UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
INSPECTOR GENERAL

April 28, 2009

**MEMORANDUM**

**SUBJECT:** EPA's Key Management Challenges for Fiscal Year 2009

**TO:** Lisa P. Jackson
Administrator

We are pleased to provide you with the list of items the Office of Inspector General (OIG) considers to be key management challenges for Fiscal Year 2009 confronting the U.S. Environmental Protection Agency (EPA). Last year, we developed a definition for management challenges to clarify and distinguish between internal control weaknesses and management challenges. In general, internal control weaknesses are deficiencies in internal control activities determined in relation to a standard derived from the concept of internal control as an activity. In contrast, management challenges are defined as a lack of capability derived from internal self-imposed constraints or, more likely, externally imposed constraints that prevent an organization from reacting effectively to a changing environment. For example, lack of controls over approval of bankcard purchases would be considered a control weakness because it can be corrected internally by adding the necessary controls. Conversely, the Agency's ability to address an issue, such as funding shortfalls for water infrastructure repairs, would constitute a management challenge, as the Agency does not have the ability to solve these challenges without outside assistance, such as from Congress and States.

We based our decision to include the areas listed primarily on audit, evaluation, or investigative work we performed and additional analysis of Agency operations. Thus, additional challenges may exist in areas that we have not yet reviewed or where other significant findings could result from additional work. We listed our key management challenges below with detailed summaries provided in the Attachment.

This year we added three challenges: 1) Management of Stimulus Funds; 2) Voluntary Programs; and 3) Safe Reuse of Contaminated Sites. While the Agency has taken steps and has worked diligently to address requirements under the American Recovery and Reinvestment Act, we believe it is a potentially vulnerable area due to the amount of funding and additional oversight requirements. We would welcome the opportunity to discuss your reaction to our list of challenges and any comments you might have.

Bill A. Roderick
Acting Inspector General

Attachment

**Attachment**

## Management of Stimulus Funds

The President signed the American Recovery and Reinvestment Act (Recovery Act, or ARRA) on February 17, 2009. The Recovery Act provided EPA with $7.2 billion, roughly equal to EPA's Fiscal Year (FY) 2009 appropriation, for the following six existing programs:

- $4 billion to the Clean Water State Revolving Fund to provide loans and grants that help communities upgrade wastewater treatment systems.
- $2 billion to the Drinking Water State Revolving Fund to provide loans and grants for drinking water infrastructure.
- $600 million to the Hazardous Substance Superfund for site clean-up.
- $300 million to the Diesel Emissions Reduction Act Program for projects that reduce diesel emissions.
- $200 million to the Leaking Underground Storage Tank Trust Fund Program for clean-up of underground storage tank petroleum leaks.
- $100 million to the Brownfields Program for grants to assess, clean, and help revitalize eligible Brownfield sites.

The purpose of the Recovery Act as it applies to EPA is to preserve and create jobs, promote economic recovery, and invest in environmental protection and other infrastructure that will provide long-term economic benefits. EPA leadership is showing a strong commitment to ensuring Recovery Act funds are used for their intended purposes and are meeting the objectives of the Act. The Agency has done considerable work in establishing an infrastructure to mitigate the challenges and to ensure overall management and stewardship of ARRA funds. The Agency quickly established a Recovery Act Steering Committee and Subcommittees to focus on specific areas. Early on the OIG was invited to participate in each of these key committees. EPA is also developing a stewardship plan to reinforce internal controls over the funds. This plan will address Office of Management and Budget's (OMB's) requirement for agencies to have risk mitigation strategies for Recovery Act funding.

While the Agency has taken steps and is working diligently to address Recovery Act requirements it will face significant challenges in meeting all of the Recovery Act requirements while at the same time carrying out its ongoing environmental programs. In addition, EPA will have to ensure that requisite environmental approvals, such as those required by the National Environmental Policy Act, are obtained in a timely fashion for projects funded through other agencies' ARRA funds.

Managing recipients' activities to achieve the above purposes while commencing expenditures and activities as quickly as possible will present further challenges. Most Recovery Act funds will be awarded through assistance agreements or contracts. EPA grants and contracts personnel will have to manage the stimulus grants and contracts in addition to their normal workloads. Although EPA may set aside anywhere from 1 to 3.5 percent of ARRA funds for management and oversight purposes, EPA will be challenged to have sufficient, trained staff to award and monitor grants and contracts. If EPA does not assign sufficient staff to ARRA oversight, the

Agency increases the risk of fraud, waste, and abuse of federal funds. It will also increase the risk that EPA will award funds to entities that do not have adequate administrative and programmatic capabilities to efficiently and effectively carry out the work. EPA will also need to focus considerable attention on ensuring that Recovery Act funds produce desired results and minimize cost overruns and project delays.

The grants EPA awards with Recovery Act funding will contain new conditions that require additional monitoring and oversight. The Act states that grant funds should be awarded to recipients that will maximize job creation and economic benefits. As EPA competes these grants it must consider these additional factors along with other ranking factors the laws and regulations require. For example, the Recovery Act requires each State to use at least 50 percent of the Clean and Drinking Water State Revolving Loan Fund amounts for forgiveness of principal, negative interest loans, or grants. The Act also stipulates that to the extent that there are sufficient eligible projects, at least 20 percent of the State Revolving Fund allotments are to fund projects to address green infrastructure, water or energy efficiency improvements, or other environmentally innovative activities. EPA also will need to more closely monitor ARRA funds because, unlike current programs, ARRA-funded grants do not require a match by the recipient and there are provisions for loan forgiveness, so not all funds will have to be repaid. These provisions increase the risk of fraud, waste, and abuse.

EPA will rely heavily on State agencies, as the primary fund recipients, to properly manage sub-recipients of funds awarded under each of these programs. For the State Revolving Funds, EPA provides funding to States that in turn award funding to a local government entity. The local government then awards contracts for water infrastructure construction. Given the significant economic problems many States face, they may not have the resources to properly oversee these funds. In addition, EPA may not have the information needed to identify fraud, waste, and abuse at the level where a majority of funds are expended. Currently, OMB is only requiring States to report information down to the sub-recipient level. If OMB does not develop a means and a requirement to collect data below the sub-recipient level, EPA will not have the information to identify potential fraud, waste, and abuse at the level where it is most likely to occur.

For the Superfund program, activities under the Recovery Act will generally be funded through contracts. With the emphasis on awarding funds and getting work started quickly, there is a risk that the contractors will not be ready and able to accept the additional work. While EPA plans on using existing contracts to obligate Recovery Act funds, the additional funds may result in the contracts reaching cost ceilings earlier than expected and needing to be re-competed earlier than planned. These additional activities will strain the current acquisition workforce. Remedial Action Contracts are a primary acquisition vehicle that the EPA Superfund program uses to conduct long-term clean-up and remediation support activities. A prior OIG report identified risks in managing such contracts. The process for determining contractor award amounts and whether they would be granted was burdensome. The complex contract award fee process resulted in excessive award fees to the contractor, and EPA viewed the award fees as more of an expectation for contractors rather than a factor to motivate excellence among the contractors.

