



Report to Chairman, Committee
on Homeland Security and
Governmental Affairs,
U.S. Senate

January 2014

FEDERAL REAL PROPERTY

Improved
Transparency Could
Help Efforts to
Manage Agencies'
Maintenance and
Repair Backlogs

GAO Highlights

Highlights of [GAO-14-188](#), a report to the Chairman, Committee on Homeland Security and Governmental Affairs, U.S. Senate

Why GAO Did This Study

GAO has designated federal real property as a high-risk area due, in part, to deferred maintenance and repair that contributes to deteriorating assets. GAO has reported that the eventual need to address deferred maintenance and repair could significantly affect future budget resources.

GAO was asked to review federal deferred maintenance and repair backlogs. GAO examined, among other things, (1) selected agencies' estimated fiscal year 2012 deferred maintenance and repair backlogs and (2) the strategies, if any, these agencies used to reduce their backlogs and how those strategies compared to leading practices. GAO selected five agencies for review that had a high ratio of deferred maintenance and repairs to annual operating costs. GAO identified leading practices in managing maintenance and repair backlogs from NRC reports, analyzed data and documents from the selected agencies and the NRC, and interviewed officials from OMB, FASAB, and the selected agencies.

What GAO Recommends

GAO recommends that OMB, in collaboration with agencies, collect and report information on (1) agencies' costs for annual maintenance and repair performed, and (2) funding spent to manage their existing backlogs. OMB agreed with our recommendations. Technical comments from OMB, DHS, DOE, GSA, VA, and the Interior were incorporated as appropriate.

View [GAO-14-188](#). For more information, contact David J. Wise at (202) 512-2834 or wised@gao.gov.

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Improved Transparency Could Help Efforts to Manage Agencies' Maintenance and Repair Backlogs

What GAO Found

The five federal agencies GAO reviewed—the General Services Administration (GSA) and the Departments of Energy (DOE), Homeland Security (DHS), the Interior, and Veterans' Affairs (VA)—reported fiscal year 2012 deferred maintenance and repair backlog estimates that ranged from nearly \$1 billion to \$20 billion. In accordance with Federal Accounting Standards Advisory Board (FASAB) standards, agencies report backlog estimates in required supplementary information accompanying their financial statements in their annual financial reports. In addition, data reported by agencies and included in the Federal Real Property Profile (FRPP)—a database overseen by the Office of Management and Budget (OMB) in coordination with agencies comprising the Federal Real Property Council (FRPC)—provides information that can be used to estimate an agency's backlog. FASAB and FRPP guidelines do not share a common definition of deferred maintenance, and an agency can make different determinations when reporting information in its financial reports and to FRPP, resulting in dissimilar backlog estimates. In addition, agencies use different methods to determine and report backlogs, making estimates across agencies not comparable. For example, Interior excludes, while DHS includes, costs for some assets scheduled for disposal. In 2011 and 2012, FASAB adopted new standards that (1) clarify the definition of deferred maintenance and repair and (2) emphasize the need for consistency over time in determining and reporting backlogs. FRPC is considering incorporating the FASAB definition of deferred maintenance and repair in its fiscal year 2014 FRPP reporting guidance. These changes may result in improved information on agencies' backlogs and prove beneficial over time.

All five of the selected agencies followed eight of the nine leading practices GAO identified for managing maintenance and repair backlogs, such as the leading practice of identifying primary methods for delivering maintenance and repair activities. Four of the five agencies, however, generally did not employ a ninth leading practice—structuring budgets to identify the funding allotted (1) for maintenance and repairs and (2) to address existing backlogs. This leading practice emphasizes that sufficiently funding maintenance and repairs is important because the costs to address backlogs may be significantly greater than if maintenance and repairs had been undertaken when needed. In 2012, GAO found that agencies' budgeting processes differ to reflect the controls the appropriations committees consider important; the National Research Council (NRC) of the National Academies has also reported that agencies' budgets vary, in part, due to their different missions. OMB and FRPC agencies are working to refine FRPP data and develop performance measures that reflect current federal real-property management priorities. Thus, as OMB and FRPC agencies work to improve FRPC data and develop new performance metrics, the opportunity exists to revise requirements for agencies to collect and report costs agencies expend on annual maintenance and to address deferred maintenance and repair backlogs. Having greater information on agencies' annual funding of maintenance and repairs—and the corresponding effects on their maintenance and repair backlogs—would provide transparency about agencies' efforts to manage their real property assets and promote improved effectiveness of federal real property spending.

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Abbreviations

BOMA International	Building Owners and Management Association International
DHS	Department of Homeland Security
DOE	Department of Energy
Interior	Department of the Interior
ESPC	energy savings performance contract
FASAB	Federal Accounting Standards Advisory Board
FCA	facility condition assessment
FRPC	Federal Real Property Council
FRPP	Federal Real Property Profile
FWS	Fish and Wildlife Service
GSA	General Services Administration
MBtu	Million British thermal units
NPS	National Park Service
NRC	National Research Council
NRM	non-recurring maintenance
OMB	Office of Management and Budget
SFFAS	Statement of Federal Financial Accounting Standards
UESC	utility energy service contract
VA	Department of Veterans Affairs

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January 23, 2014

The Honorable Thomas R. Carper
Chairman
Committee on Homeland Security and Governmental Affairs
United States Senate

Dear Chairman Carper:

We as well as others have reported that deferring maintenance and repair can reduce the overall life of federal facilities, lead to higher costs in the long term, and pose risks to safety and agencies' missions. In January 2003, we designated federal real property¹ as a high-risk area,² in part due to the deteriorating condition of some government facilities, which agencies estimate will require billions of dollars to repair or restore. The deteriorated conditions were due, in part, to the age of many federal facilities (often over 50 years old) and other factors that resulted in agencies' deferring some maintenance and repair of their facilities. We have also reported that federal agencies' estimates of their deferred maintenance and repair backlogs are not comparable and that without such information the federal government's fiscal exposure from agencies' backlogs is unclear.³

In light of questions about agencies' backlogs, you asked us to review the extent to which agencies are addressing their deferred maintenance and repair backlogs. This report discusses (1) selected agencies' estimates of their deferred maintenance and repair backlogs and (2) what strategies, if any, have these agencies used to reduce their backlogs and how those strategies compare to leading practices. In appendix I, we also provide information about and examples of deferred maintenance and repair projects that involved energy efficiency improvements.

¹Real property is generally defined as land and anything constructed on, growing on, or attached to land. In this report, when we refer to real property or assets, we are referring to assets identified in the Federal Real Property Profile—an inventory system for federal real property data—as buildings or structures.

²GAO, *High-Risk Series: Federal Real Property*, [GAO-03-122](#) (Washington, D.C.: January 2003).

³GAO, *Federal Real Property: Government's Fiscal Exposure from Repair and Maintenance Backlogs Is Unclear*, [GAO-09-10](#) (Washington D.C.: October 2008).

To address our objectives, we selected five civilian agencies that were examined as part of GAO's 2011 high-risk update on managing federal real property. The five agencies were also selected, in part, based on having a high ratio of deferred maintenance and repairs to annual operating costs. Based on these criteria, we selected the General Services Administration (GSA), the Department of Energy (DOE), the Department of Homeland Security (DHS), the Department of the Interior (Interior), and the Department of Veterans Affairs (VA). We gathered and analyzed deferred maintenance and repair data from fiscal year 2008 through fiscal year 2012⁴ from agency financial reports⁵ and the Federal Real Property Profile (FRPP)⁶ for each of our selected agencies. To assess the reliability of the agencies' deferred maintenance and repair data from fiscal year 2008 through fiscal year 2012 financial reports and the FRPP, we interviewed agency staffs who manage the data and asked them about verification and validation procedures to help ensure the accuracy of the data, as well as how the data are gathered and used to compile annual reports. We also reviewed agency guidance and instructions for reporting deferred maintenance and repair data. We found the data to be sufficiently reliable for our reporting purposes and we note the limitations we identified in the data where appropriate throughout this report. We interviewed Federal Accounting Standards Advisory Board (FASAB) officials and Office of Management and Budget (OMB) staff to understand changes made to the FASAB and FRPP backlog reporting requirements since 2011. To determine the reasons for differences in estimates from the two sources of reporting and the reasons for changes in agencies' estimates over time, we also reviewed FASAB's Statement of Federal Financial Accounting Standards (SFFAS)⁷ and related documentation concerning deferred maintenance and repair data reported annually by agencies in required supplementary information

⁴We selected this time period to encompass the available data subsequent to our 2008 review of agencies' maintenance and repair backlogs. See [GAO-09-10](#).

⁵Agencies report unaudited deferred maintenance and repair estimates as required supplementary information accompanying their financial statements in their annual financial reports. 31 U.S.C. § 3515.

⁶The FRPP is a federal real property database that, in general, describes the nature, use, and extent of all real property under the custody and control of executive branch agencies.

⁷FASAB is responsible for issuing accounting standards for the United States government. These standards are recognized as generally accepted accounting principles for the federal government.

accompanying their financial statements and in the FRPP. We reviewed documents and interviewed officials with each selected agency about deferred maintenance and repair backlog reporting and methods used to collect reported data and calculate measures of deferred maintenance and repair.

To identify leading practices that agencies could employ as strategies to manage their backlogs of deferred maintenance and repair, we reviewed studies conducted by the National Research Council (NRC) of the National Academies on maintaining federal facilities.⁸ Based on the findings and recommendations within those studies, we derived nine leading practices that agencies could employ as strategies to manage the maintenance and repair needs of federal real property assets.⁹ To determine whether the agencies were employing those leading practices, we reviewed agency documents and interviewed agency officials about their efforts to manage their backlogs. In addition, we visited sites or conducted telephone interviews with site officials to identify possible examples of how agencies are employing the leading practices. We selected at least two sites for each of our five agencies based on their reported deferred maintenance and repair requirements, geographic location, and recommendations from agency officials. We contacted officials at sites in the District of Columbia, Idaho, Maryland, New Mexico, Texas, Virginia, and West Virginia. In addition to discussing with officials the strategies they may be using to address deferred maintenance and repair backlogs, we also discussed deferred maintenance and repair projects that enabled energy efficiency improvements. Our findings based on work with the selected agencies and at selected sites do not support conclusions about other agencies and sites or about the management of deferred maintenance and repair across the federal government as a whole. However, our work provides insights on sites' efforts in

⁸The National Academies comprises four organizations: the National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and NRC. For more information on our methodology for developing leading practices for this review, see appendix II.

