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PROGRAM ASSESSMENT RATING TOOL (PART)

Acid Rain

<p>Recommendation Remove statutory requirements that prevent program from having more impact including (but not limited to) barriers that; set maximum emissions reduction targets, exempt certain viable facilities from contribution, and limit the scope of emission reduction credit trading. The Administration's Clear Skies proposal adequately addresses these and other statutory impediments. Program should work as appropriate to promote the enactment of the Clear Skies legislation.</p>	<p>Completion Date In February 2002, President Bush proposed the Clear Skies program, reintroduced in Congress in 2003, would create a mandatory program that is designed to reduce dramatically power plant emissions of SO₂, NO_x, and mercury about 70 percent from year 2000 levels. This program has not been enacted. EPA is moving forward to cut emissions administratively through the Clean Air Interstate Rule (CAIR). The CAIR program is done within the strictures of the Clean Air Act.</p>	<p>On Track (Y/N) The Clear Skies legislation has not progressed in Congress. EPA is moving forward administratively to achieve the same goals.</p>	<p>Comments on Status EPA continues to support the Clear Skies by providing analysis and other supporting material as required. EPA is focusing its efforts on the CAIR program which will achieve much of the same goals as the Clear Skies program. The CAIR rule was proposed in FY 2004.</p>
<p>Next Milestone Promulgation of the Clean Air Interstate Rule.</p>	<p>Next Milestone Date 2005</p>	<p>Lead Organization Office of Air & Radiation</p>	<p>Lead Official Brian Mclean</p>

Acid Rain

<p>Recommendation Program should develop efficiency measures to track and improve overall program efficiency. Measures should consider the full cost of the program, not just the federal</p>	<p>Completion Date The program is following through on OMB's recommendation in the 2005 Acid Rain PART to develop "efficiency measures to track and improve overall program efficiency." We have been</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status The program is evaluating industry as well as government costs. The efficiency measure will be anchored to the annual and/or long-term program performance measures approved by OMB for</p>
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contribution.	developing and evaluating various metrics to assess and track program efficiency	this program (e.g., SO ₂ emissions reduced, % change in sulfur and nitrogen deposition in acid sensitive regions, % change in number of chronically acidic lakes and streams).
Next Milestone Developing cost estimates.	Next Milestone Date 2005	Lead Organization Office of Air & Radiation Lead Official Brian Mclean

Air Toxics

Recommendation Increase funding for toxic air pollution programs by \$7 million in State grants for monitoring to help fill gaps.	Completion Date Funding was requested in the FY 2004 President's Budget; Congress included the additional funding in the FY 2004 appropriation.	On Track (Y/N) Yes	Comments on Status All monitoring funds have been committed as of April 2004. Monitoring began in January 2005.
Next Milestone Data from first quarter monitoring.	Next Milestone Date Summer 2005	Lead Organization Office of Air and Radiation	Lead Official Sally Shaver

Air Toxics

Recommendation Focus on maximizing programmatic net benefits and minimizing the cost per deleterious health effect avoided.	Completion Date Ongoing	On Track (Y/N) Yes	Comments on Status OAR is developing residual risk standards which will focus reductions on the HAPs and populations of most concern.
Next Milestone OAR proposed the coke oven residual risk proposal in July, 2004. We will take comments on the proposal and will promulgate the rule in 2005.	Next Milestone Date Mid-2005	Lead Organization Office of Air and Radiation	Lead Official Sally Shaver

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Air Toxics

<p>Recommendation Establish better performance measures (including an appropriate efficiency measure).</p>	<p>Completion Date In the air toxics re-PART (summer, 2004), OAR and OMB agreed on appropriate performance measures, including efficiency measures</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status The performance measure (percentage reduction in tons of toxicity-weighted emissions of both cancer and non-cancer HAPS) and efficiency measure (tons of toxic-weighted emissions/total cost) will be included in the FY 2006 Initial Budget Materials.</p>
<p>Next Milestone Update of toxic-weighted emissions based on 1999 inventory.</p>	<p>Next Milestone Date Mid-2005</p>	<p>Lead Organization Office of Air and Radiation</p>	<p>Lead Official Sally Shaver</p>

Clean Water SRF

<p>Recommendation Develop an outcome efficiency measure that demonstrates the marginal benefit to environment per dollars expended for the program.</p>	<p>Completion Date September 30, 2005</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status OMB approved two outcome efficiency measures and Measure Implementation Plan in 06 PART reassessment. Program rating moved from “results not demonstrated” to “adequate.”</p>
<p>Next Milestone Work with CWSRF partners to develop baselines and targets.</p>	<p>Next Milestone Date June 1, 2005</p>	<p>Lead Organization Office of Water/Office of Wastewater Management</p>	<p>Lead Official James Hanlon</p>

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Clean Water SRF

<p>Recommendation Develop/improve annual performance measures to capture the full range of sources and contaminants that affect water quality and ecosystem health.</p>	<p>Completion Date September 30, 2005</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status OMB reassessment in FY 06 noted that more work is needed to capture the full range of sources and contaminants that affect water quality and ecosystem health.</p>
<p>Next Milestone Work with CWSRF partners to develop/improve annual performance measures.</p>	<p>Next Milestone Date June 1, 2005</p>	<p>Lead Organization Office of Water/Office of Wastewater Management</p>	<p>Lead Official James Hanlon</p>

Drinking Water SRF

<p>Recommendation Develop an outcome efficiency measure that demonstrates the marginal benefit to public health per dollars expended for the program.</p>	<p>Completion Date Completed in July 2004</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status During the FY 2006 PART process, the Office of Water developed two outcome efficiency measures: 1) people receiving drinking water in compliance with health-based drinking water standards per million dollars (Federal and State); includes DWSRF, UIC, PWSS, state matching, and federal support funds; and 2) cost per community water system that is in compliance with health based drinking water standards (includes DWSRF, PWSS, state match, and federal support funds. Targets and</p>
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			baselines were developed for these new measures.
Next Milestone Report on progress towards targets.	Next Milestone Date FY 2007 PART Process	Lead Organization OW/OGWDW	Lead Official Cynthia Dougherty
Drinking Water SRF Recommendation Demonstrate other government partners' commitment to work toward annual performance goals by showing improvement in drinking water system compliance reporting by states.	Completion Date Ongoing	On Track (Y/N) Yes	Comments on Status The Data Reliability Analysis and Action Plan (2003), developed in conjunction with the Association of State Drinking Water Administrators, identified five categories of activities for which EPA and the States are now developing steps to take over the next three years to further improve the compliance data reported by States to EPA. At the ASDWA Conference in October 2004, a report of the draft steps was presented, and final steps are planned for review/approval in the second quarter FY2005. Implementation of initial steps is expected to begin in 2005.
Next Milestone	Next Milestone Date	Lead Organization OW/OGWDW	Lead Official Cynthia Dougherty

Nonpoint Source Grants

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<p>Recommendation Develop efficiency measures including an outcome efficiency measure that demonstrates the marginal benefit to the environment per dollars expended for the program.</p>	<p>Completion Date April 30, 2004</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status Agreed with OMB on an outcome efficiency measure, as articulated in FY06 PART. Received “yes” on relevant PART question.</p>
<p>Next Milestone N/A</p>	<p>Next Milestone Date N/A</p>	<p>Lead Organization OW/OWOW</p>	<p>Lead Official Diane Regas</p>
<p>Nonpoint Source Grants</p>			
<p>Recommendation Reduce funding by \$14 million in recognition of increased spending on nonpoint source pollution through USDA Farm Bill programs.</p>	<p>Completion Date February 2, 2004</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status EPA proposed a reduction in Section 319(h) funding in the FY2005 Budget request.</p>
<p>Next Milestone N/A</p>	<p>Next Milestone Date N/A</p>	<p>Lead Organization OW/OWOW</p>	<p>Lead Official Diane Regas</p>
<p>Tribal General Assistance</p>			
<p>Recommendation EPA will develop ambitious performance targets for its annual and efficiency measures.</p>	<p>Completion Date September 30, 2004</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status OMB approved revised performance measures in 05 PART reassessment. Program rating moved from “results not demonstrated” to “adequate.” For further information consult the Efficiency Measures / Measure Development Plan subsection</p>

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			within the Goal 5 Objective 3 section.
Next Milestone Begin reporting on Tribal Gap efficiency measure.	Next Milestone Date FY 2005	Lead Organization OW, AIEO	Lead Official Carol Jorgensen
Tribal General Assistance			
	Completion Date September 30, 2005	On Track (Y/N) Yes	Comments on Status Develop and implement national oversight strategy for Tribal GAP.
Next Milestone N/A	Next Milestone Date N/A	Lead Organization OW, AIEO	Lead Official Carol Jorgensen
Brownfields			
Recommendation Consistent with program expansion, continue to assess and clean-up Brownfields sites at an accelerated rate.	Completion Date Ongoing	On Track (Y/N) Yes	Comments on Status The Brownfields Program is committed to assessing, cleaning up and promoting the reuse of brownfields properties. In FY2004, the program selected 155 assessment grants, 18 revolving loan fund grants and 16 job training grants.
Next Milestone The Brownfields Program will continue to report on the progress of grants awarded under the Brownfields Law.	Next Milestone Date September 30, 2005	Lead Organization OSWER	Lead Official Juanita Standifer

Brownfields

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<p>Recommendation Work to develop more ambitious long term assessment targets that focus on redevelopment, since the current targets are within easy reach.</p>	<p>Completion Date September 30, 2004</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status The Brownfields Program met performance targets for FY2003. The Program is still gathering data on FY2004. The Program has established targets for FY2006 based on past performance.</p>
<p>Next Milestone The Brownfields Program continues to gather performance data and will set targets commensurate with program performance and funding.</p>	<p>Next Milestone Date September 30, 2005</p>	<p>Lead Organization OSWER</p>	<p>Lead Official Juanita Standifer</p>

Leaking Underground Storage Tanks

<p>Recommendation Continue to clean storage tank sites at a rapid pace.</p>	<p>Completion Date Ongoing</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status OUST has set long-term outcome based measures to aim for efficient and effective UST cleanups. OUST currently is examining the cleanup backlog of several of its states to identify and assess impediments to closure.</p>
<p>Next Milestone Identify factors that influence pace of cleanup and analyze ability to remove impediments.</p>	<p>Next Milestone Date N/A</p>	<p>Lead Organization OSWER</p>	<p>Lead Official Sammy Ng</p>

Leaking Underground Storage Tanks

<p>Recommendation</p>	<p>Completion Date</p>	<p>On Track (Y/N)</p>	<p>Comments on Status</p>
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Develop outcome measures that will test the link between the activities of the program and the impact on human health and the environment.	July 1, 2004	Yes	Annual performance measures have been forwarded to OMB that aim to reduce the backlog of cleanups that exceed state risk-based standards for human exposure and groundwater migration by 105,000 by 2008.
Next Milestone N/A	Next Milestone Date N/A	Lead Organization OSWER	Lead Official Sammy Ng

RCRA Corrective Action

Recommendation Program must define a new baseline for performance measures and establish appropriate annual targets to make goals more ambitious in achieving long-term objectives of the program.	Completion Date February 2005	On Track (Y/N) Yes	Comments on Status Finalized baseline. Annual targets included in the FY2006 CJ.
Next Milestone	Next Milestone Date N/A	Lead Organization OSWER	Lead Official Bob Maxey

RCRA Corrective Action

Recommendation Program should establish appropriate efficiency measures to adequately track program efficiency over time.	Completion Date December 2005	On Track (Y/N) Yes	Comments on Status Will finalize efficiency measure and modify RCRA Info system as needed. Will develop method for 2006 baseline and refining annual and long-term efficiency targets.
Next Milestone	Next Milestone Date	Lead Organization	Lead Official

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	OSWER	Bob Maxey
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Superfund Removal

Recommendation Propose funding at the 2003 President's Budget level.	Completion Date Ongoing	On Track (Y/N) Yes	Comments on Status In FY 2003, the Superfund removal program/project under Goal 3 was enacted at approximately the 2003 level.
Next Milestone N/A	Next Milestone Date N/A	Lead Organization OSWER	Lead Official Debbie Dietrich

Superfund Removal

Recommendation Develop outcome oriented measures that test the linkage between program activities and the impact on human health and the environment.	Completion Date Ongoing	On Track (Y/N) Yes	Comments on Status OMB approved new efficiency measure, and work continues on an outcome-oriented annual measure.
Next Milestone	Next Milestone Date	Lead Organization OSWER	Lead Official Dana Stalcup

Superfund Removal

Recommendation Improve data quality in the CERCLIS database.	Completion Date Ongoing	On Track (Y/N) Yes	Comments on Status Initial assessment of CERCLIS data completed in 12/2004. Areas for improvement were identified, as were key data quality objectives.
Next Milestone Implement changes.	Next Milestone Date March 2005	Lead Organization OSWER	Lead Official Dana Stalcup

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<p><i>Existing Chemicals</i></p>	<p>Recommendation Create outcome measures for AEGLs.</p>	<p>Completion Date February 2005</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status We have an annual performance measure that tracks the output progress of the Agency's FY 2008 AEGL Strategic Target. As the AEGL Program begins to finalize more AEGL values for the highest priority chemicals, we may be able to develop more outcome-based AEGL measures. For now, we are working toward generating an efficiency measure that can be linked to our current AEGL output measure.</p>
<p>Next Milestone Look towards developing an annual efficiency measure for the AEGL program that looks at the cost per chemical in developing AEGL values. We hope to have a measure ready for the FY 2007 re-PART process.</p>	<p>Next Milestone Date May 31, 2005</p>	<p>Lead Organization Office of Pollution Prevention and Toxics</p>	<p>Lead Official Charlie Auer</p>	

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<p>Existing Chemicals</p> <p>Recommendation Develop a long-term outcome efficiency measure.</p>	<p>Completion Date TBD</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status Developing outcome measures for the Existing Chemicals Program has been challenging but the Agency is making progress. The Agency has generated an Existing Chemical Program Measure Development and Implementation Plan (MDIP) for the FY 2006 OMB Budget Submission.</p>
<p>Next Milestone Complete an analysis of efficiency measure options and provide an efficiency measure for inclusion in the FY 2006 President's Budget. The Agency is investigating three options for existing chemicals efficiency measures in its FY 2006 MDIP.</p>	<p>Next Milestone Date 2005</p>	<p>Lead Organization Office of Pollution Prevention and Toxics</p>	<p>Lead Official Charlie Auer</p>

<p>Existing Chemicals</p> <p>Recommendation Maintain funding at the 2004 President's Budget level.</p>	<p>Completion Date February 5, 2005</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status Funding in 2005 has been maintained at the 2004 level.</p>
<p>Next Milestone</p>	<p>Next Milestone Date</p>	<p>Lead Organization</p>	<p>Lead Official</p>

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New Chemicals

Recommendation Maintain funding at the 2004 President's Budget level.	Completion Date February 5, 2005	On Track (Y/N) Yes	Comments on Status Funding in 2005 has been maintained at the 2004 level.
Next Milestone	Next Milestone Date	Lead Organization	Lead Official

New Chemicals

Recommendation Establish targets and timeframes for its measures, including efficiency measures.	Completion Date August 31, 2005	On Track (Y/N) Yes	Comments on Status The New Chemicals Program is continuing its efforts to improve performance measurement in response to FY 2005 PART findings by developing long-term and associated annual efficiency measures. The program is also establishing targets and timeframes for measures and considering an independent evaluation of the program. A new annual performance measure based on the prevention/avoidance of unreasonable risk was developed for the FY 2006 OMB Submission.
Next Milestone Complete an analysis of efficiency measure options and provide an efficiency measure for inclusion in the FY 2006 President's Budget.	Next Milestone Date August 31, 2005	Lead Organization Office of Pollution Prevention and Toxics	Lead Official Charlie Auer

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New Chemicals

<p>Recommendation Propose appropriations language to change the Toxic Substances Control Act to lift the cap on the fees that the Agency can collect for new chemical reviews.</p>	<p>Completion Date February 2005</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status EPA proposed appropriations language to remove the cap on fees in TSCA for PMN reviews as part of the FY 2005 budget process and will include proposing the language again through the FY 2006 CJ.</p>
<p>Next Milestone Inclusion of language to remove the cap on fees in TSCA for PMN reviews as part of the FY 2006 CJ.</p>	<p>Next Milestone Date N/A</p>	<p>Lead Organization Office of Pollution Prevention and Toxics</p>	<p>Lead Official Charlie Auer</p>

Pesticide Registration

<p>Recommendation The Administration recommends maintaining funding at the 2004 President's Budget level adjusted for the annual pay increase.</p>	<p>Completion Date February 5, 2004</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status Program received approximately \$2M additional funding in 2005.</p>
<p>Next Milestone</p>	<p>Next Milestone Date February 2005</p>	<p>Lead Organization Office of Pesticide Programs</p>	<p>Lead Official Marty Monell</p>

Pesticide Registration

<p>Recommendation The program will develop long-term risk-based outcome performance measures that will supplement the existing long-term measures.</p>	<p>Completion Date February 2005</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status The program is currently developing a workplan to identify available sources of data to develop more outcome oriented measures.</p>
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<p>Next Milestone The program will develop and MDIP for inclusion in the FY 2006 President's Budget Request.</p>	<p>Next Milestone Date February 2005</p>	<p>Lead Organization Office of Pesticide Programs</p>	<p>Lead Official Marty Monell</p>
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Pesticide Registration

<p>Recommendation The program will also work on long-term outcome efficiency measures.</p>	<p>Completion Date N/A</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status The program submitted two proposed measures in support of the PMA "proud to be" process.</p>
<p>Next Milestone The program will develop and MDIP for inclusion in the FY 2006 President's Budget Request.</p>	<p>Next Milestone Date N/A</p>	<p>Lead Organization Office of Pesticide Programs</p>	<p>Lead Official Marty Monell</p>

Pesticide Reregistration

<p>Recommendation Recommends providing an additional \$1.0 million for antimicrobial pesticides and \$0.5 million for inert reregistration activities.</p>	<p>Completion Date Ongoing</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status Addressed in FY 2005 President's Budget.</p>
<p>Next Milestone N/A</p>	<p>Next Milestone Date N/A</p>	<p>Lead Organization Office of Pesticide Programs</p>	<p>Lead Official Marty Monell</p>

Pesticide Reregistration

<p>Recommendation Will implement appropriate long-term performance measures,</p>	<p>Completion Date Ongoing</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status An efficiency measure and an outcome measure were added for</p>
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<p>improved annual targets, and adequate long and short term efficiency measures.</p>			<p>the FY 06 Re-PART exercise. In addition, the program is developing an indicators workplan that will contribute to improved measures. The reregistration efficiency measure submitted in support of the PMA “proud to be” process has been approved by OMB and will be included in the FY 2006 President’s Budget request.</p>
<p>Next Milestone Results of three specific indicators projects will be completed. These should contribute to improvement in both baseline and goals.</p>	<p>Next Milestone Date March 2005</p>	<p>Lead Organization Office of Pesticide Programs</p>	<p>Lead Official Marty Moneill</p>

Civil Enforcement

<p>Recommendation Redirect funds to statistically valid non-compliance rates.</p>	<p>Completion Date N/A</p>	<p>On Track (Y/N) N/A</p>	<p>Comments on Status We were unable to redirect funds for statistically valid non-compliance rate (SVNCR) work because of the Congressional reduction to OECA’s IT/Data Management budget by \$3.3 million, coupled with the need to fund PCS Modernization at \$5 million. However, OECA continues to apply SVNCR</p>
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				methodology to select regulated populations.
Next Milestone N/A	Next Milestone Date N/A	Lead Organization Office of Compliance	Lead Official Michael Stahl	
Civil Enforcement				
Recommendation Continue to fund \$5M for an improved compliance data system.	Completion Date Version 1 of modernized PCS will be available in December 2005 for all EPA Regions and 12 direct user states. Modernized PCS will be available to all states, and legacy PCS will be available for data retrieval only, by June 2007.	On Track (Y/N) Yes	Comments on Status Although Congress reduced OECA's FY 2004 IT/Data Management budget by \$3.3 million, OECA provided the full \$5 million requested for ICIS Phase II – PCS Modernization. The Agency included a total of \$8.8 million for the PCS system and system modernization efforts in its FY 2005 Congressional request.	
Next Milestone Modernized PCS, Version 1	Next Milestone Date December, 2005	Lead Organization Office of Compliance	Lead Official Michael Stahl	
Civil Enforcement				
Recommendation Continue to develop efficiency and outcome oriented performance measures.	Completion Date Ongoing	On Track (Y/N) Yes	Comments on Status Performance-based strategies for OECA's FY 2005-2007 National Priorities include outcome and other performance measures that will enable OECA to track implementation, manage the	

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			priority, and assess outcomes of priority work.
Next Milestone N/A	Next Milestone Date N/A	Lead Organization Office of Compliance	Lead Official Michael Stahl

Civil Enforcement

Recommendation Develop programs and methodologies to determine which enforcement tools, inspections, compliance assistance centers, audit incentives, are the most efficient and result in the most significant reduction of pollution.	Completion Date Ongoing	On Track (Y/N) Yes	Comments on Status EPA continues its work to develop and use the most appropriate combination of tools (assistance, incentives, monitoring, and enforcement) to address problems, i.e., environmental risks and patterns of noncompliance; and to measure all of the outcomes (e.g., pollution prevented, changes in management practices, improved compliance, and pollutant reductions) of our activities to address these problems.
Next Milestone N/A	Next Milestone Date N/A	Lead Organization Office of Compliance	Lead Official Michael Stahl

Criminal Enforcement

	Completion Date OECA's Office of Compliance (OC) will begin attempts to characterize pollution reduction by hazard and exposure in FY 2004	On Track (Y/N) Yes	Comments on Status The criminal enforcement program has a GPRA pollution reduction measure reported in FY 2003 and FY 2004. The program
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<p>harmful violations are being prosecuted.</p>	<p>by developing “proxy” measures, i.e., type of pollutant (hazard) and population surrounding a facility (exposure). OC will implement a feasibility assessment in FY 2005 and evaluate options for implementing a new hazard and exposure measure in FY 2006.</p>		<p>will follow the template being developed by OECA’s Office of Compliance to characterize the pollution reduction obtained through enforcement cases by risk and exposure.</p>
<p>Next Milestone Implement Feasibility Assessment of Measure Improvement Plan</p>	<p>Next Milestone Date 2005</p>	<p>Lead Organization Office of Compliance</p>	<p>Lead Official Michael Stahl</p>

Criminal Enforcement

<p>Next Milestone N/A</p>	<p>Next Milestone Date N/A</p>	<p>Lead Organization Office of Criminal Enforcement, Forensics and Training</p>	<p>Lead Official Peter Murtha</p>
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Criminal Enforcement

<p>Recommendation Develop statistically based recidivism rates, and measure the change to these rates.</p>	<p>Completion Date The criminal enforcement program has proposed a new recidivism measure in its FY 2004 PART submission that has been approved by OMB. The MDIP calls for external GPRA reporting beginning in FY 2007.</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status The recidivism measure will require integration of certain categories of both criminal and civil enforcement data. The criminal enforcement docket (CRIMDOC) is currently being updated and enhanced and will become the new Case Reporting System (CRS). CRS is expected to be fully “on line” and receiving data entry from criminal</p>
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			enforcement field offices during the second half of FY 2005. Integration of the criminal and civil enforcement data necessary to measure “recidivism” will also take place in FY 2005.
Next Milestone Completing enhancements to CRS and integrating civil enforcement and criminal enforcement data.	Next Milestone Date April 2005	Lead Organization Office of Criminal Enforcement, Forensics and Training	Lead Official Peter Murtha

Criminal Enforcement

Recommendation Develop programs and methodologies to address deterrence issues.	Completion Date N/A	On Track (Y/N) N/A	Comments on Status The criminal program’s FY 2004 PART submission included the new outcome measure based on “recidivism,” which will serve as the “real world” surrogate for deterrence.
Next Milestone N/A	Next Milestone Date N/A	Lead Organization Office of Criminal Enforcement, Forensics and Training	Lead Official Peter Murtha

Criminal Enforcement

Recommendation Develop statistically valid non-compliance rates.	Completion Date N/A	On Track (Y/N) N/A	Comments on Status It is not feasible to develop statistically valid non-compliance rates for the criminal enforcement program at this time. As the new “recidivism” measure in
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			implemented and data collected over the next three years, the program may be able to address the issue of statistically valid non-compliance rates in the future.
Next Milestone N/A	Next Milestone Date N/A	Lead Organization Office of Criminal Enforcement, Forensics and Training	Lead Official Peter Murtha

Ecological Research

Recommendation Encourage EPA to develop one or two more outcome-oriented long-term measures, as well as annual and efficiency measures.	Completion Date April 2005	On Track (Y/N) Yes	Comments on Status ORD has held training for the Eco program in developing outcome-oriented goals and measures. The Eco Research Multi-Year Plan Writing Team is in the process of working with clients and stakeholders to finalize this information.
Next Milestone Resubmit PART	Next Milestone Date June 30, 2005	Lead Organization ORD	Lead Official Kevin Summers

Ecological Research

Recommendation Reduce funding in FY 2005 by \$22 million. Savings from this reduction will be shifted to other high priority efforts in EPA, including the water quality	Completion Date February 2004	On Track (Y/N) Complete	Comments on Status The FY05 President's Budget proposed a \$22M cut to this program. The program is in the process of developing sufficient measures and will undergo
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<p>monitoring initiative. Funding may be increased when the program develops sufficient performance measures and demonstrates results.</p>			<p>independent expert review in 2005 to assess results.</p>
<p>Next Milestone Expert Review</p>	<p>Next Milestone Date 2nd Quarter FY05</p>	<p>Lead Organization ORD</p>	<p>Lead Official Kevin Summers</p>

Particulate Matter Research

<p>Recommendation Continue a strong emphasis on PM research, especially on co-pollutant efforts, assessment of hazardous components, and identification of the sources of those hazardous components.</p>	<p>Completion Date N/A</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status ORD's PM research continues to address the NRC's priority topics, including identifying the effects of both short- and long-term exposure to PM and copollutants, hazardous components and their sources. Of special note is a new 10-year, \$30M study with U. of WA supporting research into these topics as well as others.</p>
<p>Next Milestone N/A</p>	<p>Next Milestone Date N/A</p>	<p>Lead Organization ORD</p>	<p>Lead Official Dan Costa</p>

Particulate Matter Research

<p>Recommendation Establish a better metric for uncertainty reduction, which is the established and widely supported outcome for this program.</p>	<p>Completion Date June 2005</p>	<p>On Track (Y/N) Yes</p>	<p>Comments on Status ORD is establishing independent expert reviews of its research programs to qualitatively assess the success of research programs</p>
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PROGRAM ASSESSMENT RATING TOOL (PART)

				in reducing uncertainty and answering key science questions.
Next Milestone PART resubmission	Next Milestone Date June 2005	Lead Organization ORD	Lead Official Dan Costa	
<i>Pollution Prevention and New Technologies Research</i>				
Recommendation Shift funding from this research program to another EPA pollution prevention program that has shown results (see New Chemicals PART).	Completion Date February 2004	On Track (Y/N) Complete	Comments on Status The FY05 President's Budget proposed a \$5M cut to this program, transferred to OPPTS.	
Next Milestone N/A	Next Milestone Date N/A	Lead Organization ORD	Lead Official Alva Daniels	
<i>Pollution Prevention and New Technologies Research</i>				
Recommendation Recommend improvement of the program's strategic planning, including an independent evaluation of the program and responding to previous evaluations. In addition, the program should provide information on why it should pursue projects instead of other parties that are capable of conducting these projects.	Completion Date June 2005	On Track (Y/N) Yes	Comments on Status ORD is holding training for its research programs in developing outcome-oriented goals and measures. ORD is also establishing independent expert reviews of its research programs to qualitatively assess the success of research programs in reducing uncertainty and answering key science questions. This program is currently being redesigned to include better outcome measures.	
Next Milestone Independent Review	Next Milestone Date FY 2005	Lead Organization ORD	Lead Official Alva Daniels	

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PROGRAM ASSESSMENT RATING TOOL (PART)

Pollution Prevention and New Technologies Research	
Recommendation Establish performance measures, including efficiency measures.	<p>Completion Date June 2005</p> <p>On Track (Y/N) Yes</p> <p>Comments on Status ORD is holding training for its research programs in developing outcome-oriented goals and measures. The ETV program has also been working to develop surveys of vendors, purchasers, and permittees to determine whether ETV information is useful in decision-making. ORD is awaiting OMB feedback on proposed efficiency measures that were submitted in October 2004.</p> <p>Lead Official Alva Daniels</p>
Next Milestone Resubmit PART	<p>Next Milestone Date June 2005</p> <p>Lead Organization ORD</p>
Environmental Education	
Recommendation The Administration proposes that this program not be funded and resources be used to achieve other environmental goals.	<p>Completion Date January 2004</p> <p>On Track (Y/N) Yes</p> <p>Comments on Status The program has made significant progress in establishing performance measures and anticipates establishing baselines and targets in 2005 and reporting results in 2006. The program will also design a formal evaluation plan once performance measures have been established.</p> <p>Lead Official Andrew Burnett</p>
Next Milestone N/A	<p>Next Milestone Date N/A</p> <p>Lead Organization OA</p>

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The PART was developed to assess and improve program performance so that the Federal government can achieve better results. A PART review helps identify a program's strengths and weaknesses to inform funding and management decisions aimed at making the program more effective. The PART process identifies annual and long-term performance metrics, which can help to better quantify environmental results. The following is a table of measures identified in PART assessments conducted for FY 2004 through FY 2006.

PROGRAM	TERM	MEASURE TYPE	MEASURE	EXPLANATION
Acid Rain	Annual	Outcome	Percent change in average nitrogen deposition and mean ambient nitrate concentrations.	Data is mainly from Eastern US and is reported as 3-year averages due to varying meteorological conditions and other factors. Progress is measured as percent reduction from 1990 baseline.
Acid Rain	Annual	Outcome	Percent change in average sulfur deposition and mean ambient sulfate concentrations.	Data is mainly from Eastern U.S. and is reported as 3-year averages due to varying meteorological conditions and other factors. Progress is measured as percent reduction from 1990 baseline.
Acid Rain	Long-term	Outcome	Percent change in number of chronically acidic waterbodies in acid-sensitive regions.	Progress is measured as percent reduction from 2001 baseline number of waterbodies. Acid-sensitive regions include the Northeast, Mid-Atlantic, and Upper Midwest.
Acid Rain	Annual	Output	Tons of sulfur dioxide emitted from electric power generation sources.	Progress is measured as tons reduced from 1980 baseline of 17.4 million tons.
Acid Rain	Long-term	Output	Sulfur dioxide emissions from electric power generation sources.	Progress is measured as tons reduced from 1980 baseline of 17.4 million tons.
Air Toxics	Long-term	Outcome	Percentage reduction in tons of toxicity-weighted (for cancer risk) emissions of air toxics.	Measures percent reduction in the inventory of air toxic emissions (from a 1993 baseline), calculated as tons of emissions and multiplied by a unit risk estimate.
Air Toxics	Long-term	Outcome	Percentage reduction in tons of toxicity-weighted (for noncancer risk) emissions of air toxics.	Measures percent reduction in the inventory of air toxic emissions (from a 1993 baseline), calculated as tons of emissions and divided by the reference concentration to get noncancer

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				tons.	
Air Toxics	Annual	Outcome	Cumulative percentage reduction in tons of toxicity-weighted (for cancer risk) emissions of air toxics.	Measures percent reduction in the inventory of air toxic emissions (from a 1993 baseline), calculated as tons of emissions and multiplied by a unit risk estimate.	
Air Toxics	Annual	Outcome	Cumulative percentage reduction in tons of toxicity-weighted (for noncancer risk) emissions of air toxics.	Measures percent reduction in the inventory of air toxic emissions (from a 1993 baseline), calculated as tons of emissions and divided by the reference concentration to get noncancer tons.	
Air Toxics	Long-term	Efficiency	Tons of toxicity-weighted (for cancer and noncancer risk) emissions reduced per total cost (\$).	Will measure cumulative reduction in toxicity-weighted emissions divided by estimated total dollars spent by the Federal Government and regulated industries.	
Alaska Native Villages	Long-term	Outcome	Percent of Alaska rural and Native households with drinking water that meets SDWA requirements.		
Alaska Native Villages	Annual	Output	Percent of Alaska rural and Native households with drinking water and wastewater systems.	Baseline: As of 2003, 77% of the households have been served.	
Alaska Native Villages	Long-term	Output	By 2011, provide wastewater and drinking water systems to the remaining Alaska and Native Village population living in unserved homes.		
Alaska Native Villages	Annual	Efficiency	Number of households served with wastewater and drinking water systems per million dollars (EPA and State)		
Brownfields	Long-term	Outcome	Brownfields Properties Assessed	This measure tracks the number of brownfields properties assessed by program grant recipients. Grantees report on this measure in quarterly reports.	
Brownfields	Long-term	Output	Dollars leveraged at Brownfields properties	This measure tracks the amount of cleanup/redevelopment funding leveraged by program grant recipients at brownfields	

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				properties. Grantees report on this measure in quarterly reports.
Civil Enforcement	Long-term	Outcome	Pounds of pollution reduced, treated, or eliminated.	To be revised for risk. 5% increase by 2008, baseline set in 2005
Civil Enforcement	Annual	Outcome	Pounds of pollutants reduced, treated, or eliminated, as a result of audit agreements	
Civil Enforcement	Annual	Outcome	Pounds of pollution estimated to be reduced, treated, or eliminated as a result of concluded enforcement actions	
Civil Enforcement	Annual	Outcome	Percentage of concluded enforcement cases (including SEPs) requiring implementation of improved environmental management practices	
Civil Enforcement	Annual	Outcome	Percentage of concluded enforcement cases (including SEPs) requiring that pollutants be reduced, treated, or eliminated.	
Civil Enforcement	Annual		Change in behavior as measured by the percentage of entities making improvements in management practices.	5% increase by 2008, baseline set in 2005
Civil Enforcement	Long-term	Efficiency	Pounds of pollutants reduced, treated, or eliminated per FTE	
Clean Water State Revolving Fund	Long-term	Outcome	Percentage of waterbodies identified in 2000 as not attaining standards where water quality standards are fully attained	2002 Baseline: 0% of 21,632 waterbodies; 255,408 miles and 6.8 million acres.
Clean Water State Revolving Fund	Long-term	Outcome	Number of waterborne disease outbreaks attributable to swimming in, or other recreational contact with, the	

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			ocean, rivers, lakes, or streams measured as a five year average			
Clean Water State Revolving Fund	Long-term	Outcome	Percentage of water miles/acres with fish consumption advisory removed	2002 Baseline: 0% of 84,205 river miles; 11,277,276 lake acres.		
Clean Water State Revolving Fund	Annual	Outcome	Percentage of all major publicly-owned treatment works (POTWs) that comply with their permitted wastewater discharge standards	2002 Baseline: 97% of major POTWs. Measure includes discharge violations only (excludes administrative violations).		
Clean Water State Revolving Fund	Long-term	Output	CWSRF Long-Term Revolving Level (\$billions/yr)	Indicates the amount of funds available to be disbursed from the CWSRF program. The target is an average level of \$3.4 B/year for the period 2018-2035.		
Clean Water State Revolving Fund	Annual	Output	Fund utilization rate for the CWSRF	2002 Baseline: 91%. Calculated as cumulative loan agreement dollars to cumulative funds available for projects.		
Clean Water State Revolving Fund	Long-term	Efficiency	Number of waterbodies restored or improved per million dollars of CWSRF assistance provided			
Clean Water State Revolving Fund	Long-term	Efficiency	Number of waterbodies protected per million dollars of CWSRF assistance provided			
Climate Change Program	Long-term	Output	Million metric tons of carbon equivalent (MMTCE) of greenhouse gas emissions reduced in the building sector.			
Climate Change Program	Long-term	Output	Million metric tons of carbon equivalent (MMTCE) of greenhouse gas emissions reduced in the industry sector.			
Climate Change Program	Long-term	Output	Million metric tons of carbon equivalent (MMTCE) of greenhouse gas emissions reduced in the transportation sector.			

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Climate Change Program	Long-term	Efficiency	Tons of greenhouse gas emissions (MMTCE) prevented per societal dollar in the building sector.	
Climate Change Program	Long-term	Efficiency	Tons of greenhouse gas emissions (MMTCE) prevented per societal dollar in the industry sector (targets and baseline under development).	
Climate Change Program	Long-term	Efficiency	Tons of greenhouse gas emissions (MMTCE) prevented per societal dollar in the transportation sector.	
Criminal Enforcement	Long-term	Outcome	Pounds of pollution reduced treated or eliminated	The aggregate amount of pollution reduced, eliminated or treated, characterized as to risk.
Criminal Enforcement	Long-term	Outcome	Change in behavior to use Improved Management practices.	This measure indicates the long term success of the enforcement program in expanding the use of improved environmental management practices to promote long term compliance.
Criminal Enforcement	Long-term	Outcome	Reduction in recidivism	Measures change in criminal behavior.
Criminal Enforcement	Annual	Outcome	Reduction in recidivism	This measures a change in behavior and shows effectiveness of enforcement effort.
Criminal Enforcement	Annual	Outcome	Change in behavior to use Improved Management practices.	Indicates annual progress in meeting long term goals.
Criminal Enforcement	Annual	Outcome	Pounds of pollution reduced, treated or eliminated	To be characterized as to risk.
Criminal Enforcement	Annual	Outcome	Pollutant Impact	Annual aggregate amount (in millions of pounds) of illegal pollution that is released into the environment that cannot be remediated, treated or reduced.

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Criminal Enforcement	Annual	Efficiency	Lbs. Of Pollutant Reduction per FTE	Pollutant reductions/FTE need to ensure that the temporal relationships of outcome to resource use is aligned.
Drinking Water State Revolving Fund	Long-term	Outcome	DWSRF Long-Term Revolving Level (\$billions/yr)	Indicates the amount of funds available to be disbursed from the DWSRF program. The target is an average level of \$1.2 B/year for the period 2018-2035
Drinking Water State Revolving Fund	Long-term	Outcome	Percent population served by community water systems in compliance with health-based drinking water standards.	
Drinking Water State Revolving Fund	Annual	Outcome	Percent community water systems in compliance with drinking water standards.	This measure tracks the compliance rate of the nation's 53,000 community water systems with drinking water standards. If systems are in compliance, the population's exposure to contaminants is reduced.
Drinking Water State Revolving Fund	Annual	Output	Fund utilization rate for the DWSRF.	Cumulative dollar amount of loan agreements divided by cumulative funds available for projects.
Drinking Water State Revolving Fund	Annual	Output	Number of additional projects initiating operations.	
Drinking Water State Revolving Fund	Long-term	Efficiency	People receiving drinking water in compliance with health-based drinking water standards per million dollars (Federal and State).	Dollars include all federal and state funding for safe drinking water programs.
Drinking Water State Revolving Fund	Long-term	Efficiency	Dollars per community water system in compliance with health-based drinking water standards.	Dollars include all federal and state funding for safe drinking water programs.

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Drinking Water State Revolving Fund	Long-term	Efficiency	Average funding (in millions of dollars) per project initiating operations.	Dollars include all federal and state DWSRF funds made available to projects that have initiated operations since inception of the program.
Endocrine Disruptors	Long-term	Outcome	Determination of the extent of the impact of endocrine disruptors on humans, wildlife, and the environment to better inform the federal and scientific communities (Targets and baseline under development).	This is an Office of Research and Development (ORD) and Office of Prevention, Pesticides, and Toxic Substances (OPPTS) shared goal. The measure explicitly links research program to screening program's decisions and to environmental outcomes. Scientific progress of research will be determined through external independent expert panels that will assess the appropriateness of the measure and extent to which it has been met.
Endocrine Disruptors	Long-term	Outcome	Reduction in uncertainty regarding the effects, exposure, assessment, and management of endocrine disruptors so that EPA has a sound scientific foundation for environmental decision-making.	ORD measure. This long-term measure is a short-term outcome that explicitly links endocrine disrupting chemical (EDC) research to OPPTS decisions and environmental outcomes. Progress in reducing scientific uncertainty will be determined qualitatively through the use of external independent expert panels that will assess the appropriateness of the measures and the extent to which they have been met.
Endocrine Disruptors	Long-term	Outcome	Improved protocols for screening and testing.	ORD measure. Provides annual picture of research progress to develop screening and testing protocols for OPPTS to use. Additional annual milestones for 2007 and 2008 are described in the EDC Multi-Year Plan (MYP).
Endocrine Disruptors	Annual	Output	Assessment Milestones Met	ORD Measure. Targets include products such as guidelines for assessing endocrine disruptors.
Endocrine Disruptors	Annual	Output	Risk Management Milestones Met	ORD Measure. Targets include products such as a Risk management Evaluation of EDCs and a report on optimizing wastewater treatment plan operations to remove certain EDCs to be used by

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				the Office of Water. Additional milestones for 2007 through 2012 are described in the MYP.
Endocrine Disruptors	Annual	Output	Effects and Exposure Milestones Met	ORD Measure. Targets below include products that will help determine the extent of ED impact, such as reports identifying androgenic compounds in paper mill effluent; assessing children's exposure to pesticides, EDCs and other persistent organic pollutants; and potential effects of flame retardants on human thyroid function. Additional milestones for years 2007 and 2008 are described in MYP.
Endocrine Disruptors	Annual	Output	Cumulative number of screening assays that have been validated. (Targets under development)	OPPTS measure. EPA reports progress in terms of generally accepted milestones for the validation process for biological assays. The screening program intends to make these milestones performance measures. This new measure will replace the screening program's existing measure.
Endocrine Disruptors	Annual	Efficiency	Cost per labor hour of contracted validation studies (Target and baseline under development).	OPPTS. Measure provides a way to begin quantitative tracking of efficiency as the program moves from a single level of effort prime contract to a more flexible multiple award contract with both fixed price and level of effort features. The baseline will be hourly labor costs incurred for comparable efforts during FY 2002 and FY 2003 under the programs current validation support approach.
Environmental Education	Long-term	Outcome	Percent of all students and teachers targeted demonstrate increased environmental knowledge, as measured by the Guidelines for Learning for K-12, developed by the North American Association for Environmental Education.	Measures the performance of OEE programs to strengthen the use of environmental education in formal settings. (See OEE Revised Draft Strategic Plan (2005-2008), Long-Term Goal 1). Measure is a pre-cursor to a future measure of student achievement and/or teacher aptitude.

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Environmental Education	Long-term		Number of states adopting or aligning Guidelines for Learning curricula and standards to state academic standards or number of states developing new environmental education standards based on Guidelines for Learning.	Measures the performance of OEE programs to strengthen the use of environmental education in formal settings. (See OEE Revised Draft Strategic Plan (2005-2008), Long-Term Goal 1)
Environmental Education	Annual		Number of NNEMS fellows who pursue environmental careers.	Measures the performance of OEE programs to promote and support environmental careers. (See OEE Revised Draft Strategic Plan (2005-2008), Long-Term Goal 5)
Environmental Education	Long-term	Efficiency	Ratio of number of students/teachers that have improved environmental knowledge per total dollars expended.	Measure is currently under development. Future efficiency measure(s) may consider academic achievement or teacher aptitude.
Existing Chemicals	Long-term	Outcome	Percent cumulative reduction of chronic human health risk from environmental releases of industrial chemicals in commerce since 2001.	Target is 2008. Goal is 7%. Baseline is 2001 levels, as measured by EPA's Risk Screening Environmental Indicators (RSEI) model. 1999 and 2000 are being investigated as anomalies and are not believed to be reflective of future performance.
Existing Chemicals	Annual		Annual Measure: Percent reduction in current year production-adjusted Risk Screening Environmental Indicators (RSEI) chemical risk based index (New measure)	
Existing Chemicals	Annual	Outcome	Reduction in the current year production-adjusted risk-based score of releases and transfers of toxic chemicals.	Baseline is prior year's data (for 2000, baseline is 1999). Currently, 1999 data is under review. Chemicals are those reported to the Toxic Release Inventory (TRI) from the level of previous year (reported two years after current year due to TRI data lag).

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Existing Chemicals	Annual	Outcome	Reduction in the current year production-adjusted hazard-based score of releases and transfers of toxic chemicals.	Baseline is prior year's data. For 2000, the baseline is 1999. Chemicals are those reported to TRI from the level calculated for the previous year (reported two years after current year due to TRI data lag). EPA uses RSEI model to determine hazard.
Existing Chemicals	Long-term	Output	Percentage of high-priority chemicals for which EPA has developed short-term exposure limits.	Target is 2008. Goal is 85%. Baselines under development. From the chemicals identified as priority by the Acute Exposure Guideline Levels (AEGL) Program and representing a wide range of acutely toxic substances.
Existing Chemicals	Annual	Output	Cumulative number of chemicals with proposed, interim, and/or final values for Acute Exposure Guideline Levels (AEGL).	The numbers represented are cumulative. Supports AEGL Long-Term Goal.
Existing Chemicals	Long-term	Efficiency (Outcome)		A companion efficiency measure for RSEI is under development for possible inclusion in the FY 2005-2008 Strategic Plan based on the concept of increasing the efficiency of achieving RSEI risk reductions through improved targeting of program activities.
Existing Chemicals	Annual	Efficiency (Output)	Cost and time to establish AEGL value per chemical (Targets and baseline are under development).	Analyses currently being conducted into feasibility of demonstrating how program has found ways to make the process more efficient. Support AEGL Long-Term Goal.
Leaking Underground Storage Tanks	Long-term	Outcome	Reduce the number of cleanups that exceed state risk-based standards for human exposure and groundwater migration by 105,000 by 2008.	This measure focuses on the LUST program's sole mission, which is to cleanup LUST sites, and is in-line with their annual GPRA goal of cleaning up 21,000 LUST sites per year.

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Leaking Underground Storage Tanks	Long-term	Outcome	Reduce the number of cleanups that exceed state risk- based standards for human exposure and groundwater migration on Indian Country by 150 by 2008	Tracks EPA's performance of directly cleaning up sites, rather than tracking EPA's oversight of state cleanup programs.
Leaking Underground Storage Tanks	Annual	Outcome	Reduce the number of cleanups that exceed state risk- based standards for human exposure and groundwater migration	This annual goal of 21,000 cleanups completed tracks the program's progress in achieving its long-term goal of reducing the backlog of cleanups not meeting state-set and risk-based health and/or environmental standards.
Leaking Underground Storage Tanks	Annual	Outcome	Reduce the number of cleanups that exceed state risk- based standards for human exposure and groundwater migration on Indian Country	Tracks EPA's performance of directly cleaning up sites, rather than tracking EPA's oversight of state cleanup programs as is covered in the first measure.
Leaking Underground Storage Tanks	Annual	Efficiency	Cleanups Complete (3-year rolling average) per total cleanup dollars	This efficiency measure compares the total cost of LUST site cleanups to the number of sites cleaned up. Total costs include Federal, State and private costs. A three year rolling average of cleanups complete is used in order to account for the fluctuation
Mobile Source Standards and Certification	Long-term	Outcome	Millions of tons of volatile organic compounds (VOCs) reduced from mobile sources.	Measures reduction in millions of tons of VOC emissions from mobile sources against a 2000 baseline, as estimated by EPA models and emissions inventories.
Mobile Source Standards and Certification	Long-term	Outcome	Millions of tons of nitrogen oxides (NOx) reduced from mobile sources	Measures reduction in millions of tons of NOx emissions from mobile sources against a 2000 baseline, as estimated by EPA models and emissions inventories.
Mobile Source Standards and Certification	Long-term	Outcome	Tons of fine particulate matter (PM2.5) reduced from mobile sources	Measures reduction in tons of PM2.5 emissions from mobile sources against a 2000 baseline, as estimated by EPA models and emissions inventories.

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Mobile Source Standards and Certification	Annual	Outcome	Millions of tons of volatile organic compounds (VOCs) reduced from mobile sources.	Measures reduction in millions of tons of VOC emissions from mobile sources against a 1995 baseline, as estimated by EPA models and emissions inventories.
Mobile Source Standards and Certification	Annual	Outcome	Millions of tons of nitrogen oxides (NOx) reduced from mobile sources	Measures reduction in millions of tons of NOx emissions from mobile sources against a 1995 baseline, as estimated by EPA models and emissions inventories.
Mobile Source Standards and Certification	Annual	Outcome	Tons of particulate matter (PM10) reduced from mobile sources	Measures reduction in tons of PM10 emissions from mobile sources against a 1995 baseline, as estimated by EPA models and emissions inventories.
Mobile Source Standards and Certification	Annual	Outcome	Tons of fine particulate matter (PM2.5) reduced from mobile sources	Measures reduction in tons of PM2.5 emissions from mobile sources against a 1995 baseline, as estimated by EPA models and emissions inventories.
Mobile Source Standards and Certification	Annual	Outcome	Tons of carbon monoxide (CO) reduced from mobile sources	Measures reduction in millions of tons of CO emissions from mobile sources against a 1995 baseline, as estimated by EPA models and emissions inventories.
Mobile Source Standards and Certification	Long-term	Efficiency	Tons of pollutants (VOC, NOx, PM, CO, and SOx) reduced per total emission reduction dollars spent.	Measures cumulative reduction in tons of pollution from mobile sources divided by total dollars spent on related mobile source programs by EPA and private industry.
Mobile Source Standards and Certification	Annual	Efficiency	Percent reduction in time (days) per certificate approval for large engines (Nonroad CI, Heavy duty gas and diesel engines)	Measures average time in days from receipt of certification application to approval for three categories of large engines. Program cost will be monitored by a supplemental measure of program dollars per heavy duty certificate.
New Chemicals	Long-term	Outcome	Risks avoided to workers and the general population from prevention of the entry of new chemicals into commerce (under development).	Will show releases and exposures (to worker and general population) that otherwise would have occurred had the program not been in place, which would have threatened human health and environmental quality.

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New Chemicals	Long-term	Outcome	Cumulative reduction of releases of industrial hazardous chemicals to the environment and in industrial wastes in millions of pounds.	Baseline is 0 in 1996.
New Chemicals	Long-term	Outcome	Cumulative conservation of millions of BTUs of energy and gallons of water.	Timeline is 2008. Goal is 30/650/160. Baseline is 0 in 1996. NA denotes that BTUs of energy cannot be targeted until 2007.
New Chemicals	Annual	Outcome	Cumulative reduction of industrial hazardous chemical releases to the environment and hazardous chemicals in industrial wastes, in millions of pounds.	
New Chemicals	Annual	Outcome	Annual cumulative quantity of water conserved (millions of gallons).	
New Chemicals	Annual	Output	Number of TSCA 8(e) notices received for PMN-reviewed chemicals.	These notices are submitted to EPA by industry identifying potential risks associated with PMN-reviewed chemicals (chemicals for which zero risk was previously determined). A proxy measure is to show zero risk.
New Chemicals	Long-term	Efficiency (Output)	Review costs per chemical (for EPA and industry) (under development).	Timeline is 2008. Baseline is 2002. Goal to be determined from Phase II of OPPT PMN Program Evaluation, completed in September 2003.
New Chemicals	Annual	Efficiency (Output)	Annual number of pre-screened new chemical alternatives generated through industry's participation during the earliest stages of research and development.	
New Chemicals	Long-term		Reduction of hazardous substances from products and processes in millions of pounds	

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				(Targets under development)	
New Chemicals				Annual quantity of hazardous substances eliminated through the Green Chemistry Challenge Awards Program from 1996 levels, in millions of pounds.	
Nonpoint Source Grants	Long-term	Outcome		Number of primarily nonpoint source impaired waters that will partially or fully attain designated uses.	Will report progress every reporting cycle (currently every 2 years)
Nonpoint Source Grants	Long-term	Outcome		Number of waterbodies identified by States (on the 2000 303(d) list) as being primarily NPS-impaired partially or fully attaining designated uses.	The 2000 Baseline of primarily NPS-impaired waters is estimated to be 5,967 waterbodies. "Partially attain" means that the waterbody will cease to be impaired by a particular pollutant that has caused a 303(d) listing.
Nonpoint Source Grants	Annual	Output		Additional pounds (in millions) of reduction to total phosphorus loadings	This measure tracks the amount of phosphorus loading reduced through CWA section 319 funded projects. (FY 2002 baseline is 0, FY 2003 actual results are a partial two-year composite, reflecting an initial lag in data collection).
Nonpoint Source Grants	Annual	Output		Additional pounds (in millions) of reduction to total nitrogen loadings	This measure tracks the amount of nitrogen loading reduced through CWA section 319 funded projects. (FY 2002 baseline is 0, FY 2003 actual results are a partial two-year composite, reflecting an initial lag in data collection).
Nonpoint Source Grants	Annual	Output		Additional tons of reduction to total sediment loadings.	This measure tracks the amount of sediment loading reduced through CWA section 319 funded projects. (FY 2002 baseline is 0, FY 2003 actual results are a partial two-year composite, reflecting an initial lag in data collection).

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Nonpoint Source Grants	Long-term	Efficiency	Section 319 funds (\$million) expended per partially or fully restored waterbody.	
Pesticide Enforcement Grant Program	Long-term	Outcome	Percent of compliance actions taken as a result of inspection/enforcement.	
Pesticide Enforcement Grant Program	Long-term	Outcome	Percent of violators committing subsequent violations	
Pesticide Enforcement Grant Program	Annual	Outcome	Percent of violators committing subsequent violations	
Pesticide Enforcement Grant Program	Annual	Outcome	Percent of compliance actions taken as a result of inspection/enforcement.	
Pesticide Enforcement Grant Program	Annual	Efficiency	Number of enforcement actions per million dollars of Federal and State dollars spent.	
Pesticide Field Program	Long-term	Outcome	Cumulative reduction in the number of occupational poisoning incidents associated with exposure from pesticides. (Baseline and targets under development)	This measure applies to the Worker Protection/Certification and Training activities covered by this PART. This measures the enhanced safety of pesticide use by improving occupational competency in the application and use of pesticides.
Pesticide Field Program	Long-term	Outcome	Percentage of listed threatened and endangered species highly vulnerable to pesticides which are protected from harm by pesticide use.	This measure represents the Endangered Species Act requirement that use of registered pesticides do not harm threatened or endangered species.
Pesticide Field Program	Long-term	Outcome	Cumulative percentage of water bodies protected from adverse effects due to the use of the 31 active ingredients in pesticides with high potential to contaminate water.	This measure represents the statutory mandate that registered pesticides are safe for ecological protection when used in accordance with the packaging label.

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Pesticide Registration	Long-term	Outcome	Percent reduction in terrestrial and aquatic wildlife mortality incidents involving pesticides	The baseline is 80 reported bird incidents involving 1150 mortalities and 65 reported fish incidents involving 632,000 mortalities averaged for the period 1994-1996. The data is available annually from Ecological Incident Information System (EIS).
Pesticide Registration	Annual	Output	Percentage of agricultural acres treated with reduced-risk pesticides	Indirectly measures the increase in registration of pesticides that are lower risk than conventional pesticides by measuring the use, availability, and effectiveness (demand) for them.
Pesticide Registration	Long-term	Efficiency (Output)	Percent reduction in review time for registration of conventional pesticides.	Measures reduction in decision-making time for new active ingredient registration actions. From 2002 baseline.
Pesticide Registration	Annual		Number of new reduced risk active ingredients registered	
Pesticide Reregistration	Annual	Output	Cumulative percent of Reregistration Eligibility Decisions Completed. Percent of Reregistration Eligibility Decisions (REDs) completed	Measure tracks progress toward 2008 deadline for completing all reregistration eligibility decisions (REDs). REDs help ensure existing pesticides already in use are safe based on current science. A RED document summarizes the reregistration conclusions and outlines any risk reduction measures necessary for the pesticide to continue to be registered in the U.S.
Pesticide Reregistration	Annual	Output	Cumulative percentage of Tolerance Reassessments completed.	Measure tracks statutorily-required reviews of pesticide tolerances to ensure that they meet the most current safety standards to adequately protect human health and the environment. Tolerances are maximum pesticide residue limits allowed in or on food.

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Pesticide Reregistration	Annual	Output	Cumulative percentage of tolerance reassessments completed for top 20 foods eaten by children.	Measures help track progress toward statutorily-required deadline to complete all tolerance reassessments by 2006. Measure focuses on high priority pesticides - ones that are used on foods commonly eaten by children.
Pesticide Reregistration	Long-Term	Outcome	Cumulative reduction in the number of systemic poisoning incidents associated with exposure from organophosphate pesticides as reported to Poison Control Centers. (Baseline Under Development)	EPA has purchased incident data from the Poison Control Centers which maintains records of all poisoning cases reported. Preliminary analysis shows significant reduction in poisoning associated with organophosphate exposures.
Pesticide Reregistration	Long-Term	Outcome	Percent reduction in terrestrial and aquatic wildlife incidents and mortalities caused by certain high-risk pesticides (baseline under development).	Measure provides information on the effect of EPA's regulatory actions on the well being of fish and wildlife. Pesticides tracked for this measure will be top 15 that cause such incidents: carbofuran, diazinon, azinphos-methyl, chlorpyrifos, endosulfan, terbufos, fenthion, brodifacoum, parathion, methyl parathion, atrazine, profenofos, famphur, 2,4-D, and permethrin.
Pesticide Reregistration	Annual	Efficiency	Reduction in time required to issue Reregistration Eligibility Decisions	Measure tracks reductions in the time it takes to issue Reregistration Eligibility Decisions (REDs). Timeline is measured from the initiation of public participation to the signed RED.
Pesticide Reregistration	Annual	Efficiency	Reduction in cost per Reregistration Eligibility Decision (baseline under development).	Measure tracks average cost of Reregistration Eligibility Decisions (REDs). Calculation is based on actual Full Time Equivalent (FTE) expended to produce a reregistration decision. The baseline year for this measure will be the actual average cost for FY 01-03.

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Public Water System Supervision Grant Program	Long-term	Outcome	Percent population served by community water systems in compliance with health-based drinking water standards.	Percent population served by community water systems in compliance with health-based drinking water standards.
Public Water System Supervision Grant Program	Annual	Outcome	Percent community water systems in compliance with drinking water standards.	This measure tracks the compliance rate of the nation's 53,000 community water systems with drinking water standards. If systems are in compliance, the population's exposure to contaminants is reduced.
Public Water System Supervision Grant Program	Annual	Output	Percent of States conducting sanitary surveys at community water systems once every three years	Each year, all States are must be in compliance with the requirement to conduct sanitary surveys at community water systems once every three years, as documented by file audits of a random selection of water systems.
Public Water System Supervision Grant Program	Long-term	Efficiency	People receiving drinking water in compliance with health-based drinking water standards per million dollars (Federal and State).	Dollars include all federal and state funding for safe drinking water programs.
Public Water System Supervision Grant Program	Long-term	Efficiency	Dollars per community water system in compliance with health-based drinking water standards.	Dollars include all federal and state funding for safe drinking water programs.
RCRA Corrective Action	Long-term	Outcome	Current human exposures under control	Goal measures the percentage of sites at which stabilization and/or final cleanup efforts have been sufficient to ensure that people are not being exposed to unacceptable levels of contamination that could be reasonably expected under current conditions.
RCRA Corrective Action	Long-term	Outcome	Migration of contaminated groundwater under control	Goal measures the percentage of sites at which stabilization and/or final cleanup efforts have been sufficient to ensure plumes of contaminated groundwater are not expanding above levels of concern or are not adversely affecting surface water bodies.

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RCRA Corrective Action	Annual	Outcome	Migration of contaminated groundwater under control	New 2006-2008 targets are needed to support revised baseline for associated long-term measure.
RCRA Corrective Action	Annual	Outcome	Current human exposures under control	New 2006-2008 targets are needed to support revised baseline for associated long-term measure.
RCRA Corrective Action		Efficiency	Total number of remedies constructed per total RCRA Corrective Action budget	
RCRA Corrective Action	Long-term	Output	Number of site assessments at RCRA facilities using 2005 baseline.	New measure developed in FY 2005
RCRA Corrective Action	Long-term	Output	Number of final remedies (cleanup targets) selected at RCRA sites using 2005 baseline.	New Measure developed in FY 2005
RCRA Corrective Action	Long-term	Output	Percent of RCRA construction completions using 2005 baseline.	New Measure developed in FY 2005
Resource Conservation and Recovery Act (RCRA) Base Program, Permits and Grants	Long-term	Outcome	By 2008, reduce hazardous waste combustion facility emissions of dioxins and furans by 90% and particulate matter by 50% from 1994 levels of 880 grams/year and 9500 tons/year respectively.	Awaiting promulgation of a final rule in 2005 before the program can begin working toward these goals. No annual targets. This measure is applicable for the RCRA base hazardous waste program.
Resource Conservation and Recovery Act (RCRA) Base Program, Permits and Grants	Long-term	Outcome	By 2008, increase recycling of the total annual municipal solid waste produced to 35% from 31% in 2002.	This measure is applicable for the RCRA base municipal solid waste program.
Resource Conservation and Recovery Act	Long-term	Outcome	By 2008, reduce by 10% priority list chemicals in hazardous waste streams reported by businesses to the Toxic	OSW is making final decisions and expects to have final annual measures this summer. This measure is applicable for the RCRA base

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(RCRA) Base Program, Permits and Grants			Release Inventory.	hazardous waste program.
Resource Conservation and Recovery Act (RCRA) Base Program, Permits and Grants	Annual	Outcome	Maintain the national average municipal solid waste generation rate at no more than 4.5 pounds per person per day.	This measure is applicable for the RCRA base municipal solid waste program.
Resource Conservation and Recovery Act (RCRA) Base Program, Permits and Grants	Long-term	Output	By 2008, update controls for preventing releases at the 150 facilities that are due for permit renewal by the end of 2006 (estimated 450 facilities through 2008).	Permit renewals is a new function for the permitting program therefore there is no baseline.
Resource Conservation and Recovery Act (RCRA) Base Program, Permits and Grants	Annual	Output	By the end of 2008, prevent releases from 2,750 RCRA hazardous waste management facilities by increasing the number of facilities with permits or other approved controls from 79% (FY 2002) to 95%.	The targets are the percentage of the baseline that needs to get done in order to meet the 2008 cumulative goal of 95%. This measure is applicable for the permitting program.
Resource Conservation and Recovery Act (RCRA) Base Program, Permits and Grants	Annual	Efficiency	Facilities Under Control (permitted) per total Permitting Costs	This measure is applicable only for the RCRA hazardous waste permitting program.
Resource Conservation and Recovery Act (RCRA) Base Program, Permits and Grants	Annual	Efficiency	Reductions of priority chemicals contained in industrial waste streams per federal and private sector cost (targets and baselines under development)	

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Stratospheric Ozone Protection	Long-term	Outcome	Elimination of US consumption of Class II ozone depleting substances, measured in tons/yr of ozone depleting potential (ODP).	Does not include critical and essential use exemptions approved by the Montreal Protocol Parties
Stratospheric Ozone Protection	Long-term	Outcome	Reductions in melanoma and non-melanoma skin cancers, measured by millions of skin cancer cases avoided.	EPA will use Facts and Figures from the American Cancer Society and CDC's Morbidity and Mortality Reports (MMR), to assess the number of cases of skin cancer (melanoma and non-melanoma).
Stratospheric Ozone Protection	Long-term	Outcome	Percent reduction in equivalent effective stratospheric chlorine loading rates, measured as percent change in parts per trillion of chlorine per year (ppt/yr).	Based on US production and importation reported to EPA annually and concurrent with periodic WMO Scientific Assessments, which are every 4 years. Baseline is 2000.
Stratospheric Ozone Protection	Annual	Outcome	Remaining U.S. consumption of HCFCs, measured in tons of ozone depleting potential (ODP).	Does not include critical and essential use exemptions approved by the Montreal Protocol Parties.
Stratospheric Ozone Protection	Long-term	Efficiency	Cost (industry and EPA) per ODP-ton phase-out targets.	Denominator is consumption avoided compared to estimated consumption without the program.
Superfund Remedial Action	Long-term	Outcome	Additional Superfund sites with human exposures under control	Environmental indicator tracking the elimination or control of human exposure pathways at NPL sites. The 2002 baseline is 1199 sites representing 80% of NPL sites.
Superfund Remedial Action	Long-term	Outcome	Additional Superfund sites with groundwater migration under control	Environmental indicator tracking the elimination or control of migration of groundwater at NPL sites. The 2002 baseline is 772 sites representing 61% of NPL sites.
Superfund Remedial Action	Long-term	Outcome	Acres of land ready for reuse	Declaring any parcel of land at a Superfund site to be available for reuse is a site-specific determination made by field personnel as a result of a review of the particular conditions at the site and the risk posed to human health and the environment.

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Superfund Remedial Action	Annual	Outcome	Annual number of Superfund sites with remedy construction completed.	Tracks NPL sites at which physical construction of all cleanup actions is complete, all immediate threats to human health have been mitigated and all long-term threats are under control.
Superfund Remedial Action	Annual	Output	Final Site Assessment Decisions completed	
Superfund Remedial Action	Annual	Efficiency	Percentage of Superfund appropriation that is obligated site-specifically each year.	By measuring the percentage of resources that are annually obligated site-specifically, EPA is able to gauge the efficiency of its use of resources to achieve cleanups on a yearly basis. Targets are provisional until baseline development is completed.
Superfund Removal	Annual	Output	Number of removals completed	
Tribal General Assistance	Long-term	Outcome	% decrease in the number of households in Indian Country with inadequate wastewater sanitation systems.	
Tribal General Assistance	Long-term	Outcome	% decrease in the number of households on tribal lands lacking access to safe drinking water.	
Tribal General Assistance	Long-term	Outcome	Show at least a 10 percent improvement for each of four parameters--total nitrogen, total phosphorus, dissolved oxygen, and fecal coliforms--at not fewer than 90 monitoring stations in tribal waters for which baseline data are available.	
Tribal General Assistance	Annual	Output	% of tribes with delegated and non-delegated programs. (new targets under development)	Number of tribe-as-state (TAS) approvals for program authorization delegation or approval, implementation or direct implementation tribal cooperative agreements (DITCAs).

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Tribal General Assistance	Annual	Output	% of tribes with EPA-approved multimedia workplans.	Number of Tribes with MOUs, EAs, PPGs, DITCAs or grant eligible TAS approvals
Tribal General Assistance	Annual		Percent of tribes with delegated and non-delegated environmental programs (New measure, targets under development).	
Tribal General Assistance	Annual	Output	% of tribes with EPA-reviewed monitoring and assessment occurring (targets under development).	Number of Tribes with EPA-approved QAPPs
Tribal General Assistance	Long-term	Efficiency (Outcome)	Number of environmental programs implemented in Indian Country per million dollars (targets under development).	
U. S.-Mexico Border Water Infrastructure	Long-term	Outcome	By 2012, achieve a majority of water quality standards currently being exceeded in shared and transboundary surface waters.	The baseline is the shared and transboundary surface waters as defined, identified, and evaluated for the United States in the Clean Water Act Sec. 305(b) reports and Mexico by the Secretariat for the Environment and Natural resources. Baseline is under development.
U. S.-Mexico Border Water Infrastructure	Annual	Output	By 2005, protect the health of 1.5 million people in the Mexico border area by providing adequate water and wastewater sanitation systems funded through the Border Environment Infrastructure Fund. (Cumulative.)	Per Border 2012, this measure will be phased out in 2006 and replaced with No. 3 below. 2002 Baseline: 790,000 people provided with access to potable water and wastewater collection and treatment systems.

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U. S.-Mexico Border Water Infrastructure	Annual	Output	Increase in the number of homes connected to potable water supply and wastewater collection and treatment systems.	Baseline under development.
U. S.-Mexico Border Water Infrastructure	Long-term	Efficiency	Additional people served per million dollars (US and Mexico)	Baseline and targets are under development.
Underground Injection Control (UIC) Grant Program	Long-term	Outcome	Percent population served by community water systems in compliance with health-based drinking water standards.	
Underground Injection Control (UIC) Grant Program	Long-term	Output	Percentage of source water areas (both surface and ground water) for community water systems will achieve minimized risk to public health.	This overall measure of the source water protection program tracks the percentage source water areas for community water systems that will achieve minimized risk to public health through source water protection strategic actions.
Underground Injection Control (UIC) Grant Program	Annual	Output	Percentage of prohibited Class IV and high-priority, identified, potentially endangering Class V wells closed or permitted in ground water-based source water areas.	
Underground Injection Control (UIC) Grant Program	Annual	Output	Percentage of Class I, II, and III wells that maintain mechanical integrity without a failure that releases contaminants to underground sources of drinking water.	
Underground Injection Control (UIC) Grant Program	Annual	Output	Percentage of identified Class V motor vehicle waste disposal wells closed or permitted.	

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Underground Injection Control (UIC) Grant Program	Long-term	Efficiency	People receiving drinking water in compliance with health-based drinking water standards per million dollars (Federal and State).	Dollars include all federal and state funding for safe drinking water programs.
Underground Injection Control (UIC) Grant Program	Annual	Efficiency	Dollars per well to move Class V wells back into compliance.	Measure includes only those Class V wells that are in significant violation of regulations

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GOAL: Clean Air and Global Climate Change

Protect and improve the air so it is healthy to breathe and risks to human health and the environment are reduced. Reduce greenhouse gas intensity by enhancing partnerships with businesses and other sectors.

OBJECTIVE: HEALTHIER OUTDOOR AIR

Through 2010, working with partners, protect human health and the environment by attaining and maintaining health-based air-quality standards and reducing the risk from toxic air pollutants.

Reduce Air Toxic Emissions

- In 2006 Air toxics emissions nationwide from stationary and mobile sources combined will be reduced by an additional 2% of the updated 1993 baseline of 6.0 million tons for a cumulative reduction of 40%.
- In 2006 Complete the phase out of leaded gasoline in 20 countries in Africa through the partnership for clean fuels and vehicles.
- In 2005 Air toxics emissions nationwide from stationary and mobile sources combined will be reduced by an additional 1% of the updated 1993 baseline of 6.0 million tons for a cumulative reduction of 38%.
- In 2004 The Agency is currently working on updating the NEI and expects to have FY 2004 results in the last quarter of FY 2012.
- In 2003 End-of-year- FY 2003 data will be available in late 2009 to verify that air toxics emissions nationwide from stationary and mobile sources combined will be reduced by an additional 1% of the updated 1993 baseline of 6.0 million tons for a cumulative reduction 35%.
- In 2002 End-of-year FY 2002 data will be available in late 2004 to verify that air toxics emissions nationwide from stationary and mobile sources combined will be reduced by 1.5% from 2001 for a cumulative reduction of 33.5% from the 1993 baseline of 6.0 million tons per year.
- In 2001 End-of-year FY 2001 data will be available in late 2004 to verify that air toxics emissions nationwide from stationary and mobile sources combined will be reduced by 5% from 2000 (for a cumulative reduction of 35% from the 1993 level of 4.3 million tons.)

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Number of countries completing phase out of leaded gasoline	Data Lag	Data Lag	Data Lag	1	40	20 countries
Total Cumulative reductions in Air Toxics Emissions (% reductions from baseline).					1	40 Percent
Annual percentage of combined stationary and mobile source reductions in air toxic emissions.					2	2 Percent
Mobile Source Air Toxics Emissions Reduced					.80	.89 Million Tons
Major Stationary Source Air Toxics Emissions Reduced					1.59	1.64 Million Tons
Area and All Other Air Toxics Emissions Reduced					+.14	+.15 Million Tons

Baseline: The baseline begins in 1993. This is the year before the first MACT (Maximum Achievable Control Technology) and mobile source regulations developed under the Clean Air Act were to be implemented. Air toxics emissions data are revised every three years to generate inventories for the National Emissions Inventory (NEI), which replaced the National Toxics Inventory (NTI). In intervening years between updates of the NEI, the model EMS-HAP (Emissions Modeling System for Hazardous Air Pollutants) is used to estimate and project annual emissions of air toxics. As new inventories are completed and improved inventory data is added, the baseline (or total tons of air toxics) is adjusted. The next run of the EMS-HAP, using the final 1999 NEI data, is scheduled for Fall 2004. After that, actual numbers will be available for FY 2000 and 2001 respectively. The toxicity-weighted emission inventory will also utilize the NEI for air toxics along with the Agency's compendium of cancer and noncancer health risk criteria to develop a risk metric that can be tabulated and tracked on an annual basis. The baseline is based on emission inventory data from 1990-1993.

Air Toxicity-Weighted

In 2006 Reduction in tons of toxicity-weighted for cancer and non-cancer emissions of air toxics from 1993 baseline.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	Percentage
Reduction in tons toxicity-weighted (for cancer risk) emissions of air toxics from 1993 baseline.						22	
Reduction in tons of toxicity-weighted (for noncancer risk) emissions of air toxics from 1993 baseline.						55	

Baseline: The toxicity-weighted emission inventory will also utilize the NEI for air toxics along with the Agency's compendium of cancer and noncancer health risk criteria to develop a risk metric that can be tabulated and tracked on an annual basis. The baseline is based on emission inventory data from 1990-1993.

