



December 2021

TECHNOLOGY MODERNIZATION FUND

Implementation of Recommendations Can Improve Fee Collection and Proposal Cost Estimates



A Century of Non-Partisan Fact-Based Work

GAO@100 Highlights

Highlights of [GAO-22-105117](#), a report to congressional committees

Why GAO Did This Study

Enacted in 2017, the provisions commonly referred to as the *Modernizing Government Technology Act* established the TMF in recognition of the challenges in modernizing federal information systems. OMB and GSA administer the TMF, and a Technology Modernization Board comprised of federal IT executives reviews agency project proposals.

Pursuant to the law, OMB's 2018 TMF guidance directed agencies with approved projects to reimburse the amounts transferred from the fund and pay a fee, within 5 years of award. Fees were to be based in part on a percentage of award amounts transferred to the agency. GSA uses TMF appropriations to cover its operating expenses, and collects the fees from awarded projects to offset these expenses.

The act includes a provision for GAO to report biannually on the TMF. This second TMF report, among other things, (1) identifies the status of the fund and approved projects, (2) determines the TMF's operating costs and fees collected to offset those costs, and (3) assesses the reliability of selected projects' cost saving estimates.

GAO identified projects approved for TMF funding and reviewed the extent to which selected projects were generating cost savings. GAO also reviewed OMB and GSA's administrative fund processes, and GSA financial data on TMF operating costs.

View [GAO-22-105117](#). For more information, contact David B. Hinchman at (214) 777-5719 or hinchmand@gao.gov.

December 2021

TECHNOLOGY MODERNIZATION FUND

Implementation of Recommendations Can Improve Fee Collection and Proposal Cost Estimates

What GAO Found

The Technology Modernization Fund (TMF) provides awards to agencies to, among other things, modernize aging federal information systems. Of the initial \$175 million that Congress appropriated for TMF, the Technology Modernization Board had approved 11 projects totaling about \$89 million (see table), as of August 2021. Agency proposals were to include estimates of any project-related savings; agencies could use these savings to satisfy the requirement that they reimburse the TMF for any transfers within 5 years. For the seven projects approved in 2018 and 2019, two have reported generating cost savings but those savings are not documented. For the remaining five projects, two no longer plan on savings, two plan on savings starting in 1 to 3 years, and one does not know when savings will begin.

Technology Modernization Fund (TMF) Project Awards, as of August 31, 2021 (in dollars)

Agency and TMF project	Total award amount	Date of award
Department of Agriculture (Agriculture) Farmers.Gov Portal	4,000,000	June 7, 2018
Department of Energy Enterprise Cloud Email	3,743,702	June 7, 2018
Department of Housing and Urban Development Unisys Migration	13,850,013	June 7, 2018
Agriculture Infrastructure Optimization	500,000	October 29, 2018
Department of Labor (Labor) Visa Application Transformation	3,500,000	October 29, 2018
General Services Administration (GSA) Application Modernization	9,816,833	October 29, 2018
GSA NewPay	16,986,021	February 11, 2019
Agriculture Specialty Crops Systems Modernization	8,000,000	October 21, 2019
U.S. Equal Employment Opportunity Commission Charge and Case Management System Modernization	4,000,000	October 21, 2019
U.S. Customs Border and Protection Automated Commercial Environment Collections Module	15,000,000	July 27, 2020
Labor Data Modernization	9,600,000	March 21, 2021
Total	88,996,569	

Source: GAO analysis of agency TMF project documentation as of August 31, 2021. | [GAO-22-105117](#)

In March 2021, the *American Rescue Plan Act of 2021* appropriated an additional \$1 billion to the TMF. In May 2021, the Office of Management and Budget (OMB) provided updated TMF guidance to agencies regarding this \$1 billion. Among other things, the guidance (1) prioritizes projects that cut across agencies and address immediate cybersecurity gaps, and (2) allows agencies to apply for a partial or minimal reimbursement of the TMF funds provided (partial is agencies repaying 25 to 100 percent of the award while minimal is greater than zero but less than 25 percent). On September 30, 2021, the General Services Administration (GSA) announced the approval of seven new projects with awards totaling at least \$311 million (one of the seven projects is classified; no award figure is publicly available). In deciding on these seven, the Technology Modernization Board received 113 project proposals requesting a total of more than \$2.3 billion.

In addition, GAO analyzed TMF project and supporting cost estimate documentation for the four projects awarded funds between September 2019 and August 2021 and compared its analysis to the characteristics of a reliable cost estimate.

What GAO Recommends

In its first TMF report, GAO recommended that

- OMB and GSA develop and implement a plan that outlines the actions needed to fully recover the TMF Program Management Office's operating expenses with fee collection in a timely manner; and
- GSA develop detailed guidance to aid agencies in completing their TMF proposal cost estimates.

These recommendations have not yet been implemented. GAO maintains that their implementation can improve the sufficiency of fee collection and the quality of cost estimates.

Regarding TMF operating costs and fees collected to offset those costs, as of August 2021, GSA had received fee payments totaling about \$810,000, or about 29 percent of its operating expenses of \$2.8 million (see table below).

Fiscal year	Operating expenses	Fee collection
2018	408,662	0
2019	851,958	33,165
2020	835,725	245,096
2021 ^a	712,170	530,628
Total	2,808,515	808,889

Source: GAO analysis of TMF Program Management Office and TMF project documentation, | GAO-22-105117

^a2021 operating expenses and fee collection are for the first 11 months of fiscal year 2021 (Oct-Sept).

A key reason for this shortfall is that six of the seven initially approved projects narrowed their scopes. This led to reduced award amounts transferred to agencies, which in turn resulted in about a \$1.12 million reduction in anticipated fees. Relatedly, OMB and GSA have not yet implemented GAO's prior recommendation to develop and implement a plan to fully recover operating expenses with fee collection. Doing so would provide greater assurance that fees collected would be sufficient to offset operating costs.

OMB funding guidelines require projects to include a reliable estimate of any project-related savings. However, most of the TMF projects' reported savings estimates derived from cost estimates continue to be unreliable. Specifically, three of the four projects reviewed did not fully incorporate best practices for a reliable cost estimate, as defined in OMB Circular A-11 (which references GAO's *Cost Estimating and Assessment Guide*) (see table below).

TMF Project	Characteristic			
	Comprehensive	Well-documented	Accurate	Credible
Department of Agriculture Specialty Crops System Modernization	Minimally met	Minimally met	Minimally met	Not met
Department of Labor Data Modernization	Partially met	Partially met	Partially met	Not met
U.S. Customs and Border Protection Automated Commercial Environment Collections Module	Met	Met	Substantially met	Met
U.S. Equal Employment Opportunity Commission Charge and Case Management System Modernization	Partially met	Minimally met	Minimally met	Not met

Source: GAO analysis of agency TMF cost estimate documentation as of August 31, 2021. | GAO-22-105117

Note: Evidence was provided to satisfy a given characteristic's best practices: Not met = none; minimally met = a small portion; partially met = about half; substantially met = a large portion; met = complete evidence.

Given the significant expansion in available TMF funds, it is increasingly important that GSA implement GAO's prior recommendation to improve the instructions for the TMF cost estimate template required of each proposal. Such action would help ensure that the TMF board is reviewing documentation that is complete, accurate, and reliable.

Contents

Letter		1
	Background	7
	Majority of First Eleven Awarded Projects Have Not Yet Realized Cost Savings	18
	TMF Operating Expenses Continue to Outpace Offsetting Fee Collection	25
	Savings Estimates for the Majority of Projects Reviewed Are Not Reliable	29
	All TMF Project Acquisitions Used Full and Open Competition or an Authorized Exception	32
	Agency Comments and Our Evaluation	35
Appendix I	Objectives, Scope, and Methodology	40
Appendix II	Cost Estimate Analyses of Technology Modernization Fund Projects, September 2019-August 2021	46
Appendix III	Comments from the U.S. Equal Employment Opportunity Commission	52
Appendix IV	GAO Contact and Staff Acknowledgments	54
Tables		
	Table 1: Agency Projects That Received Awards from the Technology Modernization Fund (TMF), as of August 2021	19
	Table 2: Analysis of Technology Modernization Fund (TMF) Projects' Reported Realized Cost Savings as of August 31, 2019 and August 31, 2021 and Reasons for the Changes	22
	Table 3: Technology Modernization Fund (TMF) Projects' Awarded from September 2019 to August 2021 Reported Plans for Beginning to Realize Cost Savings, as of August 31, 2021	23

Table 4: Agency Projects That Received Awards from the Technology Modernization Fund (TMF) in September 2021	24
Table 5: Technology Modernization Fund (TMF) Program Management Office Operating Expenses and Fee Collection, as of August 31, 2021 (in dollars)	26
Table 6: Analysis of Technology Modernization Fund (TMF) Projects' Reported Scope Changes, and the Related Impact on the TMF Award Amount and Fee Collection, as of August 31, 2021	27
Table 7: Technology Modernization Fund (TMF) Project Scheduled Fee Collection, as of August 31, 2021 (in dollars)	28
Table 8: GAO Assessment of Technology Modernization Fund (TMF) Projects' Cost Estimates	31
Table 9: Use of Competitive Procedures for Technology Modernization Fund (TMF) Project Acquisitions by the Contracts Awarded or Task Orders Issued from September 1, 2019 to August 31, 2021	33
Table 10: Analysis of the Department of Agriculture Specialty Crops System Modernization Technology Modernization Fund (TMF) Project Proposal Cost Estimate Using GAO's <i>Cost Estimating and Assessment Guide</i>	48
Table 11: Analysis of the Department of Labor Data Modernization Technology Modernization Fund (TMF) Project Proposal Cost Estimate Using GAO's <i>Cost Estimating and Assessment Guide</i>	48
Table 12: Analysis of the U.S. Customs and Border Protection Automated Commercial Environment Collections Module Technology Modernization Fund (TMF) Project Proposal Cost Estimate Using GAO's <i>Cost Estimating and Assessment Guide</i>	49
Table 13: Analysis of the U.S. Equal Employment Opportunity Commission Charge and Case Management System Modernization Technology Modernization Fund (TMF) Project Proposal Cost Estimate Using GAO's <i>Cost Estimating and Assessment Guide</i>	50

Figure

Figure 1: Technology Modernization Fund (TMF) Process for Awarding Funds to Proposed Projects	13
---	----

Abbreviations

Agriculture	Department of Agriculture
CBP	U.S. Customs and Border Protection
CIO	chief information officer
Energy	Department of Energy
EEOC	U.S. Equal Employment Opportunity Commission
FAR	Federal Acquisition Regulation
FPDS	Federal Procurement Data System
GSA	General Services Administration
HUD	Department of Housing and Urban Development
IT	information technology
Labor	Department of Labor
MGT	<i>Modernizing Government Technology</i>
OMB	Office of Management and Budget
TMF	Technology Modernization Fund

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.

December 10, 2021

Congressional Committees

Although agencies spend more than \$100 billion annually on information technology (IT), the federal government has faced longstanding problems in its management of IT. Accordingly, in 2015 we added improving the management of IT acquisitions and operations to GAO's High-Risk List as a government-wide challenge.¹ In our March 2021 high-risk series update, we reported that the management of IT acquisitions and operations continued to face challenges and required significant attention to address outstanding issues.²

Recognizing the challenges in modernizing government IT systems, the President and Congress enacted legislation in December 2017 that established a new funding mechanism to improve, retire, or replace existing systems. The provisions of the *National Defense Authorization Act for Fiscal Year 2018* commonly referred to as the *Modernizing Government Technology (MGT) Act*,³ established the Technology Modernization Fund (TMF), within the Department of the Treasury.⁴ The fund is intended to improve the efficiency and effectiveness of federal IT systems, especially aging legacy systems.

The Office of Management and Budget (OMB) and a program management office within the General Services Administration (GSA), in consultation with the Chief Information Officers Council, administer the

¹GAO, *High-Risk Series: An Update*, [GAO-15-290](#) (Washington, D.C.: Feb. 11, 2015).

²GAO, *High-Risk Series: Dedicated Leadership Needed to Address Limited Progress in Most High-Risk Areas*, [GAO-21-119SP](#) (Washington, D.C.: Mar. 2, 2021).

³*Modernizing Government Technology Act* provisions of the *National Defense Authorization Act for Fiscal Year 2018*, Pub. L. No. 115-91, div. A, title X, subtitle G, 131 Stat. 1283, 1586-94 (2017).

⁴The act established a fund in the Department of the Treasury to provide transfers of amounts to agencies to help them improve, retire, or replace existing federal information technology systems.

TMF. The act also established a Technology Modernization Board,⁵ which is chaired by the Federal Chief Information Officer (CIO).⁶ The board evaluates the proposals submitted by agencies seeking funding to replace legacy systems or acquire new systems, recommends the funding of modernization projects to the Administrator of General Services, and monitors the progress and performance of approved projects. The GSA TMF Program Management Office began administering fund operations on March 5, 2018 and the board made its initial awards to projects on June 7, 2018.

The MGT Act included a provision for GAO to report biannually on the TMF and the projects receiving these funds.⁷ We issued the results of our first biannual mandate in December 2019.⁸ For our current report, our objectives were to: (1) identify the status of the TMF and projects that have received awards; (2) identify the costs of establishing and overseeing the TMF, and the fees collected to offset those costs; (3) assess the reliability of cost saving estimates for awarded projects; and (4) determine the extent to which agencies have used full and open competition for projects involving acquisitions of custom-developed IT.

The scope of our review included OMB and the GSA TMF Program Management Office—the two organizations responsible for TMF administration. We also performed work at the seven agencies that had received the 11 awards from the fund as of August 2021—the

⁵According to the MGT Act, the board shall be comprised of seven voting members, including the Federal CIO; a senior official from GSA with technical expertise in information technology development; an employee of the National Protection and Programs Directorate (now the Cybersecurity and Infrastructure Security Agency) of the Department of Homeland Security; and four employees of the federal government primarily having technical expertise in information technology development, financial management, cybersecurity and privacy, and acquisition.