⁹NRC findings and recommendations were based, in part, on its assessment and identification of some effective maintenance and repair practices that some federal agencies employed as well as some effective practices employed by some recognized private sector companies. We identified nine leading practices as those most relevant and appropriate to federal agencies' managing deferred maintenance and repair backlogs, but note that those do not represent all actions federal agencies could employ to improve the management of their real property.

comparison to leading practices to address maintenance and repair requirements and manage backlogs. Further details about our scope and methodology can be found in appendix II.

We conducted this performance audit from February 2013 to January 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The federal government manages a substantial real property portfolio; according to a fiscal year 2012 summary FRPP report¹⁰ from the Federal Real Property Council (FRPC),¹¹ the federal government owns approximately 775,000 buildings and structures that cost over \$23 billion to operate annually.¹² FRPP annual operating cost data includes combined costs for: (1) recurring maintenance and repair; (2) utilities; (3) cleaning and janitorial costs including pest control, disposal collection, and recycling operations; and (4) roads and grounds expenses such as landscaping and snow removal costs.

Since January 2003, we have designated federal real property as a high-risk area due to problems with excess and underutilized property, deteriorating facilities, unreliable real property data, and overreliance on

¹⁰Federal Real Property Council, *FY 2012 Federal Real Property Report, An Overview of the U.S. Federal Government's Real Property* (n.p.: n.d.).

¹¹In 2004, Executive Order No. 13327, "Federal Real Property Asset Management", established the FRPC within the Office of Management and Budget for administrative purposes, to among other activities, develop guidance for, and facilitate the success of, each agency's real property asset management plan. The FRPC is chaired by the Deputy Director for Management at OMB and is composed of all agency Senior Real Property Officers, the Controller of the OMB, the Administrator of General Services, and any other full-time or permanent part-time Federal officials or employees as deemed necessary by the Chairman of the Council. 69 Fed. Reg. 5897 (Feb. 6, 2004).

¹²Our review of federal facility maintenance and repair did not specifically examine the accuracy of the 2012 fiscal year FRPP data reported on the number of buildings and structures—and the annual operating costs associated with those assets—held by the executive branch as a whole because our review was limited to five selected agencies.

costly leasing.¹³ In 2008, we reported that agencies' backlogs represent a fiscal exposure that may have a significant effect on future budget resources and our nation's long-term fiscal sustainability.¹⁴ In updates to our high-risk report, we have acknowledged that the administration and real-property-holding agencies have made progress toward strategically managing federal real property. While some progress has been made, at the end of fiscal year 2012, agencies continue to report billions of dollars in deferred maintenance and repair on their real property assets, and budget constraints affect their ability to address these backlogs.¹⁵ For example, according to the Director of the National Park Service (NPS), to hold the national parks' backlog steady, the agency would have needed to spend nearly one-third of its fiscal year 2012 operating budget on deferred maintenance projects.¹⁶

Real-property-holding agencies are generally responsible for the cost of maintaining and repairing their assets, which include buildings and structures.¹⁷ Component systems (e.g., structural, electrical, heating, air conditioning, and others) of these assets have finite, expected useful lives (i.e., service life), over which time they should be maintained and after which time they can be reasonably expected to need replacement. The useful lives of assets can be extended through adequate and timely maintenance and repairs of their component systems. Conversely,

¹³In our 2011 high-risk update, we de-emphasized deferred maintenance and repair as a factor contributing to the placement of federal real property on our high-risk list because agencies had taken some steps to improve their ability to manage their deferred maintenance and repair backlogs, for example, by conducting condition assessments and prioritizing projects. For our more recent high-risk update, see GAO, *High-Risk Series: An Update*, [GAO-13-283](#) (Washington, D.C.: February 2013).

¹⁴See [GAO-09-10](#) and GAO, *Defense Infrastructure: Continued Management Attention Is Needed to Support Installation Facilities and Operations*, [GAO-08-502](#) (Washington, D.C.: April 2008).

¹⁵See footnote 5.

¹⁶National Park Service, Testimony of the Jonathan B. Jarvis, Director, National Park Service, before the Senate Committee on Energy and Natural Resources, for an oversight hearing to consider supplemental funding options to support the National Park Service's effort to address deferred maintenance and operational needs. (Washington, D.C.: July 25, 2013).

¹⁷FRPP building use categories include offices, laboratories, hospitals, schools, and museums, among other categories; structure use categories include airfield pavements, harbors and ports, parking structures, and utility systems, among other categories.

delaying or deferring routine maintenance and repairs can, in the short term, diminish the performance of these systems and, in the long term, shorten service life. Deferring needed maintenance and repair indefinitely may ultimately result in significantly higher maintenance, repair, and operating costs.¹⁸

Federal agencies typically have a backlog of deferred maintenance and repairs created through delay in performing maintenance and repairs activities.¹⁹ Agencies can manage their backlogs through a number of activities, including projects to perform deferred maintenance and repair;²⁰ new construction (i.e., repair by replacement); asset disposal; and public private partnerships,²¹ among others. (See fig. 1).

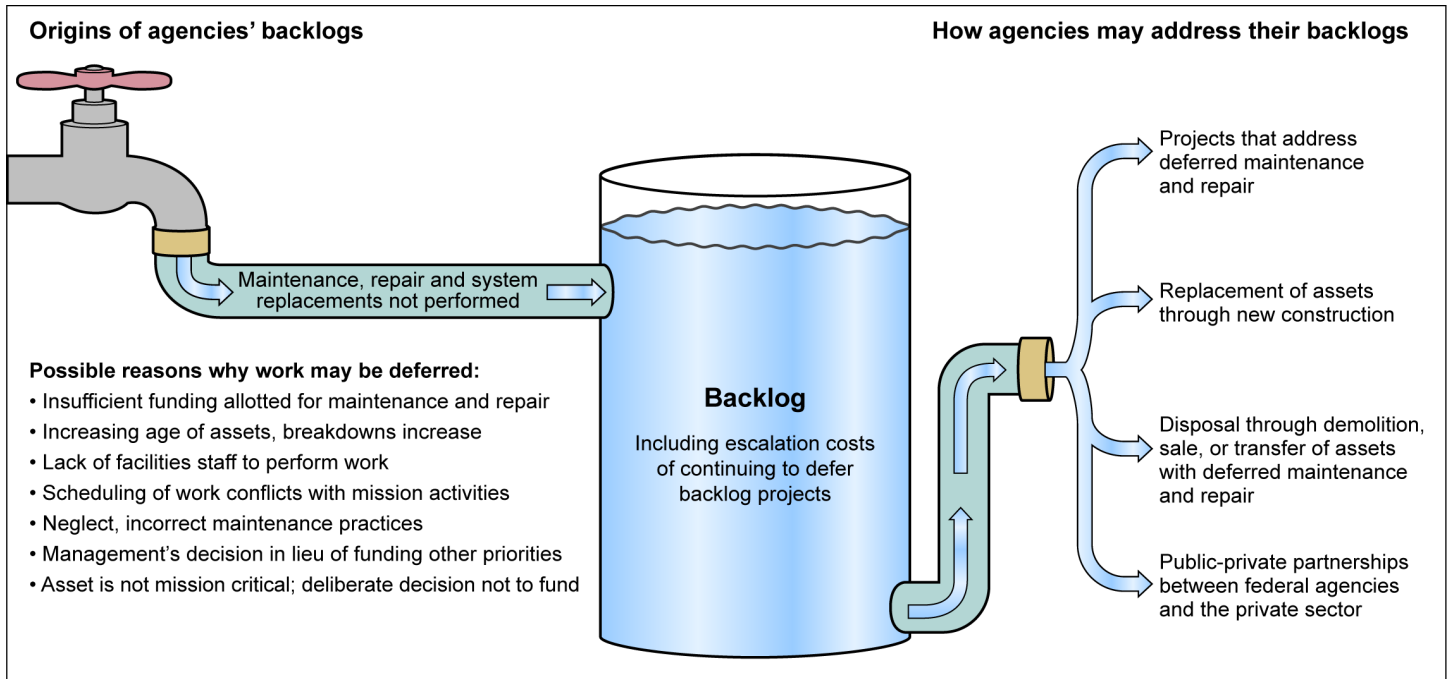
¹⁸See [GAO-09-10](#).

¹⁹Activities include preventive maintenance; replacement of parts, systems, or components; and other activities needed to preserve or maintain the asset.

²⁰For example, agencies may conduct roof repairs or replace heating, ventilation, and air conditioning systems.

²¹A public-private partnership generally entails the federal government entering into an agreement, such as an energy savings performance contract or utility energy service contract, with a non-federal partner who provides private financing (also referred to as third-party financing) to pay for federal projects, such as a lighting retrofit project. Past GAO reporting suggests that a number of factors may cause third-party financing to be more expensive than timely, full, and up-front appropriations. For additional details, see GAO, *Capital Financing: Partnerships and Energy Savings Performance Contracts Raise Budgeting and Monitoring Concerns*, [GAO-05-55](#) (Washington, D.C.: December 2004).

Figure 1: Components of Agency Deferred Maintenance and Repair Backlogs



Source: GAO.

In general, agencies annually report estimates of their deferred maintenance and repair backlogs in two places: (1) required supplementary information accompanying their financial statements in their financial reports,²² which are to be prepared in accordance with requirements set by the FASAB²³ and (2) the FRPP, which are to be

²²See footnote 5.

²³The FASAB Statement of Federal Financial Accounting Standards 42 (Apr. 25, 2012) defines “deferred maintenance and repair” as maintenance and repairs that were not performed when they should have been or were scheduled to be and which are put off or delayed for a future period. Maintenance and repairs are activities directed toward keeping fixed assets in an acceptable condition, as determined by agency management. Activities include preventive maintenance; replacement of parts, systems, or components; and other activities needed to preserve or maintain the asset. Maintenance and repairs, as distinguished from capital improvements, exclude activities directed towards expanding the capacity of an asset or otherwise upgrading it to serve needs different from, or significantly greater than, its current use.

prepared under guidance of the FRPC.²⁴ While agencies' FRPP data does not specifically report deferred maintenance and repairs, the FRPP requires agencies to report two data elements from which the "repair needs" of an asset can be derived and which we consider to be an indicator of agencies' deferred maintenance and repair backlogs for purposes of this report.²⁵ There are limitations in comparing agencies' financial report estimates of their deferred maintenance and repair with their repair needs estimates as derived from FRPP data. The limitations are due, in part, because financial report estimates are intended to quantify what is needed to bring assets to "acceptable" condition as determined by the agency which may be a condition less than their originally constructed condition.²⁶ For example, an agency's financial report estimate may include only the deferred costs to make repairs to a warehouse that is in poor condition in order to elevate the asset to fair—rather than good or excellent—condition. In contrast, FRPP estimates are intended to identify the amount of repairs necessary to restore assets back to their "original" condition. In addition, as discussed below, an agency can make different determinations on reporting information in its financial report and FRPP estimates, resulting in dissimilar indications of deferred maintenance and repair backlogs.

