United States Government Accountability Office

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

March 2016

FEDERAL REAL PROPERTY

GSA Could Better Identify Risks of Unforeseen Conditions in Repair and Alteration Projects

GAO-16-273

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GAO Highlights

Highlights of GAO-16-273, a report to the Ranking Member, Committee on Homeland Security and Governmental Affairs, U.S. Senate

Why GAO Did This Study

GSA annually spends hundreds of millions of dollars making major and minor repairs and alterations to the more than 1,500 federally owned buildings that it holds. GAO's past work has indicated that GSA sometimes encounters "unforeseen site conditions"—conditions that are different from what was expected—in performing this work. Unforeseen conditions can add both time and cost to repair and alteration projects. GAO was asked to review issues related to tenant repair and alteration projects. This report addresses (1) information about the extent, impact, and cause of unforeseen site conditions on selected projects, and (2) how GSA identifies and assesses the risks of unforeseen conditions.

GAO reviewed 18 non-generalizable repair and alteration projects funded from fiscal year 2010 to 2013, valued at $2 million or more; interviewed GSA project managers and contracting officers about these projects; reviewed project documents; and interviewed a non-generalizable sample of organizations and individuals knowledgeable about the construction industry (industry stakeholders).

What GAO Recommends

GAO recommends that GSA develop and implement a plan for analyzing information it collects to identify the role of unforeseen conditions in repair and alteration projects and the specific causes and impacts of these conditions. GSA agreed with the recommendation and the agency stated it will develop a plan to address it.

View GAO-16-273. For more information, contact David J. Wise at (202) 512-2834 or wised@gao.gov.

What GAO Found

Both industry stakeholders and General Services Administration (GSA) officials told GAO that unforeseen conditions in repair and alteration projects are common. Such conditions, for example, included an unknown wood subflooring discovered during demolition work. Among the impacts identified by the stakeholders were increased project costs and schedule delays. In general, data are limited on unforeseen conditions since GSA does not analyze this type of information. Most of the repair and alteration projects GAO reviewed—11 of 18 projects--experienced an unforeseen condition. The overall impact of the unforeseen conditions on the 18 projects GAO reviewed was largely limited. On 9 of the 11 projects that experienced such conditions, the cost to remediate them accounted for 1 to 5 percent of the project's original construction contract award amount, and on one project the cost was approximately 6 percent. These amounts were below the typical 10 percent construction contingency GSA adds to project costs. Schedule impacts were also limited: 4 of the 11 projects experienced delays ranging from 23 to 105 days. GAO also found that three projects reviewed that did not experience unforeseen conditions were attached to larger projects that did experience these conditions. In two of these larger projects the cost increases from unforeseen conditions were about $2 million each. Incomplete building drawings and lack of building information were among the possible causes of the unforeseen conditions experienced in the projects GAO reviewed.

GSA has a variety of methods to identify and assess risks of unforeseen conditions. GSA's *Project Planning Guide* states that, among other things, facility condition assessments and site surveys should be conducted initially. GSA guidance also calls for preparation of a project management plan (PMP), which includes a risk assessment matrix. GAO found that, in general, GSA used at least one of its risk identification methods on the projects reviewed. For example, GAO found that GSA prepared PMPs for 13 of the 18 projects reviewed. Three of the remaining five projects were attached to larger projects that had PMPs and GSA was unable to provide a PMP for the other two projects. However, GSA's risk identification was sometimes inconsistent with unforeseen conditions that were actually experienced. For example, on 11 of the projects, GSA did not identify risks that later materialized during the project. The *Standards for Internal Control in the Federal Government* state that agencies should comprehensively identify risks using a variety of quantitative and qualitative methods. GSA officials told GAO that contract change orders are used to document unforeseen conditions that result in a change to the contract, but that these change orders are not analyzed to identify what role these conditions represent on projects or their causes or impacts. As shown in the projects GAO reviewed, unforeseen conditions can delay schedules and increase project costs—in some cases in the millions of dollars. Analyzing project information such as change orders would allow GSA to better know what role unforeseen conditions play in repair and alteration projects and the magnitude of this risk.

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Abbreviations

FAR	Federal Acquisition Regulation
FBF	Federal Buildings Fund
GSA	General Services Administration
HVAC	heating, ventilation, and air conditioning
PDRI	Project Definition Rating Index
PMI	Project Management Institute
PMP	project management plan
RWA	reimbursable work authorization
SSA	Social Security Administration
USMS	U.S. Marshals Service

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
Washington, DC 20548

March 17, 2016

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

Dear Senator Carper:

The General Services Administration (GSA) annually spends hundreds of millions of dollars making major and minor repairs and alterations to the more than 1,500 federally owned buildings that it holds.[1] These buildings are used for a variety of purposes—from office space to warehouses—and are critical for federal agencies to fulfill their missions. Some of this work is initiated by GSA and some at the request of tenant agencies. GSA's repair and alterations program has become increasingly important over time as the inventory of buildings continues to age and deterioration and deferred maintenance increase. GSA estimated that at the end of fiscal year 2015 it had over $1.2 billion in deferred maintenance and repair work.[2] This figure 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.

Our past work has indicated that GSA sometimes encounters "unforeseen site conditions" in performing repair and alteration work.[3] In general, unforeseen site conditions are different from what was expected or what

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

[2]This estimate is for immediate repairs and alterations to bring a building or other asset up to an acceptable condition rating. It does not include funding required for future repair and maintenance needs.

[3]See for example GAO, *Recovery Act: GSA's Courthouse Projects Illustrate Opportunities to Improve Management Practices and Analyze Environmental Outcomes*, GAO-15-307 (Washington, D.C.: Feb. 12, 2015).

may have been in a project's plans or specifications.[4] In some cases, unforeseen site conditions are the result of greater than expected levels of deterioration or the result of hazardous materials, such as asbestos, in buildings. In other cases, such conditions may be the result of previous repairs or alterations that were not recorded on building drawings. Once unforeseen site conditions are encountered they can add costs to projects, delay project schedules, or cause other changes. For example, in February 2015, we reported that a courthouse modernization project we reviewed was completed more than 6 months after originally planned and required an additional $10 million in funds, in part, to address unforeseen building conditions.[5] In 2001, the GSA Inspector General's office, which reviewed 45 repair and alteration projects, reported that unforeseen site conditions in 10 projects completed in fiscal years 1998 and 1999 accounted for about $22 million, or about 43 percent, of cost growth on these projects.[6]

You asked that we review issues related to tenant repair and alteration work. This report addresses (1) information about the extent, impact, and cause of unforeseen site conditions during repair and alteration projects in federally owned buildings held by GSA and (2) how GSA identifies and assesses the risks of unforeseen site conditions.

To identify information about the extent, impact, and cause of unforeseen site conditions, we selected and reviewed 18 repair and alteration

[4]For purposes of this report, we will use the term "unforeseen site conditions" to refer to differing site conditions as well as unforeseen site conditions. The Federal Acquisition Regulation (FAR) uses the term "differing site condition" to describe situations that we considered similar to unforeseen site conditions. The FAR definition for differing site condition is "(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract."

[5]See GAO-15-307.

[6]GSA, Office of Audits, Office of Inspector General, *Audit of PBS' Initiatives to Minimize Cost Growth on Prospectus Level Repair and Alteration Projects*, Report Number A000890/P/H/R01008, Feb. 16, 2001. According to GSA officials, there would likely be fewer and less costly change orders, including those resulting from unforeseen site conditions, experienced on repair and alteration projects today compared to the time the Inspector General's report was written. GSA officials said the agency now uses different delivery methods to procure services that allow for the sharing of risk between the building owner and the contractor, methods that, according to GSA officials, results in fewer change orders.

projects across four GSA regions (Mid-Atlantic, Pacific Rim, National Capital, and Northeast and Caribbean Region). The projects included three prospectus[7] projects and 15 reimbursable work authorization (RWA)[8] projects. The projects we reviewed had values of at least $2 million and received funding from fiscal year 2010 to fiscal year 2013.[9] We chose this period to help ensure that the projects selected had progressed into the construction phase (where unforeseen site conditions might be identified) and yet were recent enough that electronic records were likely to be available.[10] We excluded projects that from their descriptions appeared to be for services and not construction, and we excluded projects that appeared to involve multiple sites. The regions selected accounted for the highest dollar amount of repair and alteration projects. We interviewed GSA project managers and contracting officers for these 18 projects and reviewed project documents to determine if the

[7]Prospectus-level projects involve major work or acquisitions that are estimated to cost more than a statutorily prescribed amount, which GSA's Administrator is authorized to adjust annually. Over the 2010 to 2013 period the threshold for prospectus projects ranged from $2.79 million to $2.85 million. Building repairs and alterations that are expected to cost more than the prospectus-level threshold must be submitted to certain congressional committees for authorization.

[8]An RWA 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. GSA has different types of RWAs. For purposes of this study we reviewed A, B, and N types since these are repair and alteration projects that are not recurring and have costs that can be separately identified from other recurring costs. A-type RWAs are for projects funded by both GSA and a tenant agency and are for a one-time need. B-type RWAs are used for projects that are funded by either the tenant agency or by the tenant agency and GSA. N-type RWAs fund standalone projects—that is, not associated with other repair or alteration projects—and are fully funded by the tenant agency.

[9]On one project, the Daniel P. Moynihan U.S. Courthouse in New York City, $2 million in appropriations were received for the design phase. According to GSA, other funding for this project came from reprogramming funds from other projects. We considered this a prospectus project since a prospectus was prepared. However, the project manager told us it was not clear if a prospectus for construction was ever approved by the relevant congressional committees. In commenting on this report, GSA officials told us a prospectus was prepared for this project but it was not funded. Instead, GSA reprogrammed monies to do the project—one to undertake the space build-out and another to do the pavilion.

[10]GSA uses an electronic project management system to record project information and to manage projects. According to GSA, this system was developed in 2009 and is now being used to collect information on all repair and alteration projects with a value of $25,000 or more.

projects had encountered unforeseen site conditions. We also interviewed these officials to identify the nature of any cost, schedule, or scope impacts from the unforeseen site conditions encountered. To identify the causes of unforeseen site conditions we discussed with project managers and contracting officers the actual unforeseen site conditions experienced and their possible causes and coded these into categories of unforeseen site condition causes. Finally, we contacted 19 organizations and individuals with knowledge of or experience in the construction industry (industry stakeholders) to obtain their views on unforeseen site conditions. These industry stakeholders were selected based on asking GSA officials who would be most appropriate to contact, asking industry stakeholders about appropriate organizations or individuals to contact, and obtaining referrals from various professional organizations. We interviewed or received written responses to questions from 11 industry stakeholders. The results of our work are not generalizable to the universe of repair and alteration projects or the views of all industry stakeholders.

