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ENVIRONMENTAL
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Actions Needed to Improve
Planning, Coordination, and
Leadership of EPA
Laboratories

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Natural Resources and Environment

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Chairman Harris, Ranking Member Miller, and Members of the Subcommittee:

I am pleased to be here today to discuss the research and development activities of the Environmental Protection Agency (EPA) and the findings of our recent report on the agency's laboratory enterprise.¹ EPA was established in 1970 to consolidate a variety of federal research, monitoring, standard-setting, and enforcement activities into one agency for ensuring the joint protection of environmental quality and human health.² Scientific research, knowledge, and technical information are fundamental to EPA's mission and inform its standard-setting, regulatory, compliance, and enforcement functions. The agency's scientific performance is particularly important as complex environmental issues emerge and evolve, and controversy continues to surround many of the agency's areas of responsibility. Unlike other primarily science-focused federal agencies, such as the National Institutes of Health or the National Science Foundation, EPA's scientific research, technical support, and analytical services underpin the policies and regulations the agency implements. Therefore, the agency operates its own laboratory enterprise. This enterprise is made up of 37 laboratories that are housed in about 170 buildings and facilities located in 30 cities across the nation. Specifically, EPA's Office of Research and Development (ORD) operates 18 laboratories with primary responsibility for research and development. Four of EPA's five national program offices³ operate nine laboratories with primary responsibility for supporting regulatory implementation, compliance, enforcement, and emergency response. Each of EPA's 10 regional offices operates a laboratory with responsibilities for a variety of applied sciences; analytical services; technical support to federal, state, and local laboratories; monitoring; compliance and enforcement; and emergency response.

¹GAO, *Environmental Protection Agency: To Better Fulfill Its Mission, EPA Needs a More Coordinated Approach to Managing Its Laboratories*, [GAO-11-347](#) (Washington, D.C.: July 25, 2011).

²Reorganization Plan No. 3 of 1970, 35 Fed. Reg. 15623 (Dec. 2, 1970) (5 U.S.C. Appendix 1).

³The national program offices with laboratories are the Office of Air and Radiation, the Office of Enforcement and Compliance Assurance, the Office of Chemical Safety and Pollution Prevention, and the Office of Solid Waste and Emergency Response.

Over the past 20 years, independent evaluations by the National Research Council and others have addressed planning, coordination, or leadership issues associated with EPA's science activities.⁴ The scope of these evaluations varied, but collectively they recognized the need for EPA to improve long-term planning, priority setting, and coordination of laboratory activities; establish leadership for agencywide scientific oversight and decision making; and better manage the laboratories' workforce and infrastructure. When it was established in 1970, EPA inherited 42 laboratories from programs in various federal departments. According to EPA's historian, EPA closed or consolidated some laboratories it inherited and created additional laboratories to support its mission. Nevertheless, EPA's historian reported that the location of most of EPA's present laboratories is largely the same as the location of its original laboratories in part because of political objections to closing facilities and conflicting organizational philosophies, such as operating centralized laboratories for efficiency versus operating decentralized laboratories for flexibility and responsiveness. Other federal agencies face similar challenges with excess and underused property. Because of these challenges, GAO has designated federal real property as an area of high risk.⁵

This statement summarizes the findings of our report issued in July of this year that examines the extent to which EPA (1) has addressed the findings of independent evaluations performed by the National Research Council and others regarding long-term planning, coordination, and leadership issues; (2) uses an agencywide, coordinated approach for managing its laboratory physical infrastructure; and (3) uses a comprehensive planning process to manage its laboratory workforce. In preparing this testimony, we relied on the work supporting our July report. In conducting that work, we reviewed agency documents and independent evaluations, visited EPA laboratories, interviewed agency officials, and examined agency databases; our recent report contains a detailed description of our scope and methodology. All of the work for our July report was performed in accordance with generally accepted government auditing standards.

⁴The National Research Council is the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering.

⁵High-Risk Series: An Update, [GAO-11-278](#) (Washington, D.C.: February 2011).