²⁴The FRPC 2012 Guidance for Real Property Inventory Reporting (Aug. 16, 2012) defines "repair needs" as the amount necessary to ensure that a constructed asset is restored to a condition substantially equivalent to the original intended and designed capacity, efficiency, or capability.

²⁵Prior to fiscal year 2013 agencies reported facility "condition index" and "replacement value" data to FRPP which can be used to derive "repair needs." "Condition index" begins with the value of "repair needs" divided by "replacement value". "Replacement value" is the amount required to construct an asset of similar size and in the same location at today's construction standards. The resulting fraction is then subtracted from 1 and multiplied by 100 to express "condition index" as a percentage. Beginning in fiscal year 2013, agencies were to report facility "repair needs" and "replacement value" to FRPP, and "condition index" was to be automatically calculated.

²⁶FASAB's deferred maintenance and repair reporting standard indicates that what constitutes acceptable condition may vary across and within agencies based on factors such as asset type and the importance of an asset to mission.

Agencies Estimate Billions of Dollars in Deferred Maintenance and Repair Backlogs, and Recent Changes Affecting Reporting Requirements May Improve These Estimates

Selected Agencies Estimate Deferred Maintenance and Repair Backlogs Range in the Billions of Dollars

The five agencies we reviewed—GSA, DOE, DHS, Interior, and VA—reported deferred maintenance and repair estimates in their financial reports ranging from \$0.8 billion to \$20.2 billion,²⁷ and FRPP estimates from \$0.9 billion to \$14.4 billion for fiscal year 2012. (See table 1.) Each agency has a process for collecting information on the condition of its facilities such as through periodic condition assessments. Agencies then use this information in determining backlogs used in financial reports and FRPP estimates; however, some agencies report different estimates to each of these sources. In explaining differences between their financial report and FRPP estimates, GSA real property officials indicated the main difference is the result of GSA's including future project requirements in its FRPP estimate, while focusing on more immediate needs and omitting future requirements in its financial report estimate. VA officials attribute the almost \$6-billion difference in VA's estimates principally to the exclusion of capitalized projects²⁸ from its financial report estimate and inclusion of those projects as part of its FRPP estimate.

²⁷The Financial Report of the United States Government of Fiscal Year 2012 estimated that government-wide deferred maintenance and repair for fiscal year 2012 ranged from about \$153.6 billion to about \$159.1 billion, including approximately \$111.2 billion in deferred maintenance and repair for the Department of Defense.

²⁸For financial reporting purposes, VA's considers a project capitalized if it meets VA's capitalization criteria whereby the project extends the useful life of an associated asset or has enlarged or improved the capacity or function of the associated asset.

Table 1: Selected Agencies' Deferred Maintenance and Repair Backlog Estimates, Fiscal Year 2012

Dollars in billions

Agency	Financial report estimates	Federal Real Property Profile (FRPP) estimates
GSA	\$1.5	\$4.7
DOE	4.7	5.1
DHS	0.8 – 0.9 ^a	0.9
Interior ^b	13.8 – 20.2 ^a	14.4
VA	6.7	12.5

Sources: GAO analysis of agency financial reports and FRPP data.

Notes: FRPP estimates were calculated using the reported data elements "condition index" and "replacement value," where condition index is defined by the formula $(1 - \text{repair needs}/\text{replacement value}) \times 100$.

Figures shown exclude deferred maintenance and repair backlog estimates reported by agencies for their capital equipment—such as DHS vehicles and vessels—which are required by FASAB as part of agencies' annual reporting. We excluded those figures because our review was focused on federal real property and not agencies' other capital assets, such as ships.

^aFASAB allows agencies to report a low and high estimate but plans to eliminate this practice in fiscal year 2015.

^bInterior's real property portfolio consists of a large number of roads, bridges, and trails, which, based on Interior's fiscal year 2012 financial report, represent just over 50 percent of the agency's deferred maintenance and repair backlog. Interior officials indicated that based on agency-specific direction from OMB, they exclude certain assets in their FRPP reporting, such as archeological sites.

Agencies Methods for Estimating Their Backlogs Differ

In general, FASAB reporting requirements for financial reports,²⁹ as well as FRPP reporting guidance,³⁰ do not require a specific process for determining the condition of assets and estimating their backlogs, and agencies can use their existing processes. As a result, agencies use a number of different methods to determine their deferred maintenance and repair backlogs. As we previously concluded in April 2008, this variation in methods makes their backlog estimates not comparable.³¹ For the

²⁹ *Statement of Federal Financial Accounting Standards 40: Definitional Changes Related to Deferred Maintenance and Repairs: Amending Statement of Federal Financial Accounting Standards 6, Accounting for Property, Plant, and Equipment, SFFAS 40.* (May 11, 2011). This standard was effective for agencies' fiscal year 2012 financial reports.

³⁰ Federal Real Property Council, *2012 Guidance for Real Property Inventory Reporting* (Oct. 25, 2012).

³¹ We previously reported on the various methods agencies use to determine their backlogs. See [GAO-09-10](#).

agencies we selected in this review, we found that each uses its own method for assessing the condition of its assets. The methods vary in the frequency in which assets and costs are included and in the types of work that are reported as deferred maintenance and repair. For example, VA reports cost estimates for asset component systems (such as a roof) that are in poor or critical condition. Interior includes costs for inactive and excess assets if the work is necessary to maintain assets in acceptable condition and excludes costs for some assets scheduled for disposal.³² In contrast, DHS includes costs for assets that it does not intend to repair and that are scheduled for disposal. In addition, we found that project cost components included in estimates vary across agencies. For example, GSA officials reported to us their estimates include the cost for design, materials, and labor. DOE officials reported their estimates exclude design costs but do include costs for materials and labor required to accomplish missed maintenance or repair actions.

Recent Changes Affecting Reporting Requirements May Improve Agencies' Backlog Estimates

We have previously concluded that accurate and consistent information on deferred maintenance and repair is important to support decision making.³³ Recent changes affecting reporting requirements may help to improve agencies' backlog estimates in these areas. In particular, in May 2011, FASAB introduced a new standard (SFFAS #40)³⁴ with the intent to clarify what agencies should include in their deferred maintenance and repair estimates. These changes were implemented in the agencies' 2012 financial reports. In addition, beginning in fiscal year 2013, agencies are to directly report "repair needs" to FRPP, in contrast to the past practice of reporting "condition index" and "replacement value," which provided an indirect indication of "repair needs."³⁵ According to OMB staff, directly reporting "repair needs" to FRPP will bring agencies' attention to this data

³²For example, Interior officials indicated when public lands are newly acquired or when federal real property is transferred to Interior (such as Fort Monroe in Hampton, Virginia, where Interior received numerous excess facilities from the Department of Defense), the deferred maintenance associated with buildings that are incidental to an acquisition and which Interior expects to dispose of are not included in Interior's backlog estimates.

³³GAO, *Deferred Maintenance Reporting: Challenges to Implementation*, [GAO/AIMD-98-42](#) (Washington, D.C.: January 1998).

³⁴See footnote 29.

³⁵See footnote 25.

element and likely result in a more accurate indication of associated maintenance and repair backlogs.

While these changes are intended to result in improved information on agencies' backlogs and prove beneficial over time, they make it difficult for agencies to determine their current progress in managing the backlogs given that it is not possible for agencies to identify trends since the estimates are not based on consistent definitions across reporting years. For example, FASAB's clarification to agencies on what should be included in backlog estimates resulted in a significant change to GSA's financial report estimate, which increased from \$0 in fiscal year 2011 to \$1.5 billion in fiscal year 2012. Specifically, in May 2011, FASAB clarified that agencies should report both deferred maintenance and deferred repairs.³⁶ According to GSA officials, prior to this clarification, they had determined the agency had no significant amount of deferred maintenance, and thus reported \$0 prior to fiscal year 2012. When considering deferred repairs in fiscal year 2012, GSA determined it did have deferred repair requirements and began reporting the costs to address repairs identified during its Physical Condition Surveys that it plans to address within 2 years.³⁷ In addition, DHS recently underwent efforts to standardize the definition and calculation method for the FRPP "repair needs" data element for its real-property-holding component agencies. These efforts, which include providing updates to guidance on how to conduct condition assessments, led to DHS's FRPP estimate decreasing from about \$2.5 billion to under \$1 billion from fiscal years 2008 to 2012. These fluctuations in the deferred maintenance and repair backlogs as reported by both GSA and DHS do not necessarily demonstrate a change in the physical condition of their assets; rather a change in the way these estimates are determined. As a result, it is unclear the extent to which changes to the backlog estimates resulted from agencies' actions to manage their backlogs or changes in the ways the agencies determine their estimates.

³⁶See footnote 29.

³⁷GSA officials indicated their Physical Condition Surveys and reporting of deferred repairs do not include costs for fire and life safety projects that are needed to bring an asset into code compliance, which is an improvement over and above the building's "original condition".

To further improve agencies' reporting of their backlogs over time, in April 2012 FASAB adopted a second new standard (SFFAS #42), which emphasizes that agency assessment methods and condition standards be consistently applied to allow agencies to track their backlogs from year to year and improve their ability to make appropriate decisions about managing their deferred maintenance and repair backlogs.³⁸ In addition, FRPC is exploring means to promote consistency in backlog reporting. For example, FRPC is considering incorporating the FASAB definition of deferred maintenance and repair as an addition to, or replacement for, "repair needs" data in fiscal year 2014. An FRPC member agency also indicated that FRPC might consider adopting industry standard definitions pertaining to maintenance costs to allow for a more comparable benchmarking across agencies and with the private sector.³⁹

Selected Agencies Employ Most Leading Practices in Managing Their Backlogs, but Generally Do Not Identify the Funding Allotted to Address Backlogs

³⁸ *Statement of Federal Financial Accounting Standards 42: Deferred Maintenance and Repairs: Amending Statements of Federal Financial Accounting Standards 6, 14, 29 and 32. SFFAS #42.* (Apr. 25, 2012). This standard becomes effective for agencies' fiscal year 2015 financial reports.

