



July 2018

REAL PROPERTY

GSA Is Taking Steps to Improve Collection and Reporting of Repair and Alteration Projects' Information

Accessible Version

GAO Highlights

Highlights of [GAO-18-595](#), a report to congressional requesters

Why GAO Did This Study

Each year, GSA spends hundreds of millions of dollars on R&A projects to address the repair, renovation, or modernization needs of the more than 1,600 federally owned buildings under the agency's custody and control—the average building's age is 47 years old. In fiscal year 2018, Congress appropriated \$666 million in obligational authority from the Federal Buildings Fund for GSA's R&A program. Collecting information is fundamental to monitoring progress and assessing projects' performance.

GAO was asked to review issues about GSA's collection of information needed to manage its R&A projects. This report examines how GSA (1) collects information on individual R&A projects and (2) assesses the performance of R&A projects.

GAO reviewed documentation on the systems that GSA uses to support its management of the R&A program, as well as internal GSA reports on regional offices' use of the system that tracks projects' status. GAO also interviewed officials from GSA's central office and four regional offices to understand the types of information collected on R&A projects and how the information is input in GSA's systems. To identify the regional officials to be interviewed, GAO selected a non-generalizable sample of four capital R&A projects and eight small R&A projects, active between October 2013 and August 2017, based on a preliminary analysis of GSA data.

GSA had no comments on the report.

View [GAO-18-595](#). For more information, contact Lori Rectanus at (202) 512-2834 or rectanusl@gao.gov.

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What GAO Found

The General Services Administration (GSA) requires its regional offices to collect information on their repair and alteration (R&A) projects electronically and is working to improve the completeness and timeliness of this collection. Since 2011, GSA has required its regional offices to input and update information on both capital projects (those costing more than \$3.095 million as of fiscal year 2018) and small projects (those costing less than \$3.095 million). Officials from the four regions GAO interviewed said they find this system to be useful for forecasting how a capital project will progress. Regarding small projects' information, GSA has taken steps to improve regional offices' collection by, for example, conducting monthly checks to ensure that all small projects have been created in the system, assessing the number of projects that have missing information, and introducing a simplified way that GSA's regions can enter information in the system. GSA officials reported that, moving forward, they are continuing to emphasize the importance of collecting complete and timely information, which is needed to assess the performance of all R&A projects.

Examples of Repair and Alteration Projects Under Way in a GSA Region



Source: GAO. | GAO-18-595

GSA uses schedule- and budget-focused measures to assess the individual, the regional, and the national performance of capital and small R&A projects and is working to create a consistent understanding of performance. GSA's measures rely on information input by regional officials. For example, during the construction phase, GSA uses two "project delivery" measures, which compare a project's estimated schedule and budget with actual outcomes. GSA produces regional and national reports detailing projects' performance relative to these measures. However, not all regional officials GAO spoke with view these reports as useful because they are not specific to the officials' information needs. As a result, some regions have created their own reports, contributing to an inconsistent understanding of R&A projects' performance across the agency. GSA has conducted outreach to its regions and has begun to introduce new "dashboard" reports that present a consolidated view of R&A projects' information. Moving forward, GSA's ability to assess R&A projects' performance will continue to rely on regional officials' complete and timely input of information for both capital and small projects.

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Abbreviations

A/E	architect/engineer
D/B	design/build
EASi	Enterprise Acquisition Solution integrated
ePM	Electronic Project Management
FBF	Federal Buildings Fund
FMIS	Financial Management Information System
GSA	General Services Administration
IRIS	Inventory Reporting Information System
NTP	notice to proceed
PCN	project control number
PM	project manager
PR	procurement request
R&A	repair and alteration
RFP	request for proposal
RWA	reimbursable work authorization

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July 23, 2018

Congressional Requesters

The General Services Administration (GSA) spends hundreds of millions of dollars each year on repairs and alterations to the approximately 1,600 federally owned buildings under its custody and control.¹ Repairs and alterations not only are important to keep buildings operating efficiently but also are increasingly important as buildings age and require renovation or modernization. In fiscal year 2017, GSA reported that the average age of its buildings was 47 years old and that the backlog of deferred maintenance for these buildings exceeded \$1.4 billion.² We have previously 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.³

As the needs of the aging federal inventory exceed available resources, it is important that the repair and alteration (R&A) projects that GSA funds to address these needs are completed efficiently and cost-effectively. Collecting information on these R&A projects is fundamental to monitoring their progress and assessing their performance; our prior work has shown the extent of information collected on these projects can be limited.⁴ You asked us to review issues related to GSA's collection of information needed to manage its R&A projects. This report discusses how GSA (1) collects information on R&A projects and (2) assesses the performance of R&A projects.

¹This report discusses federally owned buildings that GSA holds in its inventory. It does not include leased buildings or space.

²This amount is for deferred maintenance and repair work that was categorized as needing to be performed immediately to restore or maintain the building inventory in acceptable condition. It does not include funding required for future repair and maintenance needs.

³GAO, *Federal Real Property: Improved Transparency Could Help Efforts to Manage Agencies' Maintenance and Repair Backlogs*, [GAO-14-188](#) (Washington D.C.: Jan. 23, 2014).

⁴GAO, *Federal Real Property: GSA Could Better Identify Risks of Unforeseen Site Conditions in Repair and Alteration Projects*, [GAO-16-273](#) (Washington, D.C.: Mar. 17, 2016).

To determine how GSA collects information on individual R&A projects, we reviewed documentation on the project information systems that GSA uses to manage its capital projects—those with total construction costs that exceeded \$3.095 million—and small projects—those with total construction costs exceeding \$25,000 and less than or equal to \$3.095 million.⁵ We also interviewed officials from GSA’s central office about the project information systems and regional officials’ use of these systems. In addition, we reviewed GSA project reports from 2015 to 2017 from the system used to track small projects’ status to assess the extent to which GSA’s 11 regional offices may have varied in inputting complete and timely R&A project information. We reviewed the information in these reports to identify potential trends in regions’ complete and timely entry of R&A project information and interviewed GSA officials about the sources of information used to generate the reports and steps they take to ensure its accuracy.⁶

We also obtained data from GSA for all active R&A projects from October 2013 to August 2017. These years represent the period after GSA officials said they began tracking small projects in the system used to track status information and the most recent year for which data were available. We analyzed the data for completeness and interviewed GSA officials about how the data were generated and found them to be sufficiently reliable for the purposes of selecting projects to further our understanding of how GSA collects information on its R&A projects. Specifically, we used this data to select 12 R&A projects, including four capital projects and eight small projects, to understand the types of information collected on these projects. We also discussed the selected projects with officials from the four regions—including project team members who worked on these projects—to understand the specific project detail, budget, and schedule information being tracked and how the information was input in the project information systems. Furthermore,

⁵Capital projects require the submission of a prospectus to certain congressional committees for authorization. 40 U.S.C. § 3307(a). The prospectus threshold for fiscal year 2018 is \$3.095 million. GSA is authorized to annually adjust the prospectus threshold to reflect an increase or decrease in construction costs. 40 U.S.C. § 3307(h). Prior to fiscal year 2018, the prospectus threshold had been \$2.850 million since the start of fiscal year 2014. More broadly, officials from GSA’s central office said the agency’s “major R&A” and “special emphasis” programs—which include its Judiciary Capital Security, Consolidation Activities, and Fire Protection and Life Safety programs—are combined with its new construction, acquisition, and “minor R&A” programs to comprise its Capital Program.

⁶We did not independently verify the accuracy of data contained in these GSA reports.

we visited two of the four selected regions based on their proximity to our field office locations.

To select these 12 projects, we first identified those regions that had capital projects categorized as “substantially completed” during this time period as few capital projects are completed in a given year; seven regions were identified using this criterion. We then narrowed our selection to four regions that had varying degrees of performance based on our initial review of GSA reports containing regional schedule and budget targets. Specifically, to ensure that we were not selecting four comparable regions, we selected two regions that GSA reported had surpassed schedule and budget performance targets and two regions that had not. Each of these four regions had one substantially completed capital R&A project in the time frame, and we selected two small R&A projects from each region—those with the highest and lowest estimated costs when their respective construction contracts were awarded. The information obtained from the review of 12 selected projects and interviews of regional officials is not generalizable to all R&A projects and regions, but provides insight into how information is input by regional officials, how it is used by GSA’s central office and selected regional officials, and any issues affecting its completeness or timeliness.

To determine how GSA assesses the performance of R&A projects, we reviewed internal guidance and guidelines on the agency’s project-level performance measures, performance goals, and performance reporting related to R&A projects.⁷ In addition, we reviewed performance reports produced by GSA from its project information systems to understand regional R&A projects’ performance relative to GSA’s performance measures. We also reviewed documentation on GSA plans to develop new performance reporting on capital and small projects, including R&A projects, and outreach plans to understand regional officials’ reporting needs. Finally, we interviewed officials from GSA’s central office—as well as officials from four selected regions, described above—to discuss the use and usefulness of these project performance reports.

We conducted this performance audit from May 2017 through July 2018, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain

⁷These documents included but were not limited to GSA’s *FY17 Capital Program Performance Tracking* document and *FY17 Small Projects Measure/KPI Implementation Guidance*.

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

GSA spends hundreds of millions of dollars each year on needed repairs to the more than 1,600 federally owned buildings under its custody and control, which are occupied by a wide variety of federal tenant agencies. The agency's R&A program provides repairs and alterations for buildings to ensure that they will protect both the government's investment and the health and safety of buildings' occupants, support the transfer of federal agencies from leased space, and be cost-effective.