To identify how GSA identifies and assesses the risks of unforeseen site conditions, we reviewed documents related to GSA's capital-planning process and project management requirements. We also reviewed planning and risk assessment documents for the projects we reviewed. We assessed whether or not GSA's practices and procedures on the 18 projects we reviewed generally used a risk assessment tool as part of the project development process. We also interviewed officials in GSA headquarters and five regional offices (the four regions associated with the projects we reviewed plus one additional region) to discuss how GSA identifies and assesses risks on repair and alteration projects. The analysis of the risk assessment process and use of risk assessment tools included a review of documentation related to the project and GSA processes but was primarily focused on the project management plan as this was the key document that includes a risk assessment. Our analysis of project risks and causes of unforeseen site conditions included a comparison of the possible causes of unforeseen site conditions that were experienced on the 18 projects we reviewed and whether those same causes were identified as part of project planning. As part of evaluating how GSA identifies and assesses project risks to determine if improvements could be made, we reviewed *Standards for Internal Control in the Federal Government* and GAO's *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program*

Costs (Cost Guide).[11] The *Standards for Internal Control in the Federal Government* provides the overall framework for establishing and maintaining an effective internal control system and, among other things, the *Cost Guide* addresses generally accepted best practices for ensuring credible program cost estimates and the role of risks and risk assessment in developing cost estimates. Appendix I contains a more complete discussion of our objectives, scope, and methodology and appendix II provides a brief description of the projects we reviewed.

We conducted this performance audit from February 2015 to March 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

In fiscal year 2014, GSA had over 1,500 federally owned buildings in its inventory. These buildings are occupied by a wide variety of federal agencies and are used to fulfill agency missions. In some instances, these buildings are old and in significant need of repair, renovation, or modernization. For example, according to GSA, the average age of its inventory is 49 years, and funding difficulties have led to deterioration of an already aged portfolio. In addition, GSA reports that more than a fourth of its inventory of federally owned buildings is listed in or eligible for the National Register of Historic Places, the nation's listing of historic properties, and approximately half of this inventory is more than 50 years old.[12] We have previously reported that deferring maintenance and repair

[11]GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999), and GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, GAO-09-3SP (Washington, D.C.: March 2009).

[12]According to GSA officials, generally buildings need to be 50 years or older to be nominated to the National Register of Historic Places, although they can be nominated if they are less than 50 years old for exceptional significance. GSA told us the average age of its historical inventory is 91 years old—1925 being the average construction date. Using 1965 as the cutoff date for 50 years old, GSA has 18 under-50-year-old buildings that are historic (dates range from 1966 to 1978), or 96 percent of GSA's 482 historic buildings are over 50 years old.

can reduce the overall life of federal facilities, lead to higher costs in the long term, and pose risks to safety and agencies' missions.[13]

GSA addresses the need for repairs and alterations in the buildings in its inventory through its repair and alteration program. The program is implemented through repair and alteration projects in all 11 of GSA's regional offices. In fiscal year 2015, about $800 million was appropriated from the Federal Buildings Fund (FBF) to perform major and minor repairs and alterations. This is down slightly from the $1.1 billion appropriated in fiscal year 2014. GSA can make repairs or alterations on its own initiative or at the request of tenant agencies.[14] Repairs or alterations made on GSA's own initiative can be classified as "major"—that is, exceed the current $2.85 million threshold requiring preparation of a prospectus that is submitted to Congress for approval—or "minor." Minor repair or alteration projects are those projects where the construction costs exceed $25,000 but are less than the prospectus level threshold. According to GSA officials, major repair and alteration projects, among other things, primarily focus on reducing the agency's real property footprint, achieving energy savings, and improving the condition of and protection of public assets and occupants' health and safety. Minor repair and alteration projects primarily focus on building repairs and equipment and other replacement issues and funding is requested as a lump sum dollar amount for the program. Financing for GSA-initiated repair and alteration work comes from the FBF.[15] The FBF is a fund that

[13]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).

[14]GSA has the authority to delegate some repairs and alteration work directly to tenant agencies. GSA officials told us this delegation is not used very often. According to GSA officials, GSA did not authorize delegation of repair and alteration work to any agencies in fiscal years 2014 and 2015, and the agency last delegated authority for repair or alteration work in fiscal year 2013. 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, the estimated cost of the project not exceed $1 million unless approved by the GSA Administrator, and 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.

[15]We have previously reported on factors affecting the resources in the FBF. See GAO, *Federal Buildings Fund: Improved Transparency and Long-Term Plan Needed to Clarify Capital Funding Priorities*, GAO-12-646 (Washington, D.C.: Aug. 2, 2012) and GAO, *Capital Financing: Alternative Approaches to Budgeting for Federal Real Property*, GAO-14-239 (Washington, D.C: Mar. 12, 2014).

is primarily financed by rents received from other agencies and it was authorized and established by the Public Buildings Act Amendments of 1972.[16] Instead of GSA's receiving direct appropriations, the FBF operates as the primary means of financing the operating and capital costs associated with federal space, although GSA sometimes receives supplemental appropriations to meet repair or new construction needs, such as appropriations received from the American Recovery and Reinvestment Act of 2009. Congress exercises control over the FBF through the appropriations process that sets annual limits—called obligational authority—on how much of the fund can be obligated for various activities.

Repair and alteration work is also performed at the request of tenant agencies. This work is done under an RWA.[17] RWA work can range from installation of equipment and security upgrades to major renovations of buildings. According to GSA's *RWA National Policy Document*, to be accepted by GSA, an RWA must meet certain criteria, including that there is a bona fide need for the work, there is a preliminary scope of work that clearly describes the objectives and requirements of the customer request, a cost estimate, and proper funding certification and client signature. According to the *RWA National Policy Document*, the signed RWA authorizes GSA to execute the scope of the client agency request based on the authorized amount. The work is done on a reimbursable basis, and GSA bills the client agency as expenses are incurred. RWAs can be amended for changes in scope of work or authorized amounts as long as funding is legally available for that purpose. The *RWA National Policy Document* indicates there are four categories of RWAs—severable, non-severable, recurring, and non-recurring.[18] Non-recurring

[16]Pub. L. No. 92-312. As of September 30, 2015, the FBF had a balance of about $7.8 billion.

[17]GSA is authorized to provide special services, not included in the standard level user charge (rent), to other federal agencies on a reimbursable basis. 40 U.S.C. § 592(b)(2). According to GSA, RWA work may also be performed when the finished project will be in space not under the jurisdiction, custody, or control of GSA. See 31 U.S.C. § 1535.

[18]Severable RWAs are those RWAs in which the client agency receives value as the service is rendered. Non-severable RWAs are those in which the client agency receives value only when the entire service is performed. Recurring RWAs provide services to client agencies where the costs of those services cannot be readily identified from standard operating costs. Non-recurring RWAs are those RWAs that provide services where costs can readily be identified and captured.

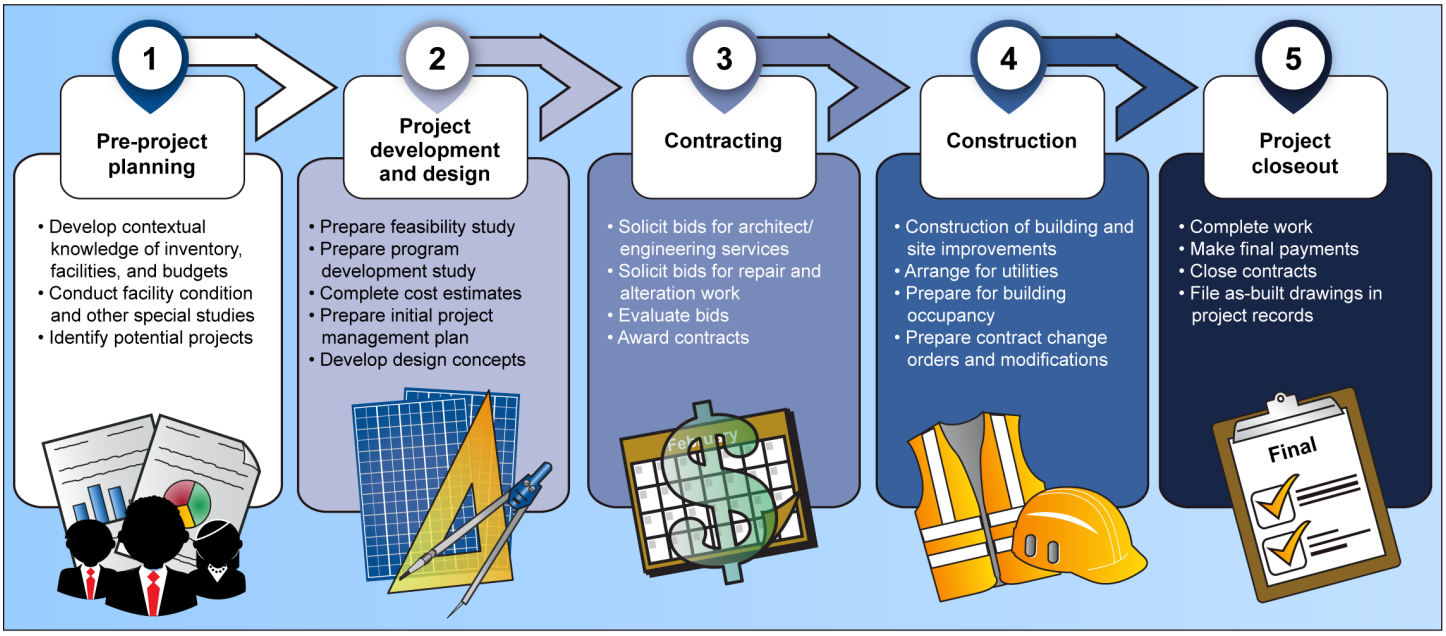
RWAs, those RWAs that, according to GSA would be applicable to repair and alteration work, are established to cover an indefinite period that must not exceed 5 fiscal years from the end of the last year in which authority to obligate funds is available. In fiscal year 2014, GSA accepted about 3,400 RWA projects in federally owned buildings held by GSA with a total value of about $670 million.[19] In general, about 75 percent of these projects were less than about $80,000; however, about 2 percent of the projects were valued at $1.9 million or higher.

Planning and executing repair and alteration projects follows a process which is prescribed by GSA and other federal requirements. In general, this process has five phases: (1) pre-project planning, (2) project development and design, (3) contracting, (4) construction, and (5) project closeout (see fig. 1).[20] GSA officials told us that, with the exception of certain checklists, prospectus-level RWA projects are treated the same as regular capital projects.