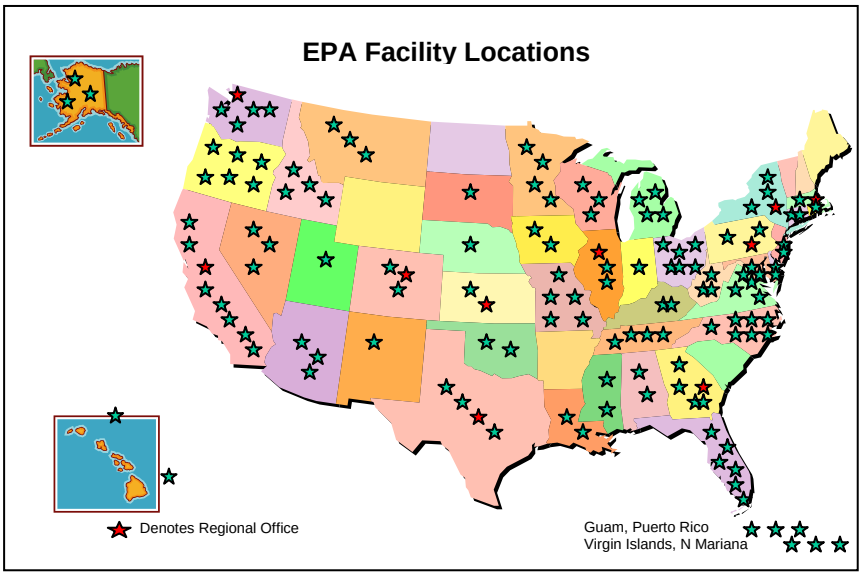
## EPA's Organization and Infrastructure

In July 1970, the first Administrator formally organized EPA based upon existing environmental legislation that encompassed discrete media programs for water, air, pesticides, radiation, and solid waste, as well as 10 regional offices and a laboratory structure inherited from other federal agencies.[1] Since that time Congress has delegated many additional responsibilities to EPA. For example, in recent years, Congress assigned EPA Homeland Security responsibilities.[2] In addition, how EPA carries out its programs has changed from program implementation to delegations to States, with EPA's role involving planning and State oversight. In recent years, EPA has increased the extent to which it partners with other federal agencies; State, local, and tribal governments; and the private sector to accomplish its mission.[3] EPA also uses voluntary programs to assist in accomplishing its mission.

Since its inception, the number of EPA personnel has grown from about 5,000 to over 17,000. As the number of personnel has increased, so has EPA's infrastructure. EPA's portfolio now includes offices and laboratories in nearly 140 locations throughout the country. Most EPA regions maintain the majority of staff in a main regional office. Some also maintain a number of separate operations offices.[4] For example, California and Florida each have seven separate EPA offices. EPA also maintains two offices each in Guam, Puerto Rico, and the Virgin Islands.

EPA's Headquarters is made up of four environmental media offices and an additional eight offices that comprise a mixture of administrative, research and development, enforcement, and program support offices. The Office of Enforcement and Compliance Assurance maintains a large Headquarters component, staff in regional offices, and 27 additional locations that house 5 or less staff. According to the Office of Enforcement and Compliance Assurance, these small offices are necessary to carry out investigative work in various geographic locations. Likewise, the Office of Research and Development is centrally located in Headquarters and maintains 13 laboratories across the country in addition to EPA's regional and other program office labs. The Office of Solid Waste and Emergency Response has personnel in Headquarters and each regional office and also maintains small (1-or-2-person) offices at numerous clean-up sites throughout the country.

[1] EPA-OIG Report, *Studies Addressing EPA's Organizational Structure*, Report No. 2006-P-00029, August 16, 2006.
[2] US EPA, *EPA Strategic Plan for Homeland Security*, September 2002.
[3] US EPA, Office of State and Local Relations, *Joint Policy on State/EPA Relations*, July 14, 1994.
[4] EPA-OIG Report, *Congressionally Requested Report on EPA Staffing Levels and Total Costs for EPA Facilities*, Report No. 09-P-0080, January 14, 2009.




Of EPA's 140 facilities, there are 97 with 5 or fewer employees.[5] The Agency's current strategic plan calls for having the "right people, in the right place, at the right time." However, since EPA's formation in 1970, a comprehensive study has not been completed to analyze EPA's mission, organization, and the related number and location of employees needed to most effectively carry out EPA's mission at the least cost. For example, with the increase in programs delegated to States, EPA's role and ability to conduct effective oversight of States becomes increasingly important. EPA might consider evaluating costs and benefits realized by those regions maintaining separate smaller operations offices in States versus maintaining large regional offices. EPA might also consider conducting a review of the rationale and benefits associated with maintaining its cadre of regional and research and development laboratories around the country to determine whether they are sited and staffed appropriately for the type of work performed.

Maintaining nearly 140 facilities is resource-intensive and cost the Agency about $300 million for FY 2008. Demonstrating the cost effectiveness of maintaining such a large number of locations presents EPA with challenges and opportunities for potential consolidation and cost efficiencies. Because of the autonomous nature of EPA and its regional and local offices, undertaking such a study may require the assistance of an independent commission and agreement from EPA's oversight committees. With diminishing resources along with growing pressure to expand EPA's role in the global arena, EPA will be challenged to produce operating efficiencies while expanding its mission. A comprehensive study to assess EPA's mission, workforce, and infrastructure requirements would provide a rational basis for addressing these challenges.

[5] EPA-OIG analysis of EPA Office of Human Resources data.

## Performance Measurement

Congress' desire to hold agencies accountable for performance was the motivating force behind the Chief Financial Officers Act of 1990 and the Government Performance and Results Act (GPRA) of 1993. The Chief Financial Officers Act established the foundation for improving management and financial accountability. GPRA created requirements for agencies to generate performance information that congressional and executive branch decision-makers need in considering measures to improve government and reduce costs.[6]

EPA has been recognized for its efforts to align budgeting, planning, and accounting systems to track and report on resource use. However, EPA continues to be challenged in measuring human health and environmental results of its environmental programs. Despite the vast array of data reported and contained in EPA's information systems, the Government Accountability Office (GAO), States, regulated entities, and EPA have pointed out that the Agency does not have much of the information it needs pertaining to environmental conditions and trends and potential human health risks of various pollutants. This makes it difficult to evaluate and report on benefits derived from environmental activities and make optimal decisions about how to invest EPA's resources to maximize environmental results.[7]

In 2006, we found that many of EPA's programs received high scores for the program purpose and program management categories on OMB's Program Assessment Rating Tool. However, EPA did not receive high marks for using information to manage programs and demonstrate results. Of the 51 programs reviewed, 41 percent (21 programs) did not regularly collect timely and credible performance information, including information from key program partners, nor use the information to manage the program and improve performance.[8]

Our recent evaluations have identified other limitations with EPA performance measures. For example, in its *FY 2006 Performance and Accountability Report*, EPA reported radon performance data without including meaningful baseline measures for comparison.[9] In addition, we identified several limitations with the National Emissions Inventory upon which EPA primarily bases its performance measures for the Air Toxics Program.[10] These limitations include a heavy reliance on emissions factors that may be inaccurate, as well as the incorporation of data from various sources that may use different methodologies to estimate emissions. Further, we found that EPA's 2008 Strategy for Sustainable Ports lacks appropriate performance measures, milestones, and other management controls that would enable the Agency to transform its strategic goals into measurable results.[11]

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[6] Chief Financial Officers Act of 1990 and the Government Performance and Results Act of 1993.
[7] EPA-OIG Report, *Using the Program Assessment Rating Tool as a Management Control Process,* Report No. 2007-P-00033, September 12, 2007.
[8] EPA-OIG Report, *Using the Program Assessment Rating Tool as a Management Control Process,* Report No. 2007-P-00033, September 12, 2007.
[9] EPA-OIG Report, *More Action Needed to Protect Public from Indoor Radon Risks;* Report No. 08-P-0174, June 3, 2008.
[10] EPA-OIG Report, *Improvements in Air Toxics Emissions Data Needed to Conduct Residual Risk Assessments;* Report No. 08-P-0020, October 31, 2007.
[11] EPA-OIG Report, *EPA Needs to Improve Its Efforts to Reduce Air Emissions at U.S. Ports,* Report No. 09-P-0125, March 23, 2009.