EPA Has Not Fully Addressed Findings of Evaluations on Long-standing Planning, Coordination, or Leadership Issues

EPA has taken some actions but has not fully addressed the findings and recommendations of five independent evaluations over the past 20 years regarding long-standing planning, coordination, and leadership issues that hamper the quality, effectiveness, and efficiency of its science activities, including its laboratory operations.

First, EPA has yet to fully address planning and coordination issues identified by a 1992 independent, expert panel evaluation that recommended that EPA develop and implement an overarching issue-based planning process that integrates and coordinates scientific efforts throughout the agency, including the important work of its 37 laboratories.⁶ That evaluation found that EPA's science was of uneven quality and that the agency lacked a coherent science agenda and operational plan to guide scientific efforts throughout the agency. Because EPA did not implement the evaluation's recommendation, EPA's programs, regional officials, and ORD continue to independently plan and coordinate the activities of their respective laboratories based on their own offices' priorities and needs.

Second, EPA has also not fully addressed recommendations from a 1994 independent evaluation by the MITRE Corporation to consolidate and realign its laboratory facilities and workforce⁷—even though this evaluation found that the geographic separation of laboratories hampered their efficiency and technical operations and that consolidation and realignment could improve planning and coordination issues that have hampered its science and technical community for decades. In its evaluation, MITRE recommended that EPA (1) realign and consolidate the ORD laboratories; (2) consolidate program laboratories in the Office of Prevention, Pesticides, and Toxic Substances⁸ and the two laboratories under the Office of Radiation and Indoor Air; and (3) through consolidation, reduce the number of regional office laboratories to a few laboratories with a national service focus. In response to the MITRE

⁶Environmental Protection Agency, *Safeguarding the Future: Credible Science, Credible Decisions, The Report of the Expert Panel on the Role of Science at EPA*, EPA/600/9-91/050 (Washington, D.C.: March 1992).

⁷MITRE Corporation, Center for Environment, Resources, and Space, *Assessment of the Scientific and Technical Laboratories and Facilities of the U.S. Environmental Protection Agency* (McLean, Va., May 1994).

⁸Now known as the Office of Chemical Safety and Pollution Prevention.

study, an agencywide steering committee formed by EPA to consider restructuring and consolidation options issued a report to the Administrator in July 1994.⁹ The steering committee report stated that combining ORD laboratories at a single location could improve teamwork and raise productivity but concluded that, for the near term, ORD should be functionally reorganized but not physically consolidated. Regarding program office laboratory consolidations, the Office of Radiation and Indoor Air did not physically consolidate its laboratories but did administratively and physically consolidate its Las Vegas laboratory with ORD's Las Vegas radiation laboratory, and the Office of Prevention, Pesticides, and Toxic Substances colocated three of four laboratories with the region 3 laboratory. As for the regional laboratories, the steering committee's report endorsed the current decentralized regional model but did not provide a justification for its position.

Third, EPA has not fully addressed recommendations from the independent evaluations regarding leadership of its research and laboratory operations.¹⁰ More specifically, EPA has not appointed a top science official with responsibility and authority for all the research, science, and technical functions of the agency— even though one study found that the lack of a top science official was a formula for weak scientific performance in the agency and poor scientific credibility outside the agency. Instead, EPA's efforts to establish leadership over its laboratory enterprise have relied on advisory positions and councils to achieve consensus and voluntary cooperation of ORD and the agency's program and regional offices. Because of the limited success of EPA's advisory positions and councils and in the absence of a central science policy authority, the National Research Council in 2000 recommended that EPA request authority from Congress to create a new position of deputy administrator for science and technology, with managerial authority to coordinate and oversee all the agency's scientific and

⁹Environmental Protection Agency, *Research, Development, and Technical Services at EPA: A New Beginning*, Report to the Administrator, EPA/600/R-94/122 (Washington, D.C.: July 1994).