Reduce SO2 Emissions

- In 2006** Keep annual emissions below level authorized by allowance holdings and make progress towards achieving the year 2010 SO2 emissions cap for utilities. Annual emissions reduction target is 7.0million tons from the 1980 baseline.
- In 2005** Keep annual emissions below level authorized by allowance holdings and make progress towards achieving the year 2010 SO2 emissions cap for utilities. Annual emissions reduction target is 6.9 million tons from the 1980 baseline.
- In 2004** Although data is not available for FY 2004, EPA has continued to meet and exceed this goal for the previous 3 years. FY 2004 data will be available in the last quarter of 2005 to verify that annual emissions reduction of approximately 5 millions tons from utility sources were maintained or increased during 2004.
- In 2003** SO2 emissions were reduced by approximately 39 percent (6.8 million tons) from the 1980 level of 17.4 million tons, approaching the 50 percent reduction goal from 1980 level by 2010.
- In 2002** SO2 emissions were reduced by approximately 40 percent (7 million tons) from the 1980 level of 17.4 million tons, approaching the 50 percent reduction goal from 1980 level by 2010.
- In 2001** Approximately 5 million tons of SO2 emissions from utility sources were reduced from the 1980 baseline.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
SO2 Emissions Reduced	6,670,000	7,000,000	6,800,000	Data avail. 05	6,900,000	7,000,000 Tons Reduced

Baseline: The base of comparison for assessing progress on the annual performance goal is the 1980 emissions baseline. The 1980 SO2 emissions inventory totals 17.4 million tons for electric utility sources. This inventory was developed by National Acid Precipitation Assessment Program (NAPAP) and used as the basis for reductions in Title IV of the Clean Air Act Amendments. This data is also contained in EPA's National Air Pollutant Emissions Trends Report. Statutory SO2 emissions cap for year 2010 and later is at 8.95 million tons which is approximately 8.5 million tons below 1980 emissions level. "Allowable SO2 emission level" consists of allowance allocations granted to sources each year under several provisions of the Act and additional allowances carried over, or banked, from previous years.

Reduce Exposure to Unhealthy PM Levels - PM-10

- In 2006** The number of people living in areas with monitored ambient PM concentrations below the NAAQS for the PM-10 standard will increase by 4% (relative to 2005) for a cumulative total of 11% (relative to 1992).
- In 2005** The number of people living in areas with monitored ambient PM concentrations below the NAAQS for the PM-10 standard will increase by 1% (relative to 2004) for a cumulative total of 7% (relative to 1992).
- In 2004** EPA is not on track to meet its goal.
- In 2003** Maintained healthy air quality for 6.1 million people living in monitored areas attaining the PM standards; increased by 228 thousand the number of people living in areas with healthy air quality that have newly attained the standard.
- In 2002** Maintained healthy air quality for 3.4 million people living in monitored areas attaining the PM standards; and increased by 2.7 million the number of people living in areas with healthy air quality that have newly attained the standard.
- In 2001** EPA maintained healthy air quality for 1.189 million people living in 9 areas attaining the PM standards and increased by 2.249 million the number of people living in areas with healthy air quality that have newly attained the standard.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals Data avail. 05	FY 2005 Pres. Bud. 7	FY 2006 Request 11	Percent
Cumulative Percent Increase in the Number of People who Live in Areas with Ambient PM-10 Concentrations Below the Level of the NAAQSas Compared to 1992			6%				
Cumulative Percent Increase in the Number of Areas with Ambient PM-10 Concentrations Below the Level of the NAAQSas Compared to 1992			50%	Data avail. 05	50	130	Percent
Total number of people who live in areas measuring clean air for PM-10						126,400,000	People
Areas measuring clean air for PM-10						38	Areas
Additional people living in new areas measuring clean air for PM-10						5,500,000	People
Total Number of People who Live in Areas Designated in Attainment with Clean Air Standards for PM	3,438,000	6,086,500	6,200,000	120,700,000	122,308,000		People
Areas Designated to Attainment for the PM-10 Standard	8	4	3	6	4		Areas
Additional People Living in Newly Designated Areas with Demonstrated Attainment of the PM Standard	2,249,000	2,686,500	228,000	126,000	1,549,648		People
PM-10 Reduced from Mobile Sources	22,000	23,000	25,000	18,000	62,161	74,594	Tons
PM-2.5 Reduced from Mobile Sources	16,500	17,250	18,000	13,500	61,217		Tons

Baseline: The 1992 baseline for population is the population in areas not classified or designated as attainment for the clean air national ambient air quality standards. The 1992 baseline for areas is those areas that are designated as non-attainment of the NAAQs but not meeting the standard (50 areas). Through FY 2003, 120,279,036 are living in areas designated to attainment; 5 areas are designated to attainment for this/these pollutants. The 1995 baseline for PM-10 reduced from

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mobile sources is 880,000 tons. Beginning in FY 2005, the 2000 Mobile6 inventory is used as the baseline for mobile source emissions. The 2000 baseline for PM-10 from mobile source is 613,000 tons.

Reduce Exposure to Unhealthy CO, SO₂, NO₂, Lead

In 2006 The number of people living in areas with monitored ambient CO, NO₂, SO₂, or Pb concentrations below the NAAQS will increase by less than 13% (relative to 2005) for a cumulative total of 66% (relative to 1992).

In 2005 The number of people living in areas with monitored ambient CO, NO₂, SO₂, or Pb concentrations below the NAAQS will increase by less than 1% (relative to 2004) for a cumulative total of 53% (relative to 1992).

In 2004 Based on available data, EPA is not on track to meet its goal. EPA maintained healthy air quality for 173M people living in 122 monitored areas attaining the CO, SO₂, NO₂ or Pb standards falling slightly short of its goal of 174M.

In 2003 Maintained healthy air quality for 53 million people living in monitored areas attaining the CO, SO₂, NO₂, and Lead standards; increased by .74 million the number of people living in areas with healthy air quality that have newly attained the standard.

In 2002 Maintained healthy air quality for 36.7 million people living in monitored areas attaining the CO, SO₂, NO₂, and Lead standards; and increased by 16.5 million, the number of people living in areas with healthy air quality that have newly attained the standard.

In 2001 EPA maintained healthy air quality for 36.3 million people living in 56 areas attaining the CO, SO₂, NO₂, and Lead standards and increased by 418,000 the number of people living in areas with healthy air quality that have newly attained the standard.

Performance Measures

Cumulative Percent Increase in the Number of People who Live in Areas with Ambient CO, SO₂, NO₂, or Pb Concentrations Below the Level of the NAAQS as Compared to 1992

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
				Data avail	53	66
				05		Percent
Cumulative Percent Increase in the Number of Areas with Ambient CO, SO ₂ , NO ₂ , or Pb Concentrations				Data avail.	77	111
				05		Percent

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Below the Level of the NAAQS as Compared to 1992						189.7
Total number of people who live in areas measuring clean air for CO, SO ₂ ,NO ₂ , or Pb.						People
Areas measuring clean air for CO,SO ₂ ,NO ₂ or Pb						4
Additional people living in new areas measuring clean air for CO, SO ₂ ,NO ₂ , or Pb						15,500,000
Total Number of People Living in Areas Designated in Attainment with Clean Air Standards for CO, SO ₂ , NO ₂ , and Pb	36,721,000	53,190,000	53,700,000	173,300,000	174,222,000	People
Areas Designated to Attainment for the CO, SO ₂ , NO ₂ , and Pb Standards	9	12		14	8	Areas
Additional People Living in Newly Designated Areas with Demonstrated Attainment of the CO, SO ₂ , NO ₂ , and Pb Standards	418,000	16,490,000	740,000	5,400,000	209,991	People
CO Reduced from Mobile Sources	10,672,000	11,002,000		12,636,000	-841,971	-1.01 M
Total Number of People Living in Areas with Demonstrated Attainment of the NO ₂ Standard	14,944,000	14,944,000			n/a	People

Baseline: The 1992 baseline for population is the population in areas not classified or designated as attainment for the clean air national ambient air quality standards. The 1992 baseline for areas is those areas that are designated as non-attainment of the NAAQS but not meeting the standard (119 areas). Through FY 2003, 167 million people are living in areas designated to attainment: 108 areas are designated to attainment for this/these pollutants. The 1995 baseline for mobile source CO emissions was 70.9M tons. Beginning in FY 2005, the 2000 Mobile6 inventory is used as the baseline for mobile source emission. The 2000 baseline was 79.2M tons for mobile source CO emissions. While on-road CO emissions continue to decrease, there is an overall increase in mobile source CO emissions due to a growth in nonroad CO.

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Reduce Exposure to Unhealthy Ozone Levels - 8 Hour

- In 2006 The number of people living in areas with monitored ambient ozone concentrations below the NAAQS for the 8-hour ozone standard will increase by 1% (relative to 2004) for a cumulative total of 7% (relative to 2001).
- In 2005 The number of people living in areas with monitored ambient ozone concentrations below the NAAQS for the 8-hour ozone standard will increase by 4% (relative to 2004) for a cumulative total of 7% (relative to 2001).
- In 2004 EPA designated the attainment status in FY 2004 for areas meeting the 8-hour ozone standard, thereby establishing the baseline to monitor progress.
- In 2003 EPA met its goal of approximately 834,400 additional people living in healthier residential indoor environments, based on information from the Indoor Environment Partner Network, which includes traditional partners and grantees; analysis of various results data efforts including public service announcements and outreach, and information from the National Association of Home Builders and radon mitigation fan sales.
- In 2002 EPA met its goal of approximately 834,400 additional people living in healthier residential indoor environments, based on information gathered from homebuilders and manufacturers outreach.

Performance Measures	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Cumulative Percent Increase in the Number of People who Live in Areas with Ambient 8-hour Concentrations Below the Level of the NAAQS as Compared to 2001	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
	834,400	834,400	834,400	Data avail 05	<1	<1
Cumulative Percent Increase in the Number of Areas with Ambient 8-hour Ozone Concentrations Below the Level of the NAAQS as Compared to 2001				Data Avail 05	<1	<1
VOCs Reduced from Mobile Sources						1.03 M
NOx Reduced from Mobile Sources						2.03 M
						Tons
						Tons

Baseline: EPA will designate the attainment status for areas in April 2004. With that data, we will have the population baseline as well as the number of areas that are not in attainment for the 8-hour ozone standard. The 1995 baseline was 8.1M tons for

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mobile source VOC emissions, and 12.0M tons for mobile source NOx emissions. Beginning in FY 2005, the Mobile6 inventory is used as the baseline year for mobile source emissions. The 2000 baseline was 7.7M tons for mobile source VOC emissions, and 11.8M tons for mobile source NOx emissions. The 1-hour ozone standard is in the process of being phased out and revoked.

Reduce Exposure to Unhealthy Ozone Levels - 1 Hour

- In 2005 The number of people living in areas with monitored ambient ozone concentrations below the NAAQS for the 1-hour ozone standard will increase by 4% (relative to 2004) for a cumulative total of 53% (relative to 1992).
- In 2004 EPA is not on track to meet this goal based on available data. EPA maintained healthy air quality for 165.4 million people living in 53 areas designated as attaining the 1-hour ozone standard (falling short of its goal by 1.9 M people) and certified that 3 out of a target of 5 of the remaining 48 non-attainment areas have attained the 1-hour NAAQS for ozone, thereby increasing the number of people living in areas with healthy air by 3.9M in lieu of the 5.8M target.
- In 2003 Maintained healthy air quality for approx. 41.7 million people living in monitored areas attaining the ozone std; certified that 5 areas of the remaining 54 nonattainment areas have attained the 1-hour NAAQS for ozone thus increasing the no. of people living in areas with healthy air by 5.8 million.
- In 2002 Maintained healthy air quality for 41.7 million people living in monitored areas attaining the ozone standard; and certified 1 area of the remaining 55 nonattainment areas attained the 1-hour NAAQS for ozone, thus increasing the number of people living in areas with healthy air by 326,000.
- In 2001 EPA maintained healthy air quality for 38.2 million people living in 43 areas attaining the ozone standard, increased by 3.5 million the number of people living in areas with healthy air quality that have newly attained the standard by certifying that 3 new areas have attained the 1-hour standard.

Performance Measures	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
Cumulative Percent Increase in the Number of People who Live in Areas with Ambient 1-hour Ozone Concentrations Below the Level of the NAAQS as Compared to 1992			42%	Data Avail 05	53	Percent

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals Data Lag	FY 2004 Actuals Data avail 05	FY 2005 Pres. Bud. 40	FY 2006 Request	Percent
Cumulative Percent Increase in the Number of Areas with Ambient 1-hour Ozone Concentrations Below the Level of the NAAQS as Compared to 1992							
Total Number of People who Live in Areas Designated to Attainment of the Clean Air Standards for Ozone	41,679,000	42,026,000		173.30	174,562,000		People
Areas Designated to Attainment for the Ozone Standard	3	1		3	6		Areas
Additional People Living in Newly Designated Areas with Demonstrated Attainment of the Ozone Standard	3,475,000	326,000		3,900,000	7,276,790		People
VOCs Reduced from Mobile Sources	1,659,000	1,755,000	1,900,000	2,040,000	855,624		Tons
NOx Reduced from Mobile Sources	1,189,000	1,319,000	1,400,000	1,653,000.	1,693,259		Tons

Baseline: The 1992 baseline for population is the population in areas not classified or designated as attainment for the clean air national ambient air quality standards. The 1992 baseline for areas is those areas that are designated as non-attainment of the NAAQS but meeting the standard (54 areas). Through FY 2003, 161.5 M are living in areas designated to attainment; 51 areas are designated to attainment for this/these pollutants. The 1995 baseline was 8.1M tons for mobile source VOC emissions, and 12.0M tons for mobile source NOx emissions. Beginning in FY 2005, the Mobile6 inventory is used as the baseline year for mobile source emissions. The 2000 baseline was 7.7M tons for mobile source VOC emissions, and 11.8M tons for mobile source NOx emissions. The 1-hour ozone standard will be revoked in FY 2005 due to the designation of all areas with respect to the 8-hour ozone standard.

Reduce Exposure to Unhealthy PM Levels - PM- 2.5

In 2006 The number of people living in areas with monitored ambient PM concentrations below the NAAQS for the PM-2.5 standard will increase by 1% (relative to 2005) for a cumulative total of less than 1% (relative to 2001).

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In 2005 The number of people living in areas with monitored ambient PM concentrations below the NAAQS for the PM-2.5 standard will increase by 1% (relative to 2003) for a cumulative total of less than 1% (relative to 2001).

In 2004 EPA designated attainment status for PM2.5 in December.

Performance Measures	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
Cumulative Percent Increase in the Number of People who Live in Areas with Ambient PM-2.5 Concentrations Below the Level of the NAAQS as Compared to 2001				Data avail. 05	1	<1
Percent Increase in the Number of Areas with Ambient PM-2.5 Concentrations Below the Level of the NAAQS as Compared to 2001				Data avail. 05	1	<1
PM-2.5 Reduced from Mobile Sources						73,460 Tons

Percent Increase in the Number of Areas with Ambient PM-2.5 Concentrations Below the Level of the NAAQS as Compared to 2001

Percent Increase in the Number of Areas with Ambient PM-2.5 Concentrations Below the Level of the NAAQS as Compared to 2001

PM-2.5 Reduced from Mobile Sources

Baseline: EPA will designate the attainment status for areas in FY 2005. With that data, we will have the population baseline as well as the number of areas that are not in attainment for the PM-2.5 standard. Beginning in FY 2005, the 2000 Mobile6 inventory is used as the baseline for mobile source emissions. The 2000 baseline for PM 2.5 from mobile sources is 613,000 tons.

Acid Rain

In 2006 Reduce total annual average nitrogen deposition and ambient nitrate concentrations 5% from baseline. Baseline for annual targets up through 2010 is 1990 monitored levels.

In 2006 Reduce total annual average sulfur deposition and ambient sulfate concentrations 27% from baseline. Baseline for annual targets up through 2010 is 1990 monitored levels.

In 2005 Reduce total annual average nitrogen deposition and ambient nitrate concentrations 5% from baseline. Baseline for annual targets up through 2010 is 1990 monitored levels.

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- In 2005 Reduce total annual average sulfur deposition and ambient sulfate concentrations 27% from baseline. Baseline for annual targets up through 2010 is 1990 monitored levels.
- In 2004 The new Acid Rain measure was developed as a result of the OMB PART analysis of the program in FY 2005 budget process. Reduce total annual average nitrogen deposition and ambient nitrate concentrations 5% from baseline. Baseline for annual targets up through 2010 is 1990 monitored levels.
- In 2004 The new annual Acid Rain measure was developed as a result of the OMB PART analysis of the program in FY 2005. Reduce total annual average sulfur deposition and ambient sulfate concentrations 27% from baseline. Baseline for annual targets up through 2010 is 1990 monitored levels.

Performance Measures

Total annual average nitrogen deposition and mean ambient nitrate concentrations reduced.

Total annual average sulfur deposition and mean ambient sulfate concentrations reduced.

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Actuals	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
Data				Data	5	5
avail. 05				avail. 05		Percentage
				Data	27	27
				avail. 05		Percentage

Baseline: Sulfur and nitrogen deposition contribute to acidification of lakes and streams, making them unable to support fish and other aquatic life. Reductions in both total sulfur and nitrogen deposition are critical to reducing the number of chronically acidic water bodies. Ambient sulfate and ambient nitrate ("acid rain" particulate") contributes to unhealthy air and respiratory problems in humans, especially children and other sensitive populations. The baseline is established from monitored site levels based on consolidated map of 1989-1991 showing a three year of deposition levels produced from the CASTNET sites (<http://www.epa.gov/castnet/sites.html>).

OBJECTIVE: HEALTHIER INDOOR AIR

By 2008, 22.6 million more Americans than in 1994 will be experiencing healthier indoor air in homes, schools, and office buildings.

Healthier Residential Indoor Air

In 2006 850,000 additional people will be living in homes with healthier indoor air.

In 2005 843,300 additional people will be living in homes with healthier indoor air.

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- In 2004 EPA is currently analyzing the information gathered through the survey instrument.
- In 2003 End-of-year FY 2003 data will be available in late 2004 to verify that 834,400 additional people were living in healthier residential indoor environments.
- In 2002 On track to ensure that 834,400 additional people will be living in healthier residential indoor environments.
- In 2001 An additional 890,000 additional people are living in healthier residential indoor environments.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
People Living in Healthier Indoor Air	890,000	Data Lag	Data Lag	Data	843,300	850,000
				avail. 05		People

Baseline: This performance measure includes EPA radon, ETS, and asthma work. 1. By 2006, increase the number of people living in homes built with radon reducing features to 4,785,612 from 1,826,280 in 1994 (cumulative). * 2. By 2006, decrease the number of children exposed to secondhand smoke from 7.4 million (27% of children ages 6 and under) in 1994 to an estimated 4.0 million (14.5% of children ages 6 and under) (cumulative). 3. By 2006, increase by 500,000 the number of people with asthma and their caregivers who are educated about indoor air asthma triggers.

Healthier Indoor Air in Schools

- In 2006 630,000 students, faculty and staff will experience improved indoor air quality (IAQ) in their schools.
- In 2005 1,312,500 students, faculty and staff will experience improved indoor air quality in their schools.
- In 2004 The Agency expects to meet its goal by reaching 3000 schools with an average of approximately 525 students/staff per school in adopting an indoor air quality management plans.
- In 2003 Based on review and analysis of partner/grantees' reports and consulting with partners of EPA's Indoor Environment Network, EPA is confident that more than 1 million students and staff are experiencing improved IAQ in schools.
- In 2002 Based on information gathered from a number of schools and school systems/districts that receive Tools for Schools kits, EPA met the goal of improved air quality for approximately an additional 1.2 million students, faculty, and staff.

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In 2001 An additional 1,930,000 students, faculty and staff are experiencing improved indoor air quality in their schools.

Performance Measures	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Students/Staff Experiencing Improved IAQ in Schools	Actuals 1,930,000	Actuals 1,200,000	Actuals 1,050,000	FY 2004 Actuals Data avail. 05	Pres. Bud. 1,312,500	FY 2006 Request 630,000

Baseline: The nation has approximately 117,000* schools with an average of 525 students, faculty, and staff for a total baseline population of 61,425,000. The IAQ "Tools for Schools" Guidance implementation began in 1997. For FY 2006, the program projects an additional 1200 schools will implement the guidance. Results from a 2002 IAQ practices in schools survey suggest that approximately 20% of U.S. schools report an adequate IAQ management plan that is in accordance with EPA guidelines.

Healthier Indoor Air in Workplaces

In 2006 240,000 additional office workers will experience improved air quality in their workplaces.
 In 2005 150,000 additional office workers will experience improved air quality in their workplaces.

Performance Measures	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Additional office workers will experience improved air quality in their workplaces.	Actuals 150,000	Actuals 150,000	Actuals 150,000	FY 2004 Actuals 150,000	Pres. Bud. 150,000	FY 2006 Request 240,000

Baseline: There are approximately 750,000 office buildings with 12 billion square feet. There are approximately 24 million office workers with the mean worker density at 1 office worker per 500 square feet. Our 2008 goal is to get an additional 3% of all office buildings to adopt good IAQ measures translating to 720,000 office workers.

OBJECTIVE: PROTECT THE OZONE LAYER

By 2010, through worldwide action, ozone concentrations in the stratosphere will have stopped declining and slowly begun the process of recovery, and the risk to human health from overexposure to ultraviolet (UV) radiation, particularly among susceptible subpopulations, such as children, will be reduced.

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Restrict Domestic Consumption of Class II HCFCs

In 2006	Restrict domestic annual consumption of class II HCFCs below 9,906 ODP-weighted metric tonnes (ODP MTs) and restrict domestic exempted production and import of newly produced class I CFCs and halons below 10,000 ODP MTs.																								
In 2005	Restrict domestic annual consumption of class II HCFCs below 9,906 ODP-weighted metric tonnes (ODP MTs) and restrict domestic exempted production and import of newly produced class I CFCs and halons below 10,000 ODP MTs.																								
In 2004	Progress on restricting domestic exempted consumption of Class I CFCs and halons is tracked by monitoring industry reports of compliance with EPA's CAA phase out regulations and US obligations under the Montreal Protocol.																								
In 2003	End of year FY 2003 data will be available in late 2004 to verify restriction of domestic consumption of class II HCFCs below 9,906 ODP-weighted metric tonnes (ODP MTs) and restriction of domestic exempted production and import of newly produced class I CFCs and halons below 10,000 ODP MTs.																								
In 2002	On track to restrict domestic consumption of class II HCFCs below 15,240 ODP-weighted metric tonnes (ODP MTs) and restrict domestic exempted production and import of newly produced class I CFCs and halons below 60,000 ODP MTs.																								
In 2001	Restricted domestic consumption of class II HCFCs below 15,240 ODP-weighted metric tonnes (ODP MTs) and restricted domestic exempted production and import of newly produced class I CFCs and halons below 60,000 ODP MTs.																								
Performance Measures																									
Domestic Consumption of Class II HCFCs	<table border="0"> <tr> <td>FY 2001</td> <td>FY 2002</td> <td>FY 2003</td> <td>FY 2004</td> <td>FY 2005</td> <td>FY 2006</td> </tr> <tr> <td>Actuals</td> <td>Actuals</td> <td>Actuals</td> <td>Actuals</td> <td>Pres. Bud.</td> <td>Request</td> </tr> <tr> <td>12,087</td> <td>On Track</td> <td>Data Lag</td> <td>Data avail. 05</td> <td><9,906</td> <td><9,906</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>ODP MTs</td> </tr> </table>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request	12,087	On Track	Data Lag	Data avail. 05	<9,906	<9,906						ODP MTs
FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006																				
Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request																				
12,087	On Track	Data Lag	Data avail. 05	<9,906	<9,906																				
					ODP MTs																				
Domestic Exempted Production and Import of Newly Produced Class I CFC s and Halons	<table border="0"> <tr> <td>3,062</td> <td>On Track</td> <td>Data Lag</td> <td>Data avail. 05</td> <td><10,000</td> <td><10,000</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>ODP MTs</td> </tr> </table>	3,062	On Track	Data Lag	Data avail. 05	<10,000	<10,000						ODP MTs												
3,062	On Track	Data Lag	Data avail. 05	<10,000	<10,000																				
					ODP MTs																				

Baseline: The base of comparison for assessing progress on the 2005 annual performance goal is the domestic consumption cap of class II HCFCs as set by the Parties to the Montreal Protocol. Each Ozone Depleting Substance (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 percent of the domestic ODP-weighted consumption of CFCs in 1989 plus the ODP-weighted level of HCFCs in 1989. Consumption equals production plus import minus export.

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OBJECTIVE: RADIATION

Through 2008, working with partners, minimize unnecessary releases of radiation and be prepared to minimize impacts to human health and the environment should unwanted releases occur.

Ensure WIPP Safety

- In 2006 Certify that 45,000 55-gallon drums of radioactive waste (containing approximately 135,000 curies) shipped by DOE to the Waste Isolation Pilot Plant are permanently disposed of safely and according to EPA standards.
- In 2005 Certify that 40,000 55-gallon drums of radioactive waste (containing approximately 120,000 curies) shipped by DOE to the Waste Isolation Pilot Plant are permanently disposed of safely and according to EPA standards.
- In 2004 Through FY 2004, EPA has certified as properly disposed approximately 109,000 drums of transuranic waste equivalent to approximately 321,000 millicuries.
- In 2003 36,041 drums (55 gallon) of radioactive waste shipped by DOE to the Waste Isolation Pilot Plant were permanently disposed of safely and according to EPA standards.
- In 2002 EPA certified that 22,800 55 gallon drums of radioactive waste (containing approximately 68,400 curies) shipped by DOE to the Waste Isolation Pilot Plant are permanently disposed of safely and according to EPA standards.

Performance Measures

Number of 55-Gallon Drums of Radioactive Waste Disposed of According to EPA Standards

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Actuals	22,800	36,041	36,500	40,000	45,000	Drums
Request						
Pres. Bud.						

Baseline: The Waste Isolation Pilot Plant (WIPP) near Carlsbad, NM was opened in May 1999 to accept radioactive transuranic waste. By the end of FY 2004, approximately 109,000 (cumulative) 55 gallon drums will be safely disposed. In FY 2006, EPA expects that DOE will ship an additional 45,000 55-gallon drums of waste. Through FY 2006, EPA expects that DOE will shipped safely and according to EPA standards, approximately 23% of the planned waste volume, based on disposal of 860,000 drums over the next 40 years. Number of drums shipped to the WIPP facility on an annual basis is

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dependent on DOE priorities and funding. EPA volume estimates are based on projecting the average shipment volumes over 40 years with an initial start up.

Build National Radiation Monitoring System

- In 2006 EPA will purchase 51 additional state of the art monitoring units and initiate deployment to sites selected based on population and geographical coverage.
- In 2005 EPA will purchase 60 additional state of the art monitoring units and initiate deployment to sites selected based on population and geographical coverage. All old sampling will be replaced and population coverage will be expanded to 60%.
- In 2004 EPA did not meet its FY 2004 target of purchasing and deploying 60 state of the art radiation monitoring units.

Performance Measures

Purchase and Deploy State-of-the Art Monitoring Units

FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
			0	60	51
					Units Purchased

Baseline:

The current fixed monitoring system, part of the Environment Radiation Ambient Monitoring System, was developed in the 1960s for the purpose of monitoring radioactive fallout from nuclear weapons testing. The system currently consists of 52 old low-tech air particulate samplers which provide coverage in cities which represent approximately 24% of the population. The current system air samplers will be retired from service due to age. As the system comes on line, EPA's schedule for estimated monitor deployment and population coverage is as follows: FY 2005: 11 monitors deployed - 22.8%; FY 2006; 71 monitors deployed- for population coverage of approximately 67.7%; FY 2009: 172 cumulative monitors deployed - for population coverage of approximately 69.4%. The purchase schedule is based primarily upon contract pricing terms and the deployment schedule reflects a best estimate of our ability to get the monitors sited and out in the field.

Homeland Security - Readiness & Response

- In 2006 Verify that 60 percent of EPA's Radiological Emergency Response Team (RERT) members meet scenario-based response criteria.

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In 2005 Verify that 50 percent of EPA's Radiological Emergency Response Team (RERT) members meet scenario-based response criteria.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Percentage of EPA RERT members that meet scenario-based criteria					50	60
						Percent

Baseline: EPA assesses RERT readiness based on the ability of the RERT to: 1. provide effective field response, as defined today, 2. support coordination centers; and 3. provide analytical capabilities throughout as needed to support a single small-to-medium scale incident. These evaluation criteria will be reevaluated and revised in response to the Department of Homeland Security development of criteria for the Nuclear Incident Response Team established under the Homeland Security Act of 2002, which includes EPA RERT assets.

OBJECTIVE: REDUCE GREENHOUSE GAS INTENSITY

Through EPA's voluntary climate protection programs, contribute 45 million metric tons of carbon equivalent (MMTCE) annually to the President's 18 percent greenhouse gas intensity improvement goal by 2012. (An additional 75 MMTCE to result from the sustained growth in the climate programs are reflected in the Administration's business-as-usual projection for greenhouse gas intensity improvement.)

Reduce Greenhouse Gas Emissions

In 2006 Greenhouse gas emissions will be reduced from projected levels by approximately 102 MMTCE per year through EPA partnerships with businesses, schools, state and local governments, and other organizations.

In 2005 Greenhouse gas emissions will be reduced from projected levels by approximately 90 MMTCE per year through EPA partnerships with businesses, schools, state and local governments, and other organizations.

In 2004 Data will be available in FY 2005.

In 2003 EPA met its goal for its Climate Change Programs by GHG emissions by 82.4 MMTCE.

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In 2002 EPA's Climate Change programs reduced GHG emissions by 71 MMTCE in 2002 which is the equivalent of eliminating emissions from more than 28 million cars.

In 2001 EPA's Climate Protection Programs reduced greenhouse gas emissions by 65 million metric tons of carbon equivalent in 2001. EPA estimates that due to investments already made through EPA's technology deployment programs, greenhouse gas emissions will be reduced by more than 500 MMTCE through 2012.

Performance Measures	FY 2001		FY 2002		FY 2003		FY 2004		FY 2005		FY 2006	
	Actuals	65	Actuals	71,000,000	Actuals	82,400,000	Actuals		Pres. Bud.	90.2	Request	102
Annual Greenhouse Gas Reductions - All EPA Programs												MMTCE
Greenhouse Gas Reductions from EPA's Buildings Sector Programs (ENERGY STAR)	16.6		19,600,000		23,000,000				23.8		26.5	MMTCE
Greenhouse Gas Reductions from EPA's Industrial Efficiency/Waste Management Programs	5.8		6,900,000		7,400,000				8		9.0	MMTCE
Greenhouse Gas Reductions from EPA's Industrial Methane Outreach Programs	16		15,900,000		17,900,000				19.1		20.1	MMTCE
Greenhouse Gas Reductions from EPA's Industrial HFC/PFC Programs	22.8		24,500,000		29,800,000				34.4		41.0	MMTCE
Greenhouse Gas Reductions from EPA's Transportation Programs	1.9		2,100,000		2,300,000				2.9		3.3	MMTCE
Greenhouse Gas Reductions from EPA's State and Local Programs	1.9		2,000,000		2,000,000				2.0		2.0	MMTCE

Baseline: The baseline for evaluating program performance is a projection of U.S. greenhouse gas emissions in the absence of the U.S. climate change programs. The baseline was developed as part of an interagency evaluation of the U.S. climate change programs in 2002, which built on similar baseline forecasts developed in 1997 and 1993. Baseline data for carbon emissions related to energy use is based on data from the Energy Information Agency (EIA) and from EPA's Integrated

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Planning Model of the U.S. electric power sector. Baseline data for non-carbon dioxide (CO2) emissions, including nitrous oxide and other high global warming potential gases are maintained by EPA. Baseline information is discussed at length in the U.S. Climate Action Report 2002 (www.epa.gov/globalwarming/publications/car/index.html), which provides a discussion of differences in assumptions between the 1997 baseline and the 2002 update, including which portion of energy efficiency programs are included in the estimates. EPA develops the non-CO2 emissions baselines and projections using information from partners and other sources. EPA continues to develop annual inventories as well as update methodologies as new information becomes available.

Reduce Energy Consumption

- In 2006 Reduce energy consumption from projected levels by more than 145 billion kilowatt hours (kWh), contributing to over \$8.5 billion in energy savings to consumers and businesses.
- In 2005 Reduce energy consumption from projected levels by more than 120 billion kilowatt hours, contributing to over \$8.5 billion in energy savings to consumers and businesses.
- In 2004 Data will be available in 2005.
- In 2003 EPA's Climate Change Programs significantly exceeded its goal by reducing energy use by 122.8 billion kWh. EPA estimates that from investments made due to EPA's technology deployment programs, businesses and consumers will realize energy bill savings of more than \$85 billion through 2012 (net of investment in energy-efficiency technologies).
- In 2002 EPA's Climate Change Programs reduced energy use by 100 billion kWh hours. EPA estimates that from investments made due to EPA's technology deployment programs, businesses and consumers will realize energy bill savings of more than \$70 billion through 2012 (net of investment in energy-efficient technologies).
- In 2001 EPA's Climate Protection Programs reduced energy use by 84 billion kilowatt hours in 2001.

Performance Measures

Annual Energy Savings - All EPA Programs	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
	84	100 B	122.8 B	Data	120	145
		kWh	kWh	avail. 05		Billion kWh

Baseline: The baseline for evaluating program performance is a projection of U.S. greenhouse gas emissions in the absence of the U.S. climate change programs. The baseline was developed as part of an interagency evaluation of the U.S. climate

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change programs in 2002, which built on similar baseline forecasts developed in 1997 and 1993. Baseline data for carbon emissions related to energy use is based on data from the Energy Information Agency (EIA) and from EPA's Integrated Planning Model of the U.S. electric power sector. Baseline data for non-carbon dioxide (CO2) emissions, including nitrous oxide and other high global warming potential gases are maintained by EPA. Baseline information is discussed at length in the U.S. Climate Action Report 2002 (www.epa.gov/globalwarming/publications/car/index.html), which provides a discussion of differences in assumptions between the 1997 baseline and the 2002 update, including which portion of energy efficiency programs are included in the estimates. EPA develops the non-CO2 emissions baselines and projections using information from partners and other sources. EPA continues to develop annual inventories as well as update methodologies as new information becomes available.

OBJECTIVE: ENHANCE SCIENCE AND RESEARCH

Through 2010, provide and apply sound science to support EPA's goal of clean air by conducting leading-edge research and developing a better understanding and characterization of environmental outcomes under Goal 1.

Clean Automotive Technology

- In 2006 Transfer hybrid powertrain components, originally developed for passenger car applications, to meet size, performance, durability, and towing requirements of Sport Utility Vehicle and urban delivery vehicle applications with an average fuel economy improvement of 35% over the baseline.
- In 2005 Transfer hybrid powertrain components, originally developed for passenger car applications, to meet size, performance, durability, and towing requirements of Sport Utility Vehicle and urban delivery vehicle applications with an average fuel economy improvement of 30% over the baseline.

In 2004 The average fuel economy of the typical SUV with EPA-developed hybrid technology represents a 25% increase over the baseline of 20.2 mpg.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Fuel Economy of typical SUV with EPA-developed hybrid technology over EPA Driving Cycles Tested				25.20	26.3	27.3 MPG

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Baseline: The average fuel economy of all SUVs sold in the US in 2001 is 20.2 mpg. Values for 2004, 2005, and 2006 represent 25%, 30%, and 35% improvements over this baseline, respectively.

Research

PM Effects Research

In 2006, develop and report on new data on the effects of different PM sizes or components to improve understanding of the health risks associated with short-term exposure to PM in healthy and select susceptible populations so that, by 2010, OAR has improved assessments of health risks to develop PM standards that maximize protection of human health, as determined by independent expert review.

Performance Measures

Integrated report on the health effects of different particle sizes or particle components in healthy and select susceptible subgroups.

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Actuals	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
					I	Report

Background: The physical attributes of PM -- size, surface area and number -- influence PM deposition, penetration, and persistence in the lung, as well as the potential for transport within the body and the inherent toxicity of the particle itself. Composition also varies by particle size, with products of combustion usually concentrated in fine PM. Evidence from epidemiological studies suggest that small or "fine" particles (PM with diameters less than 2.5 microns, or PM2.5) are strongly associated with cardiovascular and respiratory effects. Other studies have shown that larger, "coarse" particles (PM with diameters less than 10 microns, or PM10) may not contribute significantly to an increased risk of adverse health effects. In addition, a few studies show correlations between health outcomes and ultrafine (< 100 nm) ambient PM. EPA is conducting research to determine the extent to which adverse health effects can be attributed to PM belonging to a particular size class or chemical compositions of PM. This APG will report on and integrate information on the influence of particle size and certain compositions on health effects in healthy and select susceptible subgroups. Specific emphasis will be placed on differential effects - in kind or intensity - for less studied particle sizes (i.e. ultrafines and coarse particles). This information will reduce uncertainties in risk assessment, be used in the development of future PM standards, and inform decision makers implementing PM reduction strategies.

Beginning in FY 2005, regular evaluations by independent and external panels will provide reviews of EPA research programs' relevance, quality, and successful performance to date, and will determine whether EPA has been successful in

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meeting its annual and long-term commitments for research. Recommendations and results from these reviews will improve the design and management of EPA research programs and help to measure their progress under the Government Performance and Results Act.

PM Measurement Research

- In 2006 Develop and transfer new data and tools needed by OAR and the states to predict, measure, and reduce ambient PM and PM emissions to attain the existing PM NAAQS, as determined by independent expert review.
- In 2005 By FY 2005, deliver and transfer improved receptor models and data on chemical compounds emitted from sources so that, by 2006, EPA's Office of Air and Radiation and the states have the necessary new data and tools to predict, measure, and reduce ambient PM and PM emissions to attain the existing PM National Ambient Air Quality Standards (NAAQS) for the protection of public health.

Performance Measures

Improved receptor models and data on chemical compounds emitted from sources

Synthesis report with improved information on PM emissions and ambient concentrations for use in preparation and evaluation of state implementation plan development, application, and compliance

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
					09/30/05	
						models/data
						1
						Report

Background: The designation of non-attainment areas for the Particulate Matter National Ambient Air Quality Standards (NAAQS) in 2005 will mean that states will need to immediately begin developing State Implementation Plans (SIPs). SIPs incorporate source emission reduction rules that once implemented lead to cleaner air and standards attainment. They are due to EPA three years after designation. SIP development is predicated on the availability of recent and credible information on state-wide and regional air quality, atmospheric chemistry, and processes that transport and transform source emissions leading to PM concentrations in excess of the PM NAAQS. The national PM Supersites program has been applying the most sophisticated instruments and methods available over the past four years in seven areas across the country to fully characterize PM, its composition and contributing sources and atmospheric processes. Supersites have been located in Fresno, CA; Los Angeles, CA; Houston, TX; St. Louis, MO; Baltimore, MD; Pittsburgh, PA; and New York, NY. These locations include those with the highest annual and daily PM concentrations nationally. The observational insights from these Supersites will provide specialized information not otherwise available for their host and

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adjoining states. Information will be provided both as detailed area-specific information and as synthesis of findings on multiple scales. This information will provide inputs for receptor models, and confirm the emissions and chemical process information used in air quality models as part of a weight of evidence approach to be used by states to tag specific sources with reduction targets.

Beginning in FY 2005, regular evaluations by independent and external panels will provide reviews of EPA research programs' relevance, quality, and successful performance to date, and will determine whether EPA has been successful in meeting its annual and long-term commitments for research.

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GOAL: Clean and Safe Water

Ensure drinking water is safe. Restore and maintain oceans, watersheds, and their aquatic ecosystems to protect human health, support economic and recreational activities, and provide healthy habitat for fish, plants, and wildlife.

OBJECTIVE: PROTECT HUMAN HEALTH

Protect human health by reducing exposure to contaminants in drinking water (including protecting source waters), in fish and shellfish, and in recreational waters.

Safe Drinking Water

- In 2006 75% of community water systems will provide drinking water that meets health-based standards with a compliance date of January 2002 or later.
- In 2006 75% of the population served by community water systems will receive drinking water that meets health-based standards with a compliance date of January 2002 or later.
- In 2006 90% of the population served by community water systems in Indian country will receive drinking water that meets all applicable health-based drinking water standards.
- In 2006 93% of the population served by community water systems will receive drinking water that meets all applicable health-based drinking water standards through effective treatment and source water protection.
- In 2006 94% of community water systems will provide drinking water that meets health-based standards with which systems need to comply as of December 2001.
- In 2006 94% of the population served by community water systems will receive drinking water that meets health-based standards with which systems need to comply as of December 2001.
- In 2005 75% of community water systems will provide drinking water that meets health-based standards with a compliance date of January 2002 or later.

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- In 2005 75% of the population served by community water systems will receive drinking water that meets health-based standards with a compliance date of January 2002 or later.
- In 2005 90% of the population served by community water systems in Indian country will receive drinking water that meets all applicable health-based drinking water standards.
- In 2005 93% of the population served by community water systems will receive drinking water that meets all applicable health-based drinking water standards through effective treatment and source water protection.
- In 2005 94% of community water systems will provide drinking water that meets health-based standards with which systems need to comply as of December 2001.
- In 2005 94% of the population served by community water systems will receive drinking water that meets health-based standards with which systems need to comply as of December 2001.
- In 2004 Data available in 2005.
- In 2004 Data available in 2005.
- In 2003 96% of the population served by community water systems received drinking water meeting health-based standards promulgated in or after 1998.
- In 2003 90% of the population served by community water systems received drinking water meeting all health-based standards in effect as of 1994, up from 83% in 1994.
- In 2002 94% of the population served by community water systems received drinking water meeting all health-based standards in effect as of 1994.
- In 2001 91 percent of the population served by water systems received drinking water meeting all health-based standards that were in effect as of 1994.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals Available 2005	FY 2005 Pres. Bud.	FY 2006 Request	% Population
Percent of population served by community drinking water systems with no violations during the year of any Federally enforceable health-based standards that were in place by 1994.	91	94	90				
Population served by community water systems providing drinking water meeting health-based standards promulgated in or after 1998.			96	Available 2005			% Population
Population served by community water systems that receive drinking water that meets health-based standards with which systems need to comply as of December 2001					94	94	% Population
Population served by community water systems that receive drinking water that meets health-based standards with a compliance date of January 2002 or later					75	75	% Population
Percentage of community water systems that provide drinking water that meets health-based standards with which systems need to comply as of December 2001					94	94	% CWSs
Percentage of community water systems that provide drinking water that meets health-based standards with a compliance date of January 2002 or later					75	75	% CWSs
Percent of the population served by community water systems in Indian country that receive drinking water that meets all applicable health-based drinking water standards					90	90	% Population

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
% of population served by community water systems that receive drinking water that meets all applicable health-based drinking water standards through effective treatment and source water protection					93	93

93 % population

Baseline: In 1998, 85% of the population that was served by community water systems and 96% of the population served by non-community, non-transient drinking water systems received drinking water for which no violations of federally enforceable health standards had occurred during the year. Year-to-year performance is expected to change as new standards take effect. Covered standards include: Stage 1 disinfection by-products/interim enhanced surface water treatment rule/long-term enhanced surface water treatment rule/arsenic.

Drinking Water Small Systems

In 2006 Reduce the number of households on Tribal lands lacking access to safe drinking water.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Number of household on Tribal lands lacking access to safe drinking water.						30,800

30,800 Households

Baseline: 2003 Baseline: In 2003, Indian Health Service indicates that 39,000 homes lack access to safe drinking water (12% of tribal homes nationwide).

River/Lake Assessments for Fish Consumption

- In 2006 91% of the shellfish growing acres monitored by states are approved or conditionally approved for use.
- In 2006 At least 1% of the water miles/acres identified by states or tribes as having a fish consumption advisory in 2002 will have improved water and sediment quality so that increased consumption of fish and shellfish is allowed.
- In 2005 80% of the shellfish growing acres monitored by states are approved or conditionally approved for use.

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In 2005 At least 1% of the water miles/acres identified by states or tribes as having a fish consumption advisory in 2002 will have improved water and sediment quality so that increased consumption of fish and shellfish is allowed.

In 2004 24%

In 2003 Reduced consumption of contaminated fish by increasing the information available to States, Tribes, local governments, citizens, and decision-makers.

In 2002 14% of the nation's river miles and 28% of nation's lake acres have been assessed to determine if they contain fish and shellfish that should not be eaten or should be eaten in only limited quantities.

In 2001 9% of the nation's river miles and 23% of nation's lake acres have been assessed to determine if they contain fish and shellfish that should not be eaten or should be eaten in only limited quantities.

Performance Measures

Lake acres assessed for the need for fish advisories and compilation of state-issued fish consumption advisory methodologies. (cumulative)

River miles assessed for the need for fish consumption advisories & compilation of state-issued fish consumption advisory methodologies. (cumulative)

Percent of water miles/acres, identified by states or tribes as having fish consumption advisories in 2002, where increased consumption of fish is allowed.

Percent of the shellfish growing acres monitored by states that are approved or conditionally approved for use

	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	% Lake acres
	23	28	33	35%			
	9	14 %	15	24%			% River miles
					1	1	% Miles/Acres
					80	91 (FY 08)	% Areas

Baseline: In 1999, 7% of the Nation's rivers and 15% of the Nation's lakes were assessed to determine if they contained fish that should not be eaten or should be eaten in only limited quantities. In September 1999, 25 states/tribes are monitoring and

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conducting assessments based on the national guidance to establish nationally consistent fish advisories. In the 2000 Report to Congress on the National Water Quality Inventory, 69% of assessed river and stream miles; 63% of assessed lake, reservoir, and pond acres; and 53% of assessed estuary square miles supported their designated use for fish consumption. For shell fish consumption, 77% of assessed estuary square miles met this designated use.

Increase Information on Beaches

- In 2006 Coastal and Great Lakes beaches monitored by State beach safety programs will be open and safe for swimming in over 94% of the days of the beach season.
- In 2006 Restore water quality to allow swimming in not less than 3% of the stream miles and lake acres identified by states in 2000 as having water quality unsafe for swimming.
- In 2005 Coastal and Great Lakes beaches monitored by State beach safety programs will be open and safe for swimming in over 94% of the days of the beach season.
- In 2005 Restore water quality to allow swimming in not less than 2% of the stream miles and lake acres identified by states in 2000 as having water quality unsafe for swimming.
- In 2004 Beach closure data for calendar year 2003 was provided by 277 state agencies for 1,857 beaches. The goal to have closure data for 2,823 beaches was not met due to software compatibility issues with the old and new database systems. EPA expects the new system to be fully operational in early 2005 so all states can report beach closure information.
- In 2003 Reduced human exposure to contaminated recreation waters by increasing the information available to the public and decision-makers.
- In 2002 Reduced exposure to contaminated recreation waters by providing monitoring and closure data on 2,455 beaches to the public and decision-makers.
- In 2001 Reduce exposure to contaminated recreation waters by providing information on 2,354 beaches for which monitoring and closure data is available to the public and decision-makers.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	
Beaches for which monitoring and closure data is available to the public at http://www.epa.gov/waterscience/beaches/ . (cumulative)	2,354	2,445	2,823	1,857			Beaches
Restore water quality to allow swimming in stream miles and lake acres identified by states					2	3	%
Days (of beach season) that coastal and Great Lakes beaches monitored by State beach safety programs are open and safe for swimming.					94	94	%

Baseline: By the end of FY 1999, 33 states had responded to EPA's first annual survey on state and local beach monitoring and closure practices and EPA made available to the public via the internet. An average of 9 recreational contact waterborne disease outbreaks reported per year by the Centers for Disease Control for the years 1994-1998, based on data housed in EPA/ORD internal database. In 2002, monitored beaches were opened 94% of the days during the beach season.

Source Water Protection

- In 2006 20% of source water areas for community water systems will achieve minimized risk to public health.
- In 2005 20% of source water areas for community water systems will achieve minimized risk to public health.
- In 2004 13,891 community water systems (representing 42% of the population served by these systems) implemented best management practices to address potential sources of contamination and further protect drinking water supplies.
- In 2003 6,570 community water systems (representing 25% of the population served by these systems) implemented source water protection programs.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Number of community water systems and percent of population served by those CWSs that are implementing source water protection programs.			6,570 / 25%	13,891 / 42%		
Percent of source water areas for community water systems that achieve minimized risk to public health					20	20

% pop/systems
 % Areas

Baseline: EPA defines "achieve minimized risk" as substantial implementation of source water protection actions, as determined by a State's source water protection strategy. Approximately 268 million people are estimated to be served by Community Water Systems (CWSs) in 2002.

OBJECTIVE: PROTECT WATER QUALITY

Protect the quality of rivers, lakes, and streams on a watershed basis and protect coastal and ocean waters.

Watershed Protection

- In 2006 472 of the Nation's watersheds have water quality standards met in at least 80% of the assessed water segments.
- In 2006 Water quality standards are fully attained in over 25% of miles/acres of waters by 2012, with an interim milestone of restoring 5% of these waters - identified in 2000 as not attaining standards - by 2005.
- In 2005 500 of the Nation's watersheds have water quality standards met in at least 80% of the assessed water segments.
- In 2005 Water quality standards are fully attained in over 25% of miles/acres of waters by 2012, with an interim milestone of restoring 2% of these waters - identified in 2000 as not attaining standards - by 2005.
- In 2004 Available in 2005.
- In 2003 End of year FY 2003 data will be available in 2005 to verify if FY 2003, Water quality has improved on a watershed basis such that 600 of the Nation's 2,262 watersheds will have greater than 80 percent of assessed waters meeting all water quality standards, up from 500 watersheds in 1998.

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In 2002 This measure reflects states' biennial reporting under CWA 305(b), and is not intended to be reported against again until the FY2003 reporting cycle.

In 2001 Water quality improved on a watershed basis such that 510 of the Nation's 2,262 watersheds will have greater than 80 percent of assessed waters meeting all water quality standards, up from 500 watersheds in 1998.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals Available 2005.	FY 2005 Pres. Bud.	FY 2006 Request	8-digit HUCs
Watersheds that have greater than 80% of assessed waters meeting all water quality standards.	510	510 (FY00)	453	500	472		
Waterbodies (river miles and lake acres) identified in 2000 as not attaining Water quality standards, are fully attained.			2		5		%
							Miles/Acres

Baseline: As of 2002 state reports 453 watersheds had met the criteria that greater than 80% of assessed waters met all water quality standards. For a watershed to be counted toward this goal, at least 25% of the segments in the watershed must be assessed within the past 4 years consistent with assessment guidelines developed pursuant to section 305(b) of the Clean Water Act. In 2002, 0% of the 255,408 miles/and 6,803,419 acres of waters identified on 1998/2000 lists of impaired waters developed by States and approved by EPA under section 303(d) of the Clean Water Act.

Dredged Material/Ocean Disposal

In 2006 Improve ratings reported on the national "good/fair/poor" scale of the National Coastal Condition Report for: coastal wetlands loss by at least 0.2 point; contamination of sediments in coastal waters by at least 0.7 point; benthic quality by at least 0.5 point; & eutrophic condition by at least 1.2 point

In 2006 Scores for overall aquatic system health of coastal waters nationally, and in each coastal region, is improved on the (good/fair/poor) scale of the National Coastal Condition Report by at least 0.1 point

In 2005 Improve ratings reported on the national "good/fair/poor" scale of the National Coastal Condition Report for: coastal wetlands loss by at least 0.1 point; contamination of sediments in coastal waters by at least 0.1 point; benthic quality by at least 0.1 point; & eutrophic condition by at least 0.1 point

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In 2005	Scores for overall aquatic system health of coastal waters nationally, and in each coastal region, is improved on the "good/fair/poor" scale of the National Coastal Condition Report by at least 0.1 point					
Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud. Request	FY 2006 Request
Score for overall aquatic system health of coastal waters nationally, and in each coastal region, is improved (cumulative).					2.5	2.7
Maintain water clarity and dissolved oxygen in coastal waters at the national levels reported in the 2002 National Coastal Condition Report					4.3 / 4.5	4.3 / 4.6
Improve ratings reported on the national "good/fair/poor" scale of the National Coastal Condition Report for coastal wetlands loss					1.5	1.7
Improve ratings reported on the national "good/fair/poor" scale of the National Coastal Condition Report for contamination of sediments in coastal waters					1.4	2.1
Improve ratings reported on the national "good/fair/poor" scale of the National Coastal Condition Report for benthic quality					1.5	2.0
Improve ratings reported on the national "good/fair/poor" scale of the National Coastal Condition Report for eutrophic condition					1.8	3.0
Baseline:	National rating of "fair/poor" or 2.4 where the rating is based on a 5-point system where 1 is poor and 5 is good and is expressed as an aerielly weighted mean of regional scores using the National Coastal Condition Report indicators [i.e., water clarity, dissolved oxygen, coastal wetlands loss, eutrophic conditions, sediment contamination, benthic health, and fish tissue contamination]. The 2002 National Coastal Condition Report indicated 4.3 for water clarity and 4.5 for dissolved oxygen, 1.4 for coastal wetlands loss; 1.3 for contamination of sediments in coastal waters; 1.4 for benthic quality; & 1.7 for eutrophic condition.					

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State/Tribal Water Quality Standards

- In 2006 In coordination with other federal partners reduce, by 17%, households on tribal lands lacking access to basic sanitation.
- In 2006 Water quality in Indian country will be improved at not less than 50 monitoring stations in tribal waters for which baseline data are available (i.e., show at least a 10% improvement for each of four key parameters: total nitrogen, total phosphorus, dissolved oxygen, and fecal coliforms.)
- In 2005 In coordination with other federal partners reduce, by 11%, households on tribal lands lacking access to basic sanitation.
- In 2005 Water quality in Indian country will be improved at not less than 35 monitoring stations in tribal waters for which baseline data are available (i.e., show at least a 10% improvement for each of four key parameters: total nitrogen, total phosphorus, dissolved oxygen, and fecal coliforms.)
- In 2004 25
- In 2003 Assured that States and Tribes had effective, up-to-date water quality standards programs adopted in accordance with the Water Quality Standards regulation and the Water Quality Standards program priorities.
- In 2002 Assure that 25 States and 22 Tribes have effective, up-to-date water quality standards programs adopted in accordance with the Water Quality Standards regulation and the Water Quality Standards program priorities.
- In 2001 21 States and 19 Tribes have effective, up-to-date water quality standards programs adopted in accordance with the Water Quality Standards regulation and the Water Quality Standards program priorities.

Performance Measures

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
States with new or revised water quality standards that EPA has reviewed and approved or disapproved and promulgated federal replacement standards.	21	25	28	27		States
Tribes with water quality standards adopted and approved (cumulative).	19	22	23	25		Tribes

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	Stations
Number of monitoring stations (for which baseline data on 4 key parameters are available) where water quality is improved.					35	50	
Number of households on tribal lands lacking access to basic sanitation.					11	17	%

Baseline: The performance measure of state submissions (above) thus represents a "rolling annual total" of updated standards acted upon by EPA, and so are neither cumulative nor strictly incremental. EPA must review and approve or disapprove state revisions to water quality standards within 60-90 days after receiving the state's package. In 2002, there will be four key parameters available at 900 sampling stations in Indian country. In 2002, Indian Health Service indicates that 71,000 households on Tribal lands lack access to basic sanitation.

OBJECTIVE: ENHANCE SCIENCE AND RESEARCH

Provide and apply a sound scientific foundation to EPA's goal of clean and safe water by conducting leading-edge research and developing a better understanding and characterization of the environmental outcomes under Goal 2.

Research

Scientific Rationale for Surface Water Criteria

- In 2006 By 2006, provide demonstrations of bioassessment methods for Mid-Western U.S. rivers, so that, by 2010, the Office of Water, states, and tribes have approaches and methods to develop and apply criteria for habitat alteration, nutrients, suspended and bedded sediments, pathogens, and toxic chemicals that will support designated uses for aquatic ecosystems, as determined by independent expert review.
- In 2005 By 2005, provide methods for developing water quality criteria so that, by 2008, approaches and methods are available to States and Tribes for their use in developing and applying criteria for habitat alteration, nutrients, suspended and bedded sediments, pathogens and toxic chemicals that will support designated uses for aquatic ecosystems and increase the scientific basis for listing and delisting impaired water bodies under Section 303(d) of the Clean Water Act.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud. 09/30/05	FY 2006 Request
Methods for developing water quality criteria based on population-level risks of multiple stressors to aquatic life and aquatic-dependent wildlife.						methods
Report on bioassessment methods for a range of designated uses in freshwater systems within Mid-Western U.S. rivers						1 Report

Background: Under the Clean Water Act (CWA), the Office of Water is charged with setting criteria for states and tribes to use in establishing standards for identifying and restoring impaired waters and maintaining designated uses. Biological criteria have proven to be a more accurate way to measure ecological condition of waterbodies compared to traditional chemical and physical criteria. Bioassessment methods are used to develop and apply biocriteria. The historical focus of detection and monitoring has been on smaller, wadeable streams and rivers (where inputs are likely to have noticeable impacts), but the rise in awareness of the substantial role of non-point-source pollution has led to an increased interest in assessment of large rivers. Biological communities and habitats change with increasing stream size, so this research will provide river assessors with clear and consistent methods for conducting bioassessments for large rivers. Since different assessment methods use different scales of biological data (e.g., bioassays use species data and various bioassessments use community level data), this research will also compare the different levels of protection provided by different assessment methods. States and tribes are also faced with limited monitoring resources to meet their obligations for CWA 305b and 303d reporting and to meet Total Maximum Daily Load (TMDL) requirements. Until recently, the majority of state biomonitoring datasets were generated from targeted sampling designs and thus may have introduced a level of bias in some analyses. This research will provide states and tribes with guidance on balancing potential bias associated with the site selection approach with the monitoring objectives and the costs associated with a purely random sampling design. Beginning in FY 2005, regular evaluations by independent and external panels will provide reviews of EPA research programs' relevance, quality, and successful performance to date.

Drinking Water Research

In 2006

By 2006, provide results of full-scale treatment demonstration projects and evaluations of other approaches for managing arsenic in drinking water, so that by 2010, the Office of Water, states, local authorities and utilities have scientifically

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sound data and approaches to manage risks to human health posed by exposure to arsenic, as determined by independent expert review.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Final reports of full-scale demonstrations of arsenic treatment technologies					3	3 Reports

Background: A final drinking water standard for arsenic of ten parts per billion (10 ppb) was established by EPA in 2001, with an effective date for compliance of 2006. Nearly 97 percent of the water systems affected by this rule are small systems that serve less than 10,000 people each. These small systems have limited resources and need more cost-effective technologies to meet the new standard. To assist small communities, EPA has conducted a series of full-scale, long-term, on-site demonstrations of arsenic removal technologies, process modifications and engineering approaches. In addition, EPA has provided technical assistance and training to operators of small water treatment systems. Accomplishment of the FY 2006 APG will provide states, local authorities, and utilities across the country with cost-effective technologies and technical information that can be used to successfully implement the new arsenic standard.

Beginning in FY 2005, regular evaluations by independent and external panels will provide reviews of EPA research programs' relevance, quality, and successful performance to date, and will determine whether EPA has been successful in meeting its annual and long-term commitments for research. Recommendations and results from these reviews will improve the design and management of EPA research programs and help to measure their progress under the Government Performance and Results Act (GPRA).

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GOAL: Land Preservation and Restoration

Preserve and restore the land by using innovative waste management practices and cleaning up contaminated properties to reduce risks posed by releases of harmful substances.

OBJECTIVE: PRESERVE LAND

By 2008, reduce adverse effects to land by reducing waste generation, increasing recycling, and ensuring proper management of waste and petroleum products at facilities in ways that prevent releases.

Municipal Solid Waste Source Reduction

- In 2006 Divert 33.4% (80 million tons) of municipal solid waste from land filling and combustion, and maintain per capita generation of RCRA municipal solid waste at 4.5 pounds per day.
- In 2005 Divert an additional 1% (for a cumulative total of 35% or 81 million tons) of municipal solid waste from land filling and combustion, and maintain per capita generation of RCRA municipal solid waste at 4.5 pounds per day.
- In 2004 End of year 2004 data will be available in 2006 to verify diversion of 33.4% (80 million tons) of municipal solid waste from land filling and combustion, and maintain the national average municipal solid waste generation rate at no more than 4.5 pounds per person per day.
- In 2003 End of year FY 2003 data will be available in 2006 to verify that an additional 1% (for a cumulative total of 32% or 74 million tons) of municipal solid waste from land filling and combustion, and maintain per capita generation of RCRA municipal solid waste at 4.5 pounds per day was diverted.
- In 2002 FY 2002 data is currently not available for the diversion of municipal solid waste from land filling and combustion or maintaining per capita generation of RCRA municipal solid waste. Analysis of FY 2002 data is anticipated by September 2004.
- In 2001 FY 2001 data is not available for the diversion of municipal solid waste from land filling and combustion or maintaining per capita generation of RCRA municipal solid waste. Analysis of FY 2001 data is anticipated by September 2003.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Millions of tons of municipal solid waste diverted.	68	Not available	Data Lag	0	81	80
Daily per capita generation of municipal solid waste.	4.5	Not available	Data Lag	0	4.5	4.5

million tons
lbs. MSW

Baseline: An analysis conducted in FY 2001 shows approximately 68 million tons (29.2%) of municipal solid waste diverted and 4.4 lbs of MSW per person daily generation. While data indicates that the growth in recycling rates has slowed, EPA has maintained the goal of a 35% recycling rate as part of the FY 2003-2008 Strategic Plan.

Waste and Petroleum Management Controls

- In 2006** Reduce releases to the environment by managing hazardous wastes and petroleum products properly.
- In 2005** Reduce releases to the environment by managing hazardous wastes and petroleum products properly.
- In 2004** In FY 2004, 72% of UST facilities were in significant operational compliance with release detection requirements (a decrease of -4% from the target of 76%) and 79% of UST facilities were in significant operational compliance with release prevention requirements (a decrease of -6% from the target of 83%). In FY 2004, States and regional offices reported that 64% of UST facilities were in compliance with the new UST measure. Between FY 1999 and FY 2004, confirmed UST releases averaged 12,641, and the annual number of confirmed releases in FY 2004 was 7,848. The RCRA program exceeded its FY 2004 goal by establishing permits or approved controls at an additional 3.7% of regulated facilities.
- In 2003** For UST facilities, 72% are in operational compliance with leak detection, and 79% are in operational compliance with spill prevention requirements. An additional 4.1% of the RCRA facilities have permits or approved controls, and 600 oil facilities are in compliance with spill requirements.
- In 2002** 1.8% of RCRA hazardous waste management facilities received permits or other approved controls, and 580 oil facilities were in compliance with spill prevention, control and countermeasure provisions of the oil pollution regulations.
- In 2001** 9.1% of RCRA hazardous waste management facilities received permits or other approved controls, and 593 oil facilities were in compliance with spill prevention, control and countermeasure provisions of the oil pollution regulations.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	
Percent increase of RCRA hazardous waste management facilities with permits or other approved controls.	9.0%	4.5%	4.1%	3.7%	2.8%	2.5%	percentage pts.
Number of confirmed UST releases nationally.				7,848	<10,000	<10,000	UST releases
Percentage of UST facilities in significant operational compliance with release detection requirements.			-8%	-4%	Not applicable		percentage pts.
Percentage of UST facilities in significant operational compliance with release prevention (spill, overflow and corrosion protection) regulations.			-6%	-6%	Not applicable		percentage pts.
Percent increase of UST facilities that are in significant operational compliance with both release detection and release prevention (spill, overflow, and corrosion protection requirements).					1%	1%	percent

Baseline: FY 2004 marked the first baseline year that states and regional offices reported the percentage of UST facilities, out of a total estimated universe of approximately 256,000 facilities, that are in significant operational compliance with both release detection and release prevention (spill, overflow, and corrosion protection) requirements. At the end of FY 2004, the national compliance rate was 77 percent for release prevention, 72 percent for release detection, and 64 percent for the combined compliance measure. Between FY 1999 and FY 2004, confirmed UST releases averaged 12,641, and the annual number of confirmed releases in FY 2004 was 7,848. The RCRA program exceeded its FY 2004 goal by establishing permits or approved controls at an additional 3.7% of regulated facilities.

OBJECTIVE: RESTORE LAND

By 2008, control the risks to human health and the environment by mitigating the impact of accidental or intentional releases and by cleaning up and restoring contaminated sites or properties to appropriate levels.

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Superfund Cost Recovery

- In 2006 Ensure trust fund stewardship by getting PRPs to initiate or fund the work and recover costs from PRPs when EPA expends trust fund monies. Address cost recovery at all NPL and non-NPL sites with a statute of limitations (SOL) on total past costs equal to or greater than \$200,000.

- In 2005 Ensure trust fund stewardship by getting PRPs to initiate or fund the work and recover costs from PRPs when EPA expends trust fund monies. Address cost recovery at all NPL and non-NPL sites with a statute of limitations (SOL) on total past costs equal to or greater than \$200,000.

- In 2004 EPA achieved its goal of addressing through enforcement, settlement or compromise/write-off all of the pending cost recovery cases with outstanding unaddressed past costs greater than \$200,000 and pending SOL concerns.

- In 2003 Ensured trust fund stewardship by getting PRPs to initiate or fund the work and recover costs from PRPs when EPA expends trust fund monies. Addressed cost recovery at all NPL and non-NPL sites with a statute of limitations (SOL) on total past costs equal to or greater than \$200,000.

- In 2002 The goal was met. Cost recovery was addressed at 204 NPL and non-NPL sites of which 101 had total past costs greater than or equal to \$200,000 and potential statute of limitations (SOL) concerns. EPA secured cleanup and cost recovery commitments from private parties in excess of \$645 million.

In 2001 None Provided

Performance Measures

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Refer to DOJ, settle, or write off 100% of Statute of Limitations (SOLs) cases for SF sites with total unaddressed past costs equal to or greater than \$200,000 and report value of costs recovered.	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
	97.8	100	100	100%	100	100
						Percent

Baseline: In FY 98 the Agency will have addressed 100% of Cost Recovery at all NPL & non-NPL sites with total past costs equal or greater than \$200,000.

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Superfund Potentially Responsible Party Participant

- In 2005 Reach a settlement or take an enforcement action by the time of the Remedial Action start at 90 percent of non-Federal Superfund sites that have viable, liable parties.
- In 2004 EPA reached a settlement or took an enforcement action by the start of remedial action at more than 98% of those Superfund sites having known non-Federal, viable, liable parties.
- In 2003 Maximized all aspects of PRP participation which included maintaining PRP work at 87% of the new remedial construction starts at non-Federal Facility Superfund, and emphasized fairness in the settlement process.
- In 2002 In FY 2002 the percentage of remedial construction starts initiated by responsible parties exceeded the target by one percent.
- In 2001 None Provided

Performance Measures	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
PRPs conduct 70% of the work at new construction starts	67.3	71	87			Percent
Percentage of Superfund sites at which settlement or enforcement action taken before the start of RA.				98%	90	Percent

Baseline: In FY 98 approximately 70% of new remedial work at NPL sites (excluding Federal facilities) was initiated by private parties. In FY2003, a settlement was reached or an enforcement action was taken with non-Federal PRPs before the start of the remedial action at approximately 90 percent of Superfund sites.

Assess and Cleanup Contaminated Land

- In 2006 Control the risks to human health and the environment at contaminated properties or sites through cleanup, stabilization, or other action, and make land available for reuse.
- In 2005 Control the risks to human health and the environment at contaminated properties or sites through cleanup, stabilization, or other action, and make land available for reuse.

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- In 2004 In FY 2004, Superfund controlled human exposures at 83% (1,242 of 1,493) of eligible NPL sites and controlled groundwater migration at 67% (875 of 1,306) of eligible NPL sites, completed construction at 62% (926 of 1,498) of the eligible NPL sites, selected final remedies at 67% (1,003 of 1,498) of the eligible NPL sites. Of the 1,714 RCRA Corrective Action high priority facilities, 84% (1,440) have human exposures controlled and 70% (1,199) have groundwater migration controlled, reflecting the strong EPA/state partnership in this program. EPA completed 317,405 leaking underground storage tank cleanups by the end of FY 2004. The Agency has worked with state partners to evaluate multi-year cleanup goals in light of new pressures that have slowed the pace of cleanup in recent years. The result of this process has been a reduction of multi-year goals to a target number that better reflects the current challenges.
- In 2003 917 final Superfund site assessment decisions were made.
- In 2003 Superfund accomplished 380 removals, control of human exposures at 28 sites and groundwater migration at 54 sites, and 40 construction completions. The RCRA program controlled human exposures at 230 sites and groundwater migration at 175 sites. There were 18,518 LUST cleanups.
- In 2002 Human exposures to toxins were controlled at 172 RCRA facilities and toxic releases to groundwater were controlled at 171 RCRA facilities. 15,769 leaking underground storage tank cleanups were completed, and 42 Superfund construction completions were achieved.
- In 2002 Superfund initiated 426 removal actions and recorded 587 site assessment decisions, and the Brownfields program assessed 983 properties.
- In 2001 Human exposures to toxins were controlled at 179 RCRA facilities and toxic releases to groundwater were controlled at 154 RCRA facilities, 19,074 leaking underground storage tank cleanups were completed, and 47 Superfund construction completions were completed.
- In 2001 Superfund initiated 302 removal response actions and recorded 931 site assessment decisions, and the Brownfields program assessed 730 properties.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Number of leaking underground storage tank cleanups completed.	19,074	15,769	18,518	14,285	21,000	18,300
Number of Superfund final site assessment decisions.	931	587	917	548	500	500
Number of Superfund construction completions.	47	42	40	40	40	40
Number of Superfund hazardous waste sites with human exposures controlled.			28	15	10	10
Number of Superfund hazardous waste sites with groundwater migration controlled.			54	18	10	10
Number of final remedies (cleanup targets) selected at Superfund sites.				30	20	20
Number of high priority RCRA facilities with human exposures to toxins controlled.	179	207	230	195	225	225
Number of high priority RCRA facilities with toxic releases to groundwater controlled.	154	174	175	150	203	203
Number of final remedies (cleanup targets) selected at RCRA sites using 2005 baseline.						89
Percent of RCRA construction completions using 2005 baseline.						13
Number of high priority RCRA facilities with human exposures to toxins controlled using 2005 baseline.						under dev't
Number of high priority RCRA facilities with toxic releases to groundwater controlled using 2005 baseline.						under dev't

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Baseline:

In FY 2004, Superfund controlled human exposures at 83% (1,242 of 1,493) of eligible NPL sites and controlled groundwater migration at 67% (875 of 1,306) of eligible NPL sites, completed construction at 62% (926 of 1,498) of the eligible NPL sites, selected final remedies at 67% (1,003 of 1,498) of the eligible NPL sites. Of the 1,714 RCRA Corrective Action high priority facilities, 84% (1,440) have human exposures controlled and 70% (1,199) have groundwater migration controlled, reflecting the strong EPA/state partnership in this program. The new performance measures for the RCRA program (with targets under development) reflect a new facility baseline (1,968 facilities) established in October 2004. In FY 2004, EPA completed 317,405 leaking underground storage tank cleanups by the end of FY 2004. The Agency has worked with state partners to evaluate multi-year cleanup goals in light of new pressures that have slowed the pace of cleanup in recent years. The result of this process has been a reduction of multi-year goals to a target number that better reflects the current challenges.

Prepare/Respond to Accidental/Intentional Release

In 2006

Reduce and control the risks posed by accidental and intentional releases of harmful substances by improving our Nation's capability to prepare for and respond more effectively to these emergencies.

In 2005

Reduce and control the risks posed by accidental and intentional releases of harmful substances by improving our Nation's capability to prepare for and respond more effectively to these emergencies.

In 2004

By the end of FY 2004, there have been cumulative total of over 8,280 Superfund removal response actions initiated since 1980. EPA exceeded its FY 2004 expectations for readiness by reducing the core emergency response readiness deficit by 56%. EPA was involved in 308 oil spill responses in FY 2004. The Agency typically responds to or monitors 300 oil spill cleanups per year.

Performance Measures

Number of Superfund removal response actions initiated.	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
	302	426	380	385	350	350
Oil spills responded to or monitored by EPA.	527	203	322	308	300	300
Number of inspections and exercises conducted at oil storage facilities that are required to have Facility Response Plans.				360	100	100
						removals
						spills
						inspects/exer

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Percentage of emergency response and homeland security readiness improvement.				56%	10%	10%

percent

Baseline: By the end of FY 2004, there have been cumulative total of over 8,280 Superfund removal response actions initiated since 1980. EPA exceeded its FY 2004 expectations for readiness by reducing the core emergency response readiness deficit by 56%. EPA was involved in 308 oil spill responses in FY 2004. The Agency typically responds to or monitors 300 oil spill cleanups per year.

OBJECTIVE: ENHANCE SCIENCE AND RESEARCH

Through 2008, provide and apply sound science for protecting and restoring land by conducting leading-edge research and developing a better understanding and characterization of environmental outcomes under Goal 3.

Research

Scientifically Defensible Decisions for Site Clean

- In 2006 Document the performance, including cost savings, of innovative characterization and remediation options, so that newer approaches with cost or performance advantages are applied for Superfund and other cleanup projects.
- In 2005 In FY 2005, complete at least four SITE demonstrations, with emphasis on NAPLs and sediments, in order to, by 2010, develop or evaluate 40 scientific tools, technologies, methods, and models, and provide technical support that enable practitioners to 1) characterize the nature and extent of multimedia contamination; 2) assess, predict, and communicate risks to human health and the environment; 3) employ improved remediation options; and 4) respond to oil spills effectively.
- In 2004 Provided risk assessors and managers with site-specific data sets on three applications detailing the performance of conventional remedies for contaminated sediments to help determine the most effective techniques for remediating contaminated sites and protecting human health and the environment.