Measuring environmental performance and demonstrating results is inherently challenging. Results are not always immediately recognized and programs may take several years to demonstrate results. In addition, linking environmental activities to outcomes is complicated by a myriad of external factors, including weather, international environmental issues, economic activity, and others outside of EPA's control.[12] As a result, many of EPA's current performance measures focus on program activities[13] (number of enforcement actions, pounds of hazardous waste reduced, number of permits issued, number of training sessions held, etc.). While these may be good indications of amount of work performed, they do not measure the corresponding improvements to human health or the environment.

Further, a majority of EPA's program performance information is collected and reported by program partners, some under voluntary arrangements, who do not always agree on how and what information should be collected, tracked or validated, and who do not report the information to EPA in a consistent manner.[14] [15] For example, our reviews noted that only 2 of 30 EPA Performance Track members met their environmental improvement commitments,[16] the Pollution Prevention program had no independent validation of results claimed by industry,[17] and EPA's ENERGY STAR program's reported savings claims were inaccurate and reported annual savings unreliably.[18]

On a broader scale, EPA has worked for the past several years to develop and use environmental indicators. These indicators are scientifically developed, peer reviewed measures that seek to demonstrate trends in the condition of the Nation's environment. EPA publishes this information in its "Report on the Environment" to provide the public important information on air, water, land, human health, and ecological conditions. While the Report provides a broad perspective on trends, both positive and negative, on the state of the environment, it also spells out the limitations, gaps, and challenges EPA faces in gathering and analyzing information. As a result, the report can only provide partial answers to key environmental questions.[19]

To address these factors, EPA management needs to make a concerted effort to focus on the logic of program design and ensure that the design includes consideration of the performance information necessary to measure, evaluate, and demonstrate results for the resources used. Designing programs with clear and measurable results allows for transparency of, and

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[12] EPA-OIG Report, *EPA's Progress in Using the Government Performance and Results Act to Manage for Results*, Report 2001-B-000001, June 13, 2001.
[13] US EPA, *EPA Strategic Plan 2006-2011*, September 30, 2006.
[14] EPA-OIG Report, *EPA's Progress in Using the Government Performance and Results Act to Manage for Results*, Report No. 2001-B-000001, June 13, 2001.
[15] EPA-OIG Reports, *Voluntary Greenhouse Gas Reduction Programs Have Limited Potential*, Report No. 08-P-0206; *Measuring and Reporting Performance Results for the Pollution Prevention Program Need Improvement*, Report No. 09-P-0088; and *Improvements Needed to Validate Reported ENERGY STAR Benefits*, Report No. 09-P-0061.
[16] EPA-OIG Report, *Performance Track Could Improve Program Design and Management to Ensure Value*, Report No. 2007-P-00013, March, 29, 2007.
[17] EPA-OIG Report, *Measuring and Reporting Performance Results for the Pollution Prevention Program Need Improvement*, Report No. 09-P-0088, January 28, 2009.
[18] EPA-OIG Report, *Improvements Needed to Validate Reported ENERGY STAR Benefits*, Report No. 09-P-0061, December 17, 2008.
[19] US EPA, *2008 Report on the Environment*, EPA/600/R-07/045F, May 2008.

accountability for, program performance. Program design and the strategic planning process should include defining measures as well as ensuring the appropriate agreements, funding, processes, and systems are considered to obtain the necessary information. EPA also needs to ensure program managers are held accountable for ensuring that programs are designed with the means to measure and demonstrate program results and that the information gathered is used to manage and improve program results.[20]

[20] EPA-OIG Report, *Using the Program Assessment Rating Tool as a Management Control Process*, Report No. 2007-P-00033, September 12, 2007.

## Threat and Risk Assessments

Last year we noted that it had been nearly 20 years since the Science Advisory Board recommended that EPA target its environmental protection efforts on the basis of opportunities for the greatest risk reduction. A 1990 Science Advisory Board report described the fragmentary nature of U.S. environmental policy and the frequently inconsistent and uncoordinated efforts to address environmental problems. Based on our body of work, including recent reports on the Agency's enforcement and air programs, we believe the same problem exists today. The fragmentary nature of EPA's approach continues because underlying conditions remain: environmental laws often focus on a single media or threat, Agency goals and units are designed to implement separate legislative mandates, and available technological solutions address specific pollutant sources. Some EPA programs – like the Chesapeake Bay Program and the Border 2012 Program – are designed to address ecosystem or geographically-defined environmental issues rather than single media concerns. However, even these are organized and implemented to solve threats and risks faced by individual media (e.g., Border 2012 goals are to reduce water contamination, reduce air pollution, reduce land contamination, etc.).

The relative threats and risks to human health and the environment are not assessed or used based on the highest priority. In our review of the Indoor Radon Abatement Program, we found that the Agency had not been reporting program results in relation to homes at risk in its performance reporting. In our review of the Clean Air Act Risk Management Plan for airborne chemical releases, we found that many lower-risk facilities were inspected or audited when many high-risk facilities had never been inspected or audited.[21]

The U.S. Chemical Safety and Hazard Investigation Board's investigation of the 2005 BP Texas City Refinery explosion linked the accident to corporate spending decisions in the 1990s when low oil prices triggered cutbacks in maintenance, training, and operator positions at the plant. Mindful of this finding and other accidents that occurred when companies cut back on process safety measures in economic downturns, the Board Chairman released a video-taped safety message in December 2008 urging all chemical companies and refineries to maintain process safety measures even during a recession.[22] The current state of the U.S. economy only increases the need for EPA to ensure that all high-risk facilities are inspected. As these examples illustrate, we have observed little change in the Agency's inclination to develop and apply threat and risk assessments in decision making in the past year.

[21] EPA-OIG Report, *EPA Can Improve Implementation of the Risk Management Program for Airborne Chemical Releases,* Report No. 09-P-0092**,** February 10, 2009.
[22] US Chemical Safety and Hazard Investigation Board news release on December 22, 2008.

## Water and Wastewater Infrastructure

Approximately 160,000 public drinking water systems provide the Nation with drinking water, while 16,000 sewage treatment plants treat and dispose of wastewater.[23] Under the Clean Water Act and Safe Drinking Water Act, water and wastewater facilities are responsible for treating water to specified levels. EPA is responsible for administering these laws and has a role in assisting these facilities to meet their treatment requirements.

According to EPA, each year there are approximately 240,000 water main breaks and 75,000 sewer overflows, resulting in public health threats.[24] Some of the Nation's water infrastructure systems have components over 100 years old. The American Society of Civil Engineers recently assigned an overall "D" grade in its Report Card for America's Infrastructure[25] and "D-" to drinking water and wastewater.[26] As an example of the magnitude of costs, a single city, the District of Columbia, has estimated that it will need to expend $3.6 billion to meet various requirements of the Clean Water Act.[27] Nationally, EPA has estimated that approximately $1 trillion will be needed to pay for water and wastewater infrastructure over the next 20 years.[28] EPA estimates that utilities are only planning to spend about half that amount. The remaining $500 billion has been termed the "water and wastewater infrastructure gap." The gap represents infrastructure failures that could increase risks to public health and the environment, as well as damage the national economy.