GSA prioritizes capital and small R&A projects for selection differently. GSA gives priority to repairs to prevent deterioration and damage to buildings, their support systems, and operating equipment. GSA's central office uses criteria based on agency-wide strategic goals to rank and prioritize projects for funding.⁸ According to GSA's *Fiscal Year 2019 Congressional Justification*, the agency prioritizes R&A capital projects relative to a set of six criteria, each of which consider factors such as space consolidation, customer priorities, project urgency, facility

⁸Tenant agencies can also request that GSA pursue R&A projects through what is known as a "reimbursable work authorization." Such projects, funded by agencies, range from installing equipment or making security upgrades to major renovations of buildings. GSA also has the authority to delegate some R&A work directly to tenant agencies. GSA's *Delegation of Authority for Individual Repair and Alteration Guide* requires that, among other things, agencies only request a delegation of authority for a specific repair or alteration, that the estimated cost of the project not exceed \$1 million unless approved by the GSA Administrator, and that the delegation be in the best interest of the government. In January 2015, GSA also provided a blanket delegation of authority for agencies to perform small alteration work valued at \$2,500 or less.

conditions, historic status, and code compliance.⁹ For small R&A projects, GSA's central office reviews those with estimated costs exceeding \$250,000 and develops an "approved" list of projects for its regions using criteria similar to those used to prioritize capital projects.¹⁰ GSA's small R&A projects primarily focus on building repairs and equipment and other replacement issues.

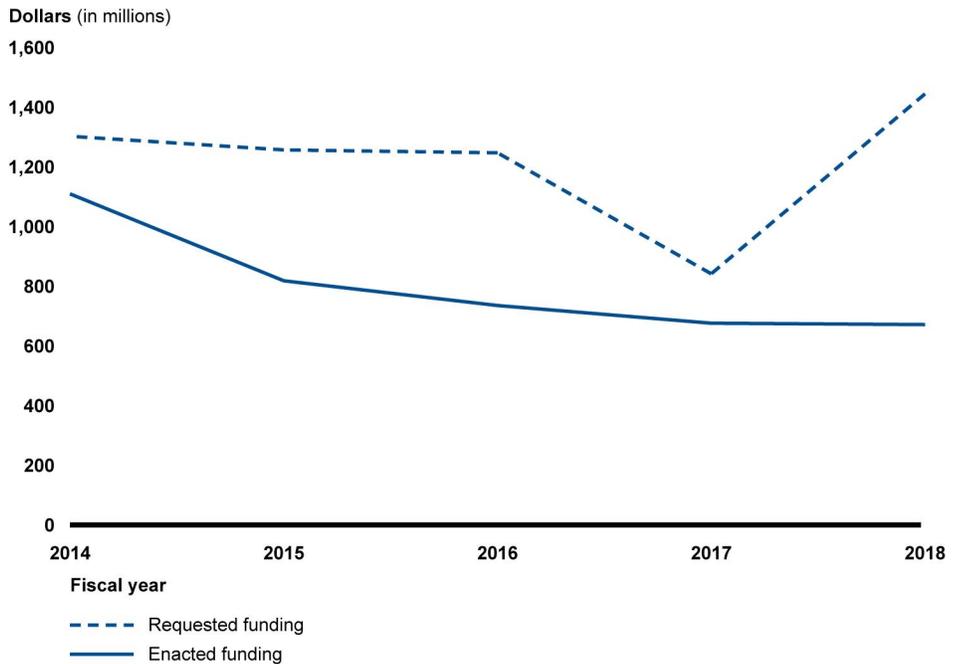
The Federal Buildings Fund (FBF), established by the Public Buildings Act Amendments of 1972 and administered by GSA, is the primary source of funds for all operating and capital costs associated with federal space—including repairs and alterations. GSA collects rent from tenant agencies, deposits it into FBF, and is appropriated obligational authority by Congress to fund real property acquisition, repairs and alterations, operation, maintenance, and disposal. As shown in figure 1, the amount of funding appropriated in obligational authority for R&A projects has steadily decreased since fiscal year 2014—and has been below the amount GSA requested each fiscal year. According to GSA officials, this decline in funding has contributed to the agency's backlog of deferred maintenance. In fiscal year 2018, GSA requested more than \$1.4 billion for R&A activities; \$666 million in obligational authority was appropriated

⁹Specifically, GSA's *Fiscal Year 2019 Congressional Justification* lists criteria including the following: (1) Serving Our Partners, which includes factors such as space consolidation and customer priorities; (2) Reducing GSA's repair backlog, which includes factors such as project urgency and facility conditions; (3) Promoting Savings and Economic Development, which includes factors such as project phase, lease cost avoidance, agency rent savings, return on investment, payback period and market factors; (4) Reducing the Federal Footprint, which includes factors such as space recapture and utilization rate improvement; (5) Ensuring a Safe, Secure, and Responsible Work Environment, which includes factors such as code compliance, seismic and accessibility improvements, and historic status; and (6) Asset Performance, which includes factors such as planned holding period for an asset and GSA's evaluation of the asset's contribution to the performance of the overall portfolio.

¹⁰Officials from GSA's central office said that small projects with costs greater than \$250,000 comprise approximately 65 percent of the agency's minor repairs and alterations appropriation, but regional offices are able to deviate from this list in the event that priorities shift or regional emergencies require adjustments. The remaining 35 percent of this appropriation is provided to GSA's regional offices for small projects between \$25,000 and \$250,000 at their discretion. According to GSA officials, the central office reviews all of the R&A program's obligations at the end of each year to confirm that they are in line with GSA's goals and objectives for the program.

from the FBF to perform major and minor repairs and alterations.¹¹ GSA has requested \$909.7 million for R&A activities for fiscal year 2019.

Figure 1: Requested and Appropriated Obligational Authority for the General Services Administration’s (GSA) Repair and Alteration Projects, Fiscal Years 2014 to 2018



Source: GAO analysis of GSA information. | GAO-18-595

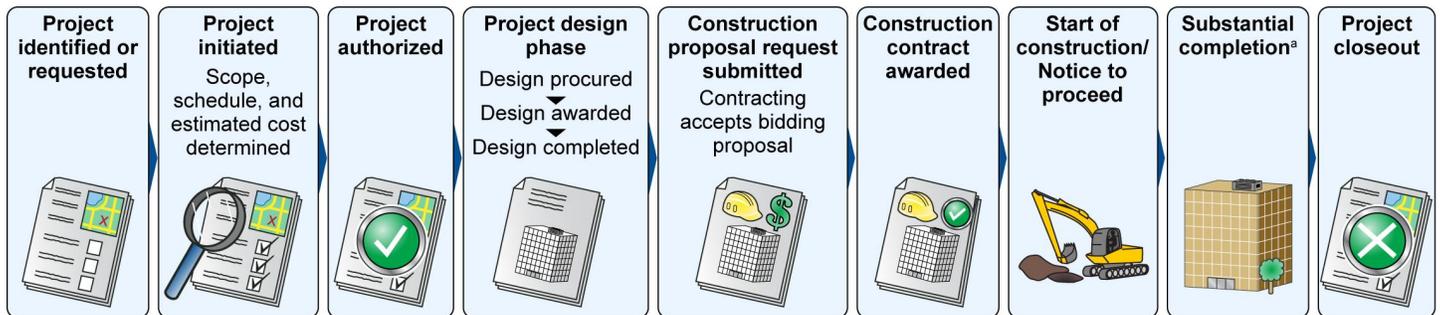
Note: GSA officials explained that the larger amount requested for fiscal year 2018 was, in part, related to the lower request made the prior year.

GSA’s Public Buildings Service manages R&A projects through its central office in Washington, D.C., and 11 regional offices. GSA’s central office establishes programming, design, and construction standards and guidance, and provides technical backup, as needed. GSA officials in both the central and regional offices are involved in assessing the needs of federal facilities and guiding R&A project development and execution. Once a project is authorized and funded, GSA’s regional offices oversee the design and construction phases of the project, from the procurement

¹¹We have previously reported on factors affecting the resources in the Federal Buildings Fund. See GAO, *Federal Buildings Fund: Improved Transparency and Long-Term Plan Needed to Clarify Capital Funding Priorities*, [GAO-12-646](#) (Washington, D.C.: Jul. 12, 2012) and GAO, *Capital Financing: Alternative Approaches to Budgeting for Federal Real Property*, [GAO-14-239](#) (Washington, D.C.: Mar. 12, 2014).

of design through the management of construction until project closeout.¹² Further details of GSA’s R&A project design and construction delivery process are shown in figure 2.

Figure 2: General Services Administration’s (GSA) Repair and Alteration Project Design and Construction Delivery Process



Source: GAO analysis of GSA information. | GAO-18-595

³GSA considers a project to be “substantially completed” on the date on which project space is suitable for occupancy.

GSA Collects Information on R&A Projects Electronically and Is Taking Steps to Improve the Collection of Small Project Information

Regional GSA Offices Collect Information on Capital and Small R&A Projects Electronically

In order to track projects, GSA has developed numerous systems that regional officials are required to use to collect information electronically on R&A projects. Each of these systems is used to collect different types of information, such as information on potential projects or funding details. These systems are used throughout the phases of GSA’s project design and construction delivery process, starting at the point that a potential

¹²GSA’s project design and construction delivery process is part of the agency’s Design Excellence & Construction Excellence programs, which the agency has reported were designed to provide taxpayers with outstanding and cost-effective federal buildings. We have previously issued work on GSA’s Design Excellence Program. See GAO, *Federal Buildings: More Consideration of Operations and Maintenance Costs Could Better Inform the Design Excellence Program*, [GAO-18-420](#) (Washington, D.C.: May 22, 2018).

project is first identified, and each system serves various management purposes, as noted in table 1.

