



June 2023

# DEPARTMENT OF EDUCATION

## Federal Student Aid System Modernization Project Should Better Estimate Cost and Schedule

Accessible Version

# GAO Highlights

Highlights of [GAO-23-106376](#), a report to congressional committees

## Why GAO Did This Study

FSA is the largest provider of student financial aid in the nation. In fiscal year 2022, the office processed approximately 17 million student aid applications and delivered over \$100 billion in aid to more than 10 million postsecondary students and their families. Most applications are submitted electronically through FSA's legacy Central Processing System. In 2019, GAO reported that this system was among the 10 most critical federal systems in need of modernization.

The House report accompanying the Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Bill, 2021 includes a provision for GAO to examine FSA's efforts to replace the Central Processing System. GAO's report (1) describes the status of FSA's AED project and (2) examines the extent to which FSA implemented selected planning best practices to oversee the AED project.

GAO reviewed relevant agency documentation to describe completed and planned development activities. GAO also assessed AED planning documentation against selected Information Systems Audit and Control Association Capability Maturity Model Integration planning best practices and interviewed appropriate officials.

## What GAO Recommends

GAO is making two recommendations to Education to develop a life cycle cost estimate, and document schedule assumptions and constraints. FSA, on behalf of Education, concurred with both of the recommendations.

View [GAO-23-106376](#). For more information, contact Marisol Cruz Cain at (202) 512-5017 or [cruzcainm@gao.gov](mailto:cruzcainm@gao.gov).

June 2023

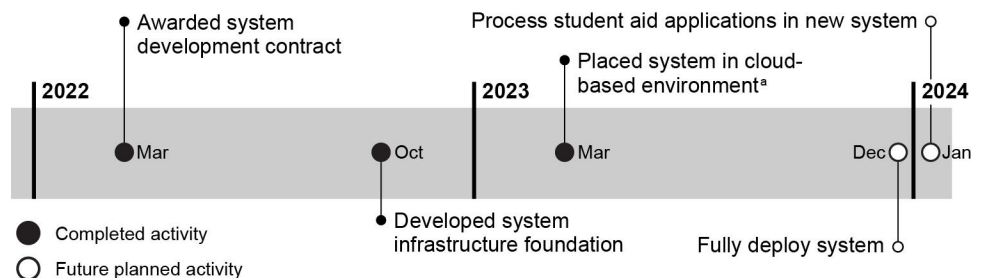
## DEPARTMENT OF EDUCATION

# Federal Student Aid System Modernization Project Should Better Estimate Cost and Schedule

## What GAO Found

In 2021, the Department of Education's Office of Federal Student Aid (FSA) initiated the Award Eligibility Determination (AED) project to, among other things, modernize and replace an over 30-year-old system used to process federal student aid applications. FSA has completed selected project planning and development activities. For example, in March 2022, FSA awarded a system development contract for approximately \$122 million. In October 2022, FSA completed development of the infrastructure foundation for the system. Future planned activities include conducting user acceptance and system integration testing. FSA plans to deploy the system by December 2023 (see figure).

### Key Completed and Future Implementation Activities for the Award Eligibility Determination (AED) Project



Source: GAO analysis of AED project documentation. | GAO-23-106376

### Text of Key Completed and Future Implementation Activities for the Award Eligibility Determination (AED) Project

- March 2022: Awarded system development contract (completed)
- Oct. 2022: Developed system infrastructure foundation (completed)
- March 2023: Placed system in cloud-based environment /a/ (completed)
- Dec. 2023: Fully deploy system (Future planned activity)
- Jan. 2024: Process student aid applications in new system (Future planned activity)

Source: GAO analysis of AED project documentation. | GAO-23-106376

<sup>a</sup>The cloud refers to network access to a shared pool of configurable computing resources that can be rapidly provisioned with minimal management effort.

The AED project implemented four of five selected planning best practices that are intended to increase the likelihood that a project meets its objectives. For example, the project developed management plans and identified the skills needed to perform the work.

However, critical gaps exist in the fifth practice related to cost and schedule. Specifically, contrary to best practices, the project did not develop a life cycle cost estimate to inform the budget. Instead, officials roughly estimated that the

office would need approximately \$336 million to develop, deploy, and support AED. However, this estimate was incomplete since it did not include government labor costs.

With regard to the schedule, GAO found that project officials developed a schedule for AED and kept it updated. However, the officials did not document the assumptions, such as resource availability, that informed the schedule. In addition, the schedule did not provide rationales for constraints that limit the movement of activities. For example, the AED schedule did not identify the rationales for why 43 activities could not start any earlier than a specific date. These gaps limit the reliability of the schedule.

Developing a life cycle cost estimate to inform the budget and establishing a reliable schedule are critical steps to ensuring the project does not overrun costs or delay the schedule. Until project officials take these steps, the project is at risk of cost increases and schedule delays.

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Text of Figure 1: Free Application for Federal Student Aid  
(FAFSA®) Electronic Process, as of February 2023

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**Abbreviations**

AED	Award Eligibility Determination
CMMI	Capability Maturity Model Integration
CPS	Central Processing System
FAFSA®	Free Application for Federal Student Aid
FPS	FAFSA Processing System
FSA	Federal Student Aid
ISACA	Information Systems Audit and Control Association
SABER	Student Aid and Borrower Eligibility Reform

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June 21, 2023

The Honorable Tammy Baldwin  
Chair  
The Honorable Shelley Moore Capito  
Ranking Member  
Subcommittee on Labor, Health and Human Services, Education, and  
Related Agencies  
Committee on Appropriations  
United States Senate

The Honorable Robert Aderholt  
Chair  
The Honorable Rosa L. DeLauro  
Ranking Member  
Subcommittee on Labor, Health and Human Services, Education, and  
Related Agencies  
Committee on Appropriations  
House of Representatives

The Department of Education's (Education) Office of Federal Student Aid (FSA) is the largest provider of student financial aid in the nation. In fiscal year 2022, the office processed about 17 million Free Application for Federal Student Aid (FAFSA®) forms (paper and electronic) and delivered approximately \$110.7 billion in aid to about 10.1 million postsecondary students and their families.