Meeting standards requires regular investment for treatment plants and distribution systems. Water and wastewater facilities have made considerable capital expenditures. Local governments spend more on water infrastructure than they do on everything else except education.[29] However, many drinking water and wastewater systems are failing to keep up with repairs and new construction required to maintain compliance with federal standards. Many systems still need to build new facilities and distribution systems, and repair and replace aging infrastructure. Further, increasingly stringent standards could compel systems to make even more extensive capital improvements. For example, many wastewater treatment plants are beginning to install costly nutrient removal technologies. Drinking water facilities will also need to meet new standards. Between January 2006 and December 2007, EPA issued three new rules[30] and made substantial revisions to the existing Lead and Copper Rule. Implementation

[23] US EPA, "Safe Drinking Water Act – Basic Information" Website; and US Department of Energy, Energy Efficiency and Renewable Energy, Federal Energy Management Program, *Biomass and Alternative Methane Fuels Fact Sheet* , July 2004.
[24] US EPA, Office of Research and Development, National Risk Management Research Laboratory, Aging Water Infrastructure Research Program, *Addressing the Challenge through Innovation*, EPA/600/F-07/015, September 2007.
[25] American Society of Civil Engineers *2009 Report Card for America's Infrastructure* – full report.
[26] American Society of Civil Engineers *2009 Report Card for America's Infrastructure* – drinking water and wastewater report cards.
[27] The National Association of Clean Water Agencies, Power Point presentation on CSOs (2007).
[28] US EPA, Office of Ground Water and Drinking Water, *The Clean Water and Drinking Water Infrastructure Gap Analysis*, EPA-816-R-02-020, September 2002; US EPA, *Clean Watersheds Needs Survey – Overview Page*; and US EPA, *Drinking Water Infrastructure Needs Survey and Assessment*, 2007.
[29] US Conference of Mayors, Mayors Water Council, *Who Pays for the Water Pipes, Pumps, and Treatment Works? Local Government Expenditures on Sewer and Water – 1991 to 2005*.
[30] Final Ground Water Rule (November 2006), Long Term 2 Enhanced Surface Water Treatment Rule (January 2006), and the Stage 2 Disinfection Byproducts Rule (January 2006).

will increase costs through upgrades to meet new requirements, so the infrastructure gap could continue to grow in size.

The Federal Government does not have a national approach to bridging the water and wastewater infrastructure gap. EPA's Clean Water and Drinking Water State Revolving Funds received about $1.6 billion in federal capitalization grants in FY 2008.[31] Congress added $6 billion to these funds in the 2009 ARRA. The U.S. Departments of Housing and Urban Development and Agriculture also provided grant and loan assistance of about $2 billion in FY 2006[32] and received funding through the ARRA. However, these programs are small in relation to the gap and are not part of a comprehensive investment strategy to address water infrastructure needs; they reflect each agency's mission and congressional direction.

EPA also addresses the gap by advocating for its "Four Pillars of Sustainable Infrastructure."[33] One pillar is "full cost pricing." Little has changed since a 2001 GAO survey that indicated more than 40 percent of wastewater systems were not generating enough revenue to cover their full cost of service, and about 30 percent deferred maintenance because of insufficient funding.[34] EPA supplements its "full-cost pricing" advocacy with programs organized around the remaining three pillars: "Effective Management," "Water Efficiency," and "Watershed Approaches." The Office of Water's "Better Management" Website contains several links to information geared at improving management practices within the water sector.[35] EPA has also established a "National Alliance for Water Efficiency."[36] Other incremental programs, such as EPA's advocacy for "green infrastructure" to reduce storm runoff, contribute to reducing infrastructure needs.[37]

EPA's current approach, based on providing a relatively small amount of funding to State Revolving Funds, and operating programs such as those under the "Four Pillars of Sustainable Infrastructure," is helpful. Other federal agencies contribute. However, this approach does not represent a cohesive national strategy for resolving the problem of aging infrastructure. A comprehensive approach would realistically assess the investment requirements, and work with States and local governments to organize resources to meet needs. It would also alert the public and Congress of unfunded liabilities and risks. While EPA has responsibility for administering the Clean Water and Safe Drinking Water Acts, it does not have resources or authority to address this gap by itself. EPA needs to ensure there is a comprehensive federal understanding of the risks to public health, the environment, and the economy if this critical resource gap remains unresolved. EPA should also take the lead in organizing a coherent federal strategy within the limits of its statutory authorities and responsibilities.

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[31] US EPA, *Drinking Water State Revolving Fund Allotments;* and US EPA, *Clean Water SRF Federal Capitalization Grants by Federal Fiscal Year of Award by State*.
[32] USDA Rural Development, Water and Environmental Programs, *Annual Activity Report – Fiscal Year 2006*, p. 6.
[33] US EPA, "Sustainable Infrastructure for Water & Wastewater" Website.
[34] GAO Report, *Water Infrastructure – Information on Financing, Capital Planning, and Privatization*, GAO-02-764, August 16, 2002.
[35] US EPA, "Sustainable Infrastructure for Water & Wastewater" Website, "Better Management" page.
[36] EPA-OIG Report, *Summary of Recent Developments in EPA's Drinking Water Program and Areas for Additional Focus*, Report No. 08-P-0120, March 31, 2008, page 11.
[37] US EPA, *Testimony of Benjamin H. Grumbles, Assistant Administrator for Water, Before the Subcommittee on Transportation Safety, Infrastructure Security, and Water Quality, of the US Senate Committee on Environment and Public Works*, September 19, 2007, page 10.

## Meeting Homeland Security Requirements

The World Trade Center and Pentagon terrorist attacks and Hurricanes Katrina and Rita, among other national emergencies, elevated the Nation's expectations of EPA's emergency response role. Over the last several years these expectations have formally expanded EPA's traditional emergency response function. The 2004 National Response Plan, the 2008 National Response Framework, and multiple Homeland Security Presidential Directives[38] have established new Federal homeland security requirements for EPA. The National Response Framework and several Homeland Security Presidential Directives direct EPA to support, coordinate, or lead responses to incidents of national significance, to include certain types of terrorist attacks or natural disaster events. EPA established its first ever homeland security office in 2003.

EPA needs to ensure it is ready to meet its homeland security requirements. The Agency must develop incident scenario plans that identify resources needed, planning assumptions, and accountable EPA entities. In addition, Agency plans need to be coordinated and communicated among all participating EPA entities as well as with outside federal, State, or local agencies that may be responding alongside EPA to nationally significant incidents. Reports issued by our office since 2003 have identified a number of concerns with EPA's homeland security-related planning efforts and actions.[39] Our reports[40] show that EPA's plan for responding to incidents of national significance (1) has undocumented assumptions and unsupported resource requirements, (2) was developed with little internal or external coordination, (3) is missing key accountability designations or process descriptions for handling crisis communications, (4) has not met milestones for completing certain critical homeland security responsibilities, and (5) has not