Table 1: Description of Electronic Systems Used to Collect Information for General Services Administration’s (GSA) Repair and Alteration (R&A) Projects

System ^a	Description
Inventory Reporting Information System (IRIS)	A planning system used by GSA regional offices to track work needed and plan R&A projects. The information in this system is used to develop ideas for future R&A projects and support planning decisions.
Pegasys	Financial system that contains project funding and payment information and supports financial planning and budgeting.
Financial Management Information System (FMIS)	Database used to store Pegasys financial data in an easy to understand format for use by GSA personnel in the central and regional offices.
Enterprise Acquisition Solution integrated (EASi)	A system used to create and track contract requests, awards, and modifications made during the course of projects.
Electronic Project Management (ePM/ePMXpress)	Project management system that contains information such as project status, project team, schedule, scope, and budget data. Depending on a project’s size and complexity, a project management plan and other artifacts may be loaded to the Electronic Project Management (ePM) project record. The tool has two versions: <ul style="list-style-type: none"> ePM, which is designed to collect substantially more data and is used for capital projects ePMXpress, which is used to collect a smaller amount of information on small projects.

Source: GAO analysis of GSA information. | GAO-18-595

^aThese five systems are also used by GSA for project types other than R&A projects.

While GSA uses all of these systems to collect information on R&A projects, ePM/ePMXpress is the system used to track a project’s progress because it supports and facilitates the tracking of project status and related performance reporting. GSA regional officials initially create records of capital projects in ePM early in the planning process—about 2 years before funding is requested from Congress—and for small projects in ePMXpress soon after they are authorized for initial funding. Once a project is entered into ePM/ePMXpress, GSA project team members (which include the project manager, other regional GSA staff, and may include external contractors) populate and update key types of project information at specific points in the project’s design and construction delivery process.¹³

¹³Information in ePM and ePMXpress is required to be populated and updated in accordance with GSA, Office of Design and Construction, *FY18 Capital Projects ePM Requirements* (Washington, D.C.: October 2017) and GSA, Office of Design and Construction, *FY18 Small Projects ePM/ePMXpress Requirements* (Washington, D.C.: March 2018).

GSA's central office first introduced ePM as a pilot project in 2009 and, to establish consistency in the information collected, issued minimum requirement guidelines for the project information to be input in the system in 2011.¹⁴ These guidelines require project team members to enter specific information on both capital and small projects into ePM. GSA introduced ePMXpress in late 2012, and it provides regional officials with a simplified interface to input and track small project information. This simplification is reflected in the types and amounts of information GSA requires project teams to collect in ePM compared to ePMXpress:

- For capital projects in ePM, there are 42 modules such as project details, funding, contracts, and schedule data.
- For small projects in ePMXpress, there are 7 modules—program information, project details, project team details, schedule, funding, project manager financials, and file manager information.
- Within these modules, project team members are required to input specific baseline and actual milestone dates in ePM/ePMXpress for both small and capital projects, including when a project's design is complete, when construction is authorized to begin, and when construction is substantially complete. Capital projects require 57 milestones, compared with up to 16 milestones for small projects.¹⁵

See appendix II for additional information on the specific types of information that regional GSA officials are required to collect on their capital and small R&A projects.

GSA guidelines also encourage project team members to collect and record additional R&A project information in ePM/ePMXpress—beyond what is required for capital and small projects—as a best practice. Officials from GSA's central office said storing additional information in this system encourages collaboration across both project teams and regions, promotes a project management culture that results in more efficiency, and allows GSA to more efficiently prepare reports for its customers. Officials from three of the four regional offices we contacted

¹⁴According to GSA, ePM is to be used across the agency to allow access to consistent capital project information, to streamline project efficiency through standardized process workflows, and to improve stakeholder collaboration.

¹⁵ePM and ePMXpress are broken down into modules for different types of data and each of these modules contain multiple data fields. GSA officials said that in ePM these modules include hundreds of possible data fields and in ePMXpress there are about 65 data fields for required and additional information.

provided examples of project team members in their region inputting more information on their R&A projects than required by GSA's central office. For example, officials in one region said they have required their project team members to collect additional information on their projects that allow the region to monitor staff workload, forecast the number of future small projects that may be needed, and ensure that officials have sufficient resources available to oversee their region's projects.

GSA Is Continuing Efforts to Improve Its Collection of Small R&A Project Information

According to GSA officials, they have seen improvements in the collection of capital R&A project information since first requiring regional offices to use ePM. Officials from GSA's central office said that since ePM was first introduced in 2009, they have worked with regional officials to adjust the types of information that project team members must input to improve the completeness, timeliness, and usefulness of project information collected. As a result, GSA officials reported that project team members are now (1) consistently creating capital R&A projects in ePM and (2) regularly updating information on these projects in a complete and timely manner, throughout the agency's project design and construction delivery process. Officials from GSA's central office said they verify that the projects have been entered into ePM when regional officials request them for inclusion in GSA's budget, a process that occurs during a project's early planning stages.¹⁶ These officials added that once a capital project is funded, project team members are required to actively manage its details in ePM, providing regular updates through various reporting tools. Furthermore, they stated that, as few new capital projects are funded each year, each capital project is highly visible and subject to a degree of scrutiny that leads to the identification and correction of any errors in ePM.¹⁷ In addition, according to GSA officials, missing project information would be captured in regional performance reports. For these reasons, GSA

¹⁶Regional officials submit this information as part of GSA's Capital Investment and Leasing Program's annual call for capital project submissions.

¹⁷For example, GSA central office officials said that, in their fiscal year 2017 R&A program, they funded five new capital R&A projects, while 776 small R&A projects were funded.

officials said they do not develop reports on the creation of capital projects in ePM or the timeliness of updates made to these projects.¹⁸

Project team members we interviewed said that having information on capital R&A projects in ePM is useful in a number of ways. For example, project team members from all four regions we interviewed said they find the “earned value” tool in ePM to be useful for project management. This tool uses schedule and budget information to forecast how a capital project is expected to progress and analyzes progress as new information is added. In addition, officials from two regions stated that ePM is a good tool for storing project documents for internal agency use, and officials from one of the regions said ePM offers a useful means to securely transmit capital project documents to both internal and external stakeholders.

GSA also reported improvements in the completeness and timeliness of updates to small projects’ information in ePMXpress in recent years. GSA conducts monthly checks to assess the number of small projects in ePMXpress with information that is either missing or out of date and issues reports to its regions summarizing the results of these checks. In May 2015, GSA issued an internal memorandum that reiterated its existing requirement that all small R&A projects be created in ePMXpress and updated in a complete and timely manner. In October 2016, GSA’s reports showed that, of all small R&A projects in ePMXpress, on average, 5 percent had schedule data errors and 7 percent had budget data errors.¹⁹ These rates varied across GSA’s regional offices, from 0 to 11 percent for schedule errors and 1 to 16 percent for budget errors. To reduce the rate of budget data errors, in 2017 GSA began using some contract award information available in EASi or FMIS to assess small projects’ performance, instead of relying on information input in ePMXpress.²⁰ GSA’s central office officials said that they found the

¹⁸We did not independently verify the completeness or timeliness of capital project information.

¹⁹According to GSA guidance, GSA checks all small projects in ePMXpress for key information that must be entered for on-time and on-budget measures to identify potential errors. If this information is not entered and updated in a timely manner in accordance with GSA guidance, the project is reported as having a data error.

²⁰Some data in ePM/ePMXpress may also be contained in IRIS, Pegasys, and EASi, which are the authoritative sources for that data. However, ePM/ePMXpress also contains information such as project status, specific schedule milestones, project documents, and correspondence that does not exist in other systems.

information in these systems to be more up to date. After GSA implemented this action, its September 2017 report showed that less than one percent of small R&A projects had errors in their schedule or budget data. Specifically, nine of GSA's 11 regions had no small R&A projects with schedule errors, and 10 regions had no budget errors.

GSA has reported that the rate at which project team members initially create all of their small R&A projects in ePMXpress has also improved in recent years. Each month, officials from GSA's central office take steps to verify that funded projects have been created in ePMXpress by manually reconciling information between ePMXpress and IRIS.²¹ GSA's stated goal is to have 100 percent of small projects created in ePMXpress, and its guidelines require project team members to create all small projects in ePMXpress within 30 days of being approved for funding.²² We found that recent GSA reports on this reconciliation showed that the overall percentage of small projects having been created in the system has improved. At the beginning of fiscal years 2016, 2017, and 2018, nationwide compliance trended from 81 percent to 95 percent to 92 percent, respectively. In addition, the lowest percentage of small projects created in ePMXpress in any one individual region at the start of fiscal year 2016—61 percent—had improved to 88 percent by the outset of fiscal year 2017 and was 85 percent at the beginning of fiscal year 2018. At that time, the percentage of small projects created in ePMXpress ranged, by region, between 85 and 100 percent. GSA officials said they expect to find some small projects to be missing in ePMXpress because, in some cases, not enough time will have elapsed between the date of funding and the date of the reconciliation. GSA officials explained that they are continuing to take steps to emphasize the importance of having complete and timely information on all small R&A projects in ePMXpress to its regional offices. For example, to support the expectation that all small projects are created in ePMXpress, one official from GSA's central office said monthly meetings are held with regional officials to discuss expectations for the completeness and quality of the project information.

²¹GSA officials also told us that they reach out to regions before issuing the final reconciliation report each month in order to capture missing projects. GSA officials said that this process is time consuming because it requires manual updates, but the agency is working to automate the identification and correction of missing projects.