[19]This only includes RWAs in federally-owned GSA buildings.

[20]GSA officials said the five steps we use are not exactly the same as the five phases contained in GSA guidance for the lifecycle of a project—identification, initiation, planning, execution, and closeout. However, as can be seen, these two are similar. Figure 1 was developed by reviewing, among other things, GSA policies and guidance to present a simplified depiction of the phases involved in planning and executing a repair and alteration project and highlighting some of the activities within these phases that are associated with identifying and assessing project risks. It is not intended to illustrate the lifecycle of a repair or alteration project.

Figure 1: Phases and Selected Activities in the General Services Administration's Planning and Execution of Repair and Alteration Projects



Source: GAO analysis of GSA documents. | GAO-16-273

The following briefly describes these five phases:

- *Pre-project planning:* According to GSA's *Project Planning Guide*,[21] the pre-project planning phase is where GSA develops the contextual knowledge of its inventory, facilities, budgets, and stakeholders. This is to enable GSA to identify potential projects, alternative solutions, and implementation strategies. Among other things, this phase would include facility condition and other special studies to assess the condition of GSA's inventory and identify repair and alteration needs.

- *Project development and design:* This phase is where GSA begins to develop a repair and alteration project in more detail, to refine options, and to develop project management plans (PMP). According to GSA officials, project development also includes risk assessment, including documentation of known and likely unknown conditions. GSA's *Project Planning Guide* indicates both a feasibility study, which

[21]GSA, *Project Planning Guide* (2004).

defines project goals, scopes customer need, and assesses alternatives, and a program development study, which reviews previous project assumptions, plans, and budgets and proposes a construction budget and implementation strategy, would be prepared. In addition, cost estimates are to be completed, an initial Capital PMP is to be prepared, and preliminary design concepts are to be developed. A Capital PMP is a document that, among other things, defines the goals of a project and the organization required to accomplish the goals, as well as target budgets and schedules. According to GSA, the PMP should also set forth the acquisition strategy for the project and identify any constraints or risks associated with the project.

- *Contracting:* Acquisition planning begins in the early stages of project development and GSA's *Project Planning Guide* recommends that as part of the feasibility study an implementation plan be prepared that identifies the best strategy for procuring a project. During the contracting phase, GSA solicits bids for architect/engineering services and repair and alteration work, evaluates these bids, and awards contracts.

- *Construction:* This phase is when the repair and alteration work is done. Construction includes construction of building and site improvements, arranging for utilities, and preparing for building occupancy. According to GSA officials, when unforeseen site conditions are discovered they are documented through contract change orders and modifications if they require a change to the contract. GSA uses both an electronic system and paper records to record contract changes. Contract change orders and modifications are also recorded in GSA's electronic project management system.

- *Project closeout:* Project closeout is when the work is completed, final payments are made, and contracts are closed. GSA's *Acquisition Manual* requires that appropriate steps be taken to ensure that physically completed projects are formally closed out in accordance with FAR and GSA requirements. Project closeout includes filing as-built drawings in project records. In January 2015, GSA began implementation of a Central Facilities Repository, which will be used

to house project documents, including as-built drawings and other building information.[22]

To help address unexpected events or circumstances, including unforeseen site conditions, repair and alteration projects may include construction contingencies. According to GSA, contingencies are a part of total estimated project costs and cover costs that may result from incomplete design, unforeseen and unpredictable conditions, or uncertainties concerning project scope.[23] GSA officials said contingencies are held by the owner (GSA) and are not part of the contract price at award. GSA currently recommends a 10 percent construction contingency for repairs and alterations and a 7 percent construction contingency for new construction. Contingencies are also applied to RWA projects, and according to GSA, prospectus-level repair and alteration RWAs would generally have a 10 percent construction contingency.

Unforeseen Site Conditions Are Common, but Impacts on Reviewed Projects Were Limited

Both Industry Stakeholders and GSA Officials Told Us Unforeseen Site Conditions Are Common in Repair and Alteration Projects

According to industry stakeholders we interviewed, unforeseen site conditions are common in repair and alteration projects. Ten of the 11 stakeholders told us that unforeseen site conditions were very prevalent, and the other stakeholder said unforeseen site conditions were somewhat to very prevalent. Some of the stakeholders said the older the building the more likely unforeseen site conditions would be encountered. Officials from the Architect of the Capitol said they run into unforeseen site conditions on most of their projects. Officials from the U.S. Postal Service also said unforeseen site conditions are prevalent and most often

[22]According to GSA, the Central Facilities Repository will be a central source for building information and will be used, among other things, to help plan projects.

[23]GSA, *P-120: Project Estimating Requirements for the Public Buildings Service*, U.S. General Services Administration, Office of the Chief Architect (January 2007).

appeared in paving projects, in underground storage tanks that were leaking, and in roof replacements with deteriorated decking. The industry stakeholders we interviewed identified the main types of unforeseen site conditions as: environmental hazards (such as asbestos and lead-based paint), and conditions being different than in building drawings or items not located where they were expected to be. Stakeholders also told us impacts of unforeseen site conditions are generally cost increases and schedule delays but the impacts can vary depending on the project. For example, one industry stakeholder told us typical impacts include costs, increased time and schedule delays, as well as the need for greater resources to mitigate impacts. Another stakeholder told us the impacts of unforeseen site conditions depend on how prepared the property owner is to address the condition and what was and was not planned for.

GSA has also reported that unforeseen site conditions are common in repair and alteration projects. As noted earlier in this report, in 2001 the GSA Office of Inspector General examined 45 prospectus-level repair and alteration projects and found that in 10 projects completed in fiscal years 1998 and 1999 unforeseen site conditions accounted for about 43 percent of the cost growth in these projects.[24] Officials in four of the five GSA regional offices we contacted described unforeseen site conditions as very prevalent and officials in one regional office said they were somewhat to very prevalent. Officials in this office went on to indicate that unexpected asbestos, lead, and mold can be found anytime during construction. The GSA officials identified hazardous materials as being one of the main types of unforeseen site conditions found.

Although industry stakeholders and GSA told us unforeseen site conditions are common in repair and alteration projects, data on the overall extent and impacts of unforeseen site conditions are limited. For example, as discussed in more detail below, GSA officials told us that the agency tracks but does not analyze project change orders to determine whether they resulted from unforeseen site conditions.

[24]GSA, Report Number A000890/P/H/R01008. As previously mentioned, according to GSA officials, there would likely be fewer and less costly change orders, including those resulting from unforeseen site conditions, experienced on repair and alteration projects today compared to the time the Inspector General's report was written. GSA now uses different delivery methods to procure services that allow for the sharing of risk between the building owner and the contractor, methods that, according to GSA officials, results in fewer change orders.

Most Projects We Reviewed Had Unforeseen Site Conditions, but Cost and Schedule Impacts Were Largely Limited

Most of the projects we reviewed had unforeseen site conditions. Specifically, unforeseen site conditions were encountered in 11 out of the 18 repair and alteration projects, including two of the three prospectus projects and nine of the 15 RWA projects (see table 1).[25] As shown in table 1, the types of unforeseen site conditions varied. For example, in one prospectus project we reviewed—a project to, among other things, build a Pavilion at the Daniel P. Moynihan U.S. Courthouse in New York City—GSA discovered that the existing wall in the plaza area was reinforced concrete rather than a standard concrete masonry unit, which was what the building drawings indicated. The reinforced concrete made demolition of the wall more difficult and, according to the project manager, GSA spent approximately an additional $70,000 to pay for more labor to demolish the wall.

Table 1: Examples of Unforeseen Site Conditions Experienced on Selected General Services Administration Repair and Alteration Projects GAO Reviewed

Project name	Location	Examples of unforeseen site conditions[a]
Prospectus projects		
Daniel P. Moynihan U.S. Courthouse	New York, NY	• Drawings failed to show reinforced concrete
New Executive Office Building	Washington, DC	• Hidden piping on the 10th floor connecting the fan coil units was not holding and led to several leaks and significant office damage
Reimbursable work authorization projects		
Social Security Administration (SSA) command center	Woodlawn, MD	• Unforeseen electrical conduits that were added after the original design of the wood ceiling was completed
SSA generator replacement project	Woodlawn, MD	• Unidentified masonry wall underground that is in the way of cable
U.S. Marshals Service (USMS) renovation	Baltimore, MD	• Lack of fireproofing on the existing beam and steel decking
SSA Frank Hagel Federal Building: main entrance	Richmond, CA	• Physical conflicts with conduits in the ceiling which were not adequately shown in as-built drawings

[25]For purposes of our review, we counted each contract modification that was associated with an unforeseen site condition as one unforeseen site condition. On one of the prospectus projects we reviewed, a roof replacement at the Eisenhower Executive Office Building in Washington, D.C., no unforeseen site conditions were reported. GSA officials initially told us unforeseen site conditions were experienced on this project, including differing roof materials. However, a GSA official subsequently told us none of the unforeseen site conditions resulted in contract modifications. In addition, GSA was unable to provide documentation for this project since project records had been archived. Based on the information provided by GSA and the lack of documentation, we considered this project as not having unforeseen site conditions.

Project name	Location	Examples of unforeseen site conditions[a]
SSA Frank Hagel Federal Building : marina way entrance	Richmond, CA	• After demolition was completed, a drain was found to be too high and needed to be recessed for proper draining
USMS courthouse renovation	Tucson, AZ	• Existing space above the corridor is a different height than listed on the construction drawings • More openings in the corridor than was documented
U.S. Agency for International Development consolidation mobility design lab	Washington, DC	• Existing sprinkler system in one portion of the ceiling was lower than expected and below the height of the new design
U.S. Forest Service's consolidation	Washington, DC	• Unknown hardwood subflooring discovered during demolition; lack of a smoke detection system and fire retardant
U.S. Secret Service's firing range	Washington, DC	• Unexpected clearance between a wall and a window

Source: GAO analysis of GSA documents and interviews. | GAO-16-273

[a]Examples of unforeseen site conditions are provided for illustrative purposes and are not an exhaustive list of the unforeseen site conditions encountered on each project.