[38] US Department of Homeland Security, Preparedness and Response website, National Response Framework.
[39] EPA-OIG Reports *EPA Needs a Better Strategy to Measure Changes in the Security of the Nation's Water Infrastructure*, Report No. 2003-M-00016, September 11, 2003; *EPA Needs to Assess the Quality of Vulnerability Assessments Related to the Security of the Nation's Water Supply*, Report No. 2003-M-00013, September 24, 2003; *Decline In EPA Particulate Matter Methods Development Activities May Hamper Timely Achievement of Program Goals*, Report No. 2003-P-00016, September 30, 2003; *Survey Results on Information Used by Water Utilities to Conduct Vulnerability Assessments*, Report No. 2004-M-0001, January 20, 2004; *EPA's Homeland Security Role to Protect Air from Terrorist Threats Needs to be Better Defined*, Report No. 2004-M-000005, February 20, 2004; *EPA Needs to Better Manage Counter Terrorism/Emergency Response Equipment*, Report No. 2004-P-00011, March 29, 2004; *EPA's Final Water Security Research and Technical Support Action Plan May Be Strengthened Through Access to Vulnerability Assessments*, Report No. 2004-P-00023, July 1, 2004; *EPA Needs to Determine What Barriers Prevent Water Systems from Securing Known Supervisory Control and Data Acquisition (SCADA) Vulnerabilities*, Report No. 2005-P-00002, January 6, 2005; *EPA Needs to Fulfill Its Designated Responsibilities to Ensure Effective BioWatch Program*, Report No. 2005-P-00012, March 23, 2005; *EPA Needs to Better Implement Plan for Protecting Critical Infrastructure and Key Resources Used to Respond to Terrorist Attacks and Disasters*, Report No. 2006-P-00022, April 26, 2006; *EPA Should Continue to Improve Its National Emergency Response Planning*, Report No. 08-P-0055, January 9, 2008; and *EPA Plans for Managing Counter Terrorism/Emergency Response Equipment and Protecting Critical Assets Not Fully Implemented*, Report No. 09-P-0087, January 27, 2009.
[40] EPA-OIG Reports *Exit Memorandum for Preliminary Research of the Effectiveness of EPA's Emergency Response Activities*, Report No. 2006-M-000004, February 24, 2006; *EPA Should Continue to Improve Its National Emergency Response Planning*, Report No. 2008-P-0055, January 9, 2008; *EPA Needs to Better Implement Plan for Protecting Critical Infrastructure and Key Resources Used to Respond to Terrorist Attacks and Disasters***,** Report No. 2006-P-0022, April 26,2006; and *EPA Plans for Managing Counter Terrorism/Emergency Response Equipment and Protecting Critical Assets Not Fully Implemented*, Report No. 09-P-0087, January 27, 2009.

established accountable entities in EPA with proper authority to complete certain critical homeland security requirements.

Based on our concerns in this area, since 2004 we have identified "Homeland Security" as an EPA management challenge.[41] Prior to 2004, we identified our concerns in this area under the "protection of critical infrastructure" management challenge.[42] From FY 2005 to 2008, EPA identified its efforts in support of Homeland Security as an Agency-level weakness[43] and is currently taking action to strengthen this area, such as: (1) expanding homeland security planning coordination efforts with other Federal, State or local agencies; (2) recognizing a more complete range of issues and information that must be considered when developing response plans for incidents of national significance; (3) developing crisis communication plans and identifying responsible parties and roles for crisis communications; and (4) completing basic Homeland Security requirements.

In its *FY 2008 Performance and Accountability Report*, EPA closed its homeland security management challenge on the basis that it "has completed all corrective actions associated with this weakness."[44] However, our review and follow-up shows that many actions are not complete and that EPA continues to face challenges in accomplishing key actions, such as internal and external coordination of plans. The Agency has not yet implemented recommendations from our 2008 report, and continues to request extensions in completing recommendations.[45] The Agency is also behind schedule in implementing the Radiation Ambient Monitoring System, which provides real-time monitoring of environmental levels of radiation in the United States. As a result, EPA may have less information about levels of radiation should a national radiological or nuclear emergency occur.[46] EPA has also not fully implemented a national equipment tracking system that would be used to respond to another terrorist attack or major catastrophic event. The nearly 2-year delay in implementing a functional national counter terrorism/emergency response equipment tracking system may impair EPA's ability to protect public health and the environment in the event of another terrorist attack or other nationally significant incident. EPA needs to address these vulnerabilities and mitigate corresponding risks associated with them through (1) improved monitoring of the Radiation Ambient Monitoring System contract; and (2) established milestones, accountability, and resources for implementing the national counter terrorism/emergency response equipment tracking system.

We plan to continue to monitor and report on EPA's progress in managing its homeland security challenges. Completion of ongoing actions will help the Agency continue on a path toward better management of the significant challenges posed by its homeland security responsibilities.

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[41] EPA-OIG Website, link to "EPA's Key Management Challenges" 2004-2007 EPA Management Challenges.
[42] EPA-OIG Website, link to "EPA's Key Management Challenges" 2001-2003 EPA Management Challenges.
[43] US EPA, Office of the Chief Financial Officer, *2005 Performance and Accountability Report,* electronic page 5; *2006 Performance and Accountability Report,* electronic page 8; and *2007 Performance and Accountability Report,* electronic page 5.
[44] US EPA, Office of the Chief Financial Officer, *2008 Performance and Accountability Report,* electronic page 516.
[45] EPA-OIG Report, *EPA Should Continue to Improve Its National Emergency Response Planning*, Report No. 2008-P-0055, January 9, 2008.
[46] EPA-OIG Report, *EPA Plans for Managing Counter Terrorism/Emergency Response Equipment and Protecting Critical Assets Not Fully Implemented*, Report No. 09-P-0087, January 27, 2009.

However, the challenge of planning and preparing for incidents of national significance, including the potential for multiple terrorist attacks, will not end with completing ongoing actions. The expansion of the Agency's current homeland security responsibilities will generally require different thinking about how to respond, coordinate with others, and communicate in nationally significant emergencies. In its December 2008 report on Superfund workload needs, the Agency noted that homeland security represents a new and evolving workload, it is an area expected to demand new resources, and homeland security workload needs are understaffed.[47] In addition to the physical and resource challenges, EPA will also have to change how its managers think about emergency response. EPA will have to expand its emergency planning process to include more internal organizations, as well as external organizations. Previously uninvolved EPA components will have to accept responsibility for planning and coordinating support to emergency response. These internal and external lines of communication and coordination will have to be confirmed and tested to maintain a credible capability outside normal practice. Even when unused, homeland security responsibilities must be accepted as Agency requirements that compete with current mission needs.

[47] US EPA *Superfund Workload Assessment Report*, OSWER Document 9200-2-81, December 2, 2008, page 28.

## Oversight of Delegations to States

EPA's oversight of State programs requires improvement. GAO[48] and our office[49] have reported that EPA has made some progress in this area; however, there are a number of factors and practices that reduce the effectiveness of Agency oversight. Key among these are limitations in the availability, quality, and robustness of program implementation and effectiveness data, and limited Agency resources to independently obtain such data. Differences between State and federal policies, interpretations, and priorities make effective oversight a challenge.

EPA's mission is to protect human health and the environment. To accomplish its mission, EPA develops regulations and establishes programs that implement environmental laws. These programs may be delegated to State, local, and tribal agencies that request to take primacy of the program. Delegation, however, does not abrogate EPA of its statutory and trust responsibilities for protecting human health and the environment. EPA performs oversight of State, local, and tribal programs in an effort to provide reasonable assurance that delegated programs are achieving their goals. In addition to regulatory programs, EPA sponsors voluntary partnerships and programs with more than 10,000 industries, businesses, nonprofit organizations, and State and local governments on more than 40 pollution prevention programs and energy conservation efforts. Dealing with partners requires different types of management approaches and controls than when dealing with parties that require oversight. EPA does not have the resources to effectively administer all its responsibilities directly. EPA relies heavily on local, State, and tribal agencies for compliance and enforcement and to obtain performance data. In its *FY 2007 Performance and Accountability Report,* EPA states it delegated the responsibility for issuing permits and for monitoring and enforcing compliance to the States and tribes.[50]

A critical management challenge to EPA is oversight of its delegations to States. Federal environmental statutes grant EPA a significant role in implementing the intent of the law, and also authorize a substantial role for States. Federal intent is to give all citizens an equal level of environmental protection. However, quality data is often lacking to ensure that the intent of the law is met. For example, EPA lacks the data necessary to assess the benefits of its air toxics standards, such as decreased incidence of cancer. Data on the program's effectiveness, such as changes in emissions, concentrations of air toxics in the (ambient) outdoor air, and data on compliance with air toxics standards are limited and inconclusive.[51] Also, Federal requirements establish consistency for businesses and within industries nationwide. States' discretion adds flexibility to address specific circumstances and local issues. Joint implementation and enforcement leads to special challenges in interpretations, strategies, and priorities.