¹⁰National Research Council, *Interim Report of the Committee on Research and Peer Review in EPA* (Washington, D.C., National Academies Press, 1995); Environmental Protection Agency, Office of Inspector General, *Regional Laboratories* (Washington, D.C., Aug. 20, 1997); and National Research Council, *Strengthening Science at the U.S. Environmental Protection Agency: Research-Management and Peer Review Practices* (Washington, D.C., National Academies Press, 2000).

technical activities. To date, EPA has not requested authority to create a new position of deputy administrator for science and technology and continues to operate its laboratories under the direction of 15 different senior officials using 15 different organizational and management structures. As a result, EPA has a limited ability to know if scientific activities are being unintentionally duplicated among the laboratories or if opportunities exist to collaborate and share scientific expertise, equipment, and facilities across EPA's organizational boundaries.

EPA Has Not Taken an Agencywide, Coordinated Approach to Manage Its Laboratory Physical Infrastructure

On the basis of our analysis of EPA's facility master planning process, we found that EPA manages its laboratory facilities on a site-by-site basis and does not evaluate each site in the context of all the agency's real property holdings—as recommended by the National Research Council report in 2004.¹¹ EPA's facility master plans are intended to be the basis for justifying its building and facilities spending, which was \$29.9 million in fiscal year 2010, and allocating those funds to specific repair and improvement projects. Master plans should contain, among other things, information on mission capabilities, use of space, and condition of individual laboratory sites. In addition, we found that most facility master plans were out of date. EPA's real property asset management plan states that facility master plans are supposed to be updated every 5 years to reflect changes in facility condition and mission, but we found that 11 of 20 master plans were out of date and 2 of 20 had not been created yet.¹²

Because EPA makes capital improvement decisions on a site-by-site basis using master plans that are often outdated, it cannot be assured it is allocating its funds most appropriately. According to officials responsible for allocating capital improvement resources, they try to spread these funds across the agency's offices and regions equitably but capital improvement funds have not kept pace with requests. The pressure and need to effectively share and allocate limited resources among EPA's many laboratories were also noted in a 1994 National Academy of Public Administration report on EPA's laboratory infrastructure, which found that

¹¹National Research Council, *Investments in Federal Facilities: Asset Management Strategies for the 21st Century* (Washington, D.C., National Academies Press, 2004).

¹²Master plans are created for owned properties only. We found there were no master plans for two laboratory properties located in Research Triangle Park, N.C., and Fort Meade, Md. We also found that 9 of the 11 outdated master plans were over 10 years old.

EPA has “too many labs in too many locations often without sufficient resources to sustain a coherent stable program.”¹³

In addition, because decisions regarding laboratory facilities are made independently of one another, opportunities to improve operating efficiencies can be lost. Specifically, we found cases where laboratories that were previously colocated moved into separate space without considering the potential benefits of remaining colocated. In one case, we found that the relocation increased some operating costs because the laboratories then had two facility managers and two security contracts and associated personnel because of different requirements for the leased facility. In another case, when two laboratories that were previously colocated moved into separate new leased laboratories several miles apart, agency officials said that they did not know to what extent this move may have resulted in increased operating cost.

EPA also does not have sufficiently complete and reliable data to make informed decisions for managing its facilities. Since 2003, when GAO first designated federal real property management as an area of high risk, agencies have come under increasing pressure to manage their real property assets more effectively.¹⁴ In February 2004, the President issued an executive order directing agencies to, among other things, improve the operational and financial management of their real property inventory.¹⁵ The order established a Federal Real Property Council within the Office of Management and Budget (OMB), which has developed guiding principles for real property asset management. In response to a June 2010 presidential memorandum directing agencies to accelerate efforts to identify and eliminate excess properties,¹⁶ in July 2010 EPA reported to the OMB that it does not anticipate the disposal of any of its owned laboratories and major assets in the near future because these assets are

¹³National Academy of Public Administration, *A Review, Evaluation, and Critique of a Study of EPA Laboratories by the MITRE Corporation and Additional Commentary on EPA Science and Technology Programs* (Washington, D.C., May 1994), 10.