Each student applying for federal financial aid must complete a FAFSA®, either electronically or on a paper copy, which is used to determine student aid eligibility. Most of the FAFSA® forms are submitted electronically through Education's Central Processing System (CPS).

However, FSA has reported that CPS is an expensive and outdated legacy system that does not reflect existing industry software capabilities. In 2019, we reported that CPS was among the 10 most critical federal systems in need of modernization.<sup>1</sup> Following our 2019 report, the House report accompanying the *Departments of Labor, Health and Human*

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<sup>1</sup>GAO, *Information Technology: Agencies Need to Develop Modernization Plans for Critical Legacy Systems*, [GAO-19-471](#) (Washington, D.C.: June 11, 2019); and *Information Technology: Agencies Need to Develop Modernization Plans for Critical Legacy Systems*, [GAO-19-351SU](#) (Washington, D.C.: June 11, 2019).

*Services, and Education, and Related Agencies Appropriations Bill, 2021* included a provision for us to examine FSA's efforts to replace CPS.<sup>2</sup>

In 2021, FSA initiated a multi-project program called the Student Aid and Borrower Eligibility Reform (SABER) initiative,<sup>3</sup> which, among other things, is intended to replace and modernize CPS. This legacy replacement project within SABER is referred to as the Award Eligibility Determination (AED) project. This project is intended to implement four products: (1) FAFSA Processing System (FPS), which is the system intended to replace CPS and is the primary development effort for the project; (2) Financial Aid Administrator Access Tool; (3) Federal Student Aid Operations Tool; and (4) AED Business Operations, which is intended to provide additional capabilities such as FPS Image and Data Capture Service.

Our specific objectives for this report were to (1) describe the status of FSA's AED project and (2) examine the extent to which FSA implemented selected planning best practices to oversee the AED project.

To address the first objective, we reviewed SABER and AED planning documentation, such as the SABER program management plan, as well as AED performance reports and schedule, to describe the implementation actions that had been taken. We also reviewed the status of the schedule. In addition, we interviewed knowledgeable FSA, program, and project officials to obtain additional information on the actions they have taken to implement the project.

To address the second objective, we assessed the planning documentation associated with the AED project against selected planning best practices from the Information Systems Audit and Control Association's (ISACA) Capability Maturity Model Integration (CMMI).<sup>4</sup> To determine the planning practices for review, we selected the CMMI capability area and associated practice area that most directly addressed

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<sup>2</sup>H. Rpt. No. 116-450 at 265-266 (Jul. 15, 2020) accompanying the *Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Bill, 2021*.

<sup>3</sup>FSA initiated the SABER program to address the legislative changes within the Fostering Undergraduate Talent by Unlocking Resources for Education Act and the FAFSA® Simplification Act, and enable critical changes to the student aid and borrower eligibility determination processes.

<sup>4</sup>ISACA, CMMI Model V2.2 (Pittsburgh, PA: Mar. 10, 2021). CMMI Model and ISACA © [2021] All rights reserved. Used with permission. The CMMI model groups related project management practices into 29 practice areas. The model also groups related practice areas into 11 capability areas.

our planned objective: the Planning and Managing Work capability area and the Planning practice area. The Planning area identified eight practices that represented the minimum baseline (i.e., floor) set of practices that must be used to address the full intent of the area. We then selected the practices that were the most relevant given that FSA had recently awarded the AED project's system development contract and the project was early in its system development life cycle at the start of our review. In particular, we selected the following planning practices:

- develop and keep updated the approach for accomplishing the work;
- plan for the knowledge and skills needed to perform the work;
- plan for the involvement of identified stakeholders;
- develop the project plan, ensure consistency among its elements, and keep it updated; and
- develop and keep the budget and schedule updated based on recorded estimates.

We then compared the AED project's planning documentation for management of scope, requirements, risk, budget, contract, schedule, and stakeholders to the five selected practices. Further, we interviewed knowledgeable FSA program and project officials to obtain an understanding of the processes in place to manage the project. Lastly, we discussed the project's efforts to implement the selected planning best practices.

We assessed the AED project's implementation of the five selected planning practices as:

- fully implemented, if available evidence demonstrated all aspects of the practice;
- partially implemented, if available evidence demonstrated some, but not all, aspects of the practice; and
- not implemented, if available evidence did not demonstrate any aspect of the practice.

To assess the reliability of the cost data for the AED project, we reviewed the data to identify missing or incorrect data and followed up with the appropriate officials, as needed. We determined that the cost data provided by FSA project officials were not complete and reliable. We discuss the limitations of these cost data in the report.

To assess the reliability of the AED project schedule, we reviewed the schedule to determine if it captured all activities, assigned resources to



activities, and included assumptions and rationales for constraints, among other things. We determined that the project schedule was not reliable. We discuss the limitations of the schedule data in the report. We also interviewed knowledgeable FSA program and project officials to address questions we had related to the completeness of the schedule. A detailed discussion of our objectives, scope, and methodology are provided in appendix I.

We conducted this performance audit from November 2022 to June 2023 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.

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## Background

FSA's core mission is to ensure all eligible customers benefit from federal financial assistance—including grants, loans, and work-study funds—for education beyond high school. The programs that FSA manages comprise the nation's largest source of student financial aid, with over 18 million students annually applying for aid via the FAFSA®. FSA's Chief Operating Officer is responsible for overseeing these programs.<sup>5</sup>

To be considered for federal student aid, a student must apply and complete a FAFSA® form by paper or by FSA's website. FSA uses this information to determine aid eligibility for award. The form currently collects information about the student and/or parent that includes, but is not limited to, the following:

- Student details—name, address, Social Security number, telephone number, email address, marital status, driver's license number.
- Student eligibility—citizenship status, dependency status, and high school completion status, among other information.
- Student finances—tax return filing status, adjusted gross income, cash, savings and checking account balances, untaxed income, and current net worth of student's assets.