²²GSA, Office of Design and Construction, *FY18 Small Projects ePM/ePMXpress Requirements* (Washington, D.C.: October 2017).

Regional officials, including project team members, told us that ePMXpress is not useful to their work on small R&A projects, a situation that has limited the extent to which the officials use this tool, an outcome that can affect the completeness and timeliness of small project information. Specifically, officials from one region said that they view ePMXpress solely as a tracking tool for GSA's central office, not as a project management tool. In addition, some regional officials said they do not find ePMXpress to be effective as a project management tool because ePMXpress does not allow them to collect information on useful project details, such as why schedules or cost estimates change during a project or why certain events happened. Project team members from three regions said that they continue to maintain offline "cuff records"—which allow them to customize their notes on why things happened during a project—because they are easier to access and update.²³ Similarly, officials from all four regions we interviewed noted that the process of manually creating and updating all of their small projects in ePMXpress—of which there are hundreds each year—is time consuming. Furthermore, small R&A projects can often be started and completed in a short period of time, and can be completed before a project team is required to create a record in ePMXpress (within 30 days of a project's approval). For this reason, officials from one region said that it is not useful to use ePMXpress for these projects. Officials in another region also reported that one of the functions that makes ePM useful for managing capital projects—that it can securely transmit documents outside of GSA—is not useful for small projects because they do not require as much interaction with external parties.

GSA has begun considering replacement systems for ePM/ePMXpress that GSA officials suggested could include the automated creation of projects upon project approval. As of March 2018, GSA had developed a statement of work to begin pursuing a replacement for ePM/ePMXpress. According to officials from the Office of GSA's Chief Information Officer, the overall goals of a replacement include ensuring that it is easier for project team members to use than the current system.²⁴ However, the capabilities of any such system are not currently known, nor are the ways

²³According to GSA officials, there is not a specific definition of a cuff record, but it is used by a project manager to store their version of project events—not project progress—outside of ePM/ePMXpress on a local computer network.

²⁴According to the Office of GSA's Chief Information Officer, the vendor that supports the ePM/ePMXpress system will no longer support the existing system after 2021 and GSA plans to identify and introduce a replacement system by that time.

in which a different system would affect the challenges reported by regional officials.

In the meantime, GSA is continuing to emphasize the importance of using ePMXpress to create and capture information for all small R&A projects to its regional offices, as the agency is using the information to support both ongoing and new efforts. For example, creating and updating project information in a timely manner improves GSA's ability to assess R&A projects' performance at the individual, regional, and national levels, as discussed later in this report. In fiscal year 2018, GSA plans to use project information input in ePM/ePMXpress to support its efforts to improve communication with tenant agencies, and GSA guidelines state it will be important that project team members use ePMXpress throughout all project phases for their small projects and ensure that the required information is up to date. In addition, the overall amount of information that project team members are required to input will increase moving forward because GSA is now requiring staff to create additional small projects in ePMXpress in a shorter period of time. In March 2018, GSA both reduced the time that project teams have to create small projects in ePM/ePMXpress from 30 to 15 days and also began requiring that additional, non-R&A small projects be created in the system. GSA has estimated this will result in approximately 1,100 additional projects being created in ePMXpress each year.²⁵

²⁵GSA has estimated that although about one-third of the projects that would be newly required to be created in ePMXpress have already been voluntarily created by their project teams, more than 700 additional projects that are not in the system would need to be created. Prior to fiscal year 2018, ePMXpress has also been used by GSA project teams to collect information on non-R&A GSA-managed small projects including projects in leased space (\$2,000 to \$25,000 projects only). Beginning in fiscal year 2018 GSA is requiring all non-R&A GSA managed small projects in leased space (all dollar values) to be entered into ePMXpress.

GSA Uses Schedule and Budget Measures to Assess the Performance of R&A Projects and Is Taking Steps to Improve Reporting

GSA Uses Schedule- and Budget-Related Performance Measures to Assess R&A Projects

GSA's central office assesses the performance of capital and small R&A projects across its regional offices by focusing primarily on schedule and budget-related measures.²⁶ According to internal GSA guidelines on performance measures, measuring projects' schedule and budget performance allows GSA to continuously improve the project delivery and accountability of its work in order to demonstrate good stewardship of its stakeholders' limited funding.²⁷

GSA assesses the performance of R&A projects using a few key measures. First, GSA uses a "timely award" measure. According to internal GSA guidelines on performance measures, the "timely award" measure reflects the effectiveness of early planning by assessing the timeliness of the obligation of funds for construction contracts following a project's initial authorization. This measure is based on schedule information that project team members input in ePM/ePMXpress and, as mentioned earlier, budget information from the FMIS and EASi systems to compare planned obligations, projected contract award amounts, and planned contract award dates to actual results. Specifically, GSA officials stated that a project's performance relative to the timely award measure is determined based on the percentage of awards that are made within set timeframes. This measure varies slightly between capital and small projects; for example, a capital project is viewed as successful if 90

²⁶For individual R&A projects, GSA officials said they also record qualitative information after completion that can be reviewed by other teams. For example, when a project is closed out, GSA officials said that they complete outcome reports and "success story" narratives for individual projects within the Consolidation Activities Program—a subset of the R&A program— which can be used to help justify requests for future projects. GSA officials also said that R&A project teams share lessons learned through monthly webinars; GSA also shares lessons learned across the agency to drive project improvement processes through its annual strategic plan update.

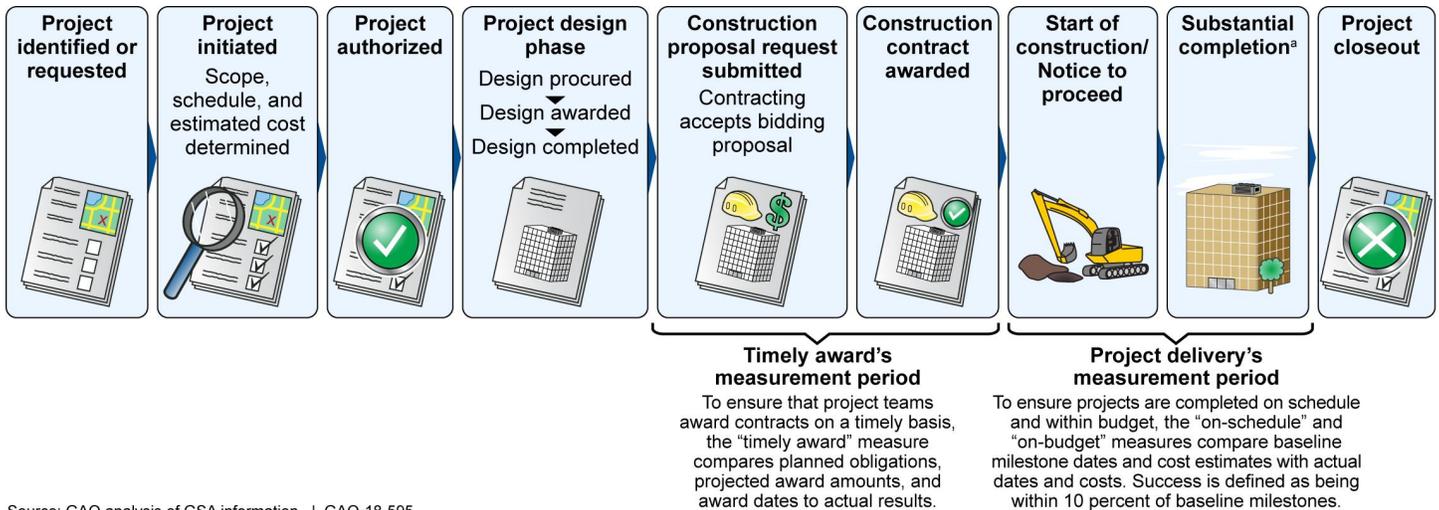
²⁷GSA, *FY17 Capital Program Performance Tracking* (Washington, D.C.: October 2016).

percent of its planned obligation dollars are awarded within 30 days of its planned “baseline” award dates set at a project’s outset, and partially successful if this awarding occurs within 45 days. Conversely, a small project is deemed successful if 85 percent of its planned obligation dollars are awarded within 30 days of its baseline award dates or within 10 percent of its estimated construction costs. If 80 percent of these funds are awarded within 45 days or 20 percent of estimated construction costs, a small project is considered partially successful with respect to this measure.

GSA also has two “project delivery” measures. Once construction begins, GSA uses information from ePM/ePMXpress, EASi, and FMIS to assess whether projects are delivered “on-schedule” and “on-budget” by comparing the alignment of a project’s (1) estimated baseline schedule and budget to its (2) actual schedule and budget. As shown in figure 3, GSA’s project-delivery measures focus on the time between the start of construction and substantial completion, which is the date on which a project is suitable for occupancy. GSA’s project delivery targets are to have 85 percent of R&A projects be completed within 10 percent of their baseline schedules, and 85 percent of them to have total costs within 10 percent of their baseline budgets. GSA reported that it uses these measures to understand how capital R&A projects contribute to its agency-wide strategic objective to establish GSA as a more effective provider of real estate services for all agencies.²⁸ According to GSA officials, tracking the rate at which capital projects—including capital R&A projects—are completed on time and within budget helps regional officials manage project expectations with their customers.

²⁸GSA’s first strategic goal listed in its *2017 Annual Performance Report / 2019 Annual Performance Plan* is to “save taxpayer money through better management of Federal real estate.” Under this goal, the R&A program is listed as a contributing program to strategic objective 1.2, which is to “establish GSA as a more effective provider of real estate services for all agencies.” The abovementioned focus on schedule and budget aligns with performance goal 1.2.2 under this objective, which is to “complete capital projects on schedule and budget.”

