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Report to Congressional Committees

DHS Annual Assessment

Most Acquisition Programs Are Meeting Goals Even with Some Management Issues and COVID-19 Delays

TRANSPORTATION SECURITY | IMMIGRATION | CYBERSECURITY | DISASTERS | BORDER SECURITY | CUSTOMS

GAO-22-104684

A Report to Congressional Committees March 2022

DHS Annual Assessment

Most Acquisition Programs Are Meeting Goals Even with Some Management Issues and COVID-19 Delays

GAO Highlights

Highlights of GAO-22-104684

National Security Cutter

Border Wall System Program

Medium Lift Helicopter

Source: (left to right): U.S. Coast Guard; U.S. Army Corps of Engineers, Defense Visual Information Distribution Service; and Customs and Border Protection. | GAO-22-104684

Why GAO Did This Study

In 2015, a Senate report included a provision for GAO to review DHS's major acquisitions. This is GAO's seventh review of the cost and schedule performance of selected major DHS acquisition programs. This report examines the extent to which these programs are meeting baseline goals and describes efforts to mitigate COVID-19–related effects on delivery of capabilities to end users.

GAO assessed 29 acquisition programs, including DHS's largest programs and those that GAO identified as at risk of poor outcomes, to determine program status as of September 30, 2021. GAO assessed progress in meeting cost and schedule goals; reviewed policy, memorandums, and information about the cost and schedule effects of COVID-19; and interviewed DHS officials.

View GAO-22-104684. For more information, contact Marie A. Mak at (202) 512-4841 or makm@gao.gov.

What GAO Found

The Department of Homeland Security (DHS) invests billions of dollars annually to acquire systems that help secure the border, increase marine safety, screen travelers, enhance cybersecurity, improve disaster response, and execute a wide variety of other operations.

As of September 2021, 23 of the 29 programs GAO selected for this review had developed a DHS-approved acquisition program baseline—establishing how the system being acquired will perform, when it will be delivered, and what it will cost—and 20 of those 23 programs were meeting their goals. However, five programs exceeded their cost or schedule goals, or both, at some point during fiscal year 2021. Reasons for the breaches included external factors, such as COVID-19, and an underestimation of program complexity. While two of these five programs restructured their baseline goals to get back on track, the remaining three were still in breach status as of September 2021 (see table).

DHS Major Acquisition Programs in Breach of Approved Cost or Schedule Goals (or both) as of September 2021

Program (baseline life-cycle cost)	Breach type
Homeland Advanced Recognition Technology ($3.9 billion)	Cost and schedule
Medium Range Surveillance Aircraft ($15.2 billion)	Schedule
National Bio and Agro-Defense Facility ($1.3 billion)	Schedule

Source: GAO analysis of Department of Homeland Security data | GAO-22-104684

Additionally, GAO found that nine programs that were meeting their currently established goals rebaselined or were in the process of doing so in fiscal year 2021 due to scope changes, such as a change in quantities, an extended life cycle, or additional funding from Congress.

As of September 2021, GAO found that four programs used a DHS policy allowing programs to adjust schedule milestones up to 6 months due to the effects of COVID-19. These effects included workforce absences due to stay-at-home orders and supply chain delays for needed parts. In most cases, programs were able to mitigate the effects of COVID-19 without baseline adjustments.

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Abbreviations

ADE	acquisition decision event
APB	acquisition program baseline
AoA	analysis of alternatives
COVID-19	Coronavirus Disease 2019
DHS	Department of Homeland Security
DOT&E	Director, Office of Test and Evaluation
JRC	Joint Requirements Council
KPP	key performance parameter
LCCE	life-cycle cost estimate
O&S	operations and support
PARM	Office of Program Accountability and Risk Management
PC&I	procurement, construction, and improvements
TEMP	test and evaluation master plan

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Congressional Committees

Each year, the Department of Homeland Security (DHS) invests billions of dollars in a diverse portfolio of major acquisition programs to help execute its many critical missions. DHS and its components are acquiring systems to help secure the border, increase marine safety, screen travelers, enhance cybersecurity, improve disaster response, and execute a wide variety of other operations. In fiscal year 2022 alone, DHS plans to spend over $5 billion on these acquisition programs, and, ultimately, the department plans to invest more than $240 billion over the life cycle of these programs. Most of DHS's major acquisition programs have life-cycle costs of at least $300 million and take multiple years to acquire.[1]

To help manage these programs, DHS established an acquisition management policy in 2008, and department leadership has dedicated resources and implemented additional guidance designed to improve acquisition oversight. We have found the policy to be generally sound in that it reflects key program management practices identified in our prior work. However, we have found shortfalls in executing the policy. Furthermore, we have highlighted DHS acquisition management issues in our high-risk updates since 2005 and made numerous recommendations over the past decade to help address these challenges.[2]

DHS has made progress in responding to some of these recommendations but has not fully addressed all of them. For example, in October 2020, we recommended that DHS should ensure the Office of Program Accountability and Risk Management (PARM) and component heads implement the nomination process for Component Acquisition

[1]DHS defines major acquisition programs as those with life-cycle cost estimates of $300 million or more. In some cases, DHS may define a program with a life-cycle cost estimate less than $300 million as a major acquisition if it has significant strategic or policy implications for homeland security, among other things.

[2]GAO, *Homeland Security: DHS Requires More Disciplined Investment Management to Help Meet Mission Needs*, GAO-12-833 (Washington, D.C.: Sept. 18, 2012); and *High-Risk Series: An Update*, GAO-05-207 (Washington, D.C.: Jan. 1, 2005). For our most recent report, see *High-Risk Series: Dedicated Leadership Needed to Address Limited Progress in Most High-Risk Areas*, GAO-21-119SP (Washington, D.C.: Mar. 2, 2021).

Executives consistently as described in DHS guidance.[3] Although DHS concurred with our recommendation and has taken steps to address it, the department is still in the process of formally documenting its actions. Additionally, in December 2019, we found that major acquisition programs' schedule goals did not trace to the integrated master schedules in accordance with DHS guidance.[4] We recommended that DHS revise the schedule development guidance and create an oversight process to confirm that programs' schedule goals are developed and updated to ensure traceability between acquisition program baseline (APB) schedule goals and integrated master schedules in accordance with GAO's Schedule Assessment Guide.[5] In response to our recommendation, DHS published a revised version of its Systems Engineering Life Cycle instruction and the accompanying guidebook in February 2021 and May 2021, respectively. However, as of September 2021, DHS had not completed efforts to create an oversight process.

The Explanatory Statement accompanying a bill to the DHS Appropriations Act, 2015 contained a provision for GAO to conduct reviews of major DHS acquisition programs, as directed in the Senate report.[6] This is our seventh such review. This report (1) examines the extent to which selected DHS major acquisition programs are meeting their baseline goals and (2) describes the programs' efforts to mitigate Coronavirus Disease 2019 (COVID-19)-related cost and schedule effects.

To answer these objectives, we reviewed 29 of DHS's 37 major acquisition programs identified in the department's January 2021 Master Acquisition Oversight List. DHS defines major acquisitions as level 1 for programs with life-cycle cost estimates (LCCE) of $1 billion or more and level 2 as programs with LCCEs from $300 million to less than $1 billion. We selected 13 of DHS's 14 level 1 acquisition programs, as of January 2021, that were in the process of obtaining new capabilities—which DHS

[3]GAO, *Homeland Security Acquisitions: DHS Has Opportunities to Improve Its Component Acquisition Oversight*, GAO-21-77 (Washington, D.C.: Oct. 20, 2020).

[4]GAO, *Homeland Security Acquisitions: Outcomes Have Improved but Actions Needed to Enhance Oversight of Schedule Goals*, GAO-20-170SP (Washington, D.C.: Dec. 19, 2019).

[5]GAO, *Schedule Assessment Guide: Best Practices for Project Schedules*, GAO-16-89G (Washington, D.C.: Dec. 22, 2015).

[6]Explanatory Statement submitted by Mr. Rogers of Kentucky, Chairman of the House Committee on Appropriations, regarding H.R. 240, Department of Homeland Security Appropriations Act, 2015, (161 Cong. Rec., H-276 (Jan. 13, 2015).

policy defines as the obtain phase of the acquisition life cycle. We selected 16 other major acquisition programs that we identified as at risk of not meeting their schedules, cost estimates, or capability requirements. These include two level 2 acquisitions in the obtain phase and 14 level 1 or level 2 programs that had not yet entered or were beyond the obtain phase. We excluded eight major acquisition programs for a variety of reasons, including lower risk programs already in deployment and to avoid duplication with other ongoing GAO reviews.

To determine the extent to which the 29 programs we selected were meeting their schedule and cost goals, we collected key acquisition documentation, such as APBs, which contain information on programs' schedules and costs. Since the November 2008 update to DHS's overarching acquisition management directive, these documents have required DHS-level approval; therefore, consistent with our prior assessments, we used November 2008 as the starting point for our analysis. We found that 24 of the 29 programs had one or more department-approved APBs between November 2008 and September 30, 2021. The remaining five programs do not yet have department-approved APBs, and, as a result, we excluded them from our portfolio analysis. We also excluded the Border Wall System Program from the aggregated analyses due to the January 2021 Presidential Proclamation directing a pause in the construction of the border wall to the extent permitted by law.[7] However, all 29 programs received individual assessments, as discussed below.

To determine the programs' efforts to mitigate COVID-19–related cost and schedule effects, we first reviewed the October 2020 DHS memorandum granting level 1 and selected level 2 programs the authority to adjust their APB schedule baseline goals up to 6 months due to effects related to COVID-19. We then reviewed baseline adjustment memos associated with programs that made use of this authority. We also interviewed officials at the programs that were associated with these adjustment memos and at those that were not to understand the cost and schedule effects they had seen as a result of COVID-19 and the steps they had taken to attempt to mitigate these effects.

Appendix I presents individual assessments of and information about each of the 29 programs we reviewed, including the six excluded from our

[7]GAO, *Southwest Border: Schedule Considerations Drove Army Corps of Engineers' Approaches to Awarding Construction Contracts through 2020*, GAO-21-372 (Washington, D.C.: June 17, 2021).

portfolio analysis. These assessments include key information such as the status of programs' schedules, costs, and test and evaluation. Our two-page assessments are intended to provide decision makers a means to quickly gauge the programs' progress and the extent to which they face any cost, schedule, performance, or program risks. See table 1 for the full list of programs we reviewed.

Table 1: DHS Major Acquisition Programs Selected for Review

Component	Program	Acquisition level
Cybersecurity and Infrastructure Security Agency	Continuous Diagnostics and Mitigation	1
	National Cybersecurity Protection System	1
	Next Generation Networks - Priority Services Phase 1	2
	Next Generation Networks - Priority Services Phase 2	2
DHS Management Directorate	Homeland Advanced Recognition Technology	1
Federal Emergency Management Agency	Grants Management Modernization	2
Science and Technology Directorate	National Bio and Agro-Defense Facility	1
Transportation Security Administration	Checkpoint Property Screening System	1
	Credential Authentication Technology	2
U.S. Coast Guard	270’ Medium Endurance Cutter Service Life Extension Program	1
	Fast Response Cutter	1
	H-65 Conversion/Sustainment Program	1
	Long Range Surveillance Aircraft (HC-130J)	1
	Medium Range Recovery Helicopter (MH-60T)	1
	Medium Range Surveillance Aircraft	1
	National Security Cutter	1
	Offshore Patrol Cutter	1
	Polar Security Cutter	1
	Waterways Commerce Cutter	1
U.S. Customs and Border Protection	Automated Commercial Environment	1
	Biometric Entry-Exit Program	1
	Border Wall System Program	1
	Cross Border Tunnel Threat	1
	Integrated Fixed Towers	2
	Medium Lift Helicopter	1
	Multi-Role Enforcement Aircraft	1
	Non-Intrusive Inspection Systems	1
	Non-Intrusive Inspection Integration	1
	Remote Video Surveillance System	1

Legend: shaded rows = the program has not yet established an acquisition program baseline approved by DHS leadership.

Source: GAO analysis of Department of Homeland Security (DHS) data. | GAO-22-104684

Appendix II provides detailed information on our objectives, scope, and methodology.

We conducted this performance audit from December 2020 to March 2022 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

To help manage its multi-billion dollar acquisition investments, DHS has established policies and processes for acquisition management, requirements development, test and evaluation, and resource allocation. The department uses these policies and processes to deliver systems that are intended to close critical capability gaps, helping enable DHS to execute its missions and achieve its goals.

Acquisition Management Policy and Oversight

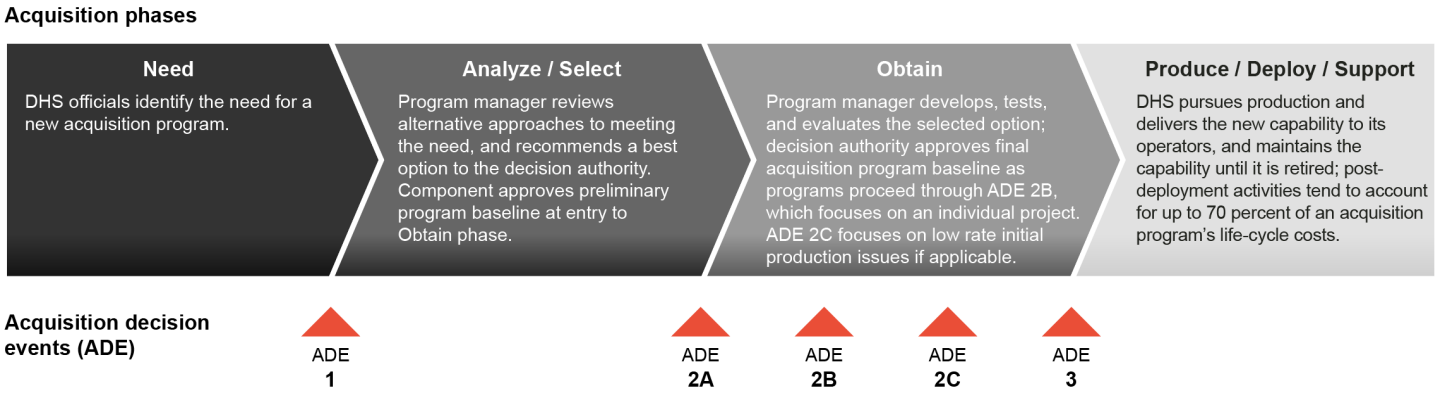
DHS's policies and processes for managing its major acquisition programs are primarily set forth in its Acquisition Management Directive 102-01 and Acquisition Management Instruction 102-01-001. DHS issued the initial version of this directive in November 2008 in an effort to establish an acquisition management system that effectively provides required capability to operators in support of the department's missions. DHS has issued multiple updates to its acquisition management directive and instruction, in part to be responsive to our recommendations. DHS issued the current version of the directive in February 2019 and the current version of the instruction in January 2021.

The Under Secretary for Management is the acquisition decision authority for the department's largest acquisition programs, those with LCCEs of $1 billion or greater, as well as some programs with cost estimates between $300 million and $1 billion. Component Acquisition Executives—typically the most senior acquisition management official within each DHS component—may be delegated acquisition decision authority for programs with cost estimates between $300 million and $1 billion.

DHS acquisition management policy establishes that a major acquisition program's acquisition decision authority shall review the program at a series of predetermined acquisition decision events (ADE) to assess whether the major program is ready to proceed through the acquisition life-cycle phases. Depending on the program, these events can occur within months of each other or be spread over several years. The 2019 revision to the DHS acquisition management policy modified entrance criteria for ADEs. For example, the revised policy requires acquisition decision authority approval of APBs by ADE 2B. Under a prior version of

the policy, acquisition decision authority approval of the APB occurred at ADE 2A. Figure 1 reflects the current acquisition life cycle in DHS acquisition management policy.

Figure 1: DHS Acquisition Life Cycle for Major Acquisition Programs



Source: GAO analysis of Department of Homeland Security (DHS) data. | GAO-22-104046

Note: Programs may develop capabilities through individual projects, segments, or increments, which are approved at ADE 2B. Programs without individual projects, segments, or increments may conduct a combined ADE 2A/2B since ADE 2B is the first milestone at which programs are required to submit certain acquisition documents.

An important aspect of an ADE is the acquisition decision authority's review and approval of key acquisition documents. See table 2 for a description of the type of key acquisition documents identified in the January 2021 acquisition instruction that requires department-level approval for major acquisitions of capital assets.

Table 2: Selected Documents Approved by DHS Headquarters at Acquisition Decision Events (ADE) For Major Acquisitions of Capital Assets

Acquisition Program Baseline (ADE 2B, 2C, 3)
• Establishes a program's critical baseline cost, schedule, and performance parameters • Expresses the parameters in measurable, quantitative terms, which must be met in order to accomplish the program's goals
Analysis of Alternatives (AoA) Study Plan (ADE 2A)
• Sets assumptions, scope, and constraints for the AoA, which is an analytical comparison of selected solution alternatives to fulfill a capability gap or need
Capability Development Plan (ADE 1)
• Serves as the agreement between the component head, program manager, and the acquisition decision authority on the activities, cost, and schedule for the analysis and selection of potential solutions to fill a mission need
Integrated Logistics Support Plan (ADE 2B, 2C, 3)
• Defines the strategy for ensuring the supportability and sustainment of a future capability • Provides critical insight into the approach, schedule, and funding requirements for integrating supportability requirements into the systems engineering process
Life-Cycle Cost Estimate (ADE 2A, 2B, 2C, 3)
• Provides an exhaustive and structured accounting of all resources and associated cost elements required to develop, produce, deploy, and sustain a particular program
Mission Need Statement (ADE 1)
• Synopsizes at a high-level the specific capabilities required to accomplish DHS's mission objectives, along with deficiencies and gaps in these capabilities
Operational Requirements Document (ADE 2A)
• Captures the business or operational user requirements and identifies which of these requirements are key performance parameters • Describes the mission, objectives, and capabilities in operationally relevant terms
System Engineering Life Cycle Tailoring Plan (ADE 2A, 2B, 2C, 3)
• Tailors the phases, products, and reviews in the System Engineering Life Cycle to meet the specific needs of each program and project
Technical Assessment (ADE 2A)
• Provides relevant information on the technical maturity, manufacturing capability, and technical risk of a planned technology
Test and Evaluation Master Plan (ADE 2A, 2C)
• Documents the overarching test and evaluation approach for the acquisition program • Describes the developmental and operational test and evaluation needed to determine a system's technical performance and operational effectiveness/suitability/resilience

Source: GAO analysis of Department of Homeland Security (DHS) information. | GAO-22-104684

DHS acquisition management policy states that the APB is the agreement between the acquisition program, component, and department-level officials that establishes how systems being acquired will perform, when they will be delivered, and what they will cost. Specifically, the APB establishes a program's schedule, costs, and key performance parameters (KPP). DHS requirements policy describes KPPs as a

program's most important and nonnegotiable requirements that a system must meet to fulfill its fundamental purpose. For example, a KPP for an aircraft may be airspeed, and a KPP for a surveillance system may be detection range.

In a 2019 revision to DHS's acquisition policy, DHS modified the way in which APBs for major acquisition programs are developed and approved. Specifically, the policy now states that a preliminary APB—approved by Component Acquisition Executives—is required at ADE 2A. The preliminary APB is updated, as necessary, and submitted to the acquisition decision authority for approval to support ADE 2B. By contrast, the prior version of the acquisition policy required the acquisition decision authority to approve an initial APB at ADE 2A. Obtaining acquisition decision authority approval of the APB later in the acquisition life cycle allows programs to better define technical requirements prior to approval.

The APB establishes objective (target) and threshold (maximum acceptable for cost, latest acceptable for schedule, and minimum or maximum acceptable for performance) baselines. According to DHS policy, if a program fails to meet any schedule, cost, or performance threshold approved in the APB, it is considered to be in breach. Programs in breach status are required to notify their acquisition decision authority and develop a remediation plan that outlines a time frame for the program to return to its APB parameters, rebaseline—that is, establish new schedule, cost, or performance goals—or have a DHS-led program review that results in recommendations for a revised baseline.