However, despite the prevalence of unforeseen site conditions in our selected projects, our review showed that the overall impact of these conditions appeared largely limited. On nine of the 11 projects we selected that experienced unforeseen site conditions, the cost for remediating those conditions accounted for 1 to 5 percent of the project's original construction contract award (see fig. 2).[26] On one of the 11 projects—a prospectus project to, among other things, modernize the heating, ventilation, and air-conditioning system at the New Executive Office Building in Washington, D.C.—the cost for addressing unforeseen site conditions was approximately 6 percent of the original construction contract award.[27] All of the reported costs for remediating unforeseen site conditions on the projects we reviewed were below the typical 10 percent construction contingency that GSA attaches to repair and alteration projects. In addition, the impacts on project schedules also appeared to

[26]For our analysis, we measured the cost by determining the cost of the unforeseen site condition as a percentage of the original construction contract award amount. This amount does not include additional costs that may have been added subsequent to contract award such as exercising contract options or general price adjustments.

[27]This project consisted of three construction contracts. Unforeseen site conditions were experienced on one of the three contracts. For purposes of our analysis, we compared the costs of unforeseen site conditions with the original construction contract award amounts for all three contracts since all three contracts were part of the construction work. On a standalone basis, the cost of unforeseen site conditions were about 25 percent of the original construction cost award on the one contract where unforeseen site conditions were experienced.

be limited. Three of the 11 projects that encountered unforeseen site conditions experienced schedule delays. These ranged from 23 to 105 days due to the unforeseen site condition.[28] For example, in an RWA project to replace power generators at a Social Security Administration center in Maryland, GSA encountered an unidentified masonry wall buried in the ground which interfered with the planned installation of wiring. As a result of this unforeseen condition, GSA issued a contract change order, which, among other things, called for the contractor to remove the wall. The removal added 23 days to the project's schedule. In another project for the Social Security Administration, the existence of conduits in the ceiling that were unexpected led to a 75-day delay in the project schedule. Although only 3 of the 11 projects we reviewed appeared to experience schedule delays based on the records we reviewed, unforeseen site conditions may have caused additional delays. For example, some GSA project managers and contracting officers we interviewed said that extensions due to unforeseen site conditions can sometimes be absorbed into other project delays. As a result, it is not clear how much of a delay, if any, can be attributed to some unforeseen site conditions.

Figure 2: Cost Increases from Unforeseen Site Conditions on the General Services Administration's Repair and Alteration Projects GAO Reviewed

Source: GAO analysis of GSA documents. | GAO-16-273

[28]We measured schedule delays by reviewing contract modifications for unforeseen site conditions and determining if there were any changes to the substantial completion date of the projects.

Note: For the repair and alteration project at the Daniel P. Moynihan Courthouse, the total cost for addressing unforeseen site conditions, about $318,000, includes an item with a cost of $20,500 that addresses both work on an unforeseen site condition as well as work unrelated to unforeseen conditions. Also, we did not include a cost for the unforeseen site condition encountered during the project at the U.S. Secret Service's firing range because there was no contract modification associated with the unforeseen site condition and the cost of the unforeseen site condition was unknown.

Three of the RWA projects we reviewed were associated with larger projects that experienced unforeseen site conditions.[29] None of the three RWA projects had unforeseen site conditions, but unforeseen site conditions were experienced in the three larger projects. The following provides information about these projects:

- One of the RWAs we reviewed was attached to a prospectus project to renovate the St. Elizabeth's Campus in Washington, D.C., for the Department of Homeland Security. The RWA was to complete, among other things, tenant-requested improvements to building 49 on the campus. GSA officials told us the RWA we reviewed did not encounter any unforeseen site conditions. However, they also told us the building where the tenant improvements were being made had undergone extensive renovations prior to the start of the RWA project. GSA officials said that this earlier work essentially eliminated the risks of unforeseen site conditions on the RWA project since the building was gutted as part of the prospectus project. As part of the larger prospectus project, GSA encountered unforeseen site conditions, which included steel beams that were buried in the ground under the building. According to the GSA officials, the beams were unforeseen, deteriorated, and had to be replaced. GSA also abated lead-based paint and asbestos in the building prior to the start of the RWA project. GSA officials said remediating these unforeseen site conditions cost about $2.4 million. The estimated construction cost for the renovation work conducted as part of the prospectus project was $84.3 million.

- One RWA project called for an upgrade of security and other equipment for the Department of Homeland Security's Customs and Border Protection at the San Ysidro Land Port of Entry in San Diego, California. This project was attached to a larger prospectus project to reconfigure and expand the entire land port of entry. According to the

[29]As previously discussed, GSA classifies RWA projects into different types. Among the RWA projects we reviewed were B-type RWAs. These are projects associated with prospectus projects, including projects where the tenant agency pays for and requests "above-standard" tenant improvements.

project manager, GSA did not encounter unforeseen site conditions during the RWA project we reviewed, but unforeseen site conditions were encountered on the prospectus project. This included greater than expected contaminated soil conditions that needed to be remediated. The remediation added almost $2 million to the cost of the prospectus project, which had an estimated site development cost of about $287 million.[30]

- A third RWA project called for the renovation of spaces occupied by the U.S. Marshals Service at a federal building in Honolulu, Hawaii. This RWA was attached to a larger project to modernize the building funded through the American Recovery and Reinvestment Act of 2009. According to a GSA official, there were no unforeseen site conditions associated with the RWA project but unforeseen site conditions were experienced in the larger project. The project manager told us the cost to address the unforeseen site conditions was paid for from the larger project. Among the unforeseen conditions experienced were additional electrical conduits in the ceiling that were not on as-built drawings and were not discovered until the ceiling was demolished. The project manager estimated the cost to remediate the unforeseen site conditions was approximately $168,000.

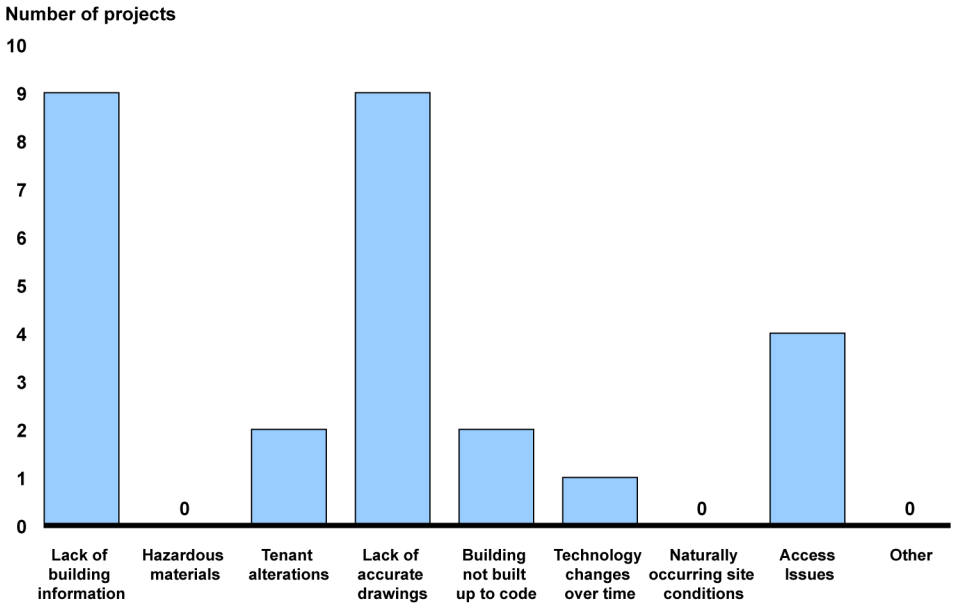
Incomplete Building Drawings and Lack of Building Information Were among the Possible Causes of Unforeseen Site Conditions in Projects We Reviewed

There can be a variety of causes for unforeseen site conditions in repair and alteration projects. For example, 5 of the 11 industry stakeholders we interviewed cited old, inaccurate, or not up-to-date building drawings as a cause of unforeseen site conditions. Among other causes cited by the stakeholders were the level or type of building maintenance, lack of information about previous renovations, construction, or use of hazardous materials, and an insufficient number, type, or scope of environmental tests or surveys. Some of the causes these stakeholders cited were similar to the possible causes of unforeseen site conditions we identified in the projects we reviewed based on project records and discussions

[30]Site development costs include grading, utilities, paving, and demolition of existing facilities. Site development work is only a portion of the total estimated cost of construction, which for this project was almost $545 million. According to GSA officials, the contaminated soils were under existing structures and buildings, and the condition of the soils could not have been identified without demolishing the building.

with GSA officials (see fig. 3).[31] For example, as the figure shows, for projects we reviewed, incomplete building drawings and lack of building information were among the possible causes for unforeseen site conditions. We also identified access issues, tenant alterations, and a building not built up to code as possible causes. We did not identify such things as hazardous materials, naturally occurring site conditions, and other causes ("other") mentioned by industry stakeholders.

Figure 3: Possible Causes of Unforeseen Site Conditions in the General Services Administration's Repair and Alteration Projects GAO Reviewed



Note: Hazardous materials, naturally occurring site conditions, and other were not identified as possible causes of unforeseen site conditions on the projects we reviewed. Unforeseen site conditions encountered in the projects we reviewed can have more than one possible cause.

Source: GAO analysis of GSA documents and interviews. | GAO-16-273

[31]We categorized possible causes of unforeseen site conditions based on discussions with GSA officials knowledgeable about the project and reviews of project records, including contract modifications. In some cases, neither GSA officials nor project records were clear as to actual cause(s) of unforeseen site conditions. As a result, the information we present shows the possible causes of unforeseen site conditions based on the officials we spoke with and the records we reviewed.

We found that incomplete, inaccurate, or out-of-date building drawings—including as-built, electrical, and mechanical drawings—were the possible cause for the unforeseen site conditions in 9 of the 11 projects we reviewed that encountered unforeseen site conditions.[32] For example, in an RWA project to build out a mobile workplace at the headquarters of the U.S. Agency for International Development in Washington, D.C., GSA encountered a sprinkler main and storm pipe that were placed lower in a portion of the ceiling than other pipes. According to a GSA official, the height of the water main and pipe were not shown in the building's mechanical and electrical drawings. Furthermore, the pipes were not identified during a building survey. According to the official, that section of the water main and pipe were the only ones that were lower than the rest of the main and pipe in the ceiling. This unforeseen site condition caused GSA to redesign that section of the office to have the ceiling lowered by 6 inches in order to accommodate the system and pipe.