Figure 3: Steps in General Services Administration’s (GSA) Repair and Alteration Project Design and Construction Delivery Process Used to Measure Timeliness of Contract Award and Project Delivery



Source: GAO analysis of GSA information. | GAO-18-595

^aGSA considers a project to be "substantially completed" on the date on which project space is suitable for occupancy.

GSA reported that most of its R&A projects met the agency’s overall timely-award and project-delivery performance targets in fiscal year 2017. For the timely award measure, GSA reported that in fiscal year 2017, 93 percent of capital projects had their planned obligation dollars awarded within 30 days of their baseline award dates and that 87 percent of small projects had awards made within 45 days of their baseline dates.²⁹ For the project delivery measure, GSA reported that 99 percent of all capital projects completed on-schedule and 99 percent were on-budget in fiscal year 2017.³⁰ In that same year, GSA reported that 88 percent of small R&A projects were on-schedule and 86 percent were on-budget.³¹ GSA arrived at these results by rolling up information on individual projects’ performance. Officials from GSA’s central office said that capital projects

²⁹These results include all of GSA’s capital and small projects, not just the R&A projects that were the focus of this review.

³⁰These results include all of GSA’s capital projects, not just the R&A projects that were the focus of this review.

³¹As stated above, these results reflect performance within one phase of GSA’s project design and construction delivery process. These results do not reflect the time or costs associated with a project from the point at which it is initially requested until construction begins; time and funds spent determining scope, schedule and budget, designing the project, and awarding a contract are not reflected in these measures.

are typically completed on-schedule and on-budget at a higher rate than small projects because capital projects have a more comprehensive planning process and are often reviewed by third parties, and they said that this process tends to result in more accurate baseline estimates. These officials also said that, while GSA has assessed the performance of its capital projects for 14 years and its regional officials have grown familiar with measurement of these projects, the agency only began assessing small projects' performance in the past 3 years and regional officials are still growing accustomed to the idea of measurement on projects with lesser costs.

GSA officials are able to adjust the baseline schedule milestones and cost estimates against which the agency assesses performance when circumstances requiring additional time or funding arise during a project's construction phase.³² According to an internal GSA document detailing requirements related to performance measures and reporting for capital projects, it is more difficult to change baseline milestones for a capital project than to adjust the dates for a small project because once a capital project's baselines are input in ePM, they can only be altered through an adjudication process involving GSA's central office.³³ As described by officials in one GSA region, this process focuses on determining whether the reasons provided to support a request are strong enough to justify a baseline change. If such a change is approved by the central office, actual performance will then be compared against adjusted baseline milestone dates or cost estimates. GSA officials stated that, although there is no such adjudication process for small projects, any changes to schedule or budget baselines must be approved by regional management

³²We asked officials from the four selected regions about their projects' performance with respect to the budget and schedule metrics, including the reasons for missing or inconsistent data (e.g., matching baseline and actual dates). However, verifying the accuracy of the on-schedule and on-budget figures reported by GSA was beyond the scope of this review; our focus was on how GSA assesses the performance of R&A projects—not on the results of their assessments.

³³GSA, *FY18 Capital Program Reporting, Measure, and KPI Requirements* (Washington, D.C.: October 2017).

or, in some cases, officials from the central office depending on the context of the change.³⁴

The brief nature of some small R&A projects may affect the entry of their information and the interpretation of the reported performance. For example, we found that all eight of the small projects we reviewed had either missing baseline dates or baseline and actual milestone dates that matched exactly in the system. When asked why this may occur, officials from one region explained that small R&A projects with short durations can sometimes be completed before a project team is required to create the project's record in ePMXpress. This can result in either missing data or baseline and completion dates simply being entered in a single session.³⁵ Officials from GSA's central office said that they rely on regional officials to input accurate information throughout the course of a project, as baselines are set and actual milestones are either met or exceeded.

GSA Reports on R&A Projects' Performance at Regional and National Levels and Is Introducing New Reporting Intended to Create a Consistent Understanding of Performance

GSA's central office produces regional and national reports and provides them to their regional offices to facilitate internal discussion on R&A projects' performance. Specifically, GSA shares the reports containing regional and overall results of its timely award measure, project delivery measures, and the previously discussed reconciliation measure to encourage conversations among senior GSA leadership and regional management. For example, one report compares projects' actual progress with baseline milestones using the project delivery measures to

³⁴In January 2017, the GSA Office of Inspector General reported on its review of reimbursable work authorizations in one GSA region. In this review, the Office of the Inspector General found that when a project was not completed by its scheduled milestone, the deadline was often extended without documentation or repercussion. The Office of the Inspector General also found that this region was not documenting justifications of cases in which it did not award contracts within estimated timeframes. See *Office of Inspector General, U.S. General Services Administration, Semiannual Report to the Congress, October 1, 2016 - March 31, 2017* (Apr. 28, 2017).

³⁵At the time of our regional interviews, project team members were required to enter small projects into ePMXpress within 30 days. Subsequently, GSA issued guidelines in March 2018 that reduced that time to 15 days.

assess the accuracy of teams' planning. GSA also shares R&A project delivery measure results with the Office of Management and Budget when compiling its annual performance reports.³⁶

Regional officials varied in the extent to which they viewed R&A performance reports as useful, and some regions have developed their own approaches to understanding projects' performance. For example, officials in all four GSA regions we interviewed said that some reports distributed by the central office are not specific to their information needs. Officials from one of these regions described one report as having little value because it is difficult to understand what message the report is intended to convey. Officials from another region said they do not find a particular report to be useful because—in addition to the timely award measure that GSA emphasizes in working to understand R&A project performance—it also includes less prominent milestones in identifying whether a project is on schedule. These officials said that while their region focuses on significant milestones like a project's contract award date ("timely award" measure) to assess progress, the report often flags projects as being behind schedule based on less critical interim milestones that can be done concurrently with other tasks, such as submitting a document for legal review. When regional officials have not found the reports shared by GSA's central office to be useful, some said they rely on varying sources of information to understand performance. For example, officials from one region we interviewed said they use raw data, made available by the central office, to create reports that they feel offer a more complete picture of performance in their region and highlight projects that may be at risk. Similarly, officials from another region said they create custom consolidated reports to discuss projects and obtain an overall impression of the information available, track and assign workloads, and assess any relevant trends emerging across projects.

Officials from GSA's central office said they are aware that some regions have not found R&A performance reports to be useful. These officials 1) acknowledged that the extent of information and features that ePM/ePMXpress offers is less than some regions have told them they need to manage their projects and 2) said updating these reports only once or twice per month is not often enough for some regions. The officials added that some regions' opting to rely on other sources of

³⁶For the most recent edition of this report, see: GSA, *2017 Annual Performance Report / 2019 Annual Performance Plan* (Washington D.C.).

information has contributed to an inconsistent understanding of R&A projects' performance across the agency. GSA has been conducting outreach to its regional offices to better understand what information regions find useful to understanding their projects' performance. GSA's plan for this outreach states that one of its aims is to ensure that regions clearly understand the purpose, outcome, and value of new reports being developed.³⁷ According to this plan, GSA intends to assess the effectiveness of its outreach by gathering feedback from regional officials and reviewing analytics on usage of the reports developed.

As outreach to regions continues, GSA has begun to introduce what officials describe as "self-service dashboard" reports to present a consolidated view of R&A project information, with the intent of promoting a consistent understanding of performance across the agency. According to GSA's outreach plan for one of the forthcoming dashboards, GSA intends for these new reports to improve the transparency and timeliness of information on R&A projects, increase accountability, help identify information gaps and redundancies, and expand knowledge sharing across the agency. Even with these dashboards, GSA officials acknowledge that some regional offices may also continue to rely on other sources of information but added that the near real-time nature and ability to filter information offered by the dashboards will allow regional officials to do more with the information that their project teams input on their projects than in the past.

Specifically, GSA recently introduced a Capital Program Information Dashboard, which is an interactive, online presentation of information on all capital projects—including R&A projects—that is updated as often as daily, in some cases, using information from ePM, IRIS, FMIS, and other sources.³⁸ The overall Capital Program Information Dashboard consists of a series of dashboards that present project information in a number of

³⁷GSA's *Small Projects Information Dashboard Change Management & Communications Plan* states that the agency's communication and change management objective for its outreach is to communicate and lead change across all levels of the organization about the dashboard. The plan also states that to identify concerns of GSA regional offices and other stakeholders across the agency, the outreach will involve regional review-team meetings, briefings, newsletter articles, talking points, and the dissemination of a frequently-asked-questions document.

³⁸GSA officials said that the data that populates the Capital Project Information Dashboard is updated at different frequencies. These officials said most of its data is now updated daily, but data related to the timely award measure are updated weekly and data supporting the project delivery measures are updated monthly.

ways. For example, the National Summary Dashboard is comprised of three sections:

- *Program Measures Performance:* This section provides a national and regional view of schedule and budget performance for capital projects, using the 85 percent fiscal year 2018 target as a reference line to show how each region is performing.
- *Program Award Performance:* This section provides a national and regional view of capital projects' performance with regard to GSA's timely award measure, displaying comparisons of actual contract award dates and original baseline dates.
- *Program Summary:* This section provides a national and regional view of capital projects, both by dollars appropriated and by the number of projects, for categories including: active projects, projects declared substantially complete within the current fiscal year, and overall combined totals. This section displays these values at a regional level in chart form and by state in an interactive map.