⁶The Federal CIO is formally known as the Administrator of the Office of Electronic Government. The Office of the Federal CIO is part of OMB within the Executive Office of the President.

⁷The act also included a provision for GAO to review IT procurement, development, and modernization programs within the federal government. This work is ongoing and is expected to be issued in December 2021 under a separate report, GAO, *Information Technology: Digital Service Programs Need to Consistently Coordinate on Developing Guidance for Agencies*, [GAO-22-104492](#).

⁸GAO, *Technology Modernization Fund: OMB and GSA Need to Improve Fee Collection and Clarify Cost Estimating Guidance for Awarded Projects*, [GAO-20-3](#) (Washington, D.C.: Dec. 12, 2019).

Department of Agriculture (Agriculture), Department of Energy (Energy), Department of Homeland Security's U.S. Customs and Border Protection (CBP), Department of Housing and Urban Development (HUD), Department of Labor (Labor), GSA, and the U.S. Equal Employment Opportunity Commission (EEOC).⁹

For our first objective, we reviewed documentation from the 11 projects, including TMF proposal documentation and status briefings to determine whether any of the projects had realized costs savings. Based on our review of the projects' documentation, we confirmed that nine of the projects had not yet begun to realize cost savings and the remaining two projects had not yet documented those realized savings as of August 31, 2021; therefore, it was premature to compare these projects' realized savings to the TMF operating costs. We also reviewed the TMF website to determine program descriptions and total award amounts. We interviewed officials in OMB's Office of E-Government and Information Technology and in the GSA TMF program office to determine the status of the program. We also interviewed officials in charge of the TMF-funded projects within the Office of the CIO and other appropriate offices of each of the agencies to determine the status of the projects awarded TMF funding since August 31, 2019. In addition, we reviewed OMB guidance and the TMF website to obtain additional information on projects awarded TMF funding after August 31, 2021.

For our second objective, we obtained and analyzed financial data from the GSA program office on actual and planned TMF operating costs for fiscal years 2018 through 2028 (fiscal year 2018 was the first year that the fund was in operation and fiscal year 2028 is the last year during which agencies plan to make reimbursements to the fund).¹⁰ Specifically, we analyzed GSA's actual operating costs from March 5, 2018 through August 31, 2021 from USASpending.gov¹¹ and reviewed the program office's planned operating costs for overseeing the fund through the end of fiscal year 2028. In addition, we relied on prior work from our first report

⁹As of August 2021, three agencies had received multiple TMF awards—Agriculture (3), Labor (2), and GSA (2)—while the remaining four agencies (Energy, CBP, HUD, and EEOC) had each received one award.

¹⁰We previously reported that GSA is the only federal agency obligating funds from the TMF to cover operating costs.

¹¹USASpending.gov is a public-facing website that provides spending data from agencies within the federal government at <https://www.usaspending.gov/>.

on the TMF issued in December 2019 that identified the costs for establishing and overseeing the fund from March 5, 2018 through August 31, 2019.¹²

To determine the accuracy and completeness of GSA's financial data on the operating costs for TMF administration, we compared the information on the operating costs provided by the agency to the spending amounts reported by GSA on USASpending.gov for obvious errors and inconsistencies. Based on these steps, we did not identify any significant errors related to the accuracy or completeness of the data. Additionally, we previously reported on steps taken to ensure the accuracy and completeness of GSA's financial data on the operating costs for TMF administration. Based on these steps, we determined that these data were sufficiently reliable for us to be able to report on GSA's operating costs for TMF administration.¹³

We also obtained and analyzed agency documentation from, and interviewed officials within GSA's TMF Program Management Office, regarding the fund's actual and planned operating expenses as of August 31, 2021. We assessed the collection of fees used to ensure the solvency of the fund during the period from June 7, 2018 (when projects first began to receive awards) through August 31, 2021. We relied on prior work from our first report on the TMF for GSA's collection of fees from June 7, 2018 through August 31, 2019, and analyzed documentation from GSA's program office on its fee collection for the period of September 1, 2019 through August 31, 2021. In addition, we interviewed staff in OMB's Office of E-Government and Information Technology regarding OMB guidance and its administrative responsibilities for the fund.

Further, we obtained and analyzed project proposal documentation and signed written agreements and interviewed officials in charge of TMF-funded projects within the Office of the CIO and other appropriate offices at each of the four agencies that received awards from September 1, 2019 through August 31, 2021 (Agriculture, Labor, CBP, and EEOC). In addition, we obtained and analyzed any updated proposal documentation or additional signed written agreements for the initial seven projects that we had previously reviewed in December 2019 (that had received awards from June 7, 2018 through August 31, 2019). This included two projects at Agriculture, one project at Energy, one project at HUD, one project at

¹²[GAO-20-3](#).

¹³[GAO-20-3](#).

Labor, and two projects at GSA. We analyzed the documentation from the 11 projects to determine the scheduled reimbursement transfers and fee payments.

For the third objective, we analyzed TMF project proposals, including cost estimates and supporting documentation, from the four agencies that received awards from September 1, 2019 to August 31, 2021. (We previously assessed the other seven projects' cost estimates for the awards made from June 7, 2018 through August 31, 2019 in our report issued in December 2019). For the four TMF-funded projects, we interviewed the agencies' project officials responsible for developing the overall TMF cost savings estimate and associated cost estimates regarding their estimation processes. We compared each TMF-funded project team's estimating methodologies and documentation to the best practices of a reliable cost estimate discussed in GAO's *Cost Estimating and Assessment Guide*.¹⁴ Our analysis enabled us to determine whether each project's cost estimate, used to determine the project's cost savings estimate, was comprehensive, well-documented, accurate, and credible.

We presented the results of our initial analysis of each project cost estimate to the cognizant agency in August 2021. We asked each agency to verify the information presented in the analysis and provide any updates or additional documentation as appropriate. Each of the agencies provided updated information, which we incorporated into this analysis, as appropriate.

In addition, we interviewed staff in OMB's Office of E-Government and Information Technology, as well as officials from the TMF Program Management Office, about the process for the review and approval of TMF-funded project cost savings estimates and cost estimate documentation.

To assess the reliability of cost savings estimates, we reviewed completed cost estimate templates. The Technology Modernization Board required agency project teams to complete such a template in submitting project cost savings estimates. We also interviewed officials in the Office of the CIO and other appropriate offices at each agency who were in charge of completing the TMF cost estimate template. We discussed with these officials how the template was completed and what sources of data

¹⁴GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs*, [GAO-20-195G](#) (Washington, D.C.: Mar. 12, 2020).

were used. We also reviewed agency responses and other supporting documentation to determine how the estimated costs and savings were derived and whether there were any qualifications of the provided data. Further, we reviewed the completed templates to identify missing data, or other errors, and consulted with our cost estimation specialists about these issues, as appropriate. Based on our assessment of each project's cost estimate (used to derive the cost savings estimate), we determined that the cost savings data for three of the four TMF projects reviewed were not reliable, while one project's cost savings data was reliable. Therefore, we did not include the estimated savings amounts for three of the four projects in our report. We discuss the data's shortcomings for these three projects later in our report.

To address the fourth objective, we obtained and analyzed any contract documentation for each of the 11 projects awarded funds through August 31, 2021. Specifically, we obtained and analyzed any contract documentation for the four projects awarded funds between September 1, 2019 through August 31, 2021 that awarded contracts or task orders for work on the projects. We also interviewed officials in charge of TMF-funded projects within the Office of the CIO and other appropriate offices at each of these agencies about acquisitions related to the awarded projects. In addition, we obtained and analyzed any updated contract documentation for the initial seven awarded projects that we previously reviewed in our report issued in December 2019.¹⁵

Using the agency-provided contract information, we obtained and analyzed data from the Federal Procurement Data System (FPDS)—the government's contract award database—for the period of September 1, 2019 through August 31, 2021.¹⁶ We assessed whether each awarded acquisition used full and open competition in accordance with the

¹⁵[GAO-20-3](#).

¹⁶The Federal Procurement Data System (FPDS) is a web-based tool for agencies to report contract transactions. In addition, it is a searchable database of contract information that provides a capability to examine data across government agencies and provides managers a mechanism for determining where contract dollars are being spent.

*Competition in Contracting Act of 1984*¹⁷ and the Federal Acquisition Regulation (FAR).¹⁸

To ensure the accuracy and completeness of the awarded projects' contract information related to the use of full and open competition, we searched FPDS data to confirm that all contracts and task orders related to the projects had been provided. We then presented the results of our analysis to officials in charge of project acquisitions at each agency and asked these officials to verify the completeness and accuracy of the FPDS data and provide any updates, as appropriate.

Officials in charge of all of the awarded projects confirmed the contract information related to the use of full and open competition and provided additional contract acquisition data, as appropriate. Based on these steps, we determined that these data were sufficiently reliable to report on TMF-funded project acquisitions' use of full and open competition. Further details on our objectives, scope, and methodology are included in appendix I.

We conducted this performance audit from March 2021 to December 2021 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

Federal agency IT systems provide essential services that are critical to the health, economy, and defense of the nation. However, federal agencies increasingly rely on aging legacy systems that can be costly to maintain. As we previously reported in May 2016, our review of federal legacy systems found that 26 federal agencies reported spending almost

¹⁷The *Competition in Contracting Act of 1984* requires agencies to obtain full and open competition through the use of competitive procedures in their procurement activities unless otherwise authorized in law. See Pub. L. No. 98-369, div. B, title VII, §§ 2711(a)(1) (civilian), 2712 (military), 98 Stat. 1175, 1184 (1984), codified at 41 U.S.C. § 3301 and 10 U.S.C. § 2304.

¹⁸In implementing the *Competition in Contracting Act*, the Federal Acquisition Regulation requires that contracting officers promote and provide for full and open competition in soliciting offers and awarding government contracts. Full and open competition, when used with respect to a contract action, means that all responsible sources are permitted to compete. See FAR 48 C.F.R. § 2.101 and subpart 6.1.

\$61 billion on operations and maintenance costs in fiscal year 2015.¹⁹ In addition, many of the government’s IT investments used hardware parts that were unsupported and outdated software languages, such as the common business oriented language (COBOL).²⁰ In some cases, this lack of vendor support created security vulnerabilities and additional costs because these known vulnerabilities were either technically difficult or prohibitively expensive to address.

Congress and the President enacted the MGT Act in December 2017 and established the TMF to provide transfers of amounts to agencies to help them improve, retire, or replace existing systems.²¹ Congress appropriates money to the TMF, which is used to fund projects approved by the board. As of August 2021, the TMF had received \$175 million through the annual appropriations process and has an additional \$1 billion available through September 30, 2025, appropriated through the *American Rescue Plan Act of 2021* to fund modernization projects.²²

Oversight of the Technology Modernization Fund

The MGT Act assigns specific responsibilities to OMB, GSA, and the Technology Modernization Board for the fund’s administration and also assigns responsibilities to federal agencies that receive awarded funds.

- **OMB.** The act requires the Director of OMB to issue guidance on the administration of the fund and report the status of the awarded projects on a public website.²³ The information reported is to include a description of the project, project status (including any schedule delay and cost overruns), financial expenditure data related to the project, and the extent to which the project is using commercial products and services.

¹⁹GAO, *Information Technology: Federal Agencies Need to Address Aging Legacy Systems*, [GAO-16-468](#) (Washington, D.C.: May 25, 2016).

²⁰The common business oriented language, which was introduced in 1959, became the first widely used, high-level programming language for business applications.

²¹*Modernizing Government Technology Act* provisions of the *National Defense Authorization Act for Fiscal Year 2018*, Pub. L. No. 115–91, title X, div. A, subtitle G, §1078(b)(3)(A), 131 Stat. 1283, 1589 (2017).

²²On March 11, 2021, Congress and the President enacted legislation that appropriated an additional \$1 billion to be available until September 30, 2025 to carry out the purposes of the fund. *American Rescue Plan Act of 2021*, Pub. L. No. 117-2, Title IV, § 4011, 135 Stat. 4, 80 (2021).

²³OMB provides information on the status of awarded projects on the Technology Modernization Fund’s website at <https://tmf.cio.gov/>.

-
- **GSA.** The act designates the Administrator of General Services, in consultation with the Chief Information Officers Council, with responsibility for administering the fund. This includes, among other things: (1) providing direct technical support in the form of personnel services and other services; (2) assisting the Technology Modernization Board with the evaluation, prioritization, and development of agency modernization proposals; and (3) performing regular project oversight and monitoring of approved agency modernization projects.

In March 2018, GSA established a TMF Program Management Office within the agency to manage these functions. An executive director leads the office and reports to the Office of the Deputy Administrator within GSA. The act requires the Administrator of General Services, in consultation with the Director of OMB, to establish amounts to be paid at levels sufficient to ensure the solvency of the fund in order to offset GSA's operating expenses for these functions. Agencies pay fees if they receive funding for a project.

- **Technology Modernization Board.** The act established a board, which is chaired by the Federal CIO, and is made up of seven federal government IT executives.²⁴ The board has responsibility for providing input to the Director of OMB for the development of processes for agencies to submit proposals, making recommendations to the Administrator of General Services to help agencies refine their submitted proposals, and evaluating and approving submitted proposals.²⁵ The board also is responsible for recommending the funding of modernization projects to the Administrator of General Services, and for monitoring the progress and performance of approved projects, in consultation with the Administrator of General Services. In addition, the board is tasked with monitoring the operating costs of the fund.

²⁴As of June 2021, the Technology Modernization Board was comprised of the Federal CIO, GSA CIO, Deputy Executive Assistant Director of Cybersecurity for the Department of Homeland Security's Cybersecurity and Infrastructure Security Agency, Assistant CIO for Agriculture's Farm Production and Conservation Mission Area, Deputy Assistant Director for National Science Foundation's Computer and Information Science and Engineering, National Geospatial Intelligence Agency's Chief Technology Officer, and the Chief Technology Officer for the Department of Veterans Affairs.