EPA has improved its oversight by implementing the State Review Framework. The Framework is intended to be a consistent approach for overseeing programs and identifying weaknesses and

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[48] GAO Report, *EPA-State Enforcement Partnership Has Improved, But EPA's Oversight Needs Further Improvement*, GAO-07-883, July 31, 2007.
[49] EPA-OIG Report, *Despite Progress, EPA Needs to Improve Oversight of Wastewater Upgrades in the Chesapeake Bay Watershed*, Report No. 08-P-0049, January 8, 2008.
[50] US EPA, Office of the Chief Financial Officer, *2007 Performance and Accountability Report – Environmental Progress*, November 13, 2007.
[51] GAO Report, *EPA Should Improve the Management of Its Air Toxics Program*, GAO-06-669, June 23, 2006.

areas for improvement. However, EPA has not yet implemented it in a consistent manner. GAO reported that EPA has made substantial progress in improving priority setting and enforcement planning with States. However, GAO concluded that EPA's oversight needed further enhancement. For example, State Revolving Fund reviews show that EPA has limited ability to determine whether States are performing timely and appropriate enforcement, and whether penalties are applied to environmental violators in a fair and consistent manner within and among States.[52] We found that EPA did not exercise effective enforcement oversight of facilities with National Pollutant Discharge Elimination Systems permits in significant long-term noncompliance.[53] The situation was also exacerbated by a lack of complete and accurate records of permit compliance and enforcement actions.

Our 2009 evaluation of the Clean Air Act Risk Management Program for airborne chemical releases found that not all States delegated authority to operate the Clean Air Act Title V Program are properly addressing Risk Management Program requirements during the permitting process.[54] Of the eight States reviewed, five States used conditional language in their Title V permits which, according to the Title V Manager, is not sufficient.

In other reports, we noted that EPA's oversight of State activities or data needs to be improved to make accurate assessments of performance and results. For example, about 20,000 lung cancer deaths each year in the U.S. are related to indoor exposure to radon.[55] Although EPA established programs in the late 1980s and early 1990s to assist consumers in identifying and obtaining reliable radon measurements and analyses, in 1998 EPA disinvested in these programs. Since then EPA has not had data to support the claim that radon test kits or radon testers are reliable.

EPA's regional offices are responsible for oversight of vehicle inspection and maintenance (I/M) programs,[56] including ensuring that State I/M programs meet State Implementation Plan commitments. Our nationwide survey of all 10 EPA regions, covering 34 I/M programs, indicated that EPA had not been obtaining sufficient information to ensure that States met their I/M program commitments. As a result, EPA did not have reasonable assurance that emission reductions claimed by some I/M programs were achieved.

In our view, while EPA has improved its oversight of delegated programs, issues are complex and changeable. Effective oversight of delegations to States is a continuous management challenge that requires an agile organization, accurate data, and consistent interpretations of policy. To provide effective oversight, the Agency must address limitations in the availability, quality, and robustness of program implementation and effectiveness data.

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[52] GAO Report, *EPA–State Enforcement Partnership Has Improved, but EPA's Oversight Needs Further Improvement*, GAO-07-883, July 31, 2007.
[53] EPA-OIG Report, *Better Enforcement Oversight Needed for Major Facilities With Water Discharge Permits in Long-Term Significant Noncompliance*, Report No. OIG-2007-P-00023, May 14, 2007.
[54] EPA-OIG Report, *EPA Can Improve Implementation of the Risk Management Program for Airborne Chemical Releases*, Report No. 0PE-FY08-0001, December 18, 2008.
[55] EPA-OIG Draft Report, *EPA Does Not Provide Oversight of Radon Testing Accuracy and Reliability*, April 2009.
[56] EPA-OIG Report, *EPA's Oversight of Vehicle Inspection and Maintenance Programs Needs Improvement*, Report No. 2007-P-00001, October 5, 2006.

## Chesapeake Bay Program

The Chesapeake Bay is North America's largest and most biologically diverse estuary. Improving water quality is the most critical element in the overall protection and restoration of the Chesapeake Bay and its tributaries according to the Chesapeake Bay 2000 Agreement.[57] Yet after about 20 years of effort by federal, State, and local governments, the Bay waters remain degraded and the latest targeted clean-up goal will not be met. After a series of reports, we determined that while EPA could increase its use of some authorities and improve oversight, this is not nearly sufficient for achieving and sustaining water quality goals.[58] EPA quite simply does not have the resources, tools, or authorities to ensure that the Chesapeake Bay Program is successful. Changes in national farm policy, local land development decisions, and individual life styles could have huge impacts on the amount of pollution being discharged to the Bay.

Congress designated EPA's Chesapeake Bay Program Office (CBPO) with the responsibility to coordinate clean-up efforts with other federal agencies and State and local governments.[59] The CBPO was also given the responsibility to report to Congress on the progress in cleaning up the Bay. Congress provides a much higher level of funding to CBPO than it does for any other geographically-based program. The 2009 budget requests $29 million for CBPO.[60] With this money, the CBPO awards grants and offers various technical information and assistance. Congress' interest in the Bay is also exhibited in its proposed funding of projects in the Farm Bill.[61]

As the most mature watershed restoration program, successful approaches and solutions for organizing and managing clean-up will be highly relevant to stakeholders in other watersheds. Success or failure will resonate in communities across the country. The Bay's problems are national problems. The CBPO can be the prototype for developing ways to address water quality impairments of other watersheds. The most important water quality issues (nutrient overloading, habitat loss, and decline in fish populations) faced by the Bay are the same issues the other 28 estuaries in EPA's National Estuary Program face.[62]

EPA's CBPO has provided scientific information used by the partnership in setting allocations, revising water quality standards, and establishing stricter wastewater treatment discharge limits. Despite these important accomplishments, Bay partners face significant obstacles in achieving the Bay's water quality goals. It is now widely acknowledged that the nutrient and sediment reductions that are required will not be met by 2010 as planned. EPA did not meet its strategic

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[57] Chesapeake Bay Program, *Chesapeake 2000*, page 1 ("chesapeakebay.net" Website).
[58] EPA-OIG Reports, *Saving the Chesapeake Bay Watershed Requires Better Coordination of Environmental and Agricultural Resources*, Report No. 2007-P-00004; *EPA Relying on Existing Clean Air Act Regulations to Reduce Atmospheric Deposition to the Chesapeake Bay and its Watershed*, Report No. 2007-P-00009; *Development Growth Outpacing Progress in Watershed Efforts to Restore the Chesapeake Bay*, Report No. 2007-P-00031; *Despite Progress, EPA Needs to Improve Oversight of Wastewater Upgrades in the Chesapeake Bay Watershed*, Report No. 08-P-0049; and *EPA Needs to Better Report Chesapeake Bay Challenges*, Report No. 08-P-0199.
[59] Clean Water Act §117.
[60] US EPA, Office of the Chief Financial Officer, *FY 2009 EPA Budget in Brief*, page D-4.
[61] US Department of Agriculture, *2007 Farm Bill Proposals.*
[62] US EPA, Office of Water, "Wetlands, Oceans, & Watersheds" website, Challenges Facing Our Estuaries, Key Management Issues.

plan goals for the Chesapeake Bay in 2005 and 2006.[63] Of the five strategic goals in 2007 and 2008, two were met and three were not. At the current rate of progress, it will take decades for Bay partners to reach their reduction goals, and that is without factoring in future challenges.