In addition to the acquisition decision authority, other bodies and senior officials support DHS's acquisition management function:

- **The Acquisition Review Board** reviews major acquisition programs for proper management, oversight, accountability, and alignment with the department's strategic functions at ADEs and other meetings as needed. The board is chaired by the acquisition decision authority or a designee and consists of members and representatives who manage DHS's mission objectives, resources, and contracts.
- **The Line of Business Chiefs** include the DHS Chief Financial Officer, the Chief Information Officer, the Chief Procurement Officer, the Chief Human Capital Officer, the Chief Security Officer, and the Chief Readiness Support Officer, among others. The Line of Business Chiefs have responsibility for executing acquisition portfolios and are responsible and accountable for adhering to the department's

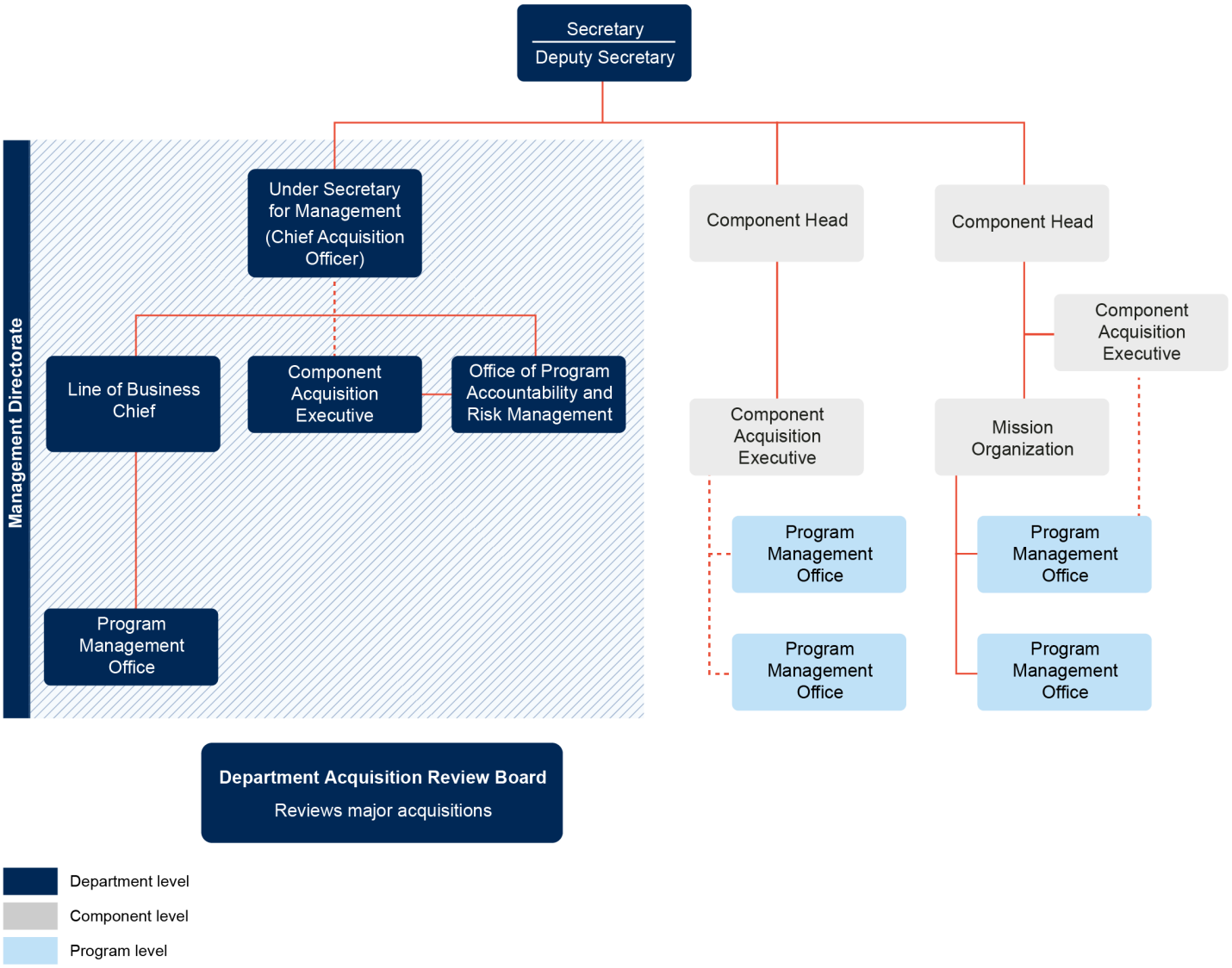
acquisition policies and procedures to ensure sound management, review, support, and approval. The Line of Business Chiefs are also members of the Acquisition Review Board.

- **The Office of Program Accountability and Risk Management** is responsible for DHS's overall acquisition governance process, supports the Acquisition Review Board, and reports directly to the Under Secretary for Management. PARM develops and updates acquisition program management policies and procedures, reviews major programs, provides guidance for workforce planning activities, and provides support to program managers.
- **Components,** such as U.S. Customs and Border Protection (CBP), the Transportation Security Administration, and the U.S. Coast Guard sponsor specific acquisition programs.[8] The head of each component is responsible for oversight of major acquisition programs once the programs complete delivery of all planned capabilities to end users.
    - **Component Acquisition Executives** within the components are responsible for overseeing the execution of their respective portfolios. In July 2021, DHS established a Component Acquisition Executive position within the Management Directorate. According to officials, this position is to oversee acquisition programs being executed within the Lines of Business.
    - **Program management offices,** also within the components, are responsible for planning and executing DHS's individual programs. They are expected to do so within the cost, schedule, and performance parameters established in their APBs. If they cannot do so, programs are considered to be in breach and must take specific steps, as noted above.

Figure 2 depicts the relationship between acquisition program managers at the department, component, and program level.

[8]DHS's components consist of operational components—those that have responsibility for directly achieving one or more of the department's missions or activities—and support components—those that generally provide assistance or guidance to other DHS components or external organizations. For example, the Management Directorate is a support component that generally provides assistance and guidance to other DHS components and external organizations and includes functions like budget, finance, information technology, facilities, human capital, and acquisitions. However, the Management Directorate also manages acquisition programs. Typically, these programs are those that involve multiple components, such as programs related to relocating the DHS headquarters and updates to financial systems for multiple components.

Figure 2: Department of Homeland Security's Acquisition Management Structure



Source: GAO analysis of Department of Homeland Security information. | GAO-22-104684

Requirements Development Process

In 2008, we found that DHS had not effectively implemented or adhered to its review process for major acquisitions and recommended that DHS reinstate the Joint Requirements Council (JRC) to review and approve acquisition requirements and assess potential duplication of effort across

the department.[9] In June 2014, DHS reestablished a JRC to develop and lead a component-driven joint requirements process for the department. In March 2016, DHS revised its policy instruction to reflect the addition of the JRC as an acquisition oversight body.

Among other responsibilities, the JRC is to provide requirements-related advice and validate key acquisition documentation to prioritize requirements and inform DHS investment decisions among its components. The JRC chair is a member of the Acquisition Review Board and advises the board on capability gaps, needs, and requirements at key milestones in the acquisition life cycle. In March 2019, we reported that the JRC could better fulfill its mission by identifying overlapping or common requirements and by making recommendations to senior leadership to inform budget decisions and to help ensure that DHS uses its finite investment resources wisely.[10] We will continue to monitor the JRC's efforts through GAO's high-risk work.

Test and Evaluation Policy

In October 2020, DHS issued a revision to the policy that describes processes for test and evaluation of the capabilities delivered by the department's major acquisition programs. The primary purpose of test and evaluation is to provide timely, accurate information to managers, decision makers, and other stakeholders to reduce programmatic, financial, schedule, and performance risks. We provide an overview of programs' test and evaluation activities in the individual program assessments presented in appendix I, as appropriate.

DHS test and evaluation policy assigns specific responsibilities to particular individuals and entities throughout the department:

- Program managers have overall responsibility for planning and executing their programs' test and evaluation strategies, including scheduling and funding test and evaluation activities and delivering systems for testing. The program manager is also responsible for developing and documenting the program's strategy for test and evaluation in a test and evaluation master plan (TEMP). A program's

[9]GAO, *Department of Homeland Security: Billions Invested in Major Programs Lack Appropriate Oversight*, GAO-09-29 (Washington, D.C.: Nov. 18, 2008). For more information, see GAO, *Homeland Security Acquisitions: Joint Requirements Council's Initial Approach Is Generally Sound and It Is Developing a Process to Inform Investment Priorities*, GAO-17-171 (Washington, D.C.: Oct. 24, 2016).

[10]GAO-19-157SP.

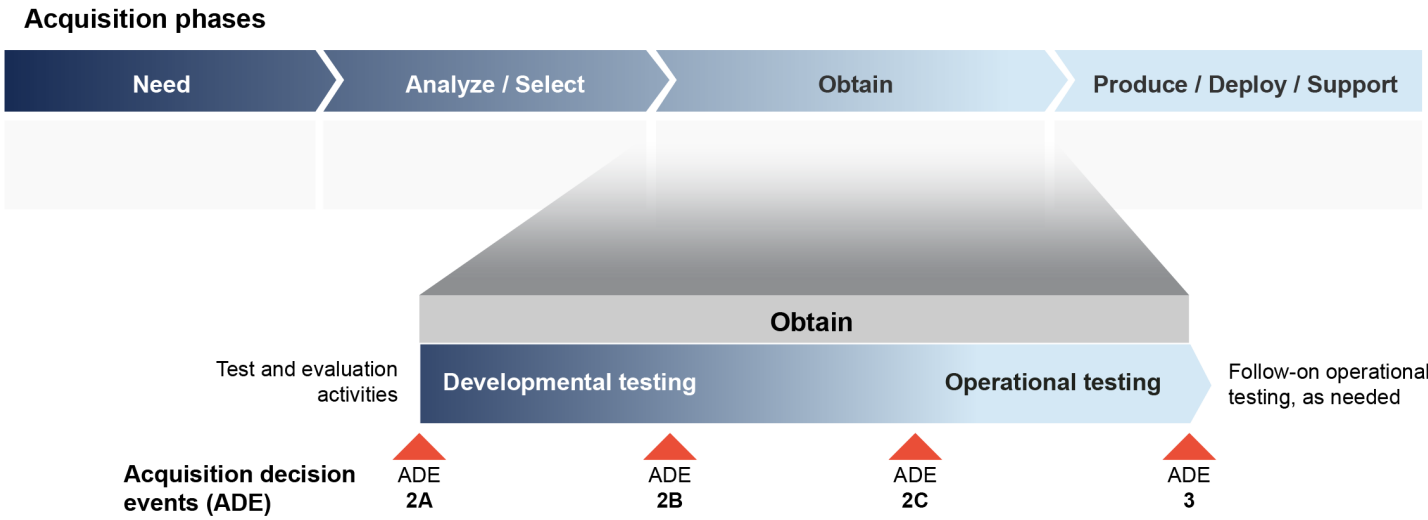
TEMP must describe the developmental and operational test and evaluation needed to determine technical performance and operational effectiveness, suitability, and resilience.[11]

- Independent test agents (formerly known as operational test agents) are responsible for planning, conducting, analyzing, assessing, and reporting on test and evaluation to identify whether a system can meet its key performance parameters and provide an evaluation of the operational effectiveness, suitability, and resilience of a system in a realistic environment. Operational effectiveness refers to the overall ability of a system to provide a desired capability when used by representative personnel. Operational suitability refers to the degree to which a system can be placed into field use and sustained satisfactorily. Operational resilience refers to the degree to which a system is able to withstand and recover from disruption, including cyber resilience. The independent test agents may be organic to the component, another government agency, or a contractor, but must be independent of the program manager, end user, and developer.
- The Director, Office of Test and Evaluation (DOT&E) is responsible for approving major acquisition programs' independent test agents, operational test and evaluation plans and TEMPs. As appropriate, the Director is also responsible for overseeing operational test and evaluation, reviewing independent test agents' reports, and assessing the reports. Prior to a program's ADE 2C, ADE 3, and other ADEs, as appropriate, the Director provides the program's acquisition decision authority a letter of assessment that includes an assessment of the adequacy of the test event, an independent evaluation of operational effectiveness, suitability, resilience and any further independent analysis.

As an acquisition program proceeds through its life cycle, the testing emphasis moves gradually from developmental test and evaluation to operational test and evaluation. In addition to operational test and evaluation, programs must complete an assessment of cyber resilience to inform ADE 3. See figure 3.

[11]DHS most recently updated the acquisition management instruction (DHS Instruction 102-01-001) in January 2021 and updated its test and evaluation instruction in October 2020. These instructions require the Test and Evaluation Master Plan as of ADE 2A. Previously, it was required at ADE 2B.

Figure 3: Test and Evaluation Activities Established by DHS Policy within the Obtain Phase



Source: GAO analysis of Department of Homeland Security (DHS) documents. | GAO-22-104684

In our October 2019 report on DHS test and evaluation activities for major programs, we reported that cyberattacks have the potential to prevent systems from working when needed, which could lead to an inability for end users to complete missions or even loss of life.[12] We also found that program compliance with DHS's cybersecurity testing requirements had been slow, in part because of the time needed to adequately plan and coordinate test and evaluation. DHS Instruction 102-01-012, issued in July 2020, states that cybersecurity and cyber resilience analyses are required for level 1 and level 2 major acquisition programs throughout the acquisition life cycle.

In our last review of DHS major programs, we reported that officials from DHS's Test and Evaluation Division stated that they are taking steps to help ensure that programs' plans to assess cyber resilience are incorporated earlier in the acquisition life cycle so test and evaluation can be completed as part of operational test and evaluation and inform ADE 3. For example, DOT&E stated that as programs update TEMPs, a plan to assess cyber resilience must be included in order to obtain approval.

[12]GAO, *Homeland Security Acquisitions: Opportunities Exist to Further Improve DHS's Oversight of Test and Evaluation Activities*, GAO-20-20 (Washington D.C.: Oct. 24, 2019).

DHS COVID-19 Policy Adjustment

Since the declaration of COVID-19 as a national emergency on March 13, 2020, many government agencies and contractors have implemented changes to curb the spread of the virus. For some DHS major acquisitions, the pandemic or changes implemented to address it have affected workforce availability for efforts, such as construction or test and evaluation. In October 2020, DHS's Deputy Under Secretary for Management issued a memorandum that granted Component Acquisition Executives the ability to adjust their APB schedule goals for level 1 and selected level 2 programs up to 6 months or longer due to effects related to COVID-19 instead of going through a formal rebaseline. Component Acquisition Executives must also notify DHS's Cost Analysis Division of any cost baseline adjustments needed for non-delegated major acquisition programs experiencing schedule delays as a result of COVID-19.

Majority of Selected Programs Were Meeting Established Goals in Fiscal Year 2021, with Fewer in Breach Status than Prior Year

Of the 23 programs we assessed with department-approved APBs, 20 were meeting their most recent cost and schedule baseline goals as of September 2021. A total of five programs were in breach of their cost or schedule goals at some point during fiscal year 2021, but two exited breach status during our review. Breaches were due to factors external to the program, such as COVID-19-related labor and supply chain issues, and internal program factors, such as an underestimation of program complexity. Additionally, nine other programs, though not experiencing a breach of cost or schedule baselines, rebaselined or were in the process of rebaselining during fiscal year 2021 due to a variety of factors. These included a change in quantities and an extension of the program schedule to enhance capabilities. We found that programs are generally meeting performance goals and conducting some operational test and evaluation as well as planning or conducting some cybersecurity testing.

Twenty of 23 Programs Were Meeting Established Cost and Schedule Goals in Fiscal Year 2021

We found that 20 out of 23 programs we reviewed with department-approved APBs were meeting their current baseline cost and schedule goals during fiscal year 2021.[13] The remaining three programs were not meeting their baseline goals at the end of fiscal year 2021 and were in the process of revising their baselines or planned to revise their baselines. See table 3 for the status of each of the 23 programs we assessed as of September 2021.

[13]Programs are required to have a department-approved APB by ADE 2B. Programs without department-approved APBs were excluded from this analysis. See appendix I for additional information on each program.

Table 3: Department of Homeland Security Program Status as of September 2021

Meeting baseline goals	Not meeting baseline goals
Cybersecurity and Infrastructure Security Agency	**DHS Management Directorate**
• Continuous Diagnostics and Mitigation	• Homeland Advanced Recognition Technology
• National Cybersecurity Protection System	**Science and Technology Directorate**
• Next Generation Network - Priority Services Phase 1	• National Bio and Agro-Defense Facility
Federal Emergency Management Agency	**U.S. Coast Guard**
• Grants Management Modernization	• Medium Range Surveillance Aircraft
Transportation Security Administration	
• Checkpoint Property Screening System	
• Credential Authentication Technology	
U.S. Coast Guard	
• 270’ Medium Endurance Cutter Service Life Extension Program	
• Fast Response Cutter	
• H-65 Conversion/Sustainment Program	
• Long Range Surveillance Aircraft (HC-130J)	
• National Security Cutter	
• Offshore Patrol Cutter	
• Polar Security Cutter	
U.S. Customs and Border Protection	
• Automated Commercial Environment	
• Biometric Entry-Exit Program	
• Integrated Fixed Towers	
• Medium Lift Helicopter	
• Multi-Role Enforcement Aircraft	
• Non-Intrusive Inspection Systems	
• Remote Video Surveillance System	

Source: GAO analysis of Department of Homeland Security (DHS) data. | GAO-22-104684

Breaches in Fiscal Year 2021 Were Due to External and Internal Factors

Of the 23 programs we reviewed, five were in breach of either cost or schedule goals at some point during fiscal year 2021, due to external and internal factors. This is fewer than the 10 programs in breach during our last review.[14] Specifically, two programs breached due to factors external to the program, including labor and supply chain issues related to the COVID-19 pandemic and international contracting delays with an original equipment manufacturer that led to contract awards up to 9 months later than procurement lead times. The other three programs breached due to internal program factors related to an insufficient understanding of the

[14]GAO-21-175.

program scope, requirements, and complexity of the work to be accomplished. Two of these programs exited breach status during fiscal year 2021. One program revised its acquisition program baseline and updated its cost and schedule goals. The other program declared full operational capability based on the capability fielded and received DHS leadership approval to restructure and initiate follow-on efforts to meet end-user needs. The remaining three programs were still in breach status as of September 2021 (see table 4). For additional details, see the individual program assessments in appendix I.

Table 4: Programs That Were in Breach of Cost or Schedule Goals in Fiscal Year 2021

Component	Program	Breach declared	Program removed from breach status	Breach type	Reason for breach	Effect of breach
Programs that breached due to factors external to the program						
Science and Technology Directorate	National Bio and Agro-Defense Facility	April 2020	December 2020	Schedule	Labor and supply chain issues related to COVID-19	Initial operational capability delayed 7 months.
		May 2021	Ongoing	Schedule	Contract modification delay and unforeseen technical issues	Initial operational capability expected to be delayed by 7 months.
U.S. Coast Guard	Medium Range Surveillance Aircraft	May 2020	Ongoing	Schedule	Contracting delays associated with installing a new mission system processor, among other things	Phase 2 ADE 2C and initial operational capability milestones delayed.
Programs that breached due to internal program factors						
Cybersecurity and Infrastructure Security Agency	National Cybersecurity Protection System	January 2020	April 2021	Schedule	Revisions to program documentation were required to accurately reflect the mission environment.	Program restructuring to better serve its end users and address evolving mission needs.
DHS Management Directorate	Homeland Advanced Recognition Technology	January 2020	Ongoing	Schedule	Contractor's approach was not feasible and a lack of understanding of complexity of requirements.	Initial operational capability for increment 1 delayed.
		May 2020	Ongoing	Cost	Updates to the cost estimate to incorporate additional work necessary to resolve issues driving schedule breach.	
Federal Emergency Management Agency	Grants Management Modernization	September 2018	January 2021	Cost	Program underestimated scope and complexity.	Delayed full operational capability by more than 3 years and increased estimated life-cycle cost by $360 million, which is more than double the previous estimate.
		March 2019	January 2021	Schedule	Contract award delay and resolving issues related to bid protest, among other things	

Source: GAO analysis of Department of Homeland Security (DHS) data. | GAO-22-104684

Of these five programs, one—the Science and Technology Directorate's National Bio and Agro-Defense Facility program—was removed from breach status only to go back into breach status during fiscal year 2021. Specifically, in April 2020, the program declared a schedule breach that was largely due to labor and supply chain issues related to COVID-19. The program adjusted its construction completion and initial operational capability dates, and DHS removed the program from breach in December 2020. Then, in May 2021, the program declared another schedule breach, this time due to a delay in executing a contract modification and unforeseen technical issues. DHS's Deputy Under Secretary for Management approved another adjustment to the construction completion and initial operational capability milestones to account for these issues. The Deputy Under Secretary required the program to submit an updated APB by September 2021, but the updated APB is still being reviewed by DHS. The program estimates that the costs associated with the additional work and extended schedule will not exceed its APB cost threshold of $1.3 billion.

Nine Programs Meeting Goals Rebaselined to Account for Program Changes, such as Scope, Quantity, or Funding Changes

Of the 20 programs that were meeting established goals, nine rebaselined or were in the process of rebaselining during fiscal year 2021. Seven programs were rebaselining due to scope changes, such as a change in quantities, an extended life cycle, or additional funding from Congress, one program rebaselined in response to prior recommendations from our September 2018 report, and one program was rebaselining in response to the contractual relief granted in response to the 2018 Hurricane Michael.[15] See table 5, and, for additional information, see the individual program assessments in appendix I.

[15]GAO, *Coast Guard Acquisitions: Polar Icebreaker Program Needs to Address Risks before Committing Resources*, GAO-18-600 (Washington, D.C.: Sept. 4, 2018).

Table 5: Programs That Rebaselined or Were Rebaselining in Fiscal Year 2021

Component	Program	Rebaseline status	Reason for rebaseline
Cybersecurity and Infrastructure Security Agency	Continuous Diagnostics and Mitigation	Approved June 2021	Implements Office of Management and Budget-directed program scope expansion and to enter obtain phase
Transportation Security Administration	Credential Authentication Technology	Ongoing	Program scope expansion to address increased passenger screening requirements and to improve identity verification
U.S. Coast Guard	Fast Response Cutter	Approved July 2021	Program added six cutters to replace old cutters operating in the Middle East. The program received $240 million in fiscal year 2021 to complete this purchase.
	National Security Cutter	Ongoing	Program received $1.2 billion for two additional cutters
	Offshore Patrol Cutter	Ongoing	Splits the program into two stages as part of the extraordinary contractual relief granted under the provisions contained in Public Law 85-804 in response to Hurricane Michael[a]
	Polar Security Cutter	May 2021	Addresses recommendations in GAO-18-600 to update the baselines prior to lead ship construction and after the preliminary design review
U.S. Customs and Border Protection	Automated Commercial Environment	Ongoing	Extends the program life cycle from 2026 to 2031 to enhance program capabilities
	Medium Lift Helicopter	Ongoing	Increases the full operational capability quantity from 20 to 35 aircraft to provide needed vertical-lift capabilities
	Non-Intrusive Inspection Systems	Approved March 2021	Accounts for changes in the mix of small-scale and large-scale system quantities for full operational capability and extension of program life-cycle

Source: GAO analysis of Department of Homeland Security (DHS) data. | GAO-22-104684

[a]See Pub. L. No. 85-804, codified at 50 U.S.C. § 1431. Executive Order 10789, as amended by Executive Order 13286, implements and authorizes the Secretary of DHS to use the authority. The extraordinary contractual authority authorizes the Secretary of Homeland Security to modify contracts without regard to other provisions of law related to making, performing, amending, or modifying contracts, whenever such action would facilitate national defense.