²⁵The MGT Act required the Technology Modernization Board to establish criteria for evaluating submitted proposals to address the greatest security, privacy, and operational risks; have the greatest government-wide impact; and have a high probability of success based on factors including a strong business case, technical design, consideration of commercial off-the-shelf products and services, procurement strategy (including adequate use of rapid, agile iterative software development practices), and program management.

As part of its oversight of awarded projects, the board requires each project to present a quarterly update and report on the status of milestones achieved in order to ensure the project is on schedule.

- **Other federal agencies.** The act states that any agency that submits an IT-related project proposal and receives a transfer of amounts from the TMF must reimburse the fund for the transfer, including any services of work performed in support of the transfer. After the board approves a project proposal (and before the transfer of funds to an agency), the Administrator of General Services, in consultation with the Director of OMB, and the head of the agency are required to sign a written agreement documenting the purpose for which the funds will be used and the terms of repayment.

OMB Issued Guidance on Applying for TMF Awards

In February 2018, OMB issued guidance on the implementation of the MGT Act that included instructions for agencies on submitting applications for TMF funding.²⁶ Agencies were allowed to begin submitting initial application proposals on February 27, 2018. The guidance included an initial application template that agencies were required to complete. As part of the template, agencies were required to provide an estimate of the TMF funding request and the agency's method used for cost estimation.

Subsequently, in March 2018, OMB issued funding guidelines for projects receiving awards. The guidelines stated that project proposals must include a reliable estimate of any project-related cost savings or avoidance relative to pre-modernization activities using the templates provided.²⁷ In addition, the guidelines stated that estimates must undergo appropriate due diligence and concurrence from the requesting agency's Office of the Chief Financial Officer prior to submission to the board, in consultation with OMB's Resource Management Office. The guidelines also stated that GSA's TMF Program Management Office could provide assistance with completing the project proposal templates.

For agencies receiving a TMF award, the guidelines stated that agencies were required to reimburse amounts transferred from the fund as well as a fee, which was determined based on the amount of awarded funding.

²⁶OMB, *Implementation of the Modernizing Government Technology Act*, M-18-12 (Washington, D.C.: Feb. 27, 2018).

²⁷OMB, *Funding Guidelines for Agencies Receiving Disbursements from the Technology Modernization Fund* (Washington, D.C.: Mar. 12, 2018).

As part of the process, agencies were required to establish a written agreement with GSA that set forth the terms for reimbursing the transferred funds and the fee. Agencies were required to start making payments no more than 1 year after the initial amount of award funding was transferred and complete repayment within 5 years, unless otherwise approved by OMB. While the guidelines noted that reimbursement was not contingent upon the achievement of project-related savings, agencies could use the project's generated cost savings to repay the award.

Additionally, on December 31, 2020, OMB updated its guidelines (in consultation with the TMF program office) to include a provision that project teams should follow their agency's implementation of OMB Circular A-11²⁸ with regard to cost estimating, and OMB Circular A-131²⁹ with regard to value engineering.³⁰ The guidelines further instructed the project proposals must include a reliable estimate of project-related costs and any cost savings or avoidance relative to pre-modernization activities. Moreover, in March 2021, the GSA TMF Program Management Office began sending a memo to each agency awarded TMF funds. This memo reiterates that agencies are to follow their own agency's implementation of OMB Circular A-11 with regard to cost estimating policies and processes.

Agencies Follow a Two-Phase Proposal Process When Applying for a TMF Award

As of August 31, 2021, the TMF application process occurs in two phases, each of which requires agencies to submit specific documents.

Phase 1

During Phase 1, agencies are required to submit an initial project proposal providing preliminary information about the project, its purpose, and its anticipated benefits. Within this documentation, agencies must confirm that funding for this project has never explicitly been denied or restricted by Congress, in accordance with the MGT Act.

Also during this phase, the Technology Modernization Board evaluates proposals and makes a determination whether to accept the initial proposal for project funding based on how well the project documentation

²⁸OMB, *Preparation, Submission, and Execution of the Budget*, Circular A-11 (Washington, D.C.: Aug. 6, 2021).

²⁹OMB, *Value Engineering*, Circular A-131 (Washington, D.C.: Dec. 26, 2013).

³⁰OMB, *Funding Guidelines for Agencies Receiving Disbursements from the Technology Modernization Fund* (Washington, D.C.: Dec. 31, 2020).

demonstrates a strong execution strategy, technical approach, and includes a strong team with a demonstrated history of successful modernization efforts.

The board encourages agencies to consider the adoption of commercial technology solutions in their proposals and present a strong technical approach and acquisition strategy to implement those solutions. In addition, agencies are encouraged to provide information on the potential impact of the modernization effort on the agency's mission, feasibility, opportunity enablement (e.g., cost savings), and common solutions. If the board approves the Phase 1 initial project proposal, the project team will move on to Phase 2.

Phase 2

In Phase 2, the agency must submit a financial plan showing a cost estimate and estimated savings from the implementation of the proposed project. Agencies must provide a more comprehensive project description than that provided in Phase 1, including discrete milestones, impact on agency mission or public facing services, funding schedule, project plan, delivery approach, and financial plan. These documents are to be approved by each agency's chief financial officer and CIO. Phase 2 proposals must also address any other areas identified by the board in the initial project review. Further, the agency proposal team is to also prepare an in-person presentation for the board.

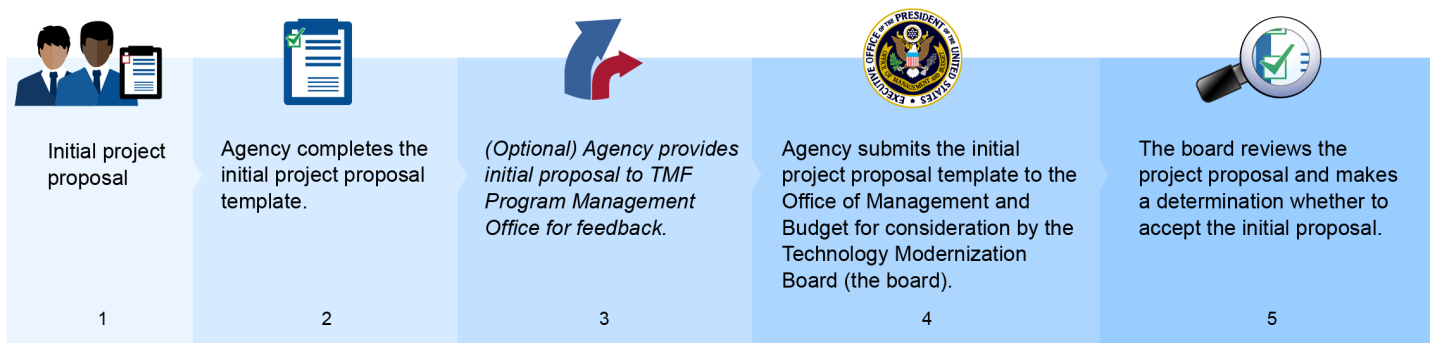
OMB's Resource Management Office also is to review the proposal documentation to ensure that the proposed project aligns with the requesting agency's mission. The office's review is intended to ensure that the proposal does not duplicate funding provided through existing appropriations, or previously has been expressly denied funding or restricted by Congress. The review includes an assessment of the proposed project's information on the reimbursement of the transferred funds and the project's planned schedule. OMB also reported that GSA sends information on the proposed projects to Congressional appropriation committees prior to listing the information on the TMF's website.

Agencies with projects that the board recommends for TMF funding are required to sign a written agreement outlining the reimbursement terms. In addition, projects receive incremental funding contingent on the successful execution of milestones outlined in the written agreement for

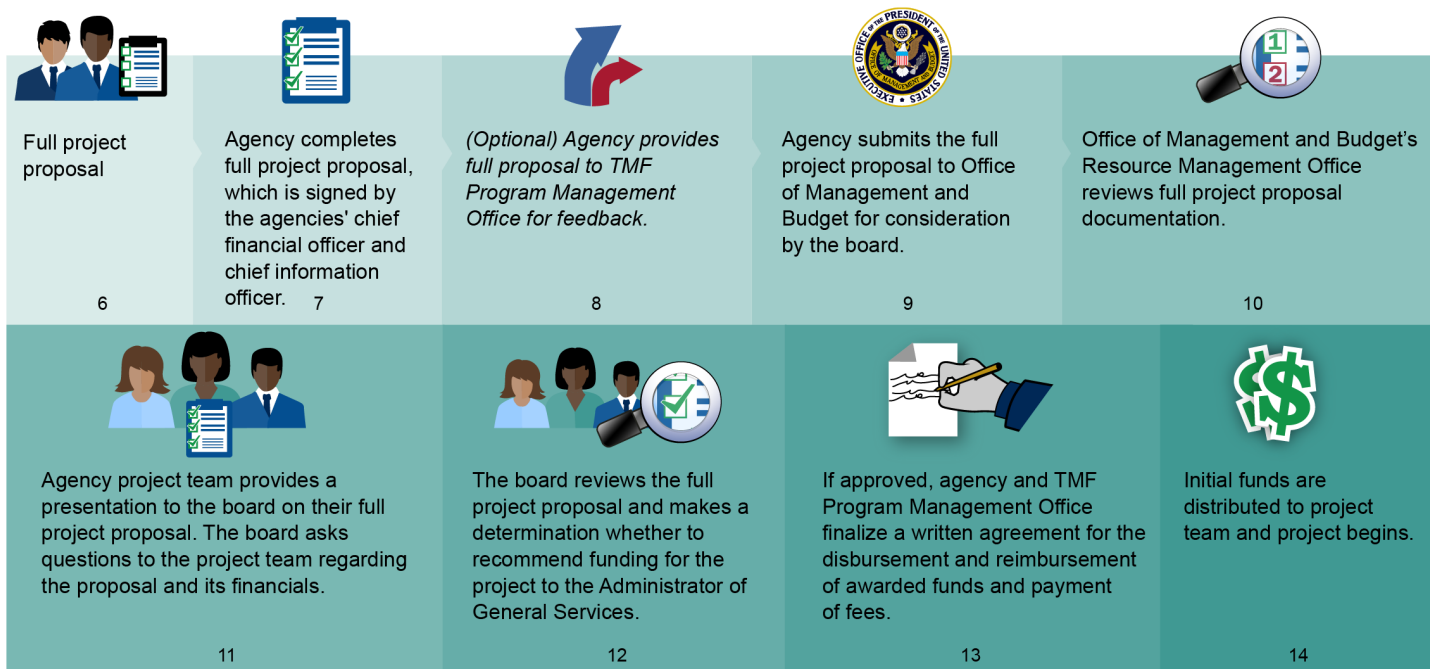
the transfer of funds. Figure 1 describes the steps in both phases of the TMF proposal process.

Figure 1: Technology Modernization Fund (TMF) Process for Awarding Funds to Proposed Projects

Phase 1



Phase 2



Source: GAO analysis of TMF documentation. | GAO-22-105117

OMB and GAO Have Issued Federal Cost Estimating Guidance

OMB Circular A-11 directs agencies to follow the guidelines outlined in its appendix on cost estimating for all IT investments and acquisitions within the federal government.³¹ Since OMB first introduced its cost estimate appendix in 2006, it has been based on the *GAO Cost Estimating and Assessment Guide*.³²

The appendix outlines a number of major steps in the cost estimating process and references the practices in GAO's cost guide. Specifically, these steps include preparing a high-level work breakdown structure, defining ground rules and assumptions, developing the data by collecting information on the cost drivers, developing the estimate using various risk factors, performing a sensitivity analysis, documenting the estimate, and updating it on a regular basis.

According to the GAO guidance, a cost estimate is considered reliable if it meets four characteristics and the specific set of best practices associated with each characteristic. Those characteristics are:

- **Comprehensive:** An estimate should include all life cycle costs (from the program's inception and design through operations and maintenance), reflect the current schedule, and have enough detail to ensure that cost elements are not omitted or double counted. Specifically, the cost estimate should be based on a product-oriented work breakdown structure that allows a program to track cost and schedule by defined deliverables, such as hardware or software components. In addition, all cost-influencing ground rules and assumptions should be detailed in the estimate's documentation.
- **Well-documented:** An estimate should be thoroughly documented, describe how it was developed; and include source data, clearly detailed calculations and results, and explanations of why particular estimating methods and references were chosen. Data should be traced to their source documents.
- **Accurate:** An estimate should be based on historical data or actual experiences on other comparable programs and an assessment of most likely costs, and be adjusted properly for inflation. In addition, the estimate should be updated regularly to reflect significant changes in the program—such as when schedules or other assumptions

³¹OMB, Circular A-11.

³²[GAO-20-195G](#).

change—and actual costs, so that it should always reflect the current status.

- **Credible:** An estimate should discuss any limitations of the analysis because of uncertainty surrounding data or assumptions. In addition, the estimate should incorporate the results of a sensitivity analysis (that examine the effects of changing assumptions on the estimate), and risk and uncertainty analysis (that identifies all of the potential project risks and assesses how these might affect the cost estimate). The estimate’s results should be cross-checked, and an independent cost estimate should be conducted to see whether other estimation methods produce similar results.

If any of the characteristics are considered not met, minimally met, or partially met, then the cost estimate does not fully reflect the characteristics of a high-quality estimate and cannot be considered reliable.

Federal Law Generally Requires Agencies to Use Competitive Procedures When Awarding Contracts

Federal agencies are generally required by the *Competition in Contracting Act of 1984* to use full and open competition to award contracts for the procurement of goods and services (including commercial IT products), with certain exceptions.³³ Using full and open competitive procedures to award contracts means that all responsible sources are permitted to compete.

While the *Competition in Contracting Act* generally requires federal agencies to award contracts using full and open competition, agencies are allowed to award contracts noncompetitively under certain circumstances. An example of an allowable exception to full and open competition includes circumstances when the contractor is the only responsible source and no other supplies or services will satisfy agency requirements. Generally, these awards must be supported by written justifications approved at the required level that address the specific exception to full and open competition that is being used in the procurement. Further, the justification is also required to be made publically available.