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- In 2003 Delivered state-of-the-science report and methods to EPA and other stakeholders for risk management of fuel oxygenates; organic and inorganic contamination of sediments, ground water and/or soils; and oil spills to ensure cost-effective and technically sound site clean-up.
- In 2002 EPA provided evaluation information on six innovative approaches that reduce human health and ecosystem exposure from dense nonaqueous phase liquids (DNAPLs) and methyl tertiary butyl-ether (MTBE) in soils and groundwater, and from oil and persistent organics in aquatic systems.
- In 2001 EPA provided technical information to support scientifically defensible and cost-effective decisions for clean-up of complex sites, hard-to-treat wastes, mining, oil spills near shorelines, and Brownfields to reduce risk to human health and the environment.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Deliver the Annual SITE Program Report to Congress.	0					report
Complete draft of the FY 2002 Annual SITE Report to Congress.		1	1			draft report
Reports on performance data for conventional sediment remedies for three sites.				3 reports		reports
SITE demonstrations completed					4	demonstrations
Draft of FY05 Annual SITE Report to Congress						1 Report

Background: Barriers to cleaning up contaminated sites include uncertainty and high cost in either characterizing the site or implementing a remedy. Problematic issues include dense non-aqueous phase liquids, contaminated sediments, and contaminated ground water. Underestimation of the extent of contamination can lead to cost overruns or significant technical changes during remediation. For some sites, the available remedies are not able to achieve cleanup targets or costs are high. Site managers are reluctant to try new approaches without an independent assessment of their performance. Documenting the results of SITE demonstrations can accelerate the application of new technologies in the field, resulting in improvements in quality, timeliness, and/or cost of clean up.

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GOAL: Healthy Communities and Ecosystems

Protect, sustain, or restore the health of people, communities, and ecosystems using integrated and comprehensive approaches and partnerships.

OBJECTIVE: CHEMICAL, ORGANISM, AND PESTICIDE RISKS

Prevent and reduce pesticide, chemical, and genetically engineered biological organism risks to humans, communities, and ecosystems.

Decrease Risk from Agricultural Pesticides

- In 2006 Ensure new pesticide registration actions (including new active ingredients, new uses) meet new health standards and are environmentally safe.
- In 2006 Percentage of acre treatments that will use applications of reduced-risk pesticides
- In 2005 Ensure new pesticide registration actions (including new active ingredients, new uses) meet new health standards and are environmentally safe.
- In 2005 Percentage of acre treatments that will use applications of reduced-risk pesticides
- In 2004 Decreased adverse risk from agricultural uses from 1995 levels.
- In 2003 Adverse risk from agricultural pesticides was decreased to ensure that new pesticides entering the market are safe for humans and the environment.
- In 2002 In FY 2002, EPA continued to register pest control products, including "safer" pesticides, thus ensuring that growers have an adequate number of pest control options available to them.
- In 2001 The Agency registered 9 new chemicals, exceeding its target by 2, and 267 new chemicals, underperforming its target by 83.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Register safer chemicals and biopesticides	107	60	72	79	84	94
New Chemicals (Active Ingredients)	53	60	72	79	84	94
New Uses	1896	2329	425	3,142	3479	3879
Percentage of acre-treatments with reduced risk pesticides		7.5%	8	Data Lag	8.7%	9%
Maintain timeliness of S18 decisions					45	45
Reduce registration decision times for new conventional chemicals					7%	10%
Reduce registration decision times for reduced risk chemicals					3%	3.5%

Baseline: The baseline for registration of reduced risk pesticides, new chemicals, and new uses, is zero in the year 1996 (the year FQPA was enacted). Progress is measured cumulatively since 1996. The baseline for acres-treated is 3.6% of total acreage in 1998, when the reduced-risk pesticide acres-treatments was 30,332,499 and total (all pesticides) was 843,063,644 acre-treatments. Each year's total acre-treatments, as reported by Doane Marketing Research, Inc. serves 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. As of 2003, there are no products registered for use against other potential bio-agents (non-anthrax). Conventional pesticides FY 2002 baseline for reducing decision time is 44 months; reduced risk pesticides FY 2002 baseline for reducing time is 32.5 months. The 2005 baseline for expedited new active ingredient pesticides is 4. The S18 2005 baseline is 45 days.

Reduce use of highly toxic pesticides

In 2006 Decrease occurrence of residues of carcinogenic and cholinesterase-inhibiting neurotoxic pesticides on foods eaten by children from their average 1994-1996 levels

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In 2005	Decrease occurrence of residues of carcinogenic and cholinesterase-inhibiting neurotoxic pesticides on foods eaten by children from their average 1994-1996 levels
In 2004	34% of samples of foods eaten by children showed occurrence of residues for carcinogenic or cholinesterase-inhibiting pesticides.
In 2003	34.3% of samples of foods eaten by children showed occurrence of residues of carcinogenic or cholinesterase inhibiting neurotoxic pesticides.
Performance Measures	
Reduce occurrence of residues on a core set of 19 foods eaten by children relative to detection levels for those foods reported in 1994-1996.	

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
			34.3%	34%	27%	14%
						Red. Occurrence

Baseline: Percent occurrence of residues of FQPA priority pesticides (organophosphates and carbamates) on samples of children's foods in baseline years 94-96. Baseline percent is 33.5% of composite sample of children's foods: apples, apple juice, bananas, broccoli, carrots, celery, grapes, green beans (fresh, canned, frozen), lettuce, milk, oranges, peaches, potatoes, spinach, sweet corn (canned and frozen), sweet peas (canned and frozen), sweet potatoes, tomatoes, and wheat.

Reassess Pesticide Tolerances

In 2006	Ensure that through ongoing data reviews, pesticide active ingredients, and products that contain them are reviewed to assure adequate protection for human health and the environment, taking into consideration exposure scenarios such as subsistence lifestyles of the Native Americans
In 2005	Ensure that through ongoing data reviews, pesticide active ingredients, and products that contain them are reviewed to assure adequate protection for human health and the environment, taking into consideration exposure scenarios such as subsistence lifestyles of the Native Americans
In 2004	Ensured that through on-going data reviews, pesticide active ingredients and the products that contain them are reviewed to assure adequate protection for human health and the environment, taking into consideration exposure scenarios such as subsistence lifestyles of Native Americans.

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In 2003 Assured that pesticides active ingredients registered prior to 1984 and the products that contain them were reviewed to assure adequate protection for human health & the environment. Also considered the unique exposure scenarios such as subsistence lifestyles of Native Americans in regulatory decisions.

In 2002 Reregistration efforts delayed to focus on reviewing and testing pesticides against anthrax.

In 2001 EPA reassessed 40% of tolerances requiring reassessment under FQPA and issued a cumulative 72% of total REDs required, achieving both targets.

Performance Measures	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Tolerance Reassessment	Actuals 40%	Actuals 66.9	Actuals 68	Actuals 73%	Pres. Bud. 87.7%	Request 100%
Reregistration Eligibility Decisions (REDs)		72.7%	75	77.6%	88.2%	92.7%
Product Reregistration		307	306	127	400	400
Tolerance reassessments for top 20 foods eaten by children	43.5%	65.6	65.6	68.9%	93%	100%
Number of inert ingredients tolerances reassessed				28	100	100
Reduce decision time for REDs					7%	10%
						Tolerances (Cum)
						Decisions (Cum)
						Actions
						Tolerances (Cum)
						tolerances
						Reduction

Baseline: The baseline value for tolerance reassessments is the 9,721 tolerances that must be reassessed by 2006 using FQPA health and safety standards. The baseline for REDs is the 612 REDs that must be completed by 2008. The baseline for inert tolerances is 870 that must be reassessed by 2006. The baseline for the top 20 foods eaten by children is 893 tolerances that must be reassessed by 2006. Reregistration decision time baseline 38-40 months.

Testing of Chemicals in Commerce for Endocrine Disruptors

In 2006 Endocrine Disruptor Screening Program will continue its progress toward completing the validation of endocrine test methods.

In 2005 Standardization and validation of screening assays

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In 2004 EPA did not meet its goal for standardization and validation of screening assays as described in FY 2004 and will begin tracking a more meaningful set of measures in FY 2006.

Performance Measures	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Screening Assays Completed	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request
Detailed Review Papers Completed.				0	11	
Prevalidation Studies Completed.						18
Validation Studies Completed.						58
Peer Reviews.						80
Assays Ready for Use.						10
						11

Baseline: Baseline - The Food Quality Protection Act of 1996 (FQPA) requires EPA to use validated assays to screen chemicals for their potential to affect the endocrine system. The development and validation of assays is currently the principal effort in implementing the Endocrine Disruptor Screening Program (EDSP). The validation process consists of several discrete steps:

Detailed Review Paper is the first stage of the overall validation process. It is a review of the scientific literature relevant to an assay and discusses the scientific principles on which the assay is based, reviews candidate protocols and makes recommendations as to which is most suitable as a starting point for assay refinement and validation.

Prevalidation consists of studies to optimize and standardize the protocol and verify the ability of the protocol to accurately measure the endpoints of concern.

Validation by Multiple Labs determines the transferability of the protocol to other laboratories and determines inter-laboratory variability.

Peer review is review by an independent group of experts of the scientific work establishing the validity of the protocol.

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Assays Ready for Use are methods whose validation have been successfully completed and peer reviewed, and therefore are judged by the Agency to be suitable for use in the EDSP either as primary or alternative tests establishing the validity of the protocol.

Process and Disseminate TRI Information - OEI

- In 2006 The increased use of the Toxic Release Inventory Made Easy (TRI-ME) will result in a total burden reduction of 5% for FY 2005 from FY 2004 levels.
- In 2005 The increased use of the Toxic Release Inventory Made Easy (TRI-ME) will result in a total burden reduction of 5% for FY 2004 from FY 2003 levels.
- In 2004 Comparing FY 2004 to FY 2003, there was a 73 percent increase in the number of reports on chemical releases and other waste management data submitted to EPA via the internet and EPA's Central Data Exchange (CDX). However, even with this sizable increase, only 38 percent of all chemical forms were submitted using CDX, short of the FY 2004 goal of 50 percent.
- In 2003 8,000 facilities reported expanded information on releases and waste management of lead and lead compounds in TRI in Reporting Year 2001 and increased usage of TRI-ME which resulted in total burden reduction of 5% for Reporting Year 2002.
- In 2002 EPA reduced reporting burden, improved data quality, lowered program costs, and speeded data publication by increasing the amount of TRI electronic reporting from 70% to 92%.
- In 2001 120,000 chemical submissions and revisions processed; published annual summary of TRIS database in April 2001; and TRI Public Data Release published in April 2001.

Performance Measures	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	
	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request	Percent
		92					

Total electronic reporting of all chemical submissions processed. (Includes diskette submissions created by ATRS, TRI-ME, and other reporting software programs, as well as web-based submissions.)

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
TRI Public Data Release	Published					Published
Chemical submissions and revisions processed.	120,000					Forms
TRIS database complete and report issued	Published					Published
Facilities reporting releases and waste management of lead and lead compounds.			8561			Facilities
Percentage of TRI chemical forms submitted over the Internet using TRI-ME and the Central Data Exchange.			25	38%		Percent
Percentage increase of TRI chemical forms submitted over the Internet using TRI-ME and the Central Data Exchange.					10	10
						Percent

Baseline: In FY 2001, TRI electronic reporting was 70%.

Reduce Wildlife Incidents and Mortalities

- In 2006 Reduce from 1995 levels the number of incidents involving mortalities to nontargeted terrestrial and aquatic wildlife caused by pesticides
- In 2005 Reduce from 1995 levels the number of incidents involving mortalities to nontargeted terrestrial and aquatic wildlife caused by pesticides
- In 2004 The amount of data for wildlife incidents and mortalities was insufficient for analysis.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Number of incidents and mortalities to terrestrial and aquatic wildlife caused by the 15 pesticides responsible for the greatest mortality to such wildlife				0%	11	14 % reduction

Baseline: 80 reported bird incidents (involving 1150 estimated bird casualties); 65 reported fish incidents (involving 632,000 estimated fish casualties) as reported in 1995.

Managing PBT Chemicals Internationally

In 2006 Collect mercury use and emission inventory data for key sectors in China and India.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Emission inventory for power sectors in China and India.					20	power plants

Baseline: Global mercury use and emissions estimates indicate that China and India are among the world's largest emitters and users of mercury. While a 2002 United Nations report indicates that over 50% of anthropogenic atmospheric mercury emissions are from Asia, accurate measures do not exist for quantifying emissions and uses for specific source sectors. Targeting EPA emissions reduction efforts requires accurate information on sources.

Exposure to Industrial / Commercial Chemicals

In 2006	Reduce exposure to and health effects from priority industrial/commercial chemicals
In 2005	Reduce exposure to and health effects from priority industrial / commercial chemicals
In 2004	Data available in 2006.
In 2001	4,885 transformers and 9,494 capacitors were safely disposed of in 2001.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Annual number of Large Transformers Safely Disposed	4,885			Data lag.	5000	5,000
Annual number of Large Capacitors Safely Disposed	9,494			Data lag	9000	9,000
Number of children aged 1-5 years with elevated blood lead levels (>10 ug / dl)				Data lag	225,000	children
Annual reduction in the number of children aged 1-5 years with elevated blood lead levels (>10 ug /dl)					45,000	children

Baseline: 1999/2000 baseline released in January 2003: Approximately 400,000 cases of childhood lead poisoning cases according to NHANES data. In 2004 a larger data set was included as we will be expanding to include more EPA Regional efforts that will include all federally administered and State administered programs. The FY2003 data for a new baseline will not be available until 2005. The baseline for PCB transformers is estimated at 2.2 million units and for capacitors is estimated at 1.85 million units as of 1988 as noted in the 1989 PCB Notification and Manifesting Rule. From 1991-2001 there was a declining trend in PCB disposal due to failing equipment and environmental liability: the total number of PCB large capacitors safely disposed of is 436,485 and the total number of PCB transformers safely disposed of is 172,672 as of 2002.

Risks from Industrial / Commercial Chemicals

- In 2006 Identify, restrict, and reduce risks associated with industrial/commercial chemicals.
- In 2005 Identify, restrict, and reduce risks associated with industrial/commercial chemicals.
- In 2004 98 High Production Volume chemicals with complete Screening Information Data Sets (SIDS) were submitted to the OECD SIDS Initial Assessment Meeting.
- In 2004 EPA reviewed all 1,377 Pre-manufacturing Notices reviewed during FY 2004, ensuring that those new chemicals marketed were safe for humans and the environment.

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In 2003 Of the approximately 1,633 applications for new chemicals and microorganisms submitted by industry ensured those marketed are safe for humans and the environment. Increased proportion of commercial chemicals that have undergone PMN review to signify they are properly managed and may be potential green alternatives to existing chemicals.

In 2002 EPA reviewed all 1,943 Pre-manufacturing Notices received during FY 2002. At the end of 2002, 21.5 percent of all chemicals in commerce had been assessed for risks. A large fraction of these chemicals also may be "green" alternatives to existing chemicals in commerce.

In 2001 Data was obtained from test plans submitted by industry for 724 chemicals already in commerce.

In 2001 EPA reviewed 1,770 Premanufacturing Notices. By the end of 2001, 21 percent of all chemicals in commerce had been assessed for risks.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Number of TSCA Pre-Manufacture Notice Reviews	1770	1943	1,633	1,377		Notices
Through chemical testing program, obtain test data for high production volume chemicals on master testing list.	724					Chemicals
Notice of Commencements	21.0					NOCs (Cum)
Make screening level health and environmental effects data publicly available for sponsored HPV chemicals		843		1,309		cum. chemicals
Reduction in the current year production-adjusted Risk Screening Environmental Indicators risk-based score of releases and transfers of toxic chemicals.				Data lag	12%	Index
High Production Volume chemicals with complete Screening Information Data Sets (SIDS) submitted to OECD SIDS Initial Assessment Meeting		98				chemicals
Percentage of chemicals identified as highest priority by the Acute Exposure Guideline Levels (AEGLS)					52%	60%
						Total Chemicals

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Program with short-term exposure limits established.						0
Number of chemicals or organisms introduced into commerce that pose unreasonable risks to workers, consumers, or the environment.						100
Percentage of HPV chemicals identified as priority concerns through assessment of Screening Information Data Sets (SIDS) and other information with risks eliminated or effectively managed.						% of HPV Chems.
Cumulative number of chemicals for which VCCEP data needs documents are issued by EPA in response to Industry sponsored Tier 1 risk assessments.						8
Annual percent reduction in relative risk index for chronic human health associated with environmental releases of industrial chemicals in commerce as measured by the RSEI Model.						3
						% Reduction

Baseline:

The baseline for TSCA PMNs in FY2004 is zero. (EPA receives about 1,700 PMNs per year for chemicals about to enter commerce. From 1979-2002, EPA reviewed about 40,000 PMNs. Of the 78,000 chemicals potentially in commerce, 16,618 have gone through the risk-screening process of Notice of Commencement.) The baseline for HPV measure is zero chemicals in 1998. The baseline for the RSEI measure is the index calculated for 2001. Baseline is 2002; calculation methodology by addition of AEGl values (10 minute, 1 hour, 4 hour and 24 hour exposure periods) and numbers of chemicals addressed. There is a list maintained by the AEGl FACA committee of highest priority chemicals; 99 chemicals are on List 1 which was generated at the program's inception in 1996 and 137 chemicals are highest priority on List 2 which was generated in 2001. Therefore the total of highest priority chemical currently stands at 236 chemicals, however chemicals can be added or deleted from the list to fit stakeholder needs which is why percentage targets have been provided. 2001 levels will serve as the baseline reference point for the percent reduction in relative risk index for chronic human health associated with environmental releases of industrial chemicals in commerce as measured by Risk Screening Environmental Indicators Model analyzing results to date. Measurement Development Plans exist for HPV, VCCEP, and New Chemicals.

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Chemical Facility Risk Reduction

- In 2006 Protect human health, communities, and ecosystems from chemical risks and releases through facility risk reduction efforts and building community infrastructures.
- In 2005 Protect human health, communities, and ecosystems from chemical risks and releases through facility risk reduction efforts and building community infrastructures.
- In 2004 Over 2,200 risk management plan audits were completed between FY 2000 and FY 2004.
- In 2003 EPA audited 300 risk management plans.
- In 2002 Data not available.
- In 2001 5 states implemented accident prevention programs and 438 risk management plan audits were completed.

Performance Measures

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Number of risk management plan audits completed.	Actuals 438	Actuals Not Available	Actuals 300	Actuals 730	Pres. Bud. 400	Request 400
Number of states implementing chemical accident prevention programs.	5	1				states

Baseline: 1,059 Risk Management Plan audits were completed between FY 2000 and FY 2003.

OBJECTIVE: COMMUNITIES

Sustain, clean up, and restore communities and the ecological systems that support them.

World Trade Organization - Regulatory System

- In 2006 Assist key trade partner countries in assessing environmental effects of trade liberalization

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In 2005	Assist trade partner countries in completing environmental reviews					
Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Number of environmental reviews initiated by FTAA countries following the enactment of the 2002 Trade Promotion Act (TPA).					3	3
Latin American countries initiating environmental assessments of trade liberalization						3 countries

Baseline: As of the end of FY 2003, two environmental reviews (Chile and Singapore) have been initiated since the enactment of the 2002 Trade Promotion Act.

Mexico Border Outreach

In 2006 Develop air quality assessments and programs to improve air quality standards in border communities.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Border communities monitoring for a pollutant that has not previously been monitored in that community						1 community

Baseline: In 2004, there are no border communities monitoring for pollutants that have not previously been monitored in their community. There are 17 monitoring stations along the US-Mexico Border (source: US-Mexico Border XXI Program: Progress Report 1996-2000). Monitoring for: carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, particulate matter 2.5 micrometers or less in diameter U.S. only, particulate matter 10 micrometers or less in diameter, total suspended particulate matter Mexico only, lead.

Revitalize Properties

In 2006 Assess, clean up and promote the reuse of Brownfields properties, and leverage jobs and cleanup/redevelopment funding.

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In 2005	Leverage jobs by assessing, promoting the cleanup and reuse of Brownfields properties.								
In 2004	Data will be available in mid-year 2005 to verify assessment of 1,000 properties, awarding of 25 cleanup grants, cleanup of 60 properties, leveraging of 5,000 jobs, training of 200 job training participants, placement of 65% of trainees, and leveraging of \$1.0 billion in cleanup and redevelopment funds.								
In 2003	\$1.49B in cleanup and redevelopment funds were leveraged through brownfield revitalization efforts.								
In 2003	By the end of FY 2003, the Brownfields program leveraged 5,023 jobs, achieving a 62% placement rate for Brownfields Job Training Program participants, and leveraged of \$1.49 billion in cleanup and redevelopment funding.								
In 2002	\$0.7 billion of cleanup and redevelopment was leveraged.								
In 2002	2,091 jobs were generated from Brownfields activities.								
In 2001	\$0.9 billion of cleanup and redevelopment was leveraged.								
In 2001	3,030 jobs were generated from Brownfields activities.								
Performance Measures		FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request		
Number of Brownfields properties assessed.		730	983	1,052	Data lag	1,000	1,000	assessments	
Number of Brownfields cleanup grants awarded.					75	25	25	grants	
Number of properties cleaned up using Brownfields funding.					Data lag	60	60	properties	
Number of acres of Brownfields property available for reuse.					Data lag	no target	no target	acres	
Number of jobs leveraged from Brownfields activities.		3,030	2091	5,023	Data lag	5,000	5,000	jobs	
Percentage of Brownfields job training trainees placed.				62%	Data lag	65%	65%	trainees placed	

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Amount of cleanup and redevelopment funds leveraged at Brownfields sites.	\$0.9B	\$0.7B	\$1.49B	\$1.0B	\$1.0B	\$1.0B

Baseline: By the end of FY 2003, the Brownfields program assessed 1,052 properties, leveraged 5,023 jobs, achieved a 62% placement rate for Brownfields job training program participants, and leveraged \$1.49B in cleanup and redevelopment funding.

OBJECTIVE: ECOSYSTEMS

Protect, sustain, and restore the health of natural habitats and ecosystems.

Protecting and Enhancing Estuaries

- In 2006 Working with NEP partners, protect or restore an additional 25,000 acres of habitat within the study areas for the 28 estuaries that are part of the National Estuary Program (NEP).
- In 2005 Working with NEP partners, protect or restore an additional 25,000 acres of habitat within the study areas for the 28 estuaries that are part of the National Estuary Program (NEP).
- In 2004 Restored and protected 107,000 acres of estuary habitat through the implementation of Comprehensive Conservation and Management Plans (CCMPs).
- In 2003 Restored and protected 118,171 acres of estuary habitat through the implementation of Comprehensive Conservation and Management Plans (CCMPs).
- In 2002 Restored and protected over 137,000 acres of estuary habitat through the implementation of Comprehensive Conservation and Management Plans (CCMPs).
- In 2001 Restored and protected 70,000 acres of estuaries through the implementation of Comprehensive Conservation and Management Plans (CCMPs).

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Acres of habitat restored and protected nationwide as part of the National Estuary Program. (incremental)	70,000	137,710	118,171	107,000	25,000	25,000
						Acres

Baseline: As of January 2000, there were over 600,000 acres of habitat preserved, restored, and/or created.

Gulf of Mexico

In 2006 Prevent water pollution and protect aquatic species in order to improve the health of the Gulf of Mexico.

In 2005 Prevent water pollution and protect aquatic species in order to improve the health of the Gulf of Mexico.

In 2004 Assisted the Gulf States in implementing watershed restoration actions in 71.2 impaired coastal river and estuary segments.

In 2003 Assisted the Gulf States in implementing watershed restoration actions in 95 impaired coastal river and estuary segments.

In 2002 Assisted the Gulf States in implementing restoration actions by supporting the identification of place-based projects in 137 State priority coastal river and estuary segments.

In 2001 Assisted the Gulf States in implementing watershed restoration action strategies (WRAS) or their equivalent in 37 priority coastal river and estuary segments.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Impaired Gulf coastal river and estuary segments implementing watershed restoration actions (incremental).	37	137	95	71.20		
						Segments

Prevent water pollution and protect aquatic systems so that overall aquatic system health of coastal waters of the Gulf of Mexico is improved

2.4 Scale

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Reduce releases of nutrients throughout the Mississippi River Basin to reduce the size of the hypoxic zone in the Gulf of Mexico, as measured by the five year running average					14,128	14,128 KM ²

Baseline: There are 95 coastal watersheds at the 8-digit hydrologic unit code (HUC) scale on the Gulf coast. The Gulf of Mexico Program has identified 12 priority coastal areas for assistance. These 12 areas include 30 of the 95 coastal watersheds. Within the 30 priority watersheds, the Gulf States have identified 354 segments that are impaired and not meeting full designated uses under the States' water quality standards. 71 or 20% is the target proposed to reinforce Gulf State efforts to implement 5-yea basin rotation schedules. The target of 71 is divided by 5 to achieve the goal for assistance provided in at least 14 impaired segments each year for the next 5 years. The 1996-2000 running average size = 14,128 km2. In 2002, the Gulf of Mexico rating of fair/poor was 1.9 where the rating is based on a 5-point system in which 1 is poor and 5 is good and is expressed as an aerially weighted mean of regional scores using the National Coastal Condition Report indicators.

Great Lakes Implementation Actions

- In 2006 Prevent water pollution and protect aquatic systems so that overall ecosystem health of the Great Lakes is improved.
- In 2005 Prevent water pollution and protect aquatic systems so that overall ecosystem health of the Great Lakes is improved by at least 1 point
- In 2004 The reduction in the phosphorus concentration in Lake Erie was not met; the problem continues to be studied in conjunction with the Canadian government.
- In 2003 Phosphorus concentrations were exceeded.
- In 2002 By removing or containing contaminated sediments, 100,000-200,000 pounds of persistent toxics which could adversely affect human health will no longer be biologically available through the food chain. This contributes to decreasing fish contaminants and advances the goal of removing fish advisories

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	Annual decrease
Long-term concentration trends of toxics (PCBs) in Great Lakes top predator fish.	Declining	Declining	Data Lag	Available 2005			Annual decrease
Long-term concentration trends of toxic chemicals in the air.	Declining	Declining	Data Lag	Available 2005.			Annual decrease
Total phosphorus concentrations (long-term) in the Lake Erie Central Basin.	Mixed	Mixed	18.40	21.2 Ug/l	10		Ug/l
Average concentrations of PCBs in whole lake trout and walleye samples will decline.					5%	5%	Annual Decrease
Average concentrations of toxic chemicals in the air in the Great Lakes basin will decline					5%	7%	Annual Decrease
Restore and delist Areas of Concern (AOCs) within the Great Lakes basin					3	3	AOC

Baseline: In 2003, Great Lakes rating of 20 on a 40 point scale where the rating uses select Great Lakes State of the Lakes Ecosystem indicators based on a 1 to 5 rating system for each indicator, where 1 is poor and 5 is good. The trend (starting with 1972 data) for toxics in Great Lakes top predator fish is expected to be less than 2 parts per million (the FDA action level) but far above the Great Lakes Initiative target or levels at which fish advisories can be removed. The trend (starting with 1992 data) for PCB concentrations in the air is expected to range from 50 to 250 picograms per cubic meter. In 2002, no Areas of Concern had been delisted. The 2.1 million yards of remediated sediments are the cumulative number of yards from 1997 to 2001.

Wetland and River Corridor Projects

- In 2006 Working with partners, achieve no net loss of wetlands.
- In 2005 Working with partners, achieve no net loss of wetlands.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud. No Net Loss	FY 2006 Request 200,000 Acres
Working with partners, achieve no net loss of wetland acres (cumulative)						
Annually, in partnership with the Corps of Engineers and States, achieve no net loss of wetlands in the Clean Water Act Section 404 regulatory program					No Net Loss	No Net Loss

Baseline: Annual net loss of an estimated 58,500 acres. In partnership with the Corps of Engineers, a baseline and initial reporting will begin in FY 2004 on net loss of wetlands in the CWA Section 404 regulatory programs.

Chesapeake Bay Habitat

- In 2006 Prevent water pollution and protect aquatic systems so that overall aquatic system health of the Chesapeake Bay is improved enough so that there are 100,000 acres of submerged aquatic vegetation. (cumulative)
- In 2006 Reduce nitrogen loads by 80 million pounds per year; phosphorus loads by 9.0 million pounds per year, and sediment loads by 1.16 million tons per year from entering the Chesapeake Bay, from 1985 levels
- In 2005 Prevent water pollution and protect aquatic systems so that overall aquatic system health of the Chesapeake Bay is improved enough so that there are 91,000 acres of submerged aquatic vegetation. (cumulative)
- In 2005 Reduce nitrogen loads by 74 million pounds per year; phosphorus loads by 8.7 million pounds per year, and sediment loads by 1.06 million tons per year from entering the Chesapeake Bay, from 1985 levels.
- In 2004 Due to record wet weather in 2003, massive amounts of nutrients and sediments were washed into the Chesapeake Bay, which resulted in a 30% decline in submerged aquatic vegetation in a single year.
- In 2003 Improved habitat in the Chesapeake Bay.
- In 2002 Meeting the annual performance goal to improve habitat in the Bay requires adherence to commitments made by the Chesapeake 2000 agreement partners and monumental effort/resources from all levels of government (local, state, and a range of Federal agencies) and from private organizations/citizens.

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In 2001 Improved habitat in the Chesapeake Bay by reducing 48.1 million pounds of nitrogen, 6.84 million pounds of phosphorous and restored over 69,000 acres of submerged aquatic vegetation.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Reduction, from 1985 levels, of nitrogen (M/lbs), phosphorus (M/lbs), and sediment loads (tons) entering Chesapeake Bay. (cumulative)			74/8.7/1.0	80/9.0/1.1	Lbs/Lbs/Tons	
Acres of submerged aquatic vegetation (SAV) present in the Chesapeake Bay. (cumulative)	69,126	85,252	89,659	64,709	91,000	100,000
					6	6
						Acres

Baseline: In 1984, there were 37,000 acres of submerged aquatic vegetation in the Chesapeake Bay. In 2002, baseline for nitrogen loads was 51 million pounds per year; phosphorus loads was 8.0 million pounds per year; and sediment loads was 0.8 million tons per year.

OBJECTIVE: ENHANCE SCIENCE AND RESEARCH

Through 2008, provide a sound scientific foundation for EPA's goal of protecting, sustaining, and restoring the health of people, communities, and ecosystems by conducting leading-edge research and developing a better understanding and characterization of environmental outcomes under Goal 4.

Research

Human Health Risk Assessment Research

In 2006 By 2006, deliver at least 20 dose-response assessments, provisional values, or pathogen risk assessments so that by 2010, at least 100 assessments have been made available through the Integrated Risk Information System (IRIS) database and other communications to EPA program offices, regions, states and Tribes providing the necessary information to predict risk and make risk management decisions that protect public health.

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Completed dose-response assessments, provisional values, or pathogen risk assessments			20			20 Assessments

Background: This FY2006 APG produces dose-response assessments and health risk assessment information to support regulatory actions and risk management decisions by clients including EPA, other Federal partners, states, tribes, and local governments. These assessments integrate relevant peer-reviewed scientific literature and assessment methods to characterize the known or potential effects of specific contaminants on human health. Many of these dose-response assessments will be posted on EPA's Integrated Risk Information System (IRIS) when completed. IRIS is widely used throughout EPA and the broader risk management community as the premiere source of hazard and dose-response information for health risk assessment. The assessments conducted in this APG will serve to identify and characterize environmentally-related human health problems and support evaluation of the effectiveness of risk management actions aimed at improving public health and safeguarding the environment. In particular, these assessments will be used to inform the decision-making process and provide scientific information to decision makers who must make regulatory, enforcement, and remedial action decisions for chemical contaminant list microbes and chemicals in drinking water; residual risk assessments for air pollutants; site-specific clean-up decisions at Superfund sites; pesticide registration; and control of multi-media toxicants. EPA also uses risk assessment information as part of the Agency's risk communication efforts to convey information on environmental hazards to the public. As a result, risk assessment information provided by products under this APG, is an integral component of environmental decision-making and information transfer processes under the statutes implemented by the Agency.

Research on Endocrine Disrupting Chemicals

In 2006 By 2006, develop and transfer standardized protocols for screening chemicals for their potential effects on the endocrine system, so that EPA's Office of Prevention, Pesticides, and Toxic Substances has the necessary protocols to validate for use in the Agency's Endocrine Disruptors Screening Program, mandated by the Food Quality Protection Act, as determined by independent expert review.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Report on a protocol to screen environmental chemicals for their ability to interact with the male hormone receptor						1 Report

Background: The Endocrine Disruptors program provides EPA with the scientific information necessary for the Agency to reduce or prevent potential unreasonable risks to human health and wildlife from exposures to chemicals that adversely affect the endocrine system, called endocrine disrupting chemicals (EDCs). In 1998, the Endocrine Disruptors Screening and Testing Advisory Committee, a FACA convened by EPA to provide advice on the development and implementation of a screening program, identified a few assays to use as starting points. However, as they affirmed, no assays were considered to be "validated" at the time. EPA's endocrine disruptors research program refined these assays and developed new ones when the starting point assays were found to be unreliable or inadequate. Between FY 2000 and FY 2006, EPA will have completed 22 milestones associated with this APG, including reducing scientific uncertainty regarding the mechanisms by which chemicals interfere with the endocrine system, developing reports on a variety of screening assays in different animal species (e.g., fish, frogs, rats), and transferring protocols that have been standardized in our laboratories and accompanying background documentation to OPPTS. OPPTS will have the protocols validated by an external peer review panel and will implement a screening program using them. The data that will be developed from the application of the validated protocols will enable the Agency to conduct risk assessments from which decisions can be made that will reduce or prevent unreasonable risks to humans and wildlife from exposure to endocrine disruptors.

Beginning in FY 2005, regular evaluations by independent and external panels will provide reviews of EPA research programs' relevance, quality, and successful performance to date, and will determine whether EPA has been successful in meeting its annual and long-term commitments for research.

Homeland Security Research

- In 2006 Provide methods, guidance documents, technologies and tools to first responders and decision-makers to enhance safety and to mitigate adverse effects of the purposeful introduction of hazardous chemical or biological materials into the environment.
- In 2005 By FY 2005, provide tools, case studies, and technical guidance so that, by FY 2006, first responders and decision-makers will have the methods, guidance documents, and technologies to enhance safety and to mitigate adverse effects of the purposeful introduction of hazardous chemical or biological materials into the environment.

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In 2004 Provided a database of EPA experts on topics of importance to assessing the health and ecological impacts of actions taken against homeland security that is available to key EPA staff and managers who might be called upon to rapidly assess the impacts of a significant terrorist event.

In 2004 Provided to building owners, facility managers, and others, methods, guidance documents, and technologies to enhance safety in large buildings and to mitigate adverse effects of the purposeful introduction of hazardous chemical or biological materials into indoor air.

In 2004 Verified two point-of-use drinking water technologies that treat intentionally introduced contaminants in drinking water supplies for application by commercial and residential users, water supply utilities, and public officials.

Performance Measures

Verify two treatment technologies for application in buildings by commercial and residential users, utilities, and public officials to treat contaminants in drinking water supplies.

Prepare ETV evaluations on at least 5 new technologies for detection, containment, or decontamination of chemical/biological contaminants in buildings to help workers select safe alternatives.

Through SBIR awards, support as least three new technologies/methods to decontaminate HVAC systems in smaller commercial buildings or decontaminate valuable or irreplaceable materials.

Prepare technical guidance for building owners and facility managers on methods/strategies to minimize damage to buildings from intentional introduction of biological/chemical contaminants.

	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	
				2			verifications
				10			verifications
				4 techs/ method			techs/methods
				guidance			guidance

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A restricted access database of EPA experts with knowledge, expertise, and experience for use by EPA to rapidly assess health and ecological impacts focused on safe buildings and water security.				1 database		database
Risk assessment toolbox to predict and reduce the consequences of chemical/biological attacks in U.S. cities.					1	toolbox
Technical guidance for water system owners and operators on methods/strategies for minimizing damage from intentional introduction of biological/chemical contaminants					09/30/05	tech. guidance
Water system-related case studies that provide a spectrum of contingency planning situations and responses, including one specifically focused on the National Capital area					09/30/05	case studies
Comprehensive guidance document for building owners and managers on restoration of buildings after terrorist contamination with biological or chemical hazards						1 Guidance
Guidance document for emergency and remedial response personnel and water utility operators for the restoration of water systems after terrorist contamination with biological or chemical hazards						1 Guidance
Comprehensive guidance package including data, methodologies, and other risk assessment tools that will assist emergency responders in establishing remediation goals at incident sites						1 Guidance

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Background: EPA's homeland security research provides appropriate, effective, and rapid risk assessment guidelines and technologies to help decision-makers prepare for, detect, contain, and decontaminate building and water treatment systems against which chemical and/or biological attacks have been directed. The Agency intends to expand the state of the knowledge of potential threats, as well as its response capabilities, by assembling and evaluating private sector tools and capabilities so that preferred response approaches can be identified, promoted, and evaluated for future use by first responders, decision-makers, and the public. This APG will provide guidance documents for the restoration of buildings and water systems and the establishment of remediation goals. These products will enable first responders to better deal with threats to the public and the environment posed by the intentional release of toxic or infectious materials.

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GOAL: Compliance and Environmental Stewardship

Improve environmental performance through compliance with environmental requirements, preventing pollution, and promoting environmental stewardship. Protect human health and the environment by encouraging innovation and providing incentives for governments, businesses, and the public that promote environmental stewardship.

OBJECTIVE: ENHANCE SCIENCE AND RESEARCH

Through 2008, strengthen the scientific evidence and research supporting environmental policies and decisions on compliance, pollution prevention, and environmental stewardship.

Research

New Technologies

- | | |
|---------|--|
| In 2006 | Provide appropriate and credible performance information about new, commercial-ready environmental technology that influences users to purchase effective environmental technology in the U.S. and abroad. |
| In 2005 | By FY 2005, complete thirty verifications and four testing protocols for a program cumulative total of 280 verifications and 88 testing protocols for new environmental technologies so that, by 2009, appropriate and credible performance information about new, commercial-ready environmental technology is available that influences users to purchase effective environmental technology in the US and abroad. |
| In 2004 | Verified 35 air, water, greenhouse gas, and monitoring technologies so that States, technology purchasers, and the public will have highly credible data and performance analyses on which to make technology selection decisions. |
| In 2003 | Developed 10 testing protocols and completed 40 technology verifications for a cumulative Environmental Technology Verification (ETV) program total of 230 to aid industry, states, and consumers in choosing effective technologies to protect the public and environment from high risk pollutants. |
| In 2002 | EPA formalized generic testing protocols for technology performance verification, and provided additional performance verifications of pollution prevention, control and monitoring technologies in all environmental media. |

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In 2001	EPA developed, evaluated, and delivered technologies and approaches that eliminate, minimize, or control high risk pollutants from multiple sectors. Delivery of the evaluative report on the Environmental Technology Verification (ETV) pilot program is delayed until FY 2002.						
Performance Measures		FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Deliver a Report to Congress on the status and effectiveness of the Environmental Technology Verification (ETV) Program during its first five years.		0					report
Complete 20 stakeholder approved and peer-reviewed test protocols in all environmental technology categories under ETV, and provide them to testing organizations world-wide.			20				protocols
Verify and provide information to States, technology purchasers, and the public on 40 air, water, pollution prevention and monitoring technologies for an ETV programmatic total of 230 verifications.				40			verifications
Complete an additional 10 stakeholder approved and peer-reviewed test protocols in all environmental technology categories under ETV, and provide them to international testing organizations.				10			protocols
Through the ETV program, verify the performance of 35 commercial-ready environmental technologies.					35 verification		verifications
Verifications completed						15	verifications
Testing protocols completed						2	protocols
Percent of respondents to survey of vendors of ETV-verified technologies stating that ETV information positively influenced sales and/or vendor innovation.						60%	Respondents

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Background: Actual environmental risk reduction can be directly related to performance and effectiveness of environmental technologies purchased and used. Private sector technology developers produce almost all the new technologies purchased in the U.S. and around the world. Purchasers and permittees of environmental technologies need an independent, objective, high quality source of performance information in order to make more informed decisions; and vendors with innovative, improved, faster, and cheaper environmental technologies need a reliable source of independent evaluation to be able to penetrate the environmental technology market. EPA's Environmental Technology Verification (ETV) program develops testing protocols for, and verifies the effectiveness of, new environmental technologies. EPA has designed surveys of vendors, purchasers, and permittees to determine ETV's impact on 1) vendor sales and technology innovation, 2) purchase decisions, and 3) permitting/regulatory-related decisions. The surveys will also attempt to gather information that can be used to assess vendor satisfaction with the verification process, the value placed on verification by vendors and others, and that will quantify any added efficiencies or benefits (either cost or time) that verification provides to innovative technologies entering the environmental marketplace. The information collected during the surveys will allow the ETV program to further confirm its valuable role in encouraging the use of improved environmental technologies, as well as provide information that can be used to refine or redirect future verification efforts. These surveys are complemented by an ongoing Web site survey designed to assess customer satisfaction with ETV's web site, as well as ongoing efforts to develop additional case studies highlighting various potential impacts, or outcomes, associated with the use of verified technologies.

OBJECTIVE: IMPROVE COMPLIANCE

By 2008, maximize compliance to protect human health and the environment through compliance assistance, compliance incentives, and enforcement by achieving a 5 percent increase in the pounds of pollution reduced, treated, or eliminated, and achieving a 5 percent increase in the number of regulated entities making improvements in environmental management practices. (Baseline to be determined for 2005.)

Non-Compliance Reduction

- In 2006 Through monitoring and enforcement actions, EPA will increase complying actions, pollutant reduction or treatment, and improve environmental management practices (EMP).
- In 2005 Through monitoring and enforcement actions, EPA will increase complying actions, pollutant reduction or treatment, and improve environmental management practices (EMP).
- In 2004 EPA focused its enforcement actions in areas with the greatest potential to protect human health and the environment by identifying significant environmental, public health, and compliance problems. The enforcement actions taken required

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defendants to reduce, treat, or eliminate illegal emissions and discharges, establish improved EMPs that will help to detect and prevent potential future non-compliance. The level of inspections and investigations maintained an effective deterrent to violations of federal environmental laws.

In 2003 EPA directed enforcement actions to maximize compliance and address environmental and human health problems.

In 2002 Based upon one measure, this APG was not met.

In 2001 EPA directed enforcement actions to maximize compliance and address environmental and human health problems.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	
Millions of pounds of pollutants required to be reduced through enforcement actions settled this fiscal year.(core optional)	660	261	600	1,000			M pounds
Number of EPA inspections conducted (core required)	17,812	17,668	18,880	21,000			inspections
Pounds of pollution estimated to be reduced, treated, or eliminated as a result of concluded enforcement actions.					300	300	million pounds
Percentage of concluded enforcement cases requiring that pollutants be reduced, treated, or eliminated and protection of populations or ecosystems.					30	30	Percentage
Percentage of concluded enforcement cases requiring implementation of improved environmental management practices.					60	60	percentage
Number of inspections, civil investigations and criminal investigations conducted.					18,500	18,500	insp&inv.
Dollars invested in improved env. performance or improved EMP as a result of concluded enforcement					4 billion	3.8 billion	Dollars

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
actions (i.e., injunctive relief and SEPs)					10	29
Percentage of regulated entities taking complying actions as a result of on-site compliance inspections and evaluations..				83		percentage
Percent of concluded enforcement actions that require an action that results in environmental benefits and/or changes in facility management or information practices.	79	77	63			Percent
Number of Criminal Investigations	482	484	471	425		Investigations
Number of Civil Investigations	368	541	344	455		Investigations

Baseline: Protecting the public and the environment from risks posed by violations of environmental requirements is basic to EPA's mission. To develop a more complete picture of the results of the enforcement and compliance program, EPA has initiated a number of performance measures designed to capture the results of monitoring and concluded enforcement cases. These results address complying actions, pollutant reduction, and improved environmental management practices. Baselines to be determined in 2005.

Compliance Incentives

- In 2006 Through self-disclosure policies, EPA will increase the percentage of audits or other actions reducing pollutants or improving EMP.
- In 2005 Through self-disclosure policies, EPA will increase the percentage of facilities reducing pollutants or improving EMP.
- In 2004 EPA offered an incentive program of reduced or eliminated penalties for facilities that conduct voluntary self-audits, and report and correct violations. These incentives are often used in targeted initiatives directed at specific industrial sectors and are occasionally developed in collaboration with the industry or industry associations. Since 2001, the incentives programs have helped return thousands of facilities to compliance, furthering environmental stewardship through the provision of information, incentives and innovative approaches to reduce or eliminate pollution.

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- In 2003 Increased opportunities through new targeted sector initiatives for industries to voluntarily self-disclose and correct violations on a corporate-wide basis.
- In 2002 The number of facilities that participated in voluntary self-audit programs, disclosed and corrected violations greatly exceeded the target.
- In 2001 EPA increased opportunities through targeted sector initiatives for industries to use one of the self-disclosure policies.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	
Percentage of audits or other actions that result in the reduction, treatment, or elimination of pollutants and the protection of populations or ecosystems.					5	5	percentage
Percentage of audits or other actions that result in improvements in environmental management practices.					10	60	Percentage
Pounds of pollutants reduced, treated, or eliminated, as a result of audits or other actions.					0.25 million	0.25 million	Pounds
Dollars invested in improved environmental performance or improved environmental management practices as a result of audits or other actions.					2 million	2 million	dollars
Facilities voluntarily self-disclose and correct violations with reduced or no penalty as a result of EPA self-disclosure policies.	1754	1467	848	969			Facilities

Baseline: EPA developed the Audit Policy to encourage corporate audits and subsequent correction of self-discovered violations. The Small Business Policy and the Small Community Policy also promote voluntary self-disclosure and correction of violations. These performance measures show the results of these incentive policies such as pollutant reductions and improved environmental management practices. Baselines to be determined in 2005.

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Regulated Communities

- In 2006 Through compliance assistance, EPA will increase the understanding of regulated entities, improve Environmental Management Practices, and reduce pollutants.
- In 2005 Through compliance assistance, EPA will increase the understanding of regulated entities, improve Environmental Management Practices, and reduce pollutants.
- In 2004 EPA continues to increase the regulated community's understanding of environmental regulations and improve facility environmental management practices by providing direct and practical assistance through the Compliance Clearinghouse, Compliance Assistance Centers, and direct assistance at the facility level or through state and local workshops.

In 2003 Increased the regulated community's compliance with environmental requirements through their expanded use of compliance assistance. The Agency continued to support small business compliance assistance centers and developed compliance assistance tools such as sector notebooks and compliance guides.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	Entities
Number of facilities, states, technical assistance providers or other entities reached through targeted compliance assistance (core optional)			721,000	731,000			
Percentage of regulated entities seeking assistance from EPA-sponsored CA centers and clearinghouse reporting that they improved EMP as a result of their use of the centers or the clearinghouse.					60	65	percentage
Percentage of regulated entities receiving direct compliance assistance from EPA reporting that they improved EMP as a result of EPA assistance.					50	30	Percentage
% of regulated entities seeking assistance from EPA-sponsored CA centers and clearinghouse reporting that they reduced, treated, or eliminated pollution as a result of that resource.					25	40	Percentage

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	Percentage
% of regulated entities seeking assistance from EPA-sponsored CA centers and clearinghouse reporting that they increased their understanding of env. rqmts. as a result of their use of the resources.					75	75	
% of regulated entities receiving direct CA from EPA reporting that they increased their understanding of env. rqmts. as a result of EPA assistance.					65	80	percentage
% of regulated entities receiving direct assistance from EPA reporting that they reduced, treated, or eliminated pollution, as a result of EPA assistance.					25	10	percentage

Baseline: EPA provides compliance assistance to the regulated community and partners. EPA supports initiatives targeted towards compliance in specific industrial and commercial sectors with certain regulatory requirements. Compliance assistance ranges from on-line Compliance Assistance Centers to direct on-site assistance. Baseline to be determined in 2005.

OBJECTIVE: IMPROVE ENVIRONMENTAL PERFORMANCE THROUGH POLLUTION PREVENTION AND INNOVATION

By 2008, improve environmental protection and enhance natural resource conservation on the part of government, business, and the public through the adoption of pollution prevention and sustainable practices that include the design of products and manufacturing processes that generate less pollution, the reduction of regulatory barriers, and the adoption of results-based, innovative, and multimedia approaches.

Reducing PBTs in Hazardous Waste Streams

In 2006 Reduce pollution in business operations.

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Number of pounds reduced (in millions) in generation of priority list chemicals from 2001 baseline of 88 million pounds						1.2 million pounds

Baseline: In FY 2001, the baseline of priority chemicals in waste streams was established at 88 million pounds. The FY 2008 goal is a reduction of 8.8 million pounds (10%).

Innovation Activities

In 2006 Performance Track members collectively will achieve an annual reduction of: 600 million gallons in water use; 2.5 million MMBTUs in energy use; 15,000 tons of solid waste; 20,000 tons materials reduced; 6,000 tons of air releases; and 10,000 tons in water discharges, compared with 2001 results.

In 2005 Performance Track members collectively will achieve an annual reduction of: 600 million gallons in water use; 2.5 million MMBTUs in energy use; 15,000 tons of solid waste; 6,000 tons of air releases; and 10,000 tons in water discharges, compared with 2001 results.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Specific annual reductions in 5 media/resource areas: water use, energy use, solid waste, air releases, and water discharges.					5	6 media reductions

Baseline: For Performance Track, the baseline year is 2001. Performance will be measured against the 2001 baseline annual reduction of 475 M gallons of water use, 0.24 million MMBTUs of energy use, 150,000 tons of solid waste, 1,113 tons of air releases, 6,870 tons of water discharges, and an increase of 2,154 tons of materials.

Reduction of Industrial / Commercial Chemicals

In 2006 Prevent, reduce and recycle hazardous industrial/commercial chemicals and improve environmental stewardship practices.

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- In 2005 Prevent, reduce and recycle hazardous industrial/commercial chemicals and improve environmental stewardship practices.
- In 2004 FY 2004 data will be avail. in FY 2006 to verify whether the quantity of Toxic Release Inventory (TRI) pollutants released, disposed of, treated or combusted for energy recovery in 2004, (normalized for changes in industrial production) was reduced by 200 million pounds, or 2%, from 2002.
- In 2003 FY 2003 data will be avail. in 2005 to verify the quantity of Toxic Release Inventory (TRI) pollutants released, disposed of, treated or combusted for energy recovery in 2003, (normalized for changes in industrial production) will be reduced by 200 million pounds, or 2%, from 2002.
- In 2002 The quantity of TRI pollutants released, disposed of, treated or combusted for energy recovery in 2002 (normalized for changes in industrial production) increased by 366 million pounds of TRI pollutants, or 2% from 2001.
- In 2001 No conclusions can be drawn regarding changes in TRI Non-recycled wastes from calendar year 2000 to calendar year 2001 without data.

Performance Measures

	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	
Reduction of TRI non-recycled waste (normalized)	-464 M Lbs	366 M Lbs	Data Lag				lbs
Alternative feed stocks, processes, or safer products identified through Green Chemistry Challenge Award				429			Prod/proc (cum)
Quantity of hazardous chemicals/solvents eliminated through the Green Chemistry Challenge Awards Program				460			lbs
For eco-friendly detergents, track the number of laundry detergent formulations developed.				38			formulations
Percent reduction in Toxics Release Inventory (TRI) reported toxic chemical releases at Federal Facilities.					32%	40%	Releases (Cum)

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud. 20%	FY 2006 Request 28%	Releases (Cum)
Percent reduction in both Toxics Release Inventory (TRI) chemical releases to the environment from the business sector per unit of production ("Clean Index")							
Percent reduction in TRI chemicals in production-related wastes generated by the business sector per unit of production ("Green Index").					10%	14%	Waste (Cum)
Reduction in overall pounds of pollution.					34 Billion	42 billion	Pounds (Cum)
Millions of dollars saved through reductions in pollution.					134 Million	\$170 million	Dollars (Cum)
Annual cumulative quantity of water conserved.					1.5 billion	1.5 billion	Gallons
Billions of BTUs of energy conserved.					143 Billion	175 billion	BTUs (Cum)

Baseline:

The baseline for the TRI non-recycled wastes measure is the amount of non-recycled wastes in 2001 reported FY2003. The baseline for eco-friendly detergents is 0 formulations in 1997. The baseline for the alternative feed stocks / processes measure is zero in 2000. The baseline for the quantity of hazardous chemicals / solvents measures is zero pounds in the year 2000. The baseline for the hospitals measure is zero in FY2001. The baseline reference point for reductions of pollution and conservation of BTUs and water will be zero for 2003. The baseline for money saved will be 2003. The baseline for reduction in CO2 will be zero for 1996. The baseline for the Clean and Green Index would be 2001 levels. The baseline for chemical releases is 2001 level. The baseline for chemical production related wastes is 2001 level. Note: Several output measures were changed to internal-only reporting status in 2005. Annual Performance measures under development for EPA's Environmentally Preferable Purchasing program for the FY2006 Annual Performance Plan.

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OBJECTIVE: BUILD TRIBAL CAPACITY

Through 2008, assist all federally recognized tribes in assessing the condition of their environment, help in building their capacity to implement environmental programs where needed to improve tribal health and environments, and implement programs in Indian country where needed to address environmental issues.

Tribal Environmental Baseline/Environmental Priority

In 2006 Assist federally recognized tribes in assessing the condition of their environment, help in building their capacity to implement environmental programs where needed to improve tribal health and environments, and implement programs in Indian country where needed to address environmental issues.

In 2005 Assist federally recognized tribes in assessing the condition of their environment, help in building their capacity to implement environmental programs where needed to improve tribal health and environments, and implement programs in Indian country where needed to address environmental issues.

In 2004 86% of Tribes have an environmental presence (e.g. one or more persons to assist in building Tribal capacity to develop and implement environmental programs)

In 2003 In 2003, AIEO evaluated non-Federal sources of environmental data pertaining to conditions in Indian Country to enrich the Tribal Baseline Assessment Project.

In 2002 A cumulative total of 331 environmental assessments have been completed.

In 2001 Baseline environmental assessments were collected for 207 Tribes.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	% Tribes
Increase tribes' ability to develop environmental program capacity of federally recognized tribes that have access to an environmental presence.					90	89	
Develop or integrate EPA and interagency data systems to facilitate the use of EPA Tribal Enterprise					5	10	Systems

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	% Data Gap
Architecture information in setting environmental priorities and informing policy decisions.					5	17	
Eliminate data gaps for environmental conditions for major water, land, and air programs as determined through the availability of information in the EPA Tribal Enterprise Architecture.					159	169	Programs
Increase implementation of environmental programs in Indian country by program delegations, approvals, or primacies issued to tribes and direct implementation activities by EPA.					271	280	Plans
Increase the number of EPA-approved quality assurance plans for tribal environmental monitoring and assessment activities. (Baseline 243)					5	30	% Agreements
Increase the percent of tribes w/ multimedia programs reflecting traditional use of natural resources.							
Environmental assessments for Tribes. (cumulative)	207	331					Tribes, etc.
Non-federal sources of environmental data pertaining to conditions in Indian Country.			20				Data sources

Baseline: There are 572 tribal entities eligible for GAP program funding. These entities are the ones for which environmental assessments of their lands will be conducted.

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NPM: Office for Administration and Resources Management

Energy Consumption Reduction

- In 2006, EPA will achieve a 20% energy consumption reduction from 1990 in its 21 laboratories. A 20% energy consumption reduction from 1990 represents progress towards the 2010 requirement of a 25% energy consumption reduction from the 1990 base. The reductions include Green Power purchases.
- In 2005, EPA will achieve a 20% energy consumption reduction from 1990 in its 21 laboratories which is in line to meet the 2005 requirement of a 20% reduction from the 1990 base. This includes Green Power purchases.
- In 2004 (Actual data available in 2005.) By 2004, EPA will achieve a 16% energy consumption reduction from 1990 in its 21 laboratories which is in line to meet the 2005 requirement of a 20% reduction from the 1990 base. This includes Green Power purchases.
- In 2003 The Agency achieved 15.3% energy consumption reduction from 1990 in its 21 laboratories.

Performance Measures

Cumulative percentage reduction in energy consumption (from 1990).

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Actuals		Actuals	Actuals	Actuals	Pres. Bud.	Request
			15.3	Data	20	20
				avail. In		Percent
				2005		

Baseline: In FY 2000, energy consumption of British Thermal Units (BTUs) per square foot is 320,000 BTUs per square foot.

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NPM: Office of Environmental Information

Information Exchange Network

- In 2006 Improve the quality, comparability, and availability of environmental data for sound environmental decision-making through the Central Data Exchange (CDX).
- In 2005 Improve the quality, comparability, and availability of environmental data for sound environmental decision-making through the Central Data Exchange (CDX).
- In 2004 Significant progress has been made in developing the Exchange Network over the past three years. The numbers of Exchange Network nodes and data flows have increased making it possible to exchange and integrate large volumes of environmental data to enhance environmental decision-making. A key component to the Network is EPA's Central Data Exchange (CDX) and its ability to facilitate data exchange and information sharing. As a result, EPA has experienced a tremendous growth in users of CDX and the Network.

In 2003 Continued to improve data access to ensure that decision makers have access to the environmental data that EPA collects and manages to make sound environmental decisions while minimizing the reporting burden on data providers.

In 2002 The Central Data Exchange (CDX), a key component of the environmental information exchange network, became fully operational and 45 states are using it to send data to EPA; thereby improving data consistency with participating states.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	States
States using the Central Data Exchange (CDX) to send data to EPA.		45	49				
CDX will fully support electronic data exchange requirements for major EPA environmental systems, enabling faster receipt, processing, and quality checking of data.					12	18	Systems
States will be able to exchange data with CDX through state nodes in real time, using new web-					40	50	States

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	
based data standards that allow for automated data-quality checking.					20,000	47,000	Users
States, tribes, laboratories, and others will choose to use CDX to report environmental data electronically to EPA, taking advantage of automated data quality checks and on-line customer support.					96	96	Percent
Customer help desk calls are resolved in a timely manner.							
In preparation for increasing the exchange of information through CDX, implement four data standards in 13 major systems and develop four additional standards in 2003.	7						Data Standards
Number of private sector and local government entities, such as water authorities, will use CDX to exchange environmental data with EPA.				7,050			Entities
CDX offers online data exchange for all major national systems by the end of FY 2004.				13			Systems
Number of states using CDX as the means by which they routinely exchange environmental data with two or more EPA media programs or Regions.				49			States

Baseline: The Central Data Exchange program began in FY 2001.

Data Quality

In 2006 EPA will improve the quality and scope of information available to the public for environmental decision-making.

In 2005 EPA will improve the quality and scope of information available to the public for environmental decision-making.

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- In 2004 EPA developed a management report on options for enhancing access to the next Report on the Environment by making it easily available electronically.
- In 2003 The public had access to a wide range of Federal, state, and local information about local environmental conditions and features in an area of their choice.
- In 2002 100% of the publicly available facility data from EPA's national systems accessible on the EPA Website is part of the Integrated Error Correction Process; thereby reducing data error.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	Percent
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Publicly available facility data from EPA's national systems, accessible on the EPA Website, will be part of the Integrated Error Correction Process.

Establish an improved suite of environmental indicators for use by EPA's programs and partners in the Agency's strategic planning and performance measurement process.

Responders to the baseline questionnaire on customer satisfaction on the EPA Website report overall satisfaction with their visit to EPA.GOV.

Window-to-My Environment is nationally deployed and provides citizens across the country with Federal, state, and local environmental information specific to an area of their choice.

Establish the baseline for the suite of indicators that are used by EPA's programs and partners in the Agency's strategic planning and performance measurement process.

1	1	1	1	1	1	1	Report
60							Percent
			1				Report

Nationally Deployed

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6-YEAR PERFORMANCE DATA: ENABLING/SUPPORT PROGRAMS

Baseline: An effort to develop a State of the Environment report based on environmental indicators was initiated in FY 2002.

Information Security

In 2006 OMB reports that all EPA information systems meet/exceed established standards for security.

In 2005 OMB reports that all EPA information systems meet/exceed established standards for security.

In 2004 EPA has made significant progress over the last 4 years in improving its information security program. For example, EPA succeeded for a second year in achieving 100% intrusion detection, and the Agency's compliance with OMB's security program criteria increased from 75% in FY 2003 to 91% in FY 2004.

In 2003 OMB reported that all EPA information systems meet/exceed established standards for security.

In 2002 Completed risk assessments on the Agency's critical infrastructure systems (12), critical financial systems (13), and mission critical environmental systems (5).

Performance Measures

Critical infrastructure systems risk assessment findings will be formally documented and transmitted to systems owners and managers in a formal Risk Assessment document.

Critical financial systems risk assessment findings will be formally documented and transmitted to systems owners and managers in a formal Risk Assessment document.

Mission critical environmental systems risk assessment findings will be formally documented and transmitted to systems owners and managers in a formal Risk Assessment document.

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	
	Actuals	Actuals	Actuals	Actuals	Pres. Bud.	Request	
		12					Systems
		13					Systems
		5					Systems

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Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	Percent
Percent compliance with criteria used by OMB to assess Agency security programs reported annually to OMB under Federal Information Security Management Act/Govt. Information Security Reform Act.			75	91	75	90	
Percent of intrusion detection monitoring sensors installed and operational.			75	100			Percent

Baseline: In FY 2002, the Agency started planning an effort to expand and strengthen its information security infrastructure.

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6-YEAR PERFORMANCE DATA: ENABLING/SUPPORT PROGRAMS

NPM: Office of the Chief Financial Officer

Strengthen EPA's Management

- In 2006 Strengthen EPA's management services in support of the Agency's mission while addressing the challenges included in the President's Management Agenda
- In 2005 Strengthen EPA's management services in support of the Agency's mission while addressing the challenges included in the President's Management Agenda
- In 2004 EPA met pre-established Agency or Government-wide performance goals.
- In 2003 EPA made progress to strengthen its management services and support the President's Management Agenda in the areas of workforce planning and financial management.
- In 2002 EPA prepared and submitted its FY 2001 financial statements and received a clean audit opinion.

Performance Measures

Agency audited Financial Statements are timely, and receive an unqualified opinion.

The number of financial and resource performance metrics where the Agency has met pre-established Agency or Government-wide performance goals.

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Actuals		Actuals	Actuals	Actuals	Pres. Bud.	Request
Goal Met	1	1	1	1	1	1
Actuals		14	14	14	14	14
Finan statement						Metrics

Baseline: The Agency's audited FY 2004 Financial Statements will be submitted on time to OMB and receive an unqualified opinion.

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6-YEAR PERFORMANCE DATA: ENABLING/SUPPORT PROGRAMS

NPM: Office of Inspector General

Fraud Detection and Deterrence

- In 2006, the OIG will improve Agency business and program operations by identifying 240 recommendations, potential savings and recoveries equal to 150 percent of the annual investment in the OIG, 108 actions for better business operations, and 80 criminal, civil, or administrative actions reducing risk or loss of integrity.
- In 2005, the OIG will improve Agency business and operations by identifying 240 recommendations, potential savings and recoveries equal to 150 percent of the annual investment in the OIG, 102 actions for better business operations, and 80 criminal, civil, or administrative actions reducing risk or loss of integrity.

In 2004 The OIG exceeded its annual targets except it only achieved a 48% potential dollar return on its budget.

In 2003 In the Annual Performance Report, our results for this APG were combined with the results for the APG on Audit and Advisory Services.

In 2002 OIG is promoting partnering relationships across governmental entities for collaborative goal setting planning performance measurement evaluation and resource sharing for greater economies of scale. OIG in collaboration w/PCIE produced an environmental compendium a web enabled catalogue of federal

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request	Improvements	Actions
Number of improved business practices and systems.				133	102	108		
Number of criminal, civil, and administrative actions.				108	80	80		
Number of business recommendations, risks, and best practices identified.				390	240	240		Recommendations
Return on the annual dollar investment in the OIG.		120	856	48	150	150		Percent

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Baseline: In FY 2002, the OIG established a baseline of 150 business recommendations, 70 improved business practices, and 50 criminal, civil, and administrative actions for improving Agency management; and a 100% potential dollar return on the investment in the OIG from savings and recoveries.

Audit and Advisory Services

In 2006 In 2006, the OIG will contribute to improved environmental quality and human health by identifying 105 environmental recommendations, risks, best practices, or opportunities for improvement; contributing to the reduction or elimination of 28 environmental or infrastructure security risks; and 50 actions influencing environmental improvements or program changes.

In 2005 In 2005, the OIG will contribute to improved environmental quality and human health by identifying 95 environmental recommendations, risks, best practices, or opportunities for improvement; contributing to the reduction or elimination of 23 environmental or infrastructure security risks; and 45 actions influencing environmental improvements or program changes.

In 2004 The OIG exceeded the targets for this goal by including measures of results in promoting economy and efficiency and preventing and detecting fraud, waste, and abuse in EPA programs and operation in addition to measures of environmental recommendations and improvement.

In 2003 Improved environmental quality and human health by identifying 312 environmental recommendations, risks, and best practices; contributing to the reduction of 92 environmental risks, and 185 actions influencing positive environmental or health impacts.

Performance Measures	FY 2001 Actuals	FY 2002 Actuals	FY 2003 Actuals	FY 2004 Actuals	FY 2005 Pres. Bud.	FY 2006 Request
Number of environmental risks reduced.			92	45	23	28
Number of environmental actions.		185		49	45	50
Number of environmental recommendations, risks, and best practices identified.			312	116	95	105

Baseline: In FY 2002, the OIG established a baseline of: 75 recommendations, best practices and risks identified contributing to improved Agency environmental goals; 15 environmental actions; and the reduction of 15 environmental risks.

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EFFICIENCY MEASURES

Introduction

EPA continues to emphasize efficiency and its measurement. Efficiency measures relate program results to the resources invested or time spent to achieve those results. These measures augment effectiveness measures, and are intended to provide additional information that can be used for sound decision-making and program management. One of EPA's milestones under the President's Management Agenda is to have at least one efficiency measure for each program that has gone through the Program Assessment Rating Tool (PART) process. Below are efficiency measures that are in place or planned for FY 2006.

Goal 1: Clean Air and Global Climate Change

Acid Rain: The program is following through on plans to develop "efficiency measures to track overall program efficiency." We have been developing and evaluating various metrics for assessing and tracking program efficiency. The efficiency measure will be anchored to the annual and/or long-term program performance measures for the Acid Rain Program (*e.g.*, SO₂ emissions reduced, % change in sulfur and nitrogen deposition in acid sensitive regions, % change in number of chronically acidic lakes and streams).

Air Toxics: As a result of the FY 2006 PART, EPA has developed a new efficiency measure that will report cumulative reductions of toxicity-weighted emissions per EPA and industry dollars spent. Reporting will include toxicity-weighted emission reductions, differentiating between cancer and noncancer risk. Baseline and targets for the efficiency measure are under development.

Mobile Sources: As a result of the FY 2006 PART, EPA has added two efficiency measures. The first will measure the average time (in days) from receipt of certification application to approval for three categories of large engines. Program costs will be monitored by a supplemental measure of program dollars per heavy-duty certificate. The first milestone for this measure is a 50% improvement by 2012. The second efficiency measure will calculate the cumulative reduction in tons of pollution from mobile sources per dollars spent by EPA and industry. Baseline and targets for the second measure are under development.

Climate Change: As a result of the FY 2006 PART, EPA has added an efficiency measure---MMTCE reduced per societal dollar spent. This measure will be reported for each of three sectors: Buildings, Industry, and Transportation. We will assume that private spending is equal to private savings, resulting in zero net private spending. Consequently, total societal spending is equal to Federal spending.

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Stratospheric Ozone: For the stratospheric ozone program, an efficiency measure will be estimated by reporting cumulative ozone depleting potential (ODP)-weighted tons of emissions reduced per cumulative dollars spent.

Particulate Matter Research: An efficiency measure for this program is under development.

Goal 2: Clean and Safe Water

Drinking Water State Revolving Fund (DWSRF): The DWSRF has three efficiency measures. The first is shared with the Public Water System Supervision (PWSS) and Underground Injection Control grants programs: People receiving drinking water in compliance with health-based drinking water standards per million dollars. Dollars included in this measure will be based on federal (grant and EPM) and state matching funds (required and additional). The second measure is: Dollars per community water system in compliance with health-based drinking water standards. The third measure is: Cumulative number of projects initiating operations per cumulative dollars (in billions).

Public Water System Supervision (PWSS) Grants: The PWSS grant program has two efficiency measures. The first is common with DWSRF and UIC Grants: People receiving drinking water in compliance with health-based drinking water standards per million dollars. Dollars included in the measure will be based on federal (grant and EPM) and state matching funds (required and additional). The second is: Dollars per community water system in compliance with health-based drinking water standards.

Underground Injection Control (UIC) Grants: The UIC program has two efficiency measures. The first is a common measure with DWSRF and PWSS grants: People receiving drinking water in compliance with health-based drinking water standards per million dollars. Dollars included in the measure will be based on federal (grant and EPM) and state matching funds (required and additional). The second is: Dollars per well to move Class V wells back into compliance. This measure includes only those Class V wells that are in significant violation of regulations. The total cost per state to move Class V wells back to compliance will be the cost of all labor and materials. A Measure Development and Implementation Plan was also created.

Clean Water State Revolving Fund (CWSRF): The program has developed two efficiency measures. Measure Development and Implementation Plans have also been developed.

- Number of waterbodies restored or improved per million dollars of CWSRF assistance provided.
- Number of waterbodies protected per million dollars of CWSRF assistance provided.

Nonpoint Source: An efficiency measure has been developed in response to PART. The measure is Section 319 funds expended per partially of fully restored waterbody. The target for

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the long-term efficiency measure (including 319 funds and state match) is \$4.7 million per restored waterbody.

Alaska Native Villages: The efficiency measure presented is number of households served with wastewater and drinking water systems per million dollars (EPA and State). A Measure Development and Implementation Plan has also been developed.

Goal 3: Land Preservation and Restoration

RCRA program (base program, permits and grants): Efficiency will be tracked via the comparison of facilities under control with private and public sector costs. Hazardous waste permits and approved controls demonstrate that waste management facilities have met standards or permit conditions that are based on human health or environmental standards (e.g., air emissions are controlled to safe levels; controls against accidental waste releases are in place; treatment of wastes is assured to the best levels that can be practically achieved; and disposal sites meet performance standards to ensure long term isolation of the wastes.). The efficiency measure compares the number of facilities that have permits or approved controls in place with a three-year rolling average of public and private sector costs. EPA will begin reporting this information in FY 2006.

Superfund Removal: Number of people protected from exposure per million dollars expended on removal actions. This measure is still in the conceptual development phase. The current proposal will determine how many people are protected per dollar spent on removal actions. The number of people protected due to removal actions will be based on the proposed program outcome measure. The number of people protected for this efficiency measure will then be divided by the dollars spent on those removal actions.

The challenges posed by outliers and sample variability will be considered as this measure is developed and assessed. First, a subset of removal actions may be selected for the efficiency measure by eliminating statistical outliers; removal actions that are too small or too large may skew the efficiency analysis. Second, removal actions may be subdivided by type or size for the efficiency analysis.

Another option being considered for the numerator for this efficiency measure is a program-wide index that is based on removal actions, protected populations, and preparedness activities. This may more accurately reflect overall program activity and progress, but presents challenges in trying to combine preparedness and response activities.

Further evaluation of these measures will continue through FY 2005. The program intends to collect baseline information and begin measure implementation in FY 2006.

Superfund Remedial Action: The Superfund program has initiated efforts to develop one or more outcome-oriented efficiency measures. Currently a feasibility study is underway to

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determine the feasibility of using the measures Human Exposures Under Control, Contaminated Groundwater Migration Under Control, or Construction Completions as the basis for both annual and long-term outcome efficiency measures. During FY 2005, the program intends to complete the feasibility study and use the results to determine which measures to study and develop further. These efforts will:

- X Focus on better defining both the numerator component and denominator components
- X Assess the usefulness of each measure
- X Assess the appropriateness of each measure
- X Assess the simplicity (ease of understanding and communication) of each measure.

Implementation and collection of baseline data will occur in FY 2006.

The Superfund program is also monitoring the percentage of total Superfund appropriated resources which are obligated site-specifically each year. The Superfund program has used Agency accounting data to determine program obligations and then employ well-defined algorithms to categorize whether obligations were site-specific or not. The baseline was set at the end of FY 2004. In FY 2006 the program will initiate an evaluation of measure data and methodology, run tests, determine out-year targets, and begin reporting accomplishments.

RCRA Corrective Action: A comparison of the number of final remedy components constructed at RCRA Corrective Action facilities with public and private sector cleanup costs. The RCRAinfo database currently includes a field associated with the successful construction of stabilization measures (CA650). The program could either adapt this data field or create a new field associated with tracking individual final remedy components that collectively would lead to a site-wide construction completion measure. In FY 2006 the program will collect baseline information on the number of final remedy components constructed nationally.

Leaking Underground Storage Tanks: The program will compare the number of leaking underground storage tank cleanups completed over a three-year rolling average with public and private sector cleanup costs in order to measure program efficiency. This measure is likely to be near term and is subject to change as the status of state fund/deductibles, LUST Trust Fund appropriations and cleanup trends/impediments change in the national program. The program estimates that the number of cleanups completed are likely to become more difficult as the remaining backlog of sites are more technically complex. The UST program has studies underway with the state programs to analyze the impacts of this trend on the program. The results of these studies may illustrate the need for an updated leaking UST program measure. In FY 2006 the program intends to establish a new baseline that will incorporate the result of ongoing studies and surveys, and report on results.

