U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

Operating efficiently and effectively

EPA Needs to Improve Its Planning and Management of Laboratory Consolidation Efforts

Report No. 21-E-0033 **December 7, 2020**

Report Contributors:

Michael Davis
Madhu Dev
Ashley Langer
Nicole Pilate
Gloria Taylor-Upshaw

Abbreviations

EPA	U.S. Environmental Protection Agency
GAO	U.S. Government Accountability Office
OIG	Office of Inspector General
OMS	Office of Mission Support

Cover Photos: Three facilities involved in the EPA's laboratory consolidation efforts. *Left:* National Vehicle and Fuel Emissions Laboratory in Ann Arbor, Michigan. *Top right:* Western Ecology Division Research Laboratory, which has been renamed the Pacific Ecological Systems Division, in Corvallis, Oregon. *Bottom right:* Ecosystem Research Division Laboratory in Athens, Georgia. (EPA OIG photos)

EPA Office of Inspector General
1200 Pennsylvania Avenue, NW (2410T)
Washington, D.C. 20460
(202) 566-2391
www.epa.gov/oig

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U.S. Environmental Protection Agency
Office of Inspector General

21-E-0033
December 7, 2020

At a Glance

EPA Needs to Improve Its Planning and Management of Laboratory Consolidation Efforts

Why We Did This Evaluation

We conducted this evaluation to determine whether the U.S. Environmental Protection Agency's laboratory consolidation efforts in Athens, Georgia; Corvallis, Oregon; and Ann Arbor, Michigan, are within cost and on schedule.

Based on its March 2015 *Synthesis Report of the US EPA Laboratory Enterprise Evaluation,* the EPA concluded that it could realize approximately $409 million in avoided costs and savings over 30 years. The Synthesis Report included actions and options regarding which laboratory facilities to consolidate or co-locate. As the Agency's central planner and coordinator, the Office of Mission Support's Real Property Services Division is responsible for the oversight of laboratory consolidation efforts.

This evaluation addresses the following:

- *Operating efficiently and effectively.*

This evaluation addresses a top EPA management challenge:

- *Complying with key internal control requirements (data quality).*

Address inquiries to our public affairs office at (202) 566-2391 or OIG_WEBCOMMENTS@epa.gov.

List of OIG reports.

What We Found

The EPA needs to improve how it plans and manages its laboratory consolidation efforts. For the three projects we reviewed, we found that the Office of Mission Support did not:

- Develop a master plan to guide the Ann Arbor laboratory consolidation effort. As of February 2020, the Agency had expended over $2 million for this project without having a master plan.
- Document key decisions related to laboratory consolidation activities.

Without improved management controls, the EPA risks continued cost overruns and delays in its laboratory consolidation efforts. Overruns and delays will reduce the Agency's potential avoided costs and savings of approximately $409 million over 30 years.

As a result, the Agency did not have documentation explaining why projects were delayed or why it incurred over $8 million in cost overruns for the Corvallis and Athens laboratory consolidation efforts.

The development and implementation of procedures and detailed requirements for managing laboratory consolidation efforts would reduce the risk of excessive cost overruns and delays. Better management of the projects could also help the EPA meet its goal of reducing the number of leases and cost of facility management, which would allow the Agency to direct resources to core environmental work.

Recommendations and Planned Agency Corrective Actions

We recommend that the assistant administrator for Mission Support develop and implement procedures that include detailed requirements for planning and managing laboratory consolidation efforts. These requirements should address developing master plans and program requirements, tracking and updating cost and schedule estimates, and maintaining decisional documentation.

The EPA agreed with our recommendation. The recommendation is resolved with corrective action pending,

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

THE INSPECTOR GENERAL

December 7, 2020

MEMORANDUM

SUBJECT: EPA Needs to Improve It's Planning and Management of Laboratory Consolidation Efforts
Report No. 21-E-0033

FROM: Sean W. O'Donnell

TO: Donna J. Vizian, Principal Deputy Assistant Administrator
Office of Mission Support

This is our report on the subject evaluation conducted by the Office of Inspector General of the U.S. Environmental Protection Agency. The project number for this evaluation was OA&E-FY20-0353. This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The EPA's Office of Mission Support is responsible for implementing the recommendation in this report.

In accordance with EPA Manual 2750, your office provided acceptable corrective actions in response to the recommendation in this report. Corrective actions are pending, and no final response to this report is required. However, if you submit a response, it will be posted on the OIG's website, along with our memorandum commenting on your response. Your response should be provided as an Adobe PDF file that complies with the accessibility requirements of Section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that you do not want to be released to the public; if your response contains such data, you should identify the data for redaction or removal along with corresponding justification.