Agencies may also meet the requirements for full and open competition by following the ordering procedures of the Federal Supply Schedules. Where orders are placed under Federal Supply Schedules, separate but

³³*Competition in Contracting Act of 1984*, § 2701, Pub. L. No. 98-369, div. B, title VII, §§ 2711(a)(1) (civilian), 2712 (military), 98 Stat. 1175, 1184 (1984), codified at 41 U.S.C. § 3301 and 10 U.S.C. § 2304.

similar requirements exist for limiting sources. For example, one of the circumstances justifying limiting the source is where only one source is capable of providing the supplies required at the level of quality required because the supplies or services are unique or highly specialized.

Federal agencies have the option to use a variety of contract types when purchasing IT products and services, including government-wide acquisition contracts,³⁴ IT Schedule 70 contracts,³⁵ and blanket purchase agreements.³⁶ These contracts and agreements allow agencies to establish a group of prequalified contractors to compete for future orders under streamlined ordering procedures once agencies determine their specific needs. Agencies can then issue orders on these contracts and agreements, obligating funds and authorizing work to be performed.

Agencies are required to publicly report their contract transactions in the FPDS database. This contract transaction data includes information on the type of award made, the amount of the award, and whether competitive procedures were used. Specifically, agencies are required to identify the extent to which the contract was competed and what solicitation procedures were used. In addition, if an agency issues task orders on an existing contract, then the agency is required to identify whether competitive procedures were used. Further, if the contract did not use competitive procedures, then the agency is required to report the reason that the contract was not competed.

³⁴A government-wide acquisition contract is a pre-competed, multiple-award contract that provides agencies the opportunity to purchase an indefinite quantity of supplies and services during a fixed period within the stated limits of the contract.

³⁵IT Schedule 70 is one of the GSA Multiple Award Schedules (also known as the Federal Supply Schedules), and is a long-term government-wide contract with commercial companies that provides federal agencies access to millions of commercial IT products and services at fair and reasonable prices to the government.

³⁶A blanket purchase agreement is a simplified method of filling anticipated repetitive needs for supplies or services by establishing “charge accounts” with qualified sources of supply (such as Federal Supply Schedule contractors). The agreement is not a contract, and, therefore, the government is not obligated to purchase a minimum quantity or dollar amount, and the contractor is not obligated to perform until it accepts an order under a blanket purchase agreement.

GAO Previously Reported
on the Status of the
Technology Modernization
Fund

In December 2019, we reported that OMB and GSA needed to improve fee collection and clarify cost estimating guidance for the initial seven awarded projects.³⁷ Specifically, we noted that GSA had obligated about \$1.2 million to cover TMF operating expenses, but had recovered only about 3 percent of those expenses through fee payments.

We reported that GSA had collected fewer fees than planned to offset costs due to several factors. These factors were: (1) no fees were collected in the first year of operation, (2) projects chose longer periods to make payments, (3) projects made payments based on funds transferred, (4) fee rates were determined based on assumptions regarding appropriations that were not met, and (5) project changes may affect fee collection.

We also reported that these initial seven projects' reported savings estimates derived from cost estimates were not reliable. None of the projects incorporated all of the best practices for a reliable cost estimate, as defined in GAO and OMB guidance. Furthermore, we noted that TMF-funded project acquisitions used full and open competition or used an authorized exception.

In the December 2019 report, we made the following recommendations to OMB and GSA:

- OMB and GSA should clarify the requirement in the TMF guidance that agencies follow the cost estimating process outlined in OMB Circular A-11 when developing the proposal cost estimate.
- OMB and GSA should develop and implement a plan that outlines the actions needed to fully recover the TMF Program Management Office's operating expenses with fee collection in a timely manner;
- GSA should develop detailed guidance for completing the TMF project cost estimate template, including information on the data elements and the fields required to be completed, in order to help ensure the accuracy and completeness of the provided information.

OMB and GSA implemented our recommendation on clarifying cost estimating guidance. Specifically, in December 2020, OMB and GSA updated their guidance to clarify the requirement in the TMF guidance that agencies follow the cost estimating process outlined in OMB Circular A-11, when developing the proposal cost estimate. The remaining

³⁷[GAO-20-3](#).

recommendations have not yet been implemented, and are discussed later in this report.

Majority of First Eleven Awarded Projects Have Not Yet Realized Cost Savings

The Technology Modernization Fund (TMF) provides awards to agencies to, among other things, modernize aging federal information systems. Of the initial \$175 million that had been appropriated for the TMF, the Technology Modernization Board had approved 11 projects totaling about \$89 million, as of August 2021. Agency proposals were to include estimates of any project-related savings; agencies could use these savings to satisfy the requirement that they reimburse the fund for any transfers within 5 years. The majority of the awarded projects have yet to realize cost savings and a number of projects have delayed the dates by which they expect to realize their savings. More recently, the OMB has updated its guidance to among other things, allow agencies to apply for a partial or minimal reimbursement of the TMF funds provided (partial is agencies repaying 25 to 100 percent of the award while minimal is greater than zero but less than 25 percent). On September 30, 2021, the board announced the approval of seven new projects, with six of the awards for those projects totaling about \$311 million.

About \$89 Million Has Been Awarded to Projects, as of August 2021

As of August 2021, the Technology Modernization Board had awarded about \$89 million to 11 projects across seven agencies. During our first biannual review of the TMF, the board had awarded funds to seven projects from June 2018 through August 2019.³⁸ Subsequently, the board made four additional awards between September 2019 and August 2021. Table 1 lists the projects that received funding between June 2018 and August 2021, descriptions of the projects, when the TMF funding awards were announced, and the amount of the awards.

³⁸[GAO-20-3](#).

Table 1: Agency Projects That Received Awards from the Technology Modernization Fund (TMF), as of August 2021

Agency	Project description	Date of award announcement	Total funds awarded ^a (in dollars)
Department of Agriculture	The Farmers.Gov Portal project was originally intended to update and modernize the conservation financial assistance and payment operations at the Farm Services Agency and Natural Resources Conservation Service in order to improve the services through the portal. The scope of the project was updated in August 2020 after the agency determined that additional process re-engineering would be required prior to further development of the technology solution for common enrollment processes for the two agencies. While the project developed tools to help reduce manual data entry, and developed a proof of concept for the system, the project was closed out prior to implementation in May 2021.	June 7, 2018	4,000,000
Department of Energy	The Enterprise Cloud Email project was originally intended to migrate approximately 47,000 email mailboxes to cloud services by 2021. The scope of the project was updated in June 2020. The project now intends to migrate approximately 16,000 email mailboxes to cloud services and decommission approximately 2,200 email mailboxes by September 2021.	June 7, 2018	3,743,702
Department of Housing and Urban Development	The Unisys Migration project was originally intended to migrate five of the agency's most critical business systems from an on-premise mainframe database to cloud computing services by March 2021. The scope of the project was updated in December 2019. The agency now intends to migrate four critical mission systems to the cloud by January 2022.	June 7, 2018	13,850,013
Department of Agriculture	The Infrastructure Optimization project was originally intended to migrate 10 applications to a shared services cloud platform by the end of 2019. The scope of the project was updated in August 2019. In February 2020, the agency completed the migration of five applications to the cloud and the project was closed.	October 29, 2018	500,000 ^b
Department of Labor	The Visa Application Transformation project transitioned the agency's paper-based certification process for certain types of visas to a digital E-Certification process in May 2020.	October 29, 2018	3,500,000
General Services Administration	The Application Modernization project was originally intended to modernize and transform 11 legacy applications using proprietary vendor technology by converting them to use open source technologies. The scope of the project was updated in May 2020 and the agency intends to modernize 12 legacy applications in fiscal year 2022.	October 29, 2018	9,816,833

Agency	Project description	Date of award announcement	Total funds awarded ^a (in dollars)
General Services Administration	The NewPay project was originally intended to modernize the agency's payroll system and replace it with a cloud-based software as a service solution. This project was also intended to lay the foundation for modernizing federal legacy payroll systems to a cloud-based solution for the federal government. After GSA and other agencies (that serve as payroll providers for federal civilian employees) did not receive funding for the migration of legacy payroll systems to NewPay by fiscal year 2020, the scope of the project was updated in July 2020. The revised project scope focused on standing up initial payroll capabilities and configuring 65 of the most common pay plans within the federal government in order to create a tool that agency payroll providers could use in the future if funding was secured. In September 2020, the agency completed the configuration and testing of the payroll solution for the planned 65 pay plans and the project was closed.	February 11, 2019	16,986,021 ^b
Department of Agriculture	The Specialty Crops System Modernization project is intended to accelerate the modernization of Agricultural Marketing Service Specialty Crops Program billing, inspection, and certificate generation and issuance processes that support the inspection and certification of 10.7 billion pounds of processed fruit and vegetable products and 49.9 billion pounds of fresh fruits and vegetables. The agency expects to complete the project in 2022.	October 21, 2019	8,000,000
U.S. Equal Employment Opportunity Commission	The Charge and Case Management System Modernization project is intended to accelerate the modernization of the agency's charge and case management system, allowing for faster, more efficient review of cases and will reduce the costs of operating the system. The agency expects to complete the project in 2022.	October 21, 2019	4,000,000
U.S. Customs and Border Protection	The Automated Commercial Environment Collections Module project is intended to modernize the outdated Automated Commercial System platform to improve customs enforcement, revenue collections, trade protections, and user experience through improved features and business capabilities, which in the long run reduces the operations and maintenance costs associated with the existing system. The agency expects to complete the project in fiscal year 2024.	July 27, 2020	15,000,000
Department of Labor	The Data Modernization project is intended to modernize enterprise data management and analytics capabilities to help improve availability and accessibility of critical data to all consumers of that data, including developers, journalists, researchers, and other federal agencies. As of October 2021, the agency had not determined a project start date and a completion date because agency officials were reviewing changes in policy priorities with senior agency leadership.	March 12, 2021	9,600,000

Source: GAO analysis of agency TMF project documentation as of August 31, 2021. | GAO-22-105117

^aAs of August 2021, the total funds awarded have not all been fully transferred to the projects.

^bAgency officials from the Department of Agriculture and the General Services Administration reported that they returned or planned to return unused funds back to the TMF (\$280,000 and \$9,669,235, respectively).

The Majority of TMF Projects Have Yet to Realize Cost Savings

As part of its selection criteria, the Technology Modernization Board stated that the agency would need to clearly demonstrate in its proposal how the proposed project would generate cost savings or how the modernization of the system would dramatically improve the quality of service provided. In addition, OMB's funding guidelines stated that the project proposal must include a reliable estimate of any project-related cost savings or avoidance using the templates provided.³⁹ Agencies were required to identify what year their project would start to realize cost savings in the TMF application after receiving an award (the earliest year savings could begin to be realized was fiscal year 2019).

However, nine of the 11 projects have not yet realized any cost savings and two projects have reported cost savings, but have not yet documented those realized savings. We previously reported that as of August 31, 2019, the initial seven projects that received TMF awards planned to begin realizing cost savings in fiscal year 2020 or later.⁴⁰ The reasons given for this timing were because either the project was still currently being implemented or the project had experienced changes to prior projections. However, as of August 31, 2021, five of these seven projects have not yet begun to realize savings. Specifically, agencies reported:

- two projects no longer plan to realize savings;⁴¹
- one project has changed its plans to begin realizing cost savings from fiscal year 2021 to fiscal year 2022;
- one project has not yet determined when it will begin to realize cost savings; and
- one project plans to begin realizing cost savings in fiscal year 2024.

Moreover, one project has reported estimated cost savings of about \$500,000 and another project has reported cost savings of about \$4 million, but neither project has yet documented those savings. Table 2 shows the original reported year for projects' realized cost savings, as of

³⁹OMB, *Funding Guidelines for Agencies Receiving Disbursements from the Technology Modernization Fund* (Washington, D.C.: Dec. 31, 2020).

⁴⁰GAO-20-3.

⁴¹At the time the award was funded, the agency reported total planned savings for these two agencies was about \$41 million.

August 31, 2019, the current reported year for projects' realized cost savings, as of August 31, 2021, and reasons for the changes.

Table 2: Analysis of Technology Modernization Fund (TMF) Projects' Reported Realized Cost Savings as of August 31, 2019 and August 31, 2021 and Reasons for the Changes

Project	Original reported year for beginning to realize cost savings, as of August 31, 2019	Current reported year for beginning to realize cost savings, as of August 31, 2021	Reason(s) for change
Department of Agriculture Farmers.Gov Portal	2020	No cost savings will be realized	The project was closed-out prior to implementation.
Department of Housing and Urban Development Unisys Migration	2021	2022	The project was re-baselined, and the cost savings shown in year 2022 are after project completion.
Department of Labor Visa Application Transformation	2021	2019	N/A. The agency reported cost avoidance of about \$4 million, but these savings have not yet been documented.
General Services Administration Application Modernization	2022	2021	N/A. The agency reported estimated cost savings of about \$500,000 in fiscal year 2021, but has not yet documented realized savings.
Department of Energy Enterprise Cloud Email	2024	2024	No change.
Department of Agriculture Infrastructure Optimization	To be determined	No cost savings will be realized	The project revised its analysis and determined that it would not generate the return on investment necessary to repay the TMF through project savings.
General Services Administration NewPay	To be determined	To be determined	The project is not currently slated to become operational because requested appropriations for further development, testing, and deployment were not received. According to agency officials, cost savings will be projected if resources are provided for further development and deployment of the project, as well as support for agency migrations to the new product.

Source: GAO analysis of agency TMF project documentation as of August 31, 2021. | GAO-22-105117

Additionally, as of August 31, 2021, agency officials responsible for project management for each of the four awarded projects since our last review stated that their projects had not yet begun to realize cost savings because the projects were still currently being implemented. Specifically, officials for three of the four projects stated that their projects would begin to realize cost savings starting in fiscal year 2022 or later. Labor officials reported that actual savings will be realized upon completion of the project, but that the date had not yet been determined because the funds have not yet been received to begin the project. Table 3 shows the year

that each of the four TMF-funded projects report that they would begin to realize cost savings.