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Goal 4: Healthy Communities and Ecosystems

Pesticides Registration and Reregistration Programs: The efficiency measures presented for this program set targets for improving decision-making times. Already in place are measures for reducing reregistration time (issuance of Re-registration Eligibility Decision, or RED) by twenty percent from the FY 2002 baseline, from the initiation of public participation to the signed RED. EPA has formalized a measure to track reductions in the registration time for new active ingredients which meet the criteria for reduced risk pesticides by three percent. The Agency is also working to implement a measure related to decision costs in FY 2006.

Pesticide Field Programs: EPA has identified three potential efficiency measures that cover the main aspects of the pesticide field program. The first is the percentage reduction in agricultural pesticide incidents per program dollar invested. The second is the number of endangered species highly vulnerable to pesticides that are protected per dollar invested. The third is the percentage reduction in the number of water sources contaminated by pesticides per dollar invested.

Toxics Program: The Toxics program is working to develop a number of measures as well. The emphasis is on efficiency measures, including both the new chemicals and the existing chemicals programs. For the new chemicals program, Agency plans to reduce its per-chemical review costs from 2002 levels. This will be accomplished by training chemical developers to use EPA's risk screening tools early in research and development so that the Agency receives at least 40 pre-screened pre-manufacture notices per year. The next step will be to track trends associated with the review of chemicals undergoing expedited review under the Sustainable Futures effort. This program is intended to create cost savings for industry; however the "pre-screening" model should also provide efficiencies for EPA processes. In the Voluntary Children's Chemical Evaluation Program (VCCEP) the program is working to improve the efficiency of EPA's efforts to review risks associated with chemicals to which children may be exposed by using a voluntary VCCEP, which includes an independent scientific peer consultation. A similar efficiency measure is under development for the High Production Volume Challenge Program (HPV). By FY 2006, EPA plans to develop and establish a monitoring system in support of these measures.

Endocrine Disruptor Screening Program: The Agency will measure "dollars per labor-hour" for contract efforts in validating assays for the Endocrine Disruptor Screening Program (EDSP). The baseline measure will be data from work assignments under a current mission support contract that expires in January 2006. EPA plans to issue a new multiple awards contract in an effort to provide increased flexibility in both economic and scientific aspects of the contract. For the FY 2006 milestone, the second phase of measurement for obtaining baseline data will occur. This efficiency measure was identified through the FY 2006 PART assessment of the EDSP.

Mexico Border: The efficiency measure under development is "Additional people served per million dollars (of U.S. and Mexico federal expenditures)." EPA will continue to work on this

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efficiency measure for the Mexico Border program as part of the follow-up to the FY 2006 PART process.

Brownfields: The program is in the process of developing an improved efficiency measure. Development of this new measure will be completed in FY 2005.

Ecosystems Protection Research: An efficiency measure for this program is under development.

Pollution Prevention Research: An efficiency measure for this program is under development.

Goal 5: Compliance and Environmental Stewardship

Civil Enforcement and Criminal Enforcement: For FY 2006, EPA will continue to use pounds of pollutants reduced per FTE for the civil and criminal enforcement programs' efficiency measures.

Pesticide Enforcement Grant Program: The Agency is also developing an efficiency measure relating the number of enforcement actions taken to their cost (Federal and State). The purpose of the measure is to determine how efficiently State programs identify pesticide violations. In FY 2006, EPA plans to work with States and Tribes to establish agreement to collect data and costs for the measure, and begin the actual data collection. EPA plans to begin reporting on the new measure starting in FY 2007. The measure will use both State and Federal funding, since this is a grant program and it is hard to differentiate which State actions are undertaken solely with Federal dollars.

RCRA program (base program, permits and grants): In addition to the efficiency measure under Goal 3, the RCRA program will track reductions of priority chemicals contained in industrial waste streams per federal and private sector cost. Reductions in priority chemicals are considered to be reductions to potential exposure and risk because priority chemicals are defined as persistent, bio-accumulative and toxic. Facilities that use one or more of the priority chemicals commit to specific priority chemical reduction levels. The program will track actual reductions as facilities progress toward their goals. In addition, the program will work to develop a more comprehensive understanding of the costs associated with the reductions, incorporating additional costs as identified, so as to continuously improve the measure. In the near term, EPA will test a surrogate efficiency measure focusing on the efforts the National Partnership for Environmental Priorities (NPEP), a voluntary national waste minimization program. NPEP members are a subset of the total universe of facilities contributing to national priority chemical reduction trends identified through TRI data analysis. Existing reduction commitments made by NPEP members will be used to set annual reduction targets, and reductions achieved from the total universe of facilities contributing to reductions will be reported annually.

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Tribal General Assistance Program: The number of environmental programs implemented in Indian Country per million dollars will be used as an efficiency measure. EPA is currently working with regional offices to evaluate several data sources and identify appropriate variables in order to produce a measurement that best supports this efficiency measure. The Agency plans to begin reporting on this measure in FY 2005. The Agency plans to begin data collection for tribal programs to establish baseline numbers in FY 2006.

Other Programs:

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- EPA plans to track the costs incurred for the Central Data Exchange (CDX) relative to production system, state node, and CDX user.
- EPA plans to track the costs savings for the Central Data Exchange (CDX) relative to production system, state node, and CDX user.
- EPA plans to measure the reduction in staff time in responding to information requests resulting from investments in the Electronic Content Management System (ECMS).
- Regarding information security, the Agency will measure the number of incidents that occurred from known threats that should have been anticipated relative to the number of Computer Emergency Response Team (CERT) advisories implemented within EPA's infrastructure.

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DESCRIPTIONS OF MEASURE DEVELOPMENT AND IMPLEMENTATION PLANS

Introduction

The Agency continues to focus on developing improved performance measures, and is using tools known as Measure Development and Implementation Plans (MDIPs) to sustain progress. MDIPs are short plans created in order to address performance measurement problems by focusing and sustaining attention and resources over the number of years necessary to fully implement a new measure. An MDIP can be written either for a performance measure that tracks results (also known as an effectiveness measure), or for an efficiency measure. Brief descriptions of those MDIPs that relate to FY 2006 are below. Efficiency measures that are under development may appear both in the preceding Efficiency Measures section and in this section. All measures under development are subject to change as the Agency completes further program and data analysis, including the PART evaluation.

Goal 1: Clean Air and Global Climate Change

School Bus: EPA is collecting data from the FY 2003 and FY 2004 school bus retrofit grants. In addition, we are assessing data from other school bus demonstration projects to develop projections that relate funding levels to specific program measures such as number of buses retrofitted or replaced; amount of outside resources leveraged; number of fleets participating in anti-idling programs, etc. This assessment will allow us to develop specific, output-oriented measures such as overall number of buses that will be retrofitted each year.

Stratospheric Ozone: As a result of the FY 2006 Program Assessment Rating Tool (PART) process, we have proposed the following new performance measures: Every five years, we will report on chlorine loading. In 2050, EPA will report the number of reductions in melanoma and nonmelanoma skin cancers. Lastly, we are considering an efficiency measure to report on cumulative tons of ozone depleting pollutant phase-out targets per cumulative costs.

Climate Change: As a result of the FY 2006 PART, EPA has added an efficiency measure: MMTCE reduced per dollar spent. We will assume that private spending is equal to private savings, resulting in zero net private spending. Consequently, total societal spending is equal to Federal spending. The Agency is also working on a Measure Development and Implementation Plan with milestones.

Goal 2: Clean and Safe Water

Waterborne Illnesses Attributable to Drinking Water: An Agency goal is to enhance and supplement the waterborne disease surveillance system to enable a more comprehensive measurement of the number of waterborne illnesses attributable to drinking water. The key

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indicator of program effectiveness is whether or not fewer people are getting sick as a result of waterborne illness. Enhanced surveillance data or surrogate indicators are necessary for estimating more precisely the incidence of waterborne illness in the U.S. and to understand the link between changes in the incidence of illnesses and the impact of regulations. The long-term outcome measure used is the number of illnesses attributable to drinking water microbes.

This waterborne illness measure is being developed in response to a recommendation during the FY 2006 PART process that EPA develop a long-term performance measure, which would track waterborne illnesses caused by drinking water. While the Centers for Disease Control and Prevention (CDC) currently tracks outbreaks, the voluntary nature of its reporting system creates underreporting problems, which presents measurement challenges.

Rural and Native Alaska Water and Sewer Infrastructure Improvements program: The program is implementing a measure that tracks the percentage of serviceable rural Alaska homes that are served by drinking water systems that fully meet Safe Drinking Water Act requirements and are served with wastewater disposal facilities that meet regulatory requirements. The plan is to determine available data sources and whether additional data collection is needed in order to establish outcome measure to establish the 2005 baselines. Once the 2005 baselines are established, the State will be responsible for all data collection. In 2006, EPA will collect data from the State of Alaska, calculate outcome measures, and report on progress toward targets.

In addition, over the coming year EPA will continue efforts recently begun with the State of Alaska to refine the proposed efficiency measure, number of households served with wastewater and drinking water systems per million dollars (EPA and State). EPA and the State will analyze available data to determine a historical (three year) average of the number of homes served per million dollars of assistance provided by the Program. Using this average as a baseline, EPA and the State will negotiate target levels that are ambitious but realistic. Efficiency levels will be reported independently on water and wastewater measures. Once a historic average has been derived and target levels have been negotiated, the State will begin reporting efficiency measure related data to EPA. Data to develop efficiency measure reports will be collected by the State throughout the year. In 2006, EPA will collect data from the State of Alaska, calculate efficiency measures, and report on progress toward efficiency target level.

Clean Water State Revolving Fund: The program has developed two efficiency measures. Measure Development and Implementation Plans have also been developed for the measures listed below:

- Number of waterbodies restored or improved per million dollars of CWSRF assistance provided; and
- Number of waterbodies protected per million dollars of CWSRF assistance provided.

Waterborne Disease Outbreaks Attributable to Recreational Water Exposure: By 2008, the quality of recreational waters nationwide will be protected so that the number of waterborne

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disease outbreaks attributable to swimming in, or other recreational contact with, the ocean, rivers, lakes, or streams will be reduced. Since 1971, CDC, EPA and the Council of State and Territorial Epidemiologists (CSTE) have maintained a collaborative surveillance system for tracking the occurrences and causes of waterborne-disease outbreaks. This surveillance system is the primary source of data concerning the scope and effects of waterborne disease from drinking water and recreational waters on persons in the United States. EPA will continue to work with CDC and CSTE to develop an outreach plan to expand participation in the surveillance system, and will work toward confirming a baseline and targets for 2008 regarding numbers of outbreaks per year.

Nutrient Levels in Rivers and Streams: Measure development is underway for phosphorus concentration trends. EPA is committed to reducing phosphorus levels in major rivers, urban and farmland streams by 2008; progress will be measured via the percentage of USGS test sites for major rivers, urban streams, and farmland streams at which phosphorus levels are below levels of concern established by USGS.

Unintentional Introductions of Aquatic Nuisance Species: By 2007, a baseline will be established against which measures will be made to determine the annual rate of unintentional introductions of Aquatic Nuisance Species (ANS) along the Atlantic, Pacific, and Gulf of Mexico coasts. Establishing a baseline will enable EPA to assess the effectiveness of actions taken to reduce the risk of unintentional ANS introductions.

Goal 3: Land Preservation and Restoration

Resource Conservation Challenge: Historically, non-hazardous waste reduction efforts focused heavily on municipal solid waste. In an effort to expand waste-reduction efforts, EPA launched the Resource Conservation Challenge (RCC), a new national program to find flexible yet protective life-cycle approaches to conserve valuable national resources through waste reduction, recycling, and energy recovery. The program is designed to elicit a response from all Americans, since we all have opportunities to reduce the waste we produce, increase recycling and conserve energy. Through the RCC, EPA challenges Americans to make purchases and disposal decisions that conserve our natural resources, saves energy, reduce costs, and preserve the environment for future generations. In FY 2006, EPA will achieve baseline information for development of RCC measures for newly generated scrap tire, existing scrap tire stockpiles, safe use of coal ash in concrete, and the beneficial use of coal combustion products.

Implementation of the RCRA maximum achievable control technology standards for combustion: The Resource Conservation and Recovery Act (RCRA) governs the management of hazardous waste generated by industrial processes, and the Clean Air Act (CAA) governs the control of air emissions from a range of sources. Hazardous waste is combusted for destruction and/or energy recovery in incinerators, boilers, cement kilns and lightweight aggregate kilns, and HCl Production Furnaces. Emissions from these sources have historically been controlled pursuant to RCRA. EPA is currently transitioning from these RCRA emission requirements to

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technology-based limitations that are required pursuant to the CAA. The EPA regional offices work with the states to implement the combustion-related regulations, develop permits, and to inspect facilities to ensure that emissions limits are not exceeded. A measure will be established when the rule is promulgated in FY 2008.

Superfund: 1) Superfund Sites with Land Ready for Reuse, and 2) Acres of Land at Superfund Sites Ready for Reuse. The Superfund program initiated efforts in FY 2003 to develop two measures for documenting and reporting Superfund revitalization accomplishments. The measures apply to all private and non-federal sites and all federal facility sites proposed for, or listed on, the National Priorities List (NPL). The measures also apply to Superfund Alternative (SAS), and NPL and non-NPL sites where non-time-critical removal actions have been conducted. The Superfund program has issued guidance governing the documentation and reporting of these measures at all sites except federal facility sites. The Federal Facilities program is writing a companion guidance to take into account of the special needs in documenting and reporting accomplishments at these sites. The Superfund program guidance provides that a Superfund site is considered ready for reuse if any of the following apply:

- The site or a portion of a site is already being used;
- Superfund response actions are unnecessary for the site or portion of the site as a result of an investigation of the property, and the Agency is not aware of other EPA, State, Tribal, or local government environmental or land use restrictions for that property; or
- The cleanup goals established for the site or portion of the site have been attained (i.e., engineering controls for the land component have been implemented and are operating as intended).

In reporting the acres of land ready for reuse, EPA regions are asked to identify the number of acres at the site ready for reuse and whether the acres are ready for residential or non-residential use. Acres of land are designated as ready for non-residential (e.g., industrial, recreational) use if the cleanup goals for those acres cannot support residential types of use.

Superfund: Number of Superfund NPL sites that achieve long term human health protection. The program intends to develop a methodology and collect baseline data for Superfund NPL sites that achieve long term human health protection during FY 2005. In FY 2006 the program will set targets beginning in FY 2007.

Superfund Removal: The number of people who are at risk (potential or actual) from exposure to contamination that have been protected in a given year due to removal response actions. A “population protected” indicator would measure the number of people that have been protected from actual or potential exposure threats each year as a result of undertaking removal actions. This measure is still under development. A large set of previous removal actions is under study to explore a variety of options for the methodology for this measure. For instance, incidents contaminating surface water, ground water, soil, and air all present different exposure potential to the population and result in different types of removal actions. The program is evaluating how

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to categorize removals for the purpose of estimating the populations at actual or potential risk by assessing the current sample data. After finalizing the specifics of this measure based on the sample data analysis, the program expects to begin implementation of this new measure in 2005.

Goal 4: Healthy Communities and Ecosystems

Pesticides Program: The Agency's Pesticides Program is identifying and planning for the development of outcome measures and indicators for both human health and the environment. For example, the program is identifying risk-based measures similar to those developed by the Toxics program. Meaningful measures for pesticides often require coordination and cooperation with other organizations for data and information. Measures for the Pesticides Field Program activities in particular, such as certification and training, the endangered species program, and others, require collaboration across several implementing partners. These include other federal agencies, states, and in some cases local organizations. EPA has begun to shape measures for these areas and will be working with our partners to establish them.

This year, new measures for human poisonings are under development. They include a measure for the reregistration program, which works to reduce exposure to older pesticides that may cause adverse effects. Draft language reads, the program will achieve a cumulative reduction in the number of systemic poisoning incidents associated with exposure from organophosphate pesticides as reported to Poison Control Centers. For the pesticides worker safety program, a similar measure looks at reductions in the number of occupational poisoning incidents associated with exposure from pesticides. Both of these potential measures require additional work on the data sets and methodologies for analysis, along with data collection issues. In FY 2006, EPA will continue to work with its partners to refine the measures, baselines and targets.

Toxics Program: The Toxics program is working to develop a number of measures as well. As noted in the previous section, the emphasis is on efficiency measures, including both the new chemicals and the existing chemicals programs. For the new chemicals program, Agency plans to reduce its per-chemical review costs from 2002 levels. This will be accomplished by training chemical developers to use EPA's risk screening tools early in research and development so that the Agency receives at least 40 pre-screened PMNs per year. The next step will be to track trends associated with the review of chemicals undergoing expedited review under the Sustainable Futures effort. This program is intended to create cost savings for industry; however the "pre-screening" model should also provide efficiencies for EPA processes. In the Voluntary Children's Chemical Evaluation Program (VCCEP) the program is working to improve the efficiency of EPA's efforts to review risks associated with chemicals to which children may be exposed by using a voluntary VCCEP, which includes an independent scientific peer consultation. A similar efficiency measure is under development for the High Production Volume Challenge Program (HPV). By FY 2006, EPA plans to develop and establish a monitoring system in support of these measures.

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Mexico Border: By 2012, assess significant shared and transboundary surface waters and achieve a majority of water quality standards currently being exceeded in those waters. With the assistance of the Regional Work Group water task forces, EPA will begin data collection and gap analysis of those water bodies failing to achieve water quality standards or designated uses. By 2006, a re-assessment will begin by the States or federal authorities, of the water quality data for watershed basins, sub-basins, and river segments to identify impaired water bodies.

Wetland Function: By 2008 and each year thereafter, in partnership with the Corps of Engineers and States (COE), obtain no net loss in wetland function based on quantifying functions gained and lost through mitigation for authorized wetlands impacts.

This measure derives from two broad efforts articulated in the 2002 interagency National Wetlands Mitigation Action Plan (MAP)—clarifying performance standards (including methods to quantify and assess wetlands function) and improving data collection and availability (including tracking and reporting on acreage and function gains and losses). EPA will work with the Corps of Engineers and other agencies to develop a model mitigation plan checklist for permit applicants, and will review and develop guidance adapting the National Academies of Sciences' National Research Council-recommended guidelines for creating or restoring self-sustaining wetlands to the Section 404 program. EPA will also analyze existing research to determine the effectiveness of using biological indicators and functional assessments for evaluating mitigation performance.

National Estuary Programs (NEP) Coastal Condition Report: By 2006, a baseline report will be released using the same indicators as the National Coastal Condition Report (see Sub-Objective 2.2.2). This NEP report will establish a uniform set of quantifiable indicators as well as NEP-specific indicators that can be aggregated to a regional and national scale. The baseline is to be determined in FY '06, when the report is released.

Endocrine Disruptor Screening Program: As noted in the Efficiency Measures section, the Agency will measure “dollars per labor-hour” for contract efforts in validating assays for the Endocrine Disruptor Screening Program (EDSP). The baseline measure will be data from work assignments under a current mission support contract that expires in January 2006. EPA plans to issue a new multiple awards contract in an effort to provide increased flexibility in both economic and scientific aspects of the contract. For the FY 2006 milestone, the second phase of measurement for obtaining baseline data will occur. This efficiency measure was identified through the FY 2006 PART assessment of the EDSP.

In addition to the developed efficiency measure, EDSP is developing two long-term measures as recommended during the FY 2006 PART process: 1) the cumulative number of chemicals pre-screened for potential endocrine disruptor effects; and, 2) the percentage of chemicals screened for potential endocrine disruptor effects. Also, the current EDSP annual performance measure is being modified to better describe ongoing progress in the program.

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Goal 5: Compliance and Environmental Stewardship

Enforcement Programs, in general: The Agency is working to enhance the outcome measure by adding a risk characterization that incorporates hazard and exposure as this relates to pollution reduction. The planned new measure is: “Hazard and exposure (human health and environmental) as it relates to pollutants estimated to be prevented, reduced, or eliminated as a result of settled enforcement actions.” In FY 2006 EPA plans to evaluate options for implementing the new hazard and exposure measure, and, depending on the results of a feasibility study, begin implementing it as an efficiency measure.

In the FY 2004 PART submission, EPA identified seven new measures as prospective GPRA measures, which are currently under development. In addition to the two efficiency measures described in the previous section, there are five measures under development to help assess how the Pesticides Enforcement Grants Program and the Criminal Enforcement Program contribute to the accomplishment of the Agency’s strategic goals. Following are the measures with brief summaries of plans for development:

Pesticides Enforcement Grant Program: Three measures are under development. One measure is the decrease in rate of subsequent violations by previous violators. A second measure is the increase in number of complying actions resulting from compliance activities. For both of the above measures, in FY 2006 EPA plans to begin collecting data and develop the baseline, and in FY 2007 to begin measuring and reporting data on them. A third measure is an efficiency measure. An improved measure relating the number of enforcement actions taken to their cost (Federal and State) is being examined. In FY 2006 EPA plans to work with states and tribes to establish agreement to collect data for an improved measure, and begin the actual data collection. EPA plans to begin reporting on the new measure, “number of enforcement actions per million dollars of combined Federal and State dollars spent,” starting in FY 2007.

Criminal Enforcement Program: Three measures are under development.

- Measure: Number of criminal enforcement cases which require improvements of environmental management practices. In FY 2005, EPA is revising the criminal enforcement program’s case conclusion data sheet to capture the data needed for this new measure and to develop a baseline for future targets.
- Measure: Level of recidivism among criminal violators. EPA plans to complete the historical analysis to develop a baseline for this measure when the enhanced Criminal Case Reporting System [CCRS, the successor to the current Criminal Enforcement Docket (CRIMDOC)] goes on-line during the second half of FY 2005.
- Measure: Pollutant impact of criminal enforcement cases. In FY 2005, EPA is revising the criminal enforcement program’s case conclusion data sheet to capture the data needed for this new measure and to develop a baseline for future targets.

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In FY 2006, EPA plans to develop the baseline and targets for all three of these measures, and begin reporting on them in FY 2007.

Environmentally Preferable Purchasing: To support the achievement of its strategic objectives, EPA is developing measures of the results the Environmentally Preferable Purchasing program. Following are the measures with brief summaries of plans for development:

- Measure: By 2008, all Federal Agencies will have defined Environmentally Preferable Purchasing programs and policies in place, and be expanding their purchases of available “green” products and services. In 2005, EPA will develop implementation plans, including measures, for achieving objectives in each product/service area. In FY 2006, EPA plans to collect and evaluate performance data and will begin reporting this measure.
- Measure: By 2008, EPA will go beyond compliance with laws and executive orders to green Agency operations through the purchase of green products and services, from a baseline year of 2002. In FY 2006, EPA will complete the collection and evaluation of performance data for this measure and will begin reporting results in FY 2007.

Tribal General Assistance Program: The number of environmental programs implemented in Indian Country per million dollars will be used as an efficiency measure. EPA is currently working with regional offices to evaluate several data sources and identify appropriate variables in order to produce a measurement that best supports this efficiency measure. The Agency plans to begin reporting on this measure in FY 2005. The Agency plans to begin data collection for tribal programs to establish baseline numbers in FY 2006.

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VERIFICATION AND VALIDATION OF PERFORMANCE MEASURES

Goal 1 Objective 1

FY 2006 Performance Measure:

- **SO₂ emissions reduced (tons/yr from 1980 baseline)**
- **Total annual average sulfur deposition and mean ambient sulfate concentrations reduced (% from baseline)**
- **Total annual average nitrogen deposition and mean ambient nitrate concentrations reduced (% from baseline)**

Performance Database: Emissions Tracking System (ETS); SO₂ and NO_x emissions collected by Continuous Emission Monitoring Systems (CEMS) or equivalent continuous monitoring methods. CEM-based emissions data have been recorded in the ETS and reported annually since 1994 for 263 of the largest affected utility units and since 1996 for all affected units. Annual totals are calculated on a calendar year basis.

Clean Air Status and Trends Network (CASTNET)- dry deposition. Data have been compiled into a central database since the late 1980s and published periodically. Site-specific data for trend analysis can be retrieved for 20 years or more at the longest running sites. Annual totals and averages are calculated on a calendar year basis.

National Atmospheric Deposition Program (NADP) - wet deposition. Data from the early 1980s have been compiled and are available in published trend analyses. The first NADP sites were established in 1978, so site-specific data may be retrievable for even longer time frames. Annual totals and averages are calculated on a calendar year basis.

Data Source: On a quarterly basis, ETS receives and processes hourly measurements of SO₂, NO_x, volumetric flow, CO₂, and other emission-related parameters from more than 3,400 fossil fuel-fired utility units affected under the Title IV Acid Rain Program. For the 5-month ozone season (May 1 - September 30), ETS receives and processes hourly NO_x measurements from electric generation units (EGUs) and certain large industrial combustion units affected by NO_x Budget Programs under the NO_x SIP Call. In 2004, the initial compliance year for the NO_x SIP Call, nearly 2,600 units reported seasonal NO_x data to ETS. Over 900 units have been reporting these data since 1999 under the Ozone Transport Commission (OTC) NO_x Budget Program.

CASTNET measures particle and gas acidic deposition chemistry. Specifically, CASTNET measures sulfate and nitrate dry deposition and meteorological information at approximately 88 monitoring sites, primarily in the East. CASTNET is a long-term dry deposition network funded, operated and maintained by the Clean Air Markets Division in EPA's Office of Air and Radiation (OAR). The National Park Service operates approximately 30 of the monitoring stations in cooperation with EPA.

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NADP is a national long-term wet deposition network that measures precipitation chemistry and provides long-term geographic and temporal trends in concentration and deposition of precipitation components. Specifically, NADP provides measurements of sulfate and nitrate wet deposition at approximately 230 monitoring sites. EPA, along with several other Federal agencies, states, and other private organizations, provide funding and support for NADP. The Illinois State Water Survey/University of Illinois maintains the NADP database.

The deposition monitoring networks have been in operation for over 25 years. They provide invaluable measurements on long-term trends and episodes in acid deposition; such data are essential for assessing progress toward the program's environmental goals. These networks are aging and need to be modernized to ensure the continued availability of these direct environmental measures. Maintaining a robust long-term atmospheric deposition monitoring network is critical for the accountability of the current Acid Rain Program and for future efforts under the Clean Air Interstate Rule (and/or Clear Skies if new legislation is enacted).

Methods, Assumption, and Suitability: Promulgated methods are used to aggregate emissions data across all United States' utilities for each pollutant and related source operating parameters such as heat input.

QA/QC Procedures: QA/QC requirements dictate performing a series of quality assurance tests of CEMS performance. For these tests, emissions data are collected under highly structured, carefully designed testing conditions, which involve either high quality standard reference materials or multiple instruments performing simultaneous emission measurements. The resulting data are screened and analyzed using a battery of statistical procedures, including one that tests for systematic bias. If a CEM fails the bias test, indicating a potential for systematic underestimation of emissions, the source of the error must be identified and corrected or the data are adjusted to minimize the bias. Further information available at <http://www.epa.gov/airmarkets/reporting/index.html>

CASTNET established a Quality Assurance Project Plan (QAPP) in November 2001; The QAPP contains data quality objectives and quality control procedures for accuracy and precision. {U.S. EPA, Office of Air Quality Planning and Standards, *Clean Air Status and Trends Network (CASTNet) Quality Assurance Project Plan* (Research Triangle Park, NC: U.S. EPA, November 2001). In addition, the program publishes annual quality assurance reports. Both the CASTNET QAPP and 2002 Annual Quality Assurance Report may be found at <http://www.epa.gov/castnet/library.html>.

NADP has established data quality objectives and quality control procedures for accuracy, precision and representation, available on the Internet: <http://nadp.sws.uiuc.edu/QA/>. The intended use of these data is to establish spatial and temporal trends in wet deposition and precipitation chemistry.

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Data Quality Review: The ETS provides instant feedback to sources on data reporting problems, format errors, and inconsistencies. The electronic data file QA checks are described at <http://www.epa.gov/airmarkets/reporting/index.html> (see *Electronic Data Report Review Process, ETS Tolerance Tables, Active ETS Error Codes/Messages and Range Format Errors*). All quarterly reports are analyzed to detect deficiencies and to identify reports that must be resubmitted to correct problems. EPA also identifies reports that were not submitted by the appropriate reporting deadline. Revised quarterly reports, with corrected deficiencies found during the data review process, must be obtained from sources by a specified deadline. All data are reviewed, and preliminary and final emissions data reports are prepared for public release and compliance determination.

CASTNET underwent formal peer review in 1997 by a panel of scientists from EPA and the National Oceanographic Atmospheric Administration (NOAA). Findings are documented in *Examination of CASTNet: Data, Results, Costs, and Implications* (United States EPA, Office of Research and Development, National Exposure Research Laboratory, February 1997).

The NADP methods of determining wet deposition values have undergone extensive peer review, handled entirely by the NADP housed at the Illinois State Water Survey/University of Illinois. Assessments of changes in NADP methods are developed primarily through the academic community and reviewed through the technical literature process.

Data Limitations: In order to improve the spatial resolution of CASTNET, additional monitoring sites are needed. CASTNET has no geographic coverage for the middle of the country and very limited coverage in the Northwest.

Error Estimate: None

New/Improved Data or Systems: The program initiated a modernization project in 2004 to update the current aging CASTNET network with advanced technology, to reconfigure CASTNET for improved geographic coverage and to facilitate its use for additional coordinated air quality monitoring strategy development. These actions will increase the Agency's capabilities to effectively assess trends in acid deposition, transport of air pollutants, regional haze, and ambient air quality over a broad geographic range. The refurbishment of CASTNET will result in more comprehensive air quality data and information, made available faster by enabling real-time access to air quality information and promoting integration with other networks. In 2004, the program finalized the purchase of instruments for deployment at three CASTNET sites in order to evaluate and test measurement and operational performance under realistic field conditions. Refurbishment activities to be pursued in FY 2006 include: (1) completion of a pilot study to evaluate options for upgrading CASTNET with new advanced measurement instrumentation; (2) selection and procurement of advanced technology monitoring equipment for up to 10 sites; and (3) development of new ecological indicators of air quality and atmospheric deposition to expand the suite of environmental metrics available for measuring the performance and efficiency of EPA's clean air programs.

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References: For additional information about CASTNET, see <http://www.epa.gov/castnet.html> and for NADP, see <http://nadp.sws.uiuc.edu/>.

For a description of EPA's Acid Rain program, see <http://www.epa.gov/airmarkets/arp/index.html/> and in the electronic Code of Federal Regulations at <http://www.epa.gov/docs/epacfr40/chapt-I.info/subch-C.html> (40 CFR parts 72-78.)

FY 2006 Performance Measure:

- **Cumulative percent increase in the number of people who live in areas with ambient criteria pollutant concentrations below the level of the NAAQS.**
- **Cumulative percent increase in the number of areas with ambient criteria pollutant concentrations below the level of the NAAQS.**
- **Areas measuring clean air for NAAQS.**

Performance Database:

AQS— The Air Quality Subsystem (AQS) stores ambient air quality data used to evaluate an area's air quality levels relative to the NAAQS. The AQS database is updated daily, primarily by the staff of state and local environmental agencies responsible for measuring ambient concentrations of criteria air pollutants at several thousand monitoring sites in all states and territories. EPA pulls the data on a calendar year basis.

FREDS—The Findings and Required Elements Data System is used to track progress of states and Regions in reviewing and approving the required data elements of the State Implementation Plans (SIP). SIPs are clean air plans and define what actions a state will take to improve the air quality in areas that do not meet national ambient air quality standards. The data are collected on a fiscal year basis.

Data Source:

AQS: State & local agency data from State and Local Air Monitoring Stations (SLAMS).

Population: Data from Census-Bureau/Department of Commerce

FREDS: Data are provided by EPA's Regional offices.

Methods, Assumptions, and Suitability: Air quality levels are evaluated relative to the level of the appropriate NAAQS. Next the populations in areas with air quality concentrations above the level of the NAAQS are aggregated. This analysis assumes that the populations of the areas are held constant at year 2000 Census levels. Data comparisons over several years allow assessment of the air program's success.

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QA/QC Procedures: AQS: The QA/QC of the national air monitoring program has several major components: the Data Quality Objective (DQO) process, reference and equivalent methods program, EPA's National Performance Audit Program (NPAP), system audits, and network reviews (Available on the Internet: www.epa.gov/ttn/amtic/npaplist.html). To ensure quality data, the SLAMS are required to meet the following: 1) each site must meet network design and site criteria; 2) each site must provide adequate QA assessment, control, and corrective action functions according to minimum program requirements; 3) all sampling methods and equipment must meet EPA reference or equivalent requirements; 4) acceptable data validation and record keeping procedures must be followed; and 5) data from SLAMS must be summarized and reported annually to EPA. Finally, there are system audits that regularly review the overall air quality data collection activity for any needed changes or corrections. Further information available on the Internet: <http://www.epa.gov/cludygxb/programs/namslam.html> and through United States EPA's Quality Assurance Handbook (EPA-454/R-98-004 Section 15)

Populations: No additional QA/QC beyond that done by the Census Bureau/Department of Commerce.

FREDS: No formal QA/QC procedures.

Data Quality Review:

AQS: No external audits have been done in the last 3 years. However, internal audits are regularly conducted.

Populations: No additional QA/QC beyond that done by the Census Bureau/Department of Commerce.

FREDS: None

Data Limitations:

AQS: None known

Populations: Not known

FREDS: None known

Error Estimate: At this time it is not possible to develop an error estimate. There is still too much uncertainty in the projections and near term variations in air quality (due to meteorological conditions for example) exists.

New/Improved Data or Systems:

AQS: In January 2002, EPA completed the reengineering of AQS to make it a more user friendly, Windows-based system. As a result, air quality data are more easily accessible via the Internet. AQS has also been enhanced to comply with the Agency's data standards (e.g.,

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latitude/longitude, chemical nomenclature). Beginning in July 2003, agencies submitted air quality data to AQS thru the Agency's Central Data Exchange (CDX). CDX is intended to be the portal through which all environmental data coming to or leaving the Agency will pass.

Population: None

FREDS: None

References: For additional information about criteria pollutant data, non-attainment areas, and other related information, see: <http://www.epa.gov/airtrends/>.

FY 2006 Performance Measure:

- **Estimated Mobile Source VOC Emissions**
- **Estimated Mobile Source NOx Emissions**
- **Estimated Mobile Source PM 10 Emissions**
- **Estimated Mobile Source PM 2.5 Emissions**
- **Estimated Mobile Source CO Emissions**

Performance Database: National Emissions Inventory Database. The database includes estimates of annual emissions, by source, of air pollutants in each area of the country, on a calendar year basis.

See: <http://www.epa.gov/ttn/chief/trends/>

Data Source: Mobile source emissions inventories. Estimates for on-road, off-road mobile source emissions are built from inventories fed into the relevant models, which in turn provide input to the National Emissions Inventory Database.

The MOBILE vehicle emission factor model is a software tool for predicting gram per mile emissions of hydrocarbons, carbon monoxide, oxides of nitrogen, carbon dioxide, particulate matter, and toxics from cars, trucks, and motorcycles under various conditions. Inputs to the model include fleet composition, activity, temporal information, and control program characteristics.

The NONROAD emission inventory model is a software tool for predicting emissions of hydrocarbons, carbon monoxide, oxides of nitrogen, particulate matter, and sulfur dioxides from small and large off road vehicles, equipment, and engines. Inputs to the model include fleet composition, activity and temporal information.

Certain mobile source information is updated annually. Inputs are updated annually only if there is a rationale and readily available source of annual data. Generally, Vehicle Miles Traveled (VMT), the mix of VMT by type of vehicle (Federal Highway Administration (FHWA)-types),

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temperature, gasoline properties, and the designs of Inspection/Maintenance (I/M) programs are updated each year. Emission factors for all mobile sources and activity estimates for non-road sources are changed only when the Office of Transportation and Air Quality requests that this be done and is able to provide the new information in a timely manner. The most recent models for mobile sources are Mobile 6 and Nonroad 2002. (Available on the Internet at <http://www.epa.gov/otaq/models.htm>.)

Methods, Assumptions, and Suitability: EPA issues emissions standards that set limits on how much pollution can be emitted from a given mobile source. Mobile sources include vehicles that operate on roads and highways ("on road" or "highway" vehicles), as well as nonroad vehicles, engines, and equipment. Examples of mobile sources are cars, trucks, buses, earthmoving equipment, lawn and garden power tools, ships, railroad locomotives, and airplanes. Vehicle and equipment manufacturers have responded to many mobile source emission standards by redesigning vehicles and engines to reduce pollution.

EPA uses models to estimate mobile source emissions, for both past and future years. The estimates are used in a variety of different settings. The estimates are used for rulemaking.

The most complete and systematic process for making and recording such mobile source emissions estimates is the "Trends" inventory process executed each year by the Office of Air Quality Planning and Standards' (OAQPS) Emissions, Monitoring, and Analysis Division (EMAD). The Assessment and Standards Division, within the Office of Transportation and Air Quality, provides EMAD information and methods for making the mobile source estimates. In addition, EMAD's contractors obtain necessary information directly from other sources; for example, weather data and the Federal Highway Administration's (FHWA) Vehicle Miles Traveled (VMT) estimates by state. EMAD creates and publishes the emission inventory estimate for the most recent historical year, detailed down to the county level and with over 30 line items representing mobile sources. At irregular intervals as required for regulatory analysis projects, EMAD creates estimates of emissions for future years. When the method for estimating emissions changes significantly, EMAD usually revises its older estimates of emissions in years prior to the year of change, to avoid a sudden discontinuity in the apparent emissions trend. EMAD publishes the national emission estimates in hardcopy; county-level estimates are available electronically. Additional information about transportation and air quality related to estimating, testing for, and measuring emissions, as well as research being conducted on technologies for reducing emissions is available at <http://www.epa.gov/otaq/research.htm>.

QA/QC Procedures: The emissions inventories are continuously improved.

Data Quality Review: The emissions inventories are reviewed by both internal and external parties, including the states, locals and industries.

Data Limitations: The limitations of the inventory estimates for mobile sources come from limitations in the modeled emission factors (based on emission factor testing and models

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predicting overall fleet emission factors in g/mile) and also in the estimated vehicle miles traveled for each vehicle class (derived from Department of Transportation data). <http://www.epa.gov/otaq/m6.htm>. For nonroad emissions, the estimates come from a model using equipment populations, emission factors per hour or unit of work, and an estimate of usage. This nonroad emissions model accounts for over 200 types of nonroad equipment. Any limitations in the input data will carry over into limitations in the emission inventory estimates.

Error Estimate: Additional information about data integrity is available on the Internet: <http://www.epa.gov/otaq/m6.htm>.

New/Improved Data or Systems: To keep pace with new analysis needs, new modeling approaches, and new data, EPA is currently working on a new modeling system termed the Multi-scale Motor Vehicles and Equipment Emission System (MOVES). This new system will estimate emissions for on road and off road sources, cover a broad range of pollutants, and allow multiple scale analysis, from fine scale analysis to national inventory estimation. When fully implemented, MOVES will serve as the replacement for MOBILE6 and NONROAD. The new system will not necessarily be a single piece of software, but instead will encompass the necessary tools, algorithms, underlying data and guidance necessary for use in all official analyses associated with regulatory development, compliance with statutory requirements, and national/regional inventory projections. Additional information is available on the Internet: <http://www.epa.gov/otaq/ngm.htm>.

References: For additional information about mobile source programs see: <http://www.epa.gov/otaq/>.

FY 2006 Performance Measure:

- **Combined Stationary and Mobile Source Reductions in Air Toxics Emissions**
- **Mobile Source Air Toxics Emissions Reduced**
- **Stationary Source Air Toxics Emissions Reduced**
- **All Other Air Toxics Emissions Reduced**

Performance Database: National Emissions Inventory (NEI) for Hazardous Air Pollutants (HAPs). The database includes estimates of annual emissions, by source, of air pollutants in each area of the country, on an annual basis.

Data Source: To calculate performance measures, the data source used is the NEI for HAPs which includes emissions from large and small industrial sources inventoried as point sources, smaller stationary area and other sources, such as fires inventoried as non-point sources, and mobile sources.

Prior to the 1999 NEI for HAPs, there was the National Toxics Inventory (NTI). The baseline NTI (for base years 1990 - 1993) includes emissions information for 188 hazardous air pollutants

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from more than 900 stationary sources and from mobile sources. It is based on data collected during the development of Maximum Achievable Control Technology (MACT) standards, state and local data, Toxics Release Inventory (TRI) data, and emissions estimates using accepted emission inventory methodologies. The baseline NTI contains county level emissions data, not facility-specific data.

The 1996 NTI and 1999 NEI for HAPs contain estimates of facility-specific HAP emissions and their source specific parameters such as location (latitude and longitude) and facility characteristics (stack height, exit velocity, temperature, etc.)

The primary source of data in the 1996 and 1999 NTI is state and local air pollution control agencies and Tribes. These data vary in completeness, format, and quality. EPA evaluates these data and supplements them with data gathered while developing MACT and residual risk standards, industry data, and TRI data. To produce a complete national inventory, EPA estimates emissions for approximately 30 non-point source categories such as wildfires and residential heating sources not included in the state, local and Tribal data. Mobile source data are developed using data provided by state and local agencies and Tribes and the most current onroad and nonroad models developed by EPA's Office of Transportation and Air Quality. The draft 1996 NTI and 1999 NEI for HAPS underwent extensive review by state and local agencies, Tribes, industry, EPA, and the public.

For more information and references on the development of the 1996 NTI, please go to the following web site: www.epa.gov/ttn/chief/nti/index.html#nti. For more information and references on the development of the 1999 NEI for HAPS, please go to the following web site: <http://www.epa.gov/ttn/chief/net/index.html#1999>.

Methods, Assumptions and Suitability: To produce a complete model-ready national inventory, EPA estimates emissions for approximately 30 non-point source categories such as wildfires and residential heating sources not included in the state, local and Tribal data. Mobile source data are developed using data provided by state and local agencies and Tribes and the most current onroad and nonroad models developed by EPA's Office of Transportation and Air Quality.

Upon development of the inventory, the EMS-HAP (Emissions Modeling System for Hazardous Air Pollutants) is used to estimate annual emissions of air toxics for the 1996 NTI and 1999 NEI for HAPS (and for all years in-between). The EMS-HAP can project future emissions, by adjusting stationary source emission data to account for growth and emission reductions resulting from emission reduction scenarios such as the implementation of the Maximum Achievable Control Technology (MACT) standards.

For more information and references on EMS-HAP, please go to the following web sites: <http://www.epa.gov/scram001/tt22.htm#aspen> and <http://www.epa.gov/ttn/chief/emch/projection/emshap.html>.

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The growth and reduction information used for the projections are further described on the following website: <http://www.epa.gov/ttn/chief/emch/projection/emshap.html>.

QA/QC Procedures: The NTI and the NEI for HAPs are databases designed to house information from other primary sources. The EPA performs extensive quality assurance/quality control (QA/QC) activities, including checking data provided by other organizations, to improve the quality of the emission inventory. Some of these activities include: (1) the use of an automated format QC tool to identify potential errors of data integrity, code values, and range checks; (2) use of geographical information system (GIS) tools to verify facility locations; and (3) automated content analysis by pollutant, source category and facility to identify potential problems with emission estimates such as outliers, duplicate sites, duplicate emissions, coverage of a source category, etc. The content analysis includes a variety of comparative and statistical analyses. The comparative analyses help reviewers prioritize which source categories and pollutants to review in more detail based on comparisons using current inventory data and prior inventories. The statistical analyses help reviewers identify potential outliers by providing the minimum, maximum, average, standard deviation, and selected percentile values based on current data. The EPA is currently developing an automated QC content tool for data providers to use prior to submitting their data to EPA. After investigating errors identified using the automated QC format and GIS tools, the EPA follows specific guidance on augmenting data for missing data fields. This guidance is available at the following web site: http://www.epa.gov/ttn/chief/emch/invent/qaaugmentationmemo_99nei_60603.pdf.

The NTI database contains data fields that indicate if a field has been augmented and identifies the augmentation method. After performing the content analysis, the EPA contacts data providers to reconcile potential errors. The draft NTI is posted for external review and includes a README file, with instructions on review of data and submission of revisions, state-by-state modeling files with all modeled data fields, and summary files to assist in the review of the data. One of the summary files includes a comparison of point source data submitted by different organizations. During the external review of the data, state and local agencies, Tribes, and industry provide external QA of the inventory. The EPA evaluates proposed revisions from external reviewers and prepares memos for individual reviewers documenting incorporation of revisions and explanations if revisions were not incorporated. All revisions are tracked in the database with the source of original data and sources of subsequent revision.

The external QA and the internal QC of the inventory have resulted in significant changes in the initial emission estimates, as seen by comparison of the initial draft NEI for HAPs and its final version. For more information on QA/QC of the NEI for HAPs, please refer to the following web site for a paper presented at the 2002 Emission Inventory Conference in Atlanta. "QA/QC - An Integral Step in the Development of the 1999 National Emission Inventory for HAPs," Anne Pope, et al. www.epa.gov/ttn/chief/conference/ei11/qa/pope.pdf.

EPA's Office of Environmental Information (OEI) has created uniform data standards or elements, which provide "meta" information on the standard NEI Input Format (NIF) fields.

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These standards were developed by teams representing states, Tribes, EPA and other Federal agencies. The use of common data standards among partners fosters consistently defined and formatted data elements and sets of data values, and provides public access to more meaningful data. The standards relevant to the NEI for HAPs are the: SIC/NAICS, Latitude/Longitude, Chemical Identification, Facility Identification, Date, Tribal and Contact Data Standards. The 1999 NEI for HAPs is compliant with all new data standards except the Facility Identification Standard because OEI has not completed its assignment of Facility IDs to the 1999 NEI for HAPs facilities.

For more information on compliance of the NEI for HAPs with new OMB Information Quality Guidelines and new EPA data standards, please refer to the following web site for a paper presented at the 2003 Emission Inventory Conference in San Diego: "The Challenge of Meeting New EPA Data Standards and Information Quality Guidelines in the Development of the 2002 NEI Point Source Data for HAPs," Anne Pope, et al.

www.epa.gov/ttn/chief/conference/ei12/dm/pope.pdf.

The 2002 NEI for HAPs will undergo scientific peer review in early 2005.

Data Quality Review: EPA staff, state and local agencies, Tribes, industry and the public review the NTI and the NEI for HAPs. To assist in the review of the 1999 NEI for HAPs, the EPA provided a comparison of data from the three data sources (MACT/residual risk data, TRI, and state, local and Tribal inventories) for each facility. For the 1999 NEI for HAPs, two periods were available for external review - October 2001 - February 2002 and October 2002 - March 2003. The final 1999 NEI was completed and posted on the Agency website in the fall of 2003.

In 2001, EPA's Science Advisory Board (SAB) reviewed the EMS-HAP model as part of the 1996 national-scale assessment. The review was generally supportive of the assessment purpose, methods, and presentation; the committee considers this an important step toward a better understanding of air toxics. Additional information is available on the Internet: www.epa.gov/ttn/atw/nata/peer.html.

In 2004, the Office of the Inspector General (OIG) released a final evaluation report on "EPA's Method for Calculating Air Toxics Emissions for Reporting Results Needs Improvement" (report can be found at www.epa.gov/oig/reports/2004/20040331-2004-p-00012.pdf) The report stated that although the methods used have improved substantially, unvalidated assumptions and other limitations underlying the NTI continue to impact its use as a GPRA performance measure. As a result of this evaluation and the OIG recommendations for improvement, EPA prepared an action plan and is looking at way to improve the accuracy and reliability of the data. EPA will meet bi-annually with OIG to report on its progress in completing the activities as outlined in the action plan.

Data Limitations: While emissions estimating techniques have improved over the years, broad assumptions about the behavior of sources and serious data limitations still exist. The NTI and

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the NEI for HAPs contain data from other primary references. Because of the different data sources, not all information in the NTI and the NEI for HAPs has been developed using identical methods. Also, for the same reason, there are likely some geographic areas with more detail and accuracy than others. Because of the lesser level of detail in the baseline NTI, it is currently not suitable for input to dispersion models. For further discussion of the data limitations and the error estimates in the 1999 NEI for HAPs, please refer to the discussion of Information Quality Guidelines in the documentation at: www.epa.gov/ttn/chief/net/index.html#haps99.

Error Estimate: Error estimate cannot be tabulated on account of data limitations as described above.

New/Improved Data or Systems: The 1996 NTI and 1999 NEI for HAPs are a significant improvement over the baseline 1993 NTI because of the added facility-level detail (e.g., stack heights, latitude/longitude locations), making it more useful for dispersion model input. Future inventories (2002 and later years) are expected to improve significantly because of increased interest in the NEI for HAPs by regulatory agencies, environmental interests, and industry, and the greater potential for modeling and trend analysis. During the development of the 1999 NEI for HAPs, all primary data submitters and reviewers were required to submit their data and revisions to EPA in a standardized format using the Agency's Central Data Exchange (CDX). For more information on CDX, please go the following web site: www.epa.gov/ttn/chief/nif/cdx.html.

References: The NTI and NEI data and documentation are available at the following sites:

ftp site: <ftp://ftp.epa.gov/EmisInventory/>
Available inventories: 1996 NTI, 1999 NEI for HAPs
Contents: Modeling data files for each state
Summary data files for nation
Documentation
README file
Audience: individuals who want full access to NTI files

NEON: <http://ttnwww.rtpnc.epa.gov/Neon/>
Available inventories: 1996 NTI and 1999 NEI for HAPs
Contents: Summary data files
Audience: EPA staff

CHIEF: www.epa.gov/ttn/chief
1999 NEI for HAPs data development materials
1999 Data Incorporation Plan - describes how EPA compiled the
1999 NEI for HAPs
QC tool for data submitters

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Data Augmentation Memo describes procedures EPA will use to augment data

99 NTI Q's and A's provides answers to frequently asked questions

NIF (Input Format) files and descriptions

CDX Data Submittal Procedures - instructions on how to submit data using CDX

Training materials on development of HAP emission inventories
Emission factor documents, databases, and models

Audience: State and local agencies, Tribes, industry, EPA, and the public

FY 2006 Performance Measure:

- **Percentage reduction in tons of toxicity-weighted (for cancer risk) emissions of air toxics**
- **Percentage reduction in tons of toxicity-weighted (for noncancer risk) emissions of air toxics**

Performance Database:

- National Emissions Inventory (NEI) for Hazardous Air Pollutants (HAPs)
- EPA's Health Criteria Data for Risk Characterization

The database includes estimates of annual emissions, by source, of air pollutants in each area of the country, on an annual basis.

Data Source: To better measure the percentage change in cancer and noncancer risk to the public, a toxicity-weighted emission inventory performance measure has been developed. This measure utilizes data from the NEI for air toxics along with data from EPA's Health Criteria Data for Risk Characterization (found at www.epa.gov/ttn/atw/toxsource/summary.html), which is a compendium of cancer and noncancer health risk criteria used to develop a risk metric. This compendium includes tabulated values for long-term (chronic) inhalation for many of the 188 hazardous air pollutants. These health risk data were obtained from various data sources including EPA, the U.S. Agency for Toxic Substances and Disease Registry, California Environmental Protection Agency, and the International Agency for Research on Cancer. The numbers from the health risk database are used for estimating the risk of contracting cancer and the level of hazard associated with adverse health effects other than cancer.

The NEI for HAPs includes emissions from large and small industrial sources inventoried as point sources, smaller stationary area and other sources, such as fires inventoried as non-point sources, and mobile sources. Prior to 1999 NEI for HAPs, there was the National Toxics Inventory (NTI). The baseline NTI (for base years 1990 - 1993) includes emissions information for 188 hazardous air pollutants from more than 900 stationary sources and from mobile sources. It is based on data collected during the development of Maximum Achievable Control

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Technology (MACT) standards, state and local data, Toxics Release Inventory (TRI) data, and emissions estimates using accepted emission inventory methodologies. The baseline NTI contains county level emissions data and cannot be used for modeling because it does not contain facility specific data.

The 1996 NTI and the 1999 NEI for HAPs contain stationary and mobile source estimates. These inventories also contain estimates of facility-specific HAP emissions and their source specific parameters such as location (latitude and longitude) and facility characteristics (stack height, exit velocity, temperature, etc.

The primary source of data in the 1996 and 1999 inventories are state and local air pollution control agencies and Tribes. These data vary in completeness, format, and quality. EPA evaluates these data and supplements them with data gathered while developing MACT and residual risk standards, industry data, and TRI data.

For more information and references on the development of the 1996 NTI, please go to the following web site: www.epa.gov/ttn/chief/nti/index.html#nti. For more information and references on the development of the 1999 NEI for HAPs, please go to the following web site: www.epa.gov/ttn/chief/net/index.html#1999.

Methods, Assumptions and Suitability: Because the NEI is only developed every three years, EPA utilizes an emissions modeling system to project inventories for “off-years” and to project the inventory into the future. This model, the EMS-HAP (Emissions Modeling System for Hazardous Air Pollutants), can project future emissions, by adjusting stationary source emission data to account for growth and emission reductions resulting from emission reduction scenarios such as the implementation of the Maximum Achievable Control Technology (MACT) standards.

Once the EMS-HAP process has been performed, the EPA would tox-weight the inventory by “weighting” the emissions for each pollutant with the appropriate health risk criteria. This would be accomplished through a multi-step process. Initially, pollutant by pollutant values would be obtained from the NEI for the current year and the baseline year (1990/93). Conversion of actual tons for each pollutant for the current year and the baseline year to “toxicity-weighted” tons would be accomplished by multiplying the appropriate values from the health criteria database such as the unit risk estimate (URE) or lifetime cancer risk (defined at www.epa.gov/ttn/atw/nata/gloss.htm#rfc) to get the noncancer tons. These toxicity-weighted values act as a surrogate for risk and allow EPA to compare the toxicity-weighted values against a 1990/1993 baseline of toxicity-weighted values to determine the percentage reduction in risk on an annual basis

Complete documentation on development of the NEI for HAPs can be found at <http://www.epa.gov/ttn/chief/net/index.html>. For more information and references on EMS-HAP, go to the following web sites: <http://www.epa.gov/scram001/tt22.htm#aspen> and

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<http://www.epa.gov/ttn/chief/emch/projection/emshap.html>. The growth and reduction information used for the projections are further described at <http://www.epa.gov/ttn/chief/emch/projection/emshap.html>.

QA/QC Procedures: The NTI and the NEI for HAPs are databases designed to house information from other primary sources. The EPA performs extensive quality assurance/quality control (QA/QC) activities, including checking data provided by other organizations, to improve the quality of the emission inventory. Some of these activities include: (1) the use of an automated format QC tool to identify potential errors of data integrity, code values, and range checks; (2) use of geographical information system (GIS) tools to verify facility locations; and (3) automated content analysis by pollutant, source category and facility to identify potential problems with emission estimates such as outliers, duplicate sites, duplicate emissions, coverage of a source category, etc. The content analysis includes a variety of comparative and statistical analyses. The comparative analyses help reviewers prioritize which source categories and pollutants to review in more detail based on comparisons using current inventory data and prior inventories. The statistical analyses help reviewers identify potential outliers by providing the minimum, maximum, average, standard deviation, and selected percentile values based on current data. The EPA has developed an automated QC content tool for data providers to use prior to submitting their data to EPA. After investigating errors identified using the automated QC format and GIS tools, the EPA follows specific guidance on augmenting data for missing data fields. This guidance is available at the following web site: http://www.epa.gov/ttn/chief/emch/invent/qaaugmentationmemo_99nei_60603.pdf.

The NTI database contains data fields that indicate if a field has been augmented and identifies the augmentation method. After performing the content analysis, the EPA contacts data providers to reconcile potential errors. The draft NTI is posted for external review and includes a README file, with instructions on review of data and submission of revisions, state-by-state modeling files with all modeled data fields, and summary files to assist in the review of the data. One of the summary files includes a comparison of point source data submitted by different organizations. During the external review of the data, state and local agencies, Tribes, and industry provide external QA of the inventory. The EPA evaluates proposed revisions from external reviewers and prepares memos for individual reviewers documenting incorporation of revisions and explanations if revisions were not incorporated. All revisions are tracked in the database with the source of original data and sources of subsequent revision.

The external QA and the internal QC of the inventory have resulted in significant changes in the initial emission estimates, as seen by comparison of the initial draft NEI for HAPs and its final version. For more information on QA/QC of the NEI for HAPs, please refer to the following web site for a paper presented at the 2002 Emission Inventory Conference in Atlanta. "QA/QC - An Integral Step in the Development of the 1999 National Emission Inventory for HAPs", Anne Pope, et al. www.epa.gov/ttn/chief/conference/ei11/qa/pope.pdf.

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EPA's Office of Environmental Information (OEI) has created uniform data standards or elements, which provide "meta" information on the standard NEI Input Format (NIF) fields. These standards were developed by teams representing states, Tribes, EPA and other Federal agencies. The use of common data standards among partners fosters consistently defined and formatted data elements and sets of data values, and provides public access to more meaningful data. The standards relevant to the NEI for HAPs are the: SIC/NAICS, Latitude/Longitude, Chemical Identification, Facility Identification, Date, Tribal and Contact Data Standards. The 1999 NEI for HAPs is compliant with all new data standards except the Facility Identification Standard because OEI has not completed its assignment of Facility IDs to the 1999 NEI for HAPs facilities.

For more information on compliance of the NEI for HAPs with new OMB Information Quality Guidelines and new EPA data standards, please refer to the following web site for a paper presented at the 2003 Emission Inventory Conference in San Diego. "The Challenge of Meeting New EPA Data Standards and Information Quality Guidelines in the Development of the 2002 NEI Point Source Data for HAPs", Anne Pope, et al. www.epa.gov/ttn/chief/conference/ei12/dm/pope.pdf. The 2002 NEI for HAPs will undergo scientific peer review in early 2005.

The tables used in the EPA's Health Criteria Data for Risk Characterization (found at www.epa.gov/ttn/atw/toxsource/summary.html) are compiled assessments from various sources for many of the 188 substances listed as hazardous air pollutants under the Clean Air Act of 1990. Because different sources developed these assessments at different times for purposes that were similar but not identical, results are not totally consistent. To resolve these discrepancies and ensure the validity of the data, EPA applied a consistent priority scheme consistent with EPA risk assessment guidelines and various levels of scientific peer review. These risk assessment guidelines can be found at <http://www.epa.gov/ncea/raf/car2sab/preamble.pdf>.

Data Quality Review: EPA staff, state and local agencies, Tribes, industry and the public review the NTI and the NEI for HAPs. To assist in the review of the 1999 NEI for HAPs, the EPA provided a comparison of data from the three data sources (MACT/residual risk data, TRI, and state, local and Tribal inventories) for each facility. For the 1999 NEI for HAPs, two periods were available for external review - October 2001 - February 2002 and October 2002 - March 2003. The final 1999 NEI was completed and posted on the Agency website in the fall of 2003.

The EMS-HAP has been subjected to the scrutiny of leading scientists throughout the country in a process called "scientific peer review". This ensures that EPA uses the best available scientific methods and information. In 2001, EPA's Science Advisory Board (SAB) reviewed the EMS-HAP model as part of the 1996 national-scale assessment. The review was generally supportive of the assessment purpose, methods, and presentation; the committee considers this an important step toward a better understanding of air toxics. Additional information is available on the Internet: www.epa.gov/ttn/atw/nata/peer.html.

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In 2004, the Office of the Inspector General (OIG) released a final evaluation report on “EPA’s Method for Calculating Air Toxics Emissions for Reporting Results Needs Improvement” (report can be found at www.epa.gov/oig/reports/2004/20040331-2004-p-00012.pdf). The report stated that although the methods used have improved substantially, unvalidated assumptions and other limitations underlying the NTI continue to impact its use as a GPRA performance measure. As a result of this evaluation and the OIG recommendations for improvement, EPA prepared an action plan and is looking at ways to improve the accuracy and reliability of the data. EPA will meet bi-annually with OIG to report on its progress in completing the activities as outlined in the action plan.

The data compiled in the Health Criteria Data for Risk Characterization (found at www.epa.gov/ttn/atw/toxsource/summary.html) are reviewed to make sure they support hazard identification and dose-response assessment for chronic exposures as defined in the National Academy of Sciences (NAS) risk assessment paradigm (www.epa.gov/ttn/atw/toxsource/paradigm.html). Because the health criteria data were obtained from various sources they are prioritized for use (in developing the performance measure, for example) according to 1) conceptual consistency with EPA risk assessment guidelines and 2) various levels of scientific peer review. The prioritization process is aimed at incorporating the best available scientific data.

Data Limitations and Error Estimates: While emissions estimating techniques have improved over the years, broad assumptions about the behavior of sources and serious data limitations still exist. The NTI and the NEI for HAPs contain data from other primary references. Because of the different data sources, not all information in the NTI and the NEI for HAPs has been developed using identical methods. Also, for the same reason, there are likely some geographic areas with more detail and accuracy than others. Because of the lesser level of detail in the baseline NTI, it is currently not suitable for input to dispersion models. For further discussion of the data limitations and the error estimates in the 1999 NEI for HAPs, please refer to the discussion of Information Quality Guidelines in the documentation at: www.epa.gov/ttn/chief/net/index.html#haps99 .

While the Agency has made every effort to utilize the best available science in selecting appropriate health criteria data for toxicity-weighting calculations there are inherent limitations and errors (uncertainties) associated with this type of data. While it is not practical to expose humans to chemicals at target doses and observe subsequent health implications over long periods of time, most of the agencies health criteria is derived from response models and laboratory experiments involving animals. The parameter used to convert from exposure to cancer risk (i.e. the Unit Risk Estimate or URE) is based on default science policy processes used routinely in EPA assessments. First, some air toxics are known to be carcinogens in animals but lack data in humans. These have been assumed to be human carcinogens. Second, all the air toxics in this assessment were assumed to have linear relationships between exposure and the probability of cancer (i.e. effects at low exposures were extrapolated from higher, measurable, exposures by a straight line). Third, the URE used for some air toxics compounds represents a

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maximum likelihood estimate, which might be taken to mean the best scientific estimate. For other air toxics compounds, however, the URE used was an “upper bound” estimate, meaning that it probably leads to an overestimation of risk if it is incorrect. For these upper bound estimates, it is assumed that the URE continues to apply even at low exposures. It is likely, therefore, that this linear model over-predicts the risk at exposures encountered in the environment. The cancer weighting-values for this approach should be considered “upper bound” in the science policy sense.

All of the noncancer risk estimates have a built-in margin of safety. All of the Reference Concentrations (RfCs) used in toxicity-weighting of noncancer are conservative, meaning that they represent exposures which probably do not result in any health effects, with a margin of safety built into the RfC to account for sources of uncertainty and variability. Like the URE used in cancer weighting the values are, therefore, considered “upper bound” in the science policy sense. Further details on limitations and uncertainties associated with the agencies health data can be found at: www.epa.gov/ttn/atw/nata/roy/page9.html#L10

New/Improved Data or Systems: The 1996 NTI and 1999 NEI for HAPs are a significant improvement over the baseline NTI because of the added facility-level detail (e.g., stack heights, latitude/longitude locations), making it more useful for dispersion model input. Future inventories (2002 and later years) are expected to improve significantly because of increased interest in the NEI for HAPs by regulatory agencies, environmental interests, and industry, and the greater potential for modeling and trend analysis. During the development of the 1999 NEI for HAPs, all primary data submitters and reviewers were required to submit their data and revisions to EPA in a standardized format using the Agency’s Central Data Exchange (CDX). For more information on CDX, please go the following web site: www.epa.gov/ttn/chief/nif/cdx.html

Beginning in 2006, the toxicity-weighted emission inventory data will also be used as a measurement to predict exposure and risk to the public. This measure will utilize ambient monitoring of air toxics as a surrogate for population exposure and compare these values with health benchmarks to predict risks.

References:

The NTI and NEI data and documentation are available at the following sites:

Emissions Inventory Data: <ftp://ftp.epa.gov/EmisInventory/>
Available inventories: 1996 NTI, 1999 NEI for HAPs
Contents: Modeling data files for each state
Summary data files for nation
Documentation
README file
Audience: individuals who want full access to NTI files

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NEON: <http://ttnwww.rtpnc.epa.gov/Neon/>
Available inventories: 1996 NTI and 1999 NEI for HAPs
Contents: Summary data files
Audience: EPA staff

CHIEF: www.epa.gov/ttn/chief
1999 NEI for HAPs data development materials
1999 Data Incorporation Plan - describes how EPA compiled the 1999 NEI for HAPs
QC tool for data submitters
Data Augmentation Memo describes procedures EPA will use to augment data
99 NTI Q's and A's provides answers to frequently asked questions
NIF (Input Format) files and descriptions
CDX Data Submittal Procedures - instructions on how to submit data using CDX
Training materials on development of HAP emission inventories
Emission factor documents, databases, and models
Audience: State/local/Tribal agencies, industry, EPA, and the public

Information on the Emissions Modeling System for Hazardous Air Pollutants:
EMS-HAP: <http://epa.gov/scram001/tt22.htm#aspen>
<http://www.epa.gov/ttn/chief/emch/projection/emshap.html>
Contents: 1996 NTI and 1999 NEI for HAPs
Audience: public

Information on EPA's Health Criteria Data for Risk Characterization:
Health Criteria Data: <http://www.epa.gov/ttn/atw/toxsource/summary.html>
Contents: Tabulated dose response values for long-term (chronic) inhalation and oral exposures; and values for short-term (acute) inhalation exposure
Audience: public

FY 2006 Performance Measure:

- **Complete the phase out of leaded gasoline in Africa in key countries/regions through the Partnership for Clean Fuels and Vehicles**

Performance Database: The measure tracks the number of African countries which have phased out leaded gasoline. EPA works with the United Nations Environment Programme

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(UNEP) and other partners in the Partnership for Clean Fuels and Vehicles to document the phase out of leaded gasoline in Africa. UNEP manages the Partnership Clearinghouse, which keeps track of the status of lead phase out in each African country. Each country's implementation of lead phase out programs is documented and verified. The Partnership's data on lead phase out can be found on the Partnership website at:

<http://www.unep.org/PCFV/Data/data.htm#leaded>

There currently is no available database on leaded gasoline sales data or market penetration of alternative fuels. The Partnership made the decision to track the number of countries which have phased out lead because the data are more easily verifiable. The phase out is implemented in different ways in different countries, mostly by legislation. But just having the legislation does not mean the lead is gone from the gasoline. Many countries have set dates for lead phase out, and the Partnership tracks progress in implementation.

Data Source: The data are collected by UNEP, working with the African countries. When the Partnership gets information on the status of lead phase out in each country, experts contact key sources in government and industry to verify it. Only then is the information put into the database on the website.

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: Experts at the Partnership for Clean Fuels and Vehicles verify the information by contacting key people from industry and government within each country.

Data Quality Reviews: N/A

Data Limitations: N/A

Error Estimate: N/A

New/Improved Data or Systems: N/A

References: N/A

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Goal 1 Objective 2

FY 2006 Overarching Performance Measure:

- **People Living in Healthier Indoor Air**

FY 2006 Performance Measure:

- **People Living in Radon Resistant Homes**

Performance Database: An annual survey reported on a calendar year basis used for over a decade to calculate results.

Data Source: The survey is an annual sample of home builders in the United States most of whom are members of the National Association of Home Builders (NAHB). NAHB members construct 80% of the homes built in the United States each year. Using a survey methodology reviewed by EPA, NAHB Research Center estimates the percentage of these homes that are built radon resistant. The percentage built radon resistant from the sample is then used to estimate what percent of all homes built nationwide are radon resistant. To calculate the number of people living in radon resistant homes, EPA assumes an average of 2.67 people per household. NAHB Research Center has been conducting this annual builder practices survey for over a decade, and has developed substantial expertise in the survey's design, implementation, and analysis. The statistical estimates are typically reported with a 95 percent confidence interval.

Methods, Assumptions, and Suitability: NAHB Research Center conducts an annual survey of home builders in the United States to assess a wide range of builder practices. NAHB Research Center voluntarily conducts this survey to maintain an awareness of industry trends in order to improve American housing and to be responsive to the needs of the home building industry. The annual survey gathers information such as types of houses built, lot sizes, foundation designs, types of lumber used, types of doors and windows used, etc. The NAHB Research Center Builder Survey also gathers information on the use of radon-resistant design features in new houses, and these questions comprise about two percent of the survey questionnaire.

In January of each year, the survey of building practices for the preceding calendar year is typically mailed out to home builders. For the most-recently completed survey, for building practices during calendar year 2002, NAHB Research Center reported mailing the survey to about 40,000 active United States home building companies, and received about 2,200 responses, which translates to a response rate of about 6 percent. The survey responses are analyzed, with respect to State market areas and Census Divisions in the United States, to assess the percentage and number of homes built each year that incorporate radon-reducing features. The data are also used to assess the percentage and number of homes built with radon-reducing features in high radon potential areas in the United States (high risk areas). Other analyses include radon-

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reducing features as a function of housing type, foundation type, and different techniques for radon-resistant new home construction. The data are suitable for year-to-year comparisons.

QA/QC Procedures: Because data are obtained from an external organization, QA/QC procedures are not entirely known. According to NAHB Research Center, QA/QC procedures have been established, which includes QA/QC by the vendor that is utilized for key entry of data.

Data Quality Review: Because data are obtained from an external organization, Data Quality Review procedures are not entirely known. NAHB Research Center indicates that each survey is manually reviewed, a process that requires several months to complete. The review includes data quality checks to ensure that the respondents understood the survey questions and answered the questions appropriately. NAHB Research Center also applies checks for open-ended questions to verify the appropriateness of the answers. In some cases, where open-ended questions request numerical information, the data are capped between the upper and lower three percent of the values provided in the survey responses. Also, a quality review of each year's draft report from NAHB Research Center is conducted by the EPA project officer.

Data Limitations: The majority of home builders surveyed are NAHB members. The NAHB Research Center survey also attempts to capture the activities of builders that are not members of NAHB. Home builders that are not members of NAHB are typically smaller, sporadic builders that in some cases build homes as a secondary profession. To augment the list of NAHB members in the survey sample, NAHB Research Center sends the survey to home builders identified from mailing lists of builder trade publications, such as Professional Builder magazine. There is some uncertainty as to whether the survey adequately characterizes the practices of builders who are not members of NAHB. The effects on the findings are not known.

Although an overall response rate of 6 percent could be considered low, it is the response rate for the entire survey, of which the radon-resistant new construction questions are only a very small portion. Builders responding to the survey would not be doing so principally due to their radon activities. Thus, a low response rate does not necessarily indicate a strong potential for a positive bias under the speculation that builders using radon-resistant construction would be more likely to respond to the survey. NAHB Research Center also makes efforts to reduce the potential for positive bias in the way the radon-related survey questions are presented.

Error Estimate: See Data Limitations

New/Improved Data or Systems: None

References: The results are published by the NAHB Research Center in annual reports of radon-resistant home building practices. See <http://www.nahbrc.org/> for more information about NAHB (last accessed 12/22/04). The most recent report, "Builder Practices Report: Radon Reducing Features in New Construction 2002," Annual Builder and Consumer Practices Surveys

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by the NAHB Research Center, Inc., December 29, 2003. Similar report titles exist for prior years.

FY 2006 Performance Measure

- **People Living in Radon Mitigated Homes**

Performance Database: Since 2003, external data are collected once a calendar year. From 1995 to 2002, the data was collected on a biennial calendar year basis.

Data Source: Radon fan manufacturers report fan sales to the Agency. EPA assumes one fan per radon mitigated home and then multiplies it by the assumed average of 2.67 people per household.

Methods, Assumptions and Suitability: N/A.

QA/QC Procedures: Because data are obtained from an external organization, EPA relies on the business practices for reporting data of the radon fan manufacturers.

Data Quality Review: Data are obtained from an external organization. EPA reviews the data to ascertain their reliability and discusses any irregularities with the relevant manufacturer.

Data Limitations: Reporting by radon fan manufacturers is voluntary and may underestimate the number of radon fans sold. Nevertheless, these are the best available data to determine the number of homes mitigated. There are other methods to mitigate radon including: passive mitigation techniques of sealing holes and cracks in floors and foundation walls, installing sealed covers over sump pits, installing one-way drain valves in untrapped drains, and installing static venting and ground covers in areas like crawl spaces. Because there are no data on the occurrence of these methods, there is again the possibility that the number of radon mitigated homes has been underestimated.

No radon vent fan manufacturer, vent fan motor maker or distributor is required to report to EPA; they provide data/information voluntarily to EPA. There are only four (4) radon vent fan manufacturers of any significance; one of these accounts for an estimated 70% of the market. Radon vent fans are unlikely to be used for non-radon applications. However, vent fans typically used for non-radon applications are perhaps being installed as substitutes for radon vent fans in some instances; estimated to be less than 1% of the total market. Ascertaining the actual number of radon vent fans used for other applications, and the number of non-radon fans being substituted in radon applications, would be difficult and expensive at this time relative to the benefit of having such data.

Error Estimate: N/A.

New/Improved Data or Systems: None

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References: See <http://www.epa.gov/iaq/radon/pubs/index.html> last accessed 12/22/2004 for National performance/progress reporting (National Radon Results: 1985-1999) on radon, measurement, mitigation and radon-resistant new construction. An update to this results report is expected to be finalized by March 2005. Data through 2002 are available from the Indoor Environments Division of the Office of Air and Radiation.

FY 2006 Performance Measure

- **Number of people with asthma who have taken steps to reduce their exposure to indoor environmental asthma triggers**

Note: The name of the “*National Survey on Environmental Management of Asthma*” has been changed to “*National Survey on Environmental Management of Asthma and Children’s Exposure to ETS*” to more appropriately reflect its actual content. Although this is a name change from that approved by OMB under the Information Collection Request (ICR), in all other respects, the content and substance of the survey are the same.