We will post this report to our website at www.epa.gov/oig.

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Appendices

Chapter 1
Introduction

Purpose

The U.S. Environmental Protection Agency's Office of Inspector General conducted this evaluation to determine whether the EPA's laboratory consolidation efforts in Athens, Georgia; Corvallis, Oregon; and Ann Arbor, Michigan, were within cost and on schedule.

Top Management Challenge

This evaluation addresses the following top management challenge for the Agency, as identified in OIG Report No. 20-N-0231, *EPA's FYs 2020–2021 Top Management Challenges*, issued July 21, 2020:

- *Complying with key internal control requirements (data quality).*

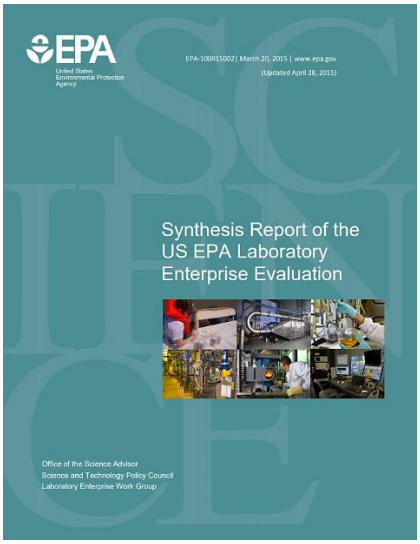
Background

In 2007, the then-EPA administrator requested that the Agency perform both a short-term review and long-term evaluation of its laboratory enterprise. In response to the administrator's short-term review request, the EPA published *Commonsense Actions and Best Practices that Improve Laboratory Efficiency and Effectiveness* in October 2008, which detailed over 500 actions that EPA laboratories could take to reduce their environmental impact and improve efficiency. In response to the administrator's long-term evaluation request, the EPA published its *Synthesis Report of the US EPA Laboratory Enterprise Evaluation* in March 2015, which noted specific actions the EPA could take in relation to its laboratory enterprise. Based on this Synthesis Report, the EPA concluded, among other things, that savings may be realized by shifting laboratories from leased facilities to owned facilities where additional space capacity exists.

The Synthesis Report is the culmination of an EPA analysis, a consulting firm's assessments, and an expert committee report that provided the EPA with information about its laboratory network. Specifically, the EPA began an analysis of its laboratory network in December 2012 to identify how to increase the efficiency of its facilities and the effectiveness of its science, while also retaining its ability to provide the research, science, and technical support that advances its mission. As part of this study, the EPA worked with a consulting firm to develop a framework for analyzing options to increase the efficiency of the Agency's laboratory enterprise. The EPA also requested recommendations for strengthening the effectiveness of its laboratory enterprise from an independent expert committee convened by the National Research Council of the National Academy of Sciences. The Synthesis Report presents the collective results of these efforts to provide conclusions about and identify how the Agency could proceed.

Appendix A lists reports related to this overall effort that were issued between October 2008 and March 2015.

EPA Synthesis Report Recommends Actions to Consolidate EPA's Laboratory Enterprise



Cover page of the EPA's synthesis report. (EPA image)

The purpose of the EPA's Synthesis Report is "to present a summary of the completed analysis, provide observations and conclusions, and identify actions that EPA could undertake to improve its laboratory enterprise for the longer term." The Synthesis Report states that the information it presents will help the EPA make decisions that could increase the efficiency and effectiveness of its laboratory enterprise. This report serves as the basis for the Agency's laboratory consolidation efforts.

As cited in the Synthesis Report, the EPA's laboratory enterprise in 2012 consisted of 34 facilities that provide critical scientific, technical, and research support for numerous Agency decisions, including those about health standards, emergency response, and enforcement. These facilities included a mix of leased and owned laboratories (Table 1).