Table 3: Technology Modernization Fund (TMF) Projects' Awarded from September 2019 to August 2021 Reported Plans for Beginning to Realize Cost Savings, as of August 31, 2021

Project	Year
Department of Agriculture Specialty Crops System Modernization	2022
Department of Labor Data Modernization	To be determined
U.S. Customs and Border Protection Automated Commercial Environment Collections Module	2024
U.S. Equal Employment Opportunity Commission Charge and Case Management System Modernization	2022

Source: GAO analysis of agency TMF cost estimate documentation as of August 31, 2021. | GAO-22-105117

OMB Announced Seven New Awards in September 2021 Subject to New Funding Guidelines

In March 2021, as part of the *American Rescue Plan Act of 2021*,⁴² the TMF was appropriated \$1 billion. Subsequently, in May 2021, OMB updated its funding guidelines to agencies for reimbursing the Technology Modernization Fund including criteria on project prioritization, reimbursement flexibility, and project fees. Specifically, starting in June 2021, the new guidelines prioritize projects that cut across agencies and address immediate cybersecurity gaps, improve the public's ability to access government services, and modernize and support priority agency assets and services.

Additionally, the guidelines allowed agencies to apply for either a partial or minimal reimbursement of their awards. According to GSA TMF program officials, the partial reimbursement option is a reimbursement to the TMF of an amount greater than or equal to 25 percent and less than 100 percent of the project's award. According to the same officials, the minimal reimbursement option refers to a reimbursement to the TMF of greater than 0 percent and less than 25 percent of the award. Further, OMB staff in the Office of E-Government and Information Technology stated that the default level of the minimal reimbursement option has been established at 5 percent of the TMF award amounts. As of October 2021, OMB and the TMF Program Management Office have not released

⁴²*American Rescue Plan Act of 2021*, Pub. L. No: 117-2, Title IV, § 4011, 135 Stat. 4, 80 (2021).

the details of these reimbursement changes, nor any resulting impact on the collection of fees to offset TMF expenses.

The board applied these guidelines to the awards starting in June 2021. Subsequently, on September 30, 2021, the board announced the approval of seven new projects with six of these awards totaling at least \$311 million (one of the seven projects is classified; no award figure is publicly available). In deciding on these seven projects, the board reportedly received 113 project proposals totaling more than \$2.3 billion. Table 4 lists the descriptions of these six projects and the amount of the awards.

Table 4: Agency Projects That Received Awards from the Technology Modernization Fund (TMF) in September 2021

Agency ^a	Project description	Total funds awarded (in dollars)
General Services Administration	The Advancing Zero Trust project is intended to allow the agency to modernize legacy network systems and implement an advanced zero trust architecture.	29,802,431
	The Login.gov project is intended to allow the agency to further scale the Login.gov shared service with more advanced cybersecurity capabilities, expand identity verification coverage, and expand integrations with agency public-facing digital services.	187,050,000
	The MAX.gov Transition project is intended to allow the agency to enhance MAX.gov to provide a modernized, secure cloud-based solution for cross-agency collaboration, authentication, and other shared services capabilities.	14,500,000
Department of Education	The Zero Trust Architecture project is intended to create and fully implement a zero trust architecture plan across the agency's enterprise to increase the security of the citizen data the department maintains.	20,000,000
Office of Personnel Management	The Zero Trust Networking project is intended to reduce the agency's attack surface and increase cybersecurity protections, visibility, and the resiliency of their services.	9,900,000
Department of Homeland Security	The Southwest Border Technology Integration Program project is intended to provide standardized and secure data sharing across the federal enterprise and throughout the immigration lifecycle to improve border flow and capacity management and increase the timeliness and fidelity of data used by decision makers.	50,000,000

Source: GAO analysis of agency TMF project documentation as of September 30, 2021. | GAO-22-105117

^aThe seventh award is a classified project and no details on the agency, nature of the project, or the amount of its award have been publicly disclosed.

TMF Operating Expenses Continue to Outpace Offsetting Fee Collection

According to the MGT Act, the TMF Program Management Office may obligate funds to cover its operating expenses out of the appropriations received for the fund (totaling approximately \$1.18 billion as of August 2021) in order to provide support to the Technology Modernization Board in meeting its responsibilities. To offset TMF operating expenses, the act required that the Administrator of General Services, in consultation with the OMB director, establish fees at levels sufficient to ensure the solvency of the fund. Subsequent OMB guidance, issued in March 2018, required TMF-awarded projects to pay an administrative fee on awarded funds, beginning within the first year after the initial incremental amount of award funding was transferred to the agency.⁴³ In addition, the TMF Program Management Office issued guidance in June 2018 that set the fee rates based on percentage of the amount transferred to an agency project and payment period.⁴⁴

As of August 31, 2021, the TMF Program Management Office had obligated about \$2.8 million to cover its operating expenses and had collected \$808,889 in fees from agency projects. Based on this amount, the fund was able to offset about 29 percent of the obligated operating costs as of August 31, 2021. Table 5 lists the operating expenses incurred by the TMF Program Management Office from the start of fiscal year 2018 through August 31, 2021, and the fees collected during this period.

⁴³According to OMB's guidelines, projects receive incremental funding contingent on the successful execution of milestones outlined in the written agreement for the transfer of funds. See OMB, *Funding Guidelines for Agencies Receiving Disbursements from the Technology Modernization Fund* (Washington, D.C.: Dec. 31, 2020).

⁴⁴The TMF Program Management Office established initial rates to cover July 2018 through September 2019 for seven awarded projects we previously reviewed in December 2019. Subsequent guidance issued in November 2019 established rates for the period of October 2019 through September 30, 2020. As of August 2021, the current rate remained in place.

Table 5: Technology Modernization Fund (TMF) Program Management Office Operating Expenses and Fee Collection, as of August 31, 2021 (in dollars)

Fiscal year	Operating expenses	Fee collection
2018	408,662	0
2019	851,958	33,165
2020	835,725	245,096
2021 ^a	712,170	530,628
Total	2,808,515	808,889

Source: GAO analysis of TMF Program Management Office and TMF project documentation. | GAO-22-105117

^aThe operating expenses and fee collection listed in 2021 are for the first 11 months of fiscal year 2021.

The primary reasons that the TMF Program Management Office’s anticipated level of fee collection has been less than originally projected is that six of the seven initially approved projects narrowed their scopes and projects continue to only make payments based on the amount of awarded funding that was transferred, an amount that can be less than the full amount of a TMF award.

Projects’ reduced scope changes affected fee collection. We previously reported in 2019 that changes to a project’s scope had the potential to affect fee collection and since then, a number of projects have reported changes that have negatively affected fee collection. Specifically, as of August 31, 2021, six of the initial seven awarded projects’ requested and received Technology Modernization Board approval of significant reductions to their approved scope, which in turn will result in lower fee collection. Specifically, six of the projects required \$46.92 million less in funding and thus, reduced the fees to be collected from those projects by about \$1.12 million. Table 6 lists the changes to the six TMF-funded projects as of August 31, 2021, the reported changes to the scope, and the impacts these changes had on funding amounts and fee collection.

Table 6: Analysis of Technology Modernization Fund (TMF) Projects' Reported Scope Changes, and the Related Impact on the TMF Award Amount and Fee Collection, as of August 31, 2021

Project	Reported scope change	Impact on total funds required	Impact on fee collection
Department of Agriculture (Agriculture) Farmers.Gov Portal	Agriculture leadership determined that additional process re-engineering would be required prior to further development of the technology solution for common enrollment processes.	Decreased project award from \$10,000,000 to \$4,000,000 (\$6 million decrease)	Decreased fees to be collected by \$180,000
Agriculture Infrastructure Optimization	Agriculture reviewed four of the remaining proposed applications and determined that further evaluation at the agency level would be required before replacement applications could be identified.	Decreased project award from \$5,000,000 to \$220,000 (\$4.78 million decrease) ^a	Decreased fees to be collected by \$142,500
Department of Energy (Energy) Enterprise Cloud Email	Energy identified approximately 2,200 mailboxes to be decommissioned, rather than migrated. In addition, two sites decided to self-fund their migrations.	Decreased project award from \$15,217,096 to \$3,743,702 (\$11.47 million decrease)	Decreased fees to be collected by \$344,201
General Services Administration (GSA) Application Modernization	GSA leadership determined that the goals of the project to develop and test a repeatable process for modernizing legacy applications could be achieved with a reduced TMF allocation and that internal resources could be leveraged to make additional progress in modernizing legacy applications.	Decreased project award from \$14,997,667 to \$9,816,833 (\$5.18 million decrease)	Decreased fees to be collected by \$155,425
GSA NewPay	GSA leadership requested to reduce the scope associated with this project given the uncertain timing of agency migrations to the tool.	Decreased project award from \$20,650,000 to \$7,316,786 (\$13.33 million decrease) ^a	Decreased fees to be collected by \$109,919
Department of Housing and Urban Development (HUD) Unisys Migration	HUD leadership requested to modify the scope associated with this project to not migrate a critical mission system to the cloud since that system is already planned to be migrated.	Decreased project award from \$20,000,000 to \$13,850,013 (\$6.15 million decrease)	Decreased fees to be collected by \$184,500

Source: GAO analysis of agency TMF project documentation as of August 31, 2021. | GAO-22-105117

^aAgency officials from the Department of Agriculture and the General Services Administration reported that they returned or planned to return unused funds to the TMF (\$280,000 and \$9,669,235, respectively).

According to GSA's November 2019 rate memo, the TMF Program Management Office planned to monitor agency requests for scope changes and if needed, in fiscal year 2020 would determine if this should be integrated differently into the forecast in future cycles. However, even though the majority of the awarded projects have changed scope, the Program Management Office has not yet updated their rate development process to integrate this risk into the models.

Projects make payments based on funds transferred. As we previously reported in 2019, agencies receiving awards were only required to make fee payments based on the amount of the award funding that was transferred, rather than based on the full award amount. Consequently, this reduced the amount of fees that the program office could collect in the initial years that agencies made fee payments.

As of August 31, 2021, all seven initial projects have received the full transfer of awarded funds, while three of the four awarded projects since our last review have received at least one transfer of awarded funds. Labor’s Data Modernization project has not yet received its first transfer of award funds. Based on the amounts transferred, the TMF Program Management Office is scheduled to collect \$2.12 million in fees by the end of fiscal year 2028 from the 11 projects, an amount that will fall short of TMF expenses to date. Table 7 shows the current scheduled fee payments that will be collected from the agencies and fees collected as of August 31, 2021.

Table 7: Technology Modernization Fund (TMF) Project Scheduled Fee Collection, as of August 31, 2021 (in dollars)

Agency	Project	Scheduled fee payment based on funds transferred	Fee payment collected
Department of Agriculture	Farmers.Gov Portal	120,000	63,000
	Infrastructure Optimization	7,500	7,500
	Specialty Crops System Modernization	210,000	15,000
Department of Energy	Enterprise Cloud Email	112,311	96,841
Department of Housing and Urban Development	Unisys Migration	415,500	120,000
Department of Labor	Data Modernization	0 ^a	0
	Visa Application Transformation	105,000	18,000
General Services Administration	Application Modernization	294,505	154,715
	NewPay	509,581	332,033
U.S. Customs and Border Protection	Automated Commercial Environment Collections Module	285,000	0
U.S. Equal Employment Opportunity Commission	Charge and Case Management System Modernization	60,000	1,800
Total		2,119,397	808,889

Source: GAO analysis of agency TMF project documentation and response as of August 31, 2021. | GAO-22-105117

^aAgency officials from the Department of Labor reported that the written agreement for the first transfer of funds to the project had not yet been approved.

Further, as of November 2021, the fee structure for awards made under the revised May 2021 OMB guidance had not been published, making it unclear how much in fees will be recovered from the September 2021 awards. As a result, there remains risk that the TMF Program Management Office's planned fee collection for all awarded projects will fall short of covering the TMF's expenses.

In our previous report, we recommended that OMB and GSA work together to develop and implement a plan that outlined the actions needed to fully recover TMF operating expenses with fee collection in a timely manner. However, that recommendation has not been fully addressed. Rather, only limited actions have been taken in response. Specifically, GSA TMF program officials reported that TMF fee rates for fiscal years 2020 and 2021 had been updated to take into account scenarios where project changes might affect award funding and fee collection. In addition, TMF program officials stated that the Administration is evaluating the future rate setting and funding model for the TMF Program Management Office. However, absent these final decisions, the impact on the collection of fees to offset TMF expenses is still to be determined.

While the TMF Program Management Office has improved its fee collection to recover about 29 percent of its operating expenses, as of August 2021 (as opposed to the 3 percent we reported in 2019), it is not clear when the program office will fully recover future operating expenses incurred in fiscal year 2022 and beyond. This reinforces the importance of OMB and GSA working collaboratively to implement a fee structure that accurately reflects the TMF program. Therefore, we continue to believe that OMB and the GSA should take steps to address our prior recommendation to fully recover TMF operating expenses.

Savings Estimates for the Majority of Projects Reviewed Are Not Reliable

OMB's Circular A-11 directs agencies to follow the guidelines outlined in its appendix on cost estimating for all IT investments and acquisitions within the federal government.⁴⁵ Since 2006, and as noted in the circular, the cost estimating appendix has been based on the GAO *Cost Estimating and Assessment Guide*.⁴⁶ The appendix outlines a number of major steps in the cost estimating process and references the practices in GAO's cost guide. According to GAO's guidance, a reliable estimate

⁴⁵OMB, *Preparation, Submission, and Execution of the Budget*, Circular A-11 (Washington, D.C.: Aug.6, 2021).

⁴⁶[GAO-20-195G](#).

should meet the criteria for four characteristics and the specific set of best practices associated with each of the characteristics. The four characteristics and the specific best practices, among others, are:

- **comprehensive** – the estimate should include all life cycle costs, a work breakdown structure, and ground rules and assumptions;
- **well-documented** – the estimate documentation should describe how the source data were used, the calculations that were performed and their results, and the estimating methodology used;
- **accurate** – the estimate should be based on historical data or actual experiences on other comparable programs and be updated regularly to reflect changes in the program; and
- **credible** – the estimate should incorporate the results of sensitivity, and risk and uncertainty analyses.