In addition, lack of information about buildings was also a top possible cause. For 9 of the 11 projects we reviewed that encountered unforeseen site conditions, the possible cause was lack of information about a building's condition. We defined this category to include unforeseen site conditions that resulted from such things as poor building records, as well as inadequate surveys and testing. For example, one RWA project we reviewed was for the renovation of the U.S. Forest Service Headquarters in Washington, D.C. to allow Forest Service staff to vacate leased space and consolidate in the headquarters building. According to project officials, during demolition, GSA discovered wood subflooring, and that the subflooring lacked fire retardant. Prior to demolition, GSA was not aware of the existence of the wood subflooring, because the wood floor was hidden by carpet. In addition, the building being renovated was built in 1880, and, according to the PMP, original construction documents were not available. In general, project officials said that there was no

[32]To ascertain the possible causes for unforeseen site conditions for each of our selected projects, we relied on project documents and responses provided by project managers and other GSA officials knowledgeable about the causes of unforeseen site conditions encountered on each project. We took this documentation and official responses and coded them into nine possible causes: (1) lack of building condition information, (2) hazardous materials, (3) tenant alterations unknown to GSA, (4) lack of accurate building drawings, (5) building not built up to code, (6) technology changes over time, (7) naturally occurring site conditions, (8) access issues, and (9) other. We developed these nine categories based on grouping the causes of unforeseen site conditions identified by GSA officials on the projects we selected into the common causes of unforeseen site conditions identified by industry stakeholders we spoke with.

information available that would lead them to know that wood subflooring existed and that they did not expect to encounter wood subflooring.[33] Remediation of the unforeseen site condition included installation of fire retardant on the floor and installation of a smoke detection system. GSA officials noted this project finished on schedule and within budget and any additional costs or time delays were absorbed by the schedule and budget contingencies.

The possible causes of the remaining unforeseen site conditions were tenant alterations unknown to GSA (2 out of 11 projects), a building's not being originally built up to code (2 of 11 projects), and difficulty faced by GSA in accessing the building for surveying and testing (4 out of 11 projects).[34]

GSA Has a Variety of Methods to Identify and Assess Risks of Unforeseen Conditions but Risk Identification Could Benefit from Analysis of Project Information

[33]For the purposes of this review, some of the repair and alteration projects we reviewed had multiple possible causes of unforeseen site conditions. This situation was true for the U.S. Forest Service RWA, which included both a lack of building condition information and a lack of accurate building drawings as possible causes of the unforeseen site condition.

[34]As discussed earlier, three RWA projects were associated with larger projects. We did not determine the possible causes of the unforeseen site conditions on the larger projects.

Variety of Methods Are Available to Identify and Assess Potential Project Risks and GSA Generally Used These Methods on Projects We Reviewed

GSA policies and procedures describe a variety of methods available to identify and assess potential risks on repair and alteration projects. These methods are used throughout the planning and execution of projects. The following describes some of the methods and tools used by project phase.

- *Pre-project planning:* GSA's *Project Planning Guide* describes that during the pre-project planning phase GSA is to assess the condition of its facilities and prepare building reports and other studies (e.g., historic preservation plans) to establish project requirements. The *Project Planning Guide* also describes how site surveys and various tests may be conducted to identify possible project risks, such as hazardous materials. GSA officials told us reviews, employing private sector peers, are established during this phase, to assess the project team's cohesion and the quality of communications to ensure that any issues that may arise during the project can be timely resolved so they do not turn into unforeseen conditions. Tools available during this phase include facility condition assessments and site surveys.

- *Project development and design:* GSA uses this phase to begin defining projects and their specifications as discussed earlier in this report. To begin identifying potential project risks the *Project Planning Guide* describes how GSA may conduct additional site surveys and tests and develop the initial PMP.[35] The PMP includes a risk assessment that identifies and assesses potential risks to projects. In addition, GSA is to prepare a feasibility study and a program development study which, according to the *Project Planning Guide*, includes an assessment of potential project risks. A Project Definition Rating Index (PDRI) may also be prepared. GSA's *Capital Project: PM Guide* describes the PDRI as, among other things, a tool used to identify a project's readiness to move forward to the next phase, as well as identify areas of risk that may require better definition and possible mitigation. Finally, GSA's *Capital Investment and Leasing Program Call*—a document used to identify requirements for repair and alteration projects to receive funding—requires various documents and checklists, including an Environmental Review Sheet and a Regional Office-Central Office Alignment checklist. These

[35]GSA created three types of PMPs: full, condensed, and express PMPs, to be prepared on individual projects, based on the individual project characteristics, including the type of project and project cost. These PMPs may include a risk assessment, acquisition strategy, and communication plan.

documents and checklists further identify and assess potential project risks. For RWA projects, GSA's *National Project Intake Guide*, describes an initial risk determination tool that is used to assist project managers in assessing risks posed by a range of factors, including project size and complexity. Tools available during this phase include the PMP, feasibility study, program development study, PDRI, and RWA risk determination tool.

- *Contracting:* As part of this step, GSA officials told us that during project planning architect/engineering firms are hired to identify potential project risks through site investigations, preparation of project specifications, and initial designs. GSA's *Capital Projects: PM Guide* states that GSA may also use Construction Managers to assist project teams in evaluating project execution and identify potential project risks. According to GSA officials, contract clauses are also incorporated into construction contracts to address unforeseen site conditions as they arise. Finally, construction contingencies are to be added to project cost estimates to cover risks that are not identified or mitigated in up-front planning. Tools available during this phase include contract provisions and construction contingencies.

- *Construction:* Risk identification and assessment during construction includes monitoring project budgets and schedules for cost growth or schedule delays and for "earned-value-management" purposes.[36] GSA's *Capital Projects: PM Guide* states that project status reports are prepared that include information on project spending and progress in meeting project schedules. According to the guide, this information is used to identify whether projects are experiencing difficulties and, if so, why. GSA officials told us that contract change orders and modifications are used to document unforeseen site conditions. Finally, GSA officials told us that lessons learned documents are sometimes prepared on repair and alteration projects. According to GSA's *Project Management Practices Guide*, lessons learned documents should assess GSA's risk response strategies. Tools available during this phase include monthly status reports, contract change orders and modifications, and lessons learned documents.

[36]According to GSA, "earned-value-management" is a project management tool that effectively integrates the project's scope of work with cost, schedule, and performance elements for optimum project planning and control.

- *Project closeout.* GSA officials told us this step includes updating as-built drawings and filing them in project records. As mentioned, GSA's *Project Management Practices Guide* also describes how project teams are to discuss projects and prepare lessons learned, including an assessment of GSA's risk response strategies. Tools available during this phase include updated as-built drawings and lessons learned documents.

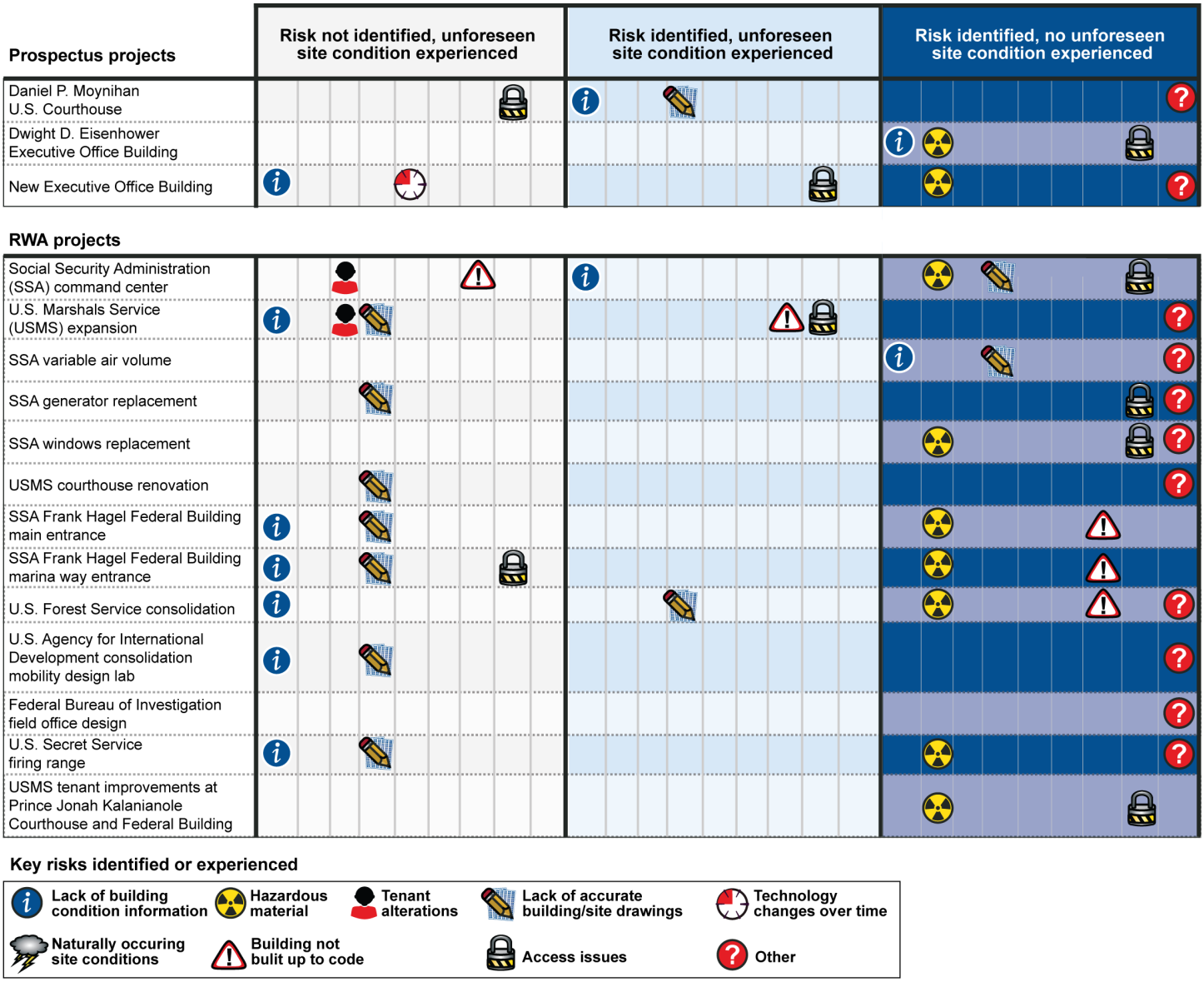
Based on the interviews we conducted and project documentation we reviewed, GSA generally used at least one of the methods or tools to identify potential risks on 16 of the 18 projects we reviewed. To make this determination we reviewed such documents as PMPs and feasibility studies. GSA guidance calls for PMPs to identify constraints and project risks and to be used continuously throughout a project to identify risks. We found that, in general, GSA prepared PMPs for our selected projects. For example, GSA prepared PMPs for 13 of the 18 RWA and prospectus projects we reviewed. Five projects did not have PMPs—three were RWA projects associated with larger projects and no separate PMP was prepared for the RWA project, and for two projects, GSA officials were not sure if a PMP was prepared and were unable to provide documentation of a PMP. The project documents we reviewed generally discussed and identified potential project risks, including sections of the PMP that identified specific potential risks. Some of the projects we reviewed also had other risk identification documents such as feasibility studies, hazardous material surveys, and program development studies.