Performance Database: The performance database consists of quarterly Partner status reports used to document the outcomes of individual projects; a media tracking study used to assess behavior change within that sector of the public viewing the public service announcements; and a national telephone survey (*National Survey on Environmental Management of Asthma and Children’s Exposure to ETS*) which seeks information about the measures taken by people with asthma, and parents of children with asthma, to minimize exposure to indoor environmental asthma triggers. Since 2000, the Agency relies on two other sources of information collected on an annual calendar year basis. Additional information about asthma morbidity and mortality in the US is obtained from the Centers for Disease Control and Prevention (CDC). Annual expenditures for health and lost productivity due to asthma are obtained from the National Heart Lung and Blood Institute (NHLBI) Chartbook www.nhlbi.nih.gov/resources/docs/02_chtbk.pdf last accessed 12/22/2004.

Data Source: Each component of the database has a unique source. Partner status reports are generated by those organizations receiving funding from EPA and are maintained by individual EPA Project Officers. An independent initiative of the Advertising Council provides media tracking of outcomes of all of their public service campaigns and this is publicly available information. The *National Survey on Environmental Management of Asthma and Children’s Exposure to ETS* (OMB control number 2060-0490) source is EPA. Data on asthma morbidity and mortality is available from the National Center for Health Statistics at the CDC (www.cdc.gov/nchs). Data on annual expenditures for health and lost productivity due to asthma are obtained from the NHLBI Chartbook.

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Methods, Assumptions and Suitability: End-of-year performance is a best professional estimate using all data sources. The survey provides more statistically sound results for one period of time; the next scheduled survey will provide performance results for year 2008.

Partner status reports: EPA requires (programmatic terms and conditions of the award) all funded organizations to provide quarterly reports identifying the numbers of children, adults, and health care professionals educated about indoor asthma triggers, the numbers of homes, schools, and child care centers in which triggers have been identified, and the type of mitigation actions taken in these environments. In addition, decreases in the number of emergency room visits, hospitalizations, and other markers of asthma morbidity are requested from those partner organizations with access to such data. EPA believes that the information reflects progress made at achieving performance measures.

National Survey on Environmental Management of Asthma and Children's Exposure to ETS (OMB control number 2060-0490): This survey is the most robust data set for this performance measure, but it is not administered annually. It (telephonic survey) was designed in consultation with staff from EPA and the CDC National Center for Health Statistics (NCHS) to ensure that respondents will understand the questions asked and will provide the type of data necessary to measure the Agency's objectives. In addition, care has been taken to ensure that the survey questions target the population with asthma by using the same qualifier question that appears on other national surveys on asthma collected by the CDC.

From an initial sampling frame of 124,994 phone numbers, 14,685 households were contacted successfully and agreed to participate in the screening survey. Of the 14,685 individuals screened, approximately 18 percent, or 2,637 individuals, either have asthma or live with someone who does. Only those individuals who have asthma or live with someone who does were considered to be eligible respondents.

Respondents were asked to provide primarily yes/no responses. In some cases, respondents were given a range of responses in the form of multiple choice questions and were asked to indicate the one which best defined their response. The survey seeks information on those environmental management measures that the Agency considers important in reducing an individual's exposure to known indoor environmental asthma triggers. By using yes/no and multiple choice questions, the Agency has substantially reduced the amount of time necessary for the respondent to complete the survey and has ensured consistency in data response and interpretation.

The information collected has been used to establish a baseline to reflect the characteristics of our nation's asthma population and future iterations of this survey will measure additional progress toward achieving performance measures.

QA/QC Procedures: It is assumed that partner organizations report data as accurately and completely as possible; site-visits are conducted by EPA project officers as warranted. The National Survey is designed in accordance with approved Agency procedures. Additional information is available on the Internet: <http://www.epa.gov/icr/players.html> last accessed

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[12/22/2004](#). The computer assisted telephone interview methodology used for this survey helps to limit errors in data collection. In addition, the QA/QC procedures associated with conducting the survey include pilot testing of interview questions, interviewer training to ensure consistent gathering of information, and random data review to reduce the possibility of data entry error.

Data Quality Review: EPA reviews the data from all sources to ascertain reliability.

Data Limitations: The primary limitation associated with Partner organization status reporting is that limitation inherent to self-reporting. For the National Survey, random digit dialing methodology is used to ensure that a representative sample of households has been contacted; however, the survey is subject to inherent limitations of voluntary telephone surveys of representative samples. For example, 1) survey is limited to those households with current telephone service; 2) interviewers may follow survey directions inconsistently. An interviewer might ask the questions incorrectly or inadvertently lead the interviewee to a response; or 3) the interviewer may call at an inconvenient time (i.e., the respondent might not want to be interrupted at the time of the call and may resent the intrusion of the phone call; the answers will reflect this attitude.).

Error Estimate: In its first data collection with this instrument, the Agency achieved results within the following percentage points of the true value at the 95 percent confidence level (survey instrument):

Adult Asthmatics	plus or minus	2.4%
Child Asthmatics	plus or minus	3.7%
Low Income Adult Asthmatics	plus or minus	6.1%

These precision rates are sufficient to characterize the extent to which the results measured by the survey accurately reflect the characteristics of our nation's asthmatic population.

New/Improved Data or Systems: Data from the *National Survey on Environmental Management of Asthma and Children's Exposure to ETS* (OMB control number 2060-0490) were collected from August 4-September 17, 2003 and represent the first data collection with this instrument.

References: National Center for Health Statistics, Centers for Disease Control and Prevention (www.cdc.gov/nchs/ last accessed 12/22/2004)

EPA Indoor Environments Division (www.epa.gov/iaq/ last accessed 12/22/2004)

FY 2006 Performance Measure

- **Number of Children 6 and Under not Exposed to Secondhand Smoke (ShS) in the Home**

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Performance Database: The performance database consists of Smoke-free Home Pledges that are tracked through a hotline and website and are documented in a monthly pledge report generated by EPA staff. Cooperative Agreement Partner status reports are used to document the outcomes of individual projects; and a state and local technical assistance database documents known activities and partners in the field. A national telephone survey (*National Survey on Environmental Management of Asthma and Children's Exposure to ETS*), which includes a series of questions about whether respondents allow smoking in their home, whether young children are in the home, what resident family members smoke and how often, and how much visitors contribute to exposure, is used to track progress toward reducing exposure. Information about ShS in the US is obtained periodically from the Centers for Disease Control and Prevention (CDC) including the National Health Interview Survey (for use in benchmarking because the same questions on ShS were asked in the 1994 and 1998 baseline National Health Interview Surveys as the National Survey on Environmental Management of Asthma and Children's Exposure to ETS), the National Health and Nutrition Examination Survey (for cotinine data), and the Behavioral Risk Factor Surveillance Survey (for state tobacco/ShS exposure data).

Data Source: Each component of the database has a unique source. For the *National Survey on Environmental Management of Asthma and Children's Exposure to ETS* (OMB control number 2060-0490), the source is EPA. Additional references are the US Surgeon General's report on tobacco (which includes the 1986 seminal document on involuntary smoking and demographic profiles of smoking/ShS exposure in US), the National Cancer Institute's (NCI) *Tobacco Monograph Series* (compiles the sum of current knowledge including clinical trials, clinical guidelines and the validation of both the EPA and California EPA risk assessments), the NCI funded *Tobacco Use Supplement* portion of the U.S. Census Bureau's *Current Population Survey* (contains fundamental policy questions regarding tobacco/ShS including smoking in the home), and *Healthy People 2010* (which includes information on cotinine, ShS exposure and children).

Additionally, cooperative partner status reports are generated by those organizations receiving funding from EPA and are maintained by individual EPA project officers.

Methods, Assumptions and Suitability: *Partner status reports:* EPA requires all funded organizations to provide status reports on their activities identifying, for example, number of presentations given, pledges signed, number of people trained (i.e. health officials, daycare providers), number of parents reached, and projected number of children no longer exposed as a result of their activities. EPA believes that the information reflects progress made at achieving performance objectives.

National Survey on Environmental Management of Asthma and Children's Exposure to ETS (OMB control number 2060-0490): This survey is the most robust data set for the performance measure; however it is not administered annually. The next survey will provide 2008 results.

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EPA designed the survey instrument (telephonic survey) in consultation with the CDC National Center for Health Statistics (NCHS) to ensure that respondents would understand the questions asked and would provide the type of data necessary to measure the Agency's performance. From the initial sampling frame of 124,994 phone numbers, 14,685 were contacted successfully and agreed to participate in the screening survey. ETS information was obtained from these individuals. The sample was large enough to yield the number of responses necessary to achieve an estimated two percent precision rate at a 95 percent confidence level. Respondents were asked to provide primarily yes/no responses. In some cases, respondents were given a range of responses in the form of multiple choice questions and were asked to indicate the one which best defined their response. By using yes/no and multiple-choice questions, the Agency substantially reduced the amount of time necessary for the respondent to complete the survey and ensured consistency in data response and interpretation. EPA believes that the information collected can be used as an additional benchmark to the 1994 and 1998 National Health Interview Survey data in order to accurately reflect the percentage of children 6 and under exposed to ShS in the home and progress in achieving performance objectives.

End-of-year performance is a best professional estimate using all data sources. The survey provides more statistically sound results for one period of time; the next scheduled survey will provide performance results for year 2008.

QA/QC Procedures: With regard to partner organization reports, EPA assumes that the data are collected and reported as accurately and completely as possible; site-visits are conducted by EPA project officers as warranted. The National Survey on Environmental Management of Asthma and Children's Exposure to ETS was designed in accordance with approved Agency procedures. Additional information is available on the Internet: <http://www.epa.gov/icr/players.html> last accessed 12/22/2004.

Data Quality Review: EPA reviews the data from all sources in the performance database to ascertain reliability and resolves any discrepancies.

Data Limitations: The primary limitation associated with Cooperative Agreement Partner status reporting is that self-reporting has an inherent limitation. For the National Survey, random digit dialing methodology is used to ensure that a representative sample of households has been contacted; however, the survey is subject to inherent limitations in voluntary telephone surveys of representative samples. Limitations of phone surveys include: 1) possible inconsistency of interviewers following survey directions. For example, an interviewer might; ask the questions incorrectly or inadvertently lead the interviewee to a response; or 2) call at an inconvenient time. For example, the respondent might not want to be interrupted at the time of the call and may resent the intrusion of the phone call. The answers will reflect this attitude. In addition, a telephone survey is limited to those households with a telephone or households that speak English. A limitation of the survey in general is that the survey represents a single point and cannot, as a stand-alone document, represent the changes in demographics and population over time.

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Currently available cotinine survey data do not address 50% of the age specific portion of EPA's target population. It does not include birth to three years old, the portion of children most susceptible to the effects of ETS.

Error Estimate: EPA's survey was designed to ensure that, at the 95 percent confidence level, its estimate of the number of children 6 and under not exposed to ShS in the house is within approximately two percentage points of the true value.

New/Improved Data or Systems: Data from the *National Survey on Environmental Management of Asthma and Children's Exposure to ETS* (OMB control number 2060-0490) was collected from August 4-September 17, 2003 and represents the first data collection with this instrument. This survey utilized the exact questions on ShS from the 1994 and 1998 baseline National Health Interview Surveys and will assist in evaluating progress made at achieving our goal.

References: EPA Indoor Environments Division (www.epa.gov/iaq/)

National Health Interview Survey and National Health and Nutrition Examination Survey are part of the National Center for Health Statistics, Centers for Disease Control and Prevention (<http://www.cdc.gov/nchs> last accessed 12/22/2004)

Behavioral Risk Factor Surveillance Survey, Centers for Disease Control and Prevention (<http://www.cdc.gov/brfss/index.htm> last accessed 12/22/2004),

US Surgeon General's report on tobacco (<http://www.cdc.gov/tobacco/sgr/index.htm/> last accessed 12/28/2004),

National Cancer Institute's (NCI) *Tobacco Monograph Series* (<http://cancercontrol.cancer.gov/tcrb/monographs/> last accessed 12/22/2004),

NCI funded *Tobacco Use Supplement* portion of the US Census Bureau's *Current Population Survey* (<http://riskfactor.cancer.gov/studies/tus-cps/> last accessed 12/22/2004),

Healthy People 2010 (<http://www.healthypeople.gov/> last accessed 12/22/2004).

FY 2006 Performance Measure

- **Students, faculty and staff experiencing improved indoor air quality in their schools**

Performance Database: The performance data consist of cooperative partner status reports, annual results reports from the EPA, and tracking numbers of disseminated Tools for Schools kits (TfS). A survey of a representative sample of schools was completed by EH&E Inc. of Newton, MA during calendar year 2002. The survey verified the number of schools using indoor

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air quality management plans consistent with EPA guidance. However, the survey is not administered on an annual basis.

Data Source: The sources of the data include cooperative partners and EPA, the National Clearinghouse on the numbers of kits disseminated, and the statistical sample of all the public and private schools in the nation during the 1999 – 2000 school year (data are from the United States Department of Education National Center for Education Statistics).

Methods, Assumptions and Suitability: Calculations for the number of people experiencing improved IAQ are based upon an average 525 students, staff and faculty per school (data are from the United States Department of Education National Center for Education Statistics). That number, along with the number of schools that are adopting/implementing TfS, are used to estimate the performance result.

End-of-year performance is a best professional estimate using all data sources. The survey provides more statistically sound results for one period of time; the next scheduled survey will provide performance results for year 2008.

QA/QC Procedures: It is assumed that partner organizations report data as accurately and completely as possible; site visits and regular communication with grantees are conducted by EPA projects officers.

Data Quality Review: EPA reviews the data from all sources in the performance database to ascertain reliability and to resolve any discrepancies.

Data Limitations: The primary limitation associated with Cooperative Agreement Partner status reporting is that self-reporting has an inherent limitation.

Error Estimate: N/A

New/Improved Data or Systems: Prior to the survey, EPA tracked the number of schools receiving the TfS guidance and estimated the population of the school to determine the number of students/staff experiencing improved indoor air quality. The survey was administered to establish a baseline for schools implementing IAQ management practices. EPA queried a statistically representative sample of schools to estimate the number of schools that have actually adopted and implemented good IAQ management practices consistent with the TfS guidance. EPA plans to re-administer the survey beginning in FY 2006 timeframe.

References: See the United States Department of Education National Center for Education Statistics, <http://nces.ed.gov/>. See also Indoor Air Quality Tools for Schools Kit (402-K-95-001) at <http://www.epa.gov/iaq/schools> last accessed 12/22/2004.

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FY 2006 Performance Measure:

- **Office Workers experiencing improved indoor air quality in their workplaces**

Performance Database: Since fiscal year 1999 and each fiscal year thereafter, the performance database consists of the annual number of requested copies of building indoor air quality guidance documents, (e.g. EPA's Building Air Quality, I-Beam, a computer software designed to be a comprehensive state-of-the-art guidance for managing IAQ in commercial buildings, Mold Remediation in Schools and Commercial Buildings) and training conducted through cooperative agreements or other government agencies (GSA) using EPA documents. In addition, EPA conducted a voluntary pilot survey of building owners and managers in 2001 to determine the use of indoor air quality (IAQ) management practices in U.S. office buildings.

Data Source: The pilot survey was developed by EPA and distributed by the Building Owners and Managers Association (BOMA). The pilot survey's purpose and design received approval from the Office of Management and Budget. The survey is not administered on an annual basis.

Methods, Assumptions and Suitability: The pilot survey included data regarding: the size and uses of a selected building; documentation of management practices employed in the building; how the heating, ventilating, and air-conditioning systems are managed; how pollution sources are addressed; housekeeping and pest management practices; remodeling and renovation activities; and responses to tenant complaints regarding IAQ. A sampling frame was developed based upon random sampling of the membership lists from BOMA, the International Facilities Managers Association (IFMA) and buildings managed by the General Services Administration (GSA). The final sample size, (and survey recipient list) was 3,612 and we received 591 completed surveys. The survey results identified both strengths and weaknesses in building management practices in U.S. office buildings.

End-of-year performance is a best professional estimate using all data sources. The survey provides more statistically sound results for one period of time.

QA/QC Procedures: Survey was designed in accordance with approved Agency procedures. Additional information is available on the Internet: <http://www.epa.gov/icr/players.html/> last accessed 12/22/2004. The quality review was conducted by BOMA.

Data Quality Review: BOMA had responsibility for the accuracy of data entered into the database. Quality assurance safeguards were used in the data entry. BOMA, and EPA's contractor reviewed individual survey responses for accuracy during the aggregation and analyses activities.

Data Limitations: The primary limitation associated with basing estimates on requests for guidance documents and training is the unknown factor of how many of the requests resulted in improved indoor air quality. The survey provided a reference point on progress. The survey

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results are subject to the limitations inherent in survey sampling. The response rate of 14% for the survey was low due to the timing of the survey administration and subsequent events in September and October 2001.

Error Estimate: 4% precision at a 95% confidence level.

New/Improved Data or Systems: None

References: N/A

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Goal 1 Objective 3

FY 2006 Performance Measure:

- **Restrict Domestic Consumption of Class II HCFCs**
- **Restrict Domestic Exempted Production and Import of Newly Produced Class I CFCs and Halons**

Performance Database: The Allowance Tracking System (ATS) database is maintained by the Stratospheric Protection Division (SPD). The ATS is used to compile and analyze quarterly information on U.S. production, imports, exports, transformations, and allowance trades of ozone-depleting substances (ODS). Results are reported on a calendar-year basis.

Data Source: Progress on restricting domestic exempted consumption of Class I CFCs and halons is tracked by monitoring industry reports of compliance with EPA's phaseout regulations. U.S. companies that produce, import, and export ODS provide the data, typically in quarterly reports. Specific requirements as outlined in the Clean Air Act are available on the Internet at <http://www.epa.gov/oar/caa/caa603.txt>.

Methods, Assumptions and Suitability: Data are aggregated across all U.S. companies for each individual ODS to analyze total U.S. consumption and production.

QA/QC Procedures: Reporting and record keeping requirements are published in 40 CFR Part 82, Subpart A, Sections 82.9 through 82.24. These sections specify the required data and accompanying documentation that companies must submit or maintain on site to demonstrate their compliance.

The ATS data are subject to a Quality Assurance Plan (Quality Assurance Plan, USEPA Office of Atmospheric Programs, October 2004). In addition, the data are subject to an annual quality assurance review, coordinated by Office of Air and Radiation (OAR) staff separate from those on the team normally responsible for data collection and maintenance. The ATS is programmed to ensure consistency of the data elements reported by companies. The tracking system flags inconsistent data for review and resolution by the tracking system manager. This information is then cross-checked with compliance data submitted by reporting companies. SPD maintains a user's manual for the ATS that specifies the standard operating procedures for data entry and data analysis. EPA regional inspectors perform inspections and audits on site at the producers', importers', and exporters' facilities. These audits verify the accuracy of compliance data submitted to EPA through examination of company records.

Data Quality Reviews: The Government Accounting Office (GAO) completed a review of U.S. participation in five international environmental agreements, and analyzed data submissions from the U.S. under the Montreal Protocol on Substances that Deplete the Ozone Layer. No deficiencies were identified in their January 2003 report.

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Data Limitations: None. Data are required by the Clean Air Act.

Error Estimate: None.

New/Improved Data or Systems: SPD is developing a system to allow direct electronic reporting.

References: See <http://www.epa.gov/ozone/desc.html> for additional information on ODSs. See <http://www.unep.ch/ozone/montreal.shtml> for additional information about the Montreal Protocol. See <http://www.unmfs.org/> for more information about the Multilateral Fund. Quality Assurance Plan, USEPA Office of Atmospheric Programs, October 2004.

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Goal 1 Objective 4

FY 2006 Performance Measure:

- **Purchase and Deploy State-of-Art Monitoring Units**

Performance Data: Data from the near real-time gamma component of the Environmental Radiation Ambient Monitoring System (ERAMS) will be stored in an internal EPA database at the National Air and Radiation Environmental Laboratory (NAREL) in Montgomery, Alabama. Expect to receive results every fiscal year beginning in FY 2006.

Data Source: Environmental Radiation Ambient Monitoring System (ERAMS). When the system is fully operational, data on ionizing radiation in air will be available in near real-time from a total of 180 monitoring units.

Methods, Assumptions and Suitability: Assuming that funding is continued in future years and the project receives all necessary approvals, the existing air sampling equipment will be replaced with state-of-the art air monitors that include near real-time gamma radiation detection capability. Addition of detectors and communication systems will provide notification about significant radioactive contamination events to decision- makers within hours

QA/QC Procedures: Quality Assurance and Quality Control Procedures will follow the Agency guidelines and be consistent with a specific Quality Assurance Plan that will be completed once the Agency tests and accepts the fixed radiation monitor prototype (given current assumptions, we expect delivery of the prototype in spring 2005 and finalization of the quality assurance plan in early summer). All monitoring equipment will be periodically calibrated with reliable standards and routinely checked for accuracy with onsite testing devices. Laboratory analyses of air filters and other environmental media are closely controlled in compliance with the NAREL Quality Management Plan and applicable Standard Operating Procedures.

Data Quality Reviews: The database will screen all incoming data from the monitoring systems for abnormalities as an indicator of either a contamination event or an instrument malfunction. Data will be held in a secure portion of the database until verified by trained personnel. Copies of quality assurance and quality control testing will also be maintained to assure the quality of the data.

Data Limitations: Data are limited in near real-time to gamma emitting radionuclide identification and quantification. Radiation levels from gamma-emitting nuclides that will be so low as to be “undetectable” will be significantly below health concerns that require immediate action. Lower levels of radioactive materials in the samples will be measured through laboratory-based analyses and data will be available within days after the sample is received.

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Error Estimate: The overall error in detection capability is estimated to be within 50% of the actual concentration based on previous experience with similar measurement systems. An error analysis will be performed on the prototype systems during the process of detector selection.

New/Improved Performance Data or Systems: New air samplers will maintain steady flow rates that are measured during operation and corrected for varying environmental conditions. Addition of gamma spectrometric detectors and computer-based multi-channel analyzers to the air samplers provide near real-time analyses of radioactive content in particles captured by the filter. In addition to data collection the onboard computer systems can communicate results of analyses back to a central database and even identify abnormal conditions that might require action. These improvements not only include higher quality data, but also will provide information regarding contamination events to decision-makers within hours instead of days. The number and location of monitoring sites will be improved to provide representative sampling for much more of the nation's population.

References: For a additional information about the continuous monitoring system, ERAMS see: <http://www.epa.gov/narel/erams/aboutus.html#mission> last accessed 12/22/2004

NAREL Quality Management Plan, Revision 1, March 15, 2001.

FY 2006 Performance Measure:

- **Percentage of EPA RERT members that meet scenario-based criteria**

Performance Data: To determine the effectiveness of RERT performance, an output measure has been developed that scores RERT members on a scale of one (1) to 100 against scenario-based criteria. A baseline evaluation was performed in FY03, based on the effectiveness of the RERT in responses to actual incidents and a major national exercise (TOPOFF2). RERT members were evaluated in their ability to: (1) provide effective field response, (2) support coordination centers, and (3) provide analytical capabilities and throughout as needed to support a single small-to-medium scale incident. Overall RERT effectiveness in this baseline analysis was measured at approximately 13 percent. In FY 2004, RERT members were re-evaluated, through a major exercise, in the ability factors listed above. In FY 2005, the evaluation criteria will be reevaluated and revised in response to the results of the FY 2004 exercise as well as changes necessitated by the Homeland Security Act of 2002. Under this Act, the Department of Homeland Security (DHS) is required to develop evaluation criteria and test the effectiveness of the Nuclear Incident Response Team (NIRT), which includes EPA's RERT assets. Thus, the output measure tentatively outlined above will be modified both in response to lessons learned at the exercise and in cooperation with DHS to meet the needs of the NIRT. Data will be collected on a fiscal year basis starting in FY 2003.

Data Source: DHS is responsible for assuring that all Federal Emergency Response assets maintain an adequate level of readiness (Homeland Security Act of 2002). EPA assumes that DHS will maintain a data system to evaluate and assess the readiness of assets across the federal

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government. EPA will perform evaluations of its own assets including exercises such as the FY 2004 exercise and report results under this measure, but must rely on the DHS data source for key information.

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: N/A

Data Quality Reviews: N/A

Data Limitations: The expectations for performance of EPA's RERT are currently evolving. Under Section 501 of the Homeland Security Act of 2002, DHS's Under Secretary for Emergency Preparedness and Response will establish standards as part of the NIRT that will be applicable to EPA's RERT assets. DHS will evaluate the NIRT's performance against these new standards, which have not yet been developed. The requirements for the RERT (i.e., what is actually expected of RERT members during a response) may change because of the new standards. This uncertainty means that the current evaluation may not effectively reflect future criteria.

Error Estimate: N/A

New/Improved Data or Systems: None

References: The Homeland Security Act of 2002.

FY 2006 Performance Measure:

- **Drums of Radioactive Waste Disposed of according to EPA Standards**

Performance Data: The Department of Energy (DOE) Waste Isolation Pilot Plant (WIPP) database contains the number of drums shipped by DOE waste generator facilities and placed in the DOE WIPP. The WIPP is a DOE facility located in southeastern New Mexico, 26 miles from Carlsbad. The WIPP Land Withdrawal Act was passed by Congress in October 1992 and amended in September 1996. The act transferred the land occupied by the WIPP to DOE and gave EPA regulatory responsibility for determining whether the facility complies with radioactive waste disposal standards. Results are calculated on a fiscal year basis and have been reported annually since 1999.

Data Source: Department of Energy

Methods, Assumptions and Suitability: N/A

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QA/QC Procedures: The performance data used by EPA are collected and maintained by DOE. Under EPA's WIPP regulations (available on the Internet:

<http://www.epa.gov/radiation/wipp/background.htm> (last accessed 7/21/2004), all DOE WIPP-related data must be collected and maintained under a comprehensive quality assurance program meeting consensus standards developed by the American Society of Mechanical Engineers (ASME) (available on the Internet: <http://www.asme.org/codes/> (last accessed 12/22/2004)). EPA conducts regular inspections to ensure that these quality assurance systems are in place and functioning properly; no additional QA/QC of the DOE data is conducted by EPA.

Data Quality Reviews: N/A

Data Limitations: The DOE WIPP database contains the number of drums shipped by DOE waste generator facilities and placed in the DOE WIPP. Currently, there are five DOE waste generator facilities that are approved to generate and ship waste: Los Alamos National Laboratory, Rocky Flats Environmental Technology Site, Hanford Site, Idaho National Engineering and Environmental Laboratory, Savannah River Site.

Before DOE waste generator facilities can ship waste to the WIPP, EPA must approve the waste characterization controls and quality assurance procedures for waste identification at these sites. EPA conducts frequent independent inspections and audits at these sites to verify continued compliance with radioactive waste disposal standards and to determine if DOE is properly tracking the waste and adhering to specific waste component limits. Once EPA gives its approval, the number of drums shipped to the WIPP facility on an annual basis is dependent on DOE priorities and funding. EPA volume estimates are based on projecting the average shipment volumes over 40 years with an initial start up.

Error Estimate: N/A

New/Improved Data or Systems: None

References: The Department of Energy National TRU Waste Management Plan Quarterly Supplement http://www.wipp.ws/library/caolib.htm#Controlled_ (last accessed 12/22/2004) contains information on the monthly volumes of waste that are received at the DOE WIPP.

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Goal 1 Objective 5

FY 2006 Performance Measure:

- **Annual Greenhouse Gas Emissions Reductions overall and by Sector**

Performance Database: Climate Protection Partnerships Division Tracking System. The tracking system's primary purpose is to maintain a record of the annual greenhouse gas emissions reduction goals and accomplishments for the voluntary climate program using information from partners and other sources.. It also measures the electricity savings and contribution towards the President's greenhouse gas intensity goal (The President's green house gas intensity goal was announced by the President February 2002. Please check the White House website for more details). Results are reported annually and calculated on a calendar-year basis.

Data Source: EPA develops carbon and non-CO₂ emissions baselines. A baseline is the "business-as-usual" case without the impact of EPA's voluntary climate programs. Baseline data for carbon emissions related to energy use comes from the Energy Information Agency (EIA) and from EPA's Integrated Planning Model (IPM) of the U.S. electric power sector. These data are used for both historical and projected greenhouse gas emissions and electricity generation, independent of partners' information to compute emissions reductions from the baseline and progress toward annual goals. The projections use a "Reference Case" for assumptions about growth, the economy, and regulatory conditions. Baseline data for non-carbon dioxide (CO₂) emissions, including nitrous oxide and other high global warming potential gases, are maintained by EPA. The non-CO₂ data are compiled with input from industry and also independently from partners' information.

Data collected by EPA's voluntary programs include partner reports on facility- specific improvements (e.g. space upgraded, kilowatt-hours (kWh) reduced), national market data on shipments of efficient products, and engineering measurements of equipment power levels and usage patterns

Baseline information is discussed at length in the U.S. Climate Action Report 2002. The report includes a complete chapter dedicated to the U.S. greenhouse gas inventory (sources, industries, emissions, volumes, changes, trends, etc.). A second chapter addresses projected greenhouse gases in the future (model assumptions, growth, sources, gases, sectors, etc.) U.S. Department of State. 2002. "U.S. Climate Action Report—2002. Third National Communication of the United States of America under the United Nations Framework Convention on Climate Change."

Partners do contribute *actual* emissions data biannually after their facility-specific improvements but these emissions data are not used in tracking the performance measure. EPA, however, validates the estimates of greenhouse gas reductions based on the actual emissions data received.

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Methods, Assumptions, and Suitability: Most of the voluntary climate programs' focus is on energy efficiency. For these programs, EPA estimates the expected reduction in electricity consumption in kilowatt-hours (kWh). Emissions prevented are calculated as the product of the kWh of electricity saved and an annual emission factor (e.g., million metric tons carbon equivalent (MMTCE) prevented per kWh). Other programs focus on directly lowering greenhouse gas emissions (e.g., Natural Gas STAR, Landfill Methane Outreach, and Coalbed Methane Outreach); for these, greenhouse gas emission reductions are estimated on a project-by-project basis. EPA maintains a tracking system⁴ for emissions reductions.

The Integrated Planning Model, used to develop baseline data for carbon emissions, is an important analytical tool for evaluating emission scenarios affecting the U.S. power sector. The IPM has an approved quality assurance project plan that is available from EPA's program office.

QA/QC Procedures: EPA devotes considerable effort to obtaining the best possible information on which to evaluate emissions reductions from voluntary programs. Peer-reviewed carbon-conversion factors are used to ensure consistency with generally accepted measures of Greenhouse Gas (GHG) emissions, and peer-reviewed methodologies are used to calculate GHG reductions from these programs.

Partners do contribute *actual* emissions data biannually after their facility-specific improvements but these emissions data are not used in tracking the performance measure. EPA, however, validates the estimates of greenhouse gas reductions based on the actual emissions data received.

Data Quality Review: The Administration regularly evaluates the effectiveness of its climate programs through interagency evaluations. The second such interagency evaluation, led by the White House Council on Environmental Quality, examined the status of U.S. climate change programs. The review included participants from EPA and the Departments of State, Energy, Commerce, Transportation, and Agriculture. The results were published in the *U.S. Climate Action Report-2002* as part of the United States' submission to the Framework Convention on Climate Change (FCCC). The previous evaluation was published in the *U.S. Climate Action Report-1997*. A 1997 audit by EPA's Office of the Inspector General concluded that the climate programs examined "used good management practices" and "effectively estimated the impact their activities had on reducing risks to health and the environment..."

Data Limitations: These are indirect measures of GHG emissions (carbon conversion factors and methods to convert material-specific reductions to GHG emissions reductions). Also, the voluntary nature of the programs may affect reporting. Further research will be necessary in order to fully understand the links between GHG concentrations and specific environmental impacts, such as impacts on health, ecosystems, crops, weather events, and so forth.

Error Estimate: These are indirect measures of GHG emissions. Although EPA devotes considerable effort to obtaining the best possible information on which to evaluate emissions

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reductions from its voluntary programs, errors in the performance data could be introduced through uncertainties in carbon conversion factors, engineering analyses, and econometric analyses. The only programs at this time aimed at avoiding GHG emissions are voluntary.

New/Improved Data or Systems: The Administration regularly evaluates the effectiveness of its climate programs through interagency evaluations. EPA continues to update inventories and methodologies as new information becomes available.

References: The U.S. Climate Action Report 2002 is available at: www.epa.gov/globalwarming/publications/car/index.html. The accomplishments of many of EPA's voluntary programs are documented in the Climate Protection Partnerships Division Annual Report. The most recent version is *Change for the Better: Energy Star and Other Voluntary Programs*, Climate Protection Partnerships Division 2002 Annual Report.

FY 2006 Performance Measure:

- **Annual Energy Savings**

Performance Database: Climate Protection Partnerships Division Tracking System. Results are reported annually and calculated on a calendar-year basis.

Data Source: Data collected by EPA's voluntary programs include partner reports on facility specific improvements (e.g. space upgraded, kilowatt-hours (kWh) reduced), national market data on shipments of efficient products, and engineering measurements of equipment power levels and usage patterns. EPA maintains a tracking system for energy reductions.

Methods, Assumptions, and Suitability: Most of the voluntary climate programs' focus is on energy efficiency. For these programs, EPA estimates the expected reduction in electricity consumption in kilowatt-hours (kWh). Emissions prevented are calculated as the product of the kWh of electricity saved and an annual emission factor (e.g., MMTCE prevented per kWh). Other programs focus on directly lowering greenhouse gas emissions (e.g., Natural Gas STAR, Landfill Methane Outreach, and Coalbed Methane Outreach); for these, greenhouse gas emission reductions are estimated on a project-by-project basis.

Energy bill savings are calculated as the product of the kWh of energy saved and the cost of electricity for the affected market segment (residential, commercial, or industrial) taken from the Energy Information Administration's (EIA) *Annual Energy Outlook* and *Annual Energy Review* for each year in the analysis (1993-2012). Energy bill savings also include revenue from the sale of methane and/or the sale of electricity made from captured methane. The net present value (NPV) of these savings was calculated using a 4-percent discount rate and a 2001 perspective.

QA/QC Procedures: EPA devotes considerable effort to obtaining the best possible information on which to evaluate energy savings from its voluntary programs.

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Data Quality Review: The Administration regularly evaluates the effectiveness of its climate programs through interagency evaluations. The second such interagency evaluation, led by the White House Council on Environmental Quality, examined the status of U.S. climate change programs. The review included participants from EPA and the Departments of State, Energy, Commerce, Transportation, and Agriculture. The results were published in the *U.S. Climate Action Report-2002* as part of the United States' submission to the Framework Convention on Climate Change (FCCC). The previous evaluation was published in the *U.S. Climate Action Report-1997*. A 1997 audit by EPA's Office of the Inspector General concluded that the climate programs examined "used good management practices" and "effectively estimated the impact their activities had on reducing risks to health and the environment...@

Data Limitations: The voluntary nature of programs may affect reporting. In addition, errors in the performance data could be introduced through uncertainties in engineering analyses and econometric analyses.

Error Estimate: Although EPA devotes considerable effort to obtaining the best possible information on which to evaluate emissions reductions from voluntary programs, errors in the performance data could be introduced through uncertainties in engineering analyses and econometric analyses.

New/Improved Data or Systems: The Administration regularly evaluates the effectiveness of its climate programs through interagency evaluations. EPA continues to update inventories and methodologies as new information becomes available.

References: The U.S. Climate Action Report 2002 is available at: www.epa.gov/globalwarming/publications/car/index.html. The accomplishments of many of EPA's voluntary programs are documented in the Climate Protection Partnerships Division Annual Report. The most recent version is *Protecting the Environment Together: Energy Star and Other Voluntary Programs*, Climate Protection Partnerships Division 2003 Annual Report [expected fall 2004].

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Goal 1 Objective 6

FY 2006 Performance Measure:

- **Fuel Economy of Typical SUV Vehicle with EPA-Developed Hybrid Technology Tested over EPA Driving Cycles**

Performance Database: Fuel economy test data for both urban and highway test cycles under the EPA Federal Test Procedure for passenger cars. The Clean Automotive Technology program commits EPA to develop technology by the end of the decade to satisfy stringent criteria emissions requirements and to at most double fuel efficiency in personal vehicles such as SUVs, pickups, and urban delivery vehicles -- while simultaneously meeting the more demanding size, performance, durability, and power requirements of these vehicles. The results are calculated on a fiscal year basis.

Data Source: EPA fuel economy tests performed at the National Vehicle and Fuel Emissions Laboratory (NVFEL), Ann Arbor, Michigan

QA/QC Procedures: EPA fuel economy tests are performed in accordance with the EPA Federal Test Procedure and all applicable QA/QC procedures. Available on the Internet: <http://www.epa.gov/otaq/sftp.htm>.

Methods, Assumptions and Suitability: N/A

Data Quality Reviews: EPA's NVFEL laboratory is recognized as a national and international facility for fuel economy and emissions testing. NVFEL is also the reference point for private industry.

Data Limitations: Primarily due to EPA regulations, vehicle fuel economy testing is a well established and precise exercise with extremely low test to test variability (well less than 5%). Additional information is available on the Internet: <http://www.epa.gov/otaq/testdata.html>. One challenge relates to fuel economy testing of hybrid vehicles (i.e., more than one source of onboard power), which is more complex than testing of conventional vehicles. EPA has not yet published formal regulations to cover hybrid vehicles. Relevant information is available on the Internet: http://www.ctts.nrel.gov/analysis/hev_test/procedures.shtml.

Error Estimate: N/A

New/Improved Data or Systems: EPA is using solid engineering judgment and consultations with other expert organizations (including major auto companies) to develop internal procedures for testing hybrid vehicles.

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References: See <http://www.epa.gov/otaq/testproc.htm> for additional information about testing and measuring emissions at the NVFEL.

FY 2006 Performance Measures:

- **Synthesis report with improved data on emissions and ambient concentrations for use in preparation and evaluation of state implementation plan development, application, and compliance determination.**
- **Integrated report on the health effects of different particle sizes or particle components in healthy and select susceptible subgroups**

Performance Database: Program output; no internal tracking system

Data Source: N/A

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: N/A

Data Quality Reviews: N/A

Data Limitations: N/A

Error Estimate: N/A

New/Improved Data or Systems: N/A

References: N/A

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Goal 2 Objective 1

FY 2006 Performance Measures:

- The percentage of the population served by community water systems that receive drinking water that meets all applicable health-based drinking water standards through effective treatment and source water protection
- The percentage of the population served by community water systems that receive drinking water that meets health-based standards with which systems need to comply as of December 2001
- The percentage of the population served by community water systems that receive drinking water that meets health-based standards with a compliance date of January 2002 or later (covered standards include: Stage I disinfection by-products/interim enhanced surface water treatment rule/long-term enhanced surface water treatment rule/arsenic)
- The percentage of community water systems that provide drinking water that meets health-based standards with which systems need to comply as of December 2001
- The percentage of community water systems that provide drinking water that meets health-based standards with a compliance date of January 2002 or later
- The percentage of population served by community water systems in Indian country that receive drinking water that meets all applicable health-based drinking water standards

Performance Database: Safe Drinking Water Information System - Federal Version (SDWIS or SDWIS-FED). SDWIS contains basic water system information, population served, and detailed records of violations of the Safe Drinking Water Act and the statute's implementing regulations. The performance measure is based on the population served by community water systems that were active during any part of the performance year and did not have any violations designated as "health based." Exceedances of a maximum contaminant level (MCL) and violations of a treatment technique are health-based violations. SDWIS has provided annual results for nine years and reports on a fiscal year basis.

Data Source: Data are provided by agencies with primacy (primary enforcement authority) for the Public Water Supply Supervision (PWSS) program. These agencies are either: States, EPA for non-delegated states or territories, and the Navajo Nation Indian tribe, the only tribe with primacy. Primacy agencies collect the data from the regulated water systems, determine compliance, and report a subset of the data to EPA (primarily inventory and summary violations).

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Methods, Assumptions and Suitability: Under the drinking water regulations, water systems must use approved analytical methods for testing for contaminants. State certified laboratories report contaminant occurrence to states that, in turn, determine exceedances of maximum contaminant levels or non-compliance with treatment techniques and report these violations to EPA. These results are subject to periodic performance audits and compared to results that states report to SDWIS. Primacy agencies' information systems and compliance determinations are audited on an average schedule of once every 3 years, according to a protocol. To measure program performance, EPA aggregates the SDWIS data into national statistics on overall compliance with health-based drinking water standards using the measures identified above.

QA/QC Procedures: EPA conducts a number of Quality Assurance/Quality Control steps to provide high quality data for program use, including:

- (1) SDWIS-FED edit checks built into the software to reject erroneous data.
- (2) Quality assurance manuals for states and Regions, which provide standard operating procedures for conducting routine assessments of the quality of the data, including timely corrective action(s).
- (3) Training to states on reporting requirements, data entry, data retrieval, and error correction.
- (4) User and system documentation produced with each software release and maintained on EPA's web site. System, user, and reporting requirements documents can be found on the EPA web site, <http://www.epa.gov/safewater/>. System and user documents are accessed via the database link <http://www.epa.gov/safewater/databases.html>, and specific rule reporting requirements documents are accessed via the regulations, guidance, and policy documents link <http://www.epa.gov/safewater/regs.html>.
- (5) Specific error correction and reconciliation support through a troubleshooter's guide, a system-generated summary with detailed reports documenting the results of each data submission, and an error code database for states to use when they have questions on how to enter or correct data.
- (6) User support hotline available 5 days a week.

The SDWIS-FED equivalent of a quality assurance plan is the data reliability action plan¹ (DRAP). The DRAP contains the processes and procedures and major activities to be employed and undertaken for assuring the data in SDWIS meet required data quality standards. This plan has three major components: assurance, assessment, and control.

Data Quality Review: SDWIS data quality was identified as an Agency weakness in 1999 and has a corrective action completion target date that extends to 2007. SDWIS' weaknesses center around five major issues: 1) completeness of the data (e.g., the inventory of public water systems, violations of maximum contaminant levels, enforcement actions) submitted by the states, 2) timeliness of the data sent by the states, i.e., if states do not report at specified times, then

¹ *Data Reliability Action Plan*. U.S. EPA, October 2002. Office of Ground Water and Drinking Water internal work plan document. *Drinking Water Data Reliability Analysis and Action Plan (2003) For State Reported Public Water System Data In the EPA Safe Drinking Water Information System/Federal Version (SDWIS/FED)*

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enforcement and oversight actions suffer, 3) difficulty receiving data from the states, 4) both cost and difficulty processing and storing data in SDWIS after it has been received, and 5) difficulty getting SDWIS data for reporting and analysis. Two (2000 and 2003) Data Reliability Action Plans focus on the first two issues, and an information strategic plan² (ISP) has been developed and is being implemented to address the last three issues, which deal primarily with technology (hardware and software) concerns. For instance, the ISP documents ways to improve tools and processes for creating and transferring data to EPA. The ISP incorporates newer technologies and adapts the Agency's Enterprise Architecture Plan to integrate data and allow the flow of data from reporting entities to EPA via the Agency's secure central data exchange (CDX) environment. Detailed activities and implementation schedules are included in these documents, and the Agency expects to implement these additional improvements by the end of 2005.

Routine data quality assurance and quality control (QA/QC) analyses of the Safe Drinking Water Information System (SDWIS) by the Office Water (OW) have revealed a degree of non-reporting of violations of health-based drinking water standards, and of violations of regulatory monitoring and reporting requirements (discussed further under Data Limitations). As a result of these data quality problems, the baseline statistic of national compliance with health-based drinking water standards likely is lower than previously reported. The Agency is engaged in statistical analysis and in discussions with states to more accurately quantify the impact of these data quality problems on the estimate of national compliance with health-based drinking water standards. Even as improvements are made, SDWIS serves as the best source of national information on compliance with Safe Drinking Water Act requirements for program management, the development of drinking water regulations, trends analyses, and public information.

Data Limitations: Recent state data verification and other quality assurance analyses indicate that the most significant data quality problem is under-reporting of monitoring and health-based standards violations and inventory characteristics. The most significant under-reporting occurs in monitoring violations. Even though those are not covered in the health based violation category, which is covered by the performance measure, failures to monitor could mask treatment technique and MCL violations. Such under-reporting of violations limits EPA's ability to: 1) accurately portray the amount of people affected by health-based violations, 2) undertake geo-spatial analysis, 3) integrate and share data with other data systems, and 4) precisely quantify the population served by systems, which are meeting the health-based standards. Therefore, the estimates of population-served could be high or low. As described in the Data Quality Review section above, EPA is currently changing the protocol to enhance the results of data audits as the best near-term option to improve these estimates, while continuing to explore other approaches, including use of contaminant occurrence data.

² U.S. EPA, Office of Water, *Office of Ground Water and Drinking Water Information Strategy* (under revision). See *Options for OGWDW Information Strategy (Working Draft)*, EPA 816-P-01-001. Washington, DC, February 2001. Available on the Internet at <http://www.epa.gov/safewater/data/informationstrategy.html>

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Error Estimate: EPA will be analyzing data, derived from the improved data audit protocol, with a robust statistical basis from which to extrapolate national results, and better aligned with requirements of the Data Quality Act. The long-term value of the improved audit process is that each year's results will be statistically representative and provide information closer in time to the needed performance reporting; for example, 2005 results, the first year of the improved audit process will be reported in 2006.

New/Improved Data or Systems: Several approaches are underway.

First, EPA will continue to work with states to implement the DRAP and ISP, which have already improved the completeness, accuracy, timeliness, and consistency of the data in SDWIS-FED through: 1) training courses for specific compliance determination and reporting requirements, 2) state-specific technical assistance, 3) increased number of data audits conducted each year, and 4) assistance to regions and states in the identification and reconciliation of missing, incomplete, or conflicting data.

Second, more states (from 30 to 40 by year-end 2005) will use SDWIS-STATE,³ a software information system jointly designed by states and EPA, to support states as they implement the drinking water program.

Third, EPA has modified SDWIS-FED to (1) simplify the database, (2) minimize data entry options resulting in complex software, (3) enforce Agency data standards, and (4) ease the flow of data to EPA through a secure data exchange environment incorporating modern technologies, all of which will improve the accuracy of the data. In 2006, full use of SDWIS-FED for receiving state reports will be implemented. Data will be stored in a data warehouse system that is optimized for analysis, data retrieval, and data integration from other data sources. It will improve the program's ability to more efficiently use information to support decision-making and effectively manage the program.

Finally, EPA, in partnership with the states, is developing information modules on other drinking water programs: the Source Water Protection Program, the Underground Injection Control Program (UIC), and the Drinking Water State Revolving Fund. These modules will be integrated with SDWIS to provide a more comprehensive data set with which to assess the nation's drinking water supplies, a key component of the goal. In 2003, agreement was reached on the data elements for reporting source water and UIC data. Plans have now been developed for design of systems to address these data flows. Developing the systems to receive the data is scheduled for 2005.

³ SDWIS/STATE (Version 8.1) is an optional Oracle data base application available for use by states and EPA regions to support implementation of their drinking water programs.

U.S. EPA, Office of Ground Water and Drinking Water. Data and Databases. Drinking Water Data & Databases – SDWIS/STATE, July 2002. Information available on the Internet: http://www.epa.gov/safewater/sdwis_st/current.html

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References:

Plans*

- SDWIS-FED does not have a Quality Assurance Project Plan - it is a legacy system which has “evolved” since the early 80s prior to the requirement for a Plan. The SDWIS-FED equivalent is the Data Reliability Action Plan
- Information Strategy Plan - SDWIS-FED (see footnote 2)
- Office of Water Quality Management Plan, available at <http://www.epa.gov/water/info.html>
- Enterprise Architecture Plan

Reports*

- 1999 SDWIS/FED Data Reliability
- 2003 SDWIS/FED Data Reliability Report - contains the Data Reliability Action Plan and status report
- PWSS Management Report (quarterly)
- 1999 Management Plan Review Report
- 2003 Management Plan Review Report

Guidance Manuals, and Tools

- PWSS SDWIS/FED Quality Assurance Manual
- Various SDWIS-FED User and System Guidance Manuals (includes data entry instructions, data On-line Data Element Dictionary-a database application, Error Code Data Base (ECDB) - a database application, users guide, release notes, etc.) Available on the Internet at <<http://www.epa.gov/safewater/sdwisfed/sdwis.htm>>
- Regulation-Specific Reporting Requirements Guidance. Available on the Internet at <<http://www.epa.gov/safewater/regs.html>>

Web site addresses

- OGWDW Internet Site <<http://www.epa.gov/safewater/databases.html>> and contains access to the information systems and various guidance, manuals, tools, and reports.
- Sites of particular interest are:
<<http://www.epa.gov/safewater/data/getdata.html>> contains information for users to better analyze the data, and
<<http://www.epa.gov/safewater/sdwisfed/sdwis.htm>> contains reporting guidance, system and user documentation and reporting tools for the SDWIS-FED system.

* These are internal documents maintained by EPA's Office of Ground Water and Drinking Water. Please call 202-564-3751 for further information.

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FY 2006 Performance Measure:

- **Percentage of source water areas for community water systems that achieve minimized risk to public health (minimized risk achieved by substantial implementation, as determined by the state, of source water protection actions in a source water protection strategy)**

Performance Database: The source water assessment and protection programs are authorized under Sections 1453, 1428, and relevant subsections of 1452 of the Safe Drinking Water Act (SDWA).⁴ EPA issued guidance to implement these programs in 1997, *State Source Water Assessment and Protection Programs Guidance*.⁵ EPA will issue supplemental reporting guidance, “State and Federal Source Water Assessment and Protection Program *Measures: Final Reporting Guidance*” early in 2005. Starting in FY 2005, and updated annually thereafter, states report to EPA on the results of their source water assessment programs (SWAPs) and progress in implementing source water protection (SWP) strategies, and whether such strategy implementation is affecting public health protection. To assess *the results of the SWAPs*, state reporting includes three elements: (1) the delineated source water areas around each well and intake, (2) whether the assessments are complete, and (3) most prevalent and most threatening sources of contamination. To assess *progress in implementing the SWP strategies*, state reporting includes two elements: (1) whether a prevention strategy covering Community Water System source water areas has been adopted, and is being implemented and (2) whether such strategy implementation has reached a substantial level. To assess *whether the program is affecting public health protection*, states report change in the number of source water areas with substantially implemented source water protection strategies. The Agency will develop a national summary of data on the progress of states’ source water protection programs using these data elements in early 2006.

In FY 2003, EPA maintained pilot state-level summary data for each of these elements in a spreadsheet format and this format will be used for reporting for FY 2005. Beginning in FY 2005, states may, at their option, make available to EPA public water system-level data for each of these elements to be maintained in a set of data tables in the drinking water warehouse (for tabular data) and in event tables in the Office of Water’s Reach Address Database (RAD)⁶ (GIS data). These data will be compatible with the inventory data States are currently reporting to the Safe Drinking Water Information System (SDWIS).⁷ Three states piloted this approach in 2003.

⁴ *Safe Drinking Water Act Amendments of 1996*. P.L. 104-182. (Washington: 6 August 1996). Available on the Internet at <<http://www.epa.gov/safewater/sdwa/sdwa.html>>

⁵ U.S. EPA, Office of Water. *State Source Water Assessment and Protection Programs Guidance*. EPA 816-R-97-009 (Washington: US EPA, August 1997). Available on the Internet at <<http://www.epa.gov/safewater/swp/swappg.html>>

⁶ Watershed Assessment, Tracking & Environmental Results (WATERS). Available only on the Internet at <<http://www.epa.gov/waters/>>

⁷ Safe Drinking Water Information System (SDWIS). Information available on the Internet at <http://www.epa.gov/safewater/databases.html>

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[Not publicly available. Contact the Drinking Water Protection Division at 202-564-3797.]

Data Source: Up to the end of FY 2004, states reported to the EPA Regional Offices the percentage of community water systems implementing source water protection programs. A new Source Water data module will be developed and will be used as the data source in FY 2005 and beyond - See section “New/Improved Data or Systems.”

Methods, Assumptions and Suitability: For this measure, the states’ reporting of progress in implementing their source water assessment and protection programs will be based on EPA’s 2005 guidance, “State and Federal Source Water Assessment and Protection Program *Measures: Final Reporting Guidance*.” States will only report state-level summary information that will be directly related to specific community water systems in a state-level database. Because state reporting will be based on consistent definitions and procedures found in the *Source Water Assessment and Protection Measures: Final Guidance*, EPA assumes that the data will be reliable for use in making management decisions.

QA/QC Procedures: QA/QC procedures will be included in the 2005 “State and Federal Source Water Assessment and Protection Program *Measures: Final Reporting Guidance*.” Additionally, a series of data checks will be built into the spreadsheet data collection procedures given to each Region for their work with states. States will be required to identify whether their reported summary-level data are based on a system-level database. EPA’s Regions also will work with individual states to obtain a description of their methods of collecting and verifying information.

Data Quality Reviews: EPA Regions will conduct data quality reviews of state data using the QA/QC procedures included with the spreadsheet-based data system, and work with states to resolve data issues. As a result, EPA expects the quality of data on the results of the assessments and source water protection activities to improve over time.

Data Limitations: Because the initial reporting provides only state-level summary information, there is no standard protocol for EPA to verify and validate the data against system-level information contained in state databases. In addition, much of the data reported by states is voluntary and based on working agreements with EPA because SDWA only requires states to complete source water assessments. The only source water information that states are required to report to EPA under SDWA is whether the assessments are completed. Although EPA’s 2005 “State and Federal Source Water Assessment and Protection Program *Measures: Final Reporting Guidance*” will set standard data definitions and procedures, it also provides for considerable flexibility in states’ data collection protocols and analytical methods to evaluate their data. For example, some states may require each public water system (PWS) to report data, while others may institute a voluntary process. Because much of the data reporting is voluntary and the individual state protocols may vary, state data may be incomplete and inconsistent across states.

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Error Estimate: There is no basis for making an error estimate for this performance measure given the data limitations of state-level summary reporting described above.

New/Improved Data or Systems: EPA has developed a new source water data module to collect, store, and use public water system-level data received from states, but it may be refined as more states voluntarily use it over the next three years of the Strategic Plan. The source water module has been developed as a joint initiative between EPA, the Association of State Drinking Water Administrators (ASDWA), and the Ground Water Protection Council (GWPC). It will give EPA the ability to access the data directly from states through a data exchange agreement using an electronic data transfer capability. A state may choose, at its option, to provide EPA more detailed data in lieu of state-level summary reporting. The new source water data module will be integrated into the drinking water data warehouse and be compatible with Safe Drinking Water Information System (SDWIS) data already reported by states. Geospatial data (i.e., the intake and well point locations and the source water area polygons) will be maintained in EPA's Office of Water's Reach Access Database (RAD). The source water assessment and protection indicator data and other attribute data will be maintained in data tables in the drinking water warehouse. The source water data module is operational for states to pilot from FY 2005 through FY 2008. Three states used the module in the first pilot year 2003. A number of other states may report using the data module for the 2005 reporting period based on EPA/ASDWA/GWPC pilot process.

References:

Guidance Manuals

- U.S. EPA, Office of Water. *State Source Water Assessment and Protection Programs Guidance*. EPA 816-R-97-009 (Washington: US EPA, August 1997). Available on the Internet at <<http://www.epa.gov/safewater/swp/swappg.html>>
- *Source Water Assessment and Protection Measures: Initial Guidance, August, 2003*.
- "State and Federal Source Water Assessment and Protection Program Measures: Final Reporting Guidance" (to be released in early 2005).

Web site addresses

- US EPA Office of Ground Water and Drinking Water. <<http://www.epa.gov/safewater>>
- For more detailed information on Source Water topics, US EPA Office of Ground Water and Drinking Water, Source Water site. <<http://www.epa.gov/safewater/protect.html>>
- US EPA Office of Water (OW) Reach Access Database (RAD). Watershed Assessment, Tracking & Environmental Results (WATERS). <<http://www.epa.gov/waters/>>
- Safe Drinking Water Information System (SDWIS).
<http://www.epa.gov/safewater/databases.html>

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FY 2006 Performance Measure:

- **Number of households on tribal lands lacking access to safe drinking water**

Performance Database: Sanitation Tracking and Reporting System (STARS), the Indian Health Service (IHS), Office of Environmental Health and Engineering (OEHE), Division of Sanitation Facilities Construction (DSFC).

Data Sources: The STARS includes data on sanitation deficiencies, Indian homes and construction projects. STARS is currently comprised of two sub data systems, the Sanitation Deficiency System (SDS) and the Project Data System (PDS).

The SDS is an inventory of sanitation deficiencies for existing Indian homes and communities. The IHS is required to prioritize SDS deficiencies and annually report to Congress. The identification of sanitation deficiencies can be made several ways, the most common of which follow:

- Consultation with Tribal members and other Agencies
- Field visits by engineers, sanitarians, Community Health Representatives (CHRs) nurses, or by other IHS or tribal health staff
- Sanitary Surveys
- Community Environmental Health Profiles
- Bureau of Indian Affairs (BIA) Inventory
- Census Bureau Reports (for comparison purposes only)
- Tribal Master Plans for Development
- Telephone Surveys
- Feasibility Studies

The most reliable and preferred method is a field visit to each community to identify and obtain accurate numbers of homes with sanitation deficiencies. The number of Indian homes within the communities must be consistent among the various methods cited above. If a field visit cannot be made, it is highly recommended that more than one method be used to determine sanitation deficiencies to increase the accuracy and establish greater credibility for the data.

The PDS is a listing of funded construction projects and is used as a management and reporting tool.

QA/QC Procedures: Quality assurance for the Indian country water quality performance measure depends on the quality of the data in the STARS. The STARS data undergoes a series of quality control reviews at various levels within the IHS DSFC. The DSFC is required to annually report deficiencies in SDS to Congress in terms of total and feasible project costs for proposed sanitation projects and sanitation deficiency levels for existing homes.

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Data Quality Reviews: The SDS data initially undergoes a series of highly organized reviews by experienced tribal, IHS field, IHS district and IHS area personnel. The data are then sent to the DSFC headquarters office for review before final results are reported. The DSFC headquarters reviews the SDS data for each of the 12 IHS area offices. The data quality review consists of performing a number of established data queries and reports which check for errors and/or inconsistencies. In addition, the top 25 SDS projects and corresponding community deficiency profiles for each area are reviewed and scrutinized thoroughly. Detailed cost estimates are highly encouraged and are usually available for review.

Data Limitations: The data are limited by the accuracy of reported data in STARS.

Error Estimate: The IHS DSFC requires that higher-level projects (those with the possibility of funding prior to the next update) must be developed to allow for program implementation in an organized, effective, efficient manner. Those SDS projects (top 20%) must have cost estimates within 10% of the actual costs.

New/Improved Data or Systems: The STARS is a web based application and therefore allows data to be continuously updated by personnel at various levels and modified as program requirements are identified.

References:

1. Indian Health Service (IHS), Division of Sanitation Facilities (DSFC). Criteria for the Sanitation Facilities Construction Program, June 1999, Version 1.02, 3/13/2003. http://www.dsfc.ihs.gov/Documents/Criteria_March_2003.cfm
2. Indian Health Service (IHS), Division of Sanitation Facilities (DSFC). Sanitation Deficiency System (SDS), Working Draft, "Guide for Reporting Sanitation Deficiencies for Indian Homes and Communities", May 2003. <http://www.dsfc.ihs.gov/Documents/SDSWorkingDraft2003.pdf>

FY 2006 Performance Measure:

- **The quality of water and sediments will be improved to allow increased consumption of fish in not less than 3% of the water miles/acres identified by states or tribes as having a fish consumption advisory in 2002.**

Performance Database: National Listing of Fish Advisories.¹ The database includes fields identifying the waters for which fish consumption advisories have been issued. The fields also identify the date upon which the advisory was issued, thus allowing an assessment of trends. The National Hydrographic Data (NHD) are used to calculate the spatial extent of the fish advisory. This information is updated continually as states and tribes issue or revise advisories. The National Listing of Fish Advisories database includes records showing that 846,310 river

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miles and 14,195,187 lake acres were identified by states or tribes in calendar year 2003 as having fish with chemical contamination levels resulting in an advisory of potential human health risk from consumption. States and tribes report data on a calendar year basis. The calendar year data are then used to support the fiscal year (FY) commitments (e.g., calendar year 2005 data support the FY 2006 commitments). Metadata are also available describing methodologies used by states and tribes for establishing advisories. The Fish Advisory data has been collected since 1993.

Data Source: State and Tribal Governments. These entities collect the information and enter it directly into the National Listing of Fish Advisories database. EPA reviews advisory entries, including the states' or tribes' responses to an on-line survey, which support the advisory decision.

Methods, Assumptions and Suitability: The performance measure is calculated as the aggregate surface area covered by the individual advisories divided by the total waters of each state or territory. The states and tribes submit the area data to the National Listing of Fish Advisories database.

QA/QC Procedures: A standard survey, which has been approved by OMB, is available on the Internet for electronic submission. A password is issued to ensure the appropriate party is completing the survey. EPA has national guidance^{2,3} for states and tribes on developing and implementing quality assurance practices for the collection of environmental information related to fish advisories. This guidance helps assure data quality of the information that states and tribes use to decide whether to issue an advisory. The Office of Water's "Quality Management Plan," approved in September 2001 and published in July 2002⁴, is general guidance that applies to information collection.

Data Quality Reviews: EPA reviews advisory entries and responses to the survey to ensure the information is complete, then follows-up with the state or local government to obtain additional information where needed. However, the Agency cannot verify the accuracy of the voluntary information that state and local governments provide. There have been no external party reviews of this information.

Data Limitations: Participation in this survey and collection of data is voluntary. While the voluntary response rate has been high, it does not capture the complete universe of advisories. Puerto Rico, the Virgin Islands, and Guam do not report in the survey. In addition, states have not assessed all waters for the need for advisories, so the information reported reflects a subset of water bodies in the state.

Error Estimate: We are unable to provide an error estimate. Submitting data to the National Listing of Fish Advisories database is voluntary and the Agency cannot be certain that the database contains information on 100% of the assessed waters in the United States. Therefore,

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we may be understating the total amount of waters assessed, the magnitude of which is not known.

New/Improved Data or Systems: EPA will use small grants to encourage states to investigate additional water bodies to determine if there is a need for fish consumption advisories. This will lead to a more complete characterization of the nation's fish safety. EPA also plans to begin tracking recommended "meal frequencies" in the state and tribal advisories to account for the instances where advisories are modified to allow greater consumption.

References:

1. U.S. EPA. Office of Water. "National Listing of Fish Advisories." Washington, DC: EPA Accessed May 1, 2003. Available only on the Internet at <http://map1.epa.gov/>
2. U.S. EPA. Office of Water. "Fish Sampling and Analysis." Volume 1 of "Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories." 3rd ed. EPA-823-B-00-007. Washington DC: EPA, 2000. Available at <http://www.epa.gov/waterscience/fishadvice/volume1/>.
3. U.S. EPA. Office of Water. "Risk Assessment and Fish Consumption Limits." Volume 2 of "Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories." 3rd ed. @ EPA-823-B-00-008. Washington DC: EPA, 2000. <http://www.epa.gov/waterscience/fishadvice/volume2/>.
4. U.S. EPA. Office of Water. "Quality Management Plan." EPA 821-X-02-001. Washington, DC: EPA, July 2002. Available at http://www.epa.gov/water/programs/qmp_july2002.pdf

FY 2006 Performance Measure:

- **Percentage of the shellfish-growing acres monitored by states that will be approved for use.**

Performance Database: There is no database currently available, although one is under development (see below). Until that database is operational, data to support this measure will come from past surveys of States that are members of the Interstate Shellfish Sanitation Conference (ISSC), conducted at 5-year intervals and periodic updates requested from the Interstate Shellfish Sanitation Conference (most recent, 2003 data released in 2004).

Data Source: Currently, the ISSC requests the data on approved acreages from shellfish producing states and prepares reports. Survey responses are voluntary.

Methods, Assumptions and Suitability: The methods used by the state programs to produce the current data used by the ISSC are based on the National Shellfish Sanitation Plan and Model Ordinance; the operation of those state programs is overseen by the FDA.

QA/QC Procedures: States are responsible for the internal QA/QC of their data.

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Data Quality Reviews: The ISSC reviews the state data during report preparation to ensure completeness and accuracy, and follows up with states where necessary.

Data Limitations: Based on NOAA's previous surveys and the voluntary nature of the information collected, potential data limitations may include incomplete coverage of shellfish growing areas.

Error Estimate: No estimates are available.

New/Improved Data or Systems: The ISSC initiated development of the Shellfish Information Management System (SIMS) in July 2002. The database is being developed and implemented by the National Oceanographic and Atmospheric Administration (NOAA) on behalf of the Interstate Shellfish Sanitation Conference (ISSC), a Cooperative Program chartered by the Food and Drug Administration (FDA). The database will include relevant information that is collected by State Shellfish Control Authorities. Historically, NOAA collected shellfish-growing area data in 5-year intervals, 1985, 1990, and 1995. These data were not stored in a database. Once operational, SIMS will be the first national shellfish growing area database and will include NOAA's 1995 and 2003 data. State summary information can then be used to track trends relevant to the performance measure, with the 1995 data as the baseline. The SIMS database is designed as a real time database. The ISSC plans to request data updates annually, but states may update their data any time. These data may be accessed at any time so timely status reports can be generated.

Ten states were involved in the design of the database; four states are working to populate the database, with plans to begin work with 5-6 more states in FY 2005. No long-term database management plan is in place at this time.

References: None at this time.

FY 2006 Performance Measure:

- **Percentage of days of the beach season that coastal and Great Lakes beaches monitored by State beach safety programs will be open and safe for swimming**

Performance Database: The data are stored in PRAWN (Program tracking, beach Advisories, Water quality standards, and Nutrients), a database that includes fields identifying the beaches for which monitoring and notification information are available and the date the advisory or closure was issued, thus enabling trend assessments to be made. The database also identifies those states that have received a BEACH (Beaches Environmental Assessment and Coastal Health) Act [P.L. 106-284] grant. EPA reports the information annually, on a calendar year basis, each May. The information in the database is accessible to the public through the BEACON (Beach Advisory Closing On-line Notification) system.

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Data Source: Since 1997 EPA has surveyed state and local governments for information on their monitoring programs and on their advisories or closures. The Agency created the PRAWN database to store this information. State and local governmental response to the survey was voluntary up through calendar year 2002. States and local entities collect and report data on a calendar year basis. The calendar year data are then used to support fiscal year commitments (e.g. 2005 calendar year data are used to report against FY 2006 commitments). Starting in calendar year 2003, data for many beaches along the coast and Great Lakes had to be reported to EPA as a condition of grants awarded under the BEACH Act¹. As of 2004, States and Territories monitor for pathogens at 3,472 coastal and Great Lakes beaches, up from 2,823 beaches in 2002².

Methods, Assumptions and Suitability: The data are an enumeration of the days of beach-specific advisories or closures issued by the reporting state or local governments during the year. Performance against the target is tracked using a simple count of the number of beaches responding to the survey and the days over which the advisory or closure actions were taken. This is compared to the total number of days that every beach could be open. Thus the data are suitable for the performance measure.

QA/QC Procedures: Since 1997, EPA has distributed a standard survey form, approved by OMB, to coastal and Great Lake state and county environmental and public health beach program officials in hard copy by mail. The form is also available on the Internet for web-entry electronic submission. When a state or local official enters data using the web-entry format, a password is issued to ensure the appropriate party is completing the survey. Currently the Agency has procedures for information collection (see Office of Water's "Quality Management Plan," approved September 2001 and published July 2002³). In addition, coastal and Great Lakes states receiving BEACH Act grants are subject to the Agency's grant regulations under 40 CFR 31.45. These regulations require states and tribes to develop and implement quality assurance practices for the collection of environmental information.

Data Quality Review: EPA reviews the survey responses to ensure the information is complete, following up with the state or local government to obtain additional information where needed. The Agency also reviews the QA/QC reports submitted by States and Territories as part of their grant reporting. There have been no external party reviews of this information.

Data Limitations: From calendar year 1997 to calendar year 2002, participation in the survey and submission of data has been voluntary. While the voluntary response rate has been high, it has not captured the complete universe of beaches. The voluntary response rate was 92% in calendar year 2002 (240 out of 261 contacted agencies responded). The number of beaches for which information was collected increased from 1,021 in calendar year 1997 to 2,823 in calendar year 2002. Participation in the survey is now a mandatory condition for implementation grants awarded under the BEACH Act program to coastal and Great Lakes states. Except for Alaska, all coastal and Great Lakes states and territories have annually applied for implementation grants since they have been available.

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Error Estimate: As of 2004, States and Territories report that they monitor at 3,472 of the 6,099 coastal and Great Lakes beaches. This monitoring varies between States. For example, North Carolina monitors all its 228 beaches whereas South Carolina monitors 24 of 229 beaches. Where monitoring is done, there is some chance that the monitoring may miss some instances of high pathogen concentrations. EPA's most recent National Health Protection Survey of Beaches found that 90% of the nation's beaches are monitored once a week or less⁴. Studies in southern California found that weekly sampling missed 75% of the pathogen exceedances⁵, and that 70% of the exceedances lasted for only one day⁶. An EPA Office of Research and Development (ORD) beach monitoring study found a positive correlation between pathogen indicator densities one day as compared to densities the next day, but that the correlation was negligible when compared to densities after four days⁷. These studies indicate that weekly sampling most likely misses many pathogen events that can affect public health. This information is not sufficient to calculate the potential error in the reporting, but it is sufficient to indicate that the reporting may understate the number of days that beaches should be closed or under advisory.

New/Improved Data or Systems: Participation in the survey is now a mandatory condition for grants awarded under the BEACH Act program. As the Agency awards these implementation grants, it will require standard program procedures, sampling and assessment methods, and data elements for reporting. To the extent that state governments apply for and receive these grants, the amount, quality, and consistency of available data will improve. In FY 2006, EPA expects the 35 coastal and Great Lakes states to apply for grants to implement monitoring and notification programs.

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Goal 2 Objective 2

FY 2006 Performance Measure:

- **Watersheds in which at least 80 percent of the assessed water segments meet water quality standards**

Performance Database: The Watershed Assessment Tracking Environmental Results System (WATERS) (1) is used to summarize water quality information at the watershed level. For purposes of this national summary, watersheds are equivalent to 8-digit hydrologic unit codes (HUCs), of which there are 2,262 nationwide although data may be disaggregated to smaller watersheds should the need arise. WATERS is a geographic information system that integrates many existing databases including the STORage and RETrieval (STORET) database (2), the National Assessment Database (NAD)(3), and the Water Quality Standards database (4). Water quality information available through WATERS includes data submitted by the states under Clean Water Act (CWA) Section 305(b) reports. Data from the NAD includes waterbody type, location, extent, and the designated uses assessed, as well as the assessment conclusion. NAD data are available for most areas as far back as the year 2000 assessment cycle. Data gaps expected include incomplete state assessments and uncertain state adoption of the data formats inconsistent with the National Assessment Database. The data are submitted to EPA every two years, with annual electronic updates. The U.S. EPA provides access to the states' data on its Monitoring Program website. (5)

Data Source: State CWA Section 305(b) reports. Under the Clean Water Act, the states are given the responsibility for setting water quality standards for their waters and collecting the data and information to assess the condition of those waters. The data collected by states to assess water quality and to prepare their CWA Section 305(b) reports come from multiple sources, e.g., state monitoring networks, United States Geological Survey (USGS), local governments, volunteer monitors, academic institutions, etc. States also use predictive tools, such as landscape and water quality models, and randomized probability surveys. [Raw water quality data may be entered by states and other sources into STORET.] States use ambient monitoring data to determine if their waters are attaining the state's water quality standards. States are encouraged to use three EPA data systems to structure and transfer these data. The first of these is the Water Quality Standards Database, which records the designated uses and supporting criteria for specifically defined waterbody segments contained in the second dataset, the National Hydrography Dataset (NHD). These segments, each defined by states, are described using a structure that EPA conceived two decades ago, but now has divested to its partner, the U.S. Geological Survey; The NHD provides important address points that can define the extent (for instance, by defining the upstream and downstream boundaries of a reach) of waterbodies that have been assigned consistent standards. The NHD also allows important features such as outfalls, intakes, and dams to be located so that they can be mapped and better understood. It also allows administrative designations to be located, such as the boundaries of assessments made to determine whether the waters meet the standards assigned to a waterbody. Results of

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assessments are entered into the third database, the National Assessment Database. The National Assessment Database is used to assemble performance statistics for each biennial (calendar year) reporting cycle: 2000, 2002, 2004 and (planned) 2006. Results are calculated on the basis of these biennial reports. Long delays are often encountered in state submissions, causing delays in EPA's development of summary statistics. EPA is working to establish more certain procedures to prevent future delays.

EPA provides access to WATERS on its monitoring website. However, given differences among state water quality standards and monitoring methods, the results of these assessments do not provide a reliable nationwide assessment of water quality conditions.

Methods, Assumptions and Suitability: States employ various methods to make water quality assessment decisions, including: 1) Direct sampling of chemical, physical, and biological parameters using targeted site selection (usually, where problems are most likely or where water is heavily used); 2) Predictive models to estimate water quality; 3) Sampling at statistically valid, probability-based sites (in its early stages in a number of states) to assess broad scale water quality conditions; 4) Compilation of data from outside sources such as volunteer monitors, academic institutions, and others. EPA aggregates state assessment information by watershed (as described above) to generate the national performance measure. State assessment results describe attainment of designated uses in accordance with state water quality standards and represent a direct measure of performance. State CWA Section 305(b) data have been used to provide a summary of the ambient water quality conditions across the nation and to determine conditions in the subset of waters assessed. Geographically specific waterbody assessments are suitable for year- to-year comparisons of water quality attainment progress. As states continue to strengthen their monitoring and data management programs, more state data will be suitable for tracking changes in water quality over time. While programs are in transition, national performance data will be heavily influenced by changes in state data procedures.