According to the GAO guidance, if the overall assessment rating for each of the four characteristics is not fully or substantially met, then the cost estimate cannot be considered reliable.

For the four projects that received TMF funding since our 2019 review, the reported savings estimates derived from the cost estimates for three of the four projects cannot be considered reliable. The fourth project's cost estimate was considered reliable. Table 8 summarizes the results of our analysis of the four TMF-funded projects' cost estimates.

Table 8: GAO Assessment of Technology Modernization Fund (TMF) Projects' Cost Estimates

TMF Project	Characteristic			
	Comprehensive	Well-documented	Accurate	Credible
Department of Agriculture Specialty Crops System Modernization	Minimally met	Minimally met	Minimally met	Not met
Department of Labor Data Modernization	Partially met	Partially met	Partially met	Not met
U.S. Customs and Border Protection Automated Commercial Environment Collections Module	Met	Met	Substantially met	Met
U.S. Equal Employment Opportunity Commission Charge and Case Management System Modernization	Partially met	Minimally met	Minimally met	Not met

Source: GAO analysis of agency TMF cost estimate documentation as of August 31, 2021. | GAO-22-105117

Note: Not met—The estimate provided no evidence that satisfies any of the characteristic's set of best practices. Minimally met—The estimate provided evidence that satisfies a small portion of the characteristic's set of best practices. Partially met—The estimate provided evidence that satisfies about half of the characteristic's set of best practices. Substantially met—the estimate provided evidence that satisfies a large portion of the characteristic's set of best practices. Met—The estimate provided complete evidence that satisfies the characteristic's entire set of best practices.

Officials responsible for developing the cost estimates for three of the four projects did not incorporate all of the best practices for a reliable cost estimate, as defined in the GAO and OMB guidance. Appendix II provides more details on our individual assessment of the four projects' cost estimates.

In assessing the reliability of the projects' cost estimates, officials from each of the four projects that we reviewed stated that the Technology Modernization Board did not require or request supporting documentation on how their cost estimates were developed. All four proposal cost estimates were developed before OMB and GSA implemented our 2019 recommendation to clarify the requirement in TMF guidance that agencies follow the cost estimating process outlined in Circular A-11 (and which references GAO's *Cost Estimating and Assessment Guide*). Although GSA has now posted clear guidance on what cost estimating process agencies are to follow, GSA has not yet addressed our prior recommendation to develop detailed guidance to help ensure the accuracy and completeness of the provided information.

In 2019, we reported that the only guidance that the Technology Modernization Board provided on the TMF website was the instruction to submit a project cost estimate using a template developed by the Program Management Office, and approved by OMB and the Technology

Modernization Board.⁴⁷ Further, we found there were no written instructions for the template regarding the data elements or the fields required to be completed. Although instructions were not provided to agencies, GSA TMF Program Management Office officials told us that the applying agency is responsible for ensuring the accuracy of the cost estimates when submitting proposals. Absent detailed guidance from the TMF Program Management Office on how to complete the cost estimate template, including information on the data elements and the fields required to be completed, agencies are at risk of continuing to provide incomplete or insufficient information in their project proposals.

Given the hundreds of millions of dollars remaining in the fund to address urgent IT modernization challenges, and the changes to the types and size of awards the fund is making, it is increasingly important that GSA implement our prior recommendation to improve the instructions for the TMF cost estimate template required of each proposal. Doing so would help ensure that the TMF board is reviewing documentation that is complete, accurate, and reliable.

All TMF Project Acquisitions Used Full and Open Competition or an Authorized Exception

The MGT Act requires the Administrator of General Services to ensure that the use of commercial off-the-shelf products and services are incorporated to the greatest extent practicable in agency projects awarded funding through TMF. As required under the *Competition in Contracting Act of 1984*, procurements, with certain exceptions, are generally required to be competed using as full and open competition.⁴⁸

Agencies are also required to publicly report their contract transactions in FPDS, including information on the type of award made and whether competitive procedures were used. In addition, if an agency issues task orders on an existing contract, then the agency is required to identify whether competitive procedures were used. Further, if the contract did not use competitive procedures, then the agency is required to report the reason that the contract was not competed.

Since the issuance of our December 2019 report, eight of the 11 TMF-funded projects had awarded or issued 59 contracts or task orders for

⁴⁷GAO-20-3.

⁴⁸*Competition in Contracting Act of 1984*, Pub. L. No. 98-369, div. B, title VII, §§ 2711(a)(1) (civilian), 2712 (military), 98 Stat. 1175, 1184 (1984), codified at 41 U.S.C. § 3301 and 10 U.S.C. § 2304.

work on the projects.⁴⁹ Agency officials responsible for management of these funded projects reported that 55 of the 59 contracts or task orders used full and open competitive procedures, which we confirmed using acquisition data from FPDS. HUD, CBP, and Agriculture officials reported that the four remaining awards were based on sole source contracts that were not competed and exceptions were appropriately documented. Table 9 lists the TMF-funded projects and agencies' reported use of full and open competitive procedures in FPDS for the related awards from September 1, 2019 through August 31, 2021.⁵⁰

Table 9: Use of Competitive Procedures for Technology Modernization Fund (TMF) Project Acquisitions by the Contracts Awarded or Task Orders Issued from September 1, 2019 to August 31, 2021

Agency	Project	Total number of contracts or task orders	Number of contracts or task orders using competitive procedures
Department of Agriculture	Infrastructure Optimization	1	0
	Specialty Crops System Modernization	15	15
Department of Housing and Urban Development	Unisys Migration	2	0
Department of Labor	Visa Application Transformation	5	5
General Services Administration	Application Modernization	9	9
	New Pay	8	8
U.S. Customs and Border Protection	Automated Commercial Environment Collections Module	1	0
U.S. Equal Employment Opportunity Commission	Charge and Case Management System Modernization	18	18
Total		59	55

Source: GAO analysis of Federal Procurement Data System data for awarded projects and reported agency data from September 1, 2019 through August 31, 2021. | GAO-22-105117

In awarding or issuing the 55 contracts or task orders, agency officials responsible for the management of the five funded projects reported that they relied on existing IT service contracts, such as federal supply

⁴⁹Three of the 11 TMF-funded projects had not awarded any additional contracts since the issuance of our December 2019 report, [GAO-20-3](#). In addition, the GSA NewPay project issued two blanket purchase agreements that each had zero dollars prior to making its eight awards. As such, we did not count these two agreements in the overall total number of contracts or task orders reported or the total for the GSA NewPay project.

⁵⁰The Department of Agriculture Farmers.Gov Portal project and the Department of Energy Enterprise Cloud Email project did not report any new contract awards or task orders for work on the projects since August 2019. The Department of Labor Data Modernization project has not yet awarded any contracts or issued task orders, as of August 31, 2021.

schedule and government-wide acquisition contracts, and blanket purchase agreements for these projects. Specifically,

- 48 awards were task orders issued on existing contracts.
- seven awards were orders from existing blanket purchase agreements.

By using existing contracts and blanket purchase agreements that had followed full and open competitive procedures, the agencies complied with the requirements for using competitive procedures. In those cases where the agencies used existing blanket purchase agreements, these orders were coded as competitive based on data reported in FPDS.

Three agencies reported that their acquisitions were sole source contracts for the four awards where competitive procedures were not used. Specifically,

- CBP completed a justification and approval for other than full and open competition. Contract documents stated that only one responsible source can perform required services and that competition would result in unacceptable risk to the government. CBP officials stated that they chose this type of contract because they wanted to retain the expertise of the existing contractors, and awarding a contract to another contractor would not allow for an adequate transition period.⁵¹
- HUD completed a justification and approval for other than full and open competition for two of its acquisitions. Contract documents cited the justification that only one responsible source would satisfy agency requirements. HUD officials stated that they chose to award a sole source contract because they required the expertise of the existing contractors between the different phases of project work.

⁵¹According to DHS officials, as of August 31, 2021, the current contract award for the Automated Commercial Environment Collections Module was under protest and with a federal appeals court.

-
- Agriculture awarded a contract under the Small Business Administration's 8(a) program⁵² and, due to the amount of the contract, reported that no justification and approval was required.

Competition is a cornerstone of the acquisition system and a critical tool for achieving the best possible return on investment for taxpayers. Agencies' adherence to federal acquisition requirements for TMF-funded investments should help ensure that these funds are used appropriately to benefit both the agencies and the public.

Agency Comments and Our Evaluation

We requested comments on a draft of this report from OMB and the seven agencies that had received awards from the fund as of August 2021 (Agriculture, Energy, HUD, Labor, GSA, CBP, and EEOC). In response, EEOC provided written comments, which are summarized below and reprinted in appendix III. CBP, GSA, and OMB provided technical comments, which we incorporated as appropriate. Labor, HUD, Agriculture, and Energy stated that they had no comments on the report.

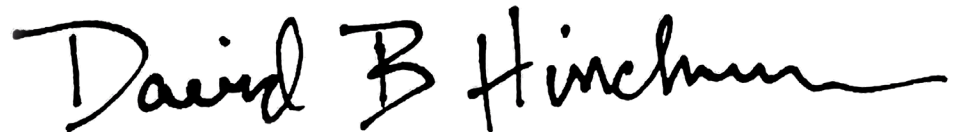
In its comments, EEOC stated that the agency's TMF project was awarded in October 2019 and had predated the guidelines instructing agencies to follow OMB Circular A-11 with regard to cost estimating policies and processes. The agency added that, at the time of its proposal, it had followed all guidance in effect on developing reliable cost estimates for TMF projects. The agency acknowledged that our report had stated that OMB had updated the guidance to agencies in December 2020, after EEOC had submitted its proposal. Nevertheless, in order to further clarify our discussion related to the timing of the submission of agencies' cost estimate proposals and the updated guidance, we have more explicitly noted in this report that EEOC's proposal as well as the other three proposals that we reviewed, were developed before OMB's and GSA's December 2020 updated guidance.

We are sending copies of this report to the appropriate congressional committees; the Acting Director of the Office of Management and Budget; the Secretaries of the Departments of Agriculture, Energy, Homeland Security, HUD, and Labor; the Administrator of General Services; the

⁵²The 8(a) program was designed to assist small, disadvantaged businesses in competing in the American economy through business development. Under the 8(a) program, agencies contract with the Small Business Administration for goods or services to be furnished under a subcontract by a small disadvantaged business. The Federal Acquisition Regulation subpart 19.8, contains the procedures for contracting with the Small Business Administration under the 8(a) program, including competition requirements in certain circumstances.

Chair of the EEOC; and other interested parties. This report will also be available at no charge on our website at <http://www.gao.gov>.

If you or your staffs have any questions on matters discussed in this report, please contact me at (214) 777-5719 or hinchmand@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 major contributions to this report are listed in appendix IV.

A handwritten signature in black ink that reads "David B Hinchman". The signature is written in a cursive, flowing style with a long horizontal flourish at the end.

David B. Hinchman
Acting Director, Information Technology and Cybersecurity

List of Committees

The Honorable Jack Reed
Chairman
The Honorable James M. Inhofe
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Gary C. Peters
Chairman
The Honorable Rob Portman
Ranking Member
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Tammy Baldwin
Chair
The Honorable John Hoeven
Ranking Member
Subcommittee on Agriculture, Rural Development, Food and Drug
Administration, and Related Agencies
Committee on Appropriations
United States Senate

The Honorable Jeanne Shaheen
Chairwoman
The Honorable Jerry Moran
Ranking Member
Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
United States Senate

The Honorable Chris Van Hollen
Chairman
The Honorable Cindy Hyde-Smith
Ranking Member
Subcommittee on Financial Services and General Government
Committee on Appropriations
United States Senate

The Honorable Chris Murphy
Chairman
The Honorable Shelley Moore Capito
Ranking Member
Subcommittee on Homeland Security
Committee on Appropriations
United States Senate

The Honorable Patty Murray
Chair
The Honorable Roy Blunt
Ranking Member
Subcommittee on Labor, Health and Human Services, Education, and
Related Agencies
Committee on Appropriations
United States Senate

The Honorable Adam Smith
Chairman
The Honorable Mike Rogers
Ranking Member
Committee on Armed Services
House of Representatives

The Honorable Carolyn B. Maloney
Chairwoman
The Honorable James Comer
Ranking Member
Committee on Oversight and Reform
House of Representatives

The Honorable Sanford Bishop Jr.
Chairman
The Honorable Andy Harris
Acting Ranking Member
Subcommittee on Agriculture, Rural Development, Food and Drug
Administration, and Related Agencies
Committee on Appropriations
House of Representatives

The Honorable Matt Cartwright
Chairman
The Honorable Robert Aderholt
Ranking Member
Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
House of Representatives

The Honorable Mike Quigley
Chairman
The Honorable Steve Womack
Ranking Member
Subcommittee on Financial Services and General Government
Committee on Appropriations
House of Representatives

The Honorable Lucille Roybal-Allard
Chairwoman
The Honorable Chuck Fleishmann
Ranking Member
Subcommittee on Homeland Security
Committee on Appropriations
House of Representatives

The Honorable Rosa DeLauro
Chair
The Honorable Tom Cole
Ranking Member
Subcommittee on Labor, Health and Human Services, Education, and
Related Agencies
Committee on Appropriations
House of Representatives

Appendix I: Objectives, Scope, and Methodology

Our objectives were to: (1) identify the status of the Technology Modernization Fund (TMF) and projects that have received awards; (2) identify the costs of establishing and overseeing the TMF, and the fees collected to offset those costs; (3) assess the reliability of cost saving estimates for awarded projects; and (4) determine the extent to which agencies have used full and open competition for projects involving acquisitions of custom-developed IT.