Table 1: EPA laboratory inventory by ownership type

EPA laboratory ownership type*	Number of facilities
Owned by:	
EPA	19
U.S. General Services Administration *EPA uses facilities under the control of the General Services Administration.*	2
Leased by:	
EPA *EPA leases these laboratories directly from a landlord.*	4
General Services Administration *The General Services Administration leases these laboratories from a private owner.*	8
Other:	
Special Use Agreement *EPA personnel may be co-located with other federal agencies or with state or local entities with mutual interests.*	1
Total	**34**

Source: EPA's *Synthesis Report of the US EPA Laboratory Enterprise Evaluation*, page 9. (EPA OIG table)

* Ownership type definitions and examples are adopted from EPA's *Nationwide Facilities Guide.*

Based on an analysis of several different scenarios, the Synthesis Report concludes that the EPA could reduce its laboratory footprint by approximately 380,000 gross square feet and the number of its laboratory facilities from 34 to 26. The March 2015 Synthesis Report states that with the full support of the then-EPA administrator and deputy administrator, the Agency decided that it should move forward with a proposed course of action that includes the following actions and options:

- **Reproductive Toxicology Facility in Durham, North Carolina.** Consolidate activities conducted at the Reproductive Toxicology Facility into the nearby Research Triangle Park, North Carolina, main building.

- **Grosse Ile, Michigan.** Discontinue laboratory activities in the Grosse Ile facility, designating it as a field station.

- **Bay St. Louis, Mississippi.** Consolidate laboratory activities conducted at the Bay St. Louis facility into the Fort Meade, Maryland, laboratory.

- **Wheeling, West Virginia.** Discontinue laboratory activities and conduct activities at the Fort Meade laboratory.

- **Golden, Colorado.** Discontinue the lease for the Region 8 laboratory and co-locate the laboratory with the nearby National Enforcement Investigations Center facility in Lakewood, Colorado.

- **Willamette Research Station in Corvallis, Oregon.** Consolidate the Willamette Research Station into the nearby laboratory facility in Corvallis, Oregon.

- **Athens, Georgia.** Assess all options, including co-locating, consolidating, or upgrading the laboratory, as well as retaining the laboratory's "as-is" footprint.

- **Chelmsford, Massachusetts.** Assess all options, including co-locating, consolidating, and upgrading this leased laboratory, as well as retaining the laboratory's "as-is" footprint.

By taking the above actions to reduce its laboratory footprint, the EPA concluded that it could realize approximately $409 million in avoided costs and savings over 30 years.

As noted in the Synthesis Report, any laboratory actions would require detailed site-specific master planning to further inform decision-making. The report recommends that the Office of Administration and Resources Management—which in November 2018 was merged with the Office of Environmental Information to create the Office of Mission Support, or OMS—prepare portfolio-

level and site-specific master plans to effectively manage the EPA's laboratory facilities and strategically assess specific needs; estimate costs, savings, and environmental benefits; and implement practical actions to improve the efficiency of the laboratories.

Agency Guidance for Construction and Renovations

The EPA's guidance for facilities includes a master planning process that involves a detailed site investigation to assess facility and site conditions, as described in the EPA's *Nationwide Facilities Guide.* Although this guidance does not list specific requirements for laboratory consolidation efforts, its master planning process includes interviewing facility staff and management to identify areas that do not meet the needs of the program or region. A preliminary master plan is then developed for each project, along with cost estimates and implementation strategies. Per the Guide, the master plan should be updated about every five years to incorporate changes in program requirements.

The EPA's guidance for facilities also includes the *EPA Facilities Manual: Volume 2, Architecture and Engineering Guidelines.* As part of the master planning process, this Manual directs the EPA project manager, representatives from the EPA's Real Property Services Division, and the director and EPA facility manager for the project location, as appropriate, to coordinate to develop a program of requirements. The intent is that all parties involved understand the project goals and requirements. The program of requirements should include:

- An overview of the project scope, objectives, requirements, and performance criteria.

- A description of the facility spaces to be constructed or renovated; area requirements for interior spaces; and area requirements for exterior spaces, if applicable.

The U.S. Government Accountability Office's *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs* states that "documentation should be done in parallel with the cost estimate's development, so that the quality of the data, methods, and rationale are fully justified." A high quality cost estimate process consists of clearly defining what the estimate includes and excludes, as well as identifying the program schedule by phase. Additionally, the GAO's *Schedule Assessment Guide: Best Practices for Project Schedules* states that a project schedule is necessary to provide not only a road map for systematic project execution but also the means to gauge progress, identify and resolve potential problems, and promote accountability at all levels of the program. A schedule provides a time sequence for the duration of a program's activities and helps everyone understand both the dates for major milestones and the activities that drive the schedule.

Obtaining funding for projects is a separate process from the master planning process. Federal agencies request congressional approval for funding through congressional justifications following the submission of the president's budget. Funds are then approved by Congress and are available for federal agencies to spend, subject to any limitations imposed by Congress.