At the same time that GSA introduced regional and national-focused dashboard reports on capital projects, it also introduced (1) a Project Details Dashboard for capital projects that provides project-level information by region and state and (2) a Project Award Performance Dashboard that provides capital project-level information for planned awards; this dashboard can be filtered by fiscal year, program, vendor, project name, and contract type or number. Both of these dashboards have multiple sections; for example, the Project Award Performance Dashboard includes sections that focus on performance relative to the project delivery and timely award measures, highlight capital projects that may require adjustments to their schedule or budget baselines, and detail reasons for requested changes to baselines.

In April 2018, GSA also launched a draft version of a dashboard for small projects that it expects to give regional officials direct access to up-to-date information on their small R&A projects. Similar to the Capital Project Information Dashboard, the Small Project Dashboard will integrate information from systems including ePMXpress, IRIS, EASi, and FMIS. GSA's plan for implementation states that this dashboard will present regional officials with a consolidated view of program and project information that includes status updates on timely-award and project-delivery measures. GSA expects that this dashboard, which is to be finalized before the end of fiscal year 2018, will offer "near real-time access" to small project information and reports to facilitate program management and data-driven decision-making. Finally, GSA officials said

the agency is also planning to introduce a dashboard that will provide its customer agencies with up-to-date information in 2018. GSA expects this report to remove the delay between the inputting of project information and its accessibility to all parties involved, making the information more transparent both internally and externally.

GSA's ability to assess and understand the performance of R&A projects will continue to rely on project team members' entry of information as it finalizes its set of dashboard reports. GSA documentation on the introduction of the Small Projects Dashboard states that because ePM/ePMXpress will continue to serve as a key source of schedule information, regional officials' regular input of R&A project information will be needed to make the dashboards meaningful.³⁹ This documentation also suggests that regional officials consider entering additional project information, beyond what is required, so it will be available to them in the dashboards. Officials from GSA's central office acknowledge that their ongoing outreach to the regional offices emphasizes the importance of complete and timely information—as discussed earlier—to the agency's ability to comprehensively understand R&A projects' performance.

³⁹As of April 2018, the draft version of GSA's Small Project Dashboard included a section on data errors that affect the quality of the information shared in the dashboard. GSA officials told us, via e-mail in April 2018, that they are considering the addition of a section focused solely on reporting data quality as a potential enhancement.

Agency Comments

We provided a draft of this report to GSA for comment. An official in GSA's Audit Management Division told us in an email that the agency had no comments on the draft report.

We will send copies of this report to appropriate congressional committees and the Administrator of the General Services Administration. In addition, we will make copies available to others upon request, and the report will be available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at 202-512-2834 or rectanusl@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 III.



Lori Rectanus
Director
Physical Infrastructure Issues

List of Requesters

The Honorable Ron Johnson
Chairman
The Honorable Claire McCaskill
Ranking Member
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable James Lankford
Chairman
The Honorable Heidi Heitkamp
Ranking Member
Subcommittee on Regulatory Affairs and Federal Management
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Thomas R. Carper
Ranking Member
Permanent Subcommittee on Investigations
Committee on Homeland Security and Governmental Affairs
United States Senate

Appendix I: Objectives, Scope, and Methodology

Our objectives were to discuss how GSA (1) collects information on repair and alteration (R&A) projects and (2) assesses the performance of R&A projects. The scope of the work focused on R&A projects from two R&A program funding streams: “capital” R&A projects (those with costs greater than \$3.095 million) and “small” R&A projects (those with costs less than or equal to \$3.095 million and greater than \$25,000);¹ we did not include projects related to new building construction projects or reimbursable work authorization projects, which are those performed by GSA but funded by other federal agencies to improve or renovate federal facilities.² We collected information on systems supporting GSA’s management of its R&A projects, including its Electronic Project Management (ePM/ePMXpress) system, Pegasys, Financial Management Information System (FMIS), Inventory Reporting Information System (IRIS), and Enterprise Acquisition Solution integrated (EASi) system. Despite some discussions of the accounting systems involved with R&A projects, this review did not involve a financial audit of the R&A program. We also reviewed our prior work and reports from the GSA’s Office of Inspector

¹Capital projects require the submission of a prospectus to certain congressional committees for authorization. 40 U.S.C. § 3307(a). As of fiscal year 2018, GSA considers small R&A projects to be those with costs that range from \$25,000 to \$3.095 million. GSA also funds projects with costs less than \$25,000 with other programs. GSA is authorized to annually adjust the prospectus threshold to reflect an increase or decrease in construction costs. 40 U.S.C. § 3307(h). Prior to fiscal year 2018, the prospectus threshold had been \$2.850 million since the start of fiscal year 2014.

²A reimbursable work authorization is an agreement between GSA and a client agency, whereby GSA agrees to provide goods and services and a client agency agrees to reimburse GSA for the cost of these goods and services, indirect costs, and GSA fees. Work can vary from installation of equipment to major renovations.

General to obtain background information and identify any existing audit findings on the R&A program that might be relevant for our objectives.³

To determine how GSA collects information on individual R&A projects, we reviewed documentation related to the R&A program, both provided to us by GSA and found on the agency's web site. In addition, we reviewed GSA reports of the rates at which regional officials have created and updated information on their small projects in a timely and complete manner in ePMXpress. By reviewing reports generated by GSA's central office—which are (1) based on their manual reconciliation of information between ePMXpress and IRIS and (2) based on the GSA identified errors in on-budget and on-schedule data in ePMXpress, EASi, and FMIS—we were able to assess the variance between regions in the extent to which project team members created their small R&A projects in ePMXpress—and subsequently updated this information as projects move forward—between 2015 and 2017. We reviewed the information in these reports to identify potential trends in regions' complete and timely entry of R&A project information and interviewed GSA officials about the sources of information used to generate the reports and steps officials take to ensure its accuracy. However, we did not independently verify the accuracy of the data contained in these reports.

We also selected 12 R&A projects using GSA's central office data from October 2013 through August 2017 to understand how information is input into the systems by regional officials, how it is used by officials from GSA's central office and selected regional offices, and whether there are any issues affecting the information's completeness or timeliness. We selected the 2013 to 2017 time frame because this time period represents the period after GSA officials said that they began tracking small projects in the system used to collect information on project status, and the period represents the most recent data available at the time of our selection. For our project selection, we obtained data from GSA central office for all R&A projects that existed but not were closed out as of the beginning of fiscal year 2014 or had been added since the beginning of fiscal year

³The prior GAO work reviewed included but was not limited to GAO, *Federal Real Property: Improved Transparency Could Help Efforts to Manage Agencies' Maintenance and Repair Backlogs*, [GAO-14-188](#) (Washington D.C.: Jan. 23, 2014) and GAO, *Federal Real Property: GSA Could Better Identify Risks of Unforeseen Site Conditions in Repair and Alteration Projects*, [GAO-16-273](#) (Washington, D.C.: Mar. 17, 2016). We also reviewed reports from the GSA's Office of Inspector General, including Office of Inspector General, U.S. General Services Administration, *Semiannual Report to the Congress, October 1, 2016 - March 31, 2017* (April 2017).

2014. We reviewed documentation on the collection of the data and analyzed the data for missing information and found the data to be sufficiently reliable for the purpose of selecting projects to understand how R&A project information is input by regional officials and how it is used across GSA.

To arrive at these 12 projects, we selected projects from regions that had one or more capital R&A projects categorized as having been substantially completed between October 2013 and August 2017, as most regions undertake few capital projects in a given year. We initially identified seven GSA regions that had substantially completed at least one capital project during this timeframe and narrowed this number to four regions—GSA regions 5, 6, 7 and 9—which had varying degrees of performance based on our initial review of GSA reports containing schedule and budget metrics. Specifically, to ensure that we were not selecting four comparable regions, we selected two regions that surpassed GSA performance targets and two regions that did not surpass their performance targets.⁴ In addition, we gave preference to regions in proximity to our field offices’ locations to minimize costs associated with site visits. Within each of the four selected regions, we identified the sole capital R&A project that was substantially completed between October 2013 and August 2017, for a total of four capital projects. We then selected two small projects—those with the highest and lowest “Estimated Cost of Construction at Award”⁵ and had been active between October 2013 and August 2017—for a total of eight small projects (see table 2 for list of selected projects).⁶

Table 2: The General Services Administration’s (GSA) Repair and Alteration Projects Selected for Discussion

GSA region	Location	Project description in GSA data	Project cost (in thousands)
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⁴For small R&A projects, we reviewed GSA reports that included information on R&A projects’ performance in regions, including the number of small projects with schedule and budget errors as well as those that had exceeded their schedule and budget targets. We also reviewed performance reports identifying the percentage of projects that had not been reconciled between the IRIS and ePMXpress systems.

⁵A project’s Estimated Cost of Construction at Award represents the total costs related to construction, as estimated at the point when its construction contract is awarded.

⁶Of the eight small projects selected, seven were shown to have been completed between October 2013 and August 2017. One project—“IL-CHICAGO-JOHN C. KLUCZYNSKI F-JCK/LPO Fire Alarm System Update”—remained in execution as of August 2017.