³⁹ Interior officials identified the Building Owners and Management Association International (BOMA International) as a possible source for industry standard definitions. BOMA International represents the owners and managers of commercial property including nearly 10-billion square feet of office space in the United States. BOMA International's mission is to advance the interests of the commercial real estate industry through advocacy, education, research, standards, and information. Interior officials said they have proposed FRPC adopt BOMA International's standard definitions pertaining to building maintenance and operations.

Selected Agencies Use Most Leading Practices as Strategies to Manage Their Backlogs

We identified nine leading practices recognized as effective strategies for managing deferred maintenance and repair backlogs. These leading practices derive from more than 15 years of research conducted by the NRC on federal facilities to include the subject of their maintenance and repair and their deferred maintenance and repair backlogs.⁴⁰ We found that each of the five agencies selected for this study generally use eight of the nine practices for addressing their backlogs. These practices include actions such as establishing clear maintenance-investment objectives, using condition assessments to establish funding levels for reducing deferred maintenance backlogs, and identifying primary methods for addressing maintenance and repair requirements. However, as discussed later in this report, four of the five agencies do not use a ninth leading practice that, in general, entails structuring budgets to specifically identify the funding allotted (1) for maintenance and repair and (2) to address any backlog of deferred deficiencies. Table 2 outlines the eight leading practices employed by the agencies to manage their backlogs and provides examples of their use. Agencies' use of some of these leading practices, in part, is reflected in our decision to de-emphasize concerns over the federal government's ability to manage the deteriorating condition of facilities as a factor contributing to the placement of federal real-property management on our high-risk list.⁴¹

Table 2: Leading Practices Used by Five Agencies to Manage Their Deferred Maintenance and Repair Backlogs

Practice	Examples of actions taken
(1) Establish clear maintenance and repair investment objectives and set priorities among outcomes to be achieved.	<ul style="list-style-type: none"> All five agencies established objectives related to maintenance and repair investments. <ul style="list-style-type: none"> For example, Interior's investment objective is to maintain its mission-critical assets that provide the public the most return on federal investment. All five agencies employ outcome-based, priority-setting criteria to decide among competing projects and outcomes, such as criteria intended to improve safety. <ul style="list-style-type: none"> For example, VA prioritizes its projects according to six major criteria which include, among others, "Fixing What We Have" (i.e., making the most of current assets) and "Departmental Initiatives" (e.g., such as complying with federal energy standards).

⁴⁰NRC reviews were initiated in response to requests from the Federal Facilities Council (FFC). FFC is comprised of representatives from multiple federal agencies' with the intent to, among other purposes, provide a forum to identify government-wide issues regarding facility planning, design, construction, operation, maintenance, and real property management.

⁴¹GAO, *High-Risk Series: Managing Federal Real Property*, [GAO-11-278](#) (Washington, D.C.: February 2011).

Practice	Examples of actions taken
(2) Identify types of facilities or specific buildings (i.e., assets) that are mission-critical and mission-supportive.	<ul style="list-style-type: none"> • All five agencies have categorized the mission dependency of their assets and generally prioritize project funding for assets that support their missions while minimizing investments in non-mission dependent assets. <ul style="list-style-type: none"> • For example, at the U.S. Coast Guard Training Center in Yorktown, Virginia, officials reported maintenance and repair will not be funded on the main ship pier as it is not mission dependent, but that safety and environmental requirements will be funded. Mission critical assets that the Coast Guard plans to continue to maintain at the site include training buildings and a weapons range.
(3) Conduct condition assessments as a basis for establishing appropriate levels of funding required to reduce, if not eliminate, any deferred maintenance and repair backlog.	<ul style="list-style-type: none"> • All five agencies conduct facility condition assessments (FCA) to identify condition deficiencies of their assets and inform budgeting decisions. For example: <ul style="list-style-type: none"> • GSA sites conduct FCAs every 2 years to estimate repairs and alterations needed to correct identified deficiencies and restore its buildings to an “acceptable” condition. Deficiencies and needs are categorized as work that should be completed either “immediately,” “within 1-2 years,” “within 3-5 years,” or “within the next 6 or more years.” More in-depth building engineering reports are also performed to support GSA’s major-repair and alteration projects. • DOE’s Thomas Jefferson National Accelerator Facility in Newport News, Virginia, conducts FCAs every 4 years, and based on risk, some assets are assessed more frequently.
(4) Establish performance goals, baselines for outcomes, and performance measures.	<ul style="list-style-type: none"> • All five agencies have established performance goals, baselines to measure outcomes, and performance measures. For example: <ul style="list-style-type: none"> • National Park Service (NPS)—part of Interior—annually reports the “percent of historic structures in good condition” and outlines its past performance and the current fiscal year goal in its budget request. For its fiscal year 2014 budget request, NPS’s goal was that 61 percent of its historic structures would achieve a good condition rating. • VA’s FY2014 budget justification reports the past performance, current fiscal year 2013 goal, and condition targets for VA’s asset portfolio.
(5) Identify the primary methods to be used for delivering maintenance and repair activities.	<ul style="list-style-type: none"> • All five agencies generally use a mix of project methods to address their maintenance and repair needs to include major and minor projects that may entail component system repairs or replacements, renovations to existing assets, new construction, disposal of assets, and use of public-private partnerships (such as energy-savings performance contracts). <ul style="list-style-type: none"> • For example, recent GSA-funded major and minor projects at the Forrestal Building in Washington, D.C.—in which DOE is a federal tenant—included a \$51 million repair (by replacement) of the building’s fire alarm system and installation of a new sprinkler system and nearly \$1 million in repairs to the building’s expansion joints. • VA’s non-recurring maintenance (NRM) program is its primary method to address condition deficiencies largely through system replacement projects and renovations to its medical treatment facilities. For instance, on our site visit to the VA Medical Center in Martinsburg, West Virginia, we saw one NRM project under way to renovate a mental health domiciliary unit that VA estimates will address approximately \$1.5 million in backlog deficiencies.
(6) Employ models for predicting the outcome of investments, analyzing tradeoffs, and optimizing among competing investments.	<ul style="list-style-type: none"> • Four of the five agencies use modeling tools, to varying extents, to support predicting the outcome of investments, analyzing tradeoffs, and optimizing among competing investments in assets and projects. <ul style="list-style-type: none"> • For example, at the Colonial National Historical Park in Virginia, NPS has: (1) grouped its assets into “optimizer bands”—based on their condition and mission priority—to make decisions on allocating limited maintenance investments; (2) predicted how the condition of its critical assets would be affected by investment assumptions; and, (3) modeled the life-cycle system replacement needs (e.g., when to replace a roof) of its assets over a 10-year time frame.

Practice	Examples of actions taken
(7) Align real property portfolios with mission needs and dispose of unneeded assets.	<ul style="list-style-type: none"> • All five agencies seek to align and modernize their asset portfolios, which may require those agencies to renovate existing assets, construct new facilities, or dispose of some assets to meet their mission needs. For example: <ul style="list-style-type: none"> • Considering DOE's Thomas Jefferson National Laboratory, we found its 10-year site plan identifies the need to both renovate an existing test lab space and construct new research space. These projects—which are nearing completion—are expected to: (1) address over \$5 million in deferred maintenance, (2) vacate over 20,000 square feet of leased space, and (3) eliminate temporary trailers that housed staff. • Within Interior, the Fish and Wildlife Service's 2008 master plan for the Patuxent Research Refuge calls for renovating some of the site's existing assets, constructing new laboratory space, and disposing—through demolition—a number of unneeded assets in order that areas may be returned to wildlife habitat use. • Agencies are also retiring some of their backlog by reducing the “footprint” of their asset portfolios, a process that may entail disposing of unneeded assets by demolition, sale, or transfer. <ul style="list-style-type: none"> • At Colonial National Historical Park, NPS demolished a 2,700-square-foot seasonal dorm in 2011 that was excess to NPS's mission need, not historic, infested with termites, and structurally beyond economic repair. The dorm had over \$400,000 of deferred maintenance and was demolished—along with other excess non-historic structures—under the park's 2009 housing master plan.
(8) Identify the types of risks posed by lack of timely investment.	<ul style="list-style-type: none"> • All five of the agencies weigh and manage risks posed by lack of timely investment. <ul style="list-style-type: none"> • For example, Interior's project ranking criteria includes “Consequences of Failure to Act,” which emphasizes projects that address unacceptable risks. Highest risk critical health and safety requirements must be addressed soon after identification, or the facility must be closed until repairs are complete in order to protect the safety of employees and the public. • At DHS's National Emergency Training Center—in Emmitsburg, Maryland—officials reported that in the last 2 fiscal years, DHS has funded critical, emergency repairs affecting safety while deferring other repairs due to limited funding. For example, critical roof and elevator replacement projects were recently completed while a renovation to the site's cafeteria has not yet been implemented.

Source: GAO analysis of agency-provided information.

Agencies Are Not Separately Identifying Funding Allotted to Manage Their Backlogs

While agencies employed eight of the nine leading practices identified by the NRC, we found that four of the five agencies selected for this study generally do not use a ninth leading practice related to funding. This practice, in general, entails structuring budgets to specifically identify the funding allotted (1) for maintenance and repair and (2) to address any backlog of deferred deficiencies because insufficient levels of such funding can cause agencies' backlogs to increase.⁴² According to the NRC, allotting sufficient funding for maintenance and repair is important because the funding needed to address deferred maintenance may be

⁴²In 2008, we also reported agencies' observations on the relationship between the level of repair and maintenance funding and backlogs. See [GAO-09-10](#).

significantly greater than if maintenance activities had been funded when needed.⁴³ However, agencies' budgeting processes and justifications may not enable implementation of this practice. In September 2012, we found that agencies' budgeting processes, account structures, and justifications differ to reflect the preferences of appropriations committees and the controls and incentives these committees consider important.⁴⁴ Similarly, the NRC has reported that agencies' budget development varies as a result of their different missions; the sizes, compositions, and distributions of their facilities; and their organizational cultures.⁴⁵ As a result, the budgeting information provided to Congress on the funding allotted for maintenance and repairs and to address backlogs varies across agencies. This variance, according to the NRC, makes it difficult for individual agencies and the government as a whole (1) to identify the beneficial outcomes or the adverse consequences of different investment strategies, (2) to share lessons learned, and (3) to improve the outcomes of maintenance and repair investments government-wide.