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<sup>5</sup>FSA's Chief Operating Officer reports directly to the Secretary of Education. This officer is also the chair for an FSA oversight council, which serves as the authoritative decision-making body for AED.

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- Parent details (if applicable)—name, Social Security number, email address, and marital status.
  - Parent finances—tax return filing status, adjusted gross income, tax exemptions, and asset information.

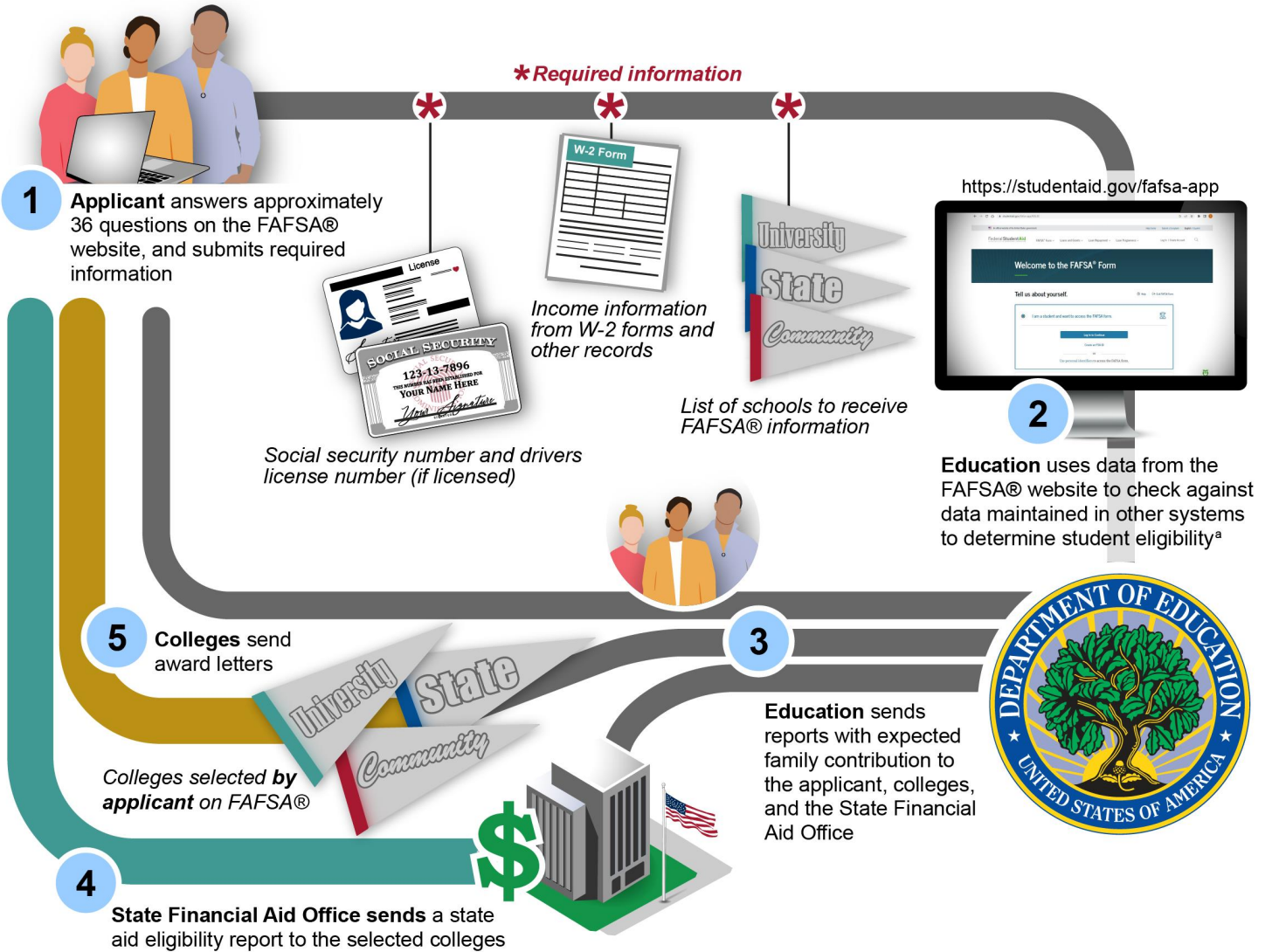
After the student submits the FAFSA® form, it is then processed by FSA's CPS. This system stores and uses the information collected from the form, such as the student's eligibility information, to determine whether the student is eligible to receive federal student aid.

CPS also performs checks against data maintained in other systems, including FSA's National Student Loan Data System and those maintained by other federal agencies, including the Departments of Defense, Homeland Security, Justice, and Veterans Affairs, and the Social Security Administration. For example, during the data checks, CPS validates students' and parents' Social Security numbers and verifies citizenship status through a data match with the Social Security Administration. CPS also verifies that the name and birth date associated with the Social Security number match the name and birth date on the form.

Although the primary purpose of the FAFSA® is to help distribute federal student aid, the form also accommodates the needs of state and institutional aid programs. Specifically, these programs rely on the FAFSA® data to calculate their own aid awards.

After Education completes the processing of an applicant's FAFSA®, a report is sent to the applicant or made available for online viewing. This report includes the applicant's expected family contribution, the types of federal aid for which the applicant qualifies, and information about any errors (e.g., questions the applicant did not complete) that Education identified during FAFSA® processing. Colleges also send applicants award letters after admission, providing students with types and amounts of federal, state, and institutional aid, should the student decide to enroll (see fig. 1).