Responsible Offices

The OMS's Office of Administration's Real Property Services Division is responsible for the Agency's fixed property, which includes land and buildings, such as the EPA's laboratory enterprise. As such, it is responsible for the oversight of laboratory consolidation efforts, serving as the central planner and coordinator for facilities while delegating control of the management of EPA facilities.

The OMS's Office of Resources and Business Operations staff serve as the principal staff to the assistant administrator for Mission Support on matters related to program management, budget, human resources, communications, workforce development programs, and administrative operations.

OMS project managers visit sites once or twice a month to conduct oversight activities during active construction. OMS project managers also hold weekly teleconferences with contractors and regional and program laboratory personnel. According to the OMS, other stakeholders also have various roles and responsibilities related to the Agency laboratory consolidation efforts:

- The EPA's **Office of Research and Development** provides environmental decommissioning due-diligence efforts to ensure that laboratories are not at risk of contaminating the environment during construction efforts.

- Regional and program **laboratory personnel**, such as laboratory directors, facility managers, and branch chiefs, aid in developing master plans for consolidation efforts.

- The OMS's **Office of Acquisition Solutions** provides procurement services for construction and support services.

- Regional **human resources offices** provide relocation services to the regions and program offices at the direction of the OMS.

- **Contractors** provide consolidation construction services at the facilities.

Scope and Methodology

We conducted our evaluation from October 2019 to September 2020 in accordance with the *Quality Standards for Inspection and Evaluation* published in

January 2012 by the Council of the Inspectors General on Integrity and Efficiency. Those standards require that we plan and perform the evaluation to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings, conclusions, and recommendations based on our review objective. We believe that the evidence obtained provides a reasonable basis for our findings, conclusions, and recommendations based on our review.

To identify applicable criteria for laboratory consolidation efforts, we reviewed federal guidance and EPA policies, including:

- Office of Management and Budget, Circular No. A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*, dated July 2016.
- *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, dated March 2009.
- GAO, *Schedule Assessment Guide: Best Practices for Project Schedules*, dated December 2015.
- *EPA Facilities Manual: Volume 2, Architecture and Engineering Guidelines*, dated June 2019.
- EPA's *Nationwide Facilities Guide*, dated June 2009.

To address our evaluation objective, we reviewed the EPA's activities for three of its laboratory consolidation efforts. We selected these three projects based on our review of the EPA's fiscal year 2020 Congressional Justification, which highlighted their costs and schedules (Table 2).

Table 2: Laboratory consolidation efforts evaluated by OIG

Consolidation effort	Estimated cost	Estimated completion date	Facilities to be consolidated	Facility location	Ownership type
Corvallis	$46 million	January 2023	Western Ecology Division*	Corvallis	EPA owned
			Willamette Research Station	Corvallis	EPA owned
			Central Regional Laboratory (Region 9)	Richmond, California	EPA leased
Athens	$51 million	September 2025	Ecosystem Research Division Laboratory*	Athens	EPA owned
			Science and Ecosystem Support Division	Athens	General Services Administration leased
Ann Arbor	Undetermined. EPA did not develop a master plan for this effort.	Fiscal year 2019	National Vehicle and Fuel Emissions Laboratory*	Ann Arbor	EPA owned
			Large Lakes and Rivers Forecasting Research Branch	Grosse Ile, Michigan	EPA owned

Source: OIG analysis of EPA's fiscal year 2020 Congressional Justification and EPA cost data. (EPA OIG table)

* Red text denotes the facility into which the other facility or facilities at each site are being consolidated.

In November 2019 and January 2020, we toured five laboratory facilities located in Ann Arbor, Athens, Corvallis, and Richmond.

For each laboratory consolidation effort that we evaluated, we reviewed documents from the EPA's Acquisition System and Compass Data Warehouse. We held interviews with OMS, Office of Research and Development, and regional staff, as well as with laboratory personnel at the facilities relevant to our evaluation. We also obtained and reviewed master plans, statements of work, congressional justifications, the presidential budget, contracts, and actual cost data for the related consolidation efforts. We based our review of cost and schedule data on the completed construction phases for each of the three laboratory consolidation efforts as of February 2020.

EPA's Acquisition System

The EPA's Acquisition System serves as a modern, integrated, web-based, centralized system for EPA acquisitions. It enables all key stakeholders in the procurement process to use one automated system throughout the acquisition life cycle, from requisitioning to contract closeout.