Although GSA Identified Risks on Projects We Reviewed, Identification of Unforeseen Site Conditions Were Inconsistent

Although GSA has risk assessment methods that were generally used on the projects we reviewed, these methods had inconsistent results in terms of identifying unforeseen site conditions that were later experienced. Based on the risk assessment methods, GSA identified a range of risks across the projects we reviewed and identified one or more types of unforeseen site conditions on at least 16 projects (see fig. 4).[37] However, the risk assessment did not consistently identify the risk of specific unforeseen site conditions that materialized during 11 of the projects.

[37]It should be noted that repair and alteration projects can have multiple risks identified as part of the risk assessment methods. Similarly, repair and alteration projects can experience a multitude of risks, including unforeseen site conditions.

Figure 4: Risks Identified by the General Services Administration and Unforeseen Site Conditions Experienced on Repair and Alteration Projects GAO Reviewed



Source: GAO analysis of GSA information. | GAO-16-273

The risks associated with unforeseen site conditions that GSA most often identified on the projects we reviewed included:

- access issues (7 projects): limiting access to areas may limit building information (for example, not being able to conduct site testing and evaluation in an occupied space may lead to an unforeseen site condition);
- presence of hazardous materials (9 projects);
- lack of accurate building drawings (4 projects); and
- other risks (11 projects), included risks that did not fall into other categories, including risks from procurement and acquisition methods.

On 11 of the projects we reviewed that experienced an unforeseen site condition, GSA did not identify risks that later materialized. For example, an RWA project for the U.S. Marshals Service in Baltimore, Maryland, did not identify risks, including a lack of accurate building drawings, and the risk of tenant alterations in an occupied building, though these risks led to several unforeseen site conditions throughout the building. Another RWA project for the Social Security Administration in Richmond, California, identified the risk of hazardous materials through site testing but did not identify the risk of poor building drawings or a lack of access due to continued occupation during design and construction work.

On five of the projects we reviewed that experienced unforeseen site conditions, GSA identified risks, and the project experienced those specific unforeseen site conditions later.[38] For example, a renovation RWA project for the U.S. Marshal Service in Baltimore, Maryland, identified access issues early on as a risk to the project. According to GSA officials, there were limitations to reducing or eliminating this risk since the project was performed in a building with security concerns and while still occupied. In addition, on a prospectus project at the Daniel P. Moynihan U.S. Courthouse Building in New York City, an unforeseen site condition was experienced related to inaccurate as-built drawings even though the building drawings were reviewed in detail as part of a site inspection.

[38]As part of our work we did not evaluate mitigation actions or strategies that GSA may or may not have used to reduce or eliminate specific risks that were identified. Instead, we evaluated whether GSA identified a particular risk and whether this same risk was later identified as an unforeseen site condition.

On at least 16 of the projects, GSA both identified specific types of unforeseen site conditions, and these projects did not subsequently experience that type of unforeseen site condition during the project. For example, the presence of hazardous materials was recognized as a risk on nine of the projects, and none of these projects experienced an unforeseen site condition caused by the presence of hazardous materials. During a windows replacement RWA project for the Social Security Administration in Woodlawn, Maryland, GSA identified issues related to hazardous materials (asbestos) and re-scoped the project from replacing windows to caulking the windows. GSA officials told us this change was made so as not to disturb the asbestos. The re-scoping also resulted in a lower-cost project.

Risk Assessment Could Benefit from Additional Analysis of Project Information

While GSA officials noted that risks are important and that the risk assessment methods are designed to identify and assess risks associated with repair and alteration projects, we found that GSA is not analyzing project information it has available to identify risks that materialized and their impact on project costs and schedules. A good understanding of project risks and their impact on project costs and schedules is important. *Standards for Internal Control in the Federal Government*[39] states that an agency's approach to assessing risks should comprehensively identify agency risks using a variety of quantitative and qualitative methods and estimate the significance of those risks to help decide how to manage those risks and plan what actions should be taken. This approach is important in the context of repair and alteration projects given that, as discussed earlier, risks from unforeseen site conditions, if not mitigated, can increase project costs and potentially jeopardize project schedules. Similarly, GAO's *Cost Estimation and Assessment Guide*[40] states more specifically that agencies should, among other things, conduct root cause analysis; develop a list of likely risks for individual projects, including a list of emerging risk items that could impact costs and schedule; and perform trend analyses and monitor project risks to develop reliable and valid cost estimates. As discussed earlier in this report, development of cost estimates is an integral part of GSA's project planning and execution process, as is establishing construction contingencies to cover the cost of unexpected events, such as

[39]GAO/AIMD-00-21.3.1.

[40]GAO-09-3SP.

unforeseen site conditions. Finally, the Project Management Institute's *Global Standard: Practice Standard for Project Risk Management* also discusses the importance of identifying types of risks and their causes as part of project planning and management, as well as the effects of these risks on projects.[41]

GSA's risk assessment methods for the most part are focused on identifying risks associated with individual projects and not identifying the risks related to change orders on a program-wide basis, or necessarily the cause of certain types of risks.[42] GSA officials told us they use contract change orders and modifications to document unforeseen site conditions resulting in a change to the contract, and they track these for individual projects to assess project status in terms of budgets and schedules. They also told us they document reasons change orders or modifications are made using a findings-of-fact form. However, GSA officials also told us they do not analyze change orders or modifications to identify the primary causes of cost growth or schedule delays on repair and alteration projects, nor do they analyze the findings of fact to identify the primary reasons change orders or modifications were made.[43] Furthermore, GSA officials told us this information is not used to identify types of risks experienced on repair and alteration projects or their impact on costs and schedules. GSA officials told us there are challenges to using contract change orders and modifications to identify the specific role unforeseen site conditions or other types of risks play in projects. Challenges include the inability to conduct searches of change orders, modifications, or findings of fact forms. According to GSA officials, neither the electronic project management system nor the electronic acquisition data system that GSA uses to record change orders and modifications, are structured to permit searches to identify instances where unforeseen site conditions were the reason for a change order or modification.

[41]The Project Management Institute is a not-for-profit professional membership association for the project, program, and portfolio management profession. It has 2.9 million members and, among other things, issues global standards related to project management.

[42]GSA officials said they do record risks program-wide and known risks are documented. For example, they said an environmental liability register is used to record asbestos, underground storage tanks, and other similar risks that represent a financial liability.

[43]According to GSA officials, they have analyzed contract change orders and modifications for other purposes, such as contract delivery method, but not specifically to assess the impact of unforeseen site conditions.

Supporting documents which could indicate the possible cause of change orders or modifications also cannot be searched. Despite these challenges, GSA officials said they would be open to analyzing contract change orders and modifications, particularly if the analysis was focused on a sample of change orders and modifications and not all of them. One official told us such an analysis could help GSA identify when unforeseen site conditions occur and what their impact was during certain phases of projects. According to this official, most unforeseen site conditions are discovered during the demolition phase of projects after construction contracts have been awarded.

Although the projects we reviewed largely had limited cost impacts resulting from unforeseen site conditions, change orders, including those from unforeseen site conditions, can impact the cost and schedule of repair and alteration projects. For example, during our design work for this study, we reviewed the renovation of the Department of Commerce' headquarters building in Washington, D.C. This is an ongoing prospectus project with an estimated construction cost of $651 million. Unforeseen site conditions, including the presence of asbestos and lead paint, were experienced on this project and increased project costs by roughly $3 million. Also during the renovation of the Department of Interior's headquarters building in Washington, D.C., another ongoing prospectus project we reviewed during our design work, contract change orders related to unforeseen site conditions resulted in $3 million in increased costs. The prospectus project had a current estimated construction cost of $282 million. GSA officials told us that unforeseen site conditions are driven by, among other things, the age of buildings. Therefore, as GSA's average building age increases the risk of unforeseen site conditions and their related costs can be expected to increase. GSA officials also told us that unforeseen site conditions are a major driver of project risk in repair and alteration projects.

We have previously reported that risk assessments allow project managers to identify and manage risks related to project's costs, schedules, and other aspects and that assessing and mitigating risks reduces the probability of later encountering problems that can cause cost increases and schedule delays.[44] Analyzing contract modifications

[44]GAO, *Intercity Passenger Rail: Amtrak's Management of Northeast Corridor Improvements Demonstrates Need for Applying Best Practices*, GAO-04-94 (Washington, D.C.: Feb. 27, 2004).

and change orders to identify the causes of project cost growth and schedule delays would not only allow GSA to better know what role unforeseen site conditions play in project cost growth or schedule delays but also the magnitude of this type of risk. This information would then allow GSA to potentially better target these conditions in its risk assessments and potentially reduce the probability of encountering this risk in future repair and alteration projects. This approach will be important as the federally-owned buildings in GSA's inventory continue to age and the probability of unforeseen site conditions increases.

Conclusions

GSA's repair and alteration program serves an important function in maintaining the inventory of federal buildings and facilities, and this program will continue to increase in importance as GSA's inventory ages and continues to deteriorate. Repairs and alterations are expensive (over $1.2 billion to address immediate deferred maintenance and repair needs as estimated by GSA), and, therefore, it is imperative that the program operate as efficiently and effectively as possible and that costs, schedule delays, and project changes are minimized to the greatest degree possible. This strategy includes identifying and assessing major types of risks to projects, including those from unforeseen site conditions. Both industry stakeholders and GSA officials have said that unforeseen site condition risks are common, particularly in aging buildings, and can lead to increases in project costs and schedule delays. Of equal importance is identifying and understanding the cause of unforeseen site conditions, such as poor quality building drawings, so these causes can be addressed and not lead to unforeseen site conditions in the future.

GSA has risk assessment methods that consider potential risks, including those from unforeseen site conditions. GSA also has a number of tools, such as PMPs and project-rating indexes that help the agency identify and assess risks. However, GSA can improve how it identifies types of project risks and minimize their impacts on repair and alteration projects. In particular, GSA can better analyze the information it has available, like contract change orders and modifications, an approach that would allow a more comprehensive identification of types of project risks, the role these risks play in repair and alteration projects, and the impacts these risks have on project costs, schedules, or scope of work. GSA is also not assessing the information it has available to identify the cause of unforeseen site conditions and identifying steps that could be taken to address these causes in order that they do not lead to unforeseen site conditions in the future. Such an analysis could also have broader benefits, including allowing GSA to identify if unforeseen site conditions or

other types of risks are common to particular types of projects or locations, and if there are common causes for certain types of risks. This type of analysis would better inform GSA's risk assessments and help minimize cost and other project impacts from unforeseen site conditions or other types of risks.