Figure 1: Free Application for Federal Student Aid (FAFSA®) Electronic Process, as of February 2023



Source: GAO analysis of Department of Education procedures; images: GAO, agency logos and Stafeeva/stock.adobe.com. | GAO-23-106376

**Text of Figure 1: Free Application for Federal Student Aid (FAFSA®) Electronic Process, as of February 2023**

1. Application answers approximately 36 questions on the FAFSA website, and submits required information  
Required information includes: Social security number and drivers

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license number (if licensed). Income information on W-2 forms and other records. List of schools to receive FAFSA information.

2. Education uses data from the FAFSA® website to check against data maintained in other systems to determine student eligibility /a/ <https://studentaid.gov/fafsa-app>
3. Education sends reports with expected family contribution to the applicant, colleges, and the State Financial Aid Office
4. State Financial Aid Office sends a state aid eligibility report to the selected colleges
5. Colleges send award letters

Source: GAO analysis of Department of Education procedures; images: Stafeeva/stock.adobe.com. | GAO-23-106376

<sup>a</sup>Education checks the data against data maintained in other systems, including FSA's National Student Loan Data System and those maintained by other federal agencies, including the Departments of Defense, Homeland Security, Justice, and Veterans Affairs, and the Social Security Administration.

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## FSA Initiated a New Project to Address Shortcomings with the Legacy System

FSA has reported that the legacy CPS system is difficult to maintain and update given complex and unused code present in the environment. For example, CPS is written in an older software language which makes it difficult to find software developers. Moreover, CPS has been in production for over 30 years and includes a variety of business rules, data fields, services, and calculations that are no longer needed, but have not been removed.

To address the need to modernize CPS (among other things), FSA announced the Next Gen program in December 2017. The goal of this multi-project program was to develop and implement modernized technology, processes, and operations to improve student, parent, borrower, and school partner experiences throughout the student aid life cycle. FSA intended to modernize CPS through one of Next Gen's projects, referred to as the Application Eligibility and Determination project. Specifically, in October 2019, Next Gen initiated the Application Eligibility and Determination project and began to plan and identify the requirements for this project. The program estimated that the new CPS replacement system would be implemented by October 2022.

However, in April 2020 FSA canceled the contract solicitation for the Application Eligibility and Determination project. FSA officials stated that their decision to cancel the Application Eligibility and Determination

project was in response to the enactment of the *Fostering Undergraduate Talent by Unlocking Resources for Education Act (FUTURE Act)* and *FAFSA Simplification Act*.<sup>6</sup>

According to office officials, these acts significantly change how the office determines eligibility and the processes used to calculate student aid. Thus, the officials stated that they wanted to focus all FSA eligibility efforts under a single program instead of across multiple programs. Further, the officials explained that additional requirements imposed by the acts led FSA to abandon its initial approach and reassess its plans for developing the CPS replacement system.

As such, in February 2021, FSA initiated the Award Eligibility Determination (AED) project and subsequently developed a new solicitation that was intended to replace and modernize CPS within the new multi-project program called SABER.<sup>7</sup> According to the March 2022 AED contract's performance work statement, the primary effort for developing and implementing the replacement system is known as the FAFSA Processing System (FPS). The project also intends to develop and implement three other smaller products:

- Financial Aid Administrator Access Tool, which is to allow administrators and schools to perform functions such as submitting a FAFSA® on behalf of an applicant and identifying verification results;
- FSA Operations Tool, which is to allow staff to monitor the overall health of FPS and manage workflow and issue tracking, among other things; and
- AED Business Operations, which is to allow staff to perform business functions, such as image and data capture and help desk-related services, among other things.

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<sup>6</sup>See FUTURE Act, Pub. L. No. 116-91, 133 Stat. 1189 (Dec. 19, 2019); FAFSA Simplification Act, Pub. L. No. 116-260, Div. FF, Title VII, 134 Stat. 3137 (Dec. 27, 2020). The FAFSA Simplification Act makes significant changes to the underlying processes and methodologies for determining federal student aid eligibility. The FAFSA Simplification Act Technical Corrections Act amended the FAFSA Simplification Act to require FSA to implement these changes by July 1, 2024. See FAFSA Simplification Act Technical Corrections Act, Pub. L. No. 117-103, Div. R, Section 102(a)(1), 136 Stat. 819 (March 15, 2022).

<sup>7</sup>FSA initiated the SABER program to address the legislative changes within the Fostering Undergraduate Talent by Unlocking Resources for Education Act (FUTURE Act) and the FAFSA® Simplification Act and enable critical changes to the student aid and borrower eligibility determination processes.

As of August 2022, FSA planned to begin processing the FAFSA® forms in FPS for the fiscal year 2024-2025 application cycle. To do so, office officials estimated that the project would need to implement FPS and the three smaller products previously described by December 2023.

### GAO Reported on the Need to Modernize the Legacy System

In 2019, we reported that the legacy FAFSA processing system—CPS—was in need of modernization.<sup>8</sup> Accordingly, we recommended that Education’s Chief Information Officer document the department’s modernization plans for CPS, to include milestones, a description of the work necessary to modernize the system, and details on the disposition of the legacy system. FSA has since implemented this recommendation.

Specifically, in September 2022, FSA issued a modernization plan for CPS. The plan included a description of the work necessary to modernize the system and details on the disposition. In addition, in February 2023, FSA provided a schedule for modernizing and replacing the legacy system through the AED project.

### FSA Completed Key Planning Activities; System Implementation Expected in December 2023

As of March 2023, FSA had completed selected planning and development activities on the AED project. As a starting point, in March 2022, FSA awarded the AED system development contract with a total contract value of approximately \$122 million. Table 1 provides a summary of the project’s key completed activities since it was initiated within the SABER program in February 2021.