Programs Generally Achieved Performance Goals, but Some Require Remediation to Address End User Needs

Most of the programs we assessed were generally achieving their performance goals, as reflected in operational test and evaluation. However, four are remediating performance issues. Sixteen of the 23 programs that we reviewed with DHS-approved APBs have completed at least some operational test and evaluation of performance goals that could be tested and were generally achieving those goals as of September 2021. Of the seven programs with DHS-approved APBs not currently achieving performance goals, three are Coast Guard cutter programs that have not yet begun test and evaluation. The other four are

remediating various issues identified through test and evaluation or as part of a rebaseline to address broader issues (see table 6).

Table 6: DHS Major Acquisition Programs Remediating Performance Issues during Fiscal Year 2021

Component	Program	Performance remediation efforts
Cybersecurity and Infrastructure Security Agency	Continuous Diagnostics and Mitigation (CDM)	• Operational test and evaluation has not yet begun because the program is addressing recommendations from DHS testing officials based on a February 2019 operational assessment and subsequent operational studies. • In January 2020, DHS testing officials recommended that the program revise its test and evaluation master plan to integrate lessons learned from user testing prior to acquisition decision event 2B for Data Protection Management, one element of the overall program. • In August 2020, we made six recommendations to DHS regarding the program. As of September 2021, five of the six recommendations, which address users' ability to integrate CDM capabilities into cybersecurity processes, remain open.[a]
DHS Management Directorate	Homeland Advanced Recognition Technology	• In January 2021, the breach remediation plan described organizational and technical challenges by the contractor that contributed to the program breach and proposed additional oversight and communication to help resolve these challenges. • In August 2021, the program issued an updated risk management plan to address issues with tracking and monitoring of technical risks that may affect performance as well as test and evaluation.
Federal Emergency Management Agency (FEMA)	Grants Management Modernization	• The program is the in process of evaluating all key performance parameters (KPP) through testing except service availability because that test and evaluation has been deferred until all grant programs are fully supported in a new grants management system called FEMA Grants Outcomes. • The program is taking remediation steps to address its software reliability KPP, which was not at an acceptable level to meet user needs.
U.S. Coast Guard	Medium Range Surveillance Aircraft (MRS)	• The program is addressing limitations to being operationally effective and suitable, as identified in DHS testing officials' findings. • Neither the HC-144A nor the C-27J aircraft in the MRS program will be able to meet two of the program's KPPs until the Coast Guard installs the new mission system processor on the aircraft. According to Coast Guard officials, the MRS independent test agent, the Navy's Commander, Operational Test and Evaluation Force, plans to test the new mission system processor in October 2021 to determine if the two outstanding KPPs have been met.

Source: GAO analysis of Department of Homeland Security (DHS) data. | GAO-22-104684

[a]GAO, *Cybersecurity: DHS and Selected Agencies Need to Address Shortcomings in Implementation of Network Monitoring Program*, GAO-20-598 (Washington, D.C.: Aug. 18, 2020).

Several other programs that met their performance goals and achieved ADE 3 subsequently required additional test and evaluation at the direction of the Acquisition Review Board to address critical operational issues or other major deficiencies before reaching full operational capability. These programs are making efforts to resolve issues or have resolved them. For example:

- Coast Guard's National Security Cutter executed follow-on operational test and evaluation in November 2018. DOT&E officials determined, in May 2019, that the program was operationally effective but suitable only with limitations because of issues related to availability and reliability of certain equipment. Coast Guard officials said that they are working to address deficiencies by the end of fiscal year 2022.
- CBP's Automated Commercial Environment (ACE) Core capability achieved full operational capability in November 2018. DOT&E officials determined that the program was operationally suitable and effective, with limitations. In July 2020, the program completed follow-on testing for the ACE Core capability and the independent test agent determined that the issue had been resolved. As ACE shifts its focus to its Collections capability—which collects and processes duties owed on imported goods—the program will need to rely on reporting by users to assess the Collections capability, as indicated in DOT&E's November 2020 approval of ACE's revised TEMP.

Additional information on these programs is in appendix I.

Programs Continued to Conduct Cybersecurity Activities

We identified several instances of programs planning or conducting cybersecurity and cyber resilience test and evaluation as required for all of the programs in our review, according to the July 2020 DHS Instruction 102-01-012. Cybersecurity refers to the prevention of, damage to, and unauthorized use of a system. For example, FEMA's Grants Management Modernization (GMM) program completed the second of three penetration assessments designed to examine the system to identify significant cyber vulnerabilities and the level of capability required to exploit those vulnerabilities. It also completed an exercise to identify different risk scenarios and prepare them for cyber threats. CBP's ACE program used penetration testing—a simulated cyberattack—to identify and mitigate potential vulnerabilities.

Additionally, we found instances of programs developing a plan to assess cyber resilience—the ability to operate while under attack—as a component of their updated or initial TEMP. For example, FEMA's GMM program included a section in its TEMP, approved in July 2020, which identified cyber resilience objectives and supporting activities. According to DHS testing officials, three programs have no current plans to conduct cyber resilience testing for a variety of reasons. For example, DHS Science and Technology Directorate's National Bio and Agro-Defense Facility program is planned for transition to operation by the U.S. Department of Agriculture and its test and evaluation is not overseen by DOT&E.

Most Programs Were Able to Address Reported Cost or Schedule Effects from COVID-19 without Requiring Baseline Adjustment Memorandums

In response to the effects of COVID-19 on its major acquisitions, the DHS Deputy Under Secretary for Management issued a memorandum in October 2020 that allowed components to adjust APB milestones up to 6 months due to cost or schedule effects, or longer with leadership approval, without being in breach status. DHS required that any component adjusting milestones for one of its major acquisitions include information about how the program schedule was affected by COVID-19. Per this process, components adjusted APB milestones for four programs in our scope, as shown in table 7.

Table 7: Programs That Adjusted Their Schedule Baselines in Fiscal Year 2021 due to the Effects of COVID-19

Component	Program	Adjustment status	Adjustment	Reason for adjustment
Science and Technology Directorate	National Bio and Agro-Defense Facility	Complete. The COVID-19 schedule adjustment memo is an addendum to the baseline.	Completion of construction extended 6 months Initial operational capability date extended 7 months	Stay-at-home orders, and labor and productivity issues resulting from COVID-19
U.S. Coast Guard	270' Medium Endurance Cutter Service Life Extension Program	Complete. The COVID-19 schedule adjustment memo is an addendum to the baseline.	Integration Readiness Review extended 6 months	COVID-19-related delays in awarding two major long-lead-time material contracts that affected systems engineering events
U.S. Customs and Border Protection	Border Wall System Program Fiscal Year 2018	Pending. Plans for rebaseline are paused in response to January 2021 Presidential Proclamation.	Rio Grande Valley initial operational capability extension to be determined	COVID-19-related delays to construction and various real estate possessions and meetings
	Integrated Fixed Towers	Complete. The COVID-19 schedule adjustment memo is an addendum to the baseline.	Full operational capability extended 3 months[a]	COVID-19-related delays to road construction in the Casa Grande region and COVID-19 exposures that delayed tower construction

Source: GAO analysis of Department of Homeland Security (DHS) data. | GAO-22-104684

[a]Full operational capability for Integrated Fixed Towers occurred in August 2021, 2 months later than the adjustment made by the component in the memo.

Of the four programs with DHS approved memorandums adjusting APB milestones, CBP's Border Wall System Program fiscal year 2018 segment was the only program that did not include details in its memorandum about the duration of schedule adjustment that would be

necessary. According to the approved memorandum, the uncertainty of COVID-19's effects made it difficult to project an updated initial operational capability date for the Rio Grande Valley work. We previously reported that COVID-19 created challenges related to meeting with land owners and the closure of some courts, which limited the ability to search county records and hold hearings related to land possession.[16] DHS requested that the Border Wall System Program provide details by February 2021 on the adjustment needed or develop a plan to assess the schedule effects of COVID-19. However, a Presidential Proclamation issued on January 20, 2021, directed DHS to pause construction of the border wall and paused the obligation of funds for the wall to the extent permitted by law. Program officials said that, as of August 2021, the program's fiscal year 2018 segment was still on hold.

In addition to the four programs with DHS-approved schedule adjustment memos, 13 other programs identified cost or schedule effects from COVID-19, including delays related to production, test and evaluation, contract award, and supply chain disruptions. Aside from the four programs mentioned above whose components adjusted baselines, the rest of the programs were able to mitigate these effects without requiring APB adjustment memorandums. See table 8.

[16]GAO-21-175.

Table 8: DHS Major Acquisition Programs Reporting COVID-19 Effects That Did Not Require Baseline Adjustment Memorandums in Fiscal Year 2021

Component	Program	Type of COVID-19 effect	Reported COVID-19 effect
Cybersecurity and Infrastructure Security Agency	Next Generation Network - Priority Services Phase 1	Schedule	Test and evaluation delay
Federal Emergency Management Agency	Grants Management Modernization	Cost Schedule	Increased deployment speed due to additional funding received related to COVID-19 response Increased work/requirements
Transportation Security Administration	Checkpoint Property Screening System	Schedule	Production delay
	Credential Authentication Technology	Cost	Fewer fees collected from travelers
U.S. Coast Guard	Fast Response Cutter	Schedule	Production delay, supply chain disruption
	H-65 Conversion/Sustainment Program	Schedule	Production delay
	National Security Cutter	Schedule	Production and test and evaluation delays
	Offshore Patrol Cutter	Schedule	Test and evaluation delay
	Polar Security Cutter	Schedule	Test and evaluation delay
U.S. Customs and Border Protection	Automated Commercial Environment	Schedule	Test and evaluation delay
	Biometric Entry-Exit Program	Cost Schedule	Fewer fees collected from travelers Development delay
	Multi-Role Enforcement Aircraft	Schedule	Supply chain disruption, training
	Remote Video Surveillance System	Schedule	Production delay

Source: GAO analysis of Department of Homeland Security (DHS) data. | GAO-22-104684

Details of COVID-19 effects on these programs include:

- The Transportation Security Administration's Checkpoint Property Screening System program temporarily halted the deployment of new units at airports, according to program officials. Officials stated the program was unable to complete any installations from March 2020 through June 2020 due to travel restrictions. Additionally, officials identified delays associated with construction and permitting issues at airports, which were caused at least in part by COVID-19. As a result, the program did not meet its goal of deploying the initial 300 scanning units by January 2021. However, officials stated that they were able to make up some of that lost time by speeding up later installations, and

the program was able to complete the deployment of these units by April 2021.

- The U.S. Coast Guard's H-65 program experienced a temporary production shutdown in 2020 due to COVID-19, according to officials. Prior to the COVID-19 pandemic, the program planned to complete six H-65 aircraft conversions in fiscal year 2020. However, a 37-day production shutdown at the U.S. Coast Guard's Aviation Logistics Center in the spring of 2020 led to only five aircraft completing conversion activities. This affected the program's planned schedule for full operational capability, which is expected to shift to July 2024. This new date remains within the APB threshold date, which requires that full operational capability be attained no later than the end of fiscal year 2024.
- According to program officials, the prime contractor for the U.S. Coast Guard's National Security Cutter program, Huntington Ingalls Industries, will deliver the 11th ship 10 months later than planned due to COVID-19–related workforce absences and supply chain disruptions, which could have a follow-on effect of delaying full operational capability. Since the program was already in the process of updating its APB to account for the addition of the 10th and 11th cutters, officials said they will likely include any COVID-19–related delays in the updated APB, which was expected be approved by December 2021.
- CBP's ACE program delayed operational test and evaluation of its Core functionality by 2 months due to COVID-19–related travel restrictions and the need to develop plans for remote testing. The program had planned to start the test event in April 2020 but delayed the start to June 2020.
- CBP's Biometric Entry-Exit program, which relies on travel-related user fees to fund a significant percentage of its operations, collected less of these fees than expected due to COVID-19, according to program officials. As travel volumes decreased, demand for certain types of visas was cut by nearly 50 percent in fiscal year 2020. Prior to COVID-19, officials stated the program collected on average $60 million in fees that funded program activities. In fiscal year 2020, visa fee applications generated $35.9 million in funds, and this amount fell to $28.4 million in fiscal year 2021. As a result of the reduced user fees, the program has been forced to delay development and expansion of the program's biometric matching capabilities, particularly for the segment of the program focused on land borders. The program is focused on maintaining current biometric matching capabilities but expects that any future expansion will lag, as user

fees generated from increased travel do not become immediately available for obligation and expenditure.

In addition to the negative COVID-19 effects described above, one program reported a positive outcome of the federal response to COVID-19. According to program officials, FEMA received an additional $2.5 million in fiscal year 2021 funding, which the Grants Management Modernization program used to implement the new requirements attached to the CARES Act. This funding helped the program test its design and incorporate new requirements sooner than anticipated.[17] Officials stated the program reviewed the new requirements, which were an extension of an existing program, and narrowed the eligibility criteria, designed the program, and opened funding opportunities through the new system within 35 days. FEMA officials described the speed of this deployment as unprecedented in the agency's history.

Agency Comments

We provided a draft of this report to DHS for review and comment. DHS provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees and the Secretary of Homeland Security. In addition, the report is available at no charge on the GAO website at https://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-4841 or makm@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.

Marie A. Mak
Director, Contracting and National Security Acquisitions

[17]Coronavirus Aid, Relief, and Economic Security Act, Pub. L. No. 116-136 (2020).

List of Committees

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

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

The Honorable Bennie G. Thompson
Chairman
The Honorable John Katko
Ranking Member
Committee on Homeland Security
House of Representatives

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

Appendix I: Program Assessments

This appendix presents individual assessments for the 29 Department of Homeland Security (DHS) major acquisition programs we reviewed. Each assessment presents information current as of September 2021. The assessments include standard elements such as: an image, a program description, and summaries of the program's progress in meeting cost and schedule goals, and key program information, such as prime contractor and contract type. In addition, the assessments provide summaries of the program execution, performance and testing activities, and program management-related issues, as applicable. The information presented in these assessments was obtained from DHS documentation, answers to our questionnaire by DHS officials, and interviews with DHS and program officials, and includes our analysis of program information. Each assessment also includes the following figures:

- **Acquisition program baseline (APB) versus current estimate.** This figure compares the program's cost thresholds from the initial APB approved after DHS's acquisition management policy went into effect in November 2008 and the program's current DHS-approved APB to the program's expected costs as of September 2021. The source for the current estimate is the most recent cost data we obtained (i.e., a department-approved life-cycle cost estimate, updated life-cycle cost estimates submitted during the resource allocation process to inform the fiscal year 2022 budget request, or a fiscal year 2021 annual life-cycle cost estimate update). Costs shown are based on the program's APB threshold costs and are presented in then-year dollars. For consistency in reporting, we use the terms procurement, construction and improvements (PC&I) and operations and support (O&S) when describing costs in these assessments.
- **Program costs for fiscal years 2022–2026.** This figure provides the programs' estimated PC&I, O&S, and total estimated costs for fiscal years 2022–2026.
- **Schedule.** This figure consists of a timeline that identifies key milestones or other significant events for the program. The timeline identifies when the program completed or expected to reach its major milestones as of September 2021. Dates shown are based on the program's APB threshold dates or updates provided by the program office.
- **Key performance parameters (KPP).** This figure provides the breakout of the programs' total number of KPPs by whether or not the programs reported those KPPs as met.
- **Test events.** This figure consists of a timeline that identifies significant test events for the program, including cybersecurity testing.

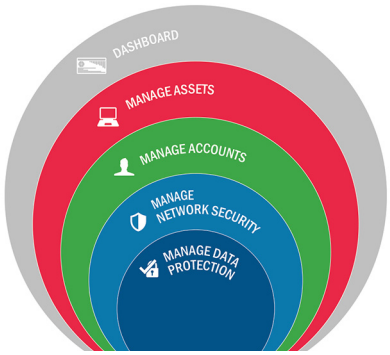
The timeline identifies when the program completed or expected to complete these events as of September 2021.

Lastly, each program assessment summarizes comments provided by the program office and identifies whether the program provided technical comments.

CONTINUOUS DIAGNOSTICS AND MITIGATION (CDM)

CYBERSECURITY AND INFRASTRUCTURE SECURITY AGENCY (CISA)

CDM aims to strengthen cybersecurity of the federal government's networks by continually monitoring and reporting vulnerabilities at more than 65 civilian agencies. CDM will provide four capabilities: Asset Management reports vulnerabilities in hardware and software; Identity and Access Management focuses on user access controls; Network Security Management will report on efforts to prevent attacks; and Data Protection Management will provide encryption to protect network data.



Source: Cybersecurity and Infrastructure Security Agency.

KEY FINDINGS

- Program achieved acquisition decision event 2A for Data Protection Management.
- Program revised its acquisition program baseline to account for expanded scope.
- Estimated program costs increased by $4.7 billion based on the expanded scope and addition of Data Protection Management.

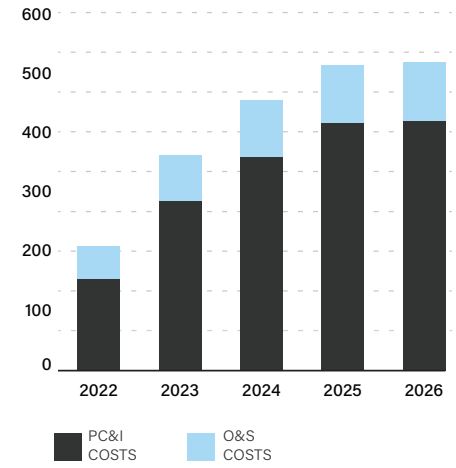
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (06/2013)	2,076	1,173	3,249
Current APB (06/2021)	5,557	1,830	7,386
Current estimate (06/2021)	4,832	1,592	6,423

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



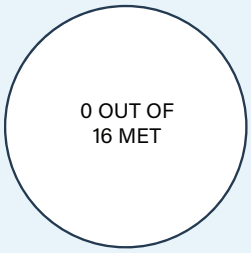
COST AND SCHEDULE

In April 2021, CDM achieved acquisition decision event (ADE) 2A for the Data Protection Management (DPM) capability. DHS subsequently approved the program's revised acquisition program baseline (APB) in June 2021, which includes preliminary cost, schedule, and performance parameters for the DPM capability and addresses the expanded scope of the program directed by the Office of Management and Budget (OMB). Specifically, OMB directed the program to increase its customer base, expand its services, and enhance the Federal Dashboard that aggregates and displays summary data received from participating agencies, among other things. The program updated its life-cycle cost estimate (LCCE) to inform the program's revised APB. The program's total APB life-cycle cost threshold increased by over $4.7 billion to account for these changes. Approximately $910 million of this increase is the preliminary cost estimate for DPM capability. The program's full operational capability (FOC) date slipped 4 years to September 2026 primarily due to the incorporation of DPM capability. The costs and program schedule will be updated and baselined in support of the planned ADE 2B for DPM capability. CISA officials plan to achieve ADE 2B for DPM capability by December 2022 but noted that the date is dependent on several variables, including funding.

The program completed an affordability analysis prior to revising its APB. The program's estimated costs exceed anticipated funding in fiscal years 2023 through 2026. In response, DHS directed the program to detail schedule effects without removing requirements or scope in its annual LCCE updates. CISA officials plan to reprioritize activities, as needed, to align with appropriated funding levels.

SCHEDULE

KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
IT	1	Multiple	Cost Plus Award Fee

PERFORMANCE AND TESTING

In May 2021, the program updated its operational requirements document (ORD) to incorporate requirements for the Data Protection Management capability, such as data discovery and protection, increasing the program's number of KPPs from 13 to 16. Upon approval of the ORD, DHS directed the program to update its Concept of Operations and ORD prior to the program's ADE 2B for Data Protection Management to reflect evolving cybersecurity and program requirements.

CDM officials stated that as of September 2021, the program did not have commitment from any agency to conduct operational testing on an agency network. These officials stated that if CDM cannot gain access to agency networks for testing purposes, the agencies will assume responsibility for testing the CDM tools on their own networks. As of April 2021, CISA officials reported that seven other agencies have conducted operational studies. These studies provided the program with informal observations on CDM implementations at the respective agencies. The CDM program is currently working with DHS officials to plan operational assessments (OA) on DHS's network to demonstrate each capability incrementally as it is deployed and to reduce risk prior to conducting program-level operational test and evaluation (OT&E).