¹⁴High-Risk Series: An Update, GAO-011-278 (Washington, D.C.: February 2011).

¹⁵Federal Real Property Asset Management, Exec. Order No. 13327, 69 Fed. Reg. 5897 (Feb. 4, 2004).

¹⁶Presidential Memorandum, Disposing of Unneeded Federal Real Estate, 75 Fed. Reg. 33987 (June 16, 2010).

fully used and considered critical for EPA's mission.¹⁷ EPA stated that decisions regarding facility disposal are made using the Federal Real Property Council's guidance but we found that EPA does not have the information needed to effectively implement this guidance. Specifically, EPA does not have accurate, reliable information regarding (1) the need for facilities, (2) property usage, (3) facility condition, and (4) facility operating efficiency—thereby undermining the credibility of any decisions based on this approach.

- First, EPA does not maintain accurate data to determine if there is an agency need for laboratory facilities because many facility master plans are often out of date. According to EPA's asset management plan, the master plans are tools that communicate the link between mission priorities and facilities. However, without up-to-date master plans, EPA does not have accurate data to determine if laboratory facilities are needed for its mission.
- Second, the agency does not have accurate data on space needs and usage because many facility master plans containing space utilization analyses are out of date. EPA also does not use public and commercial space usage benchmarks—as recommended by the Federal Real Property Council—to calculate usage rates for its laboratories. Instead, EPA measures laboratory usage on the basis of interviews with local laboratory officials. According to EPA officials, they do not use benchmarks because the work of the laboratories varies. In 2008, however, an EPA contractor created a laboratory benchmark based on those used by comparable facilities at the Centers for Disease Control and Prevention, the National Institutes of Health, the Department of Energy, and several research universities to evaluate space at two ORD laboratories in North Carolina. Consequently, we believe that objective benchmarks can be developed for EPA's unique laboratory requirements. In addition, the contractor's analysis concluded that EPA could save \$1.68 million in annual leasing and \$800,000 in annual energy costs through consolidation of the two ORD laboratories. Agency officials told us they hope to consolidate the laboratories in fiscal year 2012 if funds are available.

¹⁷Environmental Protection Agency, *Real Property Cost Savings and Innovation Plan* (Washington, D.C., July 23, 2010).

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- Third, the agency does not have accurate data for assessing facilities' condition because condition assessments contained in facility master plans are often outdated. The data may also be unreliable because data entered by local facility managers are not verified, according to agency officials. Such verification could involve edit checks or controls to help ensure the data are entered accurately.
 - Fourth, EPA does not have reliable operating cost data for its laboratory enterprise, because the agency's financial management system does not track operating costs in sufficient detail to break out information for individual laboratories or for the laboratory enterprise as a whole. Reliable operating cost data are important in determining whether a laboratory facility is operating efficiently, a determination that should inform both capital investment and property disposal decisions.

EPA Does Not Use a Comprehensive Workforce Planning Process for Its Laboratories

EPA does not use a comprehensive planning process for managing its laboratories' workforce. For example, we found that not all of the regional and program offices with laboratories prepared workforce plans as part of an agencywide planning effort in 2007, and for those that did, most did not specifically address their laboratories' workforce. In fact, some regional management and human resource officials we spoke with were unaware of the requirement to submit workforce plans to the Office of Human Resources. Some of these managers told us the program and regional workforce plans were a paperwork exercise, irrelevant to the way the workforce is actually managed. Managers in program and regional offices said that workforce planning for their respective laboratories is fundamentally driven by the annual budgets of program and regional offices and ceilings for full-time equivalents (FTE).¹⁸

In addition, none of the program and regional workforce plans we reviewed described any effort to work across organizational boundaries to integrate or coordinate their workforce with the workforces of other EPA laboratories. For example, although two regional workforce plans discussed potential vulnerability if highly skilled laboratory personnel retired, neither plan explored options for sharing resources across