QA/QC Procedures: QA/QC of data provided by states in their individual assessments (under CWA Section 305(b)) and accessed through WATERS is dependent on individual state procedures. Numerous system level checks are built into the data sources in WATERS, based upon the business rules associated with the water quality standards database. States are given the opportunity to review the information to ensure it accurately reflects the data they submitted. Data exchange guidance and training are also provided to the states. Sufficiency threshold for inclusion in this measure requires that 20 percent of stream miles in an 8-digit HUC be assessed. The Office of Water Quality Management Plan (QMP), renewed every five years, was approved in July 2002 (6). It describes the quality system used by the Office of Water and applies to all environmental programs within the Office of Water and to any activity within those programs that involves the collection or use of environmental data.

Data Quality Review: Numerous independent reports have cited that weaknesses in water quality monitoring and reporting undermine EPA's ability to depict the condition of waters nationwide, to make trend assessments, and to support scientifically sound water program

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decisions. The most recent reports include the 2004 GAO report on watershed management. General Accounting Office (GAO), 2004, *Watershed Management: Better coordination of data collection efforts needed to support key decisions*: Washington D.C., United States General Accounting Office, the 1998 *Report of the Federal Advisory Committee on the Total Maximum Daily Load (TMDL) Program* (7), the March 15, 2000 General Accounting Office report *Water Quality: Key Decisions Limited by Inconsistent and Incomplete Data* (8), the 2001 National Academy of Sciences Report, *Assessing the TMDL Approach to Water Quality Management* (9), a 2002 National Academy of Public Administration Report, *Understanding What States Need to Protect Water Quality* (10), and EPA's *Draft Report on the Environment* (11). Water quality reporting under Section 305(b) has been identified as an Agency-Level weakness under the Federal Managers Financial Integrity Act.

In response to these evaluations, EPA has been working with states and other stakeholders to improve: 1) data coverage, so that state reports reflect the condition of all waters of the state; 2) data consistency, to facilitate comparison and aggregation of state data to the national level; and 3) documentation, so that data limitations and discrepancies are fully understood by data users.

The Office of Water has limited authority to require better water quality monitoring or reporting by states. OW has recently issued several guidance documents designed to increase consistency and coverage in state monitoring, assessment and reporting. In July 2003, EPA issued its Integrated Reporting guidance (12) which calls on states to integrate the development and submission of 305(b) water quality reports and Section 303(d) lists of impaired waters. The Integrated Report will enhance the ability of water quality managers to display, access, and integrate environmental data and information from all components of the water quality program. In July 2002, EPA released the *Consolidated Assessment and Listing Methodology - a Compendium of Best Practices* (13), intended to facilitate increased consistency in monitoring program design and in the data and decision criteria used to support water quality assessments. And in March 2003, EPA issued *Elements of a State Water Monitoring and Assessment Program* (14), which describes ten elements that each state water quality monitoring program should contain and a ten-year time frame for implementing all elements. As part of each state's monitoring strategy, state data will be accompanied by quality assurance plans. Quality assurance is one of the ten required elements of these strategies.

EPA has enhanced two existing data management tools (STORET and the National Assessment Database) so that they include documentation of data quality information. EPA's WATERS tool integrates many databases including STORET, the National Assessment Database, and the Water Quality Standards Database. These integrated databases facilitate comparison and understanding of differences among state standards, monitoring activities, and assessment results. The Office of Water has recently convened and continues to use an Assessment Data Visualization Work Group that is tracking the increased use of the three data systems and is planning to focus its orientation and training to expand the use of these data systems and to ensure regional review of the quality of states' data. Regions also will more closely review the coverage of monitoring needed to support state assessment activities. Until there is consistent,

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widespread use of these systems, the water quality conditions states report will be subject to procedure-induced variation that masks environmental progress.

Data Limitations: Data do not represent an assessment of water quality conditions at the national level. EPA is working with states to provide a data structure that allows state assessments to be geographically located so that they can be clearly identified and changes can be tracked over time. EPA data systems being adopted by states implement this feature. Other disparities remain, however. Most states do not employ a monitoring design that characterizes all waters in each reporting cycle, and some states only report the results of the most recent assessments without providing the perspective of water quality from previous assessments. States, territories, and tribes collect data and information on only a portion of their water bodies because it is prohibitively expensive to monitor all water bodies. Furthermore, states do not use a consistent suite of water quality indicators to assess attainment with water quality standards. For example, indicators of aquatic life use support range from biological community condition to levels of dissolved oxygen and concentrations of toxic pollutants. State water quality standards themselves vary from state to state. State assessments of water quality may include uncertainties associated with their measured or modeled data. These variations in state practices and standards limit the use of assessment reports for describing water quality at the national level and prevent the agency from aggregating water quality assessments at the national level with known statistical confidence.

Error Estimate: No error estimate is available for these data.

New/Improved Data or Systems: The Office of Water is currently working with states, tribes and other Federal agencies to improve the data that support this management measure by addressing the underlying methods of monitoring water quality and assessing the data. Also, the Office of Water is working with partners to enhance monitoring networks to achieve comprehensive coverage of all waters, use a consistent suite of core water quality indicators (supplemented with additional indicators for specific water quality questions), and document key data elements, decision criteria and assessment methodologies in electronic data systems. The Office of Water is using a variety of mechanisms to implement these improvements including data management systems, guidance, stakeholder meetings, training and technical assistance, program reviews and negotiations.

EPA is working with states to enhance their monitoring and assessment programs, and promoting the use of probability surveys as a cost-effective way to obtain a snapshot of water quality conditions. These enhancements, along with improving the quality and timeliness of data for making watershed-based decisions, will improve EPA's ability to use state assessments in portraying national conditions and trends. Specific state refinements include developing biological criteria to measure the health of aquatic communities (and attainment with the aquatic life use) and designing probability-based monitoring designs to support statistically valid inferences about water quality. EPA has been instrumental in helping states design the monitoring networks and analyze the data. Initial efforts have focused on coastal/estuarine

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waters and Wadeable streams. Lakes will be targeted next. States are implementing these changes incrementally and in conjunction with traditional targeted monitoring. At last count, 16 states have adopted probability-based monitoring designs, several more are evaluating them, and all but 10 are collaborating with EPA to undertake a national probability survey of conditions of Wadeable streams at a national level.

The President's FY2005 budget request includes a \$17 million increase to support states' implementation of comprehensive water quality monitoring strategies, including refinement of biological assessment methods and probability-based designs for different water resource types; landscape models and other predictive tools; remote sensing and innovative indicators of water quality to help streamline where additional monitoring is needed; and targeted monitoring to provide data to implement local management actions such as National Pollution Discharge Elimination Program (NPDES) permits and Total Maximum Daily Loads (TMDLs). The initiative will also support improvement of data management systems to ensure that water quality monitoring data are understandable and available to decision makers and the public. Included here are upgrades to STORET, to improve system navigation and operation and to enhance analysis and presentation applications. Funds will also support enhancing the capability to exchange water quality data with states.

References:

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FY 2006 Performance Measure:

- **Water quality standards are fully attained in waters identified in 1998/2000 as not attaining standards**

Performance Database: The Watershed Assessment Tracking Environmental Results System (WATERS— found at <http://www.epa.gov/waters/>) is EPA's approach for viewing water quality information related to this measure. WATERS can be used to view "303(d) Information," compiled from, *States' Listings of Impaired Waters as Required by Clean Water Act Section 303(d)* (referred to here in brief as "303(d) lists"), which are recorded in the national TMDL Tracking System (NTTS). This information (found at <http://www.epa.gov/owow/tmdl/status.html>) is used to generate reports that identify waters that are not meeting water quality standards ("impaired waters"). This information, combined with information and comment from EPA Regions and states, yields the baseline data for this measure: number of impaired waters in 1998/2000. As Total Maximum Daily Loads (TMDL) and other watershed-related activities are developed and implemented, water bodies which were once impaired will meet water quality standards, and thus will be removed from the year 98/2000 impaired totals. Changes will be recorded in reports, scheduled every six years (e.g. future reporting years 2006 and 2012), as percentage improvements to water body impairment.

Data Source: The underlying data source for this measure is State 303(d) lists of their impaired water bodies. These lists are submitted with each biennial (calendar year) reporting cycle. The baseline for this measure is the 1998 list (States were not required to submit lists in 2000;

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however, if states did submit a 2000 list, then that more recent list was used as the baseline). States prepare the lists using actual water quality monitoring data, probability-based monitoring information, and other existing and readily available information and knowledge the state has, in order to make comprehensive determinations addressing the total extent of the state's water body impairments. Once EPA approves a state's 303(d) list, EPA enters the information into WATERS, as described above. Delays are often encountered in state submissions and in EPA's approval of these biennial submissions. Establishing more certain procedures to keep on schedule is being considered.

Methods, Assumptions, and Suitability: States employ various analytical methods of data collection, compilation, and reporting including: 1) Direct water samples of chemical, physical, and biological parameters; 2) Predictive models of water quality standards attainment; 3) Probabilistic models of pollutant sources; and 4) Compilation of data from volunteer groups, academic interests and others. EPA-supported models include BASINS, QUAL2E, AQUATOX, and CORMIX. Descriptions of these models and instructions for their use can be found at www.epa.gov/OST/wqm/. The standard operating procedures and deviations from standard methods for data sampling and prediction processes are stored by states in the STORET database. EPA aggregates state data to generate the national performance measure. State-provided data describe attainment of designated uses in accordance with state water quality standards and thus represent a direct measure of performance. Delays are often encountered in state 303d lists and 305b submissions, and in EPA's approval of the 303(d) portion of these biennial submissions. Establishing more certain procedures to prevent these delays is being considered.

QA/QC Procedures: QA/QC of data provided by states pursuant to individual state 303(d) lists (under CWA Section 303(d)) is dependent on individual state procedures. EPA regional staff interacts with the states during the process of approval of the lists and before the information is entered into the database to ensure the integrity of the data. The Office of Water Quality Management Plan (QMP), renewed every five years, was approved in July 2001. EPA requires that each organization prepare a document called a quality management plan (QMP) that: documents the organization's quality policy; describes its quality system; and identifies the environmental programs to which the quality system applies (e.g., those programs involved in the collection or use of environmental data).

Data Quality Review: Numerous independent reports have cited that weaknesses in monitoring and reporting of monitoring data undermine EPA's ability to depict the condition of the Nation's waters and to support scientifically sound water program decisions. The most recent reports include the 1998 *Report of the Federal Advisory Committee on the Total Maximum Daily Load (TMDL) Program*⁸, the March 15, 2000 General Accounting Office report *Water Quality: Key*

⁸ *Report of the Federal Advisory Committee on the Total Maximum Daily Load Program*. 1998. National Advisory Council for Environmental Policy and Technology. EPA Number 100R98006. National Center for Environmental Publications]

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*Decisions Limited by Inconsistent and Incomplete Data*⁹, the 2001 National Academy of Sciences Report *Assessing the TMDL Approach to Water Quality Management*¹⁰ and EPA's *Draft Report on the Environment*.¹¹

In response to these evaluations, EPA has been working with states and other stakeholders to improve: 1) data coverage, so that state reports reflect the condition of all waters of the state; 2) data consistency to facilitate comparison and aggregation of state data to the national level; and 3) documentation so that data limitations and discrepancies are fully understood by data users.

First, EPA enhanced two existing data management tools (STORET and the National Assessment Database) so that they include documentation of data quality information.

Second, EPA has developed a GIS tool called WATERS that integrate many databases including STORET, the National Assessment database, and a new water quality standards database. These integrated databases facilitate comparison and understanding of differences among state standards, monitoring activities, and assessment results.

Third, EPA and states have developed a guidance document: Consolidated Assessment and Listing Methodology - a Compendium of Best Practices¹² (released on the Web July 31, 2002 at www.epa.gov/owow/monitoring/calm.html) intended to facilitate increased consistency in monitoring program design and the data and decision criteria used to support water quality assessments.

Fourth, the Office of Water (OW) and EPA's Regional Offices have developed the *Elements of a State Water Monitoring and Assessment Program*, (August 2002) which is currently under review by our state partners. This guidance describes ten elements that each state water quality-monitoring program should contain and proposes time-frames for implementing all ten elements.

Data Limitations: Data may not precisely represent the extent of impaired waters because states do not employ a monitoring design that monitors all their waters. States, territories and tribes collect data and information on only a portion of their water bodies. States do not use a consistent suite of water quality indicators to assess attainment of water quality standards. For example, indicators of aquatic life use support range from biological community assessments to levels of dissolved oxygen to concentrations of toxic pollutants. These variations in state practices limit how the CWA Sections 305(b) reports and the 303(d) lists provided by states can

⁹ *Water Quality: Key EPA and State Decisions Limited by Inconsistent and Incomplete Data*. March 15, 2000. RCED-00-54 and *Water Quality: Inconsistent State Approaches Complicate Nation's Efforts to Identify Its Most Polluted Waters*. January 11, 2002

¹⁰ *Assessing the TMDL Approach to Water Quality Management*. 2001. Committee to Assess the Scientific Basis of the Total Maximum Daily Load Approach to Water Pollution Reduction, Water Science and Technology Board, National Research Council

¹¹ US EPA. *Draft Report on the Environment 2003*. July 2003. EPA 260-R-02-006. Available at <http://www.epa.gov/indicators/roe/index.htm>

¹² U.S. EPA. (July 31, 2002). *Consolidated Assessment and Listing Methodology. Toward a Compendium of Best Practices*. (First Edition). Washington, DC: Office of Wetlands, Oceans, and Watersheds. Available on the Internet: Monitoring and Assessing Water Quality www.epa.gov/owow/monitoring/calm.html

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be used to describe water quality at the national level. There are also differences among their programs, sampling techniques, and standards.

State assessments of water quality may include uncertainties associated with derived or modeled data. Differences in monitoring designs among and within states prevent the agency from aggregating water quality assessments at the national level with known statistical confidence. States, territories, and authorized tribes monitor to identify problems and typically lag times between data collection and reporting can vary by state.

Error Estimate: No error estimate is available for this data.

New/Improved Data Systems: The Office of Water has been working with states to improve the guidance under which 303(d) lists are prepared. EPA issued new listing Guidance July 21, 2003 entitled *Guidance for 2004 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act* (Guidance). The Guidance may be found at: <http://www.epa.gov/owow/tmdl/tmdl0103/index.html> . The Guidance addresses a number of issues that states and EPA identified during the 2002 listing cycle. Among these issues are minimum data requirements and sample size requirements in making listing determinations, use of probability-based sampling in the state's monitoring program, improved year-to-year consistency in a choice of a geo-referencing scheme, and use of a consistent method of segmenting water bodies and denoting changes to the segmentation between listing cycles.

References: Cited in body of text above.

FY 2006 Performance Measure:

- **Number of monitoring stations in Tribal waters that show at least a 10% improvement in each of 4 key parameters: total nitrogen, total phosphorus, dissolved oxygen and fecal coliform (2002 Baseline: four key parameters available at 900 sampling stations in Indian country)**

Performance Database: All of the monitoring stations originally included in the baseline for this measure (900) are United States Geological Survey (USGS) stations with USGS station identification numbers. In the time since the 900 sites were originally identified, additional monitoring stations on Tribal lands have been located. The water quality monitoring results for the additional stations on Tribal lands are recorded in the USGS National Water Information System (NWIS) and EPA's Storage and Retrieval database (STORET). Through STORET and NWIS, EPA and USGS have established standardized formats for reporting water quality data and information.

Data on total nitrogen, total phosphorus, dissolved oxygen and fecal coliform are readily available through the STORET (www.epa.gov/STORET) and the NWIS

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(<http://waterdata.usgs.gov/nwis/>) websites for those monitoring stations in Tribal waters where these data have been collected and loaded into the databases.

Data Source: Monitoring activities at the sampling stations included in this measure are not conducted or reported by Tribes. Sampling is performed at these monitoring stations by a variety of entities, for a variety of purposes and with differing frequencies. The proximity of these stations to watersheds undergoing restoration/protection activities may not be included as part of the information included in the STORET database or NWIS. The use of these monitoring stations in this performance measure is opportunistic, and thus sampling results may not necessarily reflect the impacts of restoration activities performed as part of the implementation of Clean Water Act programs by Tribes.

Methods, Assumptions and Suitability: Sampling is performed at these monitoring stations by a variety of entities, for a variety of purposes and with differing frequencies. Methods used to measure total nitrogen, total phosphorus, dissolved oxygen and fecal coliform among these sites likely differ. However, metadata for sampling results, including sampling methods, detection limits and sampling date and time, are readily available to the public through the STORET database and NWIS. Given that the measure is based on improvements in water quality at individual monitoring stations in tribal lands over time, the use of differing methods at sampling stations included in the measure is not necessarily problematic. Sampling results at these stations are likely to be suitable for tracking progress in the measure. Implicit in the measure is the assumption that improvements in water quality at these sampling stations reflect the successful implementation of CWA programs by Tribes. The monitoring stations included in the measure are used for a variety of purposes and with differing frequencies and the proximity of the monitoring stations to waters undergoing restoration/protection actions by Tribes is unknown. Given this, the suitability of sampling results at these stations for tracking successful implementation of CWA programs by Tribes is uncertain.

QA/QC Procedures: Samples at the monitoring stations included in this measure are collected and processed by a variety of entities and for differing purposes. As a result, QA/QC procedures for these samples may differ considerably. However, QA/QC procedures for the samples are readily available to the public through the STORET website or obtained from the USGS.

Data Quality Review: Data owners are responsible for data quality review. Information on the quality of the data in STORET is readily available to the public through the website. The USGS is responsible for data quality review of sampling results loaded in the NWIS. No audits or data quality reviews for the monitoring results included in this measure have been conducted by EPA for data in the STORET or NWIS database.

Data Limitations: It is still early to determine the full extent of data limitations. The monitoring stations included in the universe for this measure have been selected opportunistically by EPA based on their presence on Tribal lands and reporting sampling results for total nitrogen, total phosphorus, dissolved oxygen and fecal coliform. Sampling is performed

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at these monitoring stations by a variety of entities and for a variety of purposes with differing frequencies. The proximity of these stations to watersheds undergoing restoration/protection activities may not be included as part of the information included on the STORET or NWIS databases. Sampling results may not necessarily reflect the impacts of restoration activities performed as part of the implementation of Clean Water Act programs by Tribes. The impact of these data limitations on progress as reported in the measure is unclear.

Error Estimate: No error estimate is available for this data.

New/Improved Data or Systems: EPA has significantly improved the ease of data retrieval from the STORET database with the completion of the STORET data warehouse. Sampling results are being loaded into STORET at a rate of approximately 1 million records/month, which will significantly increase the data available to track progress in the measure. EPA and USGS are currently implementing a memorandum of understanding to create a common view for data included in the STORET database and NWIS. This work also will facilitate the ability to measure progress.

References: Water quality data in STORET are publicly available at www.epa.gov/STORET. Water quality data from USGS are available at <http://waterdata.usgs.gov/nwis/>. The Office of Water Quality Management Plan (July 2001) is available on the Intranet at <http://intranet.epa.gov/ow/infopolicy.html>.

FY 2006 Performance Measure:

- **Number of households on tribal lands lacking access to basic sanitation**

Performance Database: Sanitation Tracking and Reporting System (STARS), the Indian Health Service (IHS), Office of Environmental Health and Engineering (OEHE), Division of Sanitation Facilities Construction (DSFC).

Data Sources: The STARS includes data on sanitation deficiencies, Indian homes and construction projects. STARS is currently comprised of two sub data systems, the Sanitation Deficiency System (SDS) and the Project Data System (PDS).

The SDS is an inventory of sanitation deficiencies for existing Indian homes and communities. The IHS is required to prioritize SDS deficiencies and annually report to Congress. The identification of sanitation deficiencies can be made several ways, the most common of which follow:

- Consultation with Tribal members and other Agencies
- Field visits by engineers, sanitarians, Community Health Representatives (CHRs), nurses, or by other IHS or tribal health staff
- Sanitary Surveys

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- Community Environmental Health Profiles
- Bureau of Indian Affairs (BIA) Inventory
- Census Bureau Reports (for comparison purposes only)
- Tribal Master Plans for Development
- Telephone Surveys
- Feasibility Studies

The most reliable and preferred method is a field visit to each community to identify and obtain accurate numbers of homes with sanitation deficiencies. The number of Indian homes within the communities must be consistent among the various methods cited above. If a field visit cannot be made, it is highly recommended that more than one method be used to determine sanitation deficiencies to increase the accuracy and establish greater credibility for the data.

The PDS is a listing of funded construction projects and is used as a management and reporting tool.

QA/QC Procedures: Quality assurance for the Indian country water quality performance measure depends on the quality of the data in the STARS. The STARS data undergoes a series of quality control reviews at various levels within the IHS DSFC. The DSFC is required to annually report deficiencies in SDS to Congress in terms of total and feasible project costs for proposed sanitation projects and sanitation deficiency levels for existing homes.

Data Quality Reviews: The SDS data initially undergoes a series of highly organized reviews by experienced tribal, IHS field, IHS district and IHS area personnel. The data are then sent to the DSFC headquarters office for review before final results are reported. The DSFC headquarters reviews the SDS data for each of the 12 IHS area offices. The data quality review consists of performing a number of established data queries and reports which check for errors and/or inconsistencies. In addition, the top 25 SDS projects and corresponding community deficiency profiles for each area are reviewed and scrutinized thoroughly. Detailed cost estimates are highly encouraged and are usually available for review.

Data Limitations: The data are limited by the accuracy of reported data in STARS.

Error Estimate: The IHS DSFC requires that higher-level projects (those with the possibility of funding prior to the next update) must be developed to allow for program implementation in an organized, effective, efficient manner. Those SDS projects (top 20%) must have cost estimates within 10% of the actual costs.

New/Improved Data or Systems: The STARS is a web based application and therefore allows data to be continuously updated by personnel at various levels and modified as program requirements are identified.

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References:

1. Indian Health Service (IHS), Division of Sanitation Facilities (DSFC). Criteria for the Sanitation Facilities Construction Program, June 1999, Version 1.02, 3/13/2003. http://www.dsfc.ihs.gov/Documents/Criteria_March_2003.cfm
2. Indian Health Service (IHS), Division of Sanitation Facilities (DSFC). Sanitation Deficiency System (SDS), Working Draft, "Guide for Reporting Sanitation Deficiencies for Indian Homes and Communities", May 2003. <http://www.dsfc.ihs.gov/Documents/SDSWorkingDraft2003.pdf>

FY 2006 Performance Measure:

- **Prevent water pollution and protect aquatic systems so that overall aquatic system health of coastal waters nationally, and in each coastal region, is improved on the "good/fair/poor" scale of the National Coastal Condition Report**
- **Maintain water clarity and dissolved oxygen in coastal waters at the national levels reported in the 2002 National Coastal Condition Report based upon recent data reported in the 2004 National Coastal Condition Report**
- **Improve ratings reported on the national "good/fair/poor" scale of the National Coastal Condition Report for: coastal wetlands loss by at least 0.1 points; contamination of sediments in coastal waters by at least 0.1 points; benthic quality by at least 0.1 points; & eutrophic condition by at least 0.1 points**

Performance Database: EMAP/NCA [Environmental Monitoring and Assessment Program/National Coastal Assessment] database (housed EPA/ORD/NHEERL/AED, Narragansett, RI)(Environmental Protection Agency/Office of Research and Development/National Health and Environmental Effects Research Laboratory/Gulf Ecology Division); pre-database information housed in ORD/NHEERL facility in Gulf Breeze, FL (Gulf Ecology Division) (pre-database refers to a temporary storage site for data where they are examined for QA purposes, have appropriate metadata attached and undergo initial statistical analyses); data upon QA acceptance and metadata completion are transferred to EMAP/NCA database and are web available at www.epa.gov/emap/nca.

Data Source: Probabilistic surveys of ecological condition completed throughout the Mid-Atlantic and Gulf of Mexico by EPA's Office of Research and Development (ORD) in 1991-1994, in southern Florida in 1995, in the Southeast in 1995-1997, in the Mid-Atlantic in 1997-1998, in each coastal state in 2000-2004 (except Alaska and Hawaii), in Alaska in 2002 and 2004, in Hawaii in 2002 and 2004, and in Puerto Rico in 2000 and 2004, and in other island territories (Guam, American Samoa and U.S. Virgin Islands) in 2004. Surveys collect condition information regarding water quality, sediment quality and biotic condition at 70-100 sites/region (e.g., mid-Atlantic) each year of collection prior to 1999 and at 35-150 sites in each state or territory/year (site number dependent upon state) after 1999. Additional sampling by the

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National Estuary Program (NEP) included all individual national estuaries; the total number of sites within NEP boundaries was 30 for the two-year period 2000-2003.

These data are collected through a joint EPA-State cooperative agreement and the States follow a rigid sampling and collection protocol following intensive training by EPA personnel. Laboratory processing is completed at either a state laboratory or through a national EPA contract. Data collection follows a Quality Assurance Project Plan (QAPP) (either the National Coastal QAPP or a variant of it) and QA testing and auditing by EPA.

Methods, Assumptions and Suitability: The surveys are conducted using a probabilistic survey design which allows extrapolation of results to the target population (in this case - all estuarine resources of the specific state.) The collection design maximizes the spatial spread between sites, located by specific latitude-longitude combinations. The survey utilizes an indexed sampling period (generally late summer) to increase the probability of encountering water quality, sediment quality and biotic condition problems, if they exist. Based on the QAPP and field collection manual, a site in a specific state is located by sampling vessel via Global Positioning System (GPS) and water quality is measured on board at multiple depths. Water samples are taken for chemistry; sediment samples are taken for chemistry, toxicity testing and benthic community assessment; and fish trawls are conducted to collect community fish data and provide selected fish (target species) for analysis of whole body and/or fillet contaminant concentrations. Samples are stored in accordance with field manual instructions and shipped to the processing laboratory. Laboratories follow QA plans and complete analyses and provide electronic information to the state or EPA. EPA and the state exchange data to ensure that each has a complete set. EPA analyzes the data to assess regional conditions, whereas the states analyze the data to assess conditions of state-specific waters. Results of analyses on a national and regional basis are reported as chapters in the National Coastal Condition Report (NCCR) series. The overall regional condition index is the simple mean of the five indicators' scores used in the Coastal Condition Report (in the NCCR2 a recalculation method was provided for direct comparison of the successive reports). An improvement for one of the indicators by a full category unit over the eight year period will be necessary for the regional estimate to meet the performance measurement goal (+0.2 over an eight year period).

Assumptions: (1) The underlying target population (estuarine resources of the United States) has been correctly identified; (2) GPS is successful; (3) QAPP and field collection manuals are followed; (4) all samples are successfully collected; (5) all analyses are completed in accordance with the QAPP; and (6) all combinations of data into indices are completed in a statistically rigorous manner.

Suitability: By design all data are suitable to be aggregated to the state and regional level to characterize water quality, sediment quality, and biotic condition. Samples represent "reasonable", site-specific point-in-time data (not primary intention of data use) and an excellent representation of the entire resource (extrapolation to entire resource supportable). The intended use of the data is the characterization of populations and subpopulations of estuarine resources

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through time. The data meet this expectation and the sampling, response, analysis and reporting designs have been peer reviewed successfully multiple times. The data are suitable for individual calendar year characterization of condition, comparison of condition across years, and assessment of long-term trends once sufficient data are collected (7-10 years). Data are suitable for use in National Coastal Condition calculations for the United States and its regions to provide performance measurement information. The first long-term trends analysis will appear in the 2006 NCCR representing trends between 1990-2004.

QA/QC Procedures: The sampling collection and analysis of samples are controlled by a Quality Assurance Project Plan (QAPP) [EPA 2001] and the National Coastal Assessment Information Management Plan (IMP)[EPA 2001]. These plans are followed by all twenty-three coastal states and 5 island territories. Adherence to the plans are determined by field training (conducted by EPA ORD), field audits (conducted by EPA/ORD), round robin testing of chemistry laboratories (conducted by EPA/ORD), overall systems audits of state programs and national laboratory practices (conducted by EPA), sample splits (sent to reference laboratories), blind samples (using reference materials) and overall information systems audits (conducted by EPA/ORD). Batch sample processing for laboratory analyses requires the inclusion of QA samples in each batch. All states are subject to audits at least once every two years. All participants received training in year 2000 and retraining sessions are scheduled every two years.

Data Quality Reviews: Data quality reviews have been completed in-house by EPA ORD at the regional and national level in 2000-2003 (National Coastal Assessment 2000-2003) and by the Office of Environmental Information (OEI) in 2003 (assessment completed in June, 2003 and written report not yet available; oral debriefing revealed no deficiencies). No deficiencies were found in the program. A national laboratory used in the program (University of Connecticut) for nutrient chemistry, sediment chemistry and fish tissue chemistry is being evaluated by the Inspector General's Office for potential falsification of laboratory results in connection with other programs not related to NCA. The NCA has conducted its own audit assessment and only one incorrect use of a chemical digestion method for inorganic chemistry samples (metals) was found. This error was corrected and all samples "digested" incorrectly were reanalyzed at no cost.

Data Limitations: Data limitations are few. Because the data are collected in a manner to permit calculation of uncertainty and designed to meet a specific Data Quality Objective (DQO) (<10% error in spatial calculation for each annual state estimate), the results at the regional level (appropriate for this performance measure) are within about 2- 4% of true values dependent upon the specific sample type. Other limitations as follows: (a) Even though methodology errors are minimized by audits, in the first year of the NCA program (2000) some errors occurred resulting in loss of some data. These problems were corrected in 2001 and no problems have been observed since. (b) In some instances, (<5%) of sample results, QA investigation found irregularities regarding the precision of measurement (e.g., mortality toxicity testing of controls exceeded detection limit, etc.). In these cases, the data were "flagged" so that users are aware of the potential limitations. (c) Because of the sampling/ analysis design, the loss of data at a small

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scale (~ 10%) does not result in a significant increase in uncertainty in the estimate of condition. Wholesale data losses of multiple indicators throughout the U.S. coastal states and territories would be necessary to invalidate the performance measure. (d) The only major source of external variability is year-to-year climatic variation (drought vs. wet, major climatic event, etc.) and the only source of internal variation is modification of reporting indicators (e.g., new indices, not a change in data collected and analyzed). This internal reporting modification requires a re-analysis of earlier information to permit direct comparison. (e) There is generally a 2-3 year lag from the time of collection until reporting. Sample analysis generally takes one year and data analysis another. Add another year for report production and peer review. (f) Data collections are completed annually; The EPA/ORD data collection collaboration will continue through 2004. After 2004, ORD will assist OW, as requested, with expert advice, but will no longer support the program financially.

Error Estimate: The estimate of condition (upon which the performance measure is determined) has an annual uncertainty rate of about 2-3% for national condition, about 5-7% for individual regional indicators (composite of all five states data into a regional estimate), and about 9-10% for individual state indicators. These condition estimates are determined from the survey data using cumulative distribution functions and the uncertainty estimates are calculated using the Horvitz-Thompson estimator.

New/Improved Data or Systems:

- (1) Changes have occurred in the data underlying the performance measure based on scientific review and development. A change in some reporting indicators has occurred in order to more accurately represent the intended ecological process or function. For example, a new eutrophication index was determined for the 2000 data. In order to compare this new index to the 1991-1994 data, the earlier data results must be recomputed using the new technique. This recalculation is possible because the underlying data collection procedures have not changed.
- (2) New national contract laboratories have been added every year based on competition. QA requirements are met by the new facilities and rigorous testing at these facilities is completed before sample analysis is initiated. QA adherence and cross-laboratory sample analysis has minimized data variability resulting from new laboratories entering the program.
- (3) The only reason for the discontinuation of the National performance goal would be the elimination of the surveys after 2004 or any other year thereafter.

In order to continue to utilize the 2001 National Coastal Condition report as the baseline for this performance measure, the original scores reported in 2001 have been re-calculated in the 2004 report using the index modifications described above (#1). These “new” results for the baseline (re-calculated scores) are reported in Appendix C of the 2004 report.

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References:

1. Environmental Monitoring and Assessment Database (1990-1998) and National Coastal Assessment Database (2000- 2004) websites: www.epa.gov/emap and www.epa.gov/emap/nca (NCA data for 2000 is only data available at present)
2. National Coastal Assessment. 2000-2003. Various internal memoranda regarding results of QA audits. (Available through John Macauley, National QA Coordinator NCA, USEPA, ORD/NHEERL/GED, 1 Sabine Island, Gulf Breeze, FL 32561)
3. National Coastal Assessment. 2001. Quality Assurance Project Plan. EPA/620/R-01/002.(Available through John Macauley above)
4. National Coastal Assessment. 2001. Information Management Plan. EPA/620/R-01/003 (Available through Stephen Hale, NCA IM Coordinator, ORD/NHEERL/AED, 27 Tarzwell Drive, Narragansett, RI)
5. U.S. Environmental Protection Agency. 2001. National Coastal Condition Report. EPA-620/R- 01/005.
6. U.S. Environmental Protection Agency. 2004. National Coastal Condition Report II. In review Assigned Report Number EPA-620/R-03/002.

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Goal 2 Objective 3

FY 2006 Performance Measure:

- **Final reports of full-scale demonstrations of arsenic treatment technologies**
- **Report on bioassessment methods for a range of designated uses in freshwater systems within Mid-Western U.S. rivers**

Performance Database: Program output; no internal tracking system

Data Source: N/A

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: N/A

Data Quality Reviews: N/A

Data Limitations: N/A

Error Estimate: N/A

New/Improved Data or Systems: N/A

References: N/A

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Goal 3 Objective 1

FY 2006 Performance Measures:

- **Daily per capita generation**
- **Millions of tons municipal solid waste diverted**

Performance Database: Data are provided by the Department of Commerce. EPA does not maintain a database for this information.

Data Source: The baseline numbers for municipal solid waste (MSW) source reduction and recycling are developed using a materials flow methodology employing data largely from the Department of Commerce and described in the EPA report titled “Characterization of Municipal Solid Waste in the United States.” The Department of Commerce collects materials production and consumption data from various industries.

Methods, Assumptions and Suitability: Data on domestic production of materials and products are compiled using published data series. U.S. Department of Commerce sources are used, where available; but in several instances more detailed information on production of goods by end-use is available from trade associations. The goal is to obtain a consistent historical data series for each product and/or material. Data on average product lifetimes are used to adjust the data series. These estimates and calculations result in material-by-material and product-by-product estimates of MSW generation, recovery, and discards. To strategically support attainment of the 35% recycling goal, EPA has identified specific components of the MSW stream on which to focus: paper and paperboard, organics (yard and food waste), and plastics. For these targeted efforts EPA will examine data on these waste components.

There are various assumptions factored into the analysis to develop estimates of MSW generation, recovery and discards. Example assumptions (from pages 141-142 of year 2000 “Characterization Report”) include: Textiles used as rags are assumed to enter the waste stream the same year the textiles are discarded. Some products (e.g., newspapers and packaging) normally have short lifetimes and products are assumed to be discarded in the year they are produced.

QA/QC Procedures: Quality assurance and quality control are provided by the Department of Commerce’s internal procedures and systems. The report prepared by the Agency, “Characterization of Municipal Solid Waste in the United States,” is reviewed by a number of experts for accuracy and soundness.

Data Quality Review: The report, including the baseline numbers and annual rates of recycling and per capita municipal solid waste generation, is widely accepted among experts.

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Data Limitations: Data limitations stem from the fact that the baseline statistics and annual rates of recycling and per capita municipal solid waste generation are based on a series of models, assumptions, and extrapolations and, as such, are not an empirical accounting of municipal solid waste generated or recycled.

Error Estimate: N/A. Currently, the Office of Solid Waste (OSW) does not collect data on estimated error rates.

New/Improved Data or Systems: Because the statistics on MSW generation and recycling are widely reported and accepted by experts, no new efforts to improve the data or the methodology have been identified or are necessary. EPA plans to develop regulations for improving reporting of source reduction activities by Toxic Release Inventory reporting facilities.

References: *Municipal Solid Waste in the United States: 2001 Facts and Figures*, EPA, October 2003 (EPA 530-R-03-011), <http://www.epa.gov/osw/index.htm>.

FY 2006 Performance Measure:

- **Percent of RCRA hazardous waste management facilities with permits or other approved controls in place**

Performance Database: The Resource Conservation Recovery Act Information System (RCRAInfo) is the national database which supports EPA's RCRA program.

Data Source: Data are entered by the States. Supporting documentation and reference materials are maintained in regional and state files. EPA's Regional offices and authorized states enter data on a rolling basis.

Methods, Assumptions and Suitability: The Resource Conservation Recovery Act Information System (RCRAInfo) is the national database which supports EPA's RCRA program. RCRAInfo contains information on entities (generically referred to as "handlers") engaged in hazardous waste generation and management activities regulated under the portion of RCRA that provides for regulation of hazardous waste. RCRAInfo has several different modules, including status of RCRA facilities in the RCRA permitting universe.

QA/QC Procedures: States and EPA's Regional offices generate the data and manage data quality related to timeliness and accuracy. Within RCRAInfo, the application software enforces structural controls that ensure that high-priority national components of the data are properly entered. RCRAInfo documentation, which is available to all users on-line at <http://www.epa.gov/rcrainfo/>, provides guidance to facilitate the generation and interpretation of data. Training on use of RCRAInfo is provided on a regular basis, usually annually, depending on the nature of system changes and user needs. Determination of whether or not the GPRA annual goals are met is based on the legal and operating status codes for each unit (e.g., a facility

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can have more than one unit). Each year since 1999, in discussions with regions and states, EPA has highlighted the need to keep the data that supports the GPRA permitting goal current. RCRAInfo is the sole repository for this information and is a focal point for planning from the local to national level.

Note: Access to RCRAInfo is open only to EPA Headquarters, Regional, and authorized State personnel. It is not available to the general public because the system contains enforcement sensitive data. The general public is referred to EPA's Envirofacts Data Warehouse to obtain filtered information on RCRA-regulated hazardous waste sites.

Data Quality Review: The 1995 GAO report *Hazardous Waste: Benefits of EPA's Information System Are Limited* (AIMD-95-167, August 22, 1995, <http://www.gao.gov/archive/1995/ai95167.pdf>) on EPA's Hazardous Waste Information System reviewed whether national RCRA information systems support EPA and the states in managing their hazardous waste programs. Recommendations coincide with ongoing internal efforts to improve the definitions of data collected, ensure that data collected provide critical information and minimize the burden on states. RCRAInfo, the current national database has evolved in part as a response to this report.

Data Limitations: No data limitations have been identified. The states have ownership of their data and EPA has to rely on them to make changes. The data that determine if a facility has met its permit requirements are prioritized in update efforts. Basic site identification data may become out-of-date because RCRA does not mandate annual or other periodic notification by the regulated entity when site name, ownership and contact information changes. Nevertheless, EPA tracks the facilities by their IDs and those should not change even during ownership changes.

Error Estimate: N/A. Currently OSW does not collect data on estimated error rates.

New/Improved Data or Systems: EPA has successfully implemented new tools for managing environmental information to support federal and state programs, replacing the old data systems (the Resource Conservation and Recovery Information System and the Biennial Reporting System) with RCRAInfo. RCRAInfo allows for tracking of information on the regulated universe of RCRA hazardous waste handlers, such as facility status, regulated activities, and compliance history. The system also captures detailed data on the generation of hazardous waste by large quantity generators and on waste management practices from treatment, storage, and disposal facilities. RCRAInfo is web accessible, providing a convenient user interface for Federal, state and local managers, encouraging development of in-house expertise for controlled cost, and using commercial off-the-shelf software to develop reports from database tables.

References: RCRAInfo documentation and data (<http://www.epa.gov/rcrainfo/>). The 1995 GAO report *Hazardous Waste: Benefits of EPA's Information System Are Limited* (AIMD-95-167, August 22, 1995, <http://www.gao.gov/archive/1995/ai95167.pdf>).

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FY 2006 Performance Measure:

- **Percentage of UST facilities that are in significant operational compliance with both release detection and release prevention (spill, overfill, and corrosion protection) requirements**
- **Number of confirmed releases at UST facilities nationally**
- **Percent increase of UST facilities that are in significant operational compliance with both release detection and release prevention (Spill, overfill, and corrosion protection requirements)**

Performance Database: The Office of Underground Storage Tanks (OUST) does not maintain a national database. States individually maintain records for reporting state program accomplishments.

Data Source: Designated State agencies submit semi-annual progress reports to the EPA regional offices.

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: EPA's regional offices verify and then forward the data in a word processing table to OUST. OUST staff examine the data and resolve any discrepancies with the regional offices. The data are displayed in a word processing table on a region-by-region basis, which is a way regional staff can check their data.

Data Quality Review: None.

Data Limitations: Percentages reported are sometimes based on estimates and extrapolations from sample data. Data quality depends on the accuracy and completeness of state records.

Error Estimate: N/A

New/Improved Data or Systems: None.

References: FY 2004 End-of-Year Activity Report, November 24, 2004 (updated semi-annually). http://www.epa.gov/oust/cat/ca_043_4.pdf

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Goal 3 Objective 2

FY 2006 Performance Measure:

- **Number of inspections and exercises conducted at oil storage facilities required to have Facility Response Plans**
- **Oil spills responded to or monitored by EPA**

Performance Database: A new, more streamlined reporting system is under development to store oil spill prevention, emergency preparedness and response information. Information included in the new database will be similar to CERCLIS, but definitions and activities pertaining to oil will be included to support oil spill program needs for FY 2004 and beyond. System is currently on hold pending reorganization of the Office of Solid Waste and Emergency Response/Office of Emergency Preparedness, Prevention and Response.

Data Source: a new system pending

Methods, Assumptions and Suitability: Pending new database

QA/QC Procedures: N/A

Data Quality Reviews: N/A

Data Limitations: N/A

Error Estimate: N/A

New/Improved Data or Systems: N/A

References: For additional information on the Oil program, see http://www.epa.gov/superfund/action/process/appdx_f5.pdf. As noted above, the program is currently undergoing reorganization.

FY 2006 Performance Measure:

- **Percentage of emergency response and homeland security readiness improvement**

Performance Database: No specific database has been developed. Data from evaluations from each of the 10 Regions are tabulated and stored using standard software (WordPerfect, spreadsheets, etc.).

Data Source: Data are collected through detailed surveys of all Regional programs, and interviews with personnel and managers in each program office. The score represents a

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composite based upon data from each unique Regional and headquarters organization. Annual increments represent annual improvements. The survey instrument was developed based upon Core Emergency Response (ER) elements, and has been approved by EPA Headquarters and Regional managers. Core ER elements cover all aspects of the Core ER program, including Regional Response Centers, transportation, coordination with backup Regions, health and safety, delegation and warrant authorities, response readiness, response equipment, identification clothing, training and exercises, and outreach.

While EPA is currently prepared to respond to chemical, biological, and radiological incidents, improvement in the emergency response and homeland security readiness measure will demonstrate an increased ability to respond quickly and effectively to national-scale events. The FY 2004 Core ER target is to improve emergency response and homeland security readiness by 10% from the FY 2003 baseline performance.

Methods, Assumptions and Suitability: The Core ER elements were developed over the last several years by the EPA Removal Program to identify and clarify what is needed to ensure an excellent emergency response program. The elements, definitions, and rationales were developed by staff and managers and have been presented to the Administrator and other high level Agency managers. Based on the Core ER standards, evaluation forms and criteria were established for EPA's Regional programs, the Environmental Response Team (ERT), and Headquarters. These evaluation criteria identify what data need to be collected, and how that data translate into an appropriate score for each Core ER element. The elements and evaluation criteria will be reviewed each year for relevance to ensure that the programs have the highest standards of excellence and that the measurement clearly reflects the level of readiness. The data are collected from each Regional office, ERT, and Headquarters using a systematic, objective process. Each evaluation team consists of managers and staff, from Headquarters and from another EPA Regional office, with some portion of the team involved in all reviews for consistency and some portion varying to ensure independence and objectivity. For instance, a team evaluating Region A might include some or all of the following: a staff person from Headquarters who is participating in all reviews, a staff person from Headquarters who is very familiar with Region A activities, a manager from Headquarters, and a staff person and/or manager from Region B. One staff or group will be responsible for gathering and analyzing all the data to determine the overall score for each Regional office, ERT, and Headquarters, and for determining an overall National score.

QA/QC Procedures: See "Methods, Assumptions and Suitability"

Data Quality Review: The evaluation team will review the data (see Methods, Assumptions and Suitability) during the data collection and analysis process. Additional data review will be conducted after the data has been analyzed to ensure that the scores are consistent with the data and program information. There currently is no specific database that has been developed to collect, store, and manage the data.

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Data Limitations: One key limitation of the data is the lack of a dedicated database system to collect and manage the data. Standard software packages (word processing, spreadsheets) are used to develop the evaluation criteria, collect the data, and develop the accompanying readiness scores. There is also the possibility of subjective interpretation of data.

Error Estimate: It is likely that the error estimate for this measure will be small for the following reasons: the standards and evaluation criteria have been developed and reviewed extensively by Headquarters and EPA's Regional managers and staff; the data will be collected by a combination of managers and staff to provide consistency across all reviews plus an important element of objectivity in each review; the scores will be developed by a team looking across all ten Regions, ERT, and Headquarters; and only twelve sets of data will be collected, allowing for easier cross-checking and ensuring better consistency of data analysis and identification of data quality gaps.

New/Improved Data or Systems: There are no current plans to develop a dedicated system to manage the data.

References: FY 2004/2005 Superfund Program Implementation Manual (SPIM), <http://www.epa.gov/superfund/action/process/pdfs/appdxb3p1.pdf>.

FY 2006 Performance Measure:

- **Number of final Superfund site assessment decisions**
- **Number of Superfund hazardous waste sites with human exposures controlled**
- **Number of Superfund hazardous waste sites with groundwater migration controlled**
- **Number of final remedies (cleanup targets) selected at Superfund sites**
- **Number of Superfund construction completions**
- **Number of Superfund removal response actions initiated**

Performance Database: The Comprehensive Environmental Response, Compensation, and Liability System (CERCLIS) is the database used by the Agency to track, store, and report Superfund site information.

Data Source: CERCLIS is an automated EPA system; headquarters and EPA's Regional offices enter data into CERCLIS on a rolling basis.

Methods, Assumptions and Suitability: Each performance measure is a specific variable within CERCLIS.

QA/QC Procedures: To ensure data accuracy and control, the following administrative controls are in place: 1) Superfund Implementation Manual (SPIM), the program management manual that details what data must be reported; 2) Report Specifications, which are published for each report detailing how reported data are calculated; 3) Coding Guide, which contains technical

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instructions to such data users as Regional Information Management Coordinators (IMCs), program personnel, report owners, and data input personnel; 4) Quality Assurance (QA) Unit Testing, an extensive QA check against report specifications; 5) Regional CERCLIS Data Entry Internal Control Plan, which includes: (a) regional policies and procedures for entering data into CERCLIS; (b) a review process to ensure that all Superfund accomplishments are supported by source documentation; (c) delegation of authorities for approval of data input into CERCLIS; and (d) procedures to ensure that reported accomplishments meet accomplishment definitions; and (6) a historical lockout feature has been added to CERCLIS so that changes in past fiscal year data can be changed only by approved and designated personnel and are logged to a change-log report. Specific directions for these controls are contained in the Superfund Program Implementation Manual (SPIM) Fiscal Year 2004/2005 (<http://www.epa.gov/superfund/action/process/spim04.htm>).

CERCLIS operation and further development is taking place under the following administrative control quality assurance procedures: 1) Office of Environmental Information Interim Agency Life Cycle Management Policy Agency Directive 2100.4 (<http://cfint1.rtpnc.epa.gov/ntsdweb/otop/policies/infoman.cfm>); 2) the Office of Superfund Remediation and Technology Innovation Quality Management Plan (http://www.epa.gov/swerffrr/pdf/oswer_qmp.pdf) 3) Agency platform, software and hardware standards (<http://basin.rtpnc.epa.gov/ntsd/itroadmap.nsf>); 4) Quality Assurance Requirements in all contract vehicles under which CERCLIS is being developed and maintained (<http://www.epa.gov/quality/informationguidelines>); and 5) Agency security procedures (<http://basin.rtpnc.epa.gov/ntsd/ITRoadMap.nsf/Security?OpenView>). In addition, specific controls are in place for system design, data conversion and data capture, and CERCLIS outputs.

Data Quality Reviews: Two audits, one by the Office Inspector General (OIG) and the other by Government Accountability Office (GAO), were conducted to assess the validity of the data in CERCLIS. The OIG audit report, *Superfund Construction Completion Reporting* (No. E1SGF7_05_0102_8100030), dated December 30, 1997, was prepared to verify the accuracy of the information that the Agency was providing to Congress and the public. The OIG report concluded that the Agency “has good management controls to ensure accuracy of the information that is reported,” and “Congress and the public can rely upon the information EPA provides regarding construction completions.” Further information on this report are available at <http://www.epa.gov/oigearth/eroom.htm>. The GAO’s report, *Superfund: Information on the Status of Sites* (GAO/RCED-98-241), dated August 28, 1998, was prepared to verify the accuracy of the information in CERCLIS on sites’ cleanup progress. The report estimates that the cleanup status of National Priority List (NPL) sites reported by CERCLIS as of September 30, 1997, is accurate for 95 percent of the sites. Additional information on the *Status of Sites* may be obtained at <http://www.gao.gov/archive/1998/rc98241.pdf>. Another OIG audit, *Information Technology - Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Data Quality* (Report No. 2002-P-00016), dated September 30, 2002, evaluated the accuracy, completeness, timeliness, and consistency of the data entered into CERCLIS. The weaknesses identified were caused by the lack of an effective quality assurance

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process and adequate internal controls for CERCLIS data quality. The report provided 11 recommendations to improve controls for CERCLIS data quality. EPA concurs with the recommendations contained in the audit, and many of the identified problems have been corrected or actions that would address these recommendations are underway. Additional information about this report is available at <http://www.epa.gov/oigearth/erom.htm>.

The IG reviews annually the end-of-year Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) data, in an informal process, to verify the data supporting the performance measures. Typically, there are no published results.

The Quality Management Plan (QMP) for the Office of Solid Waste and Emergency Response (OSWER) was signed in August 2003 (http://www.epa.gov/swerffrr/pdf/oswer_qmp.pdf).

Data Limitations: Weaknesses were identified in the OIG audit, *Information Technology - Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Data Quality* (Report No. 2002-P-00016), dated September 30, 2002. The weaknesses identified were caused by the lack of an effective quality assurance process and adequate internal controls for CERCLIS data quality. Although the Agency disagrees with the study design and report conclusions, the report provided 11 recommendations with which EPA concurs. Many of the identified problems have been corrected or actions that would address these recommendations are underway, e.g., 1) FY 02/03 SPIM Chapter 2 update was made to better define the Headquarters' and Regional roles and responsibilities for maintaining planning and accomplishment data in CERCLIS; 2) FY 04/05 SPIM Appendix A, Section A.A.5 'Site Status Indicators' added language to clarify the use of the non-NPL status code of "SX"; 3) FY 04/05 SPIM Appendix A, Section A.A.6 'Data Quality' added a section on data quality which includes a list of relevant reports; 4) FY 04/05 SPIM Appendix E, Section E.A.5 "Data Owners/Sponsorship" was revised to reflect what data quality checks (focus data studies) will be done by designated Regional and headquarters staff; 5) draft guidance from OCA (Other Cleanup Activity) subgroup, which outlines the conditions under which sites are taken back from states when states have the lead but are not performing; and 6) Pre-CERCLIS Screening: A Data Entry Guide, which provides guidance to the regions for preventing entry of duplicate sites in CERCLIS. The development and implementation of a quality assurance process for CERCLIS data has begun. This process includes delineating quality assurance responsibilities in the program office and periodically selecting random samples of CERCLIS data points to check against source documents in site files.

Error Estimate: The GAO's report, *Superfund: Information on the Status of Sites* (GAO/RECD-98-241), dated August 28, 1998, estimates that the cleanup status of National Priority List sites reported by CERCLIS is accurate for 95 percent of the sites. The OIG report, *Information Technology - Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Data Quality* (Report No. 2002-P-00016), dated September 30, 2002, states that over 40 percent of CERCLIS data on site actions reviewed was inaccurate or not adequately supported. Although the 11 recommendations were helpful and will improve controls

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over CERCLIS data, the Agency disagrees and strongly objects to the study design and report conclusions, stating they do not focus on the program's data quality hierarchy and the importance it places on NPL sites.

New/Improved Data or Systems: A CERCLIS modernization effort is currently underway to enhance CERCLIS, with a focus on data collection and data analysis and how to best satisfy the current needs of the Superfund program. Among other initiatives, this effort includes reviewing current and anticipated data needs. Items in CERCLIS that are no longer needed will be deleted, and new items identified will be added. Strict standards for quality will be enforced. The CERCLIS database has been made Intranet accessible. This will make it easier to access the database and will improve database reliability because there will no longer be 10 separate CERCLIS installations on Regional servers. The Superfund eFacts system is a vital part of the CERCLIS modernization efforts. The Superfund eFacts system is an e-Government solution design to give EPA management and staff quick and easy access to important milestones relating to various aspects of the Superfund program. In 2006, the Agency will continue its efforts begun in 1999 to improve the Superfund program's technical information by increasing reliance upon the CERCLIS data system, which will incorporate more site remedy selection, risk, removal response, and community involvement information. Efforts to share information among the Federal, state, and Tribal programs to further enhance the Agency's efforts to efficiently identify, evaluate, and remediate Superfund hazardous waste sites will continue. In 2005, the Agency will also establish data quality objectives for program planning purposes and to formulate the organization's information needs for the next 5 years. Adjustments will be made to EPA's current architecture and business processes to better meet those needs.

References: OIG audit *Superfund Construction Completion Reporting*, (No. E1SGF7_05_0102_8100030) and *Information Technology - Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Data Quality*, (No. 2002-P-00016, <http://www.epa.gov/oigearth/eroom.htm>); and the GAO report, *Superfund Information on the Status of Sites* (GAO/RCED-98-241, <http://www.gao.gov/archive/1998/rc98241.pdf>). The Superfund/Oil Implementation Manuals for the fiscal years 1987 to the current manual (<http://www.epa.gov/superfund/action/guidance/index.htm>). The Quality Management Plan (QMP) for the Office of Solid Waste and Emergency Response (August 2003, http://www.epa.gov/swerffrr/pdf/oswer_qmp.pdf). Office of Environmental Information Interim Agency Life Cycle Management Policy Agency Directive 2100.4 (<http://cfint1.rtpnc.epa.gov/ntsdweb/otop/policies/infoman.cfm>). The Office of Superfund Remediation and Technology Innovation Quality Management Plan (http://www.epa.gov/swerffrr/pdf/oswer_qmp.pdf). EPA platform, software and hardware standards (<http://basin.rtpnc.epa.gov/ntsd/itroadmap.nsf>). Quality Assurance Requirements in all contract vehicles under which CERCLIS are being developed and maintained (<http://www.epa.gov/quality/informationguidelines>). EPA security procedures (<http://basin.rtpnc.epa.gov/ntsd/ITRoadMap.nsf/Security?OpenView>).

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FY 2006 Performance Measures:

- **High priority RCRA facilities with human exposures to toxins controlled**
- **High priority RCRA facilities with toxic releases to groundwater controlled**

Performance Database: The Resource Conservation Recovery Act Information System (RCRAInfo) is the national database that supports EPA's RCRA program.

Data Source: The States and Regions enter Data. A "High", "Medium", or "Low" entry is made in the database with respect to final-assessment decision. A "yes" or "no" entry is made in the database with respect to meeting the human exposures to toxins controlled and releases to groundwater controlled indicators. An entry will be made in the database to indicate when a remedy is selected and the complete construction of a remedy is made. Supporting documentation and reference materials are maintained in the Regional and State files. EPA's Regional offices and authorized States enter data on a continual basis.

Methods, Assumptions and Suitability: RCRAInfo has several different modules, including a Corrective Action Module that tracks the status of facilities that require, or may require, corrective actions. RCRAInfo contains information on entities (generically referred to as "handlers") engaged in hazardous waste (HW) generation and management activities regulated under the portion of RCRA that provides for regulation of hazardous waste. The annual performance measures are used to summarize and report on the facility-wide environmental conditions at the RCRA Corrective Action Program's highest priority facilities. They are used to track the RCRA program's progress in getting highest priority contaminated facilities under control. Known and suspected facility-wide conditions are evaluated using a series of simple questions and flow-chart logic to arrive at a reasonable, defensible determination. These questions were issued as a memorandum titled: *Interim Final Guidance for RCRA Corrective Action Environmental Indicators, Office of Solid Waste, February 5, 1999*. Lead regulators for the facility (authorized state or EPA) make the environmental indicator determination; however, facilities or their consultants may assist EPA in the evaluation by providing information on the current environmental conditions. Remedies selected and complete constructions of remedies are used to track the RCRA program's progress in getting highest priority contaminated facilities moving towards final cleanup. The lead regulators for the facility select the remedies and complete constructions of remedies determinations.

QA/QC Procedures: States and Regions generate the data and manage data quality related to timeliness and accuracy (i.e., the data correctly reflect the environmental conditions and determination). Within RCRAInfo, the application software enforces structural controls that ensure that high-priority national components of the data are properly entered. RCRAInfo documentation, which is available to all users on-line, provides guidance to facilitate the generation and interpretation of data. Training on use of RCRAInfo is provided on a regular basis, usually annually, depending on the nature of systems changes and user needs.

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Note: Access to RCRAInfo is open only to EPA Headquarters, Regional, and authorized State personnel. It is not available to the general public because the system contains enforcement sensitive data. The general public is referred to EPA's Envirofacts Data Warehouse to obtain filtered information on RCRA-regulated hazardous waste facilities.

Data Quality Review: The 1995 GAO report *Hazardous Waste: Benefits of EPA's Information System Are Limited* (AIMD-95-167, August 22, 1995, <http://www.gao.gov/archive/1995/ai95167.pdf>) on EPA's Hazardous Waste Information System reviewed whether national RCRA information systems support EPA and the states in managing their hazardous waste programs. Recommendations coincide with ongoing internal efforts to improve the definitions of data collected, ensure that data collected provide critical information and minimize the burden on states. RCRAInfo, the current national database has evolved in part as a response to this report.

Data Limitations: No data limitations have been identified. As discussed above, the performance measure determinations are made by the authorized states and EPA Regions based on a series of standard questions and entered directly into RCRAInfo. EPA has provided guidance and training to states and Regions to help ensure consistency in those determinations. High priority facilities are monitored on a facility-by-facility basis and the QA/QC procedures identified above are in place to help ensure data validity.

Error Estimate: N/A. Currently, the Office of Solid Waste does not collect data on estimated error rates.

New/Improved Data or Systems: EPA has successfully implemented new tools for managing environmental information to support federal and state programs, replacing the old data systems (the Resource Conservation and Recovery Information System and the Biennial Reporting System) with RCRAInfo. RCRAInfo allows for tracking of information on the regulated universe of RCRA hazardous waste handlers, such as facility status, regulated activities, and compliance history. The system also captures detailed data on the generation of hazardous waste from large quantity generators and on waste management practices by treatment, storage, and disposal facilities. RCRAInfo is web-accessible, providing a convenient user interface for federal, state and local managers, encouraging development of in-house expertise for controlled cost, and using commercial off-the-shelf software to develop reports from database tables.

References: RCRAInfo documentation and data (<http://www.epa.gov/rcrainfo/>). The 1995 GAO report *Hazardous Waste: Benefits of EPA's Information System Are Limited* (AIMD-95-167, August 22, 1995, <http://www.gao.gov/archive/1995/ai95167.pdf>).

FY 2006 Performance Measure:

- **Number of leaking underground storage tank cleanups completed**

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Performance Database: The Office of Underground Storage Tanks (OUST) does not maintain a national database. States individually maintain records for reporting state program accomplishments.

Data Source: Designated State agencies submit semi-annual progress reports to the EPA regional offices.

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: EPA's regional offices verify and then forward the data in a word processing table to OUST. OUST staff examine the data and resolve any discrepancies with the regional offices. The data are displayed in a word processing table on a region-by-region basis, which is a way regional staff can check their data.

Data Quality Review: None.

Data Limitations: Percentages reported are sometimes based on estimates and extrapolations from sample data. Data quality depends on the accuracy and completeness of state records.

Error Estimate: N/A

New/Improved Data or Systems: None.

References: FY 2004 End-of-Year Activity Report, November 24, 2004 (updated semi-annually). http://www.epa.gov/oust/cat/ca_043_4.pdf

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Goal 3 Objective 3

FY 2006 Performance Measure:

- **Refer to DOJ, settle, or writeoff 100% of Statute of Limitations (SOLs) cases for Superfund sites with total unaddressed past costs equal to or greater than \$200,000 and report value of costs recovered**

Performance Database: Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)

Data Source: Automated EPA system; Headquarters and EPA's Regional Offices enter data into CERCLIS

Methods, Assumptions and Suitability: The data used to support this measure are collected on a fiscal year basis only. Enforcement reports are run at the end of the fiscal year, and the data that support this measure are extracted from the report.

QA/QC Procedures: Office of Site Remediation Enforcement (OSRE) Quality Management Plan, approved April 11, 2001. To ensure data accuracy and control, the following administrative controls are in place: 1) Superfund/Oil Implementation Manual (SPIM), a program management manual that details what data must be reported; 2) Report specifications, which are published for each report detailing how reported data are calculated; 3) Coding Guide, which contains technical instructions to such data users as regional Information Management Coordinators (IMCs), program personnel, report owners, and data input personnel; 4) Quality Assurance (QA) Unit Testing, an extensive QA check against report specifications; 5) QA Third Party Testing, an extensive test made by an independent QA tester to ensure that the report produces data in conformance with the report specifications; 6) Regional CERCLIS Data Entry Internal Control Plan, which includes: a) regional policies and procedures for entering data into CERCLIS, b) a review process to ensure that all Superfund accomplishments are supported by source documentation, c) delegation of authorities for approval of data input into CERCLIS, and, d) procedures to ensure that reported accomplishments meet accomplishment definitions; and 7) a historical lockout feature that has been added to CERCLIS so that changes in past fiscal year data can be changed only by approved and designated personnel and are logged to a change-log report.

Data Quality Review: The IG annually reviews the end-of-year CERCLIS data, in an informal process, to verify the data supporting the performance measure. Typically, there are no published results.

Data Limitations: None

Error Estimate: NA

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New/Improved Data or Systems: None

References: Office of Site Remediation Enforcement (OSRE) Quality Management Plan, approved April 11, 2001

FY 2006 Performance Measure:

- **Reach a settlement or take an enforcement action before the start of a remedial action at 90 percent of Superfund sites having viable, liable responsible parties other than the Federal government**

Performance Database: Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS).

Data Source: Automated EPA system; Headquarters and Regional Offices enter data into CERCLIS.

Methods, Assumptions and Suitability: There are no analytical or statistical methods used to collect the information. The data used to support this measure are collected on a fiscal year basis only. Enforcement reports are run at the end of the fiscal year, and the data that supports this measure are extracted from the report.

QA/QC Procedures: Office of Site Remediation Enforcement (OSRE) Quality Management Plan, approved April 11, 2001. To ensure data accuracy and control, the following administrative controls are in place: 1) Superfund/Oil Implementation Manual (SPIM), a program management manual that details what data must be reported; 2) Report Specifications, which are published for each report detailing how reported data are calculated; 3) Coding Guide, which contains technical instructions to such data users as regional Information Management Coordinators (IMCs), program personnel, report owners, and data input personnel; 4) Quality Assurance (QA) Unit Testing, an extensive QA check against report specifications; 5) QA Third Party Testing, an extensive test made by an independent QA tester to ensure that the report produces data in conformance with the report specifications; 6) Regional CERCLIS Data Entry Internal Control Plan, which includes: a) regional policies and procedures for entering data into CERCLIS, b) a review process to ensure that all Superfund accomplishments are supported by source documentation, c) delegation of authorities for approval of data input into CERCLIS, and, d) procedures to ensure that reported accomplishments meet accomplishment definitions; and 7) a historical lockout feature that has been added to CERCLIS so that changes in past fiscal year data can be changed only by approved and designated personnel and are logged to a change-log report.

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Data Quality Review: The IG annually reviews the end-of-year CERCLIS data, in an informal process, to verify the data supporting the performance measure. Typically, there are no published results.

Data Limitations: None

Error Estimate: NA

New/Improved Data or Systems: None

References: Office of Site Remediation Enforcement (OSRE) Quality Management Plan, approved April 11, 2001.

FY 2006 Performance Measure:

- **Draft of FY05 Annual SITE Report to Congress**

Performance Database: Program output; no internal tracking system

Data Source: N/A

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: N/A

Data Quality Reviews: N/A

Data Limitations: N/A

Error Estimate: N/A

New/Improved Data or Systems: N/A

References: N/A

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Goal 4 Objective 1

FY 2006 Performance Measure:

- **Detailed Review Papers Completed**
- **Prevalidation Studies Completed**
- **Validation by Multiple Labs Completed**
- **Peer Reviews**
- **Assays Ready for Use**

Performance Database: Performance is measured by the cumulative number of actions (usually studies) to be undertaken by the projected completion date of FY 2009. The measures appear as fractions where the numerator represents the total number of cumulative actions for the current year and the denominator represents the actions projected to be completed by the end of FY 2009.

Data Source: Data are generated to support all stages of validation of endocrine test methods through contracts, grants and interagency agreements, and the cooperative support of the Organization of Economic Cooperation and Development (OECD), and EPA's Office of Research and Development (ORD). The scope of the effort includes the conduct of laboratory studies and associated analyses to validate the assays proposed for the Endocrine Disruptor Screening Program (EDSP).

Methods, Assumptions, and Suitability: The measures are program outputs that represent the program's progress toward completing the validation of endocrine test methods. The measures track progress through each stage of the process rather than reporting only the end product. These measures are being adopted because they best show the complexity of the validation process. For example, EPA may plan on four studies to address prevalidation issues for a given assay, and at the completion of the four studies, the annual performance measure (APM) would be 4/4. Upon review of the last study, EPA may conclude that an ambiguity exists, or another question has arisen that requires an additional study. The APM would then be revised to 4/5, showing that four studies were completed, but another study must now be completed to address all issues that allow EPA to move to the next phase of validation. The denominator also could move downward if, for instance, EPA concludes that a planned study is not needed or if an assay performs so poorly during prevalidation that it is dropped from the Endocrine Disruptor Screening Program.

Although 21 assays are being developed and validated (denoted by the denominator for the measure "Assays Ready for Use"), the denominators for the other measures differ from this number for several reasons: more than one assay may be covered in a Detailed Review Paper, more than one prevalidation study is required to optimize an assay and address prevalidation questions, etc.

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How various studies are counted also requires some explanation as there are several options. EPA has taken the view that a study is laboratory work performed to address a specific question whether performed in one laboratory or many labs. Thus, a single chemical study will be counted as one study, a multichemical study involving 10 chemicals in one laboratory will be counted as one study, and a study of interlaboratory variability will be counted as one study for each lab in which testing is conducted. From these examples, it is apparent that laboratory studies differ considerably in scope and complexity.

QA/QC Procedures: Required by the EPA's Good Laboratory Practices (GLPs) (40 CFR Part 792 and 40 CFR 160 Part 1), EDSP's contractor operates an independent quality assurance unit (QAU) to ensure that all studies are conducted under an appropriate QA/QC program. For this procurement, two levels of QA/QC are employed. All prevalidation and interlaboratory studies are conducted under a project specific Quality Assurance Program (QAP) developed by the contractor and approved by EPA. All validation studies are conducted according to GLPs. In addition, EPA or its agent conducts an independent lab/QA audit of facilities participating in the validation program.

Data Quality Review: All of the documentation and data generated by the contractor, OECD and ORD, as it pertains to the EDSP, are reviewed for quality and scientific applicability. The contractor maintains a Data Coordination Center which manages information/data generated under EDSP. The contractor also conducts statistical analyses relating to lab studies, chemical repository, and quality control studies.

Data Limitations: There is a data lag of approximately 9-24 months due to the variation in length and complexity of the lab studies, and for time required for review, analysis and reporting of data.

Error Estimate: N/A

New/Improved Data or Systems: N/A

References: EPA Website; EPA Annual Report; Endocrine Disruptor Screening Program Proposed Statement of Policy, Dec. 28, 1998; Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC) Final Report (EPA/743/R-98/003); EPA Contract # 68-W-01-023.

FY 2006 Performance Measure:

- **Number of registrations of reduced risk pesticides registered (Register safer chemicals and biopesticides)**
- **Number of new (active ingredients) conventional pesticides registered (New Chemicals) (Cumulative)**
- **Number of conventional new uses registered (New Uses)(Cumulative)**

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- **Number of new uses for previously registered antimicrobial products**
- **Maintain timeliness of Section 18 Emergency Exemption Decisions**
- **Reduce registration decision times for reduced risk chemicals**

Performance Database: The OPPIN (Office of Pesticide Programs Information Network) consolidates various pesticides program databases. It is maintained by the EPA and tracks regulatory data submissions and studies, organized by scientific discipline, which are submitted by the registrant in support of a pesticide's registration. In addition to tracking decisions in OPPIN, manual counts are also maintained by the office on the registrations of reduced risk pesticides. Results for reduced risk pesticides, new active conventional ingredients, and new uses have been reported since 1996. The results are calculated on a fiscal year (FY) basis. For antimicrobial new uses, results have been reported since FY 2004 on a FY basis. Both S18 timeliness and reduced risk decision times are being reported on a FY basis for the first time in FY 2005.

Data Source: Pesticide program reviewers update the status of the submissions and studies as they are received and as work is completed by the reviewers. The status indicates whether the application is ready for review, the application is in the process of review, or the review has been completed.

Methods, Assumptions and Suitability: The measures are program outputs which when finalized, represent the program's statutory requirements to ensure that pesticides entering the marketplace are safe for human health and the environment, and when used in accordance with the packaging label present a reasonable certainty of no harm. While program outputs are not the best measures of risk reduction, they do provide a means for reducing risk, such that the program's safety review prevents dangerous pesticides from entering the marketplace.

QA/QC Procedures: A reduced risk pesticide must meet the criteria set forth in Pesticide Registration Notice 97-3, September 4, 1997. Reduced risk pesticides include those which reduce the risks to human health; reduce the risks to non-target organisms; reduce the potential for contamination of groundwater, surface water or other valued environmental resources; and/or broaden the adoption of integrated pest management strategies, or make such strategies more available or more effective. In addition, biopesticides are generally considered safer (and thus reduced risk). All registration actions must employ sound science and meet the Food Quality Protection Act (FQPA) new safety standard. All risk assessments are subject to public and scientific peer review. The office adheres to its Quality Management Plan (May 2000) in ensuring data quality and that procedures are properly applied.

Data Quality Review: These are program outputs. EPA staff and management review the program outputs in accordance with established policy for the registration of reduced-risk pesticides as set forth in Pesticide Regulation Notice 97-3, September 4, 1997.

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Data Limitations: None. All required data must be submitted for the risk assessments before the pesticide, including a reduced risk pesticide, is registered. If data are not submitted, the pesticide is not registered. As stated above, a reduced risk pesticide must meet the criteria set forth in PRN 97-3 and all registrations must meet FQPA safety requirements. If a pesticide does not meet these criteria, it is not registered. If an application for a reduced risk pesticide does not meet the reduced risk criteria, it is reviewed as a conventional active ingredient.

Error Estimate: N/A

New/Improved Data or Systems: The OPPIN (Office of Pesticide Programs Information Network), which consolidates various pesticides program databases, will reduce the processing time for registration actions.

References: FIFRA Sec 3(c)(5); FFDCA Sec 408(a)(2); EPA Pesticide Registration Notice 97-3, September 4, 1997; Food Quality Protection Act (FQPA) 1996; OPP Quality Management Plan, May 2000)

FY 2006 Performance Measure:

- **Number of Tolerance Reassessments issued**
- **Number of Reregistration Eligibility Decisions (REDs) issued**
- **Number of Product Reregistration decisions issued**
- **Tolerance Reassessments for top 20 foods eaten by children**
- **Number of inert ingredients tolerance/tolerance exemptions reassessed**
- **Reduce decision times for REDs**
- **Reduce occurrence of residues in 19 foods eaten by children**

Performance Database: The OPPIN (Office of Pesticide Programs Information Network) consolidates various EPA program databases. It is maintained by the EPA and tracks regulatory data submissions and studies, organized by scientific discipline, which are submitted by the registrant in support of a pesticide's reregistration. In addition to tracking decisions in OPPIN, manual counts are also maintained by the office on the reregistrations decisions. Decisions are logged in as the action is completed, both for final decisions and interim decisions. Tolerance reassessments, REDs and product reregistration decisions have been reported on a FY basis since FY 1996. Tolerance reassessments for the top 20 foods eaten by children have been reported on an FY basis since FY 2002 and inert ingredient tolerances reassessed and tolerance exemptions reassessed have been reported on an FY basis since FY 2004. Reduction in decision times for REDs will be reported on an FY basis in FY 2005.

Data Source: EPA's Pesticides Program.