Appendix I: Objectives, Scope, and Methodology

GSA region	Location	Project description in GSA data	Project cost (in thousands)
Capital projects: Region 05 - Great Lakes	Chicago, IL	IL-CHICAGO-536 S. CLARK Office Build Out / JCK Parking Expansion	\$5,837.3
Capital projects: Region 06 - Heartland	Overland, MO	MO-Overland-Prevedel FB-R&A	31,448.7
Capital projects: Region 07 - Greater Southwest	Austin, TX	TX-Austin- JJ Pickle FB R&A	36,794.8
Capital projects: Region 09 - Pacific Rim	San Diego, CA	CA-San Diego-Edward J Schwartz FB&CT - Cap LS R&A, ICE FPS UST Space CPP	67,376.2
Small projects: Region 05 - Great Lakes	Detroit, MI	MI-DETROIT-P V MCNAMARA F B-ReKey Building Common Areas	77.3
Small projects: Region 05 - Great Lakes	Chicago, IL	IL-CHICAGO-JOHN C. KLUCZYNSKI F-JCK/LPO Fire Alarm System Update	1,999.7
Small projects: Region 06 - Heartland	Kansas City, MO	MO-KANSAS CITY-FEDERAL BG-Building 2306 Emergency Plumbing Repairs	28.4
Small projects: Region 06 - Heartland	Overland, MO	MO-OVERLAND-CHAS F PREVEDEL FB-Atrium, Food Service and Lobby Enhancements	2,554.3
Small projects: Region 07 - Greater Southwest	Brownsville, TX	TX-BROWNSVILLE-BROWNSVILLE FED BLDG/COURTHOUS-15-54-Replace backflow preventor	25.1
Small projects: Region 07 - Greater Southwest	Dallas, TX	[DC13-01] Domestic Water Piping Replacement - TX-DALLAS-E CABELL FOB/USPO/CTHS	2,303.0
Small projects: Region 09 - Pacific Rim	Santa Rosa, CA	CA-SANTA ROSA-JOHN F SHEA FED BLDG-Install Automatic Entry Door	26.2
Small projects: Region 09 - Pacific Rim	Sacramento, CA	CA-SACRAMENTO-FEDERAL BUILDING-Parking Lot Rehabilitation	2,618.5

Source: GAO analysis of GSA data. | GAO-18-595

We conducted interviews with regional officials from these four regions—visiting two of the four regions that were located near our field offices. During those interviews, we discussed data entry processes and posed questions both specific to the region’s selected projects and the R&A program more broadly. During interviews with both GSA’s central and regional offices, we asked officials to explain how the IRIS, ePM/ePMXpress, EASi, and any other systems are used throughout the planning and execution of R&A projects. Specifically, we reviewed and discussed processes related to project information collection in general with regional officials and specific project detail, budget, and schedule information with the project team members who input information on the selected capital and small projects into these systems; for example, we raised questions about instances in which baseline and actual dates matched for some projects. Information on the projects we selected is not generalizable to all R&A projects, and the views of the regional officials interviewed are not generalizable to all of GSA’s regional offices.

To determine how GSA assesses the performance of its R&A projects, we requested and reviewed documentation from GSA on the extent to which the agency evaluates the performance of its R&A projects and inquired about the project information systems used to produce related performance reports. In addition to the documents provided by GSA, we used publicly available annual reports and budget justifications detailing GSA's overall goals and mission and the ways in which GSA has stated that the R&A program supports these aims. After an initial review of documents provided by GSA, we identified and requested specific internal guidance and guidelines, information on the criteria used to select individual R&A projects for funding, and reports related to both capital and small projects' performance.⁷ We used information contained in some of these reports to identify the performance metrics GSA has established for assessing R&A projects' performance and to assess overall regional performance relative to these metrics, as reported by GSA. We did not independently verify the accuracy of the on-schedule and on-budget figures reported by GSA, a methodological consideration that was beyond the scope of this review; our focus was on how GSA assesses the performance of R&A projects—not on the results of their assessments. We also interviewed officials from GSA's central office and the four regional offices to discuss the agency's assessment of R&A projects' performance and the performance reports provided to regional officials. Furthermore, we reviewed information about GSA's plans to introduce new "dashboard" reports and outreach that officials from GSA's central office had conducted to understand regional officials' reporting needs. Finally, we interviewed these central-office officials and officials from the selected regional offices described above to discuss the use and usefulness of the performance reports.

We conducted this performance audit from May 2017 to July 2018 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.

⁷These documents included but were not limited to GSA's *FY17 Capital Program Performance Tracking* document and *FY17 Small Projects Measure/KPI Implementation Guidance*.

Appendix II: General Services Administration's Capital and Small Project Data-Entry Requirements for ePM and ePMXpress

The tables below show the details and differences in the General Services Administration's (GSA) data entry requirements for capital projects in ePM and small projects in ePMXpress. Although some of the ePM modules may not be applicable for every project, there are mandatory fields and functions in each that drive GSA's metrics, measures, and standardized reports. Table 3 identifies the elements required, by GSA's fiscal year 2018 measures, for capital projects and indicates whether each is used in a key performance indicator.¹

Table 3: Minimum General Services Administration's (GSA) Capital Projects Data Requirements and Their Use in ePM for Fiscal Year 2018

Required entry	ePM module	Project stage utilizing data (planning)	Project stage utilizing data (design)	Project stage utilizing data (construction)	Used in a performance measure, key performance indicator, or report	Update frequency
Financial management	Cost accounts		yes	yes	Yes	As applicable
Financial management	Funding		yes	yes	Yes	As applicable
Financial management	Transfers		yes	yes	Yes	As applicable
Contract management	Contracts		yes	yes	Yes	As applicable

¹Fiscal year 2018 requirements are the most recent guidelines issued by GSA at the time of this report.

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Requirements for ePM and ePMXpress**

Required entry	ePM module	Project stage utilizing data (planning)	Project stage utilizing data (design)	Project stage utilizing data (construction)	Used in a performance measure, key performance indicator, or report	Update frequency
Contract management	Contract modifications		yes	yes	Yes	As applicable
Contract management	Invoices		yes	yes	Yes	Monthly
Contract management	Miscellaneous expenses		yes	yes	Yes	As applicable
Contract management	Potential change orders		yes	yes	Yes	As applicable
Portfolio planning	Appropriation (and adjustment)		yes	yes	No	As applicable
Portfolio planning	Miscellaneous planned obligations		yes	yes	No	As applicable
Project management	Executive status		yes	yes	Yes	Monthly
Project management	Detailed status		yes	yes	Yes	Monthly
Project management	Meeting minutes		yes	yes	Yes	Monthly
Project management	Issue		yes	yes	Yes	Monthly
Project management	Correspondence				No	As applicable
Design management	Design documents		yes		Yes	As applicable
Design management	Design submissions		yes		Yes	As applicable
Design management	Design review comment		yes	yes	Yes	As applicable
Construction management	Requests for information			yes	Yes	Monthly
Construction management	Submittals			yes	Yes	Monthly
Construction management	Submittals packages			yes	Yes	Monthly
Construction management	Field reports		yes	yes	Yes	Monthly
Construction management	Punchlist			yes	Yes	As applicable

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Requirements for ePM and ePMXpress**

Required entry	ePM module	Project stage utilizing data (planning)	Project stage utilizing data (design)	Project stage utilizing data (construction)	Used in a performance measure, key performance indicator, or report	Update frequency
Construction management	Safety notice			yes	No	As applicable
Construction management	Fire report			yes	No	As applicable
Construction management	Injury report			yes	No	As applicable
Schedules	PM schedule	yes	yes	yes	Yes	Monthly
Schedules	Contractor schedule(s)			yes	No	As applicable
File management/catalog cards	1.0 Initiation	yes			No	As applicable
File management/catalog cards	1.0 Initiation > project management plan	yes			Yes	Project Initiation/planning
File management/catalog cards	1.0 Initiation > project charter	yes			Yes	Project initiation
File management/catalog cards	2.0 Planning	yes			No	As applicable
File management/catalog cards	2.1 Capital investment and leasing program	yes			No	As applicable
File management/catalog cards	3.0 Execution		yes	yes	No	As applicable
File management/catalog cards	3.1 Photos			yes	No	As applicable
File management/catalog cards	4.0 Closeout			yes	No	As applicable
Address book	Companies		yes	yes	Yes	As applicable
Address book	Contacts		yes	yes	Yes	As applicable
Address book	Contacts > key project manager	yes	yes	yes	Yes	Project initiation
Project properties	Project properties	yes	yes	yes	Yes	As applicable

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Requirements for ePM and ePMXpress**

Required entry	ePM module	Project stage utilizing data (planning)	Project stage utilizing data (design)	Project stage utilizing data (construction)	Used in a performance measure, key performance indicator, or report	Update frequency
Project properties	Project properties > key project manager	yes	yes	yes	Yes	Project initiation
Project properties	Key image		yes	yes	Yes	As applicable

Source: GSA. | GAO-18-595

Table 4 identifies the small-project data entry requirements for ePMXpress, as required for fiscal year 2018 measures, and whether they are used in a key performance indicator.²

Table 4: Minimum General Services Administration's (GSA) Small Projects Data Requirements and Their Use in ePMXpress for Fiscal Year 2018

ePMXpress module	Description of data collected	Project phase (initiation)	Project phase (planning)	Project phase (execution)	Project phase (close-out)	Used in a performance measure or key performance indicator	Update frequency
Program	Enter ePM program, select template	yes	yes			Yes	Project creation
Project details	Enter project control number (PCN)/reimbursable work authorization (RWA), short name, current state, project time zone, building ID(s), customer(s), project type, managing organization, funding type, project description, project status, project status as of date	yes	yes			Yes	Project creation

²Fiscal year 2018 requirements are the most recent guidelines issued by GSA at the time of this report.