Recommendation for Executive Action

To improve risk assessments for repair and alteration projects, we recommend that the Administrator of GSA develop and implement a plan to periodically analyze information GSA already collects, for example, based on a representative sample of repair and alterations projects, in order to:

- identify the specific impacts unforeseen conditions have had on project costs, schedules, and scope of work;
- analyze the causes of these conditions for those projects that experienced unforeseen site conditions; and
- identify actions that will be taken to address the potential causes of unforeseen site conditions.

Agency Comments

We provided a draft of this product to GSA for comment. In its written comments reproduced in appendix III, GSA agreed with the recommendation and said it will develop a plan to address it. GSA also provided technical comments that were incorporated, as appropriate.

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 wised@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.

Sincerely yours,

David J. Wise
Director,
Physical Infrastructure

Appendix I: Objectives, Scope, and Methodology

The objectives of this report were to (1) identify information about the extent, impact, and cause of unforeseen site conditions[1] during selected repair and alteration projects in federally owned buildings held by the General Services Administration (GSA) and to (2) determine how GSA identifies and assesses the risks of unforeseen site conditions. The scope of the work was limited to buildings and facilities that are federally owned and held by GSA. We did not include leased buildings or facilities since these could be owned or managed by private sector entities and may not necessarily be under GSA's jurisdiction related to repair and alteration work. In addition, in order to determine how GSA identifies project risks we focused on projects where GSA played a role in planning and developing projects.

To identify information about the extent, impact, and cause of unforeseen site conditions during selected repair and alteration projects, we selected 18 repair and alteration projects across four GSA regions (National Capital, Northeast and Caribbean, Mid-Atlantic, and Pacific Rim). The projects included three prospectus[2] projects and 15 reimbursable work authorization (RWA)[3] projects. The prospectus projects were all those projects that received an appropriation from fiscal years 2010 through

[1]For purposes of this report, we use the term "unforeseen site condition" to refer to differing site conditions as well as unforeseen site condition. The Federal Acquisition Regulation (FAR) uses the term "differing site condition" to describe situations that we considered similar to unforeseen site conditions. The FAR definition for differing site condition is "(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract."

[2]Prospectus projects involve major work or acquisitions that are estimated to cost more than a statutorily prescribed amount, which GSA's Administrator is authorized to adjust annually. During the time period we selected the threshold for prospectus projects ranged from $2.79 million to $2.85 million. Building repairs and alterations that are expected to cost more than the prospectus-level threshold must be submitted to certain congressional committees for authorization.

[3]A RWA 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.

2013.[4] The RWA projects also received funding over this period. We chose this period to help ensure projects selected had progressed into the construction phase (where unforeseen site conditions might be identified) and yet were recent enough that electronic records were more likely to be available.[5] To select repair and alteration projects to review, we applied four criteria: (1) project cost, (2) range of project years, (3) projects in construction, and (4) geographic diversity.

There were a total of six prospectus projects that received funding from fiscal years 2010 through 2013. These included the following:

- East Wing Infrastructure Systems Replacements (Washington, D.C.)
- New Executive Office Building (Washington, D.C.)
- Eisenhower Executive Office Building (Washington, D.C.)
- Daniel P. Moynihan U.S. Courthouse (New York, NY)
- West Wing Design Phase II (Washington, D.C.)
- West Wing/East Wing Infrastructure Systems Replacements (Washington, D.C.)

After additional research and discussion with GSA, we excluded three projects. This was because one of the projects was solely for design work (West Wing Design Phase II), not construction. According to GSA, the other two projects (West Wing Infrastructure Replacements and West Wing/East Wing Infrastructure Replacements) were combined. We selected the remaining projects for review.

The RWA projects we reviewed were selected based on a list of RWA projects provided by GSA. According to GSA, the list was intended to be

[4]On one project, the Daniel P. Moynihan U.S. Courthouse in New York City, $2 million in appropriations were received for the design phase. According to GSA, other funding for this project came from reprogramming funds from other projects. We considered this a prospectus project since a prospectus was prepared. However, the project manager told us it was not clear if a prospectus for construction was ever approved by relevant congressional committees. In commenting on this report, GSA officials told us a prospectus was prepared but it was not funded. Instead, GSA reprogrammed monies to do the project—one to undertake the space build-out and another to do the pavilion.

[5]GSA uses an electronic project management system to record project information and to manage projects. According to GSA, this system was developed in 2009 to allow access to above-prospectus level project data on a uniform data system, particularly for projects funded as part of the American Recovery and Reinvestment Act. A GSA official said the system is now being used to collect information on repair and alteration projects with a value of $25,000 or more.

all RWA projects between fiscal years 2010 and 2013 that were for tenant repairs and alterations and were in federally owned buildings held by GSA. GSA has different types of RWA projects. For purposes of this study we reviewed A, B, and N-type RWAs.[6] To select specific projects we first reviewed the list to ensure no single RWA project was represented multiple times in the data. We then combined and sorted the cost information of all RWA and prospectus projects and excluded all projects below a dollar-value cutoff ($2 million) and sorted the projects into GSA regional offices. We selected the three regional offices that accounted for the highest dollar amount of projects.[7] Finally, we selected all relevant prospectus projects (see discussion above) and randomly selected 15 RWA projects from each of three regional offices. We selected more RWA projects than we planned to review to account for potential data reliability issues we might encounter. In selecting RWA projects, we excluded projects that based on their descriptions appeared to be for services and not construction, and we excluded projects that appeared to involve multiple sites. We asked GSA to verify the final list of RWA projects to, among other things, ensure they were in federally owned buildings held by GSA. We made additional adjustments based on GSA's verification.

We interviewed GSA project managers and contracting officers for the projects we selected[8] and reviewed project documents to determine if the projects encountered unforeseen site conditions. We also interviewed these officials to identify the nature of any cost, schedule, or scope impacts from the unforeseen site conditions encountered. Finally, we reviewed project documents, including contract modifications, to obtain information about the unforeseen site conditions encountered. This

[6]A-type RWAs are for projects funded by both GSA and a tenant agency and are for a one-time need. B-type RWAs are used for projects that are funded by either the tenant agency or by the tenant agency and GSA. N-type RWAs fund standalone projects—that is, not associated with other repair or alteration projects—and are fully funded by the tenant agency. The list GSA provided excluded certain RWAs. These included RWAs for national emergencies, were prepaid (e.g., renting of space for a specific purpose, D-type RWAs), were recurring in nature (C and R-type RWAs), or were small, miscellaneous items only good for a year (F-type RWAs).

[7]We also included the Daniel P. Moynihan U.S. Courthouse project in a fourth GSA regional office (Northeast and Caribbean) since this project received an appropriation of $2 million and was treated by GSA for planning purposes like a prospectus project.

[8]GSA did not identify the contracting officer for one of our projects.

included a description of the unforeseen condition, the cost to remediate the condition, and any schedule delays experienced. Where applicable, we asked GSA to clarify any discrepancies between what was in the documentation provided and what we were told in interviews. To identify the causes of unforeseen site conditions, we discussed with project managers and contracting officers the actual unforeseen site conditions experienced and their potential causes. Working independently, two analysts then coded these potential causes into one of nine different categories of unforeseen site condition causes—lack of building condition information, hazardous materials, tenant alterations, lack of accurate drawings, building not built up to code, technology changes over time, naturally occurring site conditions, access issues, and other. These nine categories were developed by reviewing the responses of (1) knowledgeable GSA officials, (2) officials in two government agencies (U.S. Postal Service and the Architect of the Capitol), and (3) individuals/representatives who were knowledgeable and experienced in private sector practices for repair and alteration projects. The results of our work are not generalizable to the universe of repair and alteration projects.

Finally, we contacted 19 organizations and individuals (referred to in this report as industry stakeholders) with knowledge of or experience in the construction industry (see table 2). These contacts included industry trade associations as well as two construction companies that had done repair or alteration work for GSA and two public sector organizations—Architect of the Capitol and the U.S. Postal Service.[9] Our selection of industry stakeholders was based on three methods: (1) asking GSA officials who would be the most appropriate to contact, (2) asking industry stakeholders about appropriate organizations or individuals to contact, and (3) obtaining referrals from various professional organizations. Of the 19 organizations and individuals contacted, we had an interview or some other type of positive contact from 14 organizations/individuals. Of the 14 for which we had a positive contact, we had an interview or received written responses to GAO questions from 11. In the interviews we discussed such issues as the prevalence of unforeseen site conditions, the types of conditions encountered, and the causes of unforeseen or differing site conditions. We also discussed potential impacts on projects

[9]We contacted a third public sector organization, the Army Corps of Engineers, but a planned meeting was canceled.

such as cost increases or schedule delays. The results of our work are not generalizable to the entire universe of industry stakeholders.

Table 2: Industry Stakeholders Contacted for GAO's Repair and Alterations Engagement

Name of organization or individual	Type of organization
Trade and Professional Organizations	
Construction Management Association of America	Professional organization
Construction Industry Institute	Professional organization
Construction Institute of the American Society of Civil Engineers	Professional organization
Project Management Institute	Professional organization
American Association of Cost Engineers	Trade association
American Society for Testing and Materials	Professional organization
International Facility Management Association	Trade association
Building Owners and Managers Association	Trade association
American Builders and Contractors of America	Trade association
Associated General Contractors of America	Trade association
Construction Owners Association of America	Trade association
American Institute of Architects	Trade association
Individuals and private companies	
James Rispoli	University professor
Dr. Gayraj Acharya	Project manager, Government of Alberta, Canada
Grunley Construction Company	Construction company
Clark Construction Company	Construction company
Government agencies	
Army Corps of Engineers	Government agency
Architect of the Capitol	Government agency
U.S. Postal Service	Government agency

Source: GAO. | GAO-16-273

To identify how GSA identifies and assesses the risks of unforeseen site conditions, we reviewed documents related to GSA's capital-planning and execution process and reviewed planning and risk assessment documents for projects we reviewed. Among the planning and project

management documents we reviewed were GSA's *Capital Planning Guide*, *Capital Projects: Project Management Guide*, and *Project Management Practices Guide*.[10] We also reviewed GSA's Fiscal Year 2017 *Capital Investment and Leasing Program Call (Program Call)*,[11] GSA's *P-120, Project Estimating Guide (P-120)*,[12] GSA's *RWA National Policy Document*,[13] and *National Project Intake Guide*.[14] The *Program Call document* outlined the requirements that must be met for a project to be considered for inclusion in GSA's *Capital Investment Program* and the *P-120* document, among other things, discussed the technical and administrative requirements for cost estimating and cost management tasks involved with construction projects' planning and execution stages. GSA's *RWA National Policy Document* states that it is the primary resource within GSA for RWA policy and use of RWAs. The *National Project Intake Guide* establishes national guidance for the intake of all Public Buildings Service projects and, among other things, supplements information in the *Project Management Practices Guide*. Finally, we reviewed other GSA policy and procedure documents, including GSA's policy for using Project Definition Rating Indexes, GSA's procedures for environmental account coding, and GSA's Initial Risk Determination tool.