Methods, Assumptions and Suitability: The measures are program outputs which represent the program's statutory requirements to ensure that pesticides entering the marketplace are safe for

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human health and the environment and when used in accordance with the packaging label present a reasonable certainty of no harm. While program outputs are not the best measures of risk reduction, they do provide a means for reducing risk in that the program's safety review prevents dangerous pesticides from entering the marketplace.

QA/QC Procedures: All registration actions must employ sound science and meet the Food Quality Protection Act (FQPA) new safety standard. All risk assessments are subject to public and scientific peer review. The office adheres to the procedures for quality management of data as outlined in its QMP approved May 2000.

Data Quality Review: Management reviews the program counts and signs off on the decision document.

Data Limitations: None known.

Error Estimate: N/A. There are no errors associated with count data.

New/Improved Data or Systems: The OPPIN, which consolidates various pesticides program databases, will contribute to reducing the processing time for reregistration actions.

References: EPA Website <http://www.epa.gov/pesticides> EPA Annual Report 2002 EPA Number 735-R-03-001; 2003 Annual Performance Plan OPP Quality Management Plan, May 2000.

FY 2006 Performance Measure:

- **Percentage of Acre Treatments with Reduced Risk Pesticides**

Performance Database: EPA uses an external database, Doane Marketing Research data, for this measure. The data have been reported for trend data since FY 2001 on an FY basis.

Data Source: Primary source is Doane Marketing Research, Inc. (a private sector research database). The database contains pesticide usage information by pesticide, year, crop use, acreage and sector.

Methods, Assumptions and Suitability: A reduced-risk pesticide must meet the criteria set forth in Pesticide Registration Notice 97-3, September 4, 1997. Reduced-risk pesticides include those which reduce the risks to human health; reduce the risks to non-target organisms; reduce the potential for contamination of groundwater, surface water, or other valued environmental resources; and/or broaden the adoption of integrated pest management strategies or make such strategies more available or more effective. In addition, biopesticides are generally considered safer (and thus reduced-risk). EPA's statistical and economics staff review data from Doane.

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Information is also compared to prior years for variations and trends as well as to determine the reasons for the variability.

Doane sampling plans and QA/QC procedures are available to the public at their website. More specific information about the data is proprietary and a subscription fee is required. Data are weighted and a multiple regression procedure is used to adjust for known disproportionalities (known disproportionality refers to a non proportional sample, which means individual respondents have different weights) and ensure consistency with USDA and state acreage estimates.

QA/QC Procedures: All registration actions must employ sound science and meet the Food Quality Protection Act (FQPA) new safety standard. All risk assessments are subject to public and scientific peer review. Doane data are subject to extensive QA/QC procedures, documented at their websites. In ensuring the quality of the data, EPA's pesticide program adheres to its Quality Management Plan (QMP), approved May 2000.

Data Quality Review: Doane data are subject to extensive internal quality review, documented at the website. EPA's statistical and economics staff review data from Doane. Information is also compared to prior years for variations and trends as well as to determine the reasons for the variability.

Data Limitations: Doane data are proprietary; thus in order to release any detailed information, the Agency must obtain approval. There is a data lag of approximately 12-15 months, due to the collection of data on a calendar year (CY) basis and reporting on a fiscal year (FY) basis, plus the time it takes to review and analyze the data within the office's workload.

Error Estimate: Error estimates differ according to the data/database and year of sampling. Doane sampling plans and QA/QC procedures are available to the public at their website. More specific information about the data is proprietary and a subscription fee is required. Data are weighted and multiple regression procedure is used to adjust for known disproportionalities and ensure consistency with USDA and state acreage estimates

New/Improved Data or Systems: These are not EPA databases; thus improvements are not known in any detail at this time.

References: EPA Website; EPA Annual Report; Annual Performance Plan and Annual Performance Report, <http://www.ams.usda.gov/science/pdp/download.htm>; Doane Marketing Research, Inc.: <http://www.doanemr.com>; <http://www.usda.gov/nass/pubs> and <http://www.usda.nass/nass/nassinfo>; FFDCa Sec 408(a)(2); EPA Pesticide Registration Notice 97-3, September 4, 1997.

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FY 2006 Performance Measure:

- **Reduction in occurrences of carcinogenic and cholinesterase-inhibiting neurotoxic pesticide residues on a core set of 19 children's foods reported in 1994-1996**

Performance Database: United States Department of Agriculture (USDA) Pesticide Data Program (PDP). The results for this annual performance measure (APM) are calculated on a calendar year basis and have been reported in the fiscal year 2003 and 2004 annual reports.

Data Source: Data collection is conducted by the states. Information is coordinated by USDA agencies and cooperating state agencies.

Methods, Assumptions and Suitability: The information is collected by the states and includes statistical information on pesticide use, food consumption, and residue detections, which provide the basis for realistic dietary risk assessments and evaluation of pesticide tolerance. Pesticide residue sampling and testing procedures are managed by USDA's Agricultural Marketing Service (AMS). AMS also maintains an automated information system for pesticide residue data and publishes annual summaries of residue detections. This measure helps provide information on the effect of EPA's regulatory actions on children's health via reduction of pesticide residues on children's foods. The assumption is that through reduction of pesticide residues on these foods, children's exposure to pesticides will be reduced; thus, the risk to their health diminished. This measure contributes to the Agency's goal of protecting human health and is aligned with the Food Quality Protection Act (FQPA) mandate of protecting children's health.

QA/QC Procedures: The core of USDA's PDP's QA/QC program is Standard Operating Procedures (SOPs) based on EPA's Good Laboratory Practices. At each participating laboratory, there is a quality assurance (QA) unit which operates independently from the rest of the laboratory staff. QA Plans are followed as the standard procedure, with any deviations documented extensively. Final QA review is conducted by PDP staff responsible for collating and reviewing data for conformance with SOPs. PDP staff also monitor the performance of participating laboratories through proficiency evaluation samples, quality assurance internal reviews, and on-site visits. Additionally, analytical methods have been standardized in various areas including analytical standards, laboratory operations, data handling, instrumentation and QA/QC. With the exception of California, all samples of a commodity collected for PDP are forwarded to a single laboratory, allowing greater consistency, improved QA/QC and reduced sample loss. Program plans may be accessed at <http://www.ams.usda.gov/science/pdp/SOPs.htm>.

Data Quality Review: In addition to having extensive QA plans to ensure reliability of the data, the PDP follows EPA's Good Laboratory Practices in standard operating procedures. A QA committee composed of quality assurance officers is responsible for annual review of program SOPs and for addressing QA/QC issues. Quality assurance units at each participating laboratory operate independently from the laboratory staff and are responsible for day-to-day quality

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assurance oversight. Preliminary QA/QC review is done at each participating laboratory with final review performed by PDP staff for conformance with SOPs.

Data Limitations: Participation in the PDP is voluntary. Sampling is limited to ten states but designed in a manner to represent the food supply nationwide. The number of sampling sites and volume vary by state. Sampling procedures are described at the website, see reference below. There is a data lag of approximately 12-15 months due to collection/reporting procedures and time required for review and analysis of the data.

Error Estimate: Uncertainties and other sources of error are minor and not expected to have any significant effect on performance assessment. More information is available on the website (See References).

New/Improved Data or Systems: These are not EPA data; thus improvements are not known in any detail at this time.

References: PDP Annual Reports, <http://www.ams.usda.gov/science/pdp/download.htm>;
<http://www.ams.usda.gov/process/>; CFR 40 Part 160; Food Quality Protection Act (FQPA) 1996;
<http://www.epahome/Standards.html>; <http://www.ams.usda.gov/science/pdp/SOPs.htm>.

FY 2006 Performance Measure:

- **Number of incidents and mortalities to terrestrial and aquatic wildlife caused by the 15 pesticides responsible for the greatest mortality to such wildlife**

Performance Database: The Ecological Incident Information System (EIIS) is a national database of information on poisoning incidents of non-target plants and animals caused by pesticide use. The fields used include the number of incidents reported for each non-target plant or animal. The data used to report is the average for 3 years. Data are gathered on a calendar year basis and reported on a FY basis beginning in FY 2004. There is approximately 2 year data lag. The Environmental Fate and Effects staff for Pesticide Programs maintain this database.

Data Source: Data are extracted from written reports of fish and wildlife incidents submitted to the Agency by pesticide registrants under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA), Section 6(a)(2), as well as incident reports voluntarily submitted by state and Federal agencies involved in investigating such incidents.

Methods, Assumptions and Suitability: This measure helps to provide information on the effect of EPA's regulatory actions on the well being of fish and wildlife. The assumption is that the number of incidents and mortalities to fish and wildlife caused by pesticides will decrease when use of those pesticides are curtailed or eliminated.

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QA/QC Procedures: EPA adheres to its approved Quality Management Plan in ensuring the quality of the data. Even before entering incident data in the database, a database program is used to screen for records already in the database with similar locations and dates. Similar records are then individually reviewed to prevent duplicate reporting. After each record is entered into the EIIS database, an incident report is printed that contains all the data entered into the database. A staff member, other than the one who entered the data, then reviews the information in the report and compares it to the original source report to verify data quality. Scientists using the incident database are also encouraged to report any inaccuracies they find in the database for correction.

Data Quality Review: Internally and externally conducted data quality reviews related to data entry are ongoing. EPA follows a quality assurance plan for accurately extracting data from reports and entering it into the EIIS database. This quality assurance plan is described in Appendix D of the Quality Management Plan for pesticides programs. When resources allow incorporation of wildlife data from private organizations, such as the American Bird Conservancy, the new data and EIIS data are reviewed for quality during data entry using the same standards.

Data Limitations: This measure is designed to monitor trends in the numbers of acute poisoning events reported to the Agency. Because the data are obtained, in part, through voluntary reporting, the numbers of reported incidents may not accurately reflect the numbers of actual incidents. Therefore, it is important to consider the possible factors influencing changes in incident reporting rates over time when evaluating this measure.

Error Estimate: Moving average counts of number of incidents per year may be interpreted as a relative index of the frequency of acute toxicity effects that pesticides are causing to fish and wildlife. The indicator numbers are subject to under-reporting, but trends in the numbers over time may indicate if the overall level of adverse acute effects is improving or getting worse. Even so, if there is an increase in bird kills since the baseline year, it may be due to better tracking/reporting of kills rather than an increase or change in use of a pesticide.

New/Improved Data or Systems: The EPA is currently conducting a project with the American Bird Conservancy, reviewing the data in its Avian Incident Monitoring System on bird kill incidents caused by pesticides. These data will be incorporated into the EIIS. The project is expected to improve the quantity and quality of data in the EIIS database on avian incidents.

References: The Ecological Incident Information System (EIIS) is an internal EPA database. Federal Insecticide Fungicide and Rodenticide Act (FIFRA), Section 6(a) (2). QMP: Quality Management Plan for the Office of Pesticides Program, May 20, 2000.

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FY 2006 Performance Measure:

- **Establish short-term exposure limits for X percent of chemicals identified as highest priority by the Acute Exposure Guideline Levels (AEGL) Program**

Performance Database: Performance is measured by the cumulative number of chemicals with “Proposed”, “Interim”, and/or “Final” AEGL values. The results are calculated on a fiscal year basis.

Data Source: EPA manages a Federal Advisory Committee Act (FACA) committee that reviews short term exposure values for extremely hazardous chemicals. The supporting data, from both published and unpublished sources and from which the AEGL values are derived, are collected, evaluated, and summarized by FACA Chemical Managers and Oak Ridge National Laboratory’s scientists. Proposed AEGL values are published for public comment in the Federal Register. After reviewing public comment, interim values are presented to the AEGL Subcommittee of the National Academy of Sciences (NAS) for review and comment. After review and comment resolution, the National Research Council under the auspices of the National Academy of Sciences (NAS) publishes the values as final.

Methods, Assumptions, and Suitability: The work of the National Advisory Committee’s Acute Exposure Guideline Levels (NAC/AEGL, formally chartered under the Federal Advisory Committee Act) adheres to the 1993 U.S. National Research Council/National Academies of Sciences (NRC/NAS) publication *Guidelines for Developing Community Emergency Exposure Levels for Hazardous Substances*. NAC/AEGL, in cooperation with the National Academy of Sciences’ Subcommittee on AEGLs, have developed standard operating procedures (SOPs), which are followed by the program. These have been published by the National Academy Press and are referenced below. The cumulative number of AEGL values approved as “proposed” and “interim” by the NAC/AEGL FACA Committee and “final” by the National Academy of Sciences represents the measure of performance. The work is assumed to be completed at the time of final approval of the AEGL values by the NAS.

QA/QC Procedures: QA/QC procedures include public comment via the Federal Register process; review and approval by the FACA committee; and review and approval by the NAS/AEGL committee and their external reviewers.

Data Quality Review: N/A

Data Limitations: N/A

Error Estimate: N/A

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New/Improved Data or Systems: This is the first time acute exposure values for extremely hazardous chemicals have been established according to a standardized process and put through such a rigorous review.

References: Standing Operating Procedures for Developing Acute Exposure Guideline Levels for Hazardous Chemicals, National Academy Press, Washington, DC 2001 (<http://www.nap.edu/books/030907553X/html/>). NRC (National Research Council). 1993. Guidelines for Developing Community Emergency Exposure Levels for Hazardous Substances. Washington, DC: National Academy Press.

FY 2006 Performance Measure:

- **Number of children aged 1-5 years with elevated blood lead levels (>10 ug/dL) (this is the level that CDC defines as ‘elevated’ and indicative of the need for intervention)**

Performance Database: Centers for Disease Control and Prevention’s (CDC) National Health and Nutrition Examination Survey (NHANES). Data is produced on a calendar year basis. Due to strict QA/QC analysis and data lag, 2001-2002 data sets are tentatively scheduled for release first quarter of 2005.

Data Source: The National Health and Nutrition Examination Survey is a coordinated program of studies designed to assess the health and nutritional status of adults and children in the U.S. The program began in the early 1960s and continues. The survey examines a nationally representative sample of approximately 5,000 men, women, and children each year located across the U.S.

Methods, Assumptions, and Suitability: Detailed interview questions cover areas related to demographic, socio-economic, dietary, and health-related questions. The survey also includes an extensive medical and dental examination of participants, physiological measurements, and laboratory tests. Specific laboratory measurements of environmental interest include: (e.g. lead, cadmium, and mercury), VOCs, phthalates, organophosphates (OPs), pesticides and their metabolites, non-persistent pesticides, dioxins/furans and polyaromatic hydrocarbons (PAHs). NHANES is unique in that it links laboratory-derived biological markers (e.g. blood, urine etc.) to questionnaire responses and results of physical exams. CDC has published both the "National Report on Human Exposure to Environmental Chemicals," (March 2001) and the "Second National Report on Human Exposure to Environmental Chemicals" (January 2003), which reflect findings from NHANES, including the body burden of lead and other pollutants measured in the blood stream or urine. These reports provide ongoing surveillance of the U.S. population’s exposure to environmental chemicals. The 2001 report provides biological markers to 27 chemicals based on blood and urine samples from people participating in 1999 NHANES. The 2003 Report expands the number of chemicals to 116 (in order to include carcinogenic volatile organic compounds, carcinogenic PAHs, dioxins and furans, PCBs, trihalomethanes, haloacetic acids, and carbamate and organochlorine

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pesticides). Future reports will continue to provide additional data on exposure among different populations -- stratifying results by gender, race/ethnicity, age, urban/rural residence, education level, income, and other characteristics. CDC will track these indicators over time. Data will assist both public health officials and regulators in analyzing: 1) trends over time; 2) the effectiveness of public health efforts; and 3) exposure variations among sub-populations.

QA/QC Procedures: Quality assurance plans are available from the CDC as outlined on the web site <http://www.cdc.gov/nchs/nhanes.htm> under the NHANES section.

Data Quality Reviews: CDC follows standardized survey instrument procedures to collect data to promote data quality, and data are subjected to rigorous QA/QC review. CDC/NCHS has an elaborate data quality checking procedure outlined on the web site <http://www.cdc.gov/nchs/nhanes.htm> under the NHANES section.

Data Limitations: The NHANES survey uses two steps, a questionnaire and a physical exam. There are sometimes different numbers of subjects in the interview and examinations because some participants only complete one step of the survey. Participants may elect to provide a urine sample but not the more invasive blood sample. For this reason, special weighting techniques are needed. Demographic information is collected but not publicly available protect to the privacy of the participants. Body burden data are evidence of human exposure to toxic substances; however, linkages between evidence of exposure and source of exposure have yet to be made for many substances. In the case of lead, the correlation is strongly documented.

Error Estimate: Because NHANES is based on a complex multi-stage sample design, appropriate sampling weights should be used in analyses to produce national estimates. Several statistical methodologies can be used to account for unequal probability of the selection of sample persons. The methodologies and appropriate weights are provided at www.cdc.gov/nchs/about/major/nhanes/nhanes3/cdrom/nchs/MANUALS/NH3GUIDE to help generate appropriate error estimates.

New/Improved Data or Systems: NHANES has moved to a continuous sampling schedule. The sample design allows for limited estimates to be produced on an annual basis and more detailed estimates to be produced on 2-year samples. The data are released in 2-year sets (1999-2000, and 2001-2002).

References: "National Report on Human Exposure to Environmental Chemicals," (NCEH Publication Number 01-0164, Atlanta, GA: March 2001). See <http://www.cdc.gov/nceh/dls/report/>. More extensive findings from NHANES are in the "Second National Report on Human Exposure to Environmental Chemicals" (NCEH Publication Number 03-0022: Atlanta, GA January 2003). See <http://www.cdc.gov/nchs/nhanes.htm>, or <http://www.cdc.gov/exposurereport/>

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FY 2006 Performance Measure:

- **Reduce the potential for risks from leaks and spills by ensuring the safe disposal of large capacitors and transformers containing polychlorinated biphenyls (PCBs)**

Performance Database: PCB Annual Report Database. The results are calculated on a calendar year (CY) basis. Two-year data lag and results for CY 06 will not be available until 2008.

Data Source: Annual Reports from commercial storers and disposers of PCB Waste.

Methods, Assumptions, and Suitability: Data provide a baseline for the amount of safe disposal of PCB waste annually. By ensuring safe disposal of PCBs in equipment such as transformers and capacitors coming out of service, and contaminated media such as soil, and structures from remediation activities, the Agency is reducing the exposure risk of PCBs that are either already in the environment or may be released to the environment through spills or leaks.

QA/QC Procedures: The Agency reviews, transcribes, and assembles data into the Annual Report Database.

Data Quality Reviews: The Agency contacts data reporters, when needed, for clarification of data submitted.

Data Limitations: Data limitations include missing submissions from commercial storers and disposers, and inaccurate submissions. PCB-Contaminated Transformers, of PCB concentrations 50 to 499 parts per million (ppm), and those that are 500 ppm PCBs or greater are not distinguished in the data. Similarly, large and small capacitors of PCB waste may not be differentiated. Data are collected for the previous calendar year on July 1 of the next year creating a lag of approximately one year. Despite these limitations, the data do provide the only estimate of the amount of PCB waste disposed annually.

Error Estimate: Not available.

New/Improved Data or Systems: None

References: U.S EPA, Office of Pollution Prevention and Toxics, National Program Chemicals Program, PCB Annual Report for Storage and Disposal of PCB Waste.

FY 2006 Performance Measure:

- **Percent reduction in relative risk index for chronic human health associated with environmental releases of industrial chemicals in commerce as measured by Risk Screening Environmental Indicators (RSEI) Model**

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Performance Database: The RSEI Model uses annual reporting from individual industrial facilities along with a variety of other information to evaluate chemical emissions and other waste management activities. RSEI incorporates detailed data from EPA's Toxics Release Inventory (TRI) and Integrated Risk Information System, the U.S. Census, and many other sources. Due to a TRI data lag, performance data will be unavailable for this measure when the FY 2006 Annual Performance Report is prepared. The data will be available for the FY 2008 report and is based on calendar year.

Data Source: The RSEI model incorporates data on chemical emissions and transfers and facility locations from EPA's Toxics Release Inventory; chemical toxicity data from EPA's Integrated Risk Information System; stack data from EPA's AIRS Facility Subsystem and National Emissions Trends Database and the Electric Power Research Institute; meteorological data from the National Climatic Data Center; stream reach data from EPA's Reach File 1 Database; data on drinking water systems from EPA's Safe Drinking Water Information System; fishing activity data from U.S. Fish and Wildlife; exposure factors from EPA's Exposure Factor Handbook; and population data from the U.S. Census Bureau.

Methods, Assumptions and Suitability: The RSEI Model generates unique numerical values known as "Indicator Elements" using the factors pertaining to surrogate dose, toxicity and exposed population. Indicator Elements are unitless (like an index number, they can be compared to one-another but do not reflect *actual* risk), but proportional to the modeled relative risk of each release (incrementally higher numbers reflect greater estimated risk). Indicator Elements are risk-related measures generated for every possible combination of reporting facility, chemical, release medium, and exposure pathway (inhalation or ingestion). Each Indicator Element represents a unique release-exposure event and together these form the building blocks to describe exposure scenarios of interest. These Indicator Elements are summed in various ways to represent the risk-related results for releases users are interested in assessing. RSEI results are for comparative purposes and only meaningful when compared to other scores produced by RSEI. The measure is appropriate for year-to-year comparisons of performance. Depending on how the user wishes to aggregate, RSEI can address trends nationally, regionally, by state or smaller geographic areas.

QA/QC Procedures: EPA annually updates the data sources used within the RSEI model to take advantage of the most recent and reliable data. For example, TRI facilities self-report release data and occasionally make errors. TRI has QC functions and an error-correction mechanism for reporting such mistakes. Because of the unique screening-level abilities of the RSEI model, it is possible to identify other likely reporting errors and these are forwarded to the TRI Program for resolution. In developing the RSEI model, OPPT has performed numerous QC checks on various types of data. For instance, locational data for on-site and off-site facilities have been checked and corrected, and this information is being supplied to the Office of Environmental Information (OEI) and the Envirofacts database.

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Data Quality Reviews: RSEI depends upon a broad array of data resources, each of which has gone through a quality review process tailored to the specific data and managed by the providers of the data sources. RSEI includes data from the Toxics Release Inventory (TRI), Integrated Risk Information System (IRIS), U.S. Census, etc. All were collected for regulatory or programmatic purposes and are of sufficient quality to be used by EPA, other Federal agencies, and state regulatory agencies. Over the course of its development, RSEI has been the subject of three reviews by EPA's Science Advisory Board (U.S. EPA Office of Pollution Prevention and Toxics, Risk Screening Environmental Indicators Model, Peer Reviews. Described at <http://www.epa.gov/opptintr/rsei/faqs.html>). The RSEI model has undergone continuous upgrading since the 1997 SAB Review. Toxicity weighting methodology was completely revised and subject to a second positive review by SAB (in collaboration with EPA's Civil Rights program); air methodology was revised and groundtruthed using New York data to demonstrate high confidence; water methodology has been revised in collaboration with EPA's Water program. When the land methodology has been reviewed and revised, EPA will have completed its formal, written response to the 1997 SAB Review.

Data Limitations: RSEI relies on data from a variety of EPA and other sources. TRI data may have errors that are not corrected in the standard TRI QC process. In the past, RSEI has identified some of these errors and corrections have been made by reporting companies. Drinking water intake locations are not available for all intakes nationwide. Where intake locations are known only at the county-level, RSEI distributes the drinking water population between all stream reaches in that county. This could increase or decrease the RSEI risk-related results depending on the pattern of TRI releases on the stream reaches in that county. If the actual uptake location is on a highly polluted stream reach, this approach would underestimate risk by distributing the drinking water population to less-polluted reaches. In coastal areas, Publicly Owned Treatment Works (POTW) water releases may go directly to the ocean, rather than nearby streams. EPA is in the process of systematically correcting potential errors regarding POTW water releases. These examples are illustrative of the data quality checks and methodological improvements that are part of the RSEI development effort. Data sources are updated annually and all RSEI values are recalculated on an annual basis.

Error Estimate: In developing the RSEI methodology, both sensitivity analyses and groundtruthing studies have been used to address model accuracy (documentation is provided on the RSEI Home Page - www.epa.gov/opptintr/rsei/). For example, groundtruthing of the air modeling performed by RSEI compared to site-specific regulatory modeling done by the state of New York showed virtually identical results in both rank order and magnitude. However, the complexity of modeling performed in RSEI, coupled with un-quantified data limitations, limits a precise estimation of errors that may either over- or under-estimate risk-related results.

New/Improved Data or Systems: The program regularly tracks improvements in other Agency databases (e.g., SDWIS and Reach File databases) and incorporates newer data into the RSEI databases. Such improvements can also lead to methodological modifications in the model.

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Corrections in TRI reporting data for all previous years are captured by the annual updates of the RSEI model.

References: The methodologies used in RSEI were first documented for the 1997 review by the EPA Science Advisory Board. The Agency has provided this and other updated technical documentation on the RSEI Home Page. (RSEI Home Page - <http://www.epa.gov/opptintr/rsei/>) U.S. EPA Office of Pollution Prevention and Toxics, Risk Screening Environmental Indicators Model, Peer Reviews. Described at <http://www.epa.gov/opptintr/rsei/faqs.html> RSEI Methodology Document (describes data and methods used in RSEI Modeling) <http://www.epa.gov/opptintr/rsei/docs/method2004.pdf> RSEI User's Manual (PDF, 1.5 MB) explains all of the functions of the model, the data used, and contains tutorials to walk the new user through common RSEI tasks (http://www.epa.gov/opptintr/rsei/docs/users_manual.pdf). A more general overview of the model can be found in the RSEI Fact Sheet (PDF, 23 KB) (http://www.epa.gov/opptintr/rsei/docs/factsheet_v2-1.pdf).

There are also seven Technical Appendices that accompany these two documents and provide additional information on the data used in the model. The Appendices are as follows: [Technical Appendix A \(PDF, 121 KB\)](#) - Listing of All Toxicity Weights for TRI Chemicals and Chemical Categories [Technical Appendix B \(PDF, 290 KB\)](#) - Physicochemical Properties for TRI Chemicals and Chemical Categories [Technical Appendix C \(PDF, 40 KB\)](#) - Derivation of Model Exposure Parameters [Technical Appendix D \(PDF, 71 KB\)](#) - Locational Data for TRI Reporting Facilities and Off-site Facilities [Technical Appendix E \(PDF, 44 KB\)](#) - Derivation of Stack Parameter Data [Technical Appendix F \(PDF, 84KB\)](#) - Summary of Differences Between RSEI Data and TRI Public Data Release.

FY 2006 Performance Measure:

- **Number of new chemicals or microorganisms introduced into commerce that pose an unreasonable risk to workers, consumers or the environment**

Performance Database: Implementation of this measure will require the use of several EPA databases: Confidential Business Information Tracking System (CBITS), pre-manufacture notice (PMN) CBI Local Area Network (LAN), 8(e) database (ISIS), and the Focus database. The following information from these databases will be used collectively in applying this measure:

1. CBITS: Tracking information on Pre-Manufacture Notices (PMNs) received;
2. PMN CBI LAN: Records documenting PMN review and decision, assessment reports on chemicals submitted for review. In addition, the information developed for each PMN is kept in hard copy in the Confidential Business Information Center (CBIC);
3. ISIS: Data submitted by industry under the Toxic Substances Control Act (TSCA) Section 8(e). TSCA 8(e) requires that chemical manufacturers, processors, and distributors notify EPA immediately of new (e.g. not already reported), unpublished chemical information that reasonably supports a conclusion of substantial risk. TSCA 8(e) substantial risk information notices most often contain toxicity data but may also

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contain information on exposure, environmental persistence, or actions being taken to reduce human health and environmental risks. It is an important information-gathering tool that serves as an early warning mechanism; and

4. Focus: Rationale for decisions emerging from Focus meeting, including decisions on whether or not to drop chemicals from further review.

Measurement results are calculated on a fiscal-year basis and draw on relevant information received over the 12-month fiscal year.

Data Source: The Office of Pollution Prevention and Toxics (OPPT), the office responsible for the implementation of the TSCA, will compare data submitted under TSCA Section 8(e) with previously-submitted new chemical review data (submitted under TSCA Section 5 and contained in the PMN) to determine the number of instances in which EPA failed to prevent the introduction of new chemicals or microorganisms into commerce which pose an unreasonable risk to workers, consumers or the environment. Inconsistencies between the 8(e) and previously-submitted new chemical review data will be evaluated by applying the methods and steps outlined below to determine whether the inconsistencies signify an “unreasonable risk.”

Methods, Assumptions, and Suitability: EPA’s methods for implementing this measure involve determining whether EPA failed to prevent the introduction of chemicals or microorganisms into commerce that pose an unreasonable risk to workers, consumers or the environment, based on comparisons of 8(e) and previously-submitted new chemical review data. The “unreasonable risk” determination is based on consideration of (1) the magnitude of risks identified by EPA, (2) limitations on risk that result from specific safeguards applied, and (3) the benefits to industry and the public expected to be provided by the new chemical substance. In considering risk, EPA looks at anticipated environmental effects, distribution and fate of the chemical substance in the environment, patterns of use, expected degree of exposure, the use of protective equipment and engineering controls, and other factors that affect or mitigate risk. These are the steps OPPT will follow in comparing the 8(e) data with the previously-submitted new chemical review data.

1. Match all 8(e) submissions in the 8(e) database with associated TSCA Section 5 notices. TSCA Section 5 requires manufacturers to give EPA a 90-day advance notice (via a pre-manufacture notice or PMN) of their intent to manufacture and/or import a new chemical. The PMN includes information such as specific chemistry identity, use, anticipated production volume, exposure and release information, and existing available test data. The information is reviewed through the New Chemicals Program to determine whether action is needed to prohibit or limit manufacturing, processing, or use of a chemical.
2. Characterize the resulting 8(e) submissions by the PMN review phase. For example, the 8(e) submissions were received: a) before the PMN notice was received by EPA, b) during the PMN review process, or c) after the PMN review was completed.

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3. Review of 8(e) data will focus on 8(e)s received after the PMN review period was completed.
4. Comparison of hazard evaluation developed during PMN review with associated 8(e) submission.
5. Report on the accuracy of the initial hazard determination.
6. Revised risk assessment developed to determine if there was an unreasonable risk based on established risk assessment and risk management guidelines.

The databases used and the information retrieved are directly applicable to this measurement and therefore suitable for measurement purposes.

QA/QC Procedures: OPPT has in place a signed Quality Management Plan (“Quality Management Plan for the Office of Pollution Prevention and Toxics; Office of Prevention, Pesticides and Toxic Substances;” June 2003) and will ensure that those standards and procedures are applied to this effort.

Data Quality Reviews: This is a new performance measure and, therefore, there is no developed track record of review and correction. However, appropriate oversight of the measurement process will be provided. Information developed in the course of measurement will be presented to senior management within OPPT to address potential concerns related to technical outcomes and to provide quality oversight. In addition, the National Pollution Prevention and Toxics Advisory Council (NPPTAC), which consists of external experts providing independent review and direction to OPPT, has provided comment on this measure.

Data Limitations: There are some limitations of EPA’s review which result from differences in the quality and completeness of 8(e) data provided by industry; for example, OPPT cannot evaluate submissions that do not contain adequate information on chemical identity. The review is also affected in some cases by a lack of available electronic information. In particular the pre-1996 PMN cases are only retrievable in hard copy and may have to be requested from the Federal Document Storage Center. This may introduce some delays to the review process.

Error Estimate: Not applicable. This measure does not require inferences from statistical samples and therefore there is no estimate of statistical error. OPPT will review all 8(e) submissions received in the year with corresponding previously-submitted new chemical review data, and not a sample of such submissions.

New/Improved Data or Systems: OPPT is currently developing an integrated, electronic system that will provide real time access to prospective PMN review.

References: OPPT New Chemicals Program

<http://www.epa.gov/opptintr/newchems/>, TSCA Section 8(e) – Substantial Risk

<http://www.epa.gov/opptintr/chemtest/sect8e.htm>,

<http://www.epa.gov/opptintr/tsca8e/index/htm>

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“Quality Management Plan for the Office of Pollution Prevention and Toxics; Office of Prevention, Pesticides and Toxic Substances;” June 2003.

FY 2006 Performance Measure:

- **Percentage of High Production Volume (HPV) chemicals identified as priority concerns through assessment of Screening Information Data Set (SIDS) and other information with risks eliminated or effectively managed**

Performance Database: EPA will track the number of agency actions (e.g., regulatory, voluntary), targeting risk elimination or management of high production volume chemicals, using internal program databases or the Agency’s Regulation and Policy Information Data System (RAPIDS). Many types of Agency actions qualify as risk management or elimination actions. Issuance of a Significant New Use Rule (SNUR) under TSCA is an example of regulatory action that can be tracked by the RAPIDS Promulgation Data field. An example of a non-regulatory risk management/elimination action is a written communication from EPA to chemical manufacturers/users indicating the Agency’s concerns and suggesting but not requiring actions to address chemical risks (chemical substitution, handling protections, etc.). These actions would be tracked by monitoring internal communications files. The results are calculated on a calendar-year basis.

Data Source: RAPIDS stores official Agency data on progress of rule-making and other policy program development efforts. Data are supplied by EPA programs managing these efforts. For voluntary actions not tracked in RAPIDS, performance data are tracked internally by program managers.

Methods, Assumptions and Suitability: As EPA identifies HPV chemicals that are priorities for risk management action, following protocols currently under development, the Agency will commence regulatory or non-regulatory actions to address identified risks. All such actions will be recorded for the HPV chemical(s) subject to those actions, enabling EPA to report on progress in responding to the risks on a chemical- or chemical-category-specific basis. This annual performance measures (APM) commits the Agency to eliminate or effectively manage all such risks. Using data contained in RAPIDS, in the case of regulatory risk management action, EPA’s progress towards meeting this APM will be documented by the sequence of formal regulatory development steps documented in that system. Where risk management action takes nonregulatory form, such as issuance of advisory communications to chemical manufacturers or users, progress toward meeting this APM will be tracked by internal files documenting such actions. The definition of risk is being addressed in the development of the protocols used in the HPV screening/prioritization process.

QA/QC Procedures: RAPIDS entries are quality assured by senior Agency managers.

Data Quality Reviews: RAPIDS entries are reviewed by EPA’s Regulatory Management Staff.

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Data Limitations: N/A

Error Estimate: N/A

New/Improved Performance Data or Systems: N/A

References: None

FY 2006 Performance Measure:

- **The cumulative number of chemicals for which VCCEP data needs documents are issued by EPA in response to industry-sponsored Tier I risk assessments**

Performance Database: Internal VCCEP program activity tracking database. Data needs documents are issued by EPA to conclude work on all Tier I submissions. Documents may indicate data are sufficient to reasonably demonstrate that children are not subject to significant risks. Documents also may indicate that additional assessment and associated data development are required, commencing Tier 2 work. The results are calculated on a calendar-year basis.

Data Source: Formal EPA files of VCCEP Tier I data needs communications.

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: N/A

Data Quality Reviews: N/A

Data Limitations: None known

Error Estimate: N/A

New/Improved Performance Data or Systems: N/A

References: None

FY 2006 Performance Measure:

- **Number of risk management plan audits completed**

Performance Database: There is no database for this measure.

Data Source: EPA's Regional offices and the states provide the data to EPA headquarters.

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Methods, Assumptions and Suitability: Data are collected and analyzed by surveying EPA's Regional offices to determine how many audits of facilities' risk management plans (RMPs) have been completed.

QA/QC Procedures: Data are collected from states by EPA's Regional offices, with review at the Regional and Headquarters' levels.

Data Quality Review: Data quality is evaluated by both Regional and Headquarters' personnel.

Data Limitations: Data quality is dependent on completeness and accuracy of the data provided by state programs.

Error Estimate: Not calculated.

New/Improved Data or Systems: N/A

Reference: N/A

FY 2006 Performance Measure:

- **Percentage of TRI chemical forms submitted over the Internet using the Toxic Release Inventory Made Easy (TRI-ME) and the Central Data Exchange (CDX)**

Performance Database: TRI System (TRIS).

Data Source: Facility submissions of TRI data to EPA.

Methods, Assumptions, and Suitability: As part of the regular process of opening the mail at the TRI Reporting Center, submissions are immediately classified as paper or floppy disk. This information is then entered into TRIS. The identification of an electronic submission via CDX is done automatically by the software.

QA/QC Procedures: Currently, the mail room determines whether a submission is on paper or a floppy disk during the normal process of entering and tracking submissions. Electronic submissions via CDX are automatically tracked by the software. With an increase in electronic reporting via CDX, the manual mail room processing will be significantly reduced. Information received via hard copy are double-key entered. During the facility reconciliation process, the data entered are checked to ensure "submission-type" identification is accomplished at no less than 99 % accuracy. Accuracy is defined as accurate identification of document type.

Data Quality Reviews: Each month the Data Processing Center conducts data quality checks to ensure 99 % accuracy of submission information captured in TRIS.

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Data Limitations: Occasionally, some facilities send in their forms in duplicative formats (e.g., paper, floppy, and/or through CDX). All submissions are entered into TRIS. The Data Processing Center follows the procedures outlined in the document "*Dupe Check Procedures*" to identify potential duplicate submissions. Submissions through CDX override duplicate submissions by disk and/or hard copy. Floppy disk submissions override duplicate paper copy submissions.

Error Estimate: The error rate for "submission-type" data capture has been assessed to be less than 1%. The quality of the data is high.

New/Improved Performance Data or Systems: EPA continues to identify enhancements in E-reporting capabilities via CDX.

References: www.epa.gov/TRI

FY 2006 Performance Measure:

- **Emission inventory for power sectors in China and India**

Performance Database: Output measure. No database. Mercury emission and use data will be collected at targeted sites.

Data Source: EPA's Office of International Activities (OIA) and the Office of Research and Development (ORD) will collaborate with Chinese scientists and Indian government officials to collect mercury use and emission data.

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: Procedures for field and laboratory, including protocols for internal quality control checks and acceptance criteria will follow the Department of Energy's (DOE) and EPA's National Exposure Research Laboratory's (NERL- Research Triangle Park (RTP)) methodologies.

Data Quality Reviews: N/A

Data Limitations: N/A

Error Estimate: N/A

New/Improved Data or Systems: N/A

References: N/A

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Goal 4 Objective 2

FY 2006 Performance Measure:

- **Number of Brownfields properties assessed**
- **Number of Brownfields cleanup grants awarded**
- **Number of properties cleaned up using Brownfields funding**
- **Number of acres of Brownfields property available for reuse**
- **Number of jobs leveraged from Brownfields activities**
- **Percentage of Brownfields job training trainees placed**
- **Amount of cleanup and redevelopment funds leveraged at Brownfields properties**

Performance Database: The Brownfields Management System (BMS) contains the performance information identified in the above measures.

Key fields related to performance measures include:

Properties with Assessment Completed with Pilot/Grant Funding
Properties assessed with Targeted Brownfields Assessment Funding
Properties with Cleanup Complete
Acres Made Ready for Reuse
Cleanup/Redevelopment Jobs Leveraged
Assessment/Cleanup/Redevelopment Dollars Leveraged
Number of Participants Completing Training
Number of Participants Obtaining Employment

Data Source: Data are extracted from quarterly reports prepared by assessment, cleanup, revolving loan fund (RLF), and job training cooperative agreement award recipients. Information on Targeted Brownfields Assessments is collected from EPA Regions.

Methods, Assumptions and Sustainability: Cooperative agreement award recipients submit reports quarterly on project progress to EPA. Data used to track performance measures are extracted from quarterly reports by an EPA contractor. Data are then forwarded to Regional Pilot managers for review and finalization. Given the reporting cycle and the data entry/QA period, there is typically a six month data lag for BMS data.

Note that accomplishments reported by Brownfields Assessment Grantees, Brownfields Cleanup Grantees, Brownfields Revolving Loan Fund Grantees, Brownfields Job Training Grantees, and Targeted Brownfields Assessments all contribute towards these performance measures. "Number of Brownfields properties assessed" is an aggregate of assessments completed with Assessment Grant funding and assessments completed with Targeted Brownfields Assessment funding. Number of Brownfields properties cleaned up is an aggregate of properties cleaned up by RLF Grantees and Cleanup Grantees. "Number of Acres Made Ready for Reuse" is an aggregate of acreage assessed that does not require cleanup under Assessment Grants, acreage cleaned up under RLF Grants, and acreage cleaned up under Cleanup Grants. "Number of

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cleanup and redevelopment jobs leveraged” is the aggregate of jobs leveraged by Assessment, Cleanup, and RLF Grantees. “Amount of cleanup and redevelopment funds leveraged at Brownfields properties” is the aggregate of funds leveraged by Assessment, Cleanup, and RLF Grantees. “Percentage of Brownfields job training trainees placed” is based on the “Number of Participants Completing Training” and the “Number of Participants Obtaining Employment” reported by Job Training Grantees.

QA/QC Procedures: Data reported by cooperative award agreement recipients are reviewed by EPA Regional pilot managers for accuracy and to ensure appropriate interpretation of key measure definitions. Reports are produced monthly with detailed data trends analysis.

Data Quality Reviews: No external reviews.

Data Limitations: All data provided voluntarily by grantees.

Error Estimate: NA

New/Improved Data or Systems: The Brownfields Program recently developed the 'Property Profile' and 'Job Training Profile' reporting forms to be used by Assessment, Cleanup, RLF, and Job Training Grantees awarded under the Brownfields Law. These forms, approved by OMB, allow EPA to collect standardized data and will improve data quality and reliability. The BMS database has been updated to track and store the data reported in these forms.

References: For more information on the Brownfields program, see *Reusing Land and Restoring Hope: A Report to Stakeholders from the US EPA Brownfields Program* (http://www.epa.gov/brownfields/news/stake_report.htm); assessment demonstration pilots and grants (http://www.epa.gov/brownfields/assessment_grants.htm); cleanup and revolving loan fund pilots and grants (<http://www.epa.gov/brownfields/rlflst.htm>); job training pilots and grants (<http://www.epa.gov/brownfields/job.htm>); and cleanup grants (http://www.epa.gov/brownfields/cleanup_grants.htm).

FY 2006 Performance Measure:

- **Border communities monitoring for a pollutant that has not previously been monitored in that community.**

Performance Database: The measure will allow EPA to "count" improvements within an existing monitored area -- for example, installation of CO monitors in a community that did not previously monitor for CO, even if that community already monitors for other pollutants. This is an important change from the previous measure, which only allowed us to "count" a monitoring activity if it occurred in a completely new location. An internal database will be set up to track the measure.

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Information on air releases will be contained in the Aerometric Information Retrieval System (AIRS), a computer-based repository for information about air pollution in the United States.

Data Source: The information on installation of new monitors would come from the local and/or regional environmental authorities. The data collected by the monitors will be quality assured/quality controlled and stored in AIRS.

Methods, Assumptions and Suitability: N/A

QA/QC Procedures:

The QA Handbook for Ambient Air Pollution Measurement Systems will serve as guidance for the implementation and management of any Ambient Air Quality Monitoring Network. The document provides organizations with pertinent information and guidance in sampling, and analyzing ambient air monitoring data and reporting the information to the AIRS network.

To ensure transparency and foster information exchange, the coordinating bodies disseminate information regarding their activities and progress on specific projects by posting information to Web sites and list servers, through print media and public meetings, as well as by participating in environmental fairs and environmental education programs.
<http://www.epa.gov/usmexicoborder/reports.htm>

Data Quality Reviews: N/A

Data Limitations: N/A

Error Estimate: N/A

New/Improved Data or Systems: N/A

References:

EPA's OAQPS: <http://www.epa.gov/oar/oaqps/qa/index.html#handbook>

Air Data Systems: <http://epa.gov/compliance/planning/data/air/>

Envirofacts: <http://www.epa.gov/enviro/html/air.html>

FY 2006 Performance Measure:

- **Number of environmental reviews initiated by FTAA countries following the enactment of the 2002 Trade Promotion Act (TPA)**
- **Latin American countries initiating environmental assessments of trade liberalization**

Performance Database: None- manual collection

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Data Source: Project / Trade Agreement Specific

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: Verification does not involve any pollutant database analysis, but will require objective assessment of: (1) tasks completed, (2) compliance with new regulation, and (3) progress toward project goals and objectives.

Validating measurements under international programs presents several challenges. Technical assistance projects, for instance, typically target developing countries, which often do not have sound data collection and analysis systems in place. Non-technical projects, such as assistance in regulatory reform, frequently must rely on more subjective measures of change, such as the opinions of project staff or reviews by third-party organizations, including other U.S. government organizations, of the long-term efficacy of the assistance provided.

EPA works with its trading partners on capacity building projects, which establish the framework and tools to help partnering countries minimize the potential to degrade the environment and harm human health. Projects will help prevent pollution at the source, will be tailored to partner-country needs and be built on past US assistance.

Tracking development and implementation of these projects presents few challenges because EPA project staff maintains close contact with their counterparts and any changes become part of a public record.

Assessing the effectiveness of these projects or the environmental provisions in trade agreements is more subjective. Aside from feedback from Agency project staff, EPA relies, in part, on feedback from its trading partners in the target countries and regions and from non-governmental organizations (NGOs) and other third parties. Because EPA works to establish long-term relationships with its trading partners, the Agency is often able to assess environmental improvements in these countries and regions for a number of years following implementation of the trade agreement.

Data Quality Reviews: N/A

Data Limitations: N/A

Error Estimate: N/A

New/Improved Data or Systems: N/A

References: N/A

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Goal 4 Objective 3

FY 2006 Performance Measure:

- **Acres of habitat restored and protected nationwide as part of the National Estuary Program (NEP)**

Performance Database: The Office of Wetlands Oceans and Watersheds has developed a standardized format for data reporting and compilation, defining habitat protection and restoration activities and specifying habitat categories. The key field used to calculate annual performance is habitat acreage. Annual results have been reported since 2001 for the NEP (results are calculated on a fiscal year basis).

Information regarding habitat protection is accessible on a web page that highlights habitat loss/alteration, as well as the number of acres protected and restored by habitat type <http://www.epa.gov/owow/estuaries/pivot/overview/intro.htm>. This allows EPA to provide a visual means of communicating NEP performance and habitat protection and restoration progress to a wide range of stakeholders and decision-makers.

Data Source: NEP documents such as annual work plans (which contain achievements made in the previous year), annual progress reports and other implementation tracking materials, are used to document the number of acres of habitat restored and protected. EPA aggregates the data provided by each NEP to arrive at a national total for the entire Program. EPA is confident that the data presented are as accurate as possible. Each NEP reviews the information prior to reporting to EPA. In addition, EPA conducts regular reviews of NEP implementation to help ensure that information provided in these documents is accurate, and progress reported is in fact being achieved.

Methods, Assumptions and Suitability: Measuring the number of acres of habitat restored and protected may not directly correlate to improvements in the health of the habitat reported, or of the estuary overall, but it is a suitable measure of on-the-ground progress. Habitat acreage does not necessarily correspond one-to-one with habitat quality, nor does habitat (quantity or quality) represent the only indicator of ecosystem health. Nevertheless, habitat acreage serves as an important surrogate and a measure of on-the-ground progress made toward EPA's annual performance goal of habitat protection and restoration in the NEP. EPA has defined and provided examples of A_{protection} and A_{restoration} activities for purposes of measure tracking and reporting (see citation for the PIVOT website in references below.) "Restored and protected" is a general term used to describe a range of activities. The term is interpreted broadly to include created areas, protected areas resulting from acquisition, conservation easement or deed restriction, submerged aquatic vegetation coverage increases, permanent shellfish bed openings, and anadromous fish habitat increases.

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QA/QC Procedures: Primary data are prepared by the staff of the NEP based on their own reports and from data supplied by other partnering agencies/organizations (that are responsible for implementing the action resulting in habitat protection and restoration). The NEP staff are requested to follow EPA guidance to prepare their reports, and to verify the numbers. EPA then confirms that the national total accurately reflects the information submitted by each program. The Office of Water Quality Management Plan (QMP), renewed every five years, was approved in July 2001. EPA requires that each organization prepare a document called a Quality Management Plan (QMP) that documents the organization's data quality policy, which addresses the quality, generation and use of the organization's data and identifies the environmental programs to which the quality system applies (e.g., programs that rely on the collection or use of environmental data.)

Data Quality Review: No audits or quality reviews conducted yet.

Data Limitations: It is still early to determine the full extent of data limitations. Current data limitations include: information that may be reported inconsistently (based on different interpretations of the protection and restoration definitions), acreage that may be miscalculated or misreported, and acreage that may be double counted (same parcel may also be counted by partnering/implementing agency or need to be replanted multiple years). In addition, measuring the number of acres of habitat restored and protected may not directly correlate to improvements in the health of the habitat reported (particularly in the year of reporting), but is rather a measure of on-the-ground progress made by the NEPs.

Error Estimate: No error estimate is available for this data.

New/Improved Data or Systems: In 2004, NEP provided latitude and longitude data (where possible) for each project. These data are then mapped to highlight where these projects are located in each NEP study area. Not only does this assist both the individual NEP and EPA in obtaining a sense of geographic project coverage, but it provides a basis from which to begin exploring cases where acreage may be double-counted by different agencies. An on-line reporting system is also being developed for the NEPs= use that will assist in tracking habitat projects, and will help reduce EPA=s QA/QC time. Currently, this system is scheduled to be in place by September 2005.

References: Aggregate national and regional data for this measurement, as well as data submitted by the individual National Estuary Programs, is displayed numerically, graphically, and by habitat type in the Performance Indicators Visualization and Outreach Tool (PIVOT). PIVOT data are publicly available at <http://www.epa.gov/owow/estuaries/pivot/overview/intro.htm>. The Office of Water Quality Management Plan (July 2001) is available on the Intranet at <http://intranet.epa.gov/ow/infopolicy.html>.

FY 2006 Performance Measure:

- **By 2008, working with partners, achieve a net increase of 400,000 acres of wetlands**

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Performance Database: The National Wetlands Inventory (NWI) of the U.S. Fish and Wildlife Service produces information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats. This information is used by Federal, State, and local agencies, academic institutions, U.S. Congress, and the private sector. The Emergency Wetland Resources Act of 1986 directs the Service to map the wetlands of the United States. The NWI has mapped 89 percent of the lower 48 states, and 31 percent of Alaska. The Act also requires the Service to produce a digital wetlands database for the United States. About 42 percent of the lower 48 states and 11 percent of Alaska are digitized. Congressional mandates require the U.S. Fish and Wildlife Service to produce a status and trends reports to Congress at ten-year intervals.

The status and trends report is designed to provide recent and comprehensive estimates of the abundance of wetlands in the 48 conterminous States. This status and trends report indicates whether there is an actual increase in wetland acreage or if wetlands are continuing to decrease. Up-to-date status and trends information is needed to periodically evaluate the efficacy of existing Federal programs and policies, identify national or regional wetland issues, and increase public awareness of and appreciation for wetlands.

The last status and trends report¹ provided the most recent and comprehensive estimates of the current gains and losses for different types of wetlands in the United States on public and private lands from calendar year 1986 to 1997. In calendar year 1997, there were an estimated 105.5 million acres of wetlands in the conterminous United States. Of this total, 100.5 million acres (95 percent) are freshwater wetlands and 5 million acres (5 percent) are saltwater wetlands.

The President directed in his Earth Day 2004 announcement that the next National Wetlands Inventory update, status and trends report, should be completed by the end of 2005, five years ahead of the current schedule, and asked that the updates be done more frequently thereafter. This new information will enhance Federal, State, Tribal, local government programs' policies and decision making.

Data Source: The National Status and Trends Report is developed and published by the U.S. Fish and Wildlife Service. This is the only Federal study that provides statistically valid estimates with a published standard error for all wetlands in the conterminous United States. Aerial imagery is the primary data source, and it is used with reliable collateral data such as topographic maps, coastal navigation charts, published soil surveys, published wetland maps, and State, local or regional studies. A random number of sites are also field verified. All photography is cataloged, numbered, tagged, and traced in a database management system.

For each plot, aerial imagery is interpreted and annotated in accordance with procedures published by the Fish and Wildlife Service. The results are compared with previous era imagery, and any changes recorded. The differences between the data sets are analyzed and a statistical estimate of the change is produced.

¹ Dahl, T.E. 2000. Status and trends of wetlands in the conterminous United States 1986 to 1997. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 82pp.

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The five major kinds of wetlands are: 1) freshwater (or palustrine), 2) saltwater (or estuarine), 3) riverine, 4) lacustrine (or lakes and other deepwater habitats), and 5) marine wetlands. For analysis and reporting purposes, these types of wetlands were further divided into subcategories such as freshwater forested wetland, freshwater emergent wetland, estuarine and marine intertidal wetlands.

Methods, Assumptions and Suitability: An interagency group of statisticians developed the design for the national status and trends study. The study was based on a scientific probability sample of the surface area of the 48 coterminous States. The area sampled was about 1.93 billion acres and the sampling did not discriminate based on land ownership. The study used a stratified, simple random sampling design. About 754,000 possible sample plots comprised the total population. Geographic information system software was used to organize the information of about 4,375 random sample plots. The plots were examined with the use of remote sensed data in combination with field work. Estimates of change in wetlands were made over a specific time period.

QA/QC Procedures: The Service has developed and implemented quality assurance measures that provide appropriate methods to take field measurements, ensure sample integrity and provide oversight of analyses, which includes reporting of procedural and statistical confidence levels. The objective was to produce comprehensive, statistically valid acreage estimate of the Nation's wetlands. Because of the sample-based approach, various quality control and quality assurance measures were built into the data collection, review, analysis, and reporting stages. This includes field verification of the plots. Six Federal agencies assist with field verification work.

Data Quality Reviews: Not Applicable

Data Limitations: Certain habitats were excluded because of the limitations of aerial imagery as the primary data source to detect wetlands. This was consistent with previous wetland status and trends studies conducted by FWS.

Error Estimate: Estimated procedural error ranged from 4 to 6 percent of the true values when all quality assurance measures have been completed. Procedural error was related to the ability to accurately recognize and classify wetlands both from multiple sources of imagery and on the ground evaluations. Types of procedural errors were missed wetlands, inclusion of upland as wetland, misclassification of wetlands, or misinterpretation of data collection protocols. The amount of procedural error is usually a function of the quality of the data collection conventions; the number, variability, training and experience of data collection personnel; and the rigor of any quality control or quality assurance measures.

New/Improved Data or Systems: Advances in computerized cartography were used to improve data quality and geospatial integrity. Newer technology allowed the generation of existing digital plot files at any scale to overlay directly over an image base.

References:

<http://wetlands.fws.gov/index.html>

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<http://wetlands.fws.gov/bha/SandT/SandTReport.html>

http://wetlands.fws.gov/Pubs_Reports/publi.htm

FY 2006 Performance Measure:

- **Annually, beginning in FY04 and in partnership with the Corps of Engineers and states, achieve no net loss of wetlands in the Clean Water Act Section 404 regulatory program**

Performance Database: Since 1989, the goal of the Clean Water Act Section 404 program has been no net loss of wetlands.

Historically, the Corps has collected limited data on wetlands losses and gains in its Regulatory Analysis and Management System (RAMS) permit tracking database. The Corps has compiled national Section 404 wetland permitting data for the last 10 years reflecting wetland acres avoided (through the permit process), permitted for impacts, and mitigated. However, limitations in methods used for data collection, reporting and analysis resulted in difficulties in drawing reliable conclusions regarding the effects of the Section 404 program.

Data Source: Data included in RAMS is generally collected by private consultants hired by permit applicants or Corps Regulatory Staff. Data input is generally done by Corps staff.

Methods, Assumptions and Suitability: RAMS was designed to be an administrative aid in tracking permits, thus it lacks many of the fields necessary to adequately track important information regarding wetland losses and gains. Also, the database was modified differently for each of the 38 Corps Districts making national summaries difficult. Furthermore, the database is also proprietary making it difficult to retrofit without utilizing its original developers.

QA/QC Procedures: Historically, there has not been a high level of QA/QC with regard to data input into RAMS. Its antiquated format and numerous administrative fields discourage use. Lack of standard terms and classification also make all aspects of data entry problematic.

Data Quality Reviews: Independent evaluations published in 2001 by the National Academy of Sciences (NAS) and the General Accounting Office (GAO) provided a critical evaluation of the effectiveness of wetlands compensatory mitigation (the restoration, creation, or enhancement of wetlands to compensate for permitted wetland losses) for authorized losses of wetlands and other waters under Section 404 of the Clean Water Act. The NAS determined that available data was insufficient to determine whether or not the Section 404 program was meeting its goal of no net loss of either wetland area or function. The NAS added that available data suggested that the program was not meeting its no net loss goal. Among its suite of recommendations, the NAS noted that wetland area and function lost and regained over time should be tracked in a national database and that the Corps should expand and improve quality assurance measures for data entry.

In response to the NAS, GAO, and other recent critiques of the effectiveness of wetlands compensatory mitigation, EPA and the Corps in conjunction with the Departments of

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Agriculture, Commerce, Interior, and Transportation released the National Wetlands Mitigation Action Plan on December 26, 2002. The Plan includes 17 tasks that the agencies will complete over the next three years to improve the ecological performance and results of compensatory mitigation.

One of the major goals articulated in the 2002 interagency National Wetlands Mitigation Action Plan (MAP) is improving data collection and availability (including tracking and reporting on acreage and function gains and losses). MAP includes three action items the agencies will complete over the next two years that will improve their ability to track and report on wetlands gains and losses. Additional details of the milestones shown below are contained in the **MAP** <http://www.mitigationactionplan.gov/>.

- The Corps, EPA, USDA, DOI, and NOAA, in conjunction with states and Tribes, are compiling and disseminating information regarding existing mitigation-tracking database systems in FY04.
- Building upon the analysis of existing mitigation data base systems, the Corps, EPA, USDA, DOI, and NOAA will establish a shared mitigation database by FY05.
- Utilizing the shared database, the Corps, in conjunction with EPA, USDA, DOI, and NOAA, will provide an annual public report card on compensatory mitigation by fiscal year 2005 to complement reporting of other wetlands programs.

Data Limitations: As previously noted, RAMS currently provides the only national data on wetlands losses and gains in the Section 404 Program. Also, as previously noted, there are a number of concerns regarding the conclusions that can be drawn from these numbers. Data quality issues include:

1. Inability to separate restoration, creation, enhancement and preservation acreage from the aggregate "mitigation" acreage reported;
2. Lack of data regarding how much designated mitigation acreage was actually undertaken, and how much of that total was successful;
3. Lack of data regarding how much of the permitted impacts actually occurred; and
4. Limitations on identifying acres "avoided," because the figure is only based on the difference between original proposed impacts and impacts authorized. Often, permit applicants who are aware of the 404 program's requirements to avoid and minimize impacts to wetlands, make initial site selection and site design decisions that minimize wetland impacts prior to submitting a permit application. Such avoidance decisions benefit applicants, as their applications are more likely to be accepted and processed with minor changes. This behavioral influence that the program engenders is difficult to capture and quantify, but contributes considerable undocumented "avoided" impacts.

Error Estimate: Not applicable

New/Improved Data or Systems: The EPA and the Corps have acknowledged the need for improved 404 tracking. The Corps is currently piloting a new national permit tracking database called ORM to replace its existing database (RAMS). As part of the MAP, the Corps is working with EPA and the other Federal agencies and states to ensure that the version of ORM that is

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ultimately deployed will adequately track wetlands gains and losses. ORM is being designed to provide improved tracking regarding:

- Type of impacts
- Type and quantity of habitat impacted (Using Hydrogeomorphic and Cowardin classification systems)
- Type and quantity of habitat mitigated (Using Hydrogeomorphic and Cowardin classification systems)
- Type and quantity of mitigation (restoration, creation, enhancement, or preservation)
- Differentiating stream mitigation (in linear feet) from wetlands mitigation (in acres)
- Spatial tracking via GIS for both impact and mitigation sites (*planned*)
- Functional losses (debits) at the impact site and functional gains at the mitigation site (credits) if assessment tool is available and applied

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References:

<http://www.mitigationactionplan.gov/>

FY 2006 Performance Measure:

- **Prevent water pollution and protect aquatic ecosystems so that overall ecosystem health of the Great Lakes is improved**

Performance Database: US EPA's Great Lakes National Program Office (GLNPO) will collect and track the components of the index and publish the performance results as part of annual reporting under the Government Performance and Results Act (GPRA) and as online reporting of GLNPO's monitoring program, <http://epa.gov/glnpo/glindicators/index.html>. Extensive databases for the indicator components are maintained by GLNPO (phosphorus concentrations, contaminated sediments, benthic health, fish tissue contamination), by binational agreement with Environment Canada (air toxics deposition), and by local authorities who provide data to EPA (drinking water quality, beach closures). A binational team of scientists and natural resource managers is working to establish a long term monitoring program to determine extent and quality of coastal wetlands.

Data Source: Data for the index components are tracked internally and reported at the State of the Lakes Ecosystem Conferences (SOLEC). The document, "Implementing Indicators 2003-A Technical Report," presents detailed indicator reports as prepared by primary authors (attending the conference), including references to data sources found in the summary document.

Methods, Assumptions, and Suitability: The Index is based on a 40 point scale where the rating uses select Great Lakes State of the Lakes Ecosystem indicators (i.e., coastal wetlands, phosphorus concentrations, Area of Concern (AOC) sediment contamination, benthic health, fish tissue contamination, beach closures, drinking water quality, and air toxics deposition). Each component of the Index is based on a 1 to 5 rating system, where 1 is poor and 5 is good. Authors of SOLEC indicator reports use best professional judgment to assess the overall status of the ecosystem component in relation to established endpoints or ecosystem objectives, when

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available. Each of the index components is included in the broader suite of Great Lakes indicators, which was developed through an extensive multi-agency process to satisfy the overall criteria of necessary, sufficient and feasible. Information on the selection process is in the document, "Selection of Indicators for Great Lakes Basin Ecosystem Health, Version 4."

QA/QC Procedures: GLNPO has an approved Quality Management system in place¹ that conforms to the EPA quality management order and is audited every 3 years in accordance with Federal policy for Quality Management.

Data Quality Review: GLNPO's quality management system has been given "outstanding" evaluations in previous peer and management reviews². GLNPO has implemented all recommendations from these external audits and complies with Agency Quality standards.

Data Limitations: Data limitations vary among the indicator components of the Index. The data are especially good for phosphorus concentrations, fish tissue contamination, benthic health, and air toxics deposition. The data associated with other components of the index (coastal wetlands, AOC sediment contamination, beach closures, and drinking water quality) are more qualitative. Some data are distributed among several sources, and without an extensive trend line. Limitations for each of the index components are included in the formal indicator descriptions in the document, "Selection of Indicators for Great Lakes Basin Ecosystem Health, Version 4."

Error Estimate: Error statistics for the Great Lakes Index have not been quantified. Each unit of the 40 point scale represents 2.5% of the total, so any unit change in the assessment of one of the component indicators would result in a change of the index of that magnitude. The degree of environmental change required to affect an indicator assessment, however, may be significantly large.

New/Improved Data or Systems: The data system specifically for this index is being developed. Data continue to be collected through the SOLEC process by various agencies, including GLNPO. Efforts are currently in progress to integrate various Great Lakes monitoring programs to better meet SOLEC objectives and to increase efficiencies in data collection and reporting.

References:

1. "Quality Management Plan for the Great Lakes National Program Office." EPA905-R-02-009. October 2002, Approved April 2003.
2. "GLNPO Management Systems Review of 1999." Unpublished - in USEPA Great Lakes National Program Office files.
3. Canada and the United States. "State of the Great Lakes 2003." ISBN 0-662-34798-6, Environment Canada, Burlington, Ontario, Cat. No. En40-11/35-2003E, and U.S.
4. Environmental Protection Agency, Chicago, EPA 905-R-03-004. 2003. Available on CD and online at <www.binational.net>.

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FY 2006 Performance Measure:

- **The average concentrations of PCBs in whole lake trout and walleye**

Performance Database: Great Lakes National Program Office (GLNPO) base monitoring program¹. The key fields for this measure are Lake Trout and Walleye (Lake Erie). Reporting starts with 1972 data for Lake Michigan and 1977 or 1978 data for the other Lakes. In FY06, the database will contain QA/QC data from fish collected in 2004.

Data are reported on a calendar year basis.

Data Source: GLNPO's ongoing base monitoring program, which has included work with cooperating organizations such as the U.S. Geological Survey (USGS) and the U.S. Fish and Wildlife Survey (USFWS).

Methods, Assumptions, and Suitability: This indicator provides concentrations of selected organic contaminants in sport fish from the Great Lakes to: (1) determine time trends in contaminant concentrations, (2) assess impacts of contaminants on the fishery, and (3) assess potential human and wildlife exposures from consuming contaminated sport fish. The data provide two elements of contaminant concentrations: The first element includes data from 600-700 mm lake trout (*Salvelinus namaycush*) whole fish composites (5 fish) from each of the lakes (walleye, *Stizostedion vitreum vitreum*, in Lake Erie). These data are used to assess time trends in organic contaminants in the open waters of the Great Lakes, using fish as biomonitors. These data can also be used to assess the risks of such contaminants on the health of this important fishery, and on wildlife that consume them.

The second element of the indicator focuses on assessing human exposures via consumption of popular sport fish. Coho (*Oncorhynchus kisutch*) and chinook salmon (*Oncorhynchus tshawytscha*) from each lake (rainbow trout, *Salmo gairdneri*, in Lake Erie) are collected during the fall spawning run, and composite fillets (5 fish) are analyzed for organic contaminants to assess human exposure. The coho salmon spawn at 3 years of age, and so their body burdens reflect a more focused and consistent exposure time compared to the lake trout which may integrate exposures over 4 to 10 yrs depending on the lake. Chinook salmon spawn after 4-5 years, and have higher (and thus more detectable) concentrations than the coho salmon and also represent a consistent exposure time. Thus time trends for consistent age fish as well as consistent size fish can be assessed from these data.

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QA/QC Procedures: GLNPO has an approved Quality Management system in place² that conforms to the EPA quality management order and is audited every 3 years in accordance with Federal policy for Quality Management. The Quality Assurance (QA) plan that supports the fish contaminant program is approved and available on request³. The draft field sampling Quality Assurance Project Plan (QAPP) is being revised and will be submitted to the GLNPO QA officer for review by September 30, 2003⁴.

Data Quality Review: GLNPO's quality management system has been evaluated as "outstanding" in previous peer and management reviews⁵. GLNPO has implemented all recommendations from these external audits and complies with Agency Quality standards.

Data Limitations: The top predator fish (lake trout) program was designed specifically for lakewide trends. It is not well suited to portray localized changes.

Error Estimate: The goal of the fish contaminant program is to detect a 20% change in each measured contaminant concentration between two consecutively sampled periods at each site. The program was designed to reach that goal with 95% confidence.

New/Improved Data or Systems: The GLENDa database is a significant new system with enhanced capabilities. Existing and future fish data will be added to GLENDa.

References:

1. "The Great Lakes Fish Monitoring Program - A technical and Scientific Model For Interstate Environmental Monitoring." September, 1990. EPA503/4-90-004.
2. "Great Lakes National Program Office Indicators. Fish Indicators." <http://www.epa.gov/glnpo/glindicators/fishcontaminants.html>
3. "Trends in Great Lakes Fish Contaminants" , Dr. Deborah Swackhammer, Univ of Minnesota Environ. Occ. Health, School of Public Health, EPA Grant #GL97524201-2, 7/1/02. De Vault, D. S. 1984. Contaminant analysis of fish from Great Lakes harbors and tributary mouths. U.S. Environmental Protection Agency, Great Lakes National Program Office. EPA 905/3-84-003.
4. De Vault, D. S. 1985. Contaminants in fish from Great Lakes harbors and tributary mouths. Archives of Environmental Contamination and Toxicology 14: 587-594.
5. De Vault, D. S., P. Bertram, D. M. Whittle and S. Rang. 1995. Toxic contaminants in the Great Lakes. State of the Great Lakes Ecosystem Conference (SOLEC). Chicago and Toronto, U.S. Environmental Protection Agency, Great Lakes National Program Office and Environment Canada.

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9. De Vault, D. S., J. A. Weishaar, J. M. Clark and G. Lavhis. 1988. Contaminants and trends in fall run coho salmon. *Journal of Great Lakes Research* 14: 23-33.
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17. Glassmeyer, S. T., K. E. Shanks and R. A. Hites. 1999. Automated toxaphene quantitation by GC/MS. *Analytical Chemistry* in press.

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21. Mac, M. J. and C. C. Edsal. 1991. Environmental contaminants and the reproductive success of lake trout in the Great Lakes. *J. Tox. Environ. Health.* 33: 375-394.
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40. Swackhammer, D. L. 2001. "*Trends in Great Lakes Fish Contaminants.*" Unpublished - in USEPA Great Lakes National Program Office files.
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FY 2006 Performance Measure:

- **Concentration trends of toxic chemicals in the air in the Great Lakes basin will decline**

Performance Database: Great Lakes National Program Office (GLNPO) integrated atmospheric deposition network ¹ (IADN) operated jointly with Canada. Reporting starts with 1992 data, collected through the joint US/Canadian Integrated Atmospheric Deposition Program and includes, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and pesticides; however, this Performance Measure addresses only PCBs. Monitoring results from 2004 will be reported in 2006. Data are reported on a calendar year basis.

Data Source: GLNPO and Environment Canada are the principal sources of the data. Data also come through in-kind support and information sharing with other Federal agencies, Great Lakes' States, and Canada.

Methods, Assumptions, and Suitability: There are five master IADN stations, one for each lake, which are supplemented by satellite stations in other locations. The master stations are located in remote areas and are meant to represent regional background levels. Concentrations from the master stations are used for the performance measure. Concentrations from the satellite stations in Chicago and Cleveland are also sometimes used to demonstrate the importance of urban areas to atmospheric deposition to the Lakes.

Air samples are collected for 24 hours using hi-volume samplers containing an adsorbent. Precipitation samples are collected as 28-day composites. Laboratory analysis protocols generally call for solvent extraction of the organic sampling media with addition of surrogate recovery standards. Extracts are then concentrated followed by column chromatographic cleanup, fractionation, nitrogen blow-down to small volume (about 1 mL) and injection (typically 1 uL) into gas chromatography instruments.

All IADN data are loaded and quality controlled using the Research Database Management System (RDMQ), a Statistical Analysis System (SAS) program. RDMQ provides a unified set of quality assured data, including flags for each data point that can be used to evaluate the usability of the data. Statistical summaries of annual concentrations are generated by the program and used as input into an atmospheric loading calculation. The loadings calculation is described in detail in the Technical Summary referenced below. However, the averaged annual concentrations rather than the loadings are used in the performance measure.

QA/QC Procedures: GLNPO has a Quality Management system in place, which conforms to the EPA quality management order and is audited every 3 years in accordance with Federal policy for Quality Management². Quality Assurance Project Plans are in place for the laboratory grantee, as well as for the network as a whole. A jointly-funded QA contractor conducts laboratory audits and tracks QA statistics. Data from all contributing agencies are quality-controlled using the SAS-based system.

Data Quality Review: GLNPO's quality management system has been evaluated as "outstanding" in previous peer and management reviews³. This program has a joint Canadian

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US quality system and workgroup that meets twice a year. GLNPO has implemented all recommendations from these external audits and complies with Agency Quality standards⁴.

A regular set of laboratory and field blanks is taken and recorded for comparison to the IADN field samples. In addition, a suite of chemical surrogates and internal standards is used extensively in the analyses. A jointly-funded QA contractor conducts laboratory audits and intercomparisons and tracks QA statistics. As previously mentioned, data from all contributing agencies are quality-controlled using a SAS-based system.

Data Limitations: The sampling design is dominated by rural sites that under emphasize urban contributions to deposition; thus although the data are very useful for trends information, there is less assurance of the representativeness of deposition to the whole lake. There are gaps in open lake water column organics data, thus limiting our ability to calculate atmospheric loadings.

Error estimate: Concentrations have an error of +/- 40%, usually less. Differences between laboratories have been found to be 40% or less. This is outstanding given the very low levels of these pollutants in the air and the difficulty in analysis. The performance measure examines the long-term trend.

New/Improved Data or Systems: GLNPO expects to post joint data that has passed quality review to < <http://binational.net/> >, a joint international web site, and to the IADN website at < www.msc.ec.gc.ca/iadn/ >.

References:

1. "Great Lakes National Program Office Indicators. Air Indicators." <http://www.epa.gov/glnpo/glindicators/atmospheric.html>

Details of these analyses can be found in the Laboratory Protocol Manuals or the agency project plans, which can be found on the IADN resource page at: http://www.msc.ec.gc.ca/iadn/resources/resources_e.html

Overall results of the project can be found in "*Technical Summary of Progress under the Integrated Atmospheric Deposition Program 1990-1996*" and the Draft "*Technical Summary of Progress under the Integrated Atmospheric Deposition 1997-2002*". The former can also be found on the IADN resource page.

2. "Quality Management Plan for the Great Lakes National Program Office." EPA905-R-02-009. October 2002, Approved April 2003.

3. "*GLNPO Management Systems Review of 1999.*" Unpublished - in USEPA Great Lakes National Program Office files.

4. "*Integrated Atmospheric Deposition Network Quality Assurance Program Plan - Revision 1.1.*" Environment Canada and USEPA. June 29, 2001. Unpublished - in USEPA Great Lakes National Program Office files.

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FY 2006 Performance Measure:

- **Cumulative total of Areas of Concern within the Great Lakes Basin that have been restored and delisted**

Performance Database: US EPA's Great Lakes National Program Office will track the cumulative total Areas of Concern (AOC) and post that information <http://www.epa.gov/glnpo/aoc/index.html>> Forty-three AOCs have been identified: 26 located entirely within the United States; 12 located wholly within Canada; and five that are shared by both countries. Since 1987, GLNPO has tracked the 31 that are within the US or shared; however, none of these are currently restored and delisted. Information is reported on a calendar year basis.