In response to past recommendations by DHS's Director, Office of Test and Evaluation (DOT&E), CISA officials said they are working with agencies to determine their willingness to schedule OAs and OSs on their respective networks. In January 2020, DOT&E assessed the results of OSs for Identity and Access Management, an OA for Asset Management, and system integration tests at civilian departments and agencies. DOT&E determined that the CDM program is not making sufficient progress towards achieving operational effectiveness and that testing has been insufficient to assess progress towards operational suitability and cyber resilience. Among other things, DOT&E recommended that the program conduct an OA and OT&E on CDM implementation within DHS. In addition, DOT&E recommended and DHS subsequently directed that the program update its TEMP to integrate lessons learned as the program prepares for ADE 2B for Data Protection Management. CDM officials stated they are working with DOT&E and other stakeholders to identify ways to improve CDM OT&E. For example, these officials said the program established a working group to engage other agencies as they explore opportunities to conduct operational testing.

PROGRAM MANAGEMENT

In May 2021, CISA officials said they continue to face workforce challenges primarily as a result of the lengthy hiring process. The program is coordinating with CISA officials to address staffing gaps and is leveraging contractors, when possible, but officials said the program is at risk of experiencing schedule delays. In addition, CISA officials noted ongoing staffing challenges increases the risk of insufficient personnel overseeing contracts the program office manages to provide CDM services across the entire .gov enterprise.

GAO reported on the CDM program in August 2020 (GAO-20-598) and made six recommendations to DHS, among others. As of September 2021, five of the recommendations to DHS remain open.

TEST EVENTS

09/2022

- Operational review of Identity and Access Management
- Operational review of Asset Management

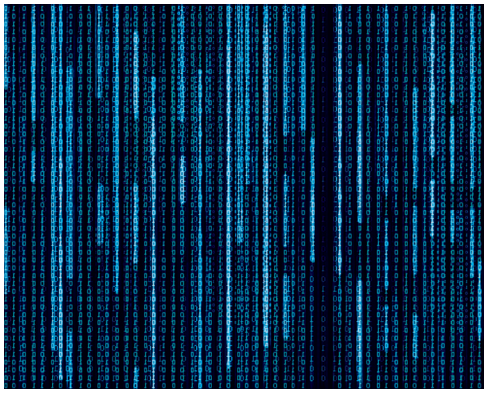
PROGRAM OFFICE COMMENTS

CISA officials stated that throughout the year the CDM program continued to navigate the COVID-19 pandemic, as well as adjust to changes in response to executive and legislative action, assess risks, and mitigate impacts to the program. They added that CDM responded to threats from hostile adversaries as well as other vulnerabilities. Despite these challenges, officials said the program minimized negative impacts and maintained momentum for agency implementation through communication with internal actors and external stakeholders. In addition, CISA officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

NATIONAL CYBERSECURITY PROTECTION SYSTEM (NCPS)

CYBERSECURITY AND INFRASTRUCTURE SECURITY AGENCY (CISA)

NCPS is intended to defend the systems federal civilian government uses from cyber threats. NCPS develops and deploys capabilities through a series of "blocks." Blocks 1.0, 2.0, 2.1 and EINSTEIN 3 Accelerated (E3A) are fully deployed and provide intrusion detection and analytic capabilities across the government. The NCPS program has partially deployed capabilities for block 2.2 to improve information sharing across agencies.



Source: National Cybersecurity Protection System.

KEY FINDINGS

The program achieved full operational capability and was removed from schedule breach status in April 2021.

NCPS is being restructured to sustain current capabilities and address evolving mission needs through a follow-on program.

CISA plans to address relevant, unaddressed block 2.2 requirements under a follow-on program.

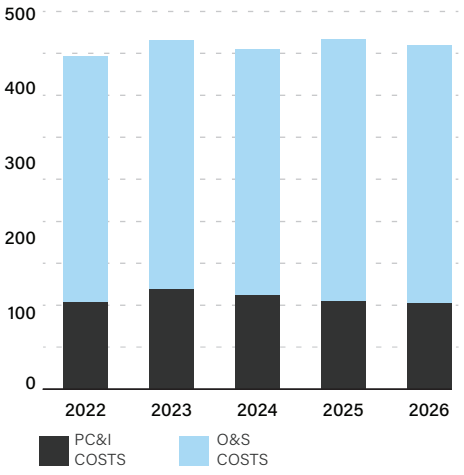
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (02/2009)	1,029	922	1,951
Current APB (10/2018)	1,627	4,281	5,908
Current estimate (06/2021)	1,945	5,240	7,185

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS

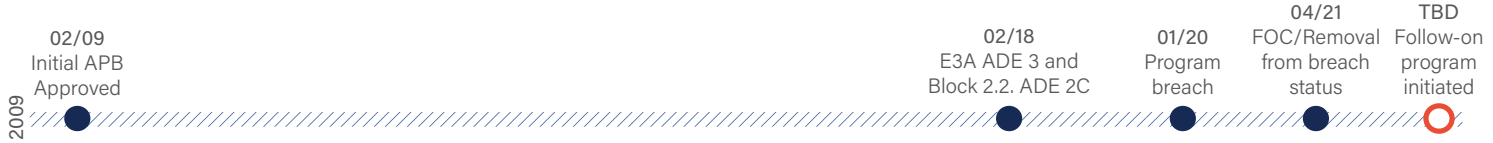


COST AND SCHEDULE

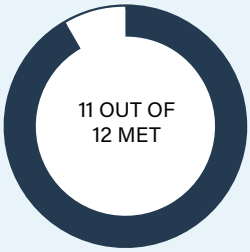
In April 2021, DHS acknowledged the program achieved full operational capability (FOC) and removed it from schedule breach status as the program formally began to restructure. The program declared a schedule breach in January 2020 as a result of delays experienced while revising the program's operational requirements document (ORD) and concept of operations (CONOPS). DHS leadership previously directed the program to revise its CONOPS and ORD following an operational assessment where DHS's Director, Operational Test and Evaluation (DOT&E), stated that the program's block 2.2 was a risk of not meeting end user needs. Through the process of revisiting requirements, program officials determined that a program restructure was necessary to sustain delivered capabilities and address evolving mission needs. When DHS leadership acknowledged the program's achievement of FOC, they approved the program's request to remove its block 2.2 ADE 3 schedule milestone. CISA officials now plan to complete full deployment of the remaining and operationally relevant block 2.2 requirements under a follow-on program to be initiated in fiscal year 2022.

The program updated its life-cycle cost estimate (LCCE) in June 2021 to inform the budget process and it now exceeds the program's current APB cost thresholds. However, this LCCE accounts for program costs through 2027, while the APB only accounts for costs through 2024. Further, NCPS officials stated that this LCCE does not account for all the capabilities that officials plan to develop under the follow-on program.

SCHEDULE



KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
IT	1	Raytheon	Cost Plus Fixed Fee

PERFORMANCE AND TESTING

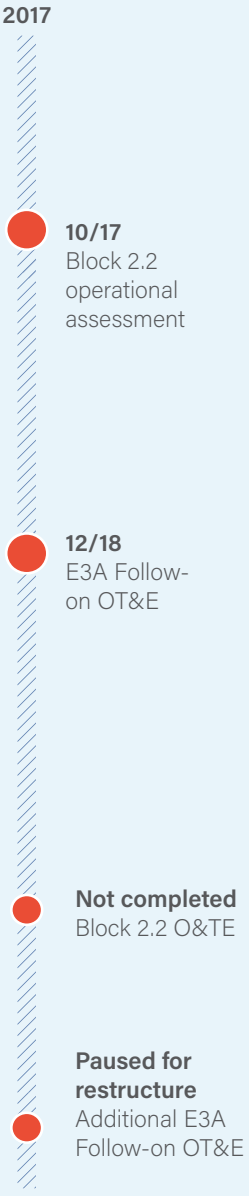
In January 2018, DHS's DOT&E determined that it was too soon to assess block 2.2 based on the operational assessment (OA) results from October 2017. However, DOT&E noted block 2.2 was at risk of not meeting current user needs and made a number of recommendations, including reviewing the ORD and CONOPS and conducting another OA before conducting initial operational test and evaluation (OT&E). In December 2019, program officials completed the CONOPS but, before completing updates to the ORD, determined that the program needs to restructure to address evolving challenges, such as a lack of a cohesive .gov network architecture, and changes in cybersecurity risk and the encryption of network traffic. As part of the restructuring effort, the program assessed the capabilities block 2.2 provides and determined the relevant capability gaps, identified requirements that may no longer be relevant, and proposed transferring some capabilities to other CISA programs. As of September 2021, CISA officials were in the process of developing key acquisition documents to inform the scope of the NCPS follow-on program. For example, program officials stated that they are developing a consolidated operational requirements document, which incorporates the mission needs statement, CONOPS and ORD for the restructured NCPS program. The program plans to develop its scope around three investment areas: cyber mission IT infrastructure, cyber operations tools, and cyber mission engineering.

In January 2018, DOT&E determined E3A met its key performance parameters (KPP) for coverage, accuracy, and timeliness based on an assessment of initial OT&E results. Based on the test results, DHS approved the program's ADE 3 for E3A. However, testing was not adequate to assess cybersecurity, and DOT&E determined E3A was operationally effective with limitations primarily because it lacks the ability to share threat information. In December 2018, the OTA completed follow-on OT&E for E3A and DOT&E subsequently determined E3A was cyber resilient with limitations. DOT&E made multiple recommendations, including that the program continue to work on improving E3A effectiveness by integrating automated information sharing solutions and data analysis tools, among other things. In June 2021, CISA officials stated that additional follow-on testing of E3A was paused while the program awards a new contract for sustainment and works through plans to restructure. However, CISA officials stated they plan to work with DOT&E to develop a new test and evaluation master plan and test strategy as part of the program restructure.

PROGRAM MANAGEMENT

In June 2021, CISA officials said that they continue to face staffing challenges, but the program requested funding for an additional 20 federal staff members in fiscal year 2022. CISA officials stated they plan to have the additional staff help with operations and sustainment efforts, analytics, and project management for the follow-on program. However, CISA officials told GAO that the federal hiring process and DHS's lengthy suitability screening process have made recruitment efforts challenging because qualified candidates often find other employment while waiting for these processes to be completed.

TEST EVENTS



PROGRAM OFFICE COMMENTS

CISA officials stated that the restructured program will leverage its three investment areas to better align and integrate CISA's Cybersecurity Division analytics and data, which is intended to improve visibility across CISA's Cybersecurity Division environments and provide a more holistic view of cyber threats. They noted that current NCPS capabilities and functions will either be carried into the restructured program or realigned to different CISA Cybersecurity Division programs. CISA officials also provided technical comments on a draft of this assessment, which we incorporated as appropriate.

NEXT GENERATION NETWORKS PRIORITY SERVICES (NGN PS) PHASE 1

CYBERSECURITY AND INFRASTRUCTURE SECURITY AGENCY (CISA)

CISA's NGN PS programs are intended to address an emerging capability gap and enhance the government's emergency telecommunications service. NGN PS Phase 1 is developing and delivering voice over internet protocol capability in three increments: 1) core networks, 2) wireless, and 3) wired access. CISA executes these programs through commercial telecommunications service providers, which address the government's requirements as providers modernize their networks.

Source: DHS.

KEY FINDINGS

According to CISA officials, Increments 2 and 3 are on track to achieve FOC in December 2022 and December 2025, respectively.

Current LCCE adds $35 million in costs but remains within its APB goals.

NGN PS Phase 1 has a staffing gap of three critical vacancies.

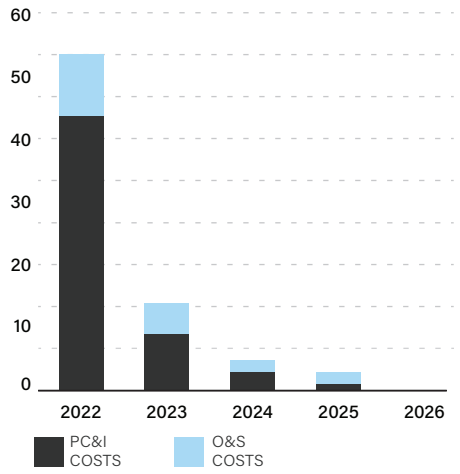
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (01/2011)	244	469	713
Current APB (04/2018)	759	0	759
Current estimate (01/2021)	661	27	688

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS

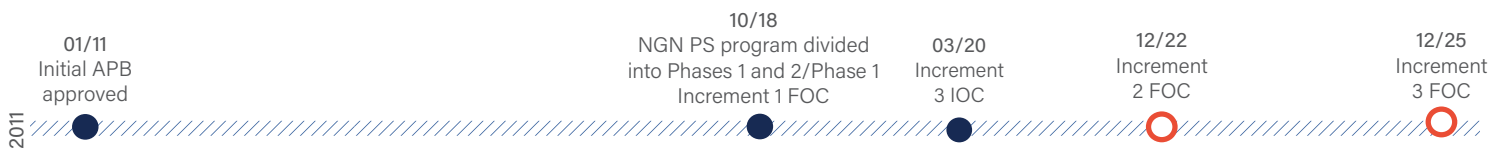


COST AND SCHEDULE

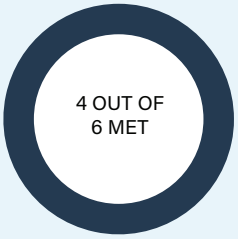
CISA previously planned to deploy capabilities for voice, data, and video priority services through a single program. In October 2018, DHS approved CISA's request to separate NGN PS into two acquisition efforts—Phases 1 and 2. Phase 1 is developing and delivering voice capability in three increments. Increment 1 maintains priority service on long distance calls and achieved full operational capability (FOC) in October 2018. Increment 2 will deliver wireless capability and secure mobile communications. Increment 3 will deliver wired capability for voice over internet protocol. CISA officials told us that, as of June 2021, the program is on track to achieve FOC for Increments 2 and 3 in December 2022 and December 2025, respectively.

In January 2021, the program updated its life-cycle cost estimate, adding $35 million in development costs for service providers to provide additional capabilities and compatibility. CISA officials told us they assume these service providers will require additional development costs to reach FOC for Increment 2 because of a completed merger and technical differences between them. The program remains within its acquisition program baseline (APB) goals. NGN PS Phase 1's acquisition cost includes both PC&I and O&S costs during the program's acquisition phase. Once operational, acquired capabilities are transferred to CISA's Priority Telecommunications Service (PTS) program for sustainment.

SCHEDULE



KEY PERFORMANCE PARAMETERS



Note: Two KPPs have not yet been tested because the capabilities they rely on have not yet deployed.

PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
IT	2	General Dynamics IT	Various

PERFORMANCE AND TESTING

NGN PS Phase 1 capabilities are evaluated through PTS's developmental and operational testing conducted by service providers on their own networks. CISA officials review the service providers' test plans, oversee testing procedures, and approve results to determine when testing is complete. The independent test agent then leverages the service providers' test and actual operational data to assess program performance. In addition, CISA officials said that they continuously review actual NGN PS performance, and service providers undergo annual network service verification testing under the PTS program. CISA officials reported that NGN PS Phase 1 continues to meet four of the program's six key performance parameters (KPP). NGN PS Phase 1 plans to test its remaining two KPPs after Increment 2 and Increment 3 capabilities are deployed in PTS's operational environment. Then, DHS's Director, Office of Test and Evaluation will provide a letter of assessment evaluating the program's performance of the remaining two KPPs prior to NGN PS Phase 1 achieving FOC.

In January 2021, DHS approved the program's Test and Evaluation Master Plan update, which reflects the Increment 3 milestones. The program previously revised the plan in July 2020 to include a threat assessment and plan for operational test and evaluation of cyber resilience, among other things, following an operational assessment of Increment 1 in 2017.

The CISA Chief Information Officer approved the system definition review and the technical completion letter for NGN PS Phase 1 Increment 3 in February 2020. According to CISA officials, the systems definition review was needed to conduct government engineering reviews of Increment 3 projects for wired capability for voice over internet protocol.

CISA's NGN PS development provides new technology for CISA's operational PTS program. CISA officials stated that, as of April 2020, NGN PS Phase 1 supported the increased use of Government Emergency Telecommunications Service and Wireless Priority Service during the COVID-19 pandemic. According to CISA officials, the shift from an office to a telework environment during COVID-19 demonstrated the need for NGN PS to align with varied service providers and include capabilities, such as cable, to address services for residential users in home offices.

PROGRAM MANAGEMENT

CISA officials told us that they are working to mitigate potential cost and schedule effects to NGN PS Phase 1 execution by working with service providers as new technologies become available, such as updated wireless standards, to avoid delays. According to CISA officials, service providers delaying NGN PS Phase 1 features may lead to delayed milestones or additional costs. In addition, NGN PS Phase 1 may incur additional costs if the program has to release features that are out-of-cycle. CISA officials stated that currently no specific provider or NGN PS Phase 1 feature is at risk for increased costs.

As of September 2021, NGN PS Phase 1 reported a staffing gap that includes three critical staffing vacancies for two electronics engineers and an IT specialist. CISA officials stated that hiring processes are underway and the program is using contractor support to fill gaps when feasible.

TEST EVENTS

2017

March
Operational assessment – Increment 1

PROGRAM OFFICE COMMENTS

CISA officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

NEXT GENERATION NETWORK PRIORITY SERVICES (NGN PS) PHASE 2

CYBERSECURITY AND INFRASTRUCTURE SECURITY AGENCY (CISA)

CISA's NGN PS programs are intended to address an emerging capability gap and enhance the government's emergency telecommunications service. NGN PS Phase 2 will provide data and video priority services. CISA executes these programs through commercial telecommunications service providers, which addresses the government's requirements as providers modernize their networks.

Source: DHS.

KEY FINDINGS

- NGN PS Phase 2 achieved ADE 2A in July 2021 and completed key acquisition documents.
- CISA has identified actions to address risks related to cybersecurity and technical planning.
- NGN PS Phase 2 acknowledges risks working with new technologies and protocols.

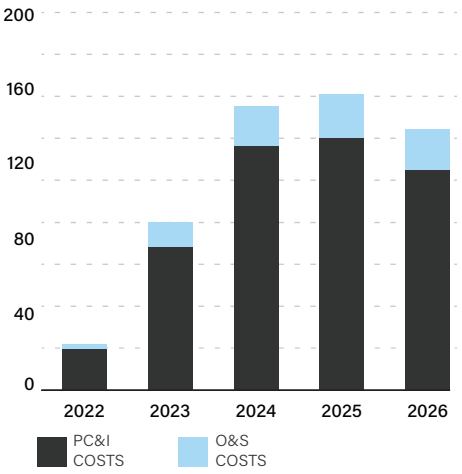
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Preliminary APB (07/2021)	756	0	756
Initial APB	not yet approved		
Current estimate (05/2021)	757	142	898

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

In July 2021, NGN PS Phase 2 achieved acquisition decision event (ADE) 2A. The program completed key acquisition documents, including the initial life-cycle cost estimate (LCCE) and preliminary acquisition program baseline (APB) in June 2021 and July 2021, respectively.

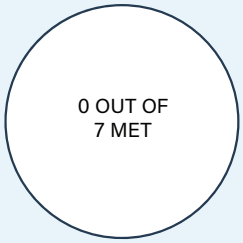
In June 2021, DHS's Acting Chief Financial Officer approved NGN PS Phase 2's initial LCCE and requested that the program update its LCCE by ADE 2B. NGN PS Phase 2 plans to achieve ADE 2B by December 2024. DHS's Cost Analysis Division recommended in their independent cost estimate that the program update its LCCE by ADE 2B to incorporate updated functional requirements and develop metrics to track progress, among other things.

According to the program's certification of funding memorandum, NGN PS Phase 2 has planned funding for fiscal year 2022 but may have funding shortfalls in future years. The program's certification of funding memo, signed by the CISA Chief Financial Officer, states that NGN PS Phase 2 has funding shortfalls exceeding 5 percent for fiscal year 2023 and beyond. According to the CISA Chief Financial Officer, NGN PS Phase 2 has a mitigation strategy to maintain the program's affordability, including adjusting the appropriate requirements to align with available funding. NGN PS Phase 2 requested $25 million of PC&I funding in the fiscal year 2022 President's budget, which included a $5 million adjustment from NGN PS Phase 1 to support NGN PS Phase 2.

NGN PS Phase 2's O&S costs are managed, funded, and reported through CISA's Priority Telecommunications Service program. Once operational, acquired capabilities are planned to be transferred to CISA's Priority Telecommunications Service program that manages O&S costs for sustainment.

SCHEDULE

KEY PERFORMANCE PARAMETERS



Note: CISA has not yet tested if the KPPs are met.

PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
IT	2	General Dynamics IT	Various

PERFORMANCE AND TESTING

In June 2021, officials from DHS's Science and Technology directorate and the Office of the Chief of Information Officer performed a technical assessment and identified two sources of technical risk to NGN PS Phase 2—insufficient cybersecurity planning and analysis, and incomplete technical planning. To manage these risks, these officials recommended that NGN PS Phase 2:

- Perform a cybersecurity analysis to identify security controls required to ensure an end-to-end cyber resilient network;
- Complete technical planning; and
- Develop a roles and responsibility model to support the complex nature of the program.

CISA officials have identified actions to address these recommendations.

PROGRAM MANAGEMENT

NGN PS Phase 2 is a complex program that requires coordination among internal and external stakeholders. In March 2021, DHS's Test and Evaluation division stated that the program should refine a preliminary schedule to show the relationship between service provider development activities, acquisition and program decisions, and test activities, among other things. This schedule would inform future timelines and would be updated as the program proceeds towards development. NGN PS Phase 2 plans to develop a Test and Evaluation Master Plan to support ADE 2B in coordination with DHS's Test and Evaluation division. It also plans to use proofs of concept to define the scale of development for data and video priority services, which would inform requirements and associated costs prior to achieving ADE 2B, planned for December 2024.