As an example of differences in agencies' budgeting processes and justifications, DOE explicitly reports—as directed by a Conference Report—funding allotted and spent by its program offices⁴⁶ for (1) maintenance and repair and (2) deferred maintenance and repair backlog reduction as part of its annual budget process;⁴⁷ however, the other four

⁴³NRC, *Investments in Federal Facilities: Asset Management Strategies for the 21st Century* (Washington, D.C.: National Academies Press: 2004). This report identifies a 2003 study that estimated a capital liability between \$4 and \$5 is created for each \$1 of deferred maintenance.

⁴⁴GAO, *Veteran's Health Care Budget: Better Labeling of Services and More Detailed Information Could Improve the Congressional Budget Justification*, [GAO-12-908](#) (Washington, D.C.: September 2012).

⁴⁵NRC, *Predicting Outcomes from Investments in Maintenance and Repair for Federal Facilities* (Washington, D.C.: National Academies Press: 2012).

⁴⁶DOE program offices include entities such as Office of Science, the National Nuclear Security Administration, and Office of Nuclear Energy, among others.

⁴⁷The Conference Report (H.R. Conf. Rep. No. 108-10) accompanying the Consolidated Appropriations Resolution, 2003, directs the Department to ensure that adequate funds are budgeted for facility maintenance and disposition, and that the amounts reported in the Integrated Facilities and Infrastructure crosscut budget be expended solely for these purposes. The Report also directs the Department to provide an annual year-end report on maintenance expenditures to the Committees on Appropriations. H.R. Rep. No. 108-10, at 886-887 (2003).

agencies we examined generally do not explicitly identify funding budgeted for maintenance and repair and for addressing their deferred backlogs. In addition, within some agencies we found variations among offices and bureaus concerning the level of budget information they provide on funding needs for maintenance and repairs and to address backlogs. Table 3 illustrates examples of differences across and within agencies concerning budget structures for funding maintenance, repair, and deferred maintenance and repair.

Table 3: Examples of How Selected Agencies Structure Budget Information about Maintenance, Repair, and Deferred Maintenance

Agency	Examples
DOE	<ul style="list-style-type: none"> DOE prepares an “Integrated Facilities and Infrastructure Crosscut” budget exhibit to consolidate and demonstrate proposed funding budgeted by DOE programs (such as DOE’s Office of Science) for both (1) maintenance and repair and (2) deferred maintenance reduction as well as other activities that may reduce DOE’s backlog such as implementing capital projects and disposing of assets. At the end of the year, DOE also prepares a real-property maintenance expenditures report for Congress that shows what DOE actually expended for maintenance and repair.
GSA	<ul style="list-style-type: none"> GSA requests annual funding for maintenance and repair needs within its “Building Operations” budget account, which funds a variety of additional activities such as utilities, cleaning costs, and salaries. GSA officials reported its regions have flexibility to manage their building-operations account locally and that GSA headquarters does not have detailed insight on how much is allotted by its regional offices for maintenance and repair. GSA projects addressing its deferred backlog are funded through multiple GSA accounts to include its “Basic (or Minor) Repairs and Alterations” and its “Major Repairs and Alterations” accounts. Because those accounts also fund functional alterations and improvements, like space renovations and security improvements, it is unclear what effect projects funded by those accounts may have on GSA’s estimated \$1.5 billion backlog of repair needs.
DHS	<ul style="list-style-type: none"> DHS offices structure their budget justifications differently from one another, and funding for facility maintenance and repair, as well funding for deferred backlog requirements, are not always identified. <ul style="list-style-type: none"> For example, the Coast Guard requests combined funding for operations and maintenance within its “Operating Funds and Unit Level Maintenance” account, and it requests funding for deferred backlog projects within its “Depot Level Maintenance” account. Those accounts can fund other activities including costs related to cutters, aircraft, equipment, and fuel. Thus, it is unclear how much funding Coast Guard allots for the maintenance and repair of its real property assets and to address its backlog. In comparison, Customs and Border Protection’s budget justification provides Congress with a “crosswalk” report that separately shows funding proposed specifically for real property: (1) operations; (2) maintenance and repair; and (3) deferred maintenance projects.

Agency	Examples
Interior	<ul style="list-style-type: none"> • Interior bureaus also structure their budget justifications differently from one another and do not always identify funding needed explicitly for maintenance and repair nor for addressing deferred maintenance projects as part of its budget process. Interior officials reported that some bureaus may include part or all of this information as part of their budget requests. <ul style="list-style-type: none"> • For example, we found the National Park Service's (NPS) fiscal year 2014 budget justification separately identifies funding requests for (1) "Facility Operations," (2) "Facility Maintenance," and (3) "Repair and Rehabilitation," which is NPS's principal deferred maintenance program. Further, NPS identifies total funding needed for maintenance and repair in relation to a lesser amount it actually requested within the constrained federal budget environment. • In comparison, Fish and Wildlife Service's (FWS) fiscal year 2014 budget justification does not separately report funding proposed for maintenance and repair of real property assets. While FWS separately reported funding requested for "deferred maintenance," its request for "annual maintenance" included funds for other operating expenses such as refuge habitat and wetland resource maintenance, utilities, custodial services, and snow removal. Thus it is unclear the extent funding resources are being directed by FWS to maintain the condition of its assets. • For major construction projects, both NPS and FWS include project data sheets in their budget justifications that indicate the deferred maintenance associated with a project and the estimated improvement in facility condition that will result from a project.
VA	<ul style="list-style-type: none"> • VA's budget does not specifically identify recurring maintenance and repair funding allotted to maintain the condition of VA hospitals. Rather, VA's recurring maintenance and repair funding is included in VA's budget under the "Medical Facilities" account, which funds not only routine maintenance and repair but also activities such as laundry and leases. • VA's budget does identify funds requested for non-recurring maintenance (NRM) projects, such as those that address VA's backlog of condition deficiencies. However, NRM projects may address other needs such as clinical improvement projects that may entail space renovations and additions that may not address deferred maintenance needs. <ul style="list-style-type: none"> • VA's deferred backlog requirements may be also funded through VA "Major Construction", and "Minor Construction" accounts. While VA's sites are required to estimate the amount of backlog deficiencies that will be reduced by a project, the information is not published in VA's budget justification. Thus, it is unclear how much funding is allotted to addressing VA's backlog.

Source: GAO analysis based on agency budget information.

While agencies' budgets may not be structured to provide information on funding allotted to address maintenance and repairs and associated backlogs as suggested by the NRC, FRPP contains some data elements that might be used to obtain insight in this area. In particular, agencies must submit "annual operating costs" to FRPP, and as previously discussed, FRPP contains "repair needs" data that estimate agencies' maintenance and repair backlogs. As currently structured, however, the "annual operating costs" data element in FRPP does not differentiate the amount spent on recurring maintenance and repairs from other annual

operating expenses, such as costs for janitorial services and utilities.⁴⁸ As a result, agencies' annual reporting of these data provides a partial mechanism for assessing funding allotted for maintenance and repair, but the data are not sufficiently useful as currently structured to allow full insight into agencies' funding of maintenance and repairs and the corresponding effects on maintenance and repair backlogs.⁴⁹ Additionally, FRPP data elements do not currently allow for the collection and reporting on the funding agencies spend on addressing deferred maintenance and repair deficiencies.

As we have previously concluded, FRPC has had several years of experience with FRPP data and is now in a better position to refine data collection requirements.⁵⁰ Along these lines, in June 2012, we recommended that the Administrator of GSA, in collaboration and consultation with FRPC member agencies, develop and implement a plan to improve the FRPP data to include designating performance measures linked to clear performance goals.⁵¹ In response to those recommendations, GSA reported it would work with OMB and FRPC members to designate new performance measures in FRPP that will reflect current real property priorities.⁵² OMB staff indicated to us that, as FRPC develops new real property metrics, FRPC is now considering collecting data and metrics on asset performance external to FRPP as another mechanism to assess the effectiveness of federal real property management. As GSA, OMB, and FRPC member agencies work to improve FRPP data and develop new performance metrics, the opportunity exists for them to revise requirements for agencies to collect

⁴⁸FRPC's fiscal year 2013 reporting guidance indicates it will explore further standardization of the definition for operating costs in fiscal year 2014.

⁴⁹In its most recent report, *Predicting Outcomes from Investments in Maintenance and Repair for Federal Facilities*, the NRC called for, among other actions, greater transparency in budget execution. See footnote 45.

⁵⁰GAO, *Federal Real Property: National Strategy and Better Data Needed to Improve Management of Excess and Underutilized Property*, [GAO-12-645](#) (Washington, D.C.: June 2012).

⁵¹See [GAO-12-645](#).

⁵²Executive Order No. 13327 established the FRPC to, among other purposes, work with the Administrator of General Services to establish performance measures to determine the effectiveness of federal real property management. The executive order indicated that such measures shall include, but not be limited to, evaluating the costs and benefits involved with maintaining and repairing federal real property in addition to other costs.

and report (1) the costs agencies expend on annual maintenance and repair and (2) the annual costs incurred to address their deferred-maintenance and repair backlogs. Having this information would further improve the federal government's reporting on its efforts to manage its real property portfolio and would enable an accounting of what funding resources have been spent in support of agencies' efforts to manage their backlogs. As we concluded in September 2013,⁵³ providing transparency—such as shedding light on the amount of spending, what it is spent on, and what are the results of that spending—is essential to improving government accountability and can, among other outcomes, improve oversight and the effectiveness of federal spending.⁵⁴

Conclusions

Federal facilities have developed maintenance and repair backlogs totaling billions of dollars that, left unchecked, can result in more expensive repairs, higher operating costs, and diminished performance of the facilities. Agencies have followed most leading practices in managing their backlogs including establishing clear investment outcomes, using condition assessments to establish funding levels for reducing deferred maintenance backlogs, and identifying primary methods for addressing maintenance and repair requirements. However, a mechanism does not fully exist to provide, as another leading practice suggests, for a transparent reporting of the funding agencies have allotted for (1) conducting annual maintenance and repair activities and (2) addressing any backlog of deferred deficiencies in relation to their reported backlogs. As efforts continue to improve FRPP data and develop metrics for assessing the effectiveness of agencies' real property management, the opportunity exists to focus attention on this key relationship between agencies' annual maintenance and repair expenditures and agencies' deferred maintenance and repair backlogs. Making changes to FRPP—or developing related performance metrics outside of FRPP—to convey information on funding annually expended on recurring maintenance and repairs and to address existing maintenance and repair backlogs would

⁵³GAO, *Federal Spending Data Transparency: Opportunities Remain to Incorporate Lessons Learned as Availability of Spending Data Increases*, [GAO-13-758](#) (Washington, D.C.: September 2013).