Source: easinfo.epa.gov

Chapter 2
EPA Needs to Follow Existing Guidance and Implement Requirements for Laboratory Consolidation Efforts

The EPA needs to improve its planning and management of laboratory consolidation efforts. For the three consolidation efforts we reviewed, we found that the OMS did not:

- Develop a master plan to guide the Ann Arbor consolidation effort.
- Document key decisions related to consolidation activities.

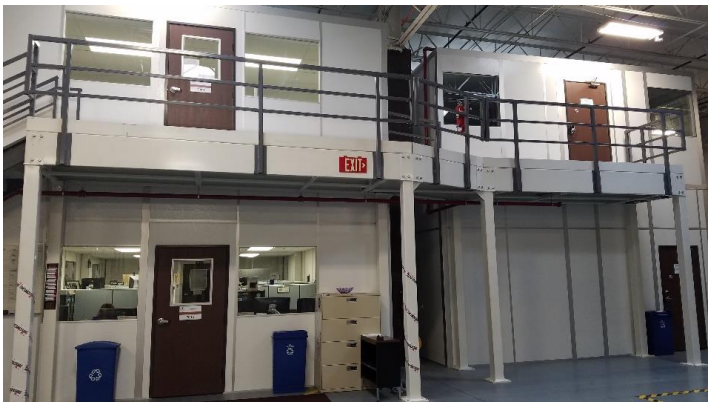
The OMS did not have standard procedures and requirements for planning and managing laboratory consolidation efforts. If the Agency continues to incur cost overruns and does not complete consolidation efforts on schedule, the EPA will not achieve the estimated $409 million in avoided costs and savings over 30 years that it projected based on the Synthesis Report. As of February 2020, the Agency had incurred a combined $8 million in cost overruns for the Corvallis and Athens consolidation efforts.

Federal policy states that management is responsible for establishing and maintaining internal controls, implementing management practices, and maintaining documentation to demonstrate operating effectiveness. Additionally, the GAO's best practices for developing and managing capital program costs state that documentation should be done in parallel with the cost estimate's development.

OMS Did Not Develop Ann Arbor Consolidation Master Plan and Program of Requirements

The OMS did not develop a master plan and program of requirements for the Ann Arbor laboratory consolidation effort. In May 2017, the OMS proposed installing a prefabricated building in the Ann Arbor laboratory facility to house the Agency's Region 5 and Criminal Investigation Division personnel from the Large Lakes and Rivers Forecasting Research Station in Grosse Ile. By September 2019, the consolidation effort was complete.

The OMS did not follow the *EPA Facilities Manual: Volume 2, Architecture and Engineering Guidelines;* the *GAO Cost Estimating and Assessment Guide*; or the EPA's *Nationwide Facilities Guide* to establish the projected cost and schedule of the Ann Arbor consolidation effort in a master plan or program of requirements. The OMS told us that master plans are developed to assess space and infrastructure needs for EPA sites that will remain occupied and operational. The OMS should have created a master plan and program of requirements for the Ann Arbor



Prefabricated buildings inside the EPA's Ann Arbor laboratory facility housing the EPA Region 5 and Criminal Investigation Division staff from Grosse Ile. (EPA OIG photo)

consolidation to determine the cost and schedule for installing a prefabricated building into the Ann Arbor laboratory facility. Instead, the Agency determined the costs and schedule for the consolidation effort as it progressed through the acquisition process.

The OMS spent $2,460,829 and took over two years to complete the Ann Arbor consolidation effort, but it did not have any planned costs and schedule against which to measure the progress of the Ann Arbor project. If the EPA follows its procedures and implements the requirements for a master plan and program of requirements during consolidation efforts, the Agency could better plan costs and scheduling expectations for these projects.

OMS Did Not Create and Maintain Documentation of Decisions Related to Consolidations

The OMS did not maintain documentation for management decisions—such as those involving project start dates or significant project changes—that related to the three laboratory consolidation efforts we reviewed. The OMS supposedly relied on and used the EPA's Acquisition System to maintain, document, and track changes to the consolidation efforts. However, we did not find documents in the system to support OMS decisions related to the projects. For example, the EPA's Acquisition System did not include documentation regarding the decision to add the Richmond laboratory to the Corvallis consolidation project, nor was there documentation regarding the specific cost methods used for the project estimates. Instead, the system housed only documents related to the contract modifications.