The scope of our review included the Office of Management and Budget (OMB) and the General Services Administration (GSA) TMF Program Management Office, the two organizations responsible for TMF administration. We also performed work at the seven agencies that had received the 11 awards from the fund as of August 2021—the Department of Agriculture (Agriculture), Department of Energy (Energy), Department of Homeland Security’s U.S. Customs and Border Protection (CBP), Department of Housing and Urban Development (HUD), Department of Labor (Labor), GSA, and the U.S. Equal Employment Opportunity Commission (EEOC).¹

For our first objective, we reviewed documentation from the 11 projects, including TMF proposal documentation and status briefings to determine whether any of the projects had realized costs savings. Based on our review of the projects’ documentation, we confirmed that nine of the projects had not yet begun to realize cost savings and the remaining two projects had not yet documented those realized savings as of August 31, 2021; therefore, it was premature to compare these projects’ realized savings to the TMF operating costs. We also reviewed the TMF website to determine program description and total award amounts. We interviewed officials in OMB’s Office of E-Government and Information Technology and in the GSA TMF program office to determine the status of the program. We also interviewed officials in charge of the TMF-funded projects within the Office of the CIO and other appropriate offices of each of the agencies to determine the status of the projects awarded TMF funding since August 31, 2019. We also reviewed OMB guidance and the TMF website to obtain additional information on projects awarded TMF funding after August 31, 2021.

¹As of August 2021, three agencies had received multiple TMF awards—Agriculture (3), Labor (2), and GSA (2)—while the remaining four agencies (Energy, CBP, HUD, and EEOC) had each received one award.

For our second objective, we obtained and analyzed financial data from the GSA program office on actual and planned TMF operating costs for fiscal years 2018 through 2028 (fiscal year 2018 was the first year that the TMF was in operation and fiscal year 2028 is the last year that agencies are currently scheduled to make reimbursements to the fund.)² Specifically, we analyzed GSA's actual operating costs from March 5, 2018 through August 31, 2021 from USASpending.gov³ and reviewed the program office's planned operating costs for overseeing the fund through the end of fiscal year 2028. In addition, we relied on prior work from our first report on the TMF, issued in December 2019, which identified the costs for establishing and overseeing the fund from March 5, 2018 through August 31, 2019.⁴

To determine the accuracy and completeness of GSA's financial data on the operating costs for TMF administration, we compared the information on the operating costs provided by the agency to the spending amounts reported by GSA on USASpending.gov for obvious errors and inconsistencies. Based on these steps, we did not identify any significant errors related to the accuracy or completeness of the data. Additionally, we previously reported on steps taken to ensure the accuracy and completeness of GSA's financial data on the operating costs for TMF administration. Based on those steps taken, we determined that these data were sufficiently reliable for us to be able to report on GSA's operating costs for TMF administration.⁵

We also obtained and analyzed agency documentation from, and interviewed officials within, GSA's TMF Program Management Office regarding the fund's actual and planned operating expenses as of August

²We previously reported that GSA is the only federal agency obligating funds from the TMF to cover operating costs.

³USASpending.gov is a public-facing website that provides spending data from agencies within the federal government at <https://www.usaspending.gov/>.

⁴GAO, *Technology Modernization Fund: OMB and GSA Need to Improve Fee Collection and Clarify Cost Estimating Guidance for Awarded Projects*, GAO-20-3 (Washington, D.C.: Dec. 12, 2019).

⁵As part of our prior work to assess the reliability of GSA's financial data, we obtained information from officials within GSA's Office of the Deputy Administrator on the controls in place for ensuring the reliability of the financial data. We also reviewed GAO, GSA Office of Inspector General, and GSA reports that discussed the results of prior reviews of internal controls for GSA financial systems. Based on the steps taken during this review, we determined that these data were sufficiently reliable for us to be able to report accurately on GSA's operating costs for TMF administration in December 2019.

31, 2021. We assessed the collection of fees used to ensure the solvency of the fund during the period of June 7, 2018 (when projects first began to receive awards) through August 31, 2021. We relied on prior work from our first report on the TMF for GSA's collection of fees from June 7, 2018 through August 31, 2019, and analyzed documentation from GSA's program office on its fee collection for the period of September 1, 2019 through August 31, 2021. In addition, we interviewed staff in OMB's Office of E-Government and Information Technology regarding OMB guidance and its administrative responsibilities for the fund.

Further, we obtained and analyzed TMF project proposal documentation and signed written agreements and interviewed officials in charge of TMF-funded projects within the Office of the Chief Information Officer (OCIO) and other appropriate offices at each of the four agencies that received awards from September 1, 2019 through August 31, 2021 (Agriculture, Labor, CBP, and EEOC). In addition, we obtained and analyzed any updated proposal documentation or additional signed written agreements for the initial seven projects that we had previously reviewed in December 2019 (that had received awards from June 2018 through August 2019). This included two projects at Agriculture, one project at Energy, one project at HUD, one project at Labor, and two projects at GSA. We analyzed the documentation from the 11 projects to determine the scheduled reimbursement transfers and fee payments.

For the third objective, we analyzed TMF project proposals, including cost estimates and supporting documentation, from the four agencies that received awards from September 1, 2019 to August 31, 2021. (We previously assessed the other seven projects' cost estimates for the awards made from June 7, 2018 through August 31, 2019 in our report issued in December 2019). For the four TMF-funded projects, we interviewed the agencies' project officials responsible for developing the overall TMF cost savings estimate and associated cost estimates regarding their estimation processes. We compared each TMF-funded project team's estimating methodologies and documentation to the best practices of a reliable cost estimate discussed in GAO's *Cost Estimating and Assessment Guide*.⁶ Our analysis enabled us to determine whether each project's cost estimate, used to determine the project's cost savings estimate, was comprehensive, well-documented, accurate, and credible.

⁶GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-20-195G](#) (Washington, D.C.: Mar. 12, 2020).

The *Cost Estimating and Assessment Guide* considers an estimate to be:

- **comprehensive** if its level of detail ensures that all pertinent costs are included and no costs are double-counted or omitted;
- **well-documented** if the estimate can be easily repeated or updated and can be traced to original sources through auditing;
- **accurate** if it is based on historical data or actual experiences on other comparable programs and is updated regularly to reflect changes in the program; and
- **credible** if the estimate has been cross-checked with an independent cost estimate and a level of uncertainty associated with the estimate has been identified and quantified.

For each characteristic, our analysis had five possible assessment categories:

- **Not met.** The estimate provided no evidence that satisfies any of the set of best practices.
- **Minimally met.** The estimate provided evidence that satisfies a small portion of the set of best practices.
- **Partially met.** The estimate provided evidence that satisfies about half of the set of best practices.
- **Substantially met.** The estimate provided evidence that satisfies a large portion of the set of best practices.
- **Met.** The estimate provided complete evidence that satisfies the entire set of best practices.

A cost estimate is considered reliable if the overall assessment for each of the four characteristics are met or substantially met.

We presented the results of our initial analysis of each TMF project cost estimate to its cognizant agency in August 2021. We asked each agency to verify the information presented in the analysis and provide any updates or additional supporting documentation, as appropriate. Each of the agencies provided updated information, which we incorporated into this analysis, as appropriate.

In addition, we interviewed staff in the Office of E-Government and Information Technology, as well as officials from the TMF Program Management Office, about the process for the review and approval of

TMF-funded project cost savings estimates and cost estimate documentation.

To assess the reliability of cost savings estimates, we reviewed completed cost estimate templates. The Technology Modernization Board required agency project teams to use a template to submit the project cost savings estimates. We also interviewed officials in the Office of the CIO and other appropriate offices at each agency who were in charge of completing the TMF cost estimate template. We discussed with these officials how the template was completed and what sources of data were used. We also reviewed agency responses and other supporting documentation to determine how the estimated costs and savings were derived and whether there were any qualifications of the provided data. This included whether certain costs were excluded from the program cost estimate, how up-to-date the data were, or whether there were other qualifications of the provided data. Further, we reviewed the completed templates to identify missing data, or other errors, and consulted with our cost estimation specialists about these issues, as appropriate. Based on our assessment of each project's cost estimate (used to derive the cost savings estimate), we determined that the cost savings data for three of the four TMF projects reviewed were not reliable, while one project's cost savings data was reliable. Therefore, we did not include the estimated savings amounts for three of the four projects in our report. In addition, we discuss the data's shortcomings for these three projects in the report.

To address the fourth objective, we obtained and analyzed any contract documentation for each of the 11 projects awarded funds through August 2021. Specifically, we obtained and analyzed any contract documentation for the four projects awarded funds between September 1, 2019 through August 31, 2021 that awarded contracts or issued task orders for work on the projects. We also interviewed officials in charge of TMF-funded projects within the Office of the CIO and other appropriate offices at each of these agencies about acquisitions related to the awarded projects. In addition, we obtained and analyzed any updated contract documentation for the initial seven awarded projects that we previously reviewed in our report issued in December 2019.

Using the agency provided contract information, we obtained and analyzed data from the Federal Procurement Data System (FPDS)—the government's contract award database—for the period of September 1,

2019 through August 31, 2021.⁷ We assessed whether each awarded acquisition used full and open competition in accordance with the *Competition in Contracting Act of 1984*⁸ and the Federal Acquisition Regulation (FAR).⁹

To ensure the accuracy and completeness of the awarded projects' contract information related to the use of full and open competition, we searched FPDS data to confirm that all contracts and task orders related to the projects had been provided. We then presented the results of our analysis to officials in charge of project acquisitions at each agency and asked these officials to verify the completeness and accuracy of the FPDS data and provide any updates, as appropriate.

Officials in charge of all of the awarded projects confirmed the contract information related to the use of full and open competition and provided additional contract acquisition data, as appropriate. Based on these steps, we determined that these data were sufficiently reliable to report on TMF-funded project acquisitions' use of full and open competition.

We conducted this performance audit from March 2021 to December 2021 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.

⁷The Federal Procurement Data System (FPDS) is a web-based tool for agencies to report contract transactions. In addition, it is a searchable database of contract information that provides a capability to examine data across government agencies and provides managers a mechanism for determining where contract dollars are being spent.

⁸The *Competition in Contracting Act of 1984* requires agencies to obtain full and open competition through the use of competitive procedures in their procurement activities unless otherwise authorized in law. See Pub. L. No. 98-369, div. B, title VII, §§ 2711(a)(1) (civilian), 2712 (military), 98 Stat. 1175, 1184 (1984), codified at 41 U.S.C. § 3301 and 10 U.S.C. § 2304.

⁹In implementing the *Competition in Contracting Act*, the Federal Acquisition Regulation requires that contracting officers promote and provide for full and open competition in soliciting offers and awarding government contracts. Full and open competition, when used with respect to a contract action, means that all responsible sources are permitted to compete. See FAR 48 C.F.R. § 2.101 and subpart 6.1.

Appendix II: Cost Estimate Analyses of Technology Modernization Fund Projects, September 2019-August 2021

Agencies submitting full project proposals to the Technology Modernization Board during phase II of the proposal process for the Technology Modernization Fund (TMF) were required to submit information on the project's cost estimate and cost savings estimate using a spreadsheet template (known as appendix B).¹

We compared each TMF-funded project team's estimating methodologies and documentation to the best practices of a reliable cost estimate discussed in the GAO *Cost Estimating and Assessment Guide*.² According to GAO's guidance, a reliable estimate should meet four characteristics and the specific set of best practices associated with each of the characteristics. Those four characteristics are:

- **Comprehensive:** An estimate should include all life cycle costs (from the program's inception and design through operations and maintenance), reflect the current schedule, and have enough detail to ensure that cost elements are not omitted or double counted. Specifically, the cost estimate should be based on a product-oriented work breakdown structure that allows a program to track cost and schedule by defined deliverables, such as hardware or software components. In addition, all cost-influencing ground rules and assumptions should be detailed in the estimate's documentation.
- **Well-documented:** An estimate should be thoroughly documented; describe how it was developed; and include source data, clearly detailed calculations and results, and explanations of why particular estimating methods and references were chosen. Data should be traced to their source documents.
- **Accurate:** An estimate should be based on historical data or actual experiences on other comparable programs and an assessment of most likely costs, and be adjusted properly for inflation. In addition, the estimate should be updated regularly to reflect significant changes in the program—such as when schedules or other assumptions change—and actual costs, so that it should always reflect the current status.

¹As noted previously, the TMF proposal process consisted of two phases. Once an agency's initial proposal was approved by the Technology Modernization Board during phase I, the agency was invited to submit a full project proposal to the board for consideration during phase II.

²GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs*, [GAO-20-195G](#) (Washington, D.C.: Mar. 12, 2020).

- **Credible:** An estimate should discuss any limitations of the analysis because of uncertainty surrounding data or assumptions. In addition, the estimate should incorporate the results of a sensitivity analysis (that examine the effects of changing assumptions on the estimate), and risk and uncertainty analysis (that identifies all of the potential project risks and assesses how these might affect the cost estimate). The estimate's results should be cross-checked, and an independent cost estimate should be conducted to see whether other estimation methods produce similar results.

In assessing each project's estimate against the components of the four characteristics, we assigned one of five assessment categories:

- **Not met.** The estimate provided no evidence that satisfies any of the characteristic's set of best practices.
- **Minimally met.** The estimate provided evidence that satisfies a small portion of the characteristic's set of best practices.
- **Partially met.** The estimate provided evidence that satisfies about half of the characteristic's set of best practices.
- **Substantially met.** The estimate provided evidence that satisfies a large portion of the characteristic's set of best practices.
- **Met.** The estimate provided complete evidence that satisfies the characteristic's entire set of best practices.

A cost estimate is considered reliable if the overall assessment ratings for each of the four characteristics are met or substantially met.

The following discusses in detail our assessment of the four TMF awarded projects' cost estimates.

Department of Agriculture
Specialty Crops System
Modernization

Table 10 includes our detailed assessment of the Department of Agriculture (Agriculture) Specialty Crops System Modernization project. Based on the overall assessment ratings for each of the four characteristics, Agriculture's project cost estimate is not considered reliable.