⁵⁴We also reported that both the administration and members of Congress have suggested the need for more transparency.

enable transparent reporting on the resources being directed at managing federal agencies' maintenance and repair backlogs.

Recommendations for Executive Action

To provide increased transparency about the funding amounts agencies are spending to maintain their assets and manage their backlogs, we recommend that the Director of OMB require the OMB Deputy Director for Management, as chair of the FRPC, in collaboration and consultation with FRPC member agencies, to take the following two actions:

1. Collect information through FRPP or other mechanisms on agencies' costs for annual recurring maintenance and repair performed—information that is currently incorporated within agencies' annual operating costs—and report summary level information in the FRPC's fiscal year report. This recommendation is not intended to limit FRPC from continuing to collect and report on agencies' overall annual operating costs, which can include annual maintenance costs plus other operating expenses such as the cost of utilities.
2. Collect information—through FRPP or other mechanisms—on funding agencies annually spent to address existing deferred maintenance and repair deficiencies and report summary level information in the FRPC's fiscal year report.

Agency Comments

We provided a draft of this report to OMB, DOE, DHS, Interior, GSA, and VA for review and comment. OMB generally concurred with the report and agreed with our recommendations. DOE, DHS, Interior, GSA, and OMB provided technical clarifications, which we incorporated where appropriate. DHS's letter is contained in appendix III.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the Director and Deputy Director of OMB, the Secretaries of Energy, Homeland Security, the Interior, and Veterans Affairs and the Administrator of GSA. Additional copies will be sent to interested congressional committees. We also will make copies available to others upon request, and the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff has any questions about this report, please contact me at (202) 512-2834 or wised@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page

of this report. GAO staff who made key contributions to this report are listed in appendix IV.

Sincerely yours,

A handwritten signature in black ink that reads "David J. Wise". The signature is written in a cursive style with a large, stylized "D" and "W".

David J. Wise
Director, Physical Infrastructure Issues

Appendix I: Examples of Deferred-Maintenance and Repair Projects That Included Energy Efficiency Improvements

We have previously reported on opportunities to concurrently address agency deferred maintenance and repair backlogs and reduce energy consumption.¹ For example, in January 2009 we concluded that agencies can replace old systems—such as heating and air conditioning, electrical, and plumbing—with new, more efficient systems that would lead to energy savings and reduce or eliminate deferred maintenance and repair associated with the systems. Understanding that agencies can address their backlogs and energy savings with the same project—these projects are principally intended to reduce utility costs but may also reduce deferred maintenance—we asked each of our five selected agencies to provide examples of locations that undertook deferred maintenance and repair projects that also resulted in energy savings (see figs. 2, 3, 4, 5, and 6 below). These projects range widely in the extent to which they address agencies' deferred maintenance and repair backlogs and increase energy efficiency. For example, DOE's Idaho National Laboratory completed a number of energy-efficiency projects that addressed several needed maintenance and repair activities, including replacing old fuel-oil-fired heating boilers with new electric boilers (see fig. 3). DOE estimated the projects reduced its backlog by over \$10 million and will result in an estimated energy reduction of over 53,000 Million British thermal units (MBtu) per year.² These projects were also funded in a variety of ways, including with one-time funds from the American Recovery and Reinvestment Act of 2009 and by use of an energy savings performance contract (ESPC) or a utility energy service contract (UESC).³ Under an ESPC, agencies enter into a long-term contract with a private company under which the company finances and implements projects to

¹GAO, *Real Property: Infrastructure Investment Presents Opportunities to Address Long-standing Real Property Backlogs and Reduce Energy Consumption*, [GAO-09-324T](#) (Washington, D.C.: Jan. 22, 2009).

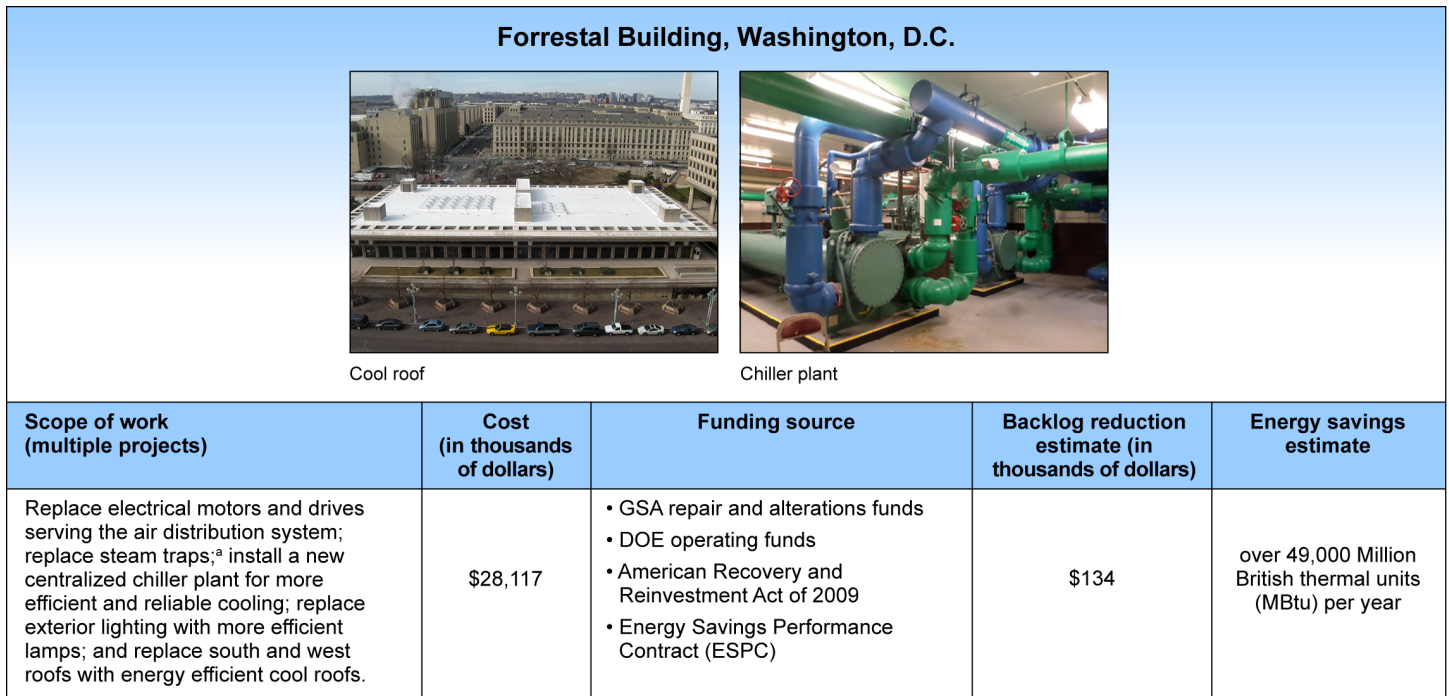
²A British thermal unit is a measure of heat energy, such as that produced by fuel burned in a boiler to produce steam.

³Energy savings performance contracts are contracts between a federal agency and an energy service provider. Based on the results of a comprehensive energy audit, an energy service company, in consultation with the federal agency, designs and constructs a project to save energy and arranges the necessary financing. The contractor guarantees that the improvements will generate energy cost savings sufficient to pay for the project over the term of the contract. Utility energy service contracts are agreements in which a utility arranges financing to cover the capital costs of a project, which are repaid by the agency, generally using appropriated funds, over the contract term. Repayments are usually based on estimated cost savings generated by the energy efficiency measures, but energy savings are not necessarily required to be guaranteed by the contractor.

Appendix I: Examples of Deferred-Maintenance and Repair Projects That Included Energy Efficiency Improvements

improve energy efficiency; agencies then repay the company from the utility costs savings achieved from those energy projects.

Figure 2: GSA Deferred Maintenance and Repair Project That Included Energy Efficiency Improvements



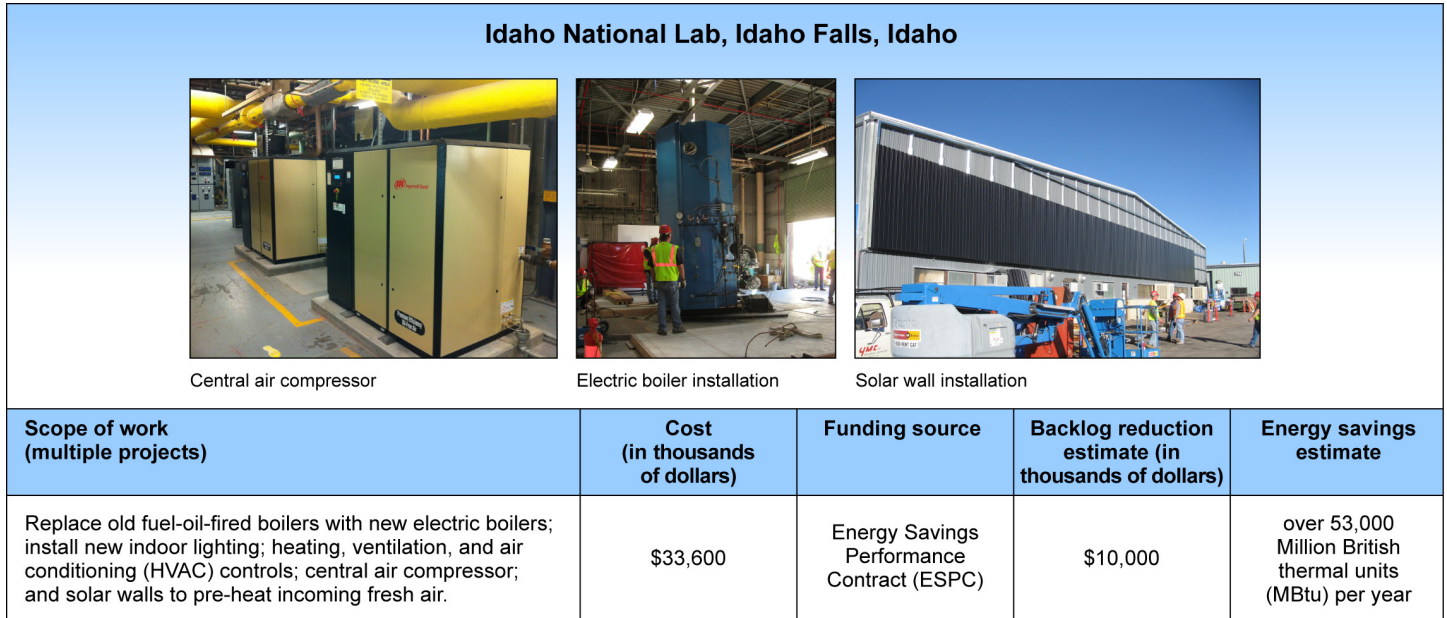
Sources: GAO presentation of agency information; DOE (left photo); GAO (right photo).