OMS staff referred us to the president's budget and OMS senior officials for decisional documents, which the staff used as a basis for any formalized decisions to start the consolidation efforts. When we asked senior officials in the OMS's Office of Resources and Business Operations about decisional documents, they stated that the Agency communicated and documented the decisions in the president's budget. The president's budget does not, however, explain why or how the OMS made decisions regarding the consolidation efforts. Additionally, OMS staff stated that they used their professional judgement and prior projects to estimate costs for the consolidation effort.

The OMS should have a project file outside of the EPA's Acquisition System that documents management decisions. The *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs* states that poorly documented estimates can cause a program's credibility to

suffer because the documentation cannot explain the rationale of the underlying cost elements. The OMS should create and maintain documentation for management decisions and cost estimates to show that they are accurate, complete, and high quality, since many cost estimates are developed to support a budget request or facilitate a decision between competing alternatives.

EPA Does Not Have Specific Procedures and Requirements for Planning and Tracking Consolidations

OMS staff used the EPA's Acquisition System to manage the laboratory consolidation efforts. They also used their knowledge and experience to determine how costs should be updated. The *EPA Facilities Manual* and *Nationwide Facilities Guide* outline general guidelines regarding project management, but except for the procurement process, the Manual and Guide do not provide specific requirements for project management, such as planning, tracking, updating projects, or maintaining documentation related to projects.

Additionally, the OMS did not have its own methodology to track and document the costs and schedules for consolidation efforts. OMS staff said that any changes to consolidation efforts are documented, approved, and tracked through the procurement process and placed in the EPA's Acquisition System. As we noted previously in this chapter, however, the OMS did not have records that explained changes in project costs and schedules.

Office of Management and Budget Circular No. A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*, states that documentation is required to demonstrate the design, implementation, and operating effectiveness of an entity's internal control system. The OMS should have specific requirements to support its laboratory consolidation efforts, including tracking changes to project costs and schedules.

EPA Risks Not Meeting Projected Savings and Lease Reduction Goals

As of February 2020, the Agency incurred over $8 million in cost overruns for the Corvallis and Athens laboratory consolidation efforts. It also expended over $2 million for the Ann Arbor consolidation effort without a master plan or a program of requirements in place to manage the project. If the OMS continues to exceed project costs and does not complete consolidations on schedule, the EPA will not achieve the potential avoided costs and savings of approximately $409 million over 30 years that it projected based on the Synthesis Report. By developing and implementing a process, procedures, and detailed requirements, the EPA will more effectively manage and track its consolidation efforts, as well as maintain decisional documentation related to these efforts. In addition, the EPA could meet its goal of reducing the number of leased facilities and the cost of facility management, which would allow the Agency to direct resources to core environmental work.

Cost Overruns and Delays Incurred for Corvallis and Athens Consolidation Efforts

As of February 2020, the OMS spent approximately $8.5 million over its planned costs for the completed phases of the Corvallis and Athens consolidation efforts. Specifically, the OMS spent almost $7.0 million over its planned cost for the Corvallis consolidation effort and almost $1.5 million over its planned cost for the Athens consolidation effort (Table 3). The OMS attributed some cost overruns to cost escalations and contract modifications for unplanned design changes.

Table 3: Cost overruns for Corvallis and Athens laboratory consolidation efforts

Consolidation effort	Planned costs	Actual costs	Costs overruns
Corvallis	$12,457,600	$19,448,817	$6,991,217
Athens	4,562,586	6,056,076	1,493,490
Total	**$17,020,186**	**$25,504,893**	**$8,484,707**

Source: OIG analysis of EPA's Corvallis and Athens laboratory consolidation cost data. (EPA OIG table)

OMS staff said that because they did not have enough funding for the Corvallis and Athens consolidation efforts, they requested five years of additional funding from Congress in 2015 for those projects. The Agency should consider its funding capabilities when updating cost estimates and schedules for laboratory consolidation efforts.

Corvallis and Athens Consolidation Efforts Were Behind Schedule

As of February 2020, the OMS was over two years behind its plans to consolidate facilities at Corvallis and more than one year behind its plans for the Athens facilities. The OMS stated that schedules can be impacted if the laboratory consolidation efforts are not funded as originally forecasted, since schedules are directly tied to funding availability. Having specific procedures that require updates to consolidation project schedules when there are significant project changes or delays would help align the affected phase completion dates.