NGN PS Phase 2 officials stated that among the program's top risks are working with new technologies and protocols that require specialized expertise. Officials told us that they conduct market research, technical analysis, and assessments to gain insight into the resilience of commercial networks used by service providers. In addition, CISA officials said that, as of September 2021, they are working to fill three vacancies to address specialized engineering needs. According to these officials, contractor resources will be used to fill any gaps or delays in hiring. CISA officials noted that, while the current staffing gap affects NGN PS Phase 1 to a greater degree, critical staffing vacancies would affect NGN PS Phase 2 planning efforts starting in fiscal year 2022.

TEST EVENTS

In progress
Development of Test and Evaluation Master Plan

TBD
Proof of concept/pilot to inform data and video priority service features

PROGRAM OFFICE COMMENTS

CISA officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

HOMELAND ADVANCED RECOGNITION TECHNOLOGY (HART)

DHS OFFICE OF BIOMETRIC IDENTITY MANAGEMENT (OBIM)

HART will replace and modernize DHS's legacy biometric identification system—known as IDENT—that shares information on foreign nationals with U.S. government and foreign partners to facilitate legitimate travel, trade, and immigration. The current program is focused on Increment 1, the infrastructure necessary to operate HART. Future capabilities are intended to provide additional capabilities including a web portal and new tools for analysis and reporting.

HART HOMELAND ADVANCED RECOGNITION TECHNOLOGY™

Source: Office of the Under Secretary for Management.

KEY FINDINGS

HART remains in breach of cost and schedule goals.

In January 2021, DHS approved a breach remediation plan that the program expects to finish implementing by March 2022.

As part of breach remediation, the program plans to increase contractor oversight and monitoring.

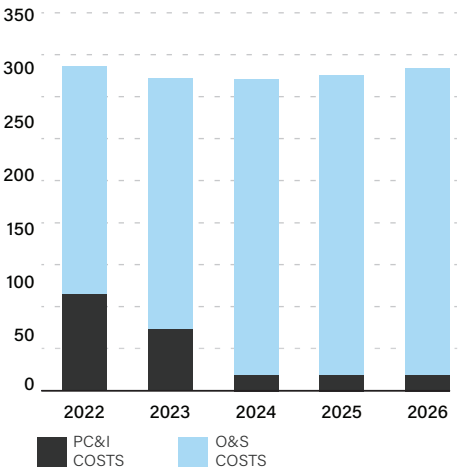
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (04/2016)	273	5,563	5,836
Current APB (05/2019)	214	3,709	3,923
Current estimate (06/2021)	455	5,703	6,158

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

HART remains in breach of cost and schedule goals due to ongoing risks associated with technical development, program requirements, and test efforts. HART breached its schedule baseline in 2017 and again in January 2020. As a result of these issues, the program was unable to begin transitioning from using IDENT to HART to meet its initial operational capability (IOC) threshold date of December 2020 or any of its subsequent APB milestones. The program's original IOC date was planned for December 2018 and full operational capability for September 2021, but updated goals for these milestones have yet to be finalized.

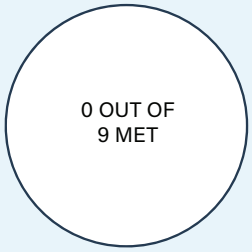
In May 2020, the program also incorporated a cost breach after updating its life-cycle cost estimate (LCCE), which exceeded its acquisition program baseline (APB) cost thresholds. Updates to the LCCE were made to reflect actual costs and preliminary timeframe adjustments for the schedule breach, among other things.

In January 2021, the DHS Deputy Under Secretary for Management approved a breach remediation plan for HART. This plan incorporates a number of actions, including increased oversight of the program by DHS management, improved monitoring of contractor progress by the program office, contract modifications, and rebaselining of the program. This rebaseline will include updates and revisions to a number of key program documents, including the operational requirements document (ORD), integrated master schedule, and LCCE. These updates are planned for completion by March 2022.

These delays represent a significant challenge because the legacy IDENT system risks failure and additional investments are necessary to keep the system operational. In 2011 DHS reported that IDENT, which became operational in 1994, had significant shortcomings, such as system capacity constraints, a lack of ability to handle multiple types of biometric data, and limitations on accuracy. Continued reliance on an overextended IDENT system represents an ongoing risk to this mission for DHS's ability to provide biometrically verified identification information to confirm an individual's identity for actions, such as issuing visa for entry into the U.S., among others.

SCHEDULE

KEY PERFORMANCE PARAMETERS



Note: KPPs have yet to be tested.

PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
IT	1	Peraton	Hybrid

PERFORMANCE AND TESTING

As part of the May 2019 rebaseline, the program revised its key performance parameters (KPP) to address evolving DHS biometric requirements. Additionally, in June 2021, DHS approved an updated test and evaluation master plan (TEMP) that aligns the HART testing schedule with planned changes to the rebaselined program schedule, among other things. In June 2021, HART officials said they were still in the process of revising program documents to reflect additional program changes, in support of the ongoing rebaseline process.

In August 2021, HART issued an updated risk management plan in response to recommendations and feedback from both DHS and our prior work related to consistent monitoring of existing technical risks and updating of those risks as the program changes. DHS's Science and Technology Directorate's (S&T) Office of Systems Engineering completed a technical assessment on HART in February 2016 and concluded that the program had a moderate overall level of technical risk. In October 2016, DHS leadership directed HART to work with S&T to conduct further analysis. In March 2019, S&T updated risks identified in the technical assessment and evaluated the program's scalability, availability, cybersecurity, and performance modeling risks for the HART system. S&T made several recommendations for the program to consider as it addresses identified risks. Our June 2021 report on HART recommended, among other things, that the program maintain accurate and current status updates for identified risks.

PROGRAM MANAGEMENT

In response to the January 2020 schedule breach, the program developed a January 2021 breach remediation plan to address the continued delays and cost increases HART faces. Among other things, this plan acknowledges that the contractor faced issues with the number and level of experience of personnel; technical challenges and rework due to an overly complex, high-risk design; and disagreements with program officials on interpretations of program requirements, all of which contributed to the breach. Additionally, the plan notes that changes to program requirements—in some cases driven by earlier schedule delays—have been a factor in the breaches. As a result of this assessment, a central component of this remediation plan is improved communication and coordination between DHS and the contractor, as well as increased monitoring of schedule performance by DHS.

TEST EVENTS

03/22
Increment 1 Production Readiness Review

07/22
Increment 1 Operational Readiness Review

PROGRAM OFFICE COMMENTS

HART officials stated that while the program remained in breach status during fiscal year 2021, work continued on technical development and test activities to address the causes of the breach. In September 2021, DHS awarded a modification to the HART contract that officials told us was to focus all effort on HART Increment 1, with the goal of achieving IOC by the end of fiscal year 2022. Officials reported that significant progress has been made, to include numerous developmental test activities and demonstration of performance as the program approaches operational test. HART officials also provide technical comments on a draft of this assessment, which we incorporated as appropriate.

GRANTS MANAGEMENT MODERNIZATION (GMM)
FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

GMM plans to deliver a new information technology system—FEMA Grants Outcomes (FEMA GO)—that aims to streamline, consolidate, and modernize FEMA's grant management process. FEMA GO will be used for submitting, approving, and managing grants and will replace the nine legacy systems currently used to manage over 40 active grant programs. The system will be used by agency headquarters and regional offices, grant recipients, local governments, and tribal and territorial partners.

FEMA GRANTS OUTCOMES

Source: Federal Emergency Management Agency.

KEY FINDINGS

- Program rebaselined in January 2021 and was removed from schedule and cost breach status.
- The current life-cycle cost estimate is more than double the previous LCCE.
- The program remains at risk of schedule and cost growth due to uncertainties with software development.

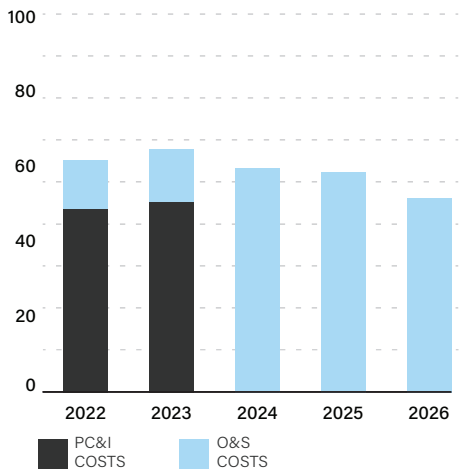
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (05/2017)	121	167	289
Current APB (01/2021)	276	438	714
Current estimate (12/2020)	240	381	621

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



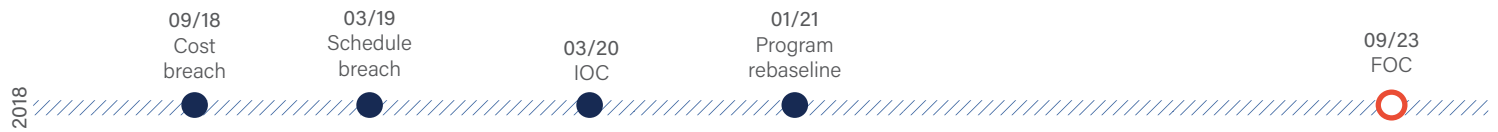
COST AND SCHEDULE

In January 2021, DHS approved a revised acquisition program baseline (APB) for GMM, removing it from cost and schedule breach status. The program declared a cost breach in September 2018 and a schedule breach in March 2019, which FEMA officials attributed to an underestimation of the program's scope and complexity. The program's revised life-cycle cost estimate (LCCE)—approved by DHS in December 2020—is $621 million, which is more than double the $261 million of the October 2019 LCCE. This cost growth was largely driven by an increase in operations and support (O&S) costs. According to FEMA officials, DHS has improved its understanding of how to estimate costs for Agile software development, and the revised LCCE is based on actual contract costs, which are expected to be more reliable than previous estimates.

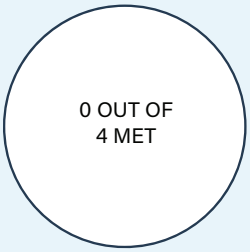
The program now plans to achieve FOC—when all grant programs are managed by FEMA GO—in September 2023, more than 3 years later than previously planned. In April 2019, we recommended GMM develop a more reliable schedule and have since closed that recommendation as implemented. We concluded that, while GMM did not address all scheduling leading practices, the program had largely improved the quality of the schedule since our last review.

Both DHS and program officials noted that GMM remains at risk of further schedule delays and cost increases due to uncertainties with software development, among other things. For example, unanticipated additional appropriations for grants provided in the CARES Act, while expediting the ability to conduct some work, resulted in the need for additional software development and O&S work to manage these grants and may affect the schedule. DHS recommended that GMM continue to refine the LCCE and develop a tracking tool to better estimate the schedule, among other things.

SCHEDULE



KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor and Prime Contract Type	Grant Programs Managed
IT	2	Karsun Solutions Firm Fixed-Price	Over 40

PERFORMANCE AND TESTING

In April 2020, the program updated its operational requirements document and the key performance parameters (KPP) to reflect a new deployment strategy. FEMA is incrementally developing and deploying its own software applications using an Agile methodology while relying on a service provider to deliver and manage the computing infrastructure in a public cloud environment. Under the Agile development methodology, test activities will be integrated into the development process and the test agent will develop regular reports that will inform acquisition decisions as increments of capability are deployed.

The program established four KPPs related to cybersecurity, reliability, service availability, and resilience to technical failures. The program is in the process of evaluating all KPPs except service availability, as that testing has been deferred until grant programs are integrated into FEMA GO. In May 2021, program officials stated that the software reliability KPP was not at an acceptable level, potentially affecting end users' experiences. However, in October 2021, officials stated that they have taken significant remediation steps, such as enhancing surveillance activities to detect performance issues. The program continues to conduct cybersecurity test events. Based on a March 2021 cyber tabletop exercise, the test agent found that the system was resilient to various cyber threats and made recommendations to improve those capabilities. In addition to the KPPs, the program drafted various business goals in the January 2021 APB to help determine if GMM has met mission needs, such as ease of use and business support, among others.

PROGRAM MANAGEMENT

In March 2021, FEMA officials reported that all critical staffing needs had been met and they overcame the approximately 33 percent staffing gap we reported on in January 2021. To address the staffing challenges, the program has hired more staff and detailed or transferred staff over to the program, which has minimized service disruptions to end users. Further, the program has reported in the past that staff have generally not been certified to the required levels for their positions. However, the program now has a plan to address staff certification levels for their designated positions; many will be certified by the end of their first year after onboarding to GMM.

In April 2019, GAO made eight recommendations to FEMA to address risks we identified with GMM. As of September 2021, two recommendations remain open. For additional information see GAO-19-164.

TEST EVENTS

2021

- **03/21** Cyber tabletop exercise
- **09/21** Second cooperative vulnerability and penetration assessment (CVPA)
- **03/22** Third CVPA
- **10/22** Adversarial assessment

PROGRAM OFFICE COMMENTS

FEMA officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

NATIONAL BIO AND AGRO-DEFENSE FACILITY (NBAF)

SCIENCE AND TECHNOLOGY DIRECTORATE (S&T)

DHS is constructing NBAF as a state-of-the-art laboratory in Manhattan, Kansas, to replace the Plum Island Animal Disease Center. The U.S. Department of Agriculture (USDA) will operate the facility to conduct research, develop vaccines, and provide enhanced capabilities to protect against foreign animal diseases that threaten the nation's food supply, economy, and public health.

Source: NBAF Design Partnership.

KEY FINDINGS

- Facility commissioning has been delayed 14 months due, in part, to COVID-19.
- The current baseline will cover costs associated with the extended schedule and additional scope.
- A DHS/USDA team is implementing a plan to gradually transition operational responsibilities to USDA.

APB THRESHOLDS VS. CURRENT ESTIMATE

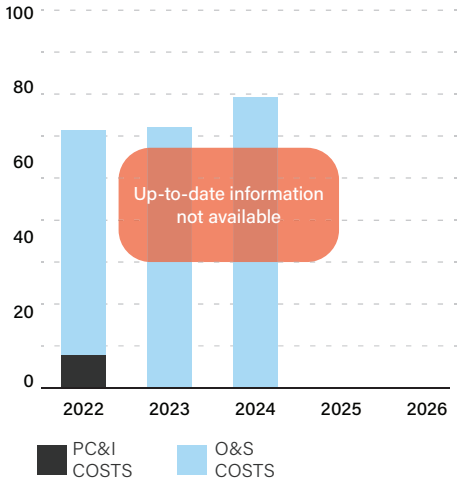
DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (07/2014)	1,298	8,341	9,639
Current APB (08/2019)	1,298	0	1,298
Current estimate (03/2017)	1,251	8,250	9,501

Note: NBAF has not updated its life-cycle cost estimate since 2017 because NBAF is not responsible for the O&S costs; instead USDA is responsible for those costs.

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



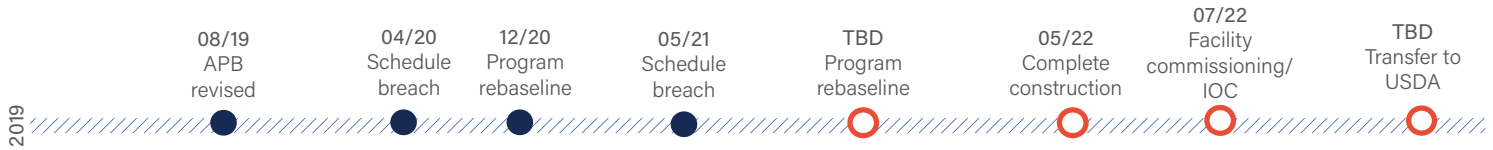
COST AND SCHEDULE

In August 2019, DHS approved an addendum to the NBAF acquisition program baseline (APB) stating that the program will transfer responsibility of operations to USDA once DHS completes construction and achieves initial operational capability (IOC), which is facility commissioning. Since then, the program breached its schedule baseline twice, and facility commissioning has been delayed 14 months from May 2021 to July 2022.

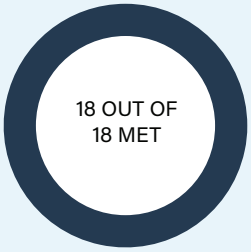
In December 2020, the program rebaselined and extended its planned IOC date by 7 months. According to a memorandum from the NBAF program, the December 2020 milestones were based on a preliminary schedule from the NBAF construction contractor. The schedule accounted for the completion of activities delayed by COVID-19 and negotiations for a $75 million contract modification. The modification added approximately $20 million for technology upgrades to be funded by DHS and $55 million for the procurement and installation of lab equipment funded by USDA through an interagency agreement. After the December 2020 rebaseline, the program breached its schedule baseline again due to a delay in awarding the contract modification and due to unforeseen technical issues, resulting in the delayed IOC date.

In August 2021, the DHS Under Secretary for Management issued an acquisition decision memorandum that acknowledged the breach and directed the program to revise its acquisition program baseline by September 30, 2021. The program estimates that costs associated with the additional work and extended schedule will not exceed its $1.3 billion APB cost threshold and officials stated in June 2021 they do not plan to update the cost estimate since the costs will not exceed the current estimate. The program has not updated its 2017 life-cycle cost estimate to account for the delays, additional costs, and removal of operating and sustainment costs that will be funded by USDA since USDA is responsible for operating NBAF.

SCHEDULE



KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
IT	1	McCarthy Mortenson	Firm Fixed-price

PERFORMANCE AND TESTING

DHS is implementing a commissioning process to determine if the NBAF facility can meet its sole key performance parameter—laboratory spaces meeting various biosafety standards. A third-party commissioning agent has been retained as a subcontractor to the prime construction management contractor. According to NBAF officials, the commissioning agent is responsible for monitoring and testing the facility's equipment and building systems during construction to ensure they are properly installed and functioning correctly. Program officials stated that a majority of the testing of the facility lock down system in the case of high winds was successfully completed in June 2020, but they are finishing some minor test activities for it. Officials stated a few other tests remain for system performance, but none of them rise to the level of risk that was associated with the high wind testing. According to program officials, USDA staff have participated in training and observed the testing process, which has enabled them to learn how to operate and troubleshoot various systems in the facility.

NBAF officials told us that, as of August 2021, construction efforts are nearly complete, but remaining activities include technology upgrades and procurement and installation of the USDA-funded equipment. Further, some equipment that sat idle for over a year due to COVID-19 will require retesting to ensure it is functioning properly.

In October 2021, officials stated that the commissioning of various components culminates with Integrated System Functional Performance Testing, which ensures that the facility and systems operate as intended. The commissioning agent will then prepare a final report to obtain the certification required for the eventual introduction of pathogens into the facility to support research activities. Officials stated that the approval of this report by DHS denotes achievement of the one key performance parameter for the program.

PROGRAM MANAGEMENT

In June 2019, DHS and USDA signed a memorandum of agreement that established plans to transfer NBAF operational responsibility from DHS to USDA. In an effort to mitigate schedule risk related to concurrent DHS-led commissioning functions and USDA-led operational stand-up efforts, DHS and USDA management staff established a joint transition team to enhance communication to identify and resolve any issues that arise. In September 2021, program officials said that the DHS and USDA team developed a phased plan to gradually transition operational responsibilities to USDA, which is being implemented.

TEST EVENTS

2020

09/20
Key high winds testing events

03/22
Integrated systems functional performance testing

PROGRAM OFFICE COMMENTS

NBAF officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

CHECKPOINT PROPERTY SCREENING SYSTEM (CPSS)

TRANSPORTATION SECURITY ADMINISTRATION (TSA)

CPSS is intended to replace aging Advanced Technology (AT) X-ray scanners used by TSA officers to detect threats in passengers' carry-on baggage, including explosives, weapons, and other prohibited items. CPSS will use Computed Tomography (CT) technology for screening, which is expected to meet a higher threat detection standard than AT and detect a wider range of threats. The program will also deploy capabilities designed to improve efficiencies and effectiveness at passenger security checkpoints, such as automated tracking of carry-on baggage and networking capabilities.

Source: Transportation Security Administration.

KEY FINDINGS

- Program achieved ADE 2B in December 2020 to authorize an incremental approach for procuring 2,263 units across four system configurations.
- An initial 300 AT/CT units have been deployed with an additional 471 Increment 1 units still forthcoming.
- Program met all of its KPPs and has developed a cyber resilience plan.

APB THRESHOLDS VS. CURRENT ESTIMATE

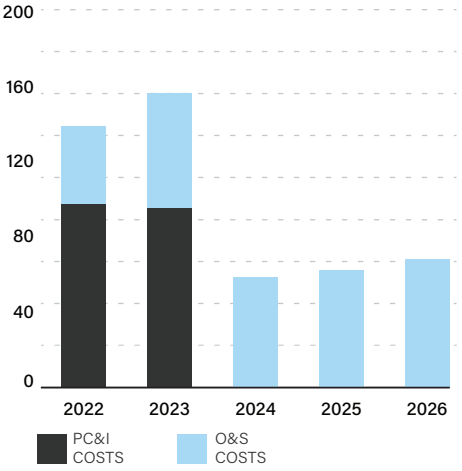
DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (11/2020)	477	932	1,409
Current APB (11/2020)	477	932	1,409
Current estimate (07/2021)	559	1,091	1,650

note: These costs represent only the values for Increment 1.

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



note: These costs represent only the values for Increment 1.