The Bay partners face the following key challenges: (1) managing land development, (2) increasing implementation of agricultural conservation practices, (3) monitoring and expediting the installation of nutrient removal technology at wastewater treatment plants, (4) seeking greater reductions in air emissions, and (5) identifying consistent and sustained funding sources to support tributary strategy implementation. Few of these steps can be taken by EPA; its "partners" will need to implement practices to reduce loads. However, EPA will need to institute management controls to ensure that promised reductions are realistic, and those that are claimed are actually being achieved.

Actions necessary to address the above challenges will not be easily implemented even if such practices are described as cost-effective. For example, it will be difficult to convince enough agricultural producers that conservation practices will not adversely affect productivity. And in many cases, EPA has no clear authority to control major sources of pollution, such as from land development. Other practices are controversial because they place restrictions on lives of the residents of the Bay watershed. Controls may result in property owners near the coast not being able to construct additions to their homes or develop vacant land. However, to address these challenges, EPA and its partners will need to make major program improvements. In the absence of significant steps from government, financial incentives or other mechanisms of influence, the enormous reductions required will not be forthcoming.

In response to OIG and GAO reports, the CBPO developed the Chesapeake Action Plan to improve program management and strategic planning. While the Plan will likely improve overall management, it is unlikely to result in the accelerated progress needed to achieve reduction goals. It will still be up to local governments to determine how they will develop lands and to other federal agencies on how they will direct agricultural production or transportation. The Bay community is responsible for taking action to ensure that Bay-wide commitments are met, and that water quality goals are achieved and maintained. It is EPA's responsibility to monitor and assess progress. Bay partners need to commit to implementation plans with realistic timeframes and generate adequate financial support. Obtaining adequate financial support will become more difficult with the current economy. EPA should use its reporting responsibilities to advise Congress and the Chesapeake Bay community on partners' progress in meeting commitments and identifying any funding shortfalls and other impediments that will affect progress for restoring the Bay.

[63] US EPA, Office of the Chief Financial Officer, *2006 Performance and Accountability Report*, page 176.

## Voluntary Programs

Data verification problems are a recurring theme in voluntary programs. This shortcoming has been especially acute in the Agency's programs to reduce air emissions, including greenhouse gases (GHG). Over the last several years, we have reviewed a number of these programs. In general, these reports determined that EPA voluntary programs have difficulty verifying their outcomes. We found that EPA had no Agency-wide policies that require voluntary programs to collect comparable data or conduct regular program evaluations. We also found that several programs showed weaknesses in their data collection and reporting systems. These problems were caused by the collection and use of limited, unverified, and anonymous performance data. Further, we found the ENERGY STAR program (EPA's highest profile GHG avoidance program) reported benefits that were inaccurate and unsupported. GHG emission reductions have been deemed a priority, but the numerous voluntary programs established to reduce GHG emissions have only limited potential. In our review of 11 prominent voluntary programs we found that, on average, they had the potential of reducing only 19 percent of total GHG emissions.

We documented similar performance and data verification limitations in Agency voluntary programs that address air toxics, ports, and nanoscale materials. States receive grant money to collect air toxics data, but only 37 have delivered the data requested. Key voluntary strategies are used to reduce diesel emissions from port sources. However, these initiatives have suffered from low participation rates, lack of funding, and emissions data. Low participation rates have also hindered EPA's ability to achieve greater results in its Nanoscale Materials Stewardship Program (NMSP). We also observed that the Pollution Prevention Program's verification and validation procedures did not ensure the accuracy of performance data obtained from voluntary partners, so program managers had no assurance that performance results data obtained from voluntary partnerships with industry and other organizations were accurate.

Some of EPA's voluntary programs are not achieving the air quality goals they were created to achieve. For example, since 1988 when the Indoor Radon Abatement Act was enacted with the goal that indoor air should be as free of radon as outdoor air, EPA has administered a voluntary program to reduce indoor radon.[64] However, inconsistencies in radon-related requirements among State and local governments, a lack of incentives, funding constraints, and misuse of the radon map limit EPA's ability to achieve greater results with this voluntary program. The problem of radon exposure actually worsens each year. To date, EPA has neither proposed any indoor radon regulations, nor decided how to use the authorities and tools available to it to achieve Indoor Radon Abatement Act goals. EPA did not agree with our recommendation to notify Congress of any limitations in the Act's authorities authorized by Congress, as well as other limitations that would preclude EPA from achieving the long-term goal of the Act.

EPA is also relying on voluntary programs to help reduce air emissions at U.S. ports, but the Agency has not successfully implemented key elements of these voluntary programs at many

[64] EPA-OIG Report, *More Action Needed to Protect Public from Indoor Radon Risks,* Report No. 08-P-0174, June 3, 2008.

ports.[65] One of the key voluntary strategies for reducing diesel emissions from port sources relies on participation in regional diesel collaboratives. However, many seaports located in nonattainment areas for either ozone, particulate matter, or both were not participating in these voluntary collaboratives. To address the low participation rate, EPA needs to proactively target and motivate port stakeholders to participate in the regional diesel collaboratives, particularly for those ports located in nonattainment areas. The lack of funding and emissions data has also hampered EPA's implementation of port voluntary programs.

Low participation rates have also hindered EPA's ability to achieve greater results in its NMSP. EPA implemented this voluntary program to complement and support regulatory efforts on nanoscale materials under the Toxic Substances Control Act.[66] NMSP is intended to help provide a stronger scientific foundation for future regulatory decisions by encouraging the submission and development of information for nanoscale materials (e.g., chemical identification and physical properties characterization, hazard, use, potential exposures, and risk management practices).[67] Under the NMSP Basic Program, participants were invited to voluntarily submit available information by July 29, 2008, on the engineered nanoscale materials they manufacture, import, process, or use.[68] Under the In-Depth Program, participants were invited to work with EPA and others on developing data over a longer timeframe. As of December 8, 2008, 29 companies or associations submitted information under the Basic Program and 4 companies had agreed to participate in the In-Depth Program. As a result of the low participation, nearly two-thirds of the chemical substances for which commercially available nanoscale materials are based were not reported under the Basic Program, and approximately 90 percent of the nanoscale materials likely to be commercialized were not reported under the Basic Program. Further, low rates of engagement in the In-Depth Program suggest that most companies are not inclined to voluntarily test their nanoscale materials.

Voluntary programs can be an adjunct to regulatory programs. However, their effectiveness and impacts cannot be assessed without the collection of comprehensive, valid, and reliable performance data. In light of these systemic findings, EPA should determine the extent to which voluntary programs can effectively address its pressing environmental and human health challenges.

[65] EPA-OIG Report, *EPA Needs to Improve Its Efforts to Reduce Air Emissions at U.S. Ports*, Report No. 09-P-0125, March 23, 2009.
[66] US EPA, *Nanoscale Materials Stewardship Program: Interim Report,* OPPT, January 2009.
[67] US EPA, *Nanoscale Materials Stewardship Program*, Federal Register, Vol. 73, No. 18, January 28, 2008.
[68] US EPA, *Nanoscale Materials Stewardship Program: Interim Report,* OPPT, January 2009.

## Safe Reuse of Contaminated Sites

In the last decade, EPA has placed increasing emphasis on the reuse of contaminated or once-contaminated properties. Today, EPA has a performance measure to define a population of contaminated sites that are "ready for reuse,"[69] and recently released a list of thousands of contaminated sites marketed as candidates for building renewable energy facilities (e.g., wind, solar, biomass facilities).[70] EPA has had some highly successful efforts in returning actual or perceived problem sites into properties that reinvigorated communities and created jobs.[71] Contaminated properties have been put back into reuse as retail stores, public recreation areas, housing complexes, sports stadiums, and commercial office space.