The EPA's main Office of Research and Development Laboratory in Athens. (EPA OIG photo)

Corvallis Consolidation Effort Delays

The Corvallis consolidation effort was scheduled to start in July 2013 and be completed in June 2017. Table 4 shows that none of the phases of the project that were completed as of February 2020 were finished on schedule. From actual contract expenditures, we verified that the two completed phases started on time but were not completed until December 2019, over two years after the

expected completion dates. Corvallis facility staff stated that the longer a consolidation effort is delayed, the more impact the delays have on an office's ability to meet its mission requirements. For example, the Willamette Research Station suspended its research efforts until it had a place to perform analyses. As a result of the construction delays, Corvallis staff were concerned that they would not meet the deadline for a congressionally required National Aquatic Research survey and report.

Table 4: Corvallis consolidation effort schedule delays

Corvallis consolidation completed phases	Contract number	Task order	Expected completion date	Actual completion date	Months over schedule
Phase 1a: Lab Modernization—Corvallis Design	EP-C-12-026	00003	November 2013	August 2015	21
		00007	January 2017	September 2018	20
		00008	June 2016	January 2017	7
Phase 1a: Lab Modernization—Corvallis Construction	EP-C-15-029	00001	January 2017	December 2019	35
Phase 2: Lab Modernization—Corvallis Design (Pacific Southwest Laboratory)	EP-C-12-026	0011	June 2017	October 2019	28

Source: OIG analysis of EPA's Corvallis laboratory consolidation schedule data. (EPA OIG table)

Athens Consolidation Project Delays

The Athens consolidation effort began in September 2017, and the OMS forecasted that Phase 2 would be completed by November 2019. As shown in Table 5, none of the phases were completed on time. In fact, construction for Phase 2, which is estimated to take one year to complete, had not started as of February 2020. By the time Phase 2 construction begins, the OMS will already be behind schedule.

Table 5: Athens consolidation schedule delays

Athens consolidation phases	Contract number	Task order	Expected completion date	Actual completion date	Months over schedule
Phase 1: Design, build and renovations of Lifespan building	EP-C-17-050	N/A	July 2018	April 2019	9
Phase 2/3: Main lab and outbuilding design	EP-C-17-026	N/A	August 2019	January 2020	5
Phase 2: Outbuilding construction	This phase was planned to be completed by November 2019; however, EPA had not started as of February 2020.				

Source: OIG analysis of EPA's Athens laboratory consolidation schedule data. (EPA OIG table)

Recommendation

We recommend that the assistant administrator for Mission Support:

1. Develop and implement procedures that include detailed requirements for planning and managing laboratory consolidation efforts. Requirements should address developing master plans and programs of requirements, tracking and updating cost and schedule estimates, and maintaining decisional documentation.

Agency Response and OIG Assessment

The EPA agreed with our recommendation. The OMS stated that it will develop programmatic changes that will address our concerns. Initially, the OMS proposed the following corrective actions, which it expected to complete by December 31, 2020:

- Continue developing programs of requirements listed in the *EPA Facilities Manual: Volume 2, Architecture and Engineering Guidelines*.
- Update the cost-and-schedule tracking systems and the status-of-funds reporting process.
- Continue to report and document consolidation decisions in the Agency's annual presidential budget submission and the Federal Real Property Profile.

On September 29, 2020, and October 15, 2020, however, we emailed the OMS with concerns that these initial proposed corrective actions did not address requirements for developing master plans and maintaining decisional documentation. In an October 23, 2020 email, the OMS clarified its proposed corrective actions and provided additional information on master planning and decisional documentation. Specifically, the OMS stated:

> OMS will include the [Program of Requirement] for cost estimating compliance in the EPA project management checklist for all future Scope of Work Documents – which will be verified through each project specific checklist.
>
> Master Planning requirements and scopes are site specific. However, each Scope of Work for a master plan contains the same overarching requirements for the information to be included in the site specific master plan. OMS will incorporate a section into the A & E guideline Volume 2, showing the requirements for the information to be included in each site specific master plan.
>
> OMS will maintain decisional documents as part of the project file.

With these clarifications, the EPA's planned corrective actions and estimated milestone date satisfy the intent of our recommendation, and we consider the recommendation resolved with corrective actions pending.

The Agency's response to the draft report is in Appendix B.

Status of Recommendation and Potential Monetary Benefits

RECOMMENDATIONS

Rec. No.	Page No.	Subject	Status[1]	Action Official	Planned Completion Date	Potential Monetary Benefits (in $000s)
1	13	Develop and implement procedures that include detailed requirements for planning and managing laboratory consolidation efforts. Requirements should address developing master plans and programs of requirements, tracking and updating cost and schedule estimates, and maintaining decisional documentation.	R	Assistant Administrator for Mission Support	12/31/20	

[1] C = Corrective action completed.
R = Recommendation resolved with corrective action pending.
U = Recommendation unresolved with resolution efforts in progress.