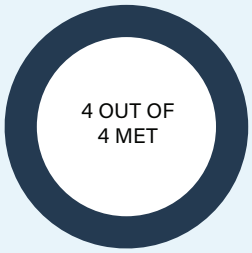
COST AND SCHEDULE

In December 2020, DHS held acquisition decision event (ADE) 2B for CPSS, authorizing an incremental approach to procuring 2,263 units across four system configurations—AT/CT, base, mid-size, and full-size. TSA officials said that the program's acquisition strategy was revised following the approval of ADE 2A in September 2019 because TSA determined that multiple configurations of the CPSS units will be needed to address spacing requirements at airports.

TSA completed deployment of 300 AT/CT systems in April 2021, which were procured under the AT program to address emerging threats while the CPSS program was being established. Under the ADE 2B APB, the program planned to procure a total of 490 units under Increment 1, which has since been increased to 771 units and is inclusive of the 300 AT/CT units. Future increments will procure additional units up to the planned full operational capability (FOC) total of 2,263 approved in the ADE 2B APB. Officials said deployment of configurations in future increments will be based on need and available funding, among other things. Increment 1 held its ADE 3 in August 2021 and, among other things, finalized planned FOC for the increment for September 2025. The program plans to conduct an additional ADE 3 for each increment to update cost and schedule based on planned quantities and system configurations.

SCHEDULE

KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
IT	1	Multiple	TBD

PERFORMANCE AND TESTING

When TSA initiated efforts to procure the AT/CT units for CPSS under the AT program, the AT program's operational requirements document was updated with broader requirements focused on capability needs. Further, TSA determined that the AT program's four key performance parameters (KPP) related to safety, availability, throughput, and detection capability were applicable to the AT/CT units. According to TSA officials, although the throughput KPP was not met by the AT/CT units, DHS and TSA leadership chose to accept these units with these short term throughput limitations in order to improve detection capability. They noted that these parameters were later changed to reflect safety, detection, interoperability, and cybersecurity, in part to reflect the incremental approach taken by the program. TSA officials told us that all four KPPs were met under the Increment 1 contract awarded for the mid-size configuration.

TSA shares information about the CPSS capabilities it needs with manufacturers through requests for proposal, requests for information, and broad agency announcements. The agency places approved systems from various vendors on a qualified products list—a list of technologies that have been tested and certified as meeting requirements by TSA and DHS—and manufacturers are then eligible for a contract award by TSA to purchase and deploy the technology. In response to emerging threats and to make existing systems more efficient, TSA develops, tests, and deploys advanced threat detection algorithms into its deployed systems. Beginning in April 2020, TSA has reviewed qualified products list applicants for the base, mid-size, and full-size configurations as part of ongoing qualifications testing. In some cases, applicants have been disapproved and required to revise their submissions and resubmit after 6 months in order to continue to compete for the award. In addition, in 2020, TSA developed a cyber resilience plan for each configuration to assess compliance with cybersecurity requirements.

PROGRAM MANAGEMENT

Under the incremental approach, CPSS plans to request ADE 3s for each increment until FOC is met. Specific cost, schedule, and unit procurements will be defined for each ADE 3, and the program's APB will be updated based on the available configuration(s) and funding. A request for proposal was released in November 2020 for the Increment 1 mid-size configuration, and program officials stated that a contract for this configuration was awarded in August 2021. Program officials also stated that request for proposals for the base and full-size configurations were released in April 2021 and that these contracts were planned for award in 2022.

TEST EVENTS

2018

09/18
AT/CT operational test and evaluation

05/21
Increment 1 qualification testing

06/22
Increment 1 follow-on operational test and evaluation

PROGRAM OFFICE COMMENTS

TSA officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

CREDENTIAL AUTHENTICATION TECHNOLOGY (CAT)

TRANSPORTATION SECURITY ADMINISTRATION (TSA)

CAT is used to verify and validate passenger identification and flight information prior to entering secure areas in airports. CAT reads data and security features embedded in identification documentation, verifies security features are correct, and displays verification results to the operator. CAT also verifies the passenger has the appropriate flight reservation to progress through security screening and enter the secure area, among other things.

Source: Idemia.

KEY FINDINGS

- CAT remains within its cost and schedule baseline despite COVID-19 disruptions and funding constraints.
- TSA expects to complete deployment of the initial 1,520 units in early fiscal year 2022.
- TSA plans to rebaseline CAT and expand the program from 1,520 to 3,585 units in fiscal year 2022.

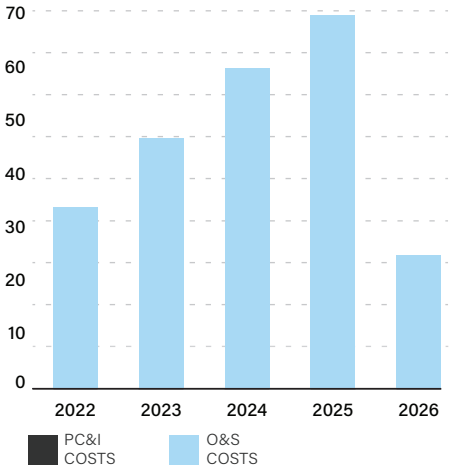
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (12/2018)	0	347	347
Current APB (12/2018)	0	347	347
Current estimate (06/2021)	61	281	341

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



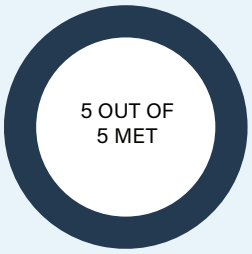
COST AND SCHEDULE

In February 2019, DHS granted the program acquisition decision event 3 and acknowledged the program's initial operational capability (IOC). This decision was based on 45 fielded units and allowed the program to initiate procurement and deployment of 1,520 CAT units. TSA conducted operational assessments on fielded units to accelerate its CAT deployment schedule in order to enhance passenger screening and increase overall checkpoint security effectiveness. Program officials stated they expect to achieve full operational capability for the current acquisition program baseline (APB) quantity of 1,520 units in December 2021. While this is a 3-month schedule slip from last year, full operational capability remains planned for 9 months earlier than the program's current APB threshold date. In fiscal year 2021, the program received additional funds, which officials said was being used to rapidly deploy up to 601 additional CAT systems. TSA plans to rebaseline the CAT program by June 2022 for further expansion to a new total quantity of 3,585 systems.

In February 2021, the program updated its life-cycle cost estimate (LCCE) to $230 million, which is within the program's APB cost thresholds. The program's overall operations and support costs increased by about $48 million since its LCCE update in May 2020. Officials stated that this increase was due, in part, to the expiration of warranties, which were replaced by maintenance contracts. TSA plans to update its LCCE in fiscal year 2022 to reflect the new APB quantity as part of the rebaselining process.

SCHEDULE

KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor and Prime Contract Type	Quantity
IT	2	Idemia Indefinite delivery/ indefinite quantity	Planned expansion from 1,520 to 3,585

PERFORMANCE AND TESTING

In May 2018, DHS approved the program's operational requirements document, in which the program refined the key performance parameters (KPP). Following operational testing and evaluation (OT&E) completed in September 2018, DHS's Director, Office of Test and Evaluation (DOT&E) evaluated the test results and determined that the CAT program met all five of its KPPs. DOT&E also found CAT was operationally effective, operationally suitable with limitations, but not operationally cyber resilient. DOT&E recommended that the program work with the vendor to improve the rate of ID authentication and conduct follow-on OT&E, among other things. In September 2019, TSA completed follow-on OT&E, which included a cyber-vulnerability assessment. The assessment reiterated the prior recommendation that the program should continue to work with the vendor to improve authentication rates as well as to address cyber resilience issues. In June 2021, TSA completed follow-on OT&E for the REAL ID enhancement of CAT. Officials told us the results of the FOT&E identified the CAT system as effective with limitations, suitable with limitations, and cyber resilient with limitations.

Due to COVID-19-related disruptions, DHS extended the date by which individuals must obtain a REAL ID license to May 2023. TSA officials stated they made use of this additional time to ensure that REAL ID capabilities for CAT have been fully developed and tested. TSA officials expect CAT to be TSA's primary identification verification method and will require updates to address changes to state IDs, especially as states adopt new minimum standards for ID issuance, among other requirements identified in the REAL ID Act of 2005. TSA expects to begin the deployment of the REAL ID software enhancement in November 2021 for all fielded CAT units, but the REAL ID verification capability will remain turned off until enforcement of the REAL ID Act.

PROGRAM MANAGEMENT

TSA officials discussed exploring ways to shift CAT to a self-service configuration as part of the program rebaseline planned for 2022. In spring 2020, the TSA Administrator noted that TSA was focusing on rapidly producing and deploying a touchless CAT configuration in response to concerns about COVID-19. At that time, CAT program officials identified funding concerns for implementation of these potential system upgrades. As of April 2021, CAT program officials noted that the decision to shift to a self-service configuration is part of an effort to reduce exposure of passengers and Transportation Security Officers to COVID-19 and reduce staffing costs. Officials noted that they expect funding for these upgrades to be included as part of the program rebaseline.

TSA is also researching potential CAT capability enhancements to meet emerging identity management needs. According to TSA officials, CAT is a critical component for TSA's efforts to enhance biometrics capabilities at TSA checkpoints for identity verification. To help achieve this enhancement, cameras will be integrated with CAT units to match facial images against the images on IDs. In March 2021, program officials told us the biometric technology needed for this effort is still being piloted by TSA's Requirements and Capabilities Analysis division and is not part of the CAT program at this time.

TEST EVENTS

PROGRAM OFFICE COMMENTS

TSA officials provide technical comments on a draft of this assessment, which we incorporated as appropriate.

270′ MEDIUM ENDURANCE CUTTER (MEC) SERVICE LIFE EXTENSION PROGRAM (SLEP)

U.S. COAST GUARD

The Coast Guard's 270′ MEC fleet is used for surveillance, general law enforcement, and other missions. All 13 cutters in the class have reached the end of their original 30-year design service life, and the designated replacement for the MEC is the Offshore Patrol Cutter (OPC), which is not expected to begin operational service until calendar year 2025. The 270′ MEC SLEP is intended to help close the operational capability gap until a sufficient number of OPCs are delivered.

Source: U.S. Coast Guard, Petty Officer 2nd Class Lisa Ferdinando.

KEY FINDINGS

The first cutter is expected to enter the SLEP process by September 2023 with planned completion in 2024.

Risk of 270′ MEC age-out mitigated by adjusting the selection order of the cutters in case of equipment failure.

Operational Assessment of SLEP equipment is expected to be completed by the second quarter of fiscal year 2022.

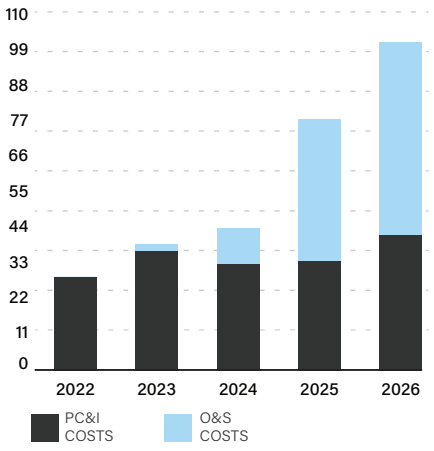
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (06/2019)	269	1,868	2,137
Current APB (06/2019)	269	1,868	2,137
Current estimate (06/2021)	245	1,601	1,845

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

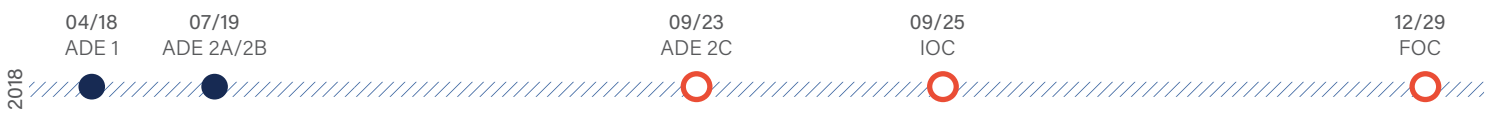
In April 2018, DHS approved the program's acquisition decision event (ADE) 1 and acknowledged the Coast Guard's need to extend the service life of a portion of the 270′ MEC fleet to bridge the operational gap while waiting for OPCs to begin operational service. The SLEP effort is intended to add up to 10 years of service life. DHS leadership subsequently approved the program's initial acquisition program baseline (APB) in June 2019 and approved a combined ADE 2A/2B in July 2019. The program's initial APB outlined the cost, schedule, and performance goals for the service life extension of six of the 13 270′ MECs to be delivered between 2024 and 2028. In approving ADE 2A/2B, DHS directed the Coast Guard to confirm the APB to include the number of cutters intended to undergo SLEP activities. In June 2021 the Coast Guard validated the 2019 APB without an update as it determined that the six cutters intended to undergo the SLEP work remain adequate to bridge the operational gap prior to delivery of the OPCs. According to Coast Guard officials, the program office established the order for the first three 270′ MEC SLEPs based on the material condition of the cutters and in coordination with Coast Guard operational commanders.

We previously reported that, while the Coast Guard has initiated the service life extension for at least six of the 270′ MECs, the program acknowledged there is a high risk that the 270′ MECs could experience system failures faster than they can be replaced or repaired. If necessary, the Coast Guard plans to mitigate this risk by adjusting the selection and order of cutters that will undergo the SLEP.

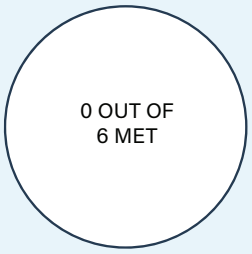
In December 2020, DHS approved a schedule adjustment for the 270′ MEC SLEP based on the effects of COVID-19. Specifically, DHS documentation shows that the Integration Readiness Review was deferred 6 months after delays awarding two long-lead item contracts. This event is now planned to be completed by December 2021.

The program plans to achieve ADE 2C by September 2023. At that time, the first cutter is expected to enter the SLEP process with planned availability to the fleet in 2024.

SCHEDULE



KEY PERFORMANCE PARAMETERS



Note: The Coast Guard has not yet tested if the KPPs are met.

PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Total Quantity
NON-IT	1	U.S. Coast Guard Yard	6 cutters

PERFORMANCE AND TESTING

The 270' MEC SLEP includes the acquisition of two major systems: the main diesel engines and the electrical system, which includes the ship-service and emergency generators. The SLEP will also include structural refurbishment to the stern pipe and bearing, as well as updating selected weapon systems. The SLEP will not introduce new capabilities and instead targets systems requiring replacement to address reliability, supportability, and obsolescence.

According to Coast Guard officials, the program plans to replace the main diesel engines on the first two cutters with new engines and install remanufactured engines in the remaining four cutters. The Coast Guard awarded a contract for long-lead materials for the engine remanufacture in December 2020. Coast Guard officials stated the engine remanufacture process takes about 1 year, and the first remanufactured engine is planned to be installed into the third cutter in fiscal year 2026. To mitigate risk related to replacing the electrical system on the cutters, DHS leadership authorized the program to use two electrical system prototypes. The first cutter to begin the electrical prototype process arrived at the Coast Guard Yard in July 2021 and is expected to complete this process by March 2022.

The program plans to demonstrate its six key performance parameters (KPP) through a series of test events. The program's KPPs are related to speed, endurance, range, boat and helicopter operations, and interoperability with systems from various partners. The test and evaluation master plan, approved in May 2019, calls for initial operational test and evaluation to begin in fiscal year 2025. So, these KPPs have not yet been assessed.

In addition, the program conducted a cybersecurity tabletop exercise in May 2021, which officials said had been delayed due to the COVID-19 pandemic and due to software updates. The Coast Guard plans to conduct an Operational Assessment in the second quarter of fiscal year 2022 that officials said is intended to assess the upgraded systems and subsystems, including the electrical system and engines.

PROGRAM MANAGEMENT

The Coast Guard plans to conduct the SLEP at the Coast Guard Yard in Baltimore, Maryland with primarily a government workforce. To address the uncertainty of the OPC delivery schedule, Coast Guard officials stated the SLEP contracts may provide for upgrades to up to all 13 270' MECs, if necessary. According to Coast Guard officials, they will not need to make a decision to include additional cutters in the MEC SLEP until fiscal year 2023. According to the program's June 2019 APB, the six MECs in the SLEP program have an average unit cost of $44 million. Coast Guard officials stated they do not believe that the current degraded condition of the MECs will necessitate conducting the SLEP activities on more than six cutters. They added that the decision to pursue more than six cutters would likely be a result of changes to the OPC program.

TEST EVENTS

2021

- **05/21** Cybersecurity tabletop
- **03/22** Operational assessment
- Electrical prototype #1 completion
- **12/22** Electrical prototype #2 completion
- **09/25** Initial operational testing

PROGRAM OFFICE COMMENTS

Coast Guard officials stated that the 270' MEC SLEP program activities are currently tracking in accordance with the APB. Given current progress, the program anticipates the first prototype cutter will be delivered on time. Coast Guard officials also provided technical comments on a draft of this assessment, which we incorporated as appropriate.

FAST RESPONSE CUTTER (FRC)
U.S. COAST GUARD

The Coast Guard uses the FRC to conduct search and rescue, migrant and drug interdiction, and other law enforcement missions. The FRC carries one cutter boat on board and is able to conduct operations in moderate sea conditions. The FRC replaces the Coast Guard's Island Class patrol boat and provides improved fuel capacity, surveillance, and communications interoperability with other DHS and Department of Defense assets.

Source: U.S. Coast Guard.

KEY FINDINGS

Program revised baseline to include six additional FRCs and anticipates achieving FOC by March 2027.

Program exercised a contract option to procure the remaining four FRCs.

Two major test deficiencies remain, but program expects to resolve them by October 2021.

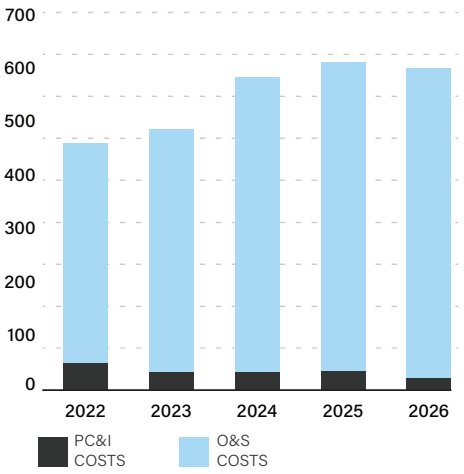
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (08/2009)	4,243	11,391	15,634
Current APB (07/2021)	3,926	15,183	19,109
Current estimate (07/2021)	3,779	13,202	16,981

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS

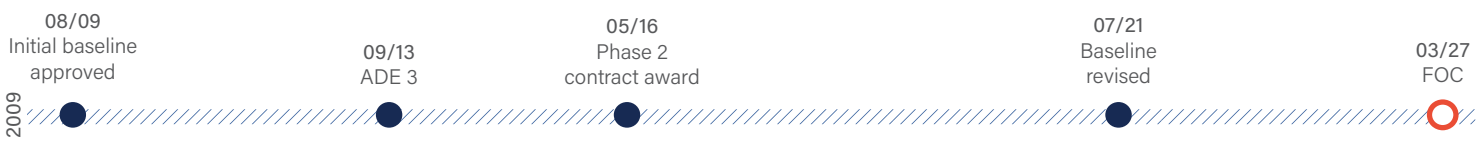


COST AND SCHEDULE

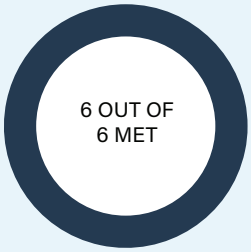
In July 2021, the Coast Guard revised its acquisition program baseline to reflect an increase of six FRCs—from 58 FRCs to a total planned acquisition of 64. The added FRCs will replace the six cutters currently operating in the Middle East. As of September 2021, 45 FRCs were delivered and the remaining 19 are under contract. The program received $240 million in funding in fiscal year 2021—allowing for the procurement of the final four FRCs in that fiscal year to finish the updated program of record at 64 cutters. In July 2021, the program updated its life-cycle cost estimate to reflect the cost of the additional six cutters and actual costs incurred by the program, resulting in a 4 percent total cost increase from its 2012 estimate.

Coast Guard officials stated that the contractor—Bollinger Shipyards LLC—is meeting the program's current delivery schedule. According to its most recent baseline, the program expects to achieve the full operational capability (FOC) threshold date—March 2027—that was set in 2012 for 58 cutters. According to Coast Guard officials, in September 2020 the current contract with Bollinger Shipyards LLC was modified to include the six additional FRCs planned to operate in the Middle East. In August 2021, the Coast Guard exercised a contract option for the last FRCs—61 through 64—in the current program of record.

SCHEDULE



KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
NON-IT	1	Bollinger Shipyards LLC	Fixed-Price with Economic Price Adjustment

PERFORMANCE AND TESTING

In February 2017, DHS's Director, Office of Test and Evaluation assessed the results from the program's July 2016 follow-on operational test and evaluation (OT&E) and determined that the program met its six key performance parameters and that the FRC was operationally effective and suitable. In June 2021, Coast Guard officials reported that they expect to resolve the remaining two major deficiencies from the program's initial OT&E—mast light reduction and the bridge alarm—by October 2021. Coast Guard officials told us that testing for the modifications made for the FRCs that will be operating in the Middle East was completed in post-delivery and required only minor changes to achieve planned functionality. For example, the officials said they had to adjust an awning to allow for full extension of the newly installed weapon system.

FRC underwent and passed Department of Defense cybersecurity audits of computer systems on defense networks in September 2019. Coast Guard officials stated the machinery control monitoring system functioned as expected, but, in order to meet current cybersecurity requirements, the operating system had to be changed. The Coast Guard is incorporating this change into production and is undertaking retrofits for operational cutters.