**Appendix II: Cost Estimate Analyses of
Technology Modernization Fund Projects,
September 2019-August 2021**

Table 10: Analysis of the Department of Agriculture Specialty Crops System Modernization Technology Modernization Fund (TMF) Project Proposal Cost Estimate Using GAO’s *Cost Estimating and Assessment Guide*

Cost estimating characteristic	GAO assessment
Comprehensive	Minimally met. Agency TMF cost estimate documentation included contractor costs from 2019 to 2029; however, not all costs were included in the project’s cost estimate and the estimate did not identify the program’s lifetime. In addition, the project proposal provided elements of a technical baseline that defined the program, reflected the current schedule, and was technically reasonable; however, there was not enough information to determine how these elements of a technical baseline informed the cost estimate. Further, the cost estimate was not based on a work breakdown structure and the estimate did not document cost-influencing ground rules and assumptions.
Well-documented	Minimally met. Agency TMF cost estimate documentation did not show the source data used, the reliability of the data, and the estimating methodology used to derive each element’s cost. Furthermore, the TMF cost estimate documentation did not describe how the estimate was developed and there was not enough information to determine whether the data in the technical baseline was consistent with the cost estimate. However, agency TMF cost estimate documentation demonstrated management approval of the proposal.
Accurate	Minimally met. Agency TMF cost estimate documentation did not include enough information to determine whether the estimate for each cost element used the best methodology from the data collected and the estimate was not adjusted for inflation. Further, because the estimate did not include calculations, the estimate cannot be checked for errors. In addition, the cost estimate did not appear to have been updated to ensure that it reflected program changes and actual costs, although program officials stated that they could update it. While agency officials stated that they relied on historical data, there was not a clear linkage between the historical data and the cost estimate submitted to the TMF.
Credible	Not met. Agency TMF cost estimate documentation did not include a risk and uncertainty analysis and major cost elements were not cross-checked to see if similar values were found using different methods. Further, an independent cost estimate was not conducted.

Source: GAO analysis of Department of Agriculture TMF cost estimate documentation as of August 31, 2021. | GAO-22-105117

Department of Labor Data Modernization Table 11 includes our detailed assessment of the Department of Labor (Labor) Data Modernization project. Based on the overall assessment ratings for each of the four characteristics, Labor’s project cost estimate is not considered reliable.

Table 11: Analysis of the Department of Labor Data Modernization Technology Modernization Fund (TMF) Project Proposal Cost Estimate Using GAO’s *Cost Estimating and Assessment Guide*

Cost estimating characteristic	GAO assessment
Comprehensive	Partially met. Agency TMF cost estimate documentation included all life cycle costs, such as operation and maintenance and government costs. In addition, certain technical information, such as schedule and architecture, was included in the cost estimate; however, the cost estimate did not include a technical baseline document and there was not enough information to determine how these technical objectives informed the estimate. Further, the TMF cost estimate documentation included a high-level work breakdown structure; however, the work breakdown structure did not include lower level cost elements nor an accompanying dictionary. In addition, while the cost estimate documentation included ground rules and assumptions, the cost estimate did not include the risks associated with the assumptions.

**Appendix II: Cost Estimate Analyses of
Technology Modernization Fund Projects,
September 2019-August 2021**

Cost estimating characteristic	GAO assessment
Well-documented	Partially met. Agency TMF cost estimate documentation included a methodology and calculations for the top-level work breakdown structure items shown in the cost estimate model. However, while the TMF cost estimate contained data sources, the data was not normalized or validated. Furthermore, although there was evidence of management approval, there was not enough information to determine what information was provided to management to gain the approval. Furthermore, there was limited consistency between the technical/programmatic data and the cost estimate.
Accurate	Partially met. Agency TMF cost estimate documentation included cost methodology sections that included calculations for contractor support; development, modernization, and enhancement costs; TMF costs; and operations and maintenance costs. In addition, the cost estimate included evidence that it was based on recent and applicable historical data of cost estimating. Further, the cost estimate was developed using a bottom-up estimating method using a combination of analogous work, vendor quotes, and subject matter experts; however, not all the calculations were provided to verify the methodology. The TMF also has not had any actual costs yet so the agency had not generated variances between planned and actual costs.
Credible	Not met. Agency TMF cost estimate documentation does not include a sensitivity analysis or a risk and uncertainty analysis. The cost estimate did not use cross-checks on major elements to validate results. Furthermore, an independent cost estimate was not conducted.

Source: GAO analysis of Department of Labor TMF cost estimate documentation as of August 31, 2021. | GAO-22-105117

U.S. Customs and Border Protection Automated Commercial Environment Collections Module	Table 12 includes our detailed assessment of the U.S. Customs and Border Protection (CBP) Automated Commercial Environment Collections Module project. Based on the overall assessment ratings for each of the four characteristics, CBP’s project cost estimate is considered reliable.
---	--

Table 12: Analysis of the U.S. Customs and Border Protection Automated Commercial Environment Collections Module Technology Modernization Fund (TMF) Project Proposal Cost Estimate Using GAO’s *Cost Estimating and Assessment Guide*

Cost estimating characteristic	GAO assessment
Comprehensive	Met. Agency TMF cost estimate documentation described all costs for the lifetime of the program. Furthermore, program officials stated that they relied on technical documentation to support the estimate. The cost estimate included a high-level overview of the program’s key milestones as well as a work breakdown structure, ground rules, and assumptions.
Well-documented	Met. Agency TMF cost estimate documentation described the source data used, the reliability of the data, and the estimating methodology used to derive each element’s cost, as well as a description of how the cost estimate was developed. Furthermore, according to agency officials, the report relies on technical aspects of the program to derive the estimate. In addition, agency TMF cost estimate documentation demonstrated management approval of the proposal.

**Appendix II: Cost Estimate Analyses of
Technology Modernization Fund Projects,
September 2019-August 2021**

Cost estimating characteristic	GAO assessment
Accurate	Substantially Met. Agency TMF cost estimate documentation showed how the values of cost elements were estimated, including ground rules and assumptions for the inflation rate. In addition, the cost estimate documentation included a tracker showing when it was updated to ensure that it accurately reflected program changes and actual costs. We did not find evidence documenting, explaining, and reviewing variances between planned and actual costs for the portion of the program funded by the TMF. Program officials stated that the program has documentation comparing planned and actual costs for earlier software releases, and that it has delivered every previous release with no variances in costs. However, they also informed us that they expect to complete documentation of actuals for the work funded through the TMF after the audit's data gathering time period and after the completion of development in October 2021.
Credible	Met. Agency TMF cost estimate documentation consisted of a sensitivity analysis and a risk and uncertainty analysis that quantified the imperfectly understood risks and identified the effects of changing key cost driver assumptions and factors. Furthermore, the cost estimate employed cross-checks. Specifically, the cost estimate was calculated in two different ways to validate results. In addition, an independent cost estimate was conducted for this project.

Source: GAO analysis of U.S. Customs and Border Protection TMF cost estimate documentation as of August 31, 2021 | GAO-22-105117

U.S. Equal Employment Opportunity Commission Charge and Case Management System Modernization	Table 13 includes our detailed assessment of the U.S. Equal Employment Opportunity Commission (EEOC) Charge and Case Management System Modernization project. Based on the overall assessment ratings for each of the four characteristics, EEOC's project cost estimate is not considered reliable.
---	--

Table 13: Analysis of the U.S. Equal Employment Opportunity Commission Charge and Case Management System Modernization Technology Modernization Fund (TMF) Project Proposal Cost Estimate Using GAO's *Cost Estimating and Assessment Guide*

Cost estimating characteristic	GAO assessment
Comprehensive	Partially met. Agency TMF cost estimate documentation described operations and maintenance; development, modernization, and enhancement; and other costs, such as those for software, phased over years 2018 to 2029. In addition, certain technical objectives were included in the proposal; however, the cost estimate did not include a technical baseline document and there was not enough information to determine how these technical objectives informed the cost estimate. Further, while the TMF cost estimate documentation included a high-level work breakdown structure, the work breakdown structure did not include lower level cost elements nor an accompanying dictionary. In addition, the cost estimate did not include cost-influencing ground rules and assumptions.
Well-documented	Minimally met. Agency TMF cost estimate documentation was limited to the notes in the appendix B financial model. The documentation did not show the source data used, the reliability of the data, or the estimating methodology used to derive each element's cost. In addition, the cost estimate did not include documentation to describe how the estimate was developed so that a cost analyst unfamiliar with the program could understand how the estimate was developed and replicate it. Furthermore, the technical objectives in the project plan were not traceable to the costs in the cost estimate. However, agency TMF cost estimate documentation demonstrated management approval of the proposal.

**Appendix II: Cost Estimate Analyses of
Technology Modernization Fund Projects,
September 2019-August 2021**

Cost estimating characteristic	GAO assessment
Accurate	Minimally met. Agency TMF cost estimate documentation contained limited supporting information for the estimate, including information about the source data, or estimating methodology for each element. Furthermore, there was no traceability to understand how the estimate was developed, if inflation was included for elements other than software, or if the estimate was free of mistakes. Though the agency provided supporting historical data, there was no clear linkage between the historical data and the cost estimate submitted to the TMF.
Credible	Not met. Agency TMF cost estimate documentation did not include a sensitivity analysis or a risk and uncertainty analysis. The cost estimate did not use cross-checks on major elements to validate results. Furthermore, cost estimate documentation noted the use of an independent cost estimate to help develop the TMF cost estimate, but not enough information was provided to evaluate the independence of the cost estimate.

Source: GAO analysis of U.S. Equal Employment Opportunity Commission TMF cost estimate documentation as of August 31, 2021. | GAO-22-105117

Appendix III: Comments from the U.S. Equal Employment Opportunity Commission



Office of
the Chair

U.S. EQUAL EMPLOYMENT OPPORTUNITY COMMISSION

Washington, D.C. 20507

November 29, 2021

David B. Hinchman
Acting Director
Information, Technology, and Cybersecurity
U.S. Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Hinchman:

Thank you for the opportunity to review the Government Accountability Office's (GAO) draft report entitled *Technology Modernization Fund (TMF): Implementation of Recommendations Can Improve Fee Collection and Proposal Cost Estimates* (draft report). In 2019, the U.S. Equal Employment Opportunity Commission (EEOC) received a TMF Project award for the modernization of our charge and case management system (TMF project). In the draft report, GAO analyzed the reliability of the cost estimate developed for the EEOC's TMF project. The EEOC respectfully submits the following comments on the draft report.

In the draft report, GAO compared EEOC's TMF project cost estimates to the best practices identified in GAO's Cost Estimating and Assessment guide and analyzed whether the cost estimates were comprehensive, well documented, accurate, and credible. After conducting this analysis, GAO concluded that EEOC's TMF project cost estimates were not reliable.

At the time that the EEOC applied for TMF funding, GSA required agencies submitting applications to complete the *TMF Financial Model*, which included financial estimations for the current state baseline and the proposed project, incorporating TMF program fees. The model also included a payback plan, requiring the EEOC to articulate how it intended to repay the fund's investment. Throughout the application process for TMF funding, the EEOC worked closely with the TMF Program Management Office and followed all of their guidance and instructions on developing and supporting reliable cost estimates.

The draft report notes that in December 2020, OMB updated its TMF guidelines to require that project proposals follow OMB Circular A-11, which references GAO's cost estimating guidance, when developing cost estimates, and in March 2021, the TMF Program Management Office began sending memos to agencies awarded TMF projects to instruct them to follow OMB Circular A-11 with regard to cost estimating policies and processes. The EEOC's TMF project award, however, predates both of these guidance documents, as it was awarded in

**Appendix III: Comments from the U.S. Equal
Employment Opportunity Commission**

October 2019. As stated above, the EEOC followed all guidance on developing reliable cost estimates for TMF projects that was in effect at the time of its TMF project proposal.

We appreciate the opportunity to review the draft report and to submit these comments for your consideration. We hope that you find this information helpful.

Sincerely,

A handwritten signature in blue ink, appearing to read "Charlotte A. Burrows".

Charlotte A. Burrows
Chair

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

David B. Hinchman at (214) 777-5719 or hinchmand@gao.gov

Staff Acknowledgments

In addition to the individual named above, the following staff made key contributions to this report: Niti Tandon (Assistant Director), Angela Watson (Analyst in Charge), Chris Businsky, Jennifer Echard, Emile Ettedgui, Valerie Hopkins, Anna Irvine, Julia Kennon, Jason Lee, Gabriel Nelson, Priscilla Smith, and Teresa Smith.

GAO's Mission

The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through our website. Each weekday afternoon, GAO posts on its [website](#) newly released reports, testimony, and correspondence. You can also [subscribe](#) to GAO's email updates to receive notification of newly posted products.

Order by Phone

The price of each GAO publication reflects GAO's actual cost of production and distribution and depends on the number of pages in the publication and whether the publication is printed in color or black and white. Pricing and ordering information is posted on GAO's website, <https://www.gao.gov/ordering.htm>.

Place orders by calling (202) 512-6000, toll free (866) 801-7077, or TDD (202) 512-2537.

Orders may be paid for using American Express, Discover Card, MasterCard, Visa, check, or money order. Call for additional information.

Connect with GAO

Connect with GAO on [Facebook](#), [Flickr](#), [Twitter](#), and [YouTube](#).
Subscribe to our [RSS Feeds](#) or [Email Updates](#). Listen to our [Podcasts](#).
Visit GAO on the web at <https://www.gao.gov>.

To Report Fraud, Waste, and Abuse in Federal Programs

Contact FraudNet:

Website: <https://www.gao.gov/about/what-gao-does/fraudnet>

Automated answering system: (800) 424-5454 or (202) 512-7700

Congressional Relations

A. Nicole Clowers, Managing Director, ClowersA@gao.gov, (202) 512-4400, U.S. Government Accountability Office, 441 G Street NW, Room 7125, Washington, DC 20548

Public Affairs

Chuck Young, Managing Director, youngc1@gao.gov, (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, DC 20548

Strategic Planning and External Liaison

Stephen J. Sanford, Managing Director, spel@gao.gov, (202) 512-4707
U.S. Government Accountability Office, 441 G Street NW, Room 7814,
Washington, DC 20548