**Table 1: Status for the Award Eligibility Determination (AED) Project, as of March 2023**

Key completed activities	Actual completion date
Federal Student Aid (FSA) awarded the system development contract for the AED project, to include the development of the FAFSA Processing System (FPS).	March 2022
The contractor began developing the project plans that will be used to oversee the AED project. The contractor also worked with FSA and AED officials to finalize these planning documents.	April 2022 to September 2022

<sup>8</sup>GAO-19-471 and GAO-19-351SU.

Key completed activities	Actual completion date
AED worked with the contractor to further define the requirements for the project.	April 2022 to December 2022
The contractor developed the FPS infrastructure foundation.	October 2022
AED worked with the contractor to place FPS in the FSA cloud-based environment <sup>a</sup>	March 2023

Source: GAO analysis of AED project documentation. | GAO-23-106376

<sup>a</sup>The cloud refers to on demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction. FSA intends to host FPS within a cloud environment, which will supersede the legacy CPS mainframe and FAFSA® mainframe solutions.

The AED project has several key future activities remaining to achieve its goal of fully implementing the project by December 2023 and to begin processing FAFSA® forms in FPS by January 2024 for the fiscal year 2024-2025 application cycle. Table 2 summarizes these key remaining activities. If project officials achieve this goal, FSA should be positioned to decommission CPS no later than March 2025.

**Table 2: Key Future Activities for the Award Eligibility Determination (AED) Project, as of February 2023**

Key future activities	Planned completion date
Conduct testing, such as user acceptance testing and systems integration testing, for FAFSA Processing System (FPS), the Financial Aid Administrator Access tool, Federal Student Aid (FSA) Operations tool, and the AED Business Operations services tool.	August 2023 to October 2023
Independently test FPS before deploying the modernized system.	October 2023 to December 2023
Fully implement the project, including deploying FPS, the Financial Aid Administrator Access tool, FSA Operations tool, and AED Business Operations services tool.	December 2023
Process student aid applications in FPS.	January 2024

Source: GAO analysis of AED project documentation. | GAO-23-106376

## AED Implemented Four Planning Practices, but Gaps Exist in Estimating Cost and Schedule

According to CMMI, an effective project planning process describes what is needed to accomplish the work within the standards and constraints of the organization. Developing plans that (1) describe how the work is going to be performed and (2) optimizes cost, functionality, and quality, increases the likelihood that a project meets its objectives.<sup>9</sup> Specifically, effective planning practices include:

<sup>9</sup>ISACA, *CMMI Model V2.2* (Pittsburgh, PA: Mar. 10, 2021). CMMI Model and ISACA© [2021] All rights reserved. Used with permission.

- developing and keeping updated the approach for accomplishing the work, including identifying the objectives of the project, the approach to be used to achieve those objectives, and risks facing the project;
- planning for the knowledge and skills needed to perform the work, including determining the gaps between the knowledge and skills needed versus those held by the currently assigned personnel;
- planning for the involvement of identified stakeholders, including their roles and responsibilities, and defining how often the project should interact with its stakeholders;
- developing the project plan, ensuring consistency among its elements, and keeping it updated, including reviewing the project plan with affected stakeholders; and
- developing and keeping the budget and schedule updated based on recorded estimates, including identifying schedule assumptions and constraints that limit planning flexibility, and resources.

The AED project fully implemented four of the five selected planning best practices, but had gaps in the implementation of the remaining practice related to budget and schedule.

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### AED Implemented Four Selected Planning Practices

Of the five selected planning practices, the AED project implemented the following four.

- **Develop and keep updated the approach for accomplishing the work — fully implemented.** The AED project defined its approach for accomplishing the work in a series of SABER and AED management plans. Collectively, these plans identified the objectives of the AED project, the approach the project intends to use to achieve those objectives, and risks relevant to the project, among other things. For example, the AED scope management plan defined project objectives, such as replacing CPS with a modern, cloud-based FAFSA processing system.<sup>10</sup> In addition, the schedule management plan captured the processes for developing and maintaining the AED project schedule.

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<sup>10</sup>The cloud refers to on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction. FSA intends to host FPS within a cloud environment. The cloud-based FPS solution will supersede the legacy CPS mainframe and FAFSA® mainframe solutions.



The project officials have also updated these management plans when necessary. For example, in June 2022, FSA developed the AED requirements management plan that defines the processes and the procedures that project officials should use to develop requirements for FPS and maintain them through its operations. The project officials subsequently updated the requirements management plan in December 2022 to incorporate additional refinements.

- **Plan for the knowledge and skills needed to perform the work — fully implemented.** The AED project planned for the knowledge and skills that the contractor and FSA government personnel would need to perform for the system development work. Specifically, the contract's performance work statement identified the necessary skills for key personnel such as the project manager. The performance work statement was also supplemented by a resource management plan. The resource management plan identified additional necessary skills for other contractor personnel along with methods for ensuring staff have the required skills to successfully complete their work.

AED project officials developed plans, such as a change management plan, that defined areas of government project management support and the responsibilities of FSA personnel managing those areas. The officials further defined the technical knowledge and skills needed for the FSA government personnel in job descriptions. In instances where a government employee was unable to fill a position, officials stated that they relied on contractor support. The project officials also provided supporting documentation that demonstrated that they had defined the knowledge and skills needed from support staff in associated contractor support request forms.

- **Plan for the involvement of identified stakeholders — fully implemented.** The AED project identified the stakeholders that should be involved with the project. Specifically, project officials developed a role and responsibilities matrix that identified 43 stakeholder positions, grouped according to 19 stakeholder groups (e.g., policy). The officials also assigned stakeholder roles based on 14 project management areas (e.g., project definition and planning). In September 2022, the SABER program also held an orientation for stakeholders, including AED stakeholders, that discussed the planned program-level coordination schedule based upon the program's decision and governance process.
- **Develop the project plan, ensure consistency among its elements, and keep it updated — fully implemented.** AED officials developed a series of plans that collectively comprised a project plan.