EPA's goal to recycle and reuse contaminated property can produce measured economic benefits, environmental benefits that result from preserving undeveloped lands, and quality of life improvements for communities. While these goals are notable, EPA's duty is to ensure that contaminated sites are safe for humans and the environment. EPA faces significant and increasing challenges in this area due to the common practice of not removing all sources of contamination from hazardous sites; a regulatory structure that places key responsibilities for monitoring and enforcing the long-term safety of contaminated sites on non-EPA parties that may lack necessary resources, information, and skill; changes in site risks as site conditions change over time; and existing weaknesses in EPA's oversight of the long-term safety of sites.

Many contaminated sites, such as Superfund sites, must be monitored in the long-term (i.e., 30 years or more) because known contamination is often not removed or remediated and controls that prevent prohibited activities at sites must be maintained and enforced. New controls or monitoring may be required because previously undetected or new contaminants have emerged.[72] This can happen directly as a result of a change in the site brought about by reuse. The lack of effective long-term monitoring and enforcement of reuse controls at contaminated sites can pose significant risks to human health and the environment. The New York Department of Environmental Conservation released a report in March 2009 listing hundreds of "old" Superfund, Brownfields, and other clean-up cases that were reopened to investigate potential new threats from vapor intrusion.[73]

EPA has acknowledged challenges to ensuring the long-term safety of contaminated sites.[74] In 2005, the Agency released a report that examined a range of long-term stewardship issues[75] and

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[69] US EPA, *Guidance for Documenting and Reporting the Superfund Sitewide Ready-for-Reuse Performance Measure, Attachment A*, OSWER 9365.0 – 36.
[70] US EPA, *RE-Powering America's Land: Renewable Energy on Contaminated Land and Mining Sites.*
[71] US EPA, "Superfund Redevelopment" Website.
[72] US EPA, *Brownfields Technology Primer: Vapor Intrusion Considerations for Redevelopment*, EPA 542-R-08-001, March 2008.
[73] New York State Department of Environmental Conservation, *Status of Vapor Intrusion Evaluations at Legacy Sites*, February 11, 2009; and *Strategy for Evaluating Soil Vapor Intrusion at Remedial Sites in New York*, DER-13, October 18, 2006.
[74] US EPA *Long-Term Stewardship: Ensuring Environmental Site Cleanups Remain Protective Over Time: Challenges and Opportunities Facing EPA's Cleanup Programs*, EPA 500-R-05-001, September 2005.
[75] EPA generally characterizes long-term stewardship activities as activities that ensure (1) ongoing protection of human health and the environment; (2) the integrity of remedial or corrective actions so they continue to operate properly, and (3) the ability of people to reuse sites in a safe and protective manner.

challenges it faced, as well as non-EPA parties (i.e., States, tribes, and other federal agencies) that have a role in ensuring long-term safety of contaminated sites. The Agency identified five categories of challenges: (1) understanding roles and responsibilities; (2) implementing and enforcing institutional controls;[76] (3) implementing, enforcing, and monitoring engineering controls;[77] (4) estimating long-term stewardship costs and obtaining funding and resources; and (5) managing and communicating information to prevent breaches of controls and ensuring consistent information in databases. The report made a number of recommendations which generally rely on partnerships and relationships to share, communicate, and exchange necessary information on roles, responsibilities, and costs associated with long-term stewardship responsibilities, and to encourage non-EPA parties to adhere to legal provisions for implementing institutional controls, where applicable (i.e., Uniform Environmental Covenants Act[78]). In response to reported GAO concerns in this area, EPA has also taken some steps to better manage the implementation of institutional controls at Superfund sites.[79] However, there remain many sites where the implementation status of institutional controls is not available.[80]

Our work has identified a number of challenges that EPA faces in ensuring effective long-term monitoring, or stewardship of contaminated sites. We found that some States were not financially prepared to take over their long-term monitoring and maintenance responsibilities for Superfund sites.[81] We reported State failures to enforce clean up agreements,[82] EPA not following Superfund site deletion guidance,[83] five-year review procedures,[84] and not having systems in place to determine whether a site clean-up is in noncompliance.[85]

It has only been in the last several years that EPA has focused attention on the long-term stewardship aspects of contaminated sites across its clean-up programs. EPA's management of the long-term oversight and monitoring requirements for the safe reuse of contaminated sites has

[76] Institutional controls are legal or administrative controls intended to minimize the potential for human exposure to contamination by limiting land or resource use. A local government is often the only entity that has legal authority to implement certain types of institutional controls (e.g., zoning restrictions).
[77] Engineering controls are the engineered physical barriers or structures designed to monitor and prevent or limit exposure to the contamination.
[78] The Uniform Environmental Covenants Act confirms the validity of environmental covenants (i.e., institutional controls/land use controls) by ensuring that land use restrictions, mandated environmental monitoring requirements, and a wide range of common engineering controls designed to control the potential environmental risk of residual contamination will be reflected in land records and effectively enforced over time. Currently, about one half of U.S. States have passed a Uniform Environmental Covenants Act.
[79] GAO Report, *Hazardous Waste Sites: Improved Effectiveness of Controls at Sites Could Better Protect the Public*, GAO-05-163 January 28, 2005. See also US EPA, Superfund Website on institutional controls.
[80] See US EPA, "Superfund Information Systems" Website, *Published Institutional Control Site Reports for All Regions*.
[81] EPA-OIG Report, *Some States Cannot Address Assessment Needs and Face Limitations in Meeting Future Superfund Cleanup Requirements*, Report No. 2004-P-00027, September 2004.
[82] EPA-OIG Report, *Improved Controls Would Reduce Superfund Backlogs*, Report No. 08-P-0169, June 2008.
[83] EPA-OIG Report, *EPA Decisions to Delete Superfund Sites Should Undergo Quality Assurance Review*, Report No. 08-P-0235, August 2008.
[84] EPA-OIG Report, *EPA Has Improved Five-Year Review Process for Superfund Remedies, But Further Steps Needed*, Report No. 2007-P-00006 December 2006; EPA-OIG Report, *EPA's Safety Determination for Delatte Metals Superfund Site Was Unsupported*, Report No. 09-P-0029, November 2008.
[85] EPA-OIG Report, *EPA Needs to Track Compliance with Superfund Cleanup Requirements*, Report No. 08-P-0141, April 2008.

lagged behind their marketing of site reuse opportunities and showcase successes. This gap promises to increase substantially as EPA continues to heavily promote the reuse of contaminated sites without investment in the tools needed to ensure the safe, long-term use of these sites. Many Superfund sites are now moving to the long-term monitoring phase with more sites expected in the future.[86] EPA's December 2008 report on future Superfund workload needs states that the post-construction workload will require the greatest increase in coming years and will increase by 89 percent over the current full-time equivalent distribution.[87] EPA will continually need to assess challenges it faces as well as challenges among the diverse group of non-EPA parties it must work with to ensure sites are safely reused. To address the challenges, these assessments should include consideration of new or expanded authorities and regulations, organizational structures, and dedicated funding and resources.

[86] US EPA, *Long-Term Stewardship: Ensuring Environmental Site Cleanups Remain Protective Over Time: Challenges and Opportunities Facing EPA's Cleanup Programs*, EPA 500-R-05-001, September 2005.
[87] US EPA, *Superfund Workload Assessment Report*, OSWER Document 9200-2-81, December 2, 2008. Post-construction workload can refer to all activities after the remedy is constructed. This includes long-term monitoring and reuse activities.