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ePMXpress module	Description of data collected	Project phase (initiation)	Project phase (planning)	Project phase (execution)	Project phase (close-out)	Used in a performance measure or key performance indicator	Update frequency
Project details	PCN/RWA number, current state, project manager, customer, project type, managing organization, funding type, project description, project status, project team, sustainability and waste diversion data fields			yes	yes	Yes	Updated monthly
Project team	Enter team member details (project manager (PM) is minimum for project creation)	yes	yes			Yes	Project creation
Schedule	Enter estimated dates for required milestones and add custom milestones as necessary for project. Required milestones include customer request, project initiated, initial scope and requirements finalized with customer, client concurrence on final scope, schedule and cost estimate, project authorization/RWA acceptance, design procurement request (PR) submitted, contracting accepts design procurement request, design award, design start/notice to proceed (NTP), design complete, PM submits construction or design/build PR, contracting accepts construction or design/build PR, construction or design/build contract award, construction start/NTP, substantial completion, and project close-out.	yes	yes			Yes	Project creation
Schedule	Maintain schedule milestone dates and baselines as necessary based on project progress.			yes	yes	Yes	Verified or updated monthly. Baselined at specific points in time.
Funding	Enter authorized project funding	yes	yes			Yes	Project creation
Project manager financials	Update funding, estimates, contracts, contract modifications, and invoices as necessary.			yes	yes	Yes	Verified or updated monthly.

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ePMXpress module	Description of data collected	Project phase (initiation)	Project phase (planning)	Project phase (execution)	Project phase (close-out)	Used in a performance measure or key performance indicator	Update frequency
File manager	Project files, drawings, communications, project plans, project schedules, adjudication materials as applicable.			yes	yes		Updated monthly.

Source: GSA. | GAO-18-595

Table 5 contains a list of standard project milestones that must be maintained by GSA project managers in the ePM and ePMXpress schedule modules, as identified in table 3 for capital projects and table 4 for small projects.

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Table 5: Milestones Required to be Maintained by General Services Administration's (GSA) Project Managers in Their Electronic Project Management System (ePM/ePMXpress) for Fiscal Year 2018

Milestone number	Milestone	Definition	Required for: Capital projects (ePM)	Required for: Small projects (ePMXpress)
1	Customer request	General Services Administration (GSA) Public Building Services acknowledges a request from a customer to perform work.	yes	yes
2	Project initiated	The project is started. The organization has committed resources to planning the project.	yes	yes
3	Initial scope and requirements finalized with customer	The high level objectives of the project have been defined and documented with the internal or external customer. The initiation phase of the project is complete.	yes	yes
4	Pre-design award	Feasibility, program development study and/or other planning phase contracts awarded.	yes	
5	Pre-design complete	Feasibility, program development study and/or other planning-phase contracts completed.	yes	
6	Customer concurrence on final scope, schedule and cost estimate	The project has been planned in detail and the customer agrees on the results of the planning. The planning phase of the project is complete.	yes	yes
7	Initial financial agreement with customer	A draft occupancy agreement and/or other financial agreement is/are in place with customer.	yes	
8	Define project funding requirement	Total project costs are estimated in preparation for funding request submittal.	yes	
9	Requirements finalized	All project stakeholder requirements are finalized.	yes	
10	Project authorization/reimbursable work authorization acceptance	Project is authorized and/or reimbursable work authorization mutual acceptance has occurred. For capital projects, the project has received congressional/Office of Management and Budget/GSA approval to move forward.	yes	yes
11	Congressional appropriation	Project has received congressional appropriation funding.	yes	
12	Site acquisition start	Site procurement has started.	yes	
13	Site acquisition complete	Site procurement has ended.	yes	
14	Design acquisition plan finalized	GSA formalizes acquisition plan for the design contract and necessary stakeholders have approved.	yes	

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Requirements for ePM and ePMXpress**

Milestone number	Milestone	Definition	Required for: Capital projects (ePM)	Required for: Small projects (ePMXpress)
15	Design procurement request submitted	The procurement request is submitted for approval to proceed with the acquisition of the design.	yes	yes
16	Contracting accepts design procurement request	The acquisition office officially receives the package as being acceptable to start the design acquisition.	yes	yes
17	Design request for proposal (RFP) published in Federal Business Opportunities	GSA formally issues design RFP on Federal Business Opportunities for architect/engineer (A/E) firm response.	yes	
18	Design RFP proposals received	Firms provide proposals in response to GSA issued design RFP.	yes	
19	Source Selection Evaluation Board /design firms shortlisted	GSA convenes Source Selection Evaluation Board and/or finalizes shortlist of potential design firms.	yes	
20	Design firm selected and price proposal requested	GSA selects the design firm and requests the firm submit formal pricing.	yes	
21	Design award	Design services have been awarded.	yes	yes
22	Design excellence peer review #1	Date of first design excellence peer review.	yes	
23	Design excellence peer review #2	Date of second design excellence peer review.	yes	
24	Construction documents 15 percent development submission	A/E submits 15 percent construction documents package (or comparable milestone for design/build (D/B) or bridging delivery methods).	yes	
25	Construction documents 50 percent development submission	A/E submits 50 percent construction documents package (or comparable milestone for D/B or bridging delivery methods).	yes	
26	Construction documents 90 percent development submission	A/E submits 90 percent construction documents package (or comparable milestone for D/B or bridging delivery methods).	yes	
27	Art-in-architecture meetings requiring customer presence 1 - Initial art panel meeting	Date of the initial art-in-architecture meeting.	yes	
28	Art-in-architecture meetings requiring customer presence 2 - Artist selection meeting	Date of the art-in-architecture artist selection meeting	yes	
29	Art-in-architecture meetings requiring customer presence 4 - Artist site visit	Date of the art-in-architecture artist site visit	yes	

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Requirements for ePM and ePMXpress**

Milestone number	Milestone	Definition	Required for: Capital projects (ePM)	Required for: Small projects (ePMXpress)
30	Art-in-architecture meetings requiring customer presence 5 - Artist concept presentation	Date of the art-in-architecture concept presentation.	yes	
31	Design start/notice to proceed	The contractor is given authority to begin the design.	yes	yes
32	Concept design approval	The Public Buildings Service Commissioner reviews the project's concept design and provides formal approval for the project to continue.	yes	
33	Design complete	Design is complete and accepted.	yes	yes
34	Construction manager as agent award	Construction manager services are awarded.	yes	
35	Signed occupancy agreements(s)	GSA customers impacted by the project sign draft occupancy agreements.	yes	
36	Construction or D/B acquisition plan finalized	GSA formalizes acquisition plan for the construction or D/B contract and necessary stakeholders have approved.	yes	
37	Project manager submits construction or D/B procurement request	The procurement request is submitted for approval to proceed with the acquisition of the construction contractor. For D/B projects this is the procurement request for the whole acquisition.	yes	yes
38	Contracting accepts construction or D/B procurement request	The acquisition office officially receives the package as being acceptable to start the acquisition.	yes	yes
39	Construction or D/B RFP issued	GSA formally issues construction or D/B RFP.	yes	
40	Construction or D/B proposals received	Firms provide proposals in response to GSA issued construction or build/B RFP.	yes	
41	Construction or D/B firms interviews complete	GSA completes interviews with prospective construction or D/B firms.	yes	
42	Successful construction or D/B firm selected	GSA selects the construction or D/B firm.	yes	
43	Construction or D/B contract acquisition/legal reviews started	Construction or D/B contract award package routed for GSA legal review.	yes	
44	Construction or D/B contract acquisition/legal reviews completed	Construction or D/B contract award package formally reviewed/approved by GSA legal.	yes	
45	Construction or D/B contract award	The construction or D/B services have been awarded.	yes	yes
46	Commissioning agent award	Commissioning agent contract has been awarded.	yes	

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Requirements for ePM and ePMXpress**

Milestone number	Milestone	Definition	Required for: Capital projects (ePM)	Required for: Small projects (ePMXpress)
47	Art-in-architecture award	Art-in-architecture contract has been awarded.	yes	
48	Construction start/notice to proceed	The contractor is given authority to begin the construction of the project. Also applies to the beginning of a D/B contract.	yes	yes
49	Construction peer review 15 percent	Date of 15 percent construction peer review.	yes	
50	Construction peer review 65 percent	Date of 65 percent construction peer review.	yes	
51	Construction peer review 90 percent	Date of 90 percent construction peer review.	yes	
52	Pre-occupancy tenant access	GSA provides access to customers/tenant agencies for review of space/work completed prior to substantial completion or occupancy.	yes	
53	Substantial completion	The project is approved for beneficial use or occupancy.	yes	yes
54	Construction complete	All construction work has been completed including all punch-list items.	yes	
55	Rent start	GSA has initiated rent for all impacted tenants.	yes	
56	Occupancy	Tenants are formally occupying project-affected space.	yes	
57	Project closeout	Project is fully complete, including completion of construction, financial closeout (e.g., reimbursable work authorization closeout letter with official deobligation amount), customer closeout, and system closeout.	yes	yes

Source: GSA. | GAO-18-595

Appendix III: GAO Contact and Staff Acknowledgments

Contact

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In addition to the contact named above, Nancy Lueke, Assistant Director; Chad Williams, Analyst-in-Charge; Terence Lam; Les Locke; Cynthia Nelson; Josh Ormond; Amy Rosewarne; Kelly Rubin; James Sweetman, Jr.; and Crystal Wesco made key contributions to this report.

Appendix IV: Accessible Data

Data Tables

Accessible Data for Figure 1: Requested and Appropriated Obligational Authority for the General Services Administration's (GSA) Repair and Alteration Projects, Fiscal Years 2014 to 2018

Fiscal Year	Requested Funding (in Millions)	Enacted Funding (in Millions)
2014	1302.38	1109.4
2015	1256.74	818.16
2016	1247.07	735.331
2017	841.617	676.035
2018	1444.49	671.444

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