Specifically, these plans defined the project's processes related to resource, communications, scope, performance, change, risk, schedule, knowledge, and quality management. In addition, the project ensured that the plans were updated, as necessary. For example, in June 2022, the project updated the risk management plan to incorporate refinements based on comments from FSA officials. Project officials also provided evidence of the government's acceptance for all project-level plans developed and maintained by the contractor.

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## AED Lacks a Life Cycle Cost Estimate and Has Gaps in the Schedule

The fifth selected CMMI planning practice states that projects should develop and keep the budget updated based on recorded estimates. Specifically, as we reported in GAO's Cost Estimating and Assessment Guide,<sup>11</sup> a life cycle cost estimate should serve as the basis for a project's budget and drive affordability analyses. A life cycle cost estimate provides a structured accounting of all labor, material, and other efforts required to develop, produce, operate and maintain, and dispose of a project. Using this type of estimate to determine the budget helps to ensure that all costs are fully accounted for so that resources are adequate to support the project.

Regarding the schedule, the fifth selected CMMI practice states that projects should develop a schedule and commit to keeping it updated. Specifically, as we reported in GAO's Schedule Assessment Guide,<sup>12</sup> projects should define assumptions that inform the schedule, such as resource availability and productivity, required effort, and availability of materials, among other things. Decisions made from incorrect assumptions lead to incorrect decisions about the project and schedule. Projects should also document rationales for constraints that limit the movement of activities in the schedule.<sup>13</sup> Because constraints restrict how planned dates respond to actual accomplished effort or resource availability, they should be used only when necessary and only if they are

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<sup>11</sup>GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs*, [GAO-20-195G](#) (Washington, D.C.: Mar. 12, 2020).

<sup>12</sup>GAO, *GAO Schedule Assessment Guide: Best Practices for Project Schedules*, [GAO-16-89G](#) (Washington, D.C.: Dec. 22, 2015).

<sup>13</sup>Constraints can be placed on an activity's start or finish date and can limit the movement of an activity to the past or future or both.

justified in the schedule documentation. A complete schedule is essential to enable management to identify significant schedule deviations and employ timely corrective actions.

FSA partially implemented this fifth planning practice related to developing and updating the budget and schedule based on recorded estimates.

- With regard to the budget, project officials developed a budget for AED development costs for fiscal years 2022 and 2023. However, this budget was not based on a life cycle cost estimate, because the project did not develop such an estimate. Instead, FSA officials roughly estimated that the office would need approximately \$336 million to develop, deploy, and support AED. However, the cost estimate was incomplete. Specifically, the estimate did not include government labor costs.

The AED project officials explained that they did not estimate the full life cycle costs for the project because FPS is a new system development effort with many integration points. The SABER program officials added that the existing interconnections of CPS are not all applicable for FPS, which made it difficult to identify the associated impact on AED project costs.

However, the lack of complete information does not absolve FSA of its responsibility to develop a life cycle cost estimate for the multi-million dollar project. As with all projects, there will always be some aspects of cost uncertainty, and there will never be enough data available in most situations. As such, a reliable cost estimate should account for risk and uncertainty by providing a cost range based on various confidence levels, as we report in GAO's Cost Estimating and Assessment Guide.<sup>14</sup> A project's estimate typically has a greater range of potential costs at the beginning of a project because less is known about the detailed requirements, and the potential for change is greater. As a project matures, general requirements are refined into clearer and more detailed requirements, thus narrowing the range of costs.

- Regarding the AED schedule, FSA developed a schedule for the project and kept it updated. The February 2023 schedule defined the activities necessary to complete the scope of work associated with developing and deploying FPS.

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<sup>14</sup>[GAO-20-195G](#).

However, the AED project schedule lacked sufficient detail and it did not comply with aspects of GAO's Schedule Assessment Guide.<sup>15</sup> Specifically, the schedule did not document the assumptions that informed the schedule. For example, the schedule did not define assumptions related to resource availability, required effort, or availability of materials, among other things. In addition, the schedule did not provide rationales for constraints that limit the movement of activities. For example, the AED schedule did not identify the rationale for why 43 activities could not start any earlier than a specific date.

According to project officials, schedule assumptions and constraints were considered and incorporated into the schedule. The officials stated that, among other things, they worked with the contractor to discuss and define the requirements needed to complete the discrete tasks in the schedule. For example, the officials stated that they built into the schedule the office's requirement that projects must allow 52 days for FSA to conduct security assessments on a system before it issues an Authorization to Operate.

Although the officials stated that they incorporated assumptions and constraints into the schedule, contrary to best practices, they did not document these schedule elements. Without documenting these important elements in the AED schedule, an independent reviewer cannot validate its contents and the project cannot fully defend the basis for the assumptions it considered, as well as the constraints it incorporated into the schedule.

Until AED project officials develop a life cycle cost estimate and update the budget based on this estimate, decision makers cannot be confident that all costs are fully accounted for and that adequate resources are available to support the project. In addition, until project officials document schedule assumptions and their rationale for the schedule constraints, decision makers cannot be confident in the reliability of the schedule or their decisions based on this schedule. As a result, until project officials fully implement this practice, the project is at risk of cost increases and schedule delays.

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## Conclusions

FSA relies on an outdated legacy system that is over 30 years old to support student aid processing for tens of millions of students and

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<sup>15</sup>[GAO-16-89G](#).

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families annually. In replacing this system, FSA's implementation of key planning practices should help it achieve its objectives.

However, critical gaps in developing a life cycle cost estimate that can inform the project's budget leads to questions about the project's affordability and the amount of requested resources. Further, the lack of documented assumptions and rationales for constraints reduces the reliability of the schedule and limits its ability to serve as a project management tool.