PROGRAM MANAGEMENT

The Coast Guard continues to work with the shipbuilder to address issues covered by the contract's warranty clauses. For example, in June 2021, Coast Guard officials told us that they discovered two latent defects in the last year. One is a small crack in the stern notch, and the other is a deformity related to the engines exhaust system. These are in addition to the latent defect in the cutter's hull that the Coast Guard reported in the fall of 2017 that could affect the FRC's structural fatigue life. To address cracks found in the interior steel structure of two FRCs, Coast Guard officials stated that the contractor developed corrective actions—ranging from adding bracket supports to removing and replacing large sections of steel. These defects are still being addressed during production and retrofitted on completed FRCs during regular maintenance periods. According to Coast Guard officials, these latent defects—including the structural repairs—should be completed by fiscal year 2024, with no cost or schedule effects on the program. As of June 2021, Coast Guard officials reported the FRC contract's warranty clauses have enabled the program to avoid $162 million in costs associated with addressing these defects. Separately, the Coast Guard continues to have trouble identifying funds needed for spare parts, including engines, propellers, and rudders. Coast Guard officials stated they have until fiscal year 2025 to secure funds.

Coast Guard officials stated that the first two cutter deliveries to homeports in the Middle East arrived on schedule in May 2021, despite COVID-19-related challenges. Officials stated they do not anticipate any issues with future deliveries to this location.

TEST EVENTS

2013

01/13
Initial operational test and evaluation

07/16
Follow-on operational test and evaluation

PROGRAM OFFICE COMMENTS

Coast Guard officials stated that the FRC program continues to oversee the production and delivery of this critical asset to the Coast Guard fleet. According to these officials, FRCs have proven incredibly effective in missions, including search and rescue, counter narcotics operations, and defense readiness missions. They noted that, despite production impacts from Hurricane Ida, FRC production and delivery estimates remain within contract delivery schedule requirements. Coast Guard officials also provided technical comments on a draft of this assessment, which we incorporated as appropriate.

H-65 CONVERSION/SUSTAINMENT PROGRAM (H-65)

U.S. COAST GUARD

The H-65 aircraft is a short-range helicopter that the Coast Guard uses to fulfill its missions, including search and rescue, ports and waterways security, marine safety, and defense readiness. The H-65 acquisition program is in the last two of six phases that will incrementally modernize the fleet. The program is currently focused on a service life extension program (SLEP) and upgrades to the automatic flight control system and avionics.

Source: U.S. Coast Guard.

KEY FINDINGS

- Twenty-nine of 98 aircraft have completed modernization activities and been delivered to the fleet.
- Program officials reported that the program is on track to meet its September 2024 FOC date despite COVID-19-related delays.
- Coast Guard plans to transition to an all-MH-60T fleet due to declining availability of the H-65.

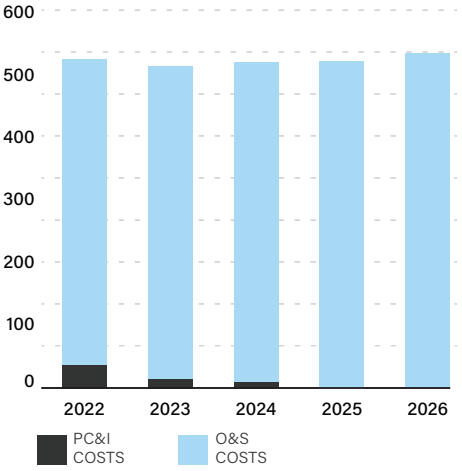
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (06/2019)	1,150	7,033	8,184
Current APB (06/2019)	1,070	12,590	13,660
Current estimate (06/2021)	1,037	11,829	12,866

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

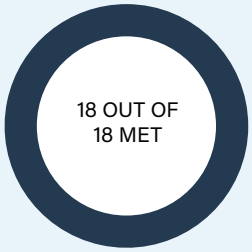
In November 2019, DHS approved the program's acquisition decision event (ADE) 3 and authorized the program to proceed with full-rate production of the SLEP and upgrades to the automatic flight control system and avionics. Coast Guard officials reported that 29 of 98 aircraft had been modernized as of September 2021. The program is on track to meet its cost and schedule goals.

In April 2021, the program updated its life-cycle cost estimate to inform the budget process, which is within the program's acquisition program baseline (APB) thresholds. In May 2021, Coast Guard officials told us that the program is on track to meet its September 2024 full operational capability (FOC) date despite experiencing schedule delays as a result of COVID-19. Specifically, Coast Guard officials reported that the program experienced a 37-day production shutdown in the spring of 2020, which resulted in one fewer aircraft completing the upgrades in fiscal year 2020.

DHS approved the program's current APB in March 2018 after the program breached its goals as a result of underestimating the technical effort necessary to meet requirements. At that time, the program restructured its schedule to synchronize the SLEP with upgrades to the automatic flight control system and avionics so that both activities will occur during the same scheduled maintenance period for each aircraft.

SCHEDULE

KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Lead System Integrator	Total Quantity
NON-IT	1	U.S. Coast Guard Aviation Logistics Center	98 aircraft

PERFORMANCE AND TESTING

The Coast Guard modernizes the aircraft at the Aviation Logistics Center in North Carolina, where engineers and technical authorities install, test, and evaluate the new equipment. We have previously reported that the completed aircraft are meeting all 18 of the program's key performance parameters (KPP).

In April 2019, the program's operational test agent completed an initial operational test on two aircraft with the upgraded automatic flight control system and avionics. DHS's Director, Office of Test and Evaluation subsequently assessed the test results and found that the aircraft did not meet two KPPs related to availability and supportability because the test facility maintenance cycle was not representative of an operational environment. Coast Guard officials stated they conducted the same analysis using data from fiscal year 2019 in a more representative operational environment, demonstrating that the program met its KPPs for availability and supportability.

The initial operational test event did not include an assessment of cybersecurity because it was not addressed in the H-65 operational requirements document or test and evaluation master plan. However, DHS recommended that the program conduct a cyber tabletop exercise, which was completed in May 2019. The Coast Guard created a working group to address potential threats and vulnerabilities identified in this exercise.

In May 2021, the program completed the post-implementation review, which is typically conducted following ADE 3, for its two current acquisition phases. This review verified that the program has met all DHS and Coast Guard cost, schedule, and performance requirements. According to Coast Guard officials, the program does not plan to conduct follow-on operational testing as all requirements have been satisfied.

PROGRAM MANAGEMENT

The H-65 fleet is projected to begin reaching the end of its service life in 2021 as airframes start reaching 20,000 flight hours. The SLEP is expected to extend the service life of each aircraft by 10,000 flight hours. Coast Guard officials previously reported that they planned to operate the H-65 aircraft until 2039 and to align the next helicopter acquisition effort with the Department of Defense's (DOD) future vertical lift acquisition plans. However, according to a January 2021 memorandum, the Coast Guard is developing a plan to transition to an all-MH-60T helicopter fleet due to the declining availability of the H-65 fleet. The memorandum notes the declining availability is at least partially due to Airbus stopping production of the civilian variant of the H-65 in 2018, which is causing a shortage of critical parts. Furthermore, Coast Guard officials stated that DOD shifted the schedule for its vertical lift recapitalization efforts further into the future. This shift caused the end of service life of the H-65 fleet to no longer align with DOD's efforts, creating a potential operational gap. The Coast Guard estimates that without taking action, it could lose over half of the planned H-65 flight hours by the mid-2030s.

TEST EVENTS

2019

- **04/19** Initial operational test
- **05/19** Cyber tabletop exercise
- **05/21** Post-implementation review

PROGRAM OFFICE COMMENTS

Coast Guard officials stated that the program continues to upgrade aircraft and deliver capability to the fleet despite the global pandemic. As of September 2021, five air stations have fully transitioned to the modernized version of the aircraft. Coast Guard officials also provided technical comments on a draft of this assessment, which we incorporated as appropriate.

LONG RANGE SURVEILLANCE AIRCRAFT (HC-130J)
U.S. COAST GUARD

The Coast Guard uses HC-130J aircraft to conduct search and rescue missions, transport cargo and personnel, support law enforcement, and execute other operations. The aircraft are quad-engine, propeller-driven platforms. As a modernized version of the HC-130H, the HC-130J has advanced engines, propellers, and equipment that provide enhanced speed, altitude, range, and surveillance capabilities. The Coast Guard plans to buy 22 HC-130J aircraft.

Source: U.S. Coast Guard.

KEY FINDINGS

Officials said the Coast Guard has received 13 missionized HC-130J aircraft.

Officials said the program is delivering aircraft to the fleet about 3 years ahead of schedule.

In April 2021, the Coast Guard reported that the Air Force awarded the production contract for the 18th HC-130J aircraft.

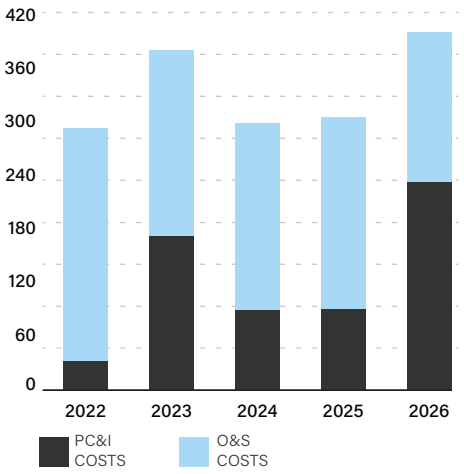
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (07/2012)	3,038	13,174	16,213
Current APB (03/2020)	2,644	15,637	18,280
Current estimate (06/2021)	2,511	14,111	16,623

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



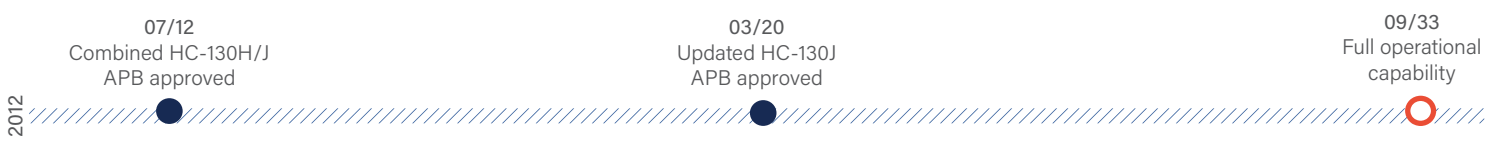
COST AND SCHEDULE

In March 2020, DHS approved the program's revised acquisition program baseline (APB) to reflect significant program changes. Most notably, the Coast Guard decided to pursue an all-HC-130J fleet, as it had canceled further HC-130H upgrades in August 2018.

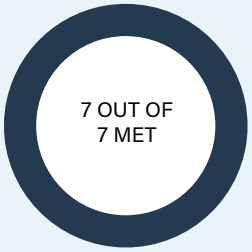
The program's total life-cycle cost threshold increased by approximately $2 billion in its revised APB. Specifically, the program's operations and support (O&S) cost threshold increased by nearly $2.5 billion, which is primarily attributed to extending the service life of HC-130J from 30 years to 37.5 years. In June 2021, the program updated its life-cycle cost estimate, which remains within its current APB cost thresholds.

Under the revised APB, the program's full operational capability (FOC) date—when all 22 aircraft are operational and assigned to Coast Guard air stations—slipped 6 years from its prior APB threshold to September 2033. Coast Guard officials stated that the delays are primarily because the Coast Guard has prioritized funding requests for ship programs, such as the Offshore Patrol Cutter. However, as of May 2021, officials reported 13 HC-130Js had been delivered, two were in the process of being upgraded (installation of Minotaur Mission System), and contracts were awarded for three more. The program aims to complete upgrades on one aircraft per year to help with production efficiencies. According to Coast Guard officials, the program has received additional funding in past years, which has allowed the program to accelerate its acquisition schedule. As of May 2021, these Coast Guard officials said they estimate that the program was delivering aircraft to the fleet approximately 3 years ahead of the schedule used to inform the March 2020 revised APB. Program officials stated they are working to update the APB and life-cycle cost estimate to reflect this accelerated schedule.

SCHEDULE



KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor and Prime Contract Type	Quantity
NON-IT	1	Lockheed Martin Fixed-Price Incentive(Firm)	22 aircraft

PERFORMANCE AND TESTING

The program updated its operational requirements document in March 2019 to inform the program's rebaseline and refined its key performance parameters (KPP). The program's KPP revisions were intended to identify overarching capabilities for long range surveillance aircraft that meet existing and emerging DHS and Coast Guard missions, rather than HC-130J-specific capabilities. Specifically, the program refined five of its seven KPPs to reflect the overarching capabilities. Coast Guard officials stated that the program is meeting all of its current KPPs.

The Coast Guard is replacing the mission system processor on its fixed-wing aircraft fleet—the HC-130J, HC-144, and C-27J—with a system used by the U.S. Navy and DHS's Customs and Border Protection. The new Minotaur Mission System is intended to enhance operator interface and sensor management and replace obsolete equipment. The December 2019 test results of the Minotaur Mission System showed that it met the requirements for long-range surveillance missions. As of May 2021, officials said 13 HC-130J aircraft have been equipped with the new mission system processor and delivered to the fleet. The Coast Guard plans to conduct operational testing of the Minotaur Mission System on the C-27J aircraft. However, the C-27J's schedule has slipped and the program has not yet revised its schedule.

In 2009, DHS's Director, Office of Test and Evaluation and the Coast Guard determined the HC-130J airframe did not need to be operationally tested because the U.S. Air Force conducted operational testing on the base C-130J airframe in 2005. Coast Guard officials stated that systems acceptance and delivery testing are conducted on each aircraft. The program is leveraging the lessons learned from the C-27J's cyber tabletop exercise, conducted in September 2019, as both aircraft operate the same mission system processor.

PROGRAM MANAGEMENT

In June 2021 the first HC-130J arrived at Coast Guard Air Station Barbers Point in Hawaii. This will be the third air station to transition from the H model to the J model, following air stations Kodiak, AK and Elizabeth City, NC. The program expects three additional aircraft to arrive in Barbers Point by the end of summer 2022.

In April 2021, the Coast Guard reported that the Air Force awarded the production contract for the 18th HC-130J aircraft. According to Coast Guard officials, the current production contract goes through fiscal year 2022 and has an average unit cost of $74 million for each aircraft. Officials stated that the Air Force indicated the current contract and pricing can be extended through the end of fiscal year 2024. Any contract actions after fiscal year 2024 would, according to Coast Guard officials, require the Air Force to award a new contract, and the Coast Guard does not know how that contract would be structured.

TEST EVENTS

2019

12/19
Test and evaluation of Minotaur Mission System

PROGRAM OFFICE COMMENTS

HC-130J officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

MEDIUM RANGE RECOVERY HELICOPTER (MH-60T) SUSTAINMENT PROGRAM
U.S. COAST GUARD

MH-60T is a multi-mission, medium range recovery helicopter that the Coast Guard uses to fulfill its missions including search and rescue; disaster recovery; ports, waterways, and coastal security; and drug interdiction. The program aims to extend the service life of the Coast Guard's MH-60T fleet through the mid-2030s by replacing existing aircraft with a mix of converted, retired Navy H-60 aircraft and through the procurement of new hulls from Sikorsky Aircraft Corporation.

Source: U.S. Coast Guard, Petty Officer 3rd Class Joshua Canup.

KEY FINDINGS

The Coast Guard reported a new contract with Sikorsky Aircraft Corporation in January 2021 for up to 45 new hulls.

New and converted Navy hulls will provide increased service life but not increased capability.

The Coast Guard has not planned operational testing of the new and converted aircraft.

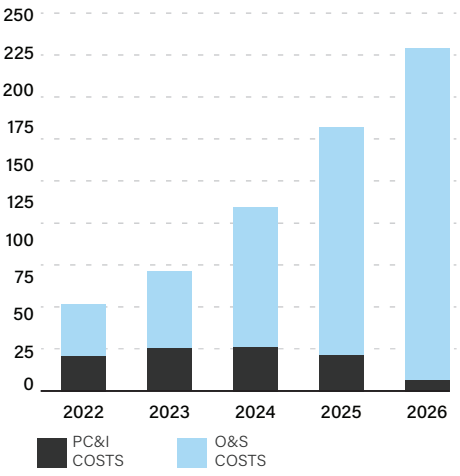
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Preliminary APB (07/2020)	585	9,924	10,509
Initial APB	not yet approved		
Current estimate (06/2021)	468	17,054	17,522

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



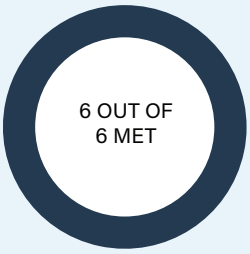
COST AND SCHEDULE

According to Coast Guard officials, the Coast Guard's original fleet of 45 MH-60T helicopters began reaching their service life limit of 20,000 flight hours in fiscal year 2021. Ninety percent of the fleet is expected to reach this limit by fiscal year 2028. All of the aircraft will be replaced by either converted Navy H-60 aircraft types or new hulls from the original equipment manufacturer as the existing aircraft reach their 20,000 flight hour limit. In August 2020, DHS leadership approved the program's acquisition decision event (ADE) 2A and authorized the program to convert up to 36 of the Navy's retired H-60 airframes into the Coast Guard's MH-60T configuration. To avoid an operational gap in the Coast Guard's MH-60T fleet and maintain the skilled labor on the MH-60T production line at the Coast Guard's Aviation Logistics Center, DHS leadership previously authorized the Coast Guard to convert 10 of the 36 aircraft prior to achieving ADE 2A. On average, the Navy aircraft have accumulated 8,000 flight hours—leaving approximately 12,000 flight hours per aircraft.

According to Coast Guard officials, receiving funding above the Coast Guard's requests enabled the program to purchase new hulls. Between fiscal years 2019 and 2021, the program received a total of $273 million to acquire new hulls. Officials said that new hulls offer greater service life than existing Navy hulls and allow the Coast Guard to operate the aircraft for an estimated 15 years longer than envisioned in the ADE 2A cost estimate. This increases the aircraft's end of service life from about fiscal year 2045 to 2059. The Coast Guard reported awarding an indefinite delivery/indefinite quantity contract to Sikorsky Aircraft Corporation for the purchase of up to 45 new hulls in January 2021. Sikorsky plans to deliver the first new hull in fiscal year 2023. As of August 2021, according to the Coast Guard, 31 new hulls have been purchased under this contract. The Coast Guard reported that, as a result of the increased service life from the new hulls, the program's total operation and support costs increased from $9.9 billion to $17.1 billion in the program's June 2021 cost estimate.

SCHEDULE

KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor/ Prime Contract Type	Total quantity
NON-IT	1	Sikorsky Aircraft Corporation / Indefinite Delivery/ Indefinite Quantity	45 aircraft

PERFORMANCE AND TESTING

Coast Guard officials reported that, in addition to the hulls, many of the MH-60T's components require replacement as part of the conversion efforts on Navy airframes. For example, several components, such as the main rotor blades and the main rotor hub as well as electrical wiring harnesses, need to be replaced. Completion of the MH-60T conversion efforts will not provide increased capability.

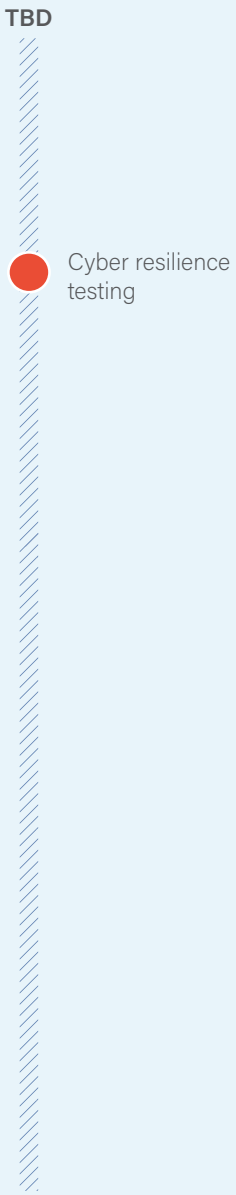
The Coast Guard has not planned operational testing of the Navy conversion hulls or the new hulls. According to Coast Guard officials, the ground checks and test flight procedures conducted after the sustainment efforts are completed will validate component installations and satisfy all testing requirements. DHS's Director, Office of Test and Evaluation agreed with this approach and program officials stated that the need for operational testing will be reevaluated if the program's scope evolves, and the need for cyber resiliency testing will be determined in the future. The Coast Guard reported that, based on operational data over 25 years, all six of the program's key performance parameters (KPP)—related to endurance, radius of action, cargo capacity, communications interoperability with government and nongovernment partners, navigational accuracy, and reliability—are being met by the MH-60T helicopter. According to Coast Guard officials, the sustainment efforts will have no effect on the aircraft's ability to meet its KPPs.

PROGRAM MANAGEMENT

The program plans to induct new aircraft, either Navy conversion hulls or new hulls, during the planned maintenance of the MH-60T aircraft at the Coast Guard's Aviation Logistics Center in North Carolina. According to Coast Guard officials, the aircraft hulls will be replaced when an existing MH-60T enters its planned maintenance period as each aircraft approaches the 20,000 flight hour limit.