¹⁸An FTE consists of one or more employed individuals who collectively complete 2,080 work hours in a given year. Therefore, one full-time employee or two half-time employees equal one FTE.

regional boundaries to address potential skill gaps. According to *EPA's Regional Laboratory System 2009 Annual Report*, many of the regional laboratories provide the same or similar core analytical capabilities—including a full range of routine and specialized chemical and biological testing of air, water, soil, sediment, tissue, and hazardous waste. Nonetheless, in these workforce plans, each region independently determines and attempts to address its individual workforce needs. As a result, by not exploring options for sharing resources among the ORD, program, and regional boundaries to address potential skill gaps, EPA may be missing opportunities to fill critical occupation needs through resource sharing.

Moreover, EPA does not have basic demographic information on the number of federal and contract employees currently working in its 37 laboratories. Specifically, EPA does not routinely compile the information needed to know how many scientific and technical employees it has working in its laboratories, where they are located, what functions they perform, or what specialized skills they may have. In addition, the agency does not have a workload analysis for the laboratories to help determine the optimal numbers and distribution of staff throughout the enterprise. We believe that such information is essential for EPA to prepare a comprehensive laboratory workforce plan to achieve the agency's mission with limited resources. Because EPA's laboratory workforce is managed separately by 15 independent senior officials, information about that workforce is tracked separately and is not readily available or routinely compiled or evaluated. Instead, EPA has relied on ad hoc calls for information to compile such data.

In response to our prior reports on EPA's workforce strategy¹⁹ and the work of the EPA Inspector General, EPA hired a contractor in 2009, in part to conduct a study to provide information about the agency's overall workload, including staffing levels and workload shifts for six major

¹⁹GAO, *Human Capital: Implementing an Effective Workforce Strategy Would Help EPA to Achieve Its Strategic Goals*, [GAO-01-812](#) (Washington, D.C.: July 31, 2001); *Human Capital: Key Principles for Effective Strategic Workforce Planning*, [GAO-04-39](#) (Washington, D.C.: Dec. 11, 2003); *Clean Water Act: Improved Resource Planning Would Help EPA Better Respond to Changing Needs and Fiscal Constraints*, [GAO-05-721](#) (Washington, D.C.: July 22, 2005); *EPA's Execution of Its Fiscal Year 2007 New Budget Authority for the Enforcement and Compliance Assurance Program in the Regional Offices*, [GAO-08-1109R](#) (Washington, D.C.: Sept. 26, 2008); *Environmental Protection Agency: Major Management Challenges*, [GAO-09-434](#) (Washington, D.C.: Mar. 4, 2009).

functions, including scientific research. In its budget justification for fiscal year 2012, however, the agency reported to Congress that a survey of the existing workload information provided by the contractor will not immediately provide information sufficient to determine whether changes are needed in workforce levels. As of October 2011, EPA had not released the results of this study, and we therefore cannot comment on whether its content has implications for the laboratories. The agency asked its National Advisory Council for Environmental Policy and Technology to help address scientific and technical competencies as it develops a new agencywide workforce plan. However, the new plan is not complete, and therefore it is too early to tell whether the council's recommendations will have implications for the laboratories.

Finally, in our July 2011 report on EPA's laboratory enterprise we recommended, among other things, that EPA develop a coordinated planning process for its scientific activities and appoint a top-level official with authority over all the laboratories, improve physical and real property planning decisions, and develop a workforce planning process for all laboratories that reflects current and future needs of laboratory facilities. In written comments on the report, EPA generally agreed with our findings and recommendations.

Chairman Harris, Ranking Member Miller, this concludes my prepared statement. I would be happy to respond to any questions that you or other members of the subcommittee may have at this time.

GAO Contact and Staff Acknowledgments

For further information on this statement, please contact David Trimble at (202) 512-3841 or trimbled@gao.gov. Contact points for our Congressional Relations and Public Affairs offices may be found on the last page of this statement. Other staff that made key contributions to this testimony include Diane LoFaro, Assistant Director; Jamie Meuwissen; Angela Miles; and Dan Semick.

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