Until FSA develops a life cycle cost estimate, updates the budget based on this estimate, and documents AED schedule assumptions and constraints, successful implementation of a modernized system is at risk of cost increases and schedule delays. Further, FSA has reduced assurance that government personnel and resources will be effectively used.

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## Recommendations for Executive Action

We are making the following two recommendations to Education's FSA:

- The Secretary of Education should direct the Chief Operating Officer of FSA to ensure that the AED project develops a life cycle cost estimate and updates the budget based on this estimate. (Recommendation 1)
- The Secretary of Education should direct the Chief Operating Officer of FSA to ensure that the AED project documents its schedule assumptions and constraints. (Recommendation 2)

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## Agency Comments and Our Evaluation

We provided a draft of this report to Education for review and comment. FSA, on behalf of Education, provided written comments, which are reprinted in appendix II. In its comments, FSA stated that it concurred with both of the recommendations.

With regard to recommendation 1, FSA stated that Education is actively working to revise the AED project's cost estimates. Further, FSA stated that the department has engaged its payroll provider to consider how its existing timekeeping system can help the AED project track government-related labor costs.

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In addition, for recommendation 2, the office stated that the AED project will document the schedule constraints through weekly reviews of the project schedule. FSA added that work is underway to enhance its existing schedule quality assurance activities.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Education, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-5017 or [cruzcaim@gao.gov](mailto:cruzcaim@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix III.

A handwritten signature in black ink that reads "Marisol Cruz Cain". The signature is written in a cursive, flowing style.

Marisol Cruz Cain  
Director, Information Technology and Cybersecurity

## Appendix I: Objectives, Scope, and Methodology

Our objectives were to (1) describe the status of the Federal Student Aid's (FSA) Award Eligibility Determination (AED) project and (2) examine the extent to which FSA implemented selected planning best practices to oversee the AED project.

To address the first objective, we reviewed Student Aid and Borrower Eligibility Reform (SABER) and AED planning documentation, such as the project management plan, performance reports, and the schedule, to describe the implementation actions that had been taken, as well the status of the schedule.<sup>1</sup> We also interviewed knowledgeable FSA, SABER program, and AED project officials to obtain additional information on the actions they have taken to implement the project.

To address the second objective, we assessed the planning documentation associated with the AED project against selected planning best practices from the Information Systems Audit and Control Association's (ISACA) Capability Maturity Model Integration (CMMI).<sup>2</sup> To determine the planning practices for review, we selected the CMMI capability area and associated practice area that most directly addressed our objective, the Planning and Managing Work capability area and the Planning practice area. The Planning area identified eight practices that represented the minimum baseline (i.e., floor) set of practices that must be used to address the full intent of the area.

We then selected the practices that were the most relevant given that FSA had recently awarded the AED project's system development contract and the project was early in its system development life cycle at the start of our review. Table 3 identifies the resulting selected practice area and five selected associated practices.

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<sup>1</sup>The multi-project SABER program is responsible for overseeing the implementation of the AED project. As such, the processes identified in the SABER planning documentation are also applicable to the AED project.

<sup>2</sup>ISACA, CMMI Model V2.2 (Pittsburgh, PA: Mar. 10, 2021). CMMI Model and ISACA © [2021] All rights reserved. Used with permission. The CMMI model groups related project management practices into 29 practice areas. The model also groups related practice areas into 11 capability areas.

**Table 3: Selected Practice Area and Selected Associated Practices**

Practice area	Selected practice
Planning	Develop and keep updated the approach for accomplishing the work.
	Plan for the knowledge and skills needed to perform the work.
	Plan for the involvement of identified stakeholders.
	Develop the project plan, ensure consistency among its elements, and keep it updated.
	Develop and keep the budget and schedule updated based on recorded estimates.

Source: ISACA, CMMI Model v2.2. CMMI Model and ISACA © [2021]. All rights reserved. Used with permission. | GAO-23-106376

To determine the extent to which the AED project had implemented the selected planning best practices, we obtained and assessed program, project, scope, requirements, risk, budget, contract, schedule, and stakeholder management documentation and compared them against each of the five selected practices. In particular, we analyzed program-level documentation, including the SABER program management plan and acquisition strategy. We also analyzed AED documentation, including the requirements management plan, resource management plan, risk management plan, and schedule management plan. Further, we analyzed the AED system development contract, the associated performance work statement, budget request documentation, cost estimate documentation, stakeholder analysis documentation, and a tracking matrix that identified stakeholders relevant to the project and their various roles and responsibilities. Lastly, we also compared the AED project’s cost and schedule documentation against aspects of GAO’s *Cost Estimating and Assessment Guide* and GAO’s *Schedule Assessment Guide*.<sup>3</sup>

We also interviewed knowledgeable FSA, SABER program, and AED project officials to obtain an understanding of the processes in place to manage the project. Further, we discussed the project’s efforts to implement the selected planning best practices.

<sup>3</sup>GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs*, GAO-20-195G (Washington, D.C.: Mar. 12, 2020); and GAO *Schedule Assessment Guide: Best Practices for Project Schedules*, GAO-16-89G (Washington, D.C.: Dec. 22, 2015).



We assessed the AED project's implementation of the five selected planning practices as:

- fully implemented, if available evidence demonstrated all aspects of the practice;
- partially implemented, if available evidence demonstrated some, but not all, aspects of the practice; and
- not implemented, if available evidence did not demonstrate any aspect of the practice.

To assess the reliability of the cost data for the AED project, we reviewed the data to identify missing or incorrect data and followed up with the appropriate officials, as needed. We determined that the data provided by FSA and AED project officials were not complete and reliable. Specifically, the data were incomplete because they did not include information related to all government-related costs. We noted these limitations in the report. We also interviewed knowledgeable FSA and AED project officials to clarify questions related to the data.