Data Source: Internal tracking and communications with Great Lakes States, the US Department of State and the International Joint Commission (IJC).

Methods, Assumptions, and Suitability: US EPA's Great Lakes National Program Office is in regular communication with the Great Lakes States, the US Department of State and the IJC, and is responsible for coordinating and overseeing the de-listing of AOCs. Generally speaking, under the Great Lakes Water Quality Agreement, an AOC is an area in the Great Lakes determined to have significant beneficial use impairments, such as restrictions on fish and wildlife consumption, fish tumors, eutrophication, beach closings, added costs to agriculture or industry. In 1989, the IJC established a review process and developed AOC listing/delisting criteria (<http://www.ijc.org/rel/boards/annex2/buis.htm#table1>) for existing and future AOCs. In 2001, the U.S. Policy Committee, led by GLNPO and including State, Tribal, and Federal agencies responsible for Great Lakes environmental issues, developed delisting guidelines for domestic AOCs (<http://www.epa.gov/glnpo/aoc/delist.html>) and for the binational AOCs shared by Michigan and Ontario (<http://www.epa.gov/glnpo/aoc/delist.html> - appendix 5).

QA/QC Procedures: GLNPO has an approved Quality Management system in place¹ that conforms to the EPA quality management order and is audited every 3 years in accordance with Federal policy for Quality Management.

Data Quality Review: GLNPO's quality management system has been given "outstanding" evaluations in previous peer and management reviews². GLNPO has implemented all recommendations from these external audits and complies with Agency Quality standards.

Data Limitations: one known.

Error Estimate: None.

New/Improved Data or Systems: NA

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References:

GLNPO will develop and maintain the appropriate tracking system once there are any de-listed US or Binational Areas of Concern. Information regarding Areas of Concern is currently available online at: <http://www.epa.gov/glnpo/aoc/index.html>

1. "Quality Management Plan for the Great Lakes National Program Office." EPA905-R-02-009. October 2002, Approved April 2003.
2. "GLNPO Management Systems Review of 1999." Unpublished - in USEPA Great Lakes National Program Office files.

FY 2006 Performance Measure:

- **Cubic yards of contaminated sediment in the Great Lakes remediated (cumulative from 1997)**

Performance Database: Data tracking sediment remediation are compiled in two different formats. The first is a matrix that shows the cumulative total of contaminated sediment that was remediated in the Great Lakes basin from 1997 for each Area of Concern or other non-Areas of Concern with sediment remediation. The second format depicts the yearly totals on a calendar year basis graphically. These databases are reported approximately one year after the completion of work.

Data Source: GLNPO collects sediment remediation data from various state and Federal project managers across the Great Lakes region. These data are obtained directly from the project manager via an information fact sheet the project manager completes for any site in the Great Lakes basin that has performed any remedial work on contaminated sediment. The project manager also indicates whether an approved Quality Assurance Project Plan (QAPP) was used in the collection of data at the site. This is used to decide if the data provided by the project manager are reliable for GLNPO reporting purposes. If an approved QAPP was not used, sediment data would likely not be reported by GLNPO

Methods, Assumptions, and Suitability: The data collected to track sediment remediation in the Great Lakes show the amount of sediment remediated for that year, the amount of sediment remediated in prior years, and the amount of sediment remaining to be addressed for a particular site. This format is suitable for year-to-year comparisons for individual sites.

QA/QC Procedures: GLNPO relies on the individual government/agency project managers to provide information on whether an approved QAPP was in place during remediation of contaminated sediment. The tracking database houses information on the calculated amount of sediment remediated at individual sites as provided by the project managers. It is then GLNPO's responsibility to determine if the data are usable based upon the information sheet provided by the project managers.

Data Quality Review: The data, in both the graphic and matrix formats, are reviewed by management, individual project managers, and GLNPO's Sediment Team Leader prior to being

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released. GLNPO's quality management system has been given "outstanding" evaluations in previous peer and management reviews. GLNPO has implemented all recommendations from these external audits and complies with Agency Quality standards.

Data Limitations: The data provided in the sediment tracking database should be used as a tool to track sediment remediation progress at sites across the Great Lakes. Many of the totals for sediment remediation are estimates provided by project managers. For specific data uses, individual project managers should be contacted to provide additional information.

Error Estimate: The amount of sediment remediated or yet to be addressed should be viewed as estimated data. A specific error estimate is not available.

New/Improved Data or Systems: Existing tracking systems are anticipated to remain in place.

References:

- Giancarlo Ross, M.B. "*Sediment Remediation Matrix*". Unpublished - in USEPA Great Lakes National Program Office files.
- Giancarlo Ross, M.B. "*Sediment Remediation Pie Charts*". Unpublished - in USEPA Great Lakes National Program Office files.
- Giancarlo Ross, M.B. "Compilation of Project Managers Informational Sheets". Unpublished - in USEPA Great Lakes National Program Office files.

FY 2006 Performance Measure:

- **Acres of submerged aquatic vegetation (SAV) present in the Chesapeake Bay**

Performance Database: SAV acres in Chesapeake Bay. Total acres surveyed and estimated additional acres from 1978 through 2003, excluding the years 1979-1983 and 1988 when no surveys were conducted. The FY 2006 Annual Performance Report for this measure will be based on the results of the survey conducted the previous calendar year (2005). We expect to receive the preliminary survey results for calendar year 2005 in April 2006.

Data Source: Virginia Institute of Marine Sciences provides the data (via an EPA Chesapeake Bay Program (CBP) grant to Virginia Institute of Marine Sciences). EPA has confidence in the third party data and believes the data are accurate and reliable based on QA/QC procedures described below.

Methods, Assumptions and Suitability: The SAV survey is a general monitoring program, conducted to optimize precision and accuracy in characterizing annually the status and trends of SAV in tidal portions of the Chesapeake Bay. The general plan is to follow fixed flight routes over shallow water areas of the Bay, to comprehensively survey all tidal shallow water areas of the Bay and its tidal tributaries. Non-tidal areas are omitted from the survey. SAV beds less than 1 square meter are not included due to the limits of the photography and interpretation. Annual monitoring began in 1978 and is ongoing. Methods are described in the Quality

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Assurance Project Plan (QAPP) on file for the EPA grant and at the VIMS web site (<http://www.vims.edu/bio/sav/>).

QA/QC Procedures: Quality assurance project plan for the EPA grant to the Virginia Institute of Marine Sciences describes data collection, analysis, and management methods. This is on file at the EPA Chesapeake Bay Program Office. The VIMS web site at <http://www.vims.edu/bio/sav/> provides this information as well. Metadata are included with the data set posted at the VIMS web site (<http://www.vims.edu/bio/sav/metadata/recent.html>).

Data Quality Reviews: This indicator has undergone extensive technical and peer review by state, Federal and non-government organization partner members of the SAV workgroup and the Living Resources subcommittee. Data collection, data analysis and QA/QC are conducted by the principal investigators/scientists. The data are peer reviewed by scientists on the workgroup. Data selection and interpretation, the presentation of the indicator, along with all supporting information and conclusions, are arrived at via consensus by the scientists and resource manager members of the workgroup. The workgroup presents the indicator to the subcommittee where extensive peer review by Bay Program managers occurs.

There have been no data deficiencies identified in external reviews

Data Limitations: Due to funding constraints, there were no surveys in the years 1979-1983 and 1988. Spatial gaps in 1999 occurred due to hurricane disturbance and subsequent inability to reliably photograph SAV. Spatial gaps in 2001 occurred due to post-nine-eleven flight restrictions near Washington D.C. Spatial gaps in 2003 occurred due to adverse weather in the spring and summer and Hurricane Isabel in the fall.

Error Estimate: No error estimate is available for this data.

New/Improved Data or Systems: Some technical improvements (e.g., photointerpretation tools) were made over the 22 years of the annual SAV survey in Chesapeake Bay.

References:

See Chesapeake Bay SAV special reports at <http://www.vims.edu/bio/sav/savreports.html> and bibliography at <http://www.vims.edu/bio/sav/savchespublish.html>. The SAV distribution data files are located at <http://www.vims.edu/bio/sav/savdata.html> and also at <http://www.chesapeakebay.net/pubs/statustrends/88-data-2002.xls>. The SAV indicator is published at <http://www.chesapeakebay.net/status.cfm?sid=88>.

FY 2006 Performance Measures:

- Reduce nitrogen loads entering Chesapeake Bay, from 1985 levels (2002 Baseline: 51 million pounds/year reduced)
- Reduce phosphorus loads entering Chesapeake Bay, from 1985 levels (2002 Baseline: 8 million pounds/year reduced)
- Reduce sediment loads entering Chesapeake Bay, from 1985 levels (2002 Baseline: 0.8 million tons/year reduced)

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Performance Database: Nutrient and Sediment Loads Delivered to the Chesapeake Bay. The Bay data files used in the indicator are located at <http://www.chesapeakebay.net/pubs/statustrends/186-data-2003.xls>. Data have been collected in 1985, 2000, 2001, 2002 and are expected on an annual basis after 2002. There is a two year data lag. Load data are from Chesapeake Bay watershed portions of NY, MD, PA, VA, WV, DE, and DC.

The FY 2006 Annual Performance Report for these measures will be based on the results of the 2004 data collection. We expect to receive the preliminary results for calendar year 2004 in April 2006.

Data Source: State/district data are provided to the Chesapeake Bay Program Office for input into the Chesapeake Bay Program Watershed Model.

Methods, Assumptions and Suitability: The data are of high quality. Data are consolidated by watershed boundaries at the state level and provided to the Chesapeake Bay Program Office for input into the watershed model.

What is the Watershed Model?

A lumped parameter Fortran based model (HSPF) that mimics the effects of hydrology, nutrient inputs, and air deposition on land and outputs runoff, groundwater, nutrients and sediment to receiving waters. Ten years of simulation are used and averaged to develop the reduction effects of a given set of Best Management Practices (BMPs). Using a ten-year average of actual weather (hydrologic, temperature, wind, etc.) ensures wet, dry and average conditions for each season are included. The effectiveness of the model is dependent upon the quality of the assumptions, BMPs and landuse descriptions used. The model is calibrated extensively to real-time monitoring, outside peer review and continual updates as better information, data collection and computer processing power become available.

What are the input data?

The model takes meteorological inputs such as precipitation, temperature, evapotranspiration, wind speed, solar radiation, dewpoint, and cloud cover to drive the hydrologic simulation. The changes in nutrient outputs are primarily determined by such factors as land use acreage, BMPs, fertilizer, manure, atmospheric deposition, point sources, and septic loads.

BMPs: Watershed Model BMPs include all nutrient reduction activities tracked by the jurisdictions for which a source has been identified, cataloged and assigned an efficiency. Efficiencies are based on literature review, recommendations of the appropriate source workgroup and approved by the Nutrient Subcommittee. It is the responsibility of the jurisdictions to track and report all nutrient reduction activities within their borders and maintain documentation to support submissions.

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Land use acreage is determined by combining analyses of satellite imagery and county-based databases for agricultural activities and human population. Fertilizer is determined by estimated application rates by crops and modified by the application of nutrient management BMPs. Manure applications are determined by an analysis of animal data from the census of agriculture.

Atmospheric deposition is determined by an analysis of National Atmospheric Deposition Program (NADP) deposition data and modified by scenarios of the Regional Acid Deposition Model. Point Source loads are determined from Discharge Monitoring Reports. Septic loads are estimated in a study commissioned by the CBP.

<http://www.chesapeakebay.net/pubs/1127.pdf>

<http://www.chesapeakebay.net/pubs/114.pdf>

<http://www.chesapeakebay.net/pubs/112.pdf>

<http://www.chesapeakebay.net/pubs/777.pdf>

What are the model outputs?

The watershed model puts out daily flows and nitrogen, phosphorus, and sediment loads for input to the water quality model of the Chesapeake Bay. The daily loads are averaged over a 10-year hydrologic period (1985-1994) to report an average annual load to the Bay. The effect of flow is removed from the load calculations.

What are the model assumptions?

BMPs: Model assumptions are based on three conditions: knowledge, data availability and computing power. The ability to alter what is used in the watershed model is a function of the impact the change would have on calibration. In many cases there is new information, data or methodologies that would improve the model, but changes are not possible because of the impact on the current calibration.

Changes in manure handling, feed additives, new BMPs and some assumptions could be incorporated into the model without impacting the calibration. In these cases, the changes were made.

Other input assumptions, such as multiple manure application levels, increasing the number and redefining some land uses, defining new nutrient or sediment sources, adjusting for varying levels of management (range of implementation levels) are items scheduled for incorporation in the new model update (2005).

Input assumptions are documented in the above publications. Assumptions of the actual model code are in the HSPF documentation:

ftp://water.usgs.gov/pub/software/surface_water/hspf/doc/hspfhelp.zip

Data are collected from states and local governments programs. Methods are described at <http://www.chesapeakebay.net/data/index.htm>, (refer to CBP Watershed Model Scenario Output

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Database, Phase 4.3). For more information contact Kate Hopkins at hopkins.kate@epa.gov or Jeff Sweeney jsweeney@chesapeakebay.net

QA/QC Procedures: State offices have documentation of the design, construction and maintenance of the databases used for the performance measures, showing they conform to existing U.S. Department of Agriculture Natural Resources Conservation Service (USDA/NRCS) technical standards and specifications for nonpoint source data and EPA's Permit Compliance System (PCS) standards for point source data. State offices also have documentation of implemented Best Management Practices (BMPs) based on USDA NRCS standards and specification and the Chesapeake Bay Program's protocols and guidance. BMPs are traditionally used to reduce pollutant loads coming from nonpoint sources such as urban/suburban runoff, agriculture, and forestry activities.

References include: the USDA NRCS Technical Guide and Appendix H from the Chesapeake Bay Program (contact Russ Mader at mader.russ@epa.gov or Kate Hopkins at hopkins.kate@epa.gov). Quality assurance program plans are available in each state office.

Data Quality Reviews: All data are reviewed and approved by the individual jurisdictions before input to the watershed model. QA/QC is also performed on the input data to ensure basic criteria, such as not applying a BMP at a higher level than allowed. A specific level of input should yield output within a specified range of values. Output is reviewed by both the CBPO staff and the Tributary Strategy Workgroup as an additional level of QA/QC. Any values out of the expected range is analyzed and understood before approval and public release. The model itself is given a quarterly peer review by an outside independent group of experts. There have been no data deficiencies identified in external reviews.

Data Limitations: Data collected from voluntary collection programs are not included in the database, even though they may be valid and reliable. The only data submitted by state and local governments to the Chesapeake Bay Program Office are data that are required for reporting under the cost share and regulatory programs. State and local governments are aware that additional data collection efforts are being conducted by non-governmental organizations, however, they are done independently of the cost share programs and are not reported.

Error Estimate: There may be errors of omission, misclassification, incorrect georeferencing, misdocumentation or mistakes in the processing of data.

New/Improved Data or Systems: The next version of the watershed model is currently under development and will be completed in 2005. The new version (phase 5) will have increased spatial resolution and ability to model the effects of management practices. The phase 5 watershed model is a joint project with cooperating state and Federal agencies. Contact Gary Shenk gshenk@chesapeakebay.net or see the web site at <http://www.chesapeakebay.net/phase5.htm>

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References:

See <http://www.chesapeakebay.net/data/index.htm>, refer to CBP Watershed Model Scenario Output Database, Phase 4.3. Contact Kate Hopkins at hopkins.kate@epa.gov or Jeff Sweeney jsweeney@chesapeakebay.net. The nutrient and sediment loads delivered to the Bay indicator are published at <http://www.chesapeakebay.net/status.cfm?sid=186>. The nutrient and sediment loads delivered to the Bay data files used in the indicator are located at <http://www.chesapeakebay.net/pubs/statustrends/186-data-2003.xls>. See “Chesapeake Bay Watershed Model Application and Calculation of Nutrient and Sediment Loadings, Appendix H: Tracking Best Management Practice Nutrient Reductions in the Chesapeake Bay Program, A Report of the Chesapeake Bay Program Modeling Subcommittee”, USEPA Chesapeake Bay Program Office, Annapolis, MD, August 1998, available at <http://www.chesapeakebay.net/pubs/777.pdf>. See USDA NRCS Field Office Technical Guide available at <http://www.nrcs.usda.gov/technical/efotg/>

FY 2006 Performance Measure:

- **Prevent water pollution and protect aquatic ecosystems so that overall aquatic system health of coastal waters of the Gulf of Mexico is improved on the “good/fair/poor” scale of the National Coastal Condition Report**
- **Reduce releases of nutrients throughout the Mississippi River Basin to reduce the size of the hypoxic zone in the Gulf of Mexico**

Performance Database: (1) Louisiana Coastal Hypoxia Shelfwide Survey metadata (data housed at National Oceanic and Atmospheric Administration/National Ocean Data Center, Silver Spring, Maryland). Funds for this research are provided by the National Oceanic and Atmospheric Administration, Coastal Ocean Program (NOAA/COP)

(2) Southeast Area Monitoring and Assessment Program (**SEAMAP**) - Gulf surveys.

The data used in assessing performance under this measure have been collected annually on a calendar year basis since 1982.

Data Source: (1) Hydrographic data are collected during annual surveys of the Louisiana continental shelf. Nutrient, pigment and station information data are also acquired. The physical, biological and chemical data collected are part of a long-term coastal Louisiana dataset. The goal is to understand physical and biological processes that contribute to the causes of hypoxia and use the data to support environmental models for use by resource managers.

(2) The Southeast Area Monitoring and Assessment Program (SEAMAP) is a state/Federal/university program for collection, management and dissemination of fishery-independent data and information in the southeastern United States.

Methods, Assumptions and Suitability: The distribution of hypoxia on the Louisiana shelf has been mapped annually in mid-summer (usually late July to early August) over a standard 60- to 80- station grid since 1985. During the shelfwide cruise, data are collected along transects from the mouth of the Mississippi River to the Texas border. Information is collected on a wide range

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of parameters, including conductivity/temperature/depth (CTD), light penetration, dissolved oxygen, suspended solids, nutrients, phytoplankton, and chlorophyll. Hydrographic, chemical, and biological data also are collected from two transects of Terrebonne Bay on a monthly basis, and bimonthly, off Atchafalaya Bay. There is a single moored instrument array in 20-m water depth in the core of the hypoxic zone that collects vertical conductivity/temperature data, as well as near-surface, mid, and near-bottom oxygen data; an upward directed Acoustic Doppler Current Profiler (ADCP) on the seabed measures direction and speed of currents from the seabed to the surface. There is also an assortment of nutrient and light meters.

Station depths on the cruises range from 3.25 to 52.4 meters. Northern end stations of transects are chosen based on the survey vessel's minimum depth limits for each longitude.

Standard data collections include hydrographic profiles for temperature, salinity, dissolved oxygen, and optical properties. Water samples for chlorophyll *a* and phaeopigments, nutrients, salinity, suspended sediment, and phytoplankton community composition are collected from the surface, near-bottom, and variable middle depths.

The objective is to delimit and describe the area of midsummer bottom dissolved oxygen less than 2 (mg. L).

Details of data collection and methodology are provided in referenced reports.

QA/QC Procedures: NOAA does not require written QA/QC procedures or a Quality Management Plan; however, the procedures related to data collection are covered in metadata files.

The SEAMAP Data Management System (DMS) conforms to the SEAMAP Gulf and South Atlantic DMS Requirements Document developed through a cooperative effort between National Marine Fisheries Service (NMFS) and other SEAMAP participants.

Data Quality Reviews: (1) Essential components of the environmental monitoring program in the Gulf of Mexico include efforts to document the temporal and spatial extent of shelf hypoxia, and to collect basic hydrographic, chemical and biological data related to the development of hypoxia over seasonal cycles. All data collection protocols and data are presented to and reviewed by the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force (the Task Force) in support of the adaptive management approach as outlined in the Action Plan for Reducing, Mitigating, and Controlling Hypoxia in the Northern Gulf of Mexico (the Action Plan).

(2) Biological and environmental data from all SEAMAP-Gulf surveys are included in the SEAMAP Information System, managed in conjunction with National Marine Fisheries Service – Southeast Fisheries Science Center (NMFS-SEFSC). Raw data are edited by the collecting agency and verified by the SEAMAP Data Manager prior to entry into the system. Data from all SEAMAP-Gulf surveys during 1982-2003 have been entered into the system, and data from 2004 surveys are in the process of being verified, edited, and entered for storage and retrieval.

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Data Limitations: Monitoring for shelf-wide conditions are currently performed each year primarily, but not exclusively, in July. The spatial boundaries of some monitoring efforts are limited by resource availability. Experience with the datasets has shown that when data are plotted or used in further analysis, outlying values may occasionally be discovered.

Error Estimate: (1) The manufacturers state +/- 0.2mg/L as the error allowance for both SeaBird and Hydrolab oxygen sensors.

References:

Mississippi River/Gulf of Mexico Watershed Nutrient Task force.2001. Action Plan for Reducing, Mitigating, and Controlling Hypoxia in the Northern Gulf of Mexico. Washington, DC.

Rabalais N.N., R.E. Turner, Dubravko Justic, Quay Dortch, and W.J. Wiseman. 1999. Characterization of Hypoxia. Topic 1 Report for the Integrated assessment on Hypoxia in the Gulf of Mexico. NOAA Coastal Ocean Program Decision Analysis Series No. 15. Silver Spring Maryland: National Oceanic and Atmospheric Administration.

Hendee, J.C. 1994. Data management for the nutrient enhanced coastal ocean productivity program. *Estuaries* 17:900-3

Rabalais, Nancy N., W.J. Wiseman Jr., R.E. Turner ; Comparison of continuous records of near-bottom dissolved oxygen from the hypoxia zone of Louisiana. *Estuaries* 19:386-407

SEAMAP Information System <http://www.gsmfc.org/sis.html>

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Goal 4 Objective 5

FY 2006 Performance Measure:

- Completed dose-response assessments, provisional values, or pathogen risk assessments
- Comprehensive guidance document for building owners and managers on restoration of buildings after terrorist contamination with biological or chemical hazards
- Comprehensive guidance document for emergency and remedial response personnel and water utility owners and operators for the restoration of water systems after terrorist contamination with biological or chemical hazards
- Comprehensive guidance package including data, methodologies, and other risk assessment tools that will assist emergency responders in establishing remediation goals at incident sites
- Report on a protocol to screen environmental chemicals for their inability to interact with the male hormone receptor

Performance Database: Program output; no internal tracking system

Data Source: N/A

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: N/A

Data Quality Reviews: N/A

Data Limitations: N/A

Error Estimate: N/A

New/Improved Data or Systems: N/A

References: N/A

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Goal 5 Objective 1

FY 2006 Performance Measure:

- **Percentage of concluded enforcement cases requiring that pollutants be reduced, treated, or eliminated and protection of populations or ecosystems**
- **Pounds of pollution estimated to be reduced, treated, or eliminated as a result of concluded enforcement actions**
- **Percentage of concluded enforcement cases requiring implementation of improved environmental management practices**
- **Dollars invested in improved environmental performance or improved environmental management practices as a result of concluded enforcement actions (i.e., injunctive relief and SEPs)**
- **Percentage of audits or other actions that result in the reduction, treatment, or elimination of pollutants and protection of populations or ecosystems**
- **Percentage of audits or other actions that result in improvements in environmental management practices**
- **Pounds of pollutants reduced, treated, or eliminated as a result of audits or other actions**
- **Dollars invested in improved environmental performance or improved environmental management practices as a result of audits or other actions**

Performance Databases: The Integrated Compliance Information System, (ICIS), which tracks EPA civil enforcement (e.g., judicial and administrative) actions. The Criminal Case Reporting System (CCRS) is the new enhanced data base for tracking criminal enforcement actions.

Data Source: Most of the essential data on environmental results in ICIS are collected through data developed originally through the use of the Case Conclusion Data Sheet (CCDS), which Agency staffs begin preparing after the conclusion of each civil (judicial and administrative) enforcement action. EPA implemented the CCDS in 1996 to capture relevant information on the results and environmental benefits of concluded enforcement cases. The information generated through the CCDS is used to track progress for several of the performance measures. The CCDS form consists of 27 specific questions which, when completed, describe specifics of the case; the facility involved; information on how the case was concluded; the compliance actions required to be taken by the defendant(s); the costs involved; information on any Supplemental Environmental Project to be undertaken as part of the settlement; the amounts and types of any penalties assessed; and any costs recovered through the action, if applicable. The CCDS documents whether the facility/defendant, through injunctive relief, must: (1) reduce pollutants; and (2) improve management practices to curtail, eliminate or better monitor and handle

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pollutants in the future. The Criminal Enforcement Program also maintains a separate case conclusion data form and system for compiling and quantifying the results of criminal enforcement prosecution, including pollution reduction. The criminal enforcement case conclusion form and system is currently being revised.

Methods, Assumptions and Suitability: For enforcement actions which result in pollution reductions, the staff estimate the amounts of pollution reduced for an immediately implemented improvement, or an average year once a long-term solution is in place. There are established procedures for the staff to calculate, by statute, (e.g., Clean Water Act), the pollutant reductions or eliminations. The procedure first entails the determination of the difference between the current Aout of compliance@ concentration of the pollutant(s) and the post enforcement action Ain compliance@ concentration. This difference is then converted into standard units of measure.

QA/QC Procedures: Quality Assurance/Quality Control procedures [See references] are in place for both the CCDS and ICIS entry. There are a Case Conclusion Data Sheet Training Booklet [See references] and a Case Conclusion Data Sheet Quick Guide [See references], both of which have been distributed throughout Regional and Headquarters= (HQ) offices. Separate CCDS Calculation and Completion Checklists [See references] are required to be filled out at the time the CCDS is completed. Criminal enforcement pollution reduction measures are quality assured by the program at the end of the fiscal year.

Quality Management Plans (QMPs) are prepared for each Office within The Office of Enforcement and Compliance Assurance (OECA). The Office of Compliance (OC) has established extensive processes for ensuring timely input, review and certification of ICIS information in Fiscal Year (FY) 2003. OC=s QMP, effective for 5 years, was approved July 29, 2003 by the Office of Environmental Information (OEI) and is required to be re-approved in 2008. OECA instituted a requirement for semiannual executive certification of the overall accuracy of ICIS information to satisfy the Government Performance and Results Act (GPRA), the Agency's information quality guidelines, and other significant enforcement and compliance policies on performance measurement.

Data Quality Review: Information contained in the CCDS and ICIS are required by policy to be reviewed by regional and headquarters= staff for completeness and accuracy. ICIS data is reviewed quarterly and certified at mid-year and end-of-year.

Data Limitations: The pollutant reductions or eliminations reported on the CCDS are estimates of what will be achieved if the defendant carries out the requirements of the settlement. Information on expected outcomes of state enforcement is not available. The estimates are based on information available at the time a case is settled or an order is issued. In some instances, this information will be developed and entered after the settlement, during continued discussions over specific plans for compliance. Because of the time it takes to agree on the compliance actions, there may be a delay in completing the CCDS. Additionally, because of unknowns at the time of settlement, different levels of technical proficiency, or the nature of a case, OECA=s expectation is that based on information on the CCDS, the overall amounts of pollutant reductions/eliminations will be prudently underestimated.

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Error Estimate: Not available

New & Improved Data or Systems: In November 2000, EPA completed a comprehensive guidance package on the preparation of the Case Conclusion Data Sheet. This guidance, issued to headquarters= and regional managers and staff, was made available in print and CD-ROM, and was supplemented in FY 2002 [See references]. The guidance contains work examples to ensure better calculation of the amounts of pollutants reduced or eliminated through concluded enforcement actions. EPA trained each of its ten regional offices during FY 2002. OC=s Quality Management Plan was approved by OEI July 29, 2003, and is effective for five years. [See references]. A new criminal enforcement case management, tracking and reporting system (Criminal Case Reporting System) will come on line during FY 2005 that will replace the existing criminal docket (CRIMDOC). This new system allows for a more user friendly database and greater tracking, management, and reporting capabilities.

References: Quality Assurance and Quality Control procedures: Data Quality: Life Cycle Management Guidance, (IRM Policy Manual 2100, dated September 28, 1994, reference Chapter 17 for Life Cycle Management). Case Conclusion Data Sheets: Case Conclusion Data Sheet, Training Booklet, issued November 2000 available: www.epa.gov/compliance/resources/publications/planning/caseconc.pdf; Quick Guide for Case Conclusion Data Sheet, issued November 2000. Information Quality Strategy and OC=s Quality Management Plans: Final Enforcement and Compliance Data Quality Strategy, and Description of FY 2002 Data Quality Strategy Implementation Plan Projects, signed March 25, 2002. ICIS: U.S. EPA, Office of Enforcement and Compliance Assurance, ICIS Phase I, implemented June 2002. Internal EPA database; non-enforcement sensitive data available to the public through the Freedom of Information Act (FOIA).

FY 2006 Performance Measure:

- **Number of inspections, civil investigations, and criminal investigations conducted**

Performance Databases: Output measure. Integrated Data for Enforcement Analysis (IDEA) integrates data from major enforcement and compliance systems, such as the Permit Compliance System (PCS), Air Facilities Subsystem (AFS), Resource Conservation and Recovery Act Information System (RCRAInfo), Integrated Compliance Information system (ICIS) for Clean Air Act (CAA) 112(r), National Compliance Database (NCDB), FIFRA/TSCA Tracking System (FTTS). There is also manual reporting of specific media inspections and all civil investigations. The Criminal Case Reporting System (CCRS), which is scheduled to come on line during the second quarter of FY 2005, is a criminal case management, tracking and reporting system. Information about criminal cases investigated by the U.S. EPA-Criminal Investigation Division (CID) is entered into CCRS at case initiation, and investigation and prosecution information is tracked until case conclusion.

Data Source: EPA=s regional and Headquarters= offices. U.S. EPA-CID offices.

Methods, Assumptions and Suitability: N/A

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QA/QC Procedures: All the systems have been developed in accordance with the Office of Information Management's Lifecycle Management Guidance, which includes data validation processes, internal screen audit checks and verification, system and user documents, data quality audit reports, third-party testing reports, and detailed report specifications for showing how data are calculated. For CRIMDOC (and the forthcoming CCRS), the system administrator performs regularly scheduled quality assurance/quality control checks of the CRIMDOC database to validate data and to evaluate and recommend enhancements to the system.

Data Quality Review: EPA is now using updated monitoring strategies [See references] which clarify reporting definitions and enhance oversight of state and local compliance monitoring programs. In FY2003, OECA instituted a requirement for semiannual executive certification of the overall accuracy of information to satisfy the GPRA, the Agency's information quality guidelines, and other significant enforcement and compliance policies on performance measurement.

Data Limitations: For all systems, there are concerns about quality and completeness of data and the ability of existing systems to meet data needs. Incompatible database structures/designs and differences in data definitions impede integrated analyses. There is also manual reporting of specific media inspections and all civil investigations. Additionally, there are incomplete data available on the universe of regulated facilities because not all are inspected/permitted. In addition, the targets for each measure such as the numbers of inspections, and civil and criminal investigations are based on the resources redirected to the state and tribal enforcement grant program.

Error Estimate: N/A

New & Improved Data or Systems: PCS modernization is underway and is scheduled for completion in 2007. An Interim Data Exchange Format (IDEF) has been established and will support the transfer of data from modernized state systems into the current PCS data system while PCS is being modernized. EPA is addressing the quality of the data in the major systems and each Office within OECA has developed a Quality Management Plan (data quality objectives, quality assurance project plans, baseline assessments). A new Integrated Compliance Information System (ICIS) supports core program needs and consolidates and streamlines existing systems. Additionally, OECA began implementing its Data Quality Strategy in FY 2002. A new case management, tracking and reporting system (Criminal Case Reporting System) is currently being developed that will replace CRIMDOC. This new system will be a more user-friendly database with greater tracking, management and reporting capabilities.

References: Clean Air Act Compliance Monitoring Strategy, April 25, 2001, www.epa.gov/compliance/resources/policies/monitoring/cmstrategy.pdf
AFS: <http://www.epa.gov/compliance/planning/data/air/afssystem.html>.
PCS: <http://www.epa.gov/compliance/planning/data/water/pcssys.html>.
RCRAinfo: <http://www.epa.gov/epaoswer/hazwaste/data/index.htm>.

For CRIMDOC: CRIM-DOC U.S. EPA, Office of Enforcement and Compliance Assurance. Internal enforcement confidential database; non-enforcement sensitive data available to the public through the Freedom of Information Act (FOIA).

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Information Quality Strategy and OC=s Quality Management Plans: Final Enforcement and Compliance Data Quality Strategy, and Description of FY 2002 Data Quality Strategy Implementation Plan Projects, signed March 25, 2002

FY 2006 Performance Measure:

- **Percentage of regulated entities taking complying actions as a result of on-site compliance inspections and evaluations**

Performance Databases: ICIS and manual reporting by regions

Data Sources: EPA regional offices and Office of Regulatory Enforcement (specifically, the Clean Air Act (CAA)- Mobile Source program) and Office of Compliance – Agriculture Division.

Methods, Assumptions and Suitability: A new measurement tool, the Inspection Conclusion Data Sheet, (ICDS) will be used to analyze results from inspections/evaluations conducted under some of EPA=s major statutes. EPA will analyze data on the three pieces of information from the ICDS: on-site actions taken by facilities, deficiencies observed, and compliance assistance provided. The inspectors complete the Inspection Conclusion Data Sheet (ICDS) for each inspection or evaluation subject to ICDS reporting and the information is either entered into ICIS or reported manually by the Regions and HQ programs.

QA/QC Procedures: ICIS has been developed per Office of Information Management Lifecycle Management Guidance, which includes data validation processes, internal screen audit checks and verification, system and user documents, data quality audit reports, third party testing reports, and detailed report specifications for showing how data are calculated.

Data Quality Review: Regional manual reports are reviewed and checked against the inspection or evaluation data entered into other Agency databases (Air Facilities Subsystem (AFS), Permit Compliance System (PCS), Online Tracking Information System (OTIS), Integrated Data for Enforcement Analysis (IDEA)). Information contained in the CCDS, ICDS and ICIS are required by policy to be reviewed by regional and headquarters= staff for completeness and accuracy. In FY2003, OECA instituted a requirement for semiannual executive certification of the overall accuracy of information to satisfy the GPRA, the Agency's information quality guidelines, and other significant enforcement and compliance policies on performance measurement. ICIS data are reviewed quarterly and certified at mid-year and end of year.

Data Limitations: ICIS is currently the database of record for CAA 112(r) inspections and audits. It is not the official database of record for inspections and evaluations for other programs, and as a result the regions have to enter inspection data into both ICIS and other Agency databases. This can result in redundant, incomplete, or contradictory data.

Error Estimate: N/A

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New & Improved Data or Systems: The new Integrated Compliance Information System (ICIS) will support core program needs and consolidate and streamline existing systems. As ICIS becomes more widely used by the regions and HQ programs some of the problems with data entry and reporting should be resolved. As various older systems become modernized (e.g., PCS), they will incorporate the ICDS data set as part of the system. This should minimize data entry and reporting problems.

References: ICIS: U.S. EPA, Office of Enforcement and Compliance Assurance, ICIS Phase I, implemented June 2002. Internal EPA database; non-enforcement sensitive data available to the public through the Freedom of Information Act (FOIA).

FY 2006 Performance Measure:

- **Percentage of regulated entities seeking assistance from EPA-sponsored compliance assistance centers and clearinghouse reporting that they improved environmental management practices as a result of their use of the centers or the clearinghouse**
- **Percentage of regulated entities seeking assistance from EPA-sponsored compliance assistance centers and clearinghouse reporting that they reduced, treated, or eliminated pollution as a result of their use of the centers or the clearinghouse**
- **Percentage of regulated entities seeking assistance from EPA-sponsored compliance assistance centers and clearinghouse reporting that they increased their understanding of environmental requirements as a result of their use of the centers or the clearinghouse**

Performance Database: EPA Headquarters manages data on the performance of the centers and clearinghouse respondents manually before entering it into ICIS.

Data source: Headquarters will enter manually collected information into ICIS upon completion and delivery of media and sector-specific compliance assistance provided by the EPA-sponsored compliance assistance centers and the clearinghouse. ICIS is designed to capture outcome measurement information such as increased awareness/understanding of environmental laws, changes in behavior and environmental improvements as a result of the compliance assistance provided.

Methods, Assumptions and Suitability: N/A

QA/QC Procedures: Automated data checks and data entry guidelines are in place for ICIS. Data from manual systems will be validated with internal checks, third party testing reports, and detailed reports showing how data are calculated.

Data Quality Reviews: Data from manual systems will be validated with internal checks, third party testing reports, and detailed reports showing how data are calculated.

Information contained in the ICIS is reviewed by Regional and Headquarters staff for completeness and accuracy. In FY2003, OECA instituted a requirement for semiannual executive certification of the overall accuracy of information to satisfy the GPRA, the Agency's information quality guidelines, and other significant enforcement and compliance policies on

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performance measurement. ICIS data are reviewed quarterly and certified at mid-year and end of year.

Data Limitations: None

Error Estimate: None

New/Improved Data or Systems: EPA plans to improve and/or modify elements of the compliance assistance module in ICIS based on use of the system.

References: US EPA, Integrated Compliance Information System Compliance Assistance Module, February 2004; US EPA, Compliance Assistance in the Integrated Compliance Information System Guidance, February 20, 2004.

FY 2006 Performance Measure:

- **Percentage of regulated entities receiving direct compliance assistance from EPA reporting that they improved environmental management practices as a result of EPA assistance**
- **Percentage of regulated entities receiving direct compliance assistance from EPA reporting that they increased their understanding of environmental requirements as a result of EPA assistance**
- **Percentage of regulated entities receiving direct assistance from EPA reporting that they reduced, treated, or eliminated pollution, as a result of EPA assistance**

Performance Database: EPA Headquarters will manage data on regulated entities receiving direct compliance assistance from EPA through ICIS.

Data source: Headquarters and EPA=s Regional offices will enter information in ICIS upon completion and delivery of media and sector-specific compliance assistance including workshops, training, on-site visits and distribution of compliance assistance tools. ICIS is designed to capture outcome measurement information such as increased awareness/understanding of environmental laws, changes in behavior and environmental improvements as a result of the compliance assistance provided.

Methods, Assumptions and Suitability: N/A

QA/QC: Automated data checks and data entry guidelines are in place for ICIS.

Data Quality Review: Information contained in the ICIS is reviewed by Regional and Headquarters staff for completeness and accuracy. In FY2003, OECA instituted a requirement for semiannual executive certification of the overall accuracy of information to satisfy the GPRA, the Agency's information quality guidelines, and other significant enforcement and compliance policies on performance measurement. ICIS data are reviewed quarterly and certified at mid-year and end of year.

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Data Limitations: None

Error Estimate: None

New & Improved Data or Systems: EPA plans to improve and/or modify elements of the compliance assistance module in ICIS based on use of the system.

References: US EPA, Integrated Compliance Information System Compliance Assistance Module, February 2004; US EPA, Compliance Assistance in the Integrated Compliance Information System Guidance, February 20, 2004.

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Goal 5 Objective 2

FY 2006 Performance Measure:

- **Number of pounds reduced (in millions) in generation of priority list chemicals from 2001 baseline of 88 million pounds**

Performance Database: Toxics Release Inventory (TRI) provides facility/chemical-specific data quantifying the amount of TRI-listed chemicals entering wastes associated with production processes in each year. The total amount of each chemical in production-related wastes can be broken out by the methods employed in managing such wastes, including recycling, energy recovery, treatment, and disposal/release. Amounts of these wastes that are not recycled are tracked for this performance measure. The performance measure uses the Chemical Abstract System (CAS) numbers for the 23 chemicals identified by EPA as priority chemicals (<http://www.epa.gov/epaoswer/hazwaste/minimize/chemlist.htm>).

Data Source: Regulated facilities report facility-specific, chemical-specific release, waste and recycling data to EPA. For example, in calendar year 1999, 22,639 facilities filed 84,068 TRI reports.

Methods, Assumptions, and Suitability: TRI data are collected as required by Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990. (40 CFR Part 13101; www.epa.gov/tri/). Only certain facilities in specific Standard Industrial Classification (SIC) codes are required to report annually the quantities of over 650 listed toxic chemicals and chemical categories released to each environmental medium and otherwise managed as waste (40 CFR Part 13101; www.epa.gov/tri/). Regulation requires covered facilities to use monitoring, mass balance, emission factors and/or engineering approaches to estimate releases and recycling volumes. For purposes of the performance measure, data controls are employed to facilitate cross-year comparisons: a subset of chemicals and sectors are assessed that are consistently reported in all years; data are normalized to control for changes in production using published U.S. Bureau of Economic Analysis (BEA) gross product indices (chain-type quantity index for the manufacturing sector).

QA/QC Procedures: Most facilities use EPA-certified automated Toxics Release Inventory (TRI) FORM R reporting tools, which contain automated error checking mechanisms. Upon receipt of the facilities' reports, EPA conducts automated edits, error checks, data scrubs, corrections and normalization during data entry and subsequent processing. The Agency does not control the quality of the data submitted by the regulated community. EPA does, however, work with the regulated community to improve the quality of their estimates.

Data Quality Review: The quality of the data contained in the TRI chemical reports is dependent upon the quality of the data that the reporting facility uses to estimate its releases and other waste management quantities. Use of TRI Form R by submitters and EPA's data reviews help assure data quality. The GAO Report Environmental Protection: EPA Should Strengthen Its Efforts to Measure and Encourage Pollution Prevention (GAO - 01 - 283,

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<http://www.gao.gov/new.items/d01283.pdf>), recommends that EPA strengthen the rule on reporting of source reduction activities. Although EPA agrees that source reduction data are valuable, the Agency has not finalized regulations to improve reporting of source reduction activities by TRI-regulated facilities.

Data Limitations: Use of the data should be based on the user's understanding that the Agency does not have direct assurance of the accuracy of the facilities' measurement and reporting processes. TRI release data are reported by facilities on a good faith, best-estimate basis. EPA does not have the resources to conduct on-site validation of each facility's reporting data, though on-site investigations do occur each year at a subset of reporting facilities.

Error Estimate: From the various data quality efforts, EPA has learned of several reporting issues such as incorrect assignment of threshold activities and incorrect assignment of release and other waste management quantities (EPA-745-F-93-001; EPA-745-R-98-012; www.epa.gov/tri/tridata/data_quality_reports/index.htm; www.epa.gov/tri/report/index.htm.)

For example, certain facilities incorrectly assigned a 'processing' (25,000 lb) threshold instead of an 'otherwise use' (10,000 lb) threshold for certain non-persistent, bioaccumulative and toxic (PBT) chemicals, so they did not have to report if their releases were below 25,000 lbs. Also, for example, some facilities incorrectly reported fugitive releases instead of stack releases of certain toxic chemicals.

New/Improved Data or Systems: EPA plans to develop regulations for improving reporting of source reduction activities by TRI reporting facilities.

References: www.epa.gov/tri/ and additional citations provided above. (EPA-745-F-93-001; EPA-745-R-98-012; <http://www.epa.gov/tri/report/index.htm>; www.epa.gov/tri/tridata/data_quality_reports/index.htm; www.epa.gov/tri/report/index.htm Bureau of Economic Analysis (BEA) indices are available at <http://www.bea.gov/bea/regional/gsp/>

FY 2006 Performance Measure:

- **Specific annual reductions in six media/resource areas: water use, energy use, materials use, solid waste, air releases, and water discharges**

Performance Databases: Both the Performance Track On-Line (a Domino database) and the Performance Track Members Database (a Microsoft Access database) store information that facilities have provided to EPA in applications and annual performance reports. Performance Track members select a set of environmental indicators on which to report performance over a three-year period of participation. The externally reported indicators (listed above) may or may not be included in any particular facility's set of indicators. Performance Track aggregates and reports only that information that a facility voluntarily reports to the Agency. A facility may make progress towards one of the above indicators, but if it is not among its set of "commitments", then Performance Track's data will not reflect the changes occurring at the facility. Similarly, if a facility's performance declines in any of the above areas and the indicator

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is not included among its set of commitments, that decline will not be reflected in the above results.

Members report on results in a calendar year. Fiscal year 2006 corresponds most closely with members' calendar year 2006. That data will be reported to the Performance Track program by April 1, 2007. The data will then be reviewed, aggregated, and available for external reporting in August 2007. (Calendar year 2005 data will become available in August of 2006.)

Data Source: All data are self-reported and self-certified by member facilities. As described below, Performance Track engages in quality control to the extent possible, but it does not conduct formal auditing. However, a criterion of Performance Track membership is the existence of an environmental management system (EMS) at the facility, a key element of which is a system of measurement and monitoring. Most Performance Track facilities have had independent third-party audits of their EMSs, which create a basis for confidence in the facilities' data. It is clear from submitted reports that some facilities have a tendency to estimate or round data. Errors are also made in converting units and in calculations. In general, however, EPA is confident that the externally reported results are a fair representation of members' performance.

Methods, Assumptions, and Suitability: Data collected from members' applications and annual performance reports are compiled and aggregated across those members that choose to report on the given indicator. The data reflect the performance results at the facility; any improvements or declines in performance are due to activities and conditions at the specific facility as a whole. However, in some cases, facilities report results for specific sections of a facility and this may not be clear in the reports submitted to the program. For example, Member A commits to reducing its VOCs from 1000 tons to 500 tons over a 3-year period. In Year 1, it reports a reduction of VOCs from 1000 tons to 800 tons. Performance Track aggregates this reduction of 200 tons with results from other facilities. But unbeknownst to Performance Track, the facility made a commitment to reduce its VOCs from Production Line A and is only reporting on its results from that production line. The facility is not intentionally hiding information from EPA, but mistakenly thought that its commitment could focus on environmental management activities at Production Line A rather than across the entire facility. Unfortunately, due to increased production and a couple of mishaps by a sloppy technician, VOC emissions at Production Line B increased by 500 tons in Year 1. Thus, the facility's VOC emissions actually increased by 300 tons in Year 1. Performance Track's statement to the public that the facility reduced its emissions by 200 tons is therefore misleading.

The data can be used to make year-to-year comparisons, but reviewers and analysts should bear in mind that Performance Track membership is constantly in flux. Although members should retain the same set of indicators for their three-year participation period, as new members join the program and others leave, the baseline constantly changes.

Due to unavoidable issues regarding the timing of the application period, a small subset of reported data will represent two years of performance at certain facilities, i.e., the baseline will be two years prior rather than one year.

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QA/QC Procedures: Data submitted with applications and annual performance reports to the program are reviewed for completeness and adherence to program formatting requirements. In cases where it appears possible that data is miscalculated or misreported, EPA or contractor staff follows up with the facility. If the accuracy of data remains under question or if a facility has provided incomplete or non-standard data, the database is coded to ensure that the data is excluded from aggregated and externally reported results.

Additionally, Performance Track staff visit up to 20% of Performance Track member facilities each year. During those visits, facilities are asked about their data collection systems and about the sources of the data reported to the program.

Performance Track contractors conduct a quality review of data entered manually into the database. Performance Track staff conduct periodic checks of the entered data.

As described, Performance Track is quality controlled to the extent possible, but is not audited in a formal way. However, a prerequisite of Performance Track membership is an environmental management system (EMS) at the facility, a key element of which is a system of measurement and monitoring. Most Performance Track facilities have had independent third-party audits of their EMSs, which create a basis for confidence in the facilities' data.

A Quality Management Plan is under development.

Data Quality Reviews: N/A.

Data Limitations: Potential sources of error include miscalculations, faulty data collection, misreporting, inconsistent reporting, and nonstandard reporting on the part of the facility. Where facilities submit data outside of the Performance Track On-Line system, Performance Track staff or contractors must enter data manually into the database. Manually entered data is sometimes typed incorrectly.

It is clear from submitted reports that some facilities have a tendency to estimate or round data. Errors are also made in converting units and in calculations. In general, however, EPA is confident that the externally reported results are a fair representation of members' performance.

Error Estimate: Not calculated.

New/Improved Performance Data or Systems: Since spring 2004, all Performance Track applications and annual performance reports have been submitted electronically (i.e., through the Performance Track On-Line system), thus avoiding the need for manual data entry. Additionally, the program is implementing a new requirement that all members gain third-party assessments of their EMSs. Also, the program has reduced the chances that data may reflect process-specific (rather than facility-wide) data by paying additional attention to the issue in the review process and by instituting "facility-wide data" requirements for all indicators.

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References: Members' applications and annual performance reports can be found on the Performance Track website at <http://www.epa.gov/performance-track/particip/alphabet.htm>. *Performance Track On-Line* and the *Performance Track Members Database* are not generally accessible. Performance Track staff can grant access to and review of the databases by request.

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Goal 5 Objective 3

FY 2006 Performance Measures:

- **Increase tribes' ability to develop environmental program capacity by ensuring that 100 percent of federally recognized tribes have access to an environmental presence**
- **Develop or integrate 15 (cumulative) EPA and interagency data systems to facilitate the use of EPA Tribal Program Enterprise Architecture (TPEA) information in setting environmental priorities and informing policy decisions**
- **Eliminate 20 percent of the data gaps for environmental conditions for major water, land, and air programs as determined through the availability of information in the TPEA**
- **Increase implementation of environmental programs in Indian country to 189 (cumulative total) as determined by program delegations, approvals, or primacies issued to tribes and direct implementation activities by EPA**
- **Increase by 50 percent the number of tribes with environmental monitoring and assessment activities under EPA approved quality assurance procedures**
- **Increase by 50 percent the number of tribes with multimedia programs reflecting traditional use of natural resources as determined by use of PPS, EPA/Tribal Environmental Agreements, and other innovative EPA agreements that reflect holistic program integration**

Performance Database: EPA's American Indian Environmental Office (AIEO) developed an information technology infrastructure, named the Tribal Program Enterprise Architecture (TPEA), under the auspices of the Office of Management and Budget (OMB) Circular A-16 on federal data coordination. The TPEA is a suite of ten secure Internet-based applications that track progress toward environmental program implementation in Indian country. One TPEA application, the Goal 5 / Objective 3 Reporting System, tracks progress in achieving the six strategic measures under Goal 5 Objective 3 of EPA's National Strategic Plan – "Build Tribal Capacity" (see Appendix A for site addresses and passwords).

Measure 1. Increase tribes' ability to develop environmental program capacity by ensuring that 100 percent of federally recognized tribes have access to an environmental presence.

Access to an environmental presence is measured by the level of General Assistance Program funds available to support tribes in hiring staff and acquiring resources to operate an environmental program. That level has changed over time. Presently, \$110,000 is considered the average annual cost for a tribe to maintain an environmental presence.

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Measure 1 is measured as a percentage. The number of tribal entities that have access to an environmental presence is calculated from the annual General Assistance Program appropriation, less recisions and an annual set aside which supports nationally significant programs, divided by \$110,000. That number is compared to the number of tribal entities eligible to receive GAP funding and reported as a percentage.

Values for appropriations and recision are public records in the EPA annual budget. The GAP set aside values are maintained by AIEO. The \$110,000 level to maintain an environmental presence was determined by consensus of the EPA Regional Indian Coordinators.

Measure 2. Develop or integrate 15 (cumulative) EPA and interagency data systems to facilitate the use of EPA Tribal Program Enterprise Architecture (TPEA) information in setting environmental priorities and informing policy decisions.

A Tribal Information Management System (TIMS) is the vehicle for organizing and integrating the various data sources used in the TPEA (see Appendix A). Current TPEA data sources are existing federal databases, both from EPA and other agencies, supplemented by data collected from the EPA regions as appropriate. All data sources are identified and referenced in the application. EPA continues to take advantage of new technology to establish direct links with other federal agency data systems (including the U.S. Geological Service, Bureau of Reclamation, and Indian Health Service) to further develop this integrated, comprehensive, multi-agency Tribal Program Enterprise Architecture, following the business rules and models of the Federal Enterprise Architecture

Presently, 45 data layers are identified in the Tribal Program Enterprise Architecture. Commitments for the incorporation of additional data sources are reported annually in the Goal 5 / Objective 3 Reporting System.

Measure 3. Eliminate 20 percent of the data gaps for environmental conditions for major water, land, and air programs as determined through the availability of information in the TPEA.

Identification of data gaps in environmental information is an issue both for EPA as an agency (EPA working draft, 2004) and other organizations that attempt to analyze data from a national perspective (Heinz Center, 2002). As EPA identifies environmental data gaps, AIEO will coordinate with other Agency programs to eliminate those gaps, with special emphasis on gaps in Indian country.

Thirty data gaps are listed for measure 3. These were identified by a Baseline Assessment working group made up of EPA Headquarters and Regional staff responsible for management of tribal programs. Some obvious issues in Indian country, such as open dumps and hazardous waste sites-are not on the list of data gaps because national systems already exist to identify and verify that information (Indian Health Service Open Dumps Report to Congress, and EPA RCRAinfo data system).

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Measure 3 is measured as a percentage, which when applied to the total number of gaps equals the elimination of six data gaps by 2008. Commitments for the elimination of data gaps are reported annually in the Goal 5 Objective 3 Reporting System.

Measure 4. Increase implementation of environmental programs in Indian country to 189 (cumulative total) as determined by program delegations, approvals, or primacies issued to tribes and direct implementation activities by EPA.

Measure 4 is tracked by: 1) Treatment in a manner similar to a State (TAS) approvals, or primacies; 2) the execution of Direct Implementation Tribal Cooperative Agreements (DITCA); and 3) GAP grants that have provisions for the implementation of solid waste or hazardous waste programs. EPA Regional project officers managing tribal grants input data by tribe and the system cumulates it nationally. Thus, it is possible, and even likely, that a tribe will contribute to a target in multiple ways.

Measure 4 implementation activities are input continuously by regional tribal program officers, and then summed annually, at the end of the fiscal year.

Measure 5. Increase by 50 percent the number of tribes with environmental monitoring and assessment activities under EPA approved quality assurance procedures.

Measure 5 measures active Quality Assurance Project Plans. Data are input by regional tribal program officers from information maintained by regional Quality Assurance Officers. Because all ongoing environmental monitoring programs are required to have active Quality Assurance Project Plans, expired plans are removed from the measure 5 list.

Measure 5 active Quality Assurance Project Plans are input continuously by regional tribal program officers, and then summed annually, at the end of the fiscal year.

Measure 6. Increase by 50 percent the number of tribes with multimedia programs reflecting traditional use of natural resources as determined by use of PPGs, EPA/Tribal Environmental Agreements, and other innovative EPA agreements that reflect holistic program integration.

Measure 6 reports on Performance Partnership Grants, Tier I & II Tribal Environmental Agreements (TEAs) Memoranda of Agreement, and Memoranda of Understanding. These data are input by tribal project officers at the EPA regions and summed. As in measure 4, it is possible, that a tribe will contribute to the target in more than one way.

Measure 6 TEAs, PPGs, MOAs and MOUs are input continuously by Regional Tribal Program Officers, and then summed annually, at the end of the fiscal year.

Methods, Assumptions and Suitability: The Goal 5 Objective 3 Reporting System contains all the information for reporting the six strategic measures. Measures 4, 5, and 6 assume the Regional Tribal Program Officers input accurate data. Measure 4 can be verified from the records of the Integrated Grants Management System. Measure 5 can be verified from Regional

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Quality Assurance Officer databases. Measure 6 can be verified from official correspondence files between EPA Regions and Tribes, or from project officer case files.

QA/QC Procedures: Data used in the Tribal Program Enterprise Architecture contains quality assurance and metadata documentation prepared by the originating agency or program. Additionally, because the information in the Tribal Program Enterprise Architecture will be used for budget and strategic planning purposes, AIEO requires adherence to the Office of the Chief Financial Officer's Information Quality Guidelines (EPA, 2003.)

Data Quality Reviews: Data correction and improvement is an ongoing component of the Tribal Program Enterprise Architecture. A special application, the Tribal Information Management System (TIMS) Data Center (see Appendix A), was developed to support submission of corrections to boundary information, narrative profiles, and factual database information – particularly latitude and longitude coordinates for facilities. AIEO will collect and pass along recommendations regarding the correction or modification of databases whenever errors are detected or suggestions for database improvement are received. Each database manager will retain the responsibility of addressing the recommended change according to their quality assurance protocols. Because the data submittals will be used for budget or strategic planning purposes, AIEO will require that all submittals meet the OCFO's Information Quality Guidelines (EPA, 2003).

Data Limitations: The largest part of the data used by the Tribal Program Enterprise Architecture has not been coded to particular tribes by the recording agency. AIEO uses new geographic data mining technologies to extract records based on the geographical coordinates of the data points. For example, if a regulated facility has latitude and longitude coordinates that place it in the boundaries of the Wind River Reservation, then it is assigned to the Arapaho and Shoshone Tribes of the Wind River Reservation. This technique is extremely powerful because it tribally enables large numbers of information systems which were previously incapable of identifying tribes. This will be applied to all EPA databases. There are limitations, however. When database records are not geographically identified with latitude and longitude, the technique does not work and the record is lost to the system. For EPA regulated facilities in the Facility Registry System, AIEO estimates that 64% have latitude and longitude recorded.

Error Estimate: Analysis of variation of reservation boundary coverages available to EPA indicates deviations of up to 5%. Another source of error comes from records that are not sufficiently described geographically to be assigned to specific tribes. For some agencies, such as the United States Geological Survey (USGS), the geographic record is complete, so there is no error from these sources. It is estimated that 36% of the regulated facilities in EPA's regulatory databases are not geographically described, and thus will not be recognized by the AIEO methodology.

New/Improved Data or Systems: The technologies used by the Tribal Enterprise Architecture are new, secure and state-of-the-art. The geographic interface is a product called ARC/IMS, which is a web-based application, with a fully functional Geographic Information System (GIS), scalable and rendered in 3-dimensions. The Tribal Enterprise Architecture uses XML protocols to attach to and display information seamlessly and in real-time from cooperating agency data

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systems without having to download the data to an intermediate server. In addition, the baseline assessment project has developed web-based, secure data input systems that allow regional project officers to input programmatic data directly into performance reporting systems, TIMS and other customizable reports.

References:

Office of Chief Financial Officer Information Quality Guidelines are found at <http://intranet.epa.gov/ocfo/policies/iqg/index.htm>

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Goal 5 Objective 4

FY 2006 Performance Measure:

- **Percent of respondents to survey of vendors of ETV-verified technologies stating that ETV information positively influenced sales and/or vendor innovation.**

Performance Database: No internal tracking system

Data Source: Responses from a census of vendors who have participated in or completed the ETV program between FY 2001 to approximately six months before the survey is administered, or a statistically representative sample of this population. The anticipated completion date for the report from the vendor survey is January 2006. Data will be available for inclusion in the FY 2006 Annual Performance Report.

Methods, Assumptions and Suitability: Data collection methodology is anticipated to be a combination of web technology and telephone interviewing; the final mode of delivery will be determined as the project progresses. Data collection is scheduled for May through July 2005. The schedule may need to be adjusted depending upon survey development, testing and the Information Collection Request process. The information is a direct measure of the research outcomes for this program.

QA/QC Procedures: EPA anticipates testing instrument validity, with a field test in February 2005, to make sure what was designed to be measured is being measured. As a result, questions which don't elicit information on the constructs of interest will be deleted and others will be added if the constructs are not fully developed/addressed by the initial list of questions. The goal is to reduce the amount of non-random error as much as possible before the survey is administered.

Data Quality Reviews: The respondent will enter data using a web questionnaire, minimizing and/or eliminating data entry by contractor personnel. The questionnaire will be designed using well accepted survey development practices and will include background information and instructions designed to maximize the likelihood that the questionnaires will be completed correctly. EPA also anticipates using Advanced Computer Assisted Telephone Interviewing equipment and processes which allow the interviewer to thoroughly check data entry at the time the respondent answers the question. This also should assure a high quality data set.

Data Limitations: N/A

Error Estimate: N/A

New/Improved Data or Systems: EPA anticipates that future vendor surveys will either be performed "en masse," approximately four to five years apart, or on an ongoing periodic basis, at intervals to be determined based on the results of the 2005 survey.

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References: Miller, Delbert C. and Neil J. Salkind. Handbook of Research Design and Social Measurement, Sixth Edition. Sage Publications. Thousand Oaks, CA. 2002.

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ENABLING SUPPORT PROGRAMS

Performance Measure:

- **Cumulative percentage reduction in energy consumption in EPA's 21 laboratories from the 1990 base**

Performance Database: The Agency's contractor provides energy consumption information quarterly and annually. The Agency keeps the energy consumption data in the "Energy Reporting System." The contractor is responsible for validating the data.

Data Source: The Agency's contractor collects quarterly energy data from each of EPA's laboratories. The data are based on metered readings from the laboratory's utility bills for certain utilities (natural gas, electricity, purchased steam, chilled water, high temperature hot water, and potable water) and from on-site consumption logs for other utilities (propane and fuel oil). The data from the on-site consumption logs are compared to invoices to verify that reported consumption and cost data are correct.

Methods, Assumptions, and Suitability: N/A

QA/QC Procedures: EPA's Sustainable Facilities Practices Branch compares reported energy use at each facility against previous years' data to see if there are any significant and unexplainable increases or decreases in energy quantities and costs.

Data Quality Reviews: N/A

Data Limitations: EPA does not have a formal meter verification program to ensure that an on-site utility meter reading corresponds to the charges included in the utility bill.

New/Improved Data or Systems: N/A

References: N/A

FY 2006 Performance Measure:

- **The Central Data Exchange (CDX) will fully support electronic data exchange requirements for major EPA environmental systems, enabling faster receipt, processing, and quality checking of data**
- **States will be able to exchange data with CDX through state nodes in real time, using new web-based data standards that allow for automated data-quality checking**
- **States, tribes, laboratories, and others will choose to use CDX to report environmental data electronically to EPA, taking advantage of automated data quality checks and on-line customer support**
- **Customer-help desk calls resolved in a timely fashion**

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Performance Database: CDX Customer Registration Subsystem.

Data Source: Data are provided by state, private sector, local, and tribal government CDX users.

Methods, Assumptions, and Suitability: All CDX users must register before they can begin reporting to the system. The records of registration provide an up-to-date, accurate count of users. Users identify themselves with several descriptors.

QA/QC Procedures: QA/QC have been performed in accordance with a CDX Quality Assurance Plan [*Quality Assurance Project Plan for the Interim Central Data Exchange System*. Document number: EP005T7. Sept. 17, 2001] and the CDX Design Document v.3, Appendix K registration procedures [*Central Data Exchange Electronic Reporting Prototype System Requirements: Version 3; Document number: EP005S3. December 2000*]. Specifically, data are reviewed for authenticity and integrity. The CDX Quality Assurance Plan was updated in FY 2004 [*Quality Assurance Project Plan for the Central Data Exchange*, 10/8/2004; contact: Wendy Timm, 202 566 0725] to incorporate new technology and policy requirements. Work is underway to complete the revision of the Design Document. Automated edit checking routines are performed in accordance with program specifications and CDX quality assurance guidance [*Quality Assurance Project Plan for the Interim Central Data Exchange System*. Document number: EP005T7. Sept. 17, 2001].

Data Quality Reviews: CDX successfully completed independent security risk assessment in the summer 2001. In addition, routine audits of CDX data collection procedures and customer service operations are provided weekly to CDX management and staff for review. Included in these reports are performance measures such as the number of CDX new users, number of submissions to CDX, number of help desk calls, number of calls resolved, ranking of errors/problems, and actions taken. These reports are reviewed and actions discussed at weekly project meetings.

Data Limitations: The CDX system collects, reports, and tracks performance measures on data quality and customer service. While its automated routines are sufficient to screen systemic problems/issues, a more detailed assessment of data errors/problems generally requires a secondary level of analysis that takes time and human resources.

Error Estimate: CDX incorporates a number of features to reduce errors, such as pre-populating data whenever possible, edit checks, etc. The possibility of an error in the number of states registered for CDX, e.g., double-counting of some sort, is extremely remote (far less than 1 %).

New/Improved Performance Data or Systems: CDX coalesces the registration/submission requirements of many different state-to-EPA, private sector-to-EPA, and local and tribal governments-to-EPA data exchanges into a single web-based system. The system allows for a more consistent and comprehensive management and performance tracking of many different external customers. The creation of a centralized registration system, coupled with the use of web forms and web-based approaches to submitting the data, invite opportunities to introduce automated quality assurance procedures for the system and reduce human error.

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References: CDX website (www.epa.gov/cdx).

FY 2006 Performance Measure:

- **Establish an improved suite of environmental indicators for use by EPA's programs and partners in the Agency's strategic planning and performance measurement process**

Performance Database: Initial collection of indicators compiled during the drafting of EPA's "Report on the Environment," supplemented by indicators currently used in the Agency's strategic planning and performance measurement process (e.g., EPA's Strategic Plan, Annual Performance Plan, Annual Performance Report, Annual Operating Plan, and National Environmental Performance Partnership Agreements), will comprise an Agency baseline of indicators (<http://www.epa.gov/indicators/roe/index.htm>).

Methods, Assumptions and Suitability: The Office of Environmental Information (OEI), the Office of Research and Development (ORD), and the Office of the Chief Financial Officer (OCFO) will review the planning documents and establish a baseline of indicators in consultation with key Agency steering committees.

QA/QC Procedures: As the baseline is established, protocols also will be developed to ensure that the data supporting the indicators are accurate and complete.

Data Quality Reviews: To be determined and conducted once a baseline has been established.

Data Limitations: The challenge is to develop suitable indicators with sufficient data of known quality.

Error Estimate: To be determined.

New/Improved Performance Data or Systems: The baseline indicators and supporting data are in development.

References: EPA's "Draft Report on the Environment" and "Technical Support Document" (EPA pub. no. 260-R-02-006). Draft Report on the Environment Technical Document (Publication # EPA 600-R-03-050). Both Dated June 2003

Web site: <http://www.epa.gov/indicators/roe/html/roePDF.htm>

FY 2006 Performance Measure:

- **Percent compliance with criteria used by OMB to assess Agency security programs reported annually to OMB under the Federal Information Security Management Act (FISMA)**

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Performance Database: Automated Security Self-Evaluation and Remediation Tracking (ASSERT) database.

Data Source: Information technology (IT) system owners in Agency Program and Regional offices.

Methods, Assumptions, and Suitability: Annual IT security assessments are conducted using the methodology mandated by the Office of Management and Budget (OMB), the National Institute of Standards, and Technology (NIST) Security Self-Assessment Guide for Information Technology Systems. ASSERT has automated and web-enabled this methodology.

QA/QC Procedures: Automated edit checking routines are performed in accordance with ASSERT design specifications to ensure answers to questions in ASSERT are consistent. The Office of Inspector General consistent with §3545 FISMA, and the Chief Information Officer's information security staff conduct independent evaluations of the assessments. The Agency certifies results to OMB in the annual FISMA report.

Data Quality Reviews: Program offices are required to develop security action plans composed of tasks and milestones to address security weaknesses. Program offices self-report progress toward these milestones. EPA's information security staff review these self-reported data, conduct independent validation of a sample, and discuss anomalies with the submitting office.

Data Limitations: Resources constrain the security staff's ability to validate all of the self-reported compliance data submitted by program systems' managers.

Error Estimate: N/A

New/Improved Data or Systems: N/A

References:

Annual Information Security Reports to OMB: <http://intranet.epa.gov/itsecurity/progreviews/>;
OMB guidance memorandum: <http://www.whitehouse.gov/omb/memoranda/2003.html>;
ASSERT web site: <https://cfint.rtpnc.epa.gov/assert/>; NIST Special Publication 800-26, *Security Self-Assessment Guide for Information Technology Systems*, November 2001: <http://csrc.nist.gov/publications/nistpubs/index.html>; and, Federal Information Security Management Act, PL107-347: http://csrc.nist.gov/policies/FISMA_final.pdf

FY 2006 Performance Measure:

- **Number of actions taken for environmental improvement, reductions in environmental risks, and recommendations made for environmental improvement**
- **Number of actions taken for improvement in business practices, criminal/civil/administrative actions, potential dollar return, and recommendations made for improved business practices**

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Performance Database: The OIG Performance Measurement and Results System captures and aggregates information on an array of measures in a logic model format, linking immediate outputs with long-term intermediate outcomes and results. Because intermediate and long-term results may not be realized for several years, only verifiable results are reported in the year completed, while others remain prospective until completed and verified. Database measures include numbers of: 1) recommendations for environmental and management improvement; 2) legislative, regulatory policy, directive, or process changes; 3) environmental, program, and resource integrity risks identified, reduced, or eliminated; 4) best practices identified and transferred; 5) examples of environmental and management improvements; 6) monetary value of funds questioned, saved, fined, or recovered; and 7) public or congressional inquiries resolved.

Data Source: Designated OIG staff enters data into the system. Data are from OIG performance evaluations, audits, research, court records, EPA documents, data systems, and reports that track environmental and management actions or improvements made and risks reduced or avoided. OIG also collects independent data from EPA's partners and stakeholders.

Methods, Assumptions, and Suitability: OIG performance results are a chain of linked events, starting with OIG outputs (e.g., recommendations, reports of best practices, and identification of risks). The subsequent actions taken by EPA or its stakeholders/partners, as a result of OIG's outputs, to improve operational efficiency and environmental program delivery are reported as intermediate outcomes. The resulting improvements in operational efficiency, risks reduced/eliminated, and conditions of environmental and human health are reported as outcomes. By using common categories of performance measures, quantitative results can be summed and reported. Each outcome is also qualitatively described, supported, and linked to an OIG product or output. The OIG can only control its outputs, and has no authority, beyond its influence, to implement its recommendations that lead to environmental and management outcomes.

QA/QC Procedures: All performance data submitted to the database require at least one verifiable source assuring data accuracy and reliability. Data quality assurance and control are performed as an extension of OIG products and services, subject to rigorous compliance with the Government Auditing Standards of the Comptroller General¹, and regularly reviewed by OIG management, an independent OIG Management Assessment Review Team, and external independent peer reviews.

Data Quality Reviews: There have not been any previous audit findings or reports by external groups on data or database weaknesses in the OIG Performance Measurement and Results System. All data reported are audited internally for accuracy and consistency.

Data Limitations: All OIG staff are responsible for data accuracy in their products and services. However, there is a possibility of incomplete, miscoded, or missing data in the system due to human error or time lags. Data supporting achievement of results are often from indirect or external sources, with their own methods or standards for data verification/validation.

¹ Government Auditing Standards (2003 Revision), General Accounting Office, GAO-03-673G, June 2003

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Error Estimate: The error rate for outputs is estimated at +/-2%, while the error rate for reported long-term outcomes is presumably greater because of the longer period needed for tracking results. Errors tend to be those of omission.

New/Improved Data or Systems: The OIG developed the Performance Measurement and Results System as a prototype in FY 2001 and anticipates replacing it in FY 2005 with a more sophisticated system designed to integrate data collection and analysis. We also expect the quality of the data to improve as staff gain greater familiarity with the system and measures. This system is a best practice in government for linking an array of measures from outputs to eventual results and impacts. With enhanced linkages to customer satisfaction results and resource investments, it will provide a full-balanced scorecard with return on investment information for accountability and decision making.

References: All OIG non-restricted performance results are referenced in the OIG Performance Measurement and Results System with supporting documentation available either through the OIG Web Site or other Agency databases. The OIG Web Site is www.epa.gov/oig.²

FY 2006 Performance Measure:

- **Agency's audited Financial Statements meet the new accelerated schedule and receive an unqualified opinion.**

Performance Database: Output measure. There is no performance database.

Data Source: OMB acknowledgement of receipt of financial statements; OIG audit report.

QA/QC Procedures: The Agency's financial statements are subject to OCFO management review and an OIG audit.

Data Quality Review: The annual financial audit opinion, rendered by the OIG, is a gauge of the accuracy and fair presentation of the financial activity and financial balances of the Agency. The unqualified opinion is rendered by the OIG.

Data Limitations: N/A

New/Improved Data or Systems: N/A

References: Fiscal Year 2004 EPA Annual Report

FY 2006 Performance Measure:

- **The number of financial and resource performance metrics where the Agency has met pre-established Agency or Government-wide performance goals.**

² U.S. EPA, Office of Inspector General, Audits, Evaluations, and Other Publications, Internet at www.epa.gov/oig, last updated July 8, 2004

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Performance Database: Internal tracking using an Excel spreadsheet.

Data Source: The data to track the fourteen key financial and resource performance measures originate from the following sources: Financial Management Officer certification, Senior Resource Officer certification, EPAYS payroll system, Integrated Federal Management System (IFMS) system, and the General Services Administration (GSA). The performance measure summarizes EPA's performance against pre-established Agency or government-wide performance goals using these reporting mechanisms.

QA/QC Procedures: Data compiled from Financial Management Officer and Senior Resource Officer certifications are accepted only by email or as signed certifications. The IFMS and EPAYS systems are audited annually by independent federal auditors. GSA is also required to have its financial records audited annually by independent auditors.

Data Quality Review: Data are reviewed periodically throughout the year by management and appropriate actions are identified when there are necessary corrections. Both the EPAYS payroll system and the IFMS accounting system are audited annually by the Inspector General. GSA data are verified annually through their annual audit process.

Data Limitations: Financial data are timely and accurate. Annual audits check for accuracy and completeness. Certified financial data are as accurate as the certifier's review.

New/Improved Data or Systems: People Plus payroll system will supercede the EPAYS system in FY 2005.

References: Internal performance tracking using an Excel spreadsheet is posted on the EPA website at <http://www.epa.gov/ocfo/govwide/index.htm>

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