Note: Estimates above are based on a GAO review of agency information. We did not assess the reliability of these numbers because they were not material to our findings, conclusions, and recommendations.

^aSteam traps are valves used within a heating system to remove hot condensate, air, and other non-condensable gases while preventing or minimizing the passing of steam.

Appendix I: Examples of Deferred-Maintenance and Repair Projects That Included Energy Efficiency Improvements

Figure 3: DOE Deferred Maintenance and Repair Project That Included Energy Efficiency Improvements

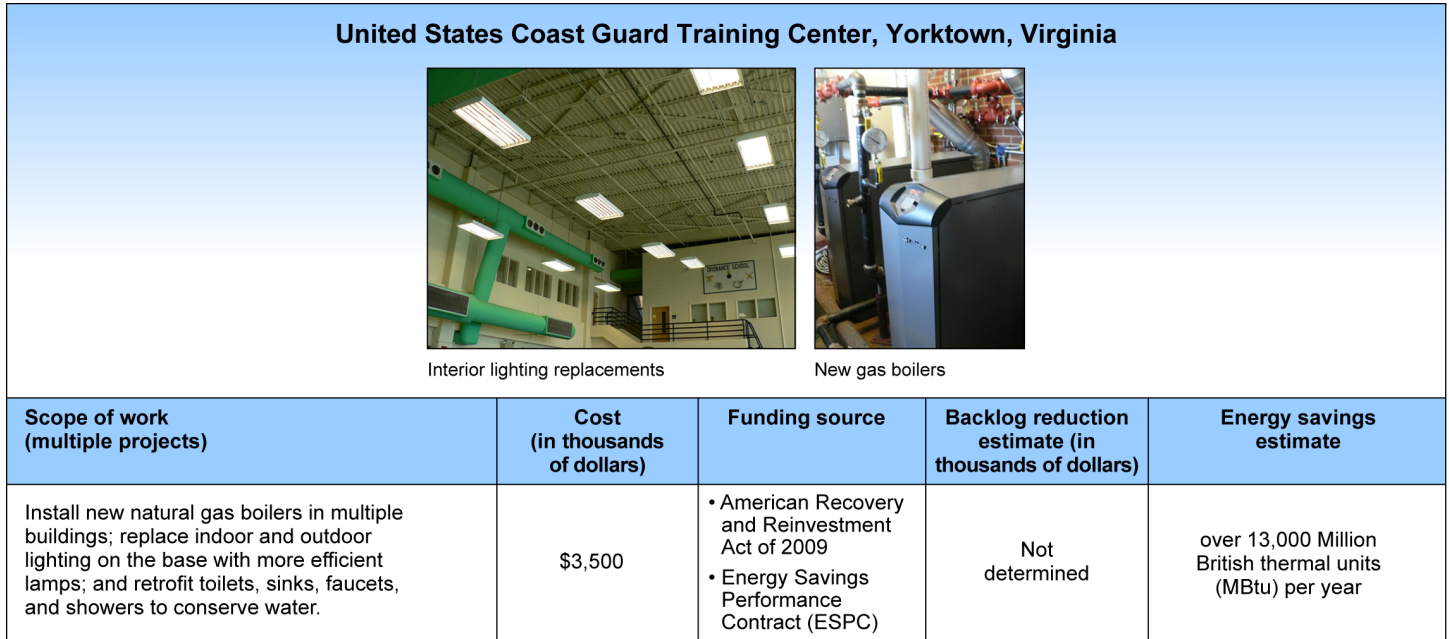


Sources: GAO presentation of Department of Energy (DOE) information; DOE (photographs).

Note: Estimates above are based on a GAO review of agency information. We did not assess the reliability of these numbers because they were not material to our findings, conclusions, and recommendations.

Appendix I: Examples of Deferred-Maintenance and Repair Projects That Included Energy Efficiency Improvements

Figure 4: DHS Deferred Maintenance and Repair Project That Included Energy Efficiency Improvements

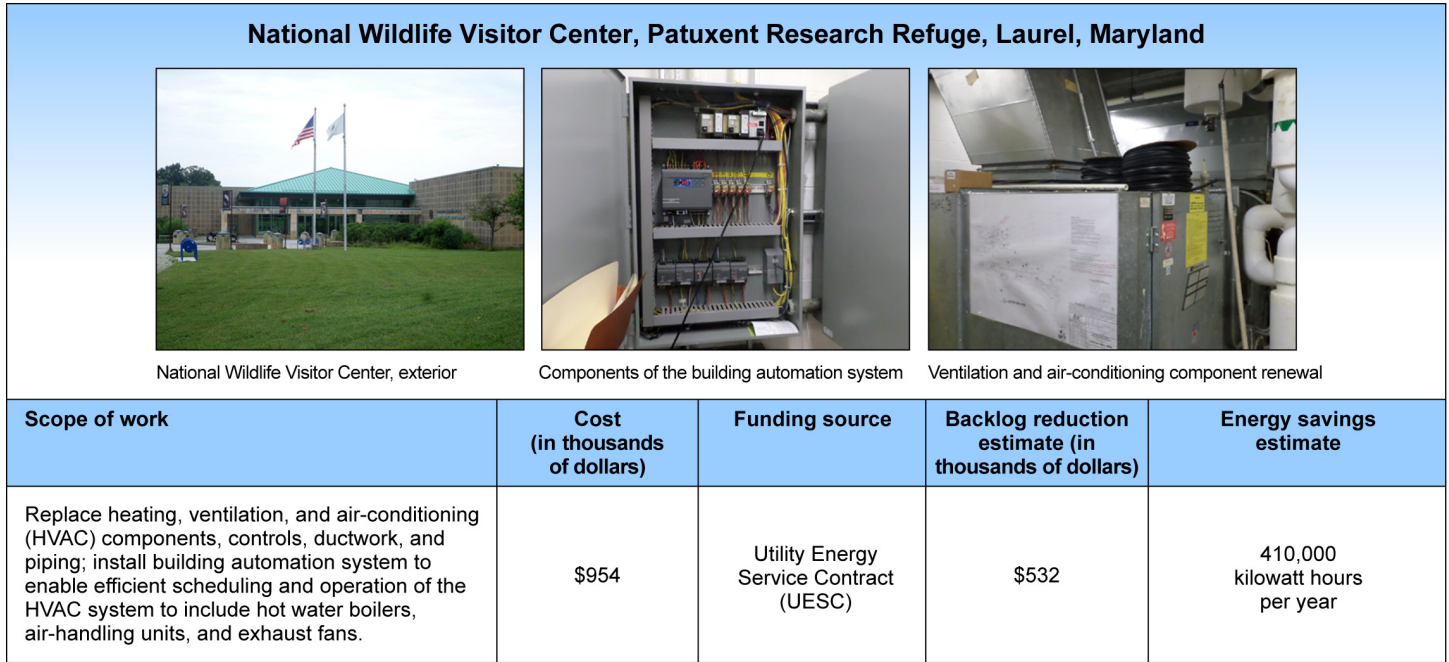


Source: GAO presentation of agency information; GAO (photographs).

Note: Estimates above are based on a GAO review of agency information. We did not assess the reliability of these numbers because they were not material to our findings, conclusions, and recommendations.

Appendix I: Examples of Deferred-Maintenance and Repair Projects That Included Energy Efficiency Improvements

Figure 5: Interior Deferred Maintenance and Repair Project That Included Energy Efficiency Improvements

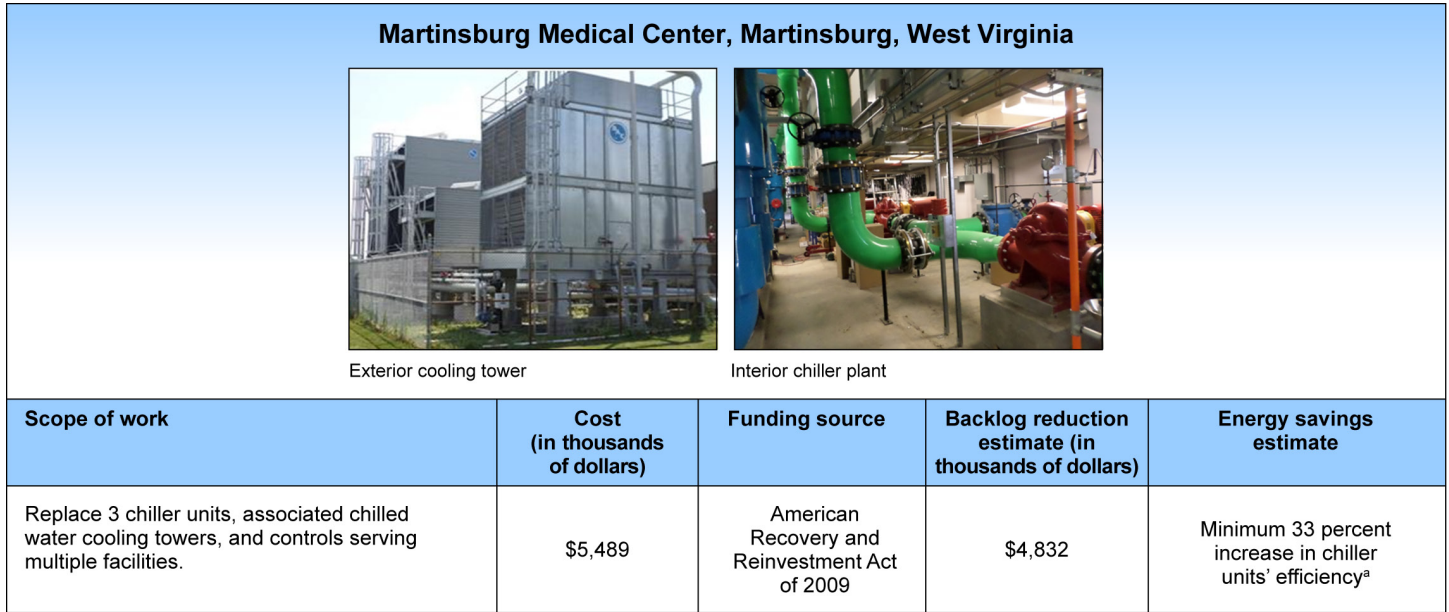


Sources: GAO presentation of agency information; GAO (photographs).