To assess the reliability of the project schedule, we evaluated documentation supporting the schedule, such as the AED schedule management plan. We also assessed the reliability of the project schedule by determining if it captured all activities, assigned resources to activities, and included assumptions and rationales for constraints, among other things. We also interviewed knowledgeable FSA, SABER program, and AED project officials to address questions we had related to the completeness of the schedule.

We determined that the AED project schedule was not reliable. Specifically, the AED schedule was not reliable because the project did not provide documentation that demonstrated that it had defined schedule assumptions or provided a rationale for the constraints included in the schedule. We discuss the limitations of these data in the report. We have also made appropriate attribution indicating the sources of the data.

We conducted this performance audit from November 2022 to June 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

## Appendix II: Comments from the Department of Education



May 25, 2023

Marisol Cruz Cain  
Director, Information Technology and Cybersecurity  
Government Accountability Office  
441 G Street, N.W.  
Washington, D.C. 20548

Dear Ms. Cruz Cain:

On behalf of the U.S. Department of Education (Department), I write in response to the statements and recommendations made in the Government Accountability Office (GAO) draft report, *Department of Education: Federal Student Aid (FSA) System Modernization Project Should Better Estimate Cost and Schedule (GAO-23-106376)*.

We appreciate the opportunity to respond to this draft report. The Department recognizes that the Free Application for Federal Student Aid (FAFSA<sup>®</sup>) unlocks federal, state, and institutional aid that makes postsecondary education more affordable for more than 18 million students. That is why the Department is strongly committed to modernizing the Central Processing System (CPS), which processes FAFSA forms for millions of students and distributes them to more than 5,600 schools in the United States and around the world. The Department is deeply committed to modernizing the CPS solution together with implementing the *Fostering Undergraduate Talent by Unlocking Resources in Education (FUTURE) Act* and the *FAFSA Simplification Act*.

We are pleased that your report highlights the Department's complete and successful implementation of four selected GAO best practices when planning the modernization of the CPS solution through the Award Eligibility Determination (AED) project. The Department continues to ensure that the AED project and the implementation of the *FUTURE Act* and the *FAFSA Simplification Act* fully meet these selected best practices. For example, the Department continues to leverage the Student Aid and Borrower Eligibility Reform (SABER) initiative's program governance practices to actively monitor the AED project's implementation, including maintaining robust stakeholder coordination and risk management structures.

The Department is also diligently working to optimize the AED project's schedule practice. The AED project's integrated schedule contains over 880 discrete activities that depend on integration with over 19 FSA systems and multiple business, technical, and security processes. As noted in your report, only 43 of these activities did not include a rationale for why they cannot start earlier than a specific date within the AED project's integrated schedule. The Department will continue to discuss and document these constraints through weekly schedule reviews. The Department remains committed to continuously ensuring that the AED project schedule is thoroughly validated, and work is underway to enhance our existing schedule quality assurance activities. These activities

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**Appendix II: Comments from the Department  
of Education**

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include additional checks for missing task relationships, invalid dates, and lags and leads to validate the reliability of the AED project schedule.

The Department is also actively working to update its current lifecycle cost estimates while leveraging the existing processes for developing cost and budget estimates. The *FUTURE Act* and *FAFSA Simplification Act* introduced many significant changes to how students apply for financial aid. These changes include new system development and technical integration tasks that add volatility to our cost estimates. The Department will continue to recalibrate the AED project's cost estimates and simultaneously finish new system development and technical integration tasks. Your report also noted that the Department's cost estimates did not include all government-related costs. As discussed during the exit conference, any requirement to gather government-related costs through implementing project-based timekeeping would require negotiation with our union. In the meantime, the Department has engaged its payroll provider to consider how the existing timekeeping system can enable this effort.

Here are GAO's two recommendations from the draft report and the Department's response for each recommendation:

**Recommendation 1:**

The Secretary of Education should direct the Chief Operating Officer of FSA to ensure that the AED project develops a lifecycle cost estimate and updates the budget based on this estimate.

**Response 1:**

The Department concurs with this recommendation and will implement it by recalibrating the AED project's existing lifecycle cost estimate.

**Recommendation 2:**

The Secretary of Education should direct the Chief Operating Officer of FSA to ensure that the AED project documents its schedule assumptions and constraints.

**Response 2:**

The Department concurs with this recommendation and will implement it by enhancing the existing schedule quality assurance activities.

Again, thank you for the chance to respond to this draft GAO report.

Sincerely,



Richard Cordray  
Chief Operating Officer  
Federal Student Aid

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## Text of Appendix II: Comments from the Department of Education

May 25, 2023

Marisol Cruz Cain

Director, Information Technology and Cybersecurity Government Accountability  
Office

441 G Street, N.W. Washington, D.C. 20548

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---

### Recommendation 1:

The Secretary of Education should direct the Chief Operating Officer of FSA to ensure that the AED project develops a lifecycle cost estimate and updates the budget based on this estimate.

### Response 1:

The Department concurs with this recommendation and will implement it by recalibrating the AED project's existing lifecycle cost estimate.

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**Recommendation 2:**

The Secretary of Education should direct the Chief Operating Officer of FSA to ensure that the AED project documents its schedule assumptions and constraints.

Response 2:

The Department concurs with this recommendation and will implement it by enhancing the existing schedule quality assurance activities.

Again, thank you for the chance to respond to this draft GAO report.

Sincerely,

Richard Cordray

Chief Operating Officer Federal Student Aid

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## Appendix III: GAO Contacts and Staff Acknowledgments

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### GAO Contact

Marisol Cruz Cain, (202) 512-5017, [cruzcainm@gao.gov](mailto:cruzcainm@gao.gov)

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### Staff Acknowledgments

In addition to the contact listed above, the following staff made significant contributions to this report: Shannin O'Neill (assistant director), Javier Irizarry (analyst-in-charge), Mathew Bader, Chris Businsky, Rebecca Eyley, Jennifer Leotta, Ahsan Nasar, and Adam Vodraska.

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