The Coast Guard's current helicopter fleet is comprised of 48 MH-60T and 98 H-65 aircraft. Officials stated that three aircraft were added to the original fleet of 45 MH-60T aircraft in 2018 through Navy hull conversions. According to an April 2021 memo, the Coast Guard plans to transition to an all-MH-60T helicopter fleet in the future and dispose of all H-65 aircraft. The Coast Guard planned to operate both the MH-60T and H-65 aircraft until the 2030s and align its next helicopter acquisition effort with the Department of Defense's (DOD) future vertical lift acquisition plans. However, the H-65's declining availability and DOD's decision to delay its vertical lift recapitalization efforts caused the end of service life of the H-65 fleet to no longer align with DOD's efforts, creating a potential operational gap. Officials stated that the Coast Guard is still developing a transition plan to an all MH-60T fleet. According to the Coast Guard, if DHS approves, this plan could result in an increase in the size of the MH-60T fleet from the current fleet of 48 aircraft to a minimum of 127 aircraft. The Coast Guard has not stated if the additional aircraft would be new hulls or Navy hull conversions. According to the Coast Guard, an all-MH-60T fleet would provide greater range and endurance and would streamline the Coast Guard's training and logistics.

TEST EVENTS



PROGRAM OFFICE COMMENTS

Coast Guard officials stated that after the MH-60T program was initiated, the fleet expanded from 45 to 48 helicopters when the Coast Guard received funding to convert three Navy hulls into MH-60T aircraft. Those three aircraft were executed outside the scope of the program, which is limited to the original 45 MH-60T helicopters. Coast Guard officials also provided technical comments on a draft of this assessment, which we incorporated as appropriate.

MEDIUM RANGE SURVEILLANCE AIRCRAFT (MRS)

U.S. COAST GUARD

The Coast Guard's MRS program is comprised of 18 HC-144A and 14 C-27J aircraft. Both aircraft conduct all types of missions, including search and rescue and disaster response. All 32 aircraft are twin-engine, propeller driven platforms with interiors that can be reconfigured to accommodate cargo, personnel, or medical transports. Both aircraft compile data from the aircraft's multiple sensors and transmit information.

Source: U.S. Coast Guard.

KEY FINDINGS

- MRS remains in breach status as it works to update required acquisition documentation by September 2022.
- Coast Guard received 10 upgraded HC-144 aircraft.
- MRS deployed an interim sensor solution to the C-27J until the new mission system processor is deployed.

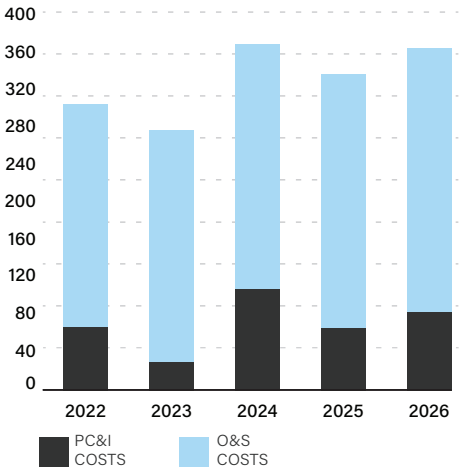
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (02/2009)	2,400	10,867	13,267
Current APB (08/2016)	2,507	12,680	15,187
Current estimate (06/2021)	2,240	14,914	17,154

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

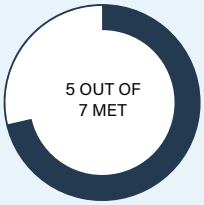
In May 2020, the program declared a schedule breach. The program does not expect to complete all of the necessary updates to its acquisition documents—such as the acquisition program baseline (APB) and the integrated logistics support plan—to be removed from breach status until the fourth quarter of fiscal year 2022. Coast Guard officials explained the breach was due to contracting delays associated with installing new mission systems on the first two prototype C-27Js and finalizing hardware design instructions for production, among other things.

The program's current APB was approved in August 2016 and includes acceptance of and modifications to the C-27J aircraft to meet the Coast Guard's mission needs. Coast Guard officials reported the contractor performing these activities experienced delays in deliverables from the original equipment manufacturer, including the delivery of the installation kits for the mission systems. As a result, the program did not meet its acquisition decision event (ADE) 2C for the C-27Js—authorizing low-rate initial production—by March 2021 or initial operational capability of the missionized C-27Js by September 2021. Coast Guard officials stated they anticipate the installation of the mission system processor on the two prototype C-27Js by June 2022 for the first aircraft and by March 2023 for the second aircraft. The APB also includes acceptance of the 18 HC-144A aircraft and upgrades to the aircraft's mission and flight management systems. In September 2021, officials said the program had completed upgrades on 10 of the 18 HC-144A aircraft.

In June 2021, the program updated its life-cycle cost estimate to inform the budget process, which exceeds its current APB cost thresholds by almost $2 billion. Officials attributed this cost growth to an increase in the anticipated service life of the C-27J aircraft. The program reduced the annual flight hours per aircraft to 750 from 1,000 hours, which will allow the aircraft to operate longer. The program expects the updated APB as part of its breach remediation plan to be completed by December 2021.

SCHEDULE

KEY PERFORMANCE PARAMETERS



Note: Key performance parameters reflect HC-144 testing only; C-27J has not yet been tested.

PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor & Prime Contract Type	Quantity
NON-IT	1	Multiple / Multiple	32 aircraft

PERFORMANCE AND TESTING

The Coast Guard is replacing the mission system processor on its fixed-wing aircraft—including the HC-144A and C-27J—with a system that is already used by the Coast Guard, U.S. Navy, and DHS's U.S. Customs and Border Protection. The new mission system processor is intended to enhance operator interface and sensor management and replace obsolete equipment. Neither the HC-144A nor the C-27J will be able to meet two of their key performance parameters (KPP) until the Coast Guard installs the new mission system processor on the aircraft. These two KPPs are related to the detection of targets and the aircraft's ability to communicate with other assets. According to Coast Guard officials, the MRS operational test agent, the Navy's Commander, Operational Test and Evaluation Force, plans to test the new mission system processor in October 2021 to determine if the two outstanding KPPs have been met. Testing of the new processor on the HC-144 is planned as part of this October 2021 testing and the Coast Guard plans to test the processor during the C-27J's operational test event as well.

In August 2012, DHS's Director, Office of Test and Evaluation determined that the aircraft was operationally effective with limitations and operationally suitable with limitations. Coast Guard officials previously stated that they are addressing these limitations with upgrades to the new mission system. The program plans to conduct developmental testing on the C-27J once the first aircraft is complete. In addition, the Coast Guard plans to assess the new mission system processor during operational testing of the C-27J. According to Coast Guard officials, the Coast Guard has deployed an interim sensor solution to the C-27J fleet to increase their operational utility until the mission system processor is fielded on a sufficient number of aircraft. The program's test and evaluation master plan was updated in August 2021. Developmental testing is scheduled to be completed by June 2023 and initial operational testing is scheduled to be completed by December 2024. According to the program's test and evaluation master plan, a cyber tabletop will be conducted during the C-27J's developmental test event. Additional cyber resiliency testing will be conducted during operational testing.

PROGRAM MANAGEMENT

In November 2016, DHS approved the acquisition of four missionized C-27J aircraft and a low-rate production quantity of four additional aircraft following ADE 2C. However, Coast Guard officials said they expect a production gap on the C-27J line before low-rate production due to the time needed to complete contract actions following ADE 2C. The program is seeking $20 million in fiscal year 2022 funds to close this production gap. Due to the delay reaching ADE 2C, the program would need pre-milestone authorization to install the mission system processor on more than four aircraft.

TEST EVENTS

2012

07/12 HC-144A operational testing

06/23 HC-27J developmen tal testing

12/24 HC-27J initial operational testing

PROGRAM OFFICE COMMENTS

Coast Guard officials stated that since the data cutoff for this report of September 30, 2021, the 11th HC-144 upgrade with new mission processor has been delivered. In addition, operational testing of the mission processor was conducted on the HC-144. Coast Guard officials also provided technical comments, which we incorporated as appropriate.

NATIONAL SECURITY CUTTER (NSC)
U.S. COAST GUARD

The Coast Guard uses the NSC to conduct search and rescue, migrant and drug interdiction, environmental protection, and other missions. The NSC replaces and provides improved capabilities over the Coast Guard's High Endurance Cutters. The NSC carries helicopters, cutter boats, and uncrewed aerial vehicles; provides an extended on-scene presence at forward-deployed locations; and operates worldwide.

Source: U.S. Coast Guard.

KEY FINDINGS

- Program is still working to close remaining non-cyber deficiencies.
- Delays in securing Navy weapon systems are expected to affect NSC 9 but not 10 and 11.
- COVID-19 effects on the shipyard is delaying delivery of NSC 11 by roughly 10 months.

APB THRESHOLDS VS. CURRENT ESTIMATE

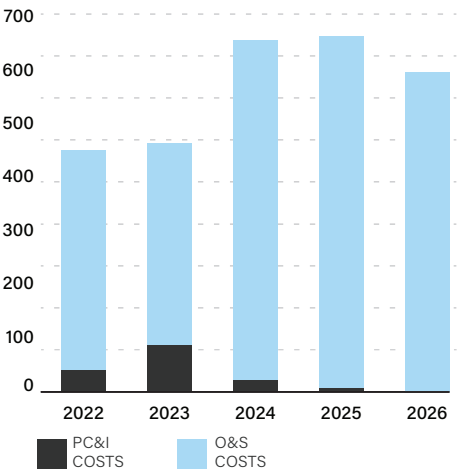
DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (12/2008)	4,749	19,528	24,277
Current APB (11/2017)	6,135	16,410	22,545
Current estimate (09/2021)	7,373	20,395	27,768

Note: Baselines and estimate are based on differing numbers of cutters.

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

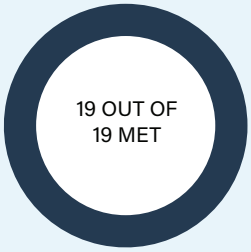
The Coast Guard originally planned to acquire eight NSCs; however, Congress has since appropriated funds for the production of three additional NSCs. In 2017, the Coast Guard updated its acquisition documentation—including the acquisition program baseline (APB) and life-cycle cost estimate—to account for the ninth NSC, and Coast Guard officials said the program is in the process of doing so again to reflect NSCs 10 and 11. DHS approved the updated life-cycle cost estimate in September 2021, but program officials stated that approval of the updated APB is still in process. The program's current APB cost thresholds already reflect cost growth that occurred earlier in the program when it implemented several design changes to enhance capabilities and address equipment issues. The program anticipates an affordability gap of $105 million between fiscal years 2023 and 2025. According to NSC program documentation, these funds are needed to cover non-shipbuilder costs, such as program and post-delivery activities for NSCs 10 and 11.

As of September 2021, nine NSCs have been delivered, with the 10th expected in March 2023. Delivery of the 11th NSC was originally planned for January 2024, but program officials told us this has changed to November 2024 due to COVID-19 effects on the supply chain and work force. Coast Guard officials reported that the program's full operational capability (FOC) date is expected to be revised to 2026 to account for the additional NSCs and post-delivery activities, such as training and system installations. According to program officials, the revised FOC date is when the last cutter is planned to be designated as ready for operations, approximately one year after delivery.

In fiscal year 2020, congressional conferees noted $100 million was available for long-lead time materials for a 12th NSC should the Coast Guard determine the additional cutter is necessary. However, the Coast Guard proposed rescinding a portion of this funding in its fiscal year 2021 and 2022 congressional budget justifications as the Coast Guard would like to focus investments on the Polar Security Cutter and Offshore Patrol Cutter programs.

SCHEDULE

KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
NON-IT	1	Huntington Ingalls Industries	Fixed-Price Incentive (Firm Target)

PERFORMANCE AND TESTING

Coast Guard officials reported that the program demonstrated all of its 19 key performance parameters (KPP)—covering requirements for areas such as sprint speed, aviation, and interoperability—either through operations or during follow-on operational test and evaluation (OT&E). DHS's Director, Office of Test and Evaluation (DOT&E) determined the NSC was operationally effective but suitable with limitations because of issues related to availability and the reliability of certain equipment. DOT&E recommended that the program address the test authority's findings and periodically assess cybersecurity. In June 2021, Coast Guard officials said they have identified technical solutions for the outstanding non-cyber test deficiencies—such as better shock absorption when firing the cutter's 57mm gun—and are working to close them.

In November 2019, the program's KPP related to uncrewed aerial surveillance aircraft was demonstrated using a prototype uncrewed aircraft on an NSC. The results—finalized in March 2020—identified six major deficiencies, including users having to manually enter search patterns into the control station rather than this being automated. DOT&E finalized its cyber follow-on test and evaluation report for the uncrewed aerial surveillance aircraft in July 2021 and identified three major cyber related deficiencies. Additional detail on DOT&E's assessment of cyber resiliency is classified, but the report notes that these deficiencies do not pose a risk to completing the mission or personnel safety.

The NSCs have faced ongoing issues with their propulsion systems, which we reported on in January 2016. These issues included high engine temperatures that could potentially hinder the cutters' ability to operate in warm water areas. The Coast Guard is implementing corrective measures for eight of the nine issues. According to Coast Guard officials, they will determine the need to implement the last corrective measure—a raw water flow analysis and system modifications—following completion of the other measures on NSC 9 and assessment of those results. They stated that these measures are still being tested.

PROGRAM MANAGEMENT

According to program officials, the Coast Guard relies on the Navy to request funding for and provide certain weapon systems on the NSC, such as a radar-guided gun used to protect against anti-ship cruise missiles. Coast Guard officials previously told GAO that some of these Navy systems may be unavailable to support the production of NSCs 9 through 11, since these additional cutters were unplanned and the Navy did not originally include funding for some of these systems in its budget requests. As a result of this delay in Navy funding, NSC 9 will have its radar-guided gun installed in a special post-delivery maintenance period instead of during construction and program officials expect a 7-month delay before the cutter is fully mission capable. As of June 2021, program officials stated these systems will be installed on NSCs 10 and 11 during construction and no delays are expected.

TEST EVENTS

2014

05/14
Initial operational test and evaluation

11/18
Follow-on operational test and evaluation

PROGRAM OFFICE COMMENTS

According to Coast Guard officials, the NSC Program remains focused on delivering the 10th and 11th NSCs and performing upgrades to previous NSCs after delivery to make them fully mission capable. They noted that continued budget support through 2025 will be needed to ensure the NSCs are made fully capable as planned. Coast Guard officials also provided technical comments on a draft of this assessment, which we incorporated as appropriate.

OFFSHORE PATROL CUTTER (OPC)
U.S. COAST GUARD

The Coast Guard plans to use the OPC to conduct multi-mission operations including homeland security, law enforcement, and search and rescue operations. The OPC is designed for long-distance transit, extended on-scene presence, and operations with deployable aircraft and small boats. It is intended to replace the Coast Guard's aging Medium Endurance Cutters and complement the operational capabilities provided by the Fast Response Cutters and National Security Cutters.

Source: ©2016 Eastern Shipbuilding Group, Panama City, FL.

KEY FINDINGS

- Program plans to competitively award a contract for up to 11 OPCs in March 2022.
- Program began construction of third OPC despite continued design risks.
- Program made progress in improving its risk management practices and testing plan.

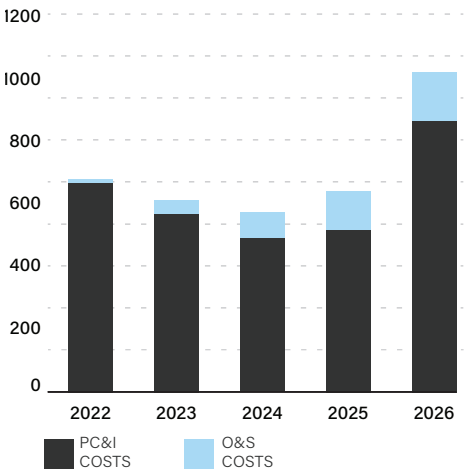
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (04/2012)	12,101	41,895	53,996
Preliminary APB (03/2020)	14,576	39,131	53,767
Current estimate (06/2021)	12,749	43,239	55,988

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

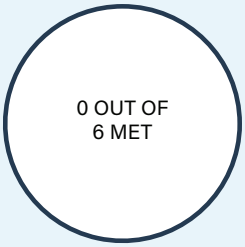
In 2018, Hurricane Michael caused extensive damage to the facilities of the program's shipbuilder, Eastern Shipbuilding Group (ESG). After determining that it could no longer meet contract terms, ESG requested schedule and cost relief in 2019 for OPCs 1 through 9. In 2019, DHS granted extraordinary contractual relief, authorizing cost relief to ESG for the first four OPCs (stage 1) and directing the program to recompete the requirement for OPCs 5 through 25 (stage 2). The Coast Guard also delayed delivery of the first four OPCs in response to ESG's request for schedule relief. In January 2021, the Coast Guard issued a request for proposals to competitively award a contract for up to 11 OPCs as part of stage 2 of the new acquisition strategy, with plans to award the contract by March 2022.

DHS approved a revised acquisition program baseline (APB) in March 2020 that established cost and schedule goals for stage 1 of the program and preliminary goals for stage 2. The program plans to finalize the stage 2 APB by June 2022. In October 2020, we found that the program's life-cycle cost estimate lacked critical analyses. In 2021, the program updated its preliminary cost estimate for all 25 OPCs. The total procurement cost for the 25 OPCs in the preliminary estimate is $12.7 billion—about the same as the 2020 estimate and a 24 percent increase from the program's previous estimate of $10.3 billion. The program does not plan to finalize its cost goal for the entire program until June 2022, after the stage 2 contract is awarded.

In October 2020, we also found that the Coast Guard had not revised its program schedule to reflect deficiencies with ESG's schedule. According to Coast Guard officials, ESG has improved its scheduling practices, and the program continues to closely monitor schedule risk, production progress, and timelines.
Since initial APB approval in 2012, the program's initial operational capability (IOC) date has slipped by approximately 2 years and 9 months. However, the program's full operational capability (FOC) date will not be revised until the program develops its stage 2 APB. The program's acquisition decision event (ADE) 3 and FOC date will remain preliminary until a contract award is made for stage 2. Given IOC delays, the Coast Guard initiated a program in 2019 to extend the service life of six 270' Medium Endurance Cutters by up to 10 years. The effort has a life-cycle cost estimate of $1.8 billion.

SCHEDULE

KEY PERFORMANCE PARAMETERS



Note: The Coast Guard has not yet tested if the KPPs are met.

PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor (OPCs 1 - 4)	Prime Contract Type (OPCs 1-4)
NON-IT	1	Eastern Shipbuilding Group	Fixed-Price Incentive (Firm Target)

PERFORMANCE AND TESTING

In October 2020, we found that the program faced risks in design and testing, schedule, and cost. For example, the Coast Guard began construction of the first two OPCs without completing the functional design and maturing its single critical technology, contrary to leading shipbuilding practices identified by GAO, which emphasize design stability prior to construction to reduce cost and schedule risks. The design risks continued to OPC 3. When the Coast Guard approved construction of OPC 3 in April 2021, the functional design was nearly complete, and ESG had not yet demonstrated a prototype of its critical technology—a small crane used to launch and recover cutter boats from the side of the OPC—in an operational environment. Coast Guard officials stated that they planned to mitigate these risks by conducting additional land-based testing and feasibility studies.

Despite these risks, the program made improvements in two key areas related to risk management and its testing plans. In October 2020, we found that the program's lack of a comprehensive risk management process limited the program's ability to effectively manage cost and schedule risks. In response to our recommendation, the Coast Guard began holding risk management meetings on a regular basis and updated its risk management plan to more comprehensively capture risks and the program's planned risk mitigation strategies.

In October 2020, we also found the program's testing schedule and risks changed with the March 2020 rebaseline, but the program did not revise its testing plan in support of ADE 2C, which authorized the award of OPC 2. For example, certain test results will not be completed in time to inform construction of any of the stage 1 OPCs. In response to our recommendation, the program updated its testing plan in April 2021. The updated plan better aligns with the revised acquisition strategy and incorporates the cost, schedule, and operational risks into the program's testing strategy.

PROGRAM MANAGEMENT

The program reported that as of March 2021, ESG had completed nearly 40 percent of construction for OPC 1 and projected delivery by August 2022. ESG had completed about 12 percent of construction for OPC 2 and projected delivery by October 2023. In May 2021, the Coast Guard exercised a contract option with ESG for construction of OPC 3 and some materials for OPC 4. Coast Guard officials stated, however, that as of June 2021, ESG had not yet started construction because of supply chain challenges that resulted from the COVID-19 pandemic, including late deliveries of steel plates and copper nickel pipes. According to Coast Guard officials, the program's schedule has not been significantly affected by COVID-19, in part, because ESG made adjustments to its workforce to complete work as planned.

In October 2020, GAO made eight recommendations to DHS and the Coast Guard to address risks identified with the OPC program. As of September 2021, five of the eight recommendations remain open. For additional information, see GAO-21-9.

TEST EVENTS

2025

09/25
Initial operational testing

12/28
Follow-on test and evaluation

PROGRAM OFFICE COMMENTS

Coast Guard officials stated the assessment recognized the challenges the program faced due to Hurricane Michael and acknowledged the Coast Guard's efforts to mitigate cost and schedule risks. Officials stated the program continues to institute lessons learned on the "first in class" ship to improve production efficiency. Officials noted the delivery dates of the first two OPCs will change after finalization of an October 2021 engineering change to incorporate combat systems into production, which is intended to provide a more capable OPC at delivery and avoid re-work during post-delivery activities.

POLAR SECURITY CUTTER (PSC)
U.S. COAST GUARD

The PSC program—formerly designated as the Heavy Polar Icebreaker—is intended to assist the Coast Guard in maintaining access to Arctic and Antarctic polar regions. The