Note: Estimates above are based on a GAO review of agency information. We did not assess the reliability of these numbers because they were not material to our findings, conclusions, and recommendations.

Appendix I: Examples of Deferred-Maintenance and Repair Projects That Included Energy Efficiency Improvements

Figure 6: VA Deferred Maintenance and Repair Project That Included Energy Efficiency Improvements



Sources: GAO presentation of agency information; GAO (photographs).

Note: Estimates above based on GAO review of agency information. We did not assess the reliability of these numbers because they were not material to our findings, conclusions, and recommendations.

^aMetering is not available to measure that actual energy savings resulting from this project. Therefore, officials used equipment specifications to estimate this increase in energy efficiency.

Appendix II: Objectives, Scope, and Methodology

The objectives of our review were to determine (1) selected agencies' estimates of their deferred maintenance and repair backlogs, and (2) the strategies, if any, these agencies used to reduce deferred maintenance and repair backlogs and how those strategies compare to leading practices. We also reported examples of deferred maintenance and repair projects that included energy efficiency improvements (see app. I).

To address our objectives, we selected five civilian agencies that were examined as part of GAO's 2011 high risk update on managing federal real property and reported a high ratio of deferred maintenance and repairs to annual operating costs. Based on these criteria, we selected the General Services Administration (GSA), the Department of Energy (DOE), the Department of Homeland Security (DHS), the Department of the Interior (Interior), and the Department of Veterans Affairs (VA).

To determine selected agencies' estimates of deferred maintenance and repair backlogs, we gathered and analyzed deferred maintenance and repair data for fiscal years 2008 through 2012¹ from agency financial reports² and the Federal Real Property Profile (FRPP).³ To assess the reliability of the agencies' deferred maintenance and repair data from fiscal year 2008 through fiscal year 2012 financial reports and the FRPP, we interviewed agency staffs who manage the data and asked them about verification and validation procedures to help ensure the accuracy of the data, as well as how the data are gathered and used to compile annual reports. We also reviewed agency guidance and instructions for reporting deferred maintenance and repair data. We found the data to be sufficiently reliable for our reporting purposes and we note the limitations we identified in the data where appropriate throughout this report. Since agencies do not report deferred maintenance and repair backlogs as a FRPP data element, we calculated the selected agencies' total repair needs using the condition index and replacement value data they

¹Our determination was based on the most current data available which included the 2012 financial reports and the fiscal year 2012 Federal Real Property Profile data

²Agencies report unaudited deferred maintenance and repair estimates as required supplementary information accompanying their financial statements in their annual financial reports. 31 U.S.C. § 3515.

³We selected this time period to encompass the available data subsequent to our 2008 review of agencies' maintenance and repair backlogs. See [GAO-09-10](#).

reported for each asset.⁴ To determine the reasons for differences in estimates from the two sources and the reasons for changes in agencies' estimates over time, we reviewed Federal Financial Accounting Standards issued by the Federal Accounting Standards Advisory Board (FASAB) and FRPP reporting guidance issued by the Federal Real Property Council (FRPC). We also interviewed FASAB officials and Office of Management and Budget (OMB) staff to understand changes made to the FASAB and FRPP backlog reporting requirements since 2011. In addition, we reviewed documents and interviewed officials with each selected agency about their deferred maintenance and repair backlog reporting and methods used to collect reported data and calculate measures of deferred maintenance and repair. We also inquired about the reasons for changes in their backlog estimates over time. We also interviewed staff from the OMB to discuss their role in overseeing FRPP reporting, including updates to the FRPP reporting guidance.

To identify leading practices that agencies could employ as strategies to manage their backlogs of deferred maintenance and repair, we reviewed literature on deferred maintenance and repair, in general, and also as it pertains to federal real property portfolios specifically. We reviewed studies conducted by the National Research Council (NRC) of the National Academies⁵ over the past 15 years on maintaining federal facilities.⁶ Those reported studies included: (1) *Stewardship of Federal Facilities: A Proactive Strategy for Managing the Nation's Public Assets* (1998); (2) *Investments in Federal Facilities: Asset Management Strategies for the 21st Century* (2004); and (3) *Predicting Outcomes from Investments in Maintenance and Repair for Federal Facilities* (2012). Based on the findings and recommendations within those studies, we derived nine leading practices that agencies could employ to manage the

⁴The formula for calculating repair needs is defined by $(1 - \text{condition index}/100) \times \text{replacement value}$. Under this formula, agencies report condition index as a percentage from 0 to 100, with 100 representing the best possible condition for an asset.

⁵The National Academies comprises four organizations: the National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and NRC.

⁶NRC reviews were initiated in response to requests from the Federal Facilities Council (FFC). FFC is comprised of representatives from multiple federal agencies with the intent to, among other purposes, provide a forum to identify government-wide issues regarding facility planning, design, construction, operation, maintenance, and real property management.

maintenance and repair needs of federal real property assets.⁷ We identified these nine leading practices as those most relevant and appropriate to federal agencies managing deferred maintenance and repair backlogs, but note that these do not represent all actions federal agencies could employ to improve the management of their real property to include their maintenance and repair programs.⁸ To determine whether the agencies were employing those leading practices, we reviewed agency guidance for identifying, prioritizing, and budgeting as it relates to managing their deferred maintenance backlogs. We provided the agencies—at the headquarters level—a series of structured questions and requested written responses about the extent their agency uses any of the identified leading practices for managing their deferred maintenance and repair backlogs. During 10 site visits and 2 conference calls, we discussed with agencies' site officials whether they employed those leading practices.

To identify examples of (1) leading practices agencies are using to address deferred maintenance and repair and (2) deferred maintenance and repair projects that included energy efficiency improvements, we selected at least two site-visit locations from our five agencies. These selections were based primarily on the amount of deferred maintenance and repair,⁹ geographic location, and recommendations from agency officials on sites where a deferred maintenance and repair project was undertaken that also improved energy efficiency. Specifically, we spoke with officials from:

- Colonial National Historical Park—Interior (Yorktown, VA);
- Dallas Veterans Affairs Medical Center—VA (Dallas, TX);
- National Emergency Training Center—DHS (Emmitsburg, MD);

⁷NRC findings and recommendations were based, in part, on its assessment and identification of some effective maintenance and repair practices that some federal agencies employed as well as some effective practices employed by some recognized private sector companies.

⁸We provided the identified strategies to internal subject matter experts for review and comment before finalizing our selection.

⁹The Department of Energy, Department of Homeland Security, Department of the Interior, and Department of Veterans Affairs each have numerous components, bureaus, or programs that may address deferred maintenance and repair differently. Therefore, we selected sites within components, bureaus, or programs that had the highest amounts of deferred maintenance and repair.

- Food and Drug Administration, White Oak Campus—GSA (Silver Spring, MD);
- Forrestal Building—GSA (Washington, DC);
- Fort Worth Federal Center—GSA (Fort Worth, TX);
- Idaho National Laboratory—DOE (Idaho Falls, ID); by conference call;
- Los Alamos National Laboratory—DOE (Los Alamos, NM); by conference call;
- Martinsburg Veterans Affairs Medical Center—VA (Martinsburg, WV);
- Patuxent Research Refuge—Interior (Laurel, MD);
- Thomas Jefferson National Accelerator Facility—DOE (Newport News, VA); and
- United States Coast Guard Training Center—DHS (Yorktown, VA).

Our findings based on work with the selected agencies and at selected sites do not support conclusions about other agencies and sites or about the management of deferred maintenance and repair across the federal government as a whole; however, our work provided us with insights on sites' efforts in comparison to leading practices to address maintenance and repair requirements and manage backlogs.

We conducted this performance audit from February 2013 to January 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix III: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528



**Homeland
Security**

January 9, 2014

David J. Wise
Director, Physical Infrastructure Issues
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Draft Report GAO-14-188, "FEDERAL REAL PROPERTY: Improved Transparency Could Help Efforts to Manage Agencies' Maintenance and Repair Backlogs"

Dear Mr. Wise:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO's) work in planning and conducting its review and issuing this report.

Although the report contained no recommendations for DHS, GAO did recommend that the Office of Management and Budget (OMB), in collaboration and consultation with Federal Real Property Council (FRPC) member agencies, collect and report information on agencies' costs for annual recurring maintenance and repair performed, and annual funding spent to address existing deferred maintenance and repair deficiencies.

DHS welcomes the opportunity to assist OMB, in collaboration with fellow FRPC member agencies, in addressing GAO's recommendations. DHS previously established an agency-wide Integrated Facilities Assessment Working Group as part of the Secretary's Efficiency Review Program. And, as noted in the draft report, DHS developed a standardized definition of the Federal Real Property Profile repair needs data element, including deferred maintenance. DHS representatives look forward to sharing their expertise while participating in follow-on efforts concerning maintenance and repair backlog managing and reporting.

Again, thank you for the opportunity to review and comment on this draft report. Technical comments previously were submitted under separate cover. Please feel free to contact me should have you any questions. We look forward to working with you in the future.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim H. Crumpacker".

Jim H. Crumpacker
Director
Departmental GAO-OIG Liaison Office

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

David J. Wise, (202) 512-2834 or wised@gao.gov

Staff Acknowledgments

In addition to the contact above, Michael Armes (Assistant Director), John Bauckman, Russell Burnett, Matthew Cook, Collin Fallon, Michael Mgebhoff, and Joshua Ormond made key contributions to this report.

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