We assessed whether or not GSA's practices and procedures on the 18 projects[15] we reviewed generally used a risk assessment tool as part of the project development process. The analysis of the risk assessment process and use of risk assessment tools included a review of documentation related to the project and GSA processes but was primarily focused on the project management plan (PMP), which is a key document that includes a risk assessment. Among the documents we

[10]GSA, *Project Planning Guide* (2004), GSA, Public Buildings Service, *Capital Projects: PM Guide*, v.2012 (July 2012), and GSA, *PBS Project Management Practice Guide V.2* (undated).

[11]GSA, *Fiscal Year 2017 Capital Investment and Leasing Program Call* (May 2015).

[12]GSA, *P-120, Project Estimating Requirements for the Public Buildings Service* (January 2007).

[13]GSA, *Reimbursable Work Authorization National Policy Document*, Version 3.0 (August 22, 2012).

[14]GSA, *National Project Intake Guide* (January 2014).

[15]Three RWA projects were attached to larger projects. For two of these projects, project management plans were performed for the larger projects.

reviewed were PMPs, feasibility studies, and program development studies. We interviewed GSA officials, both at headquarters and in five GSA regional offices (the four regional offices associated with the projects we selected plus Region 4, the Southeast-Sunbelt region), about GSA's overall risk assessment methods and tools. These regions were selected since they accounted for about 80 percent of the funding for the RWA projects from which we selected projects to review. We also interviewed GSA project managers about how they identified and assessed risks for the specific projects we reviewed.

Our analysis of project risks and causes of unforeseen site conditions included a comparison of the possible causes of unforeseen site conditions that were experienced on the 18 projects we reviewed with whether those same causes were identified as part of project planning. As discussed earlier, we discussed with project managers and contracting officers the possible causes of unforeseen site conditions encountered and coded the causes into nine different categories. We also reviewed such documents as PMPs, feasibility studies, program development studies, and hazardous materials studies for the projects that submitted documentation to identify the potential project risks and their causes identified during project planning. We then compared the potential project risks identified during project planning with the actual unforeseen site conditions and their potential causes that were actually experienced as coded into the nine categories of causes. This resulted in a grouping of projects based on whether or not project planning identified the risk and whether or not they experienced a related unforeseen site condition. As part of our analysis, we did not assess whether GSA did or did not comply with its stated risk assessment methods or tools, use the appropriate risk assessment tool or method, or correctly identify appropriate risks as part of its assessment. We also did not assess whether or not additional risks could or should have been identified by GSA as part of the risk assessment process. Rather, we reviewed risk assessment documents, such as PMPs and feasibility studies for each of our projects to determine whether these documents were prepared and the types of risks identified. In some instances, we used our professional judgement to determine the type of risk identified by GSA based on the language or intent contained in the source document.

As part of evaluating how GSA identifies and assesses project risks to determine if improvements could be made, we reviewed *Standards for*

Internal Control in the Federal Government and *GAO's Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs (Cost Guide)*.[16] The *Standards for Internal Control in the Federal Government* provides the overall framework for establishing and maintaining an effective internal control system for the federal government. Among other things, the *Cost Guide* addresses generally accepted best practices for ensuring credible program cost estimates. It also discusses the role of risks and risk assessment in developing cost estimates. Finally, we reviewed the Project Management Institute's (PMI) *Global Standard: Practice Standard for Project Risk Management*. PMI is a not-for profit professional membership organization for the project, program, and portfolio management profession. Among other things, this organization issues standards and conducts academic research to improve the profession of project management. The *Global Standard: Practice Standard for Risk Management* discusses principles of effective risk management, including risk identification and risk assessment.

We conducted this performance audit from February 2015 to March 2016 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.

[16]GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999) and *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, GAO-09-3SP (Washington, D.C.: March 2009).

Appendix II: Description of the General Services Administration's (GSA) Repair and Alteration Projects GAO Reviewed

Project name	Location	Project description	Project cost (in millions)[a]
Prospectus projects			
Dwight D. Eisenhower Executive Office Building	Washington, D.C.	• Roof replacement	$15.0
Daniel P. Moynihan U.S. Courthouse	New York, NY	• Construction of swing space to provide temporary chambers for district judges from the Thurgood Marshall Courthouse • Construction of a new entrance pavilion for security and screening	26.3[b]
New Executive Office Building	Washington, D.C.	• Modernization of the heating, ventilation, and air conditioning (HVAC) system and abatement of hazardous materials	36.5[c]
Reimbursable work authorization projects			
GSA Region			
Region 3			
Social Security Administration (SSA) variable air volume	Wilkes Barre, PA	• Replacement of variable air volume boxes throughout the building	5.0
SSA command center	Woodlawn, MD	• Construction renovation to relocate the existing control and emergency response command center to a new building • Update of the fire alarm system at SSA headquarters	11.6
SSA generator replacement	Woodlawn, MD	• Replacement of two emergency generators and reconfiguration of the associated electrical loads • Upgrade of 8 existing elevators to current building code	4.5
SSA windows replacement	Woodlawn, MD	• Re-caulking of all windows in the building to reduce energy consumption	3.7[d]
U.S. Marshals Service (USMS) renovation	Baltimore, MD	• Renovation, over multiple phases, to construct new cell blocks, interview rooms, command center, security system, office space and a dedicated HVAC system • Renovation of elevators and upgrades to mechanical and electrical systems	6.3
Region 9			
Customs and Border Protection San Ysidro Land Port of Entry	San Diego, CA	• Installation of additional security equipment and the associated cabling and wiring	6.2
SSA Frank Hagel Federal Building: main entrance	Richmond, CA	• Renovation of building entrance, including aesthetic and security upgrades	3.5
SSA Frank Hagel Federal Building: marina way entrance	Richmond, CA	• Renovation of building entrance, including aesthetic, security, and life-safety upgrades	3.8
USMS Courthouse renovation	Tucson, AZ	• Renovation of courthouse in 3 phases including the establishment of swing space for dislocated staff and the expansion of existing cell blocks	9.0

Project name	Location	Project description	Project cost (in millions)[a]
USMS tenant improvements at Prince Jonah Kalanianaole Courthouse and Federal Building	Honolulu, HI	• Renovation of special purpose and support space within the courthouse, including the renovation and construction of new holding cells	4.7
Region 11			
Department of Homeland Security St. Elizabeth's development	Washington, D.C.	• Construction of an operations center for the U.S. Coast Guard • Renovation of existing building for tenant improvements and miscellaneous site work	20.2
Federal Bureau of Investigation field office design	Washington, D.C.	• Renovation of existing space to create a secure work environment and improve energy consumption	5.1
U.S. Agency for International Development consolidation mobility design lab	Washington, D.C.	• Renovation of office to a mobile workplace	7.2
U.S. Forest Service's consolidation	Washington, D.C.	• Renovation to upgrade all major building systems in order to accommodate the consolidation and relocation of employees from Rosslyn, Virginia, to Washington, D.C.	23.0
U.S. Secret Service's firing range	Washington, D.C.	• Construction of firing range	4.4

Source: GAO analysis of project information and interviews with GSA officials. | GAO-16-273

[a]For Prospectus projects, project costs are the total amount appropriated or apportioned for the project and for reimbursable work authorization projects, the project costs are the original award amount and any amendments to the original award.

[b]Two million ($2 million) in appropriations were received for the design phase for this project. According to GSA, other funding for this project came from reprogramming funds from other projects. We considered this a prospectus project since a prospectus was prepared. However, the project manager told us it was not clear if a prospectus for this project was ever approved by relevant congressional committees. In commenting on this report, GSA officials told us a prospectus was prepared but it was not funded. Instead, GSA reprogrammed monies to do the project—one to undertake the space build-out and another to do the pavilion.

[c]The original amount appropriated for this project was $36.5 million. However, the original project was subsequently canceled and GSA officials told us $20 million of the amount originally appropriated has been spent on this project.

[d]According to GSA, this project was re-scoped from a replacement project to a re-caulking project due to the presence of hazardous materials. The cost of the project was reduced from $3.7 to $1.4 million.

Appendix III: Comments from the General Services Administration

GSA

The Administrator

March 4, 2016

The Honorable Gene L. Dodaro
Comptroller General of the United States
U.S. Government Accountability Office
Washington, DC 20548

Dear Mr. Dodaro:

The U.S. General Services Administration (GSA) appreciates the opportunity to review and comment on the U.S. Government Accountability Office (GAO) draft report entitled, *Federal Real Property: GSA Could Better Identify Risks of Unforeseen Conditions in Repair and Alteration Projects* (GAO-16-273). As a result of its findings, GAO makes one recommendation to GSA:

To improve risk assessments for repair and alteration projects, GAO recommends that the Administrator of GSA develop and implement a plan to periodically analyze information GSA already collects, for example, based on a representative sample of repair and alterations projects, in order to:

- Identify the specific impacts these conditions have had on project costs, schedules, and scope of work,
- Analyze the causes of these conditions for those projects that experienced unforeseen site conditions, and
- Identify actions that will be taken to address the potential causes of unforeseen site conditions.

GSA reviewed this report, agrees with the recommendation, and will develop a plan to address the recommendation made to GSA. GSA is confident that these actions will satisfactorily remedy the concerns raised by your office.

If you have any additional questions or concerns, please contact me at (202) 501-0800 or Ms. Lisa A. Austin, Associate Administrator, Office of Congressional and Intergovernmental Affairs, at (202) 501-0563.

Sincerely,

Denise T. Roth

Denise Turner Roth
Administrator

cc: Mr. David Wise, Director, Physical Infrastructure Issues, GAO

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Washington, DC 20405
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Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

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Staff Acknowledgments

In addition the individual named above, other key contributors to this report were Nancy Lueke, Assistant Director; Russell Burnett; Jenny Chow; Richard Jorgenson; Hannah Laufe; Malika Rice; Amy Rosewarne; Charles Schartung; and Crystal Wesco.