Appendix A

Reports Related to EPA's Laboratory Consolidation Efforts

Document title	Document issuer	Date issued	Report summary
Commonsense Actions and Best Practices that Improve Laboratory Efficiency and Effectiveness	EPA	October 2008	This report serves as the EPA's response to the administrator's request for a near-term review of the EPA's laboratory enterprise. The report suggests that a more comprehensive study be performed to look at ways to enhance resource sharing through bulk purchasing, co-location, and specialized equipment sharing and purchasing, as well as ways to share the broad range of technical expertise available within the EPA.
Streamlining Government *Questions to Consider When Evaluating Proposals to Consolidate Physical Infrastructure and Management Functions*	GAO	May 2012	This report addresses the components of a successful laboratory consolidation effort and outlines fundamental questions to consider when evaluating consolidation proposals.
Rethinking the Components, Coordination, and Management of US EPA Laboratories	National Research Council	September 2014	The report assessed the Agency's highest-priority needs for mission-relevant laboratory science and technical support to develop principles for the efficient and effective management of the EPA's laboratory enterprise.
Environmental Protection Agency Nationwide Laboratory Assessment	Smithgroup JJR (contractor)	February 2015	This nationwide assessment of the EPA's laboratory enterprise was developed to study and evaluate the efficiency of the laboratory portfolio and provide the EPA with tools and options to assist with future decision-making.
Synthesis Report of the US EPA Laboratory Enterprise Evaluation	EPA	March 2015	In 2012, the EPA began this evaluation to identify opportunities to increase its efficiency and effectiveness while ensuring its ability to fulfill its mission. The EPA's conclusions in this evaluation were based on the National Research Council's and contractor's reports to realize savings by shifting from leased facilities to EPA-owned facilities.

Agency Response to Draft Report

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

OFFICE OF MISSION SUPPORT

MEMORANDUM

SUBJECT: Response to Office of Inspector General Draft Report Project No. OA&E-FY20-0353 "*EPA Needs Better Planning and Controls to Improve Its Management of Laboratory Consolidations*," dated September 8, 2020

FROM: Donna J. Vizian, Principal Deputy Assistant Administrator DONNA VIZIAN Digitally signed by DONNA VIZIAN Date: 2020.09.29 08:54:35 -04'00'

TO: Michael Davis, Efficiency Directorate
Office of Audit and Evaluation
Office of Inspector General

Thank you for the opportunity to respond to the issues and recommendations in the subject audit report. The following is a summary of the Office of Mission Support's position.

AGENCY'S OVERALL POSITION

We agree with the report's findings and have begun to develop programmatic changes which will address the concerns of the Office of Inspector General.

OMS RESPONSE TO REPORT RECOMMENDATION 1

No.	Recommendation	High-Level Intended Corrective Action(s)	Estimated Completion Date
1	Develop and implement procedures that include detailed requirements for planning and managing laboratory consolidation efforts. Requirements should address developing master plans and programs of requirements, tracking and updating cost and schedule estimates, and maintaining decisional documentation.	We will continue to develop programs of requirements documents per the requirements listed in the EPA National Facilities Manual, Volume 2 and ensure all POR documents include an overview of the project scope, objectives, requirements, performance criteria, facility description and area requirements.	December 31, 2020

		We will ensure all POR documents comply with the GAO cost estimating and assessment guide. OMS will update the current cost and schedule tracking systems and the current status of funds reporting process to include tracking project cost accounting and schedule updates consistent with OMB's Circular A-123, as required. OMS will continue to report and document consolidation decisions in the agency's annual Presidential budget submission and the Federal Real Property Profile.	

If you have any questions regarding this response, please contact Mitch Hauser, Audit Follow-up Coordinator, of the Office of Resources and Business Operations, (202) 564-7636 or hauser.mitchell@epa.gov.

Cc: Gloria Taylor Upshaw
Rashmi Bartlett
James Hatfield
Richard Eyermann
Nicole Pilate
Ashley Langer
Yvette Jackson
Alva Daniels
Lenee Morina
Jessy Branham
Dan Amon
Steve Blankenship
Ayesha Sayeed
Jason Bushta
Dan Coogan
Jan Jablonski
Monisha Harris
Marilyn Armstrong
Mitchell Hauser
Allison Thompson
Andrew LeBlanc
Nikki Wood

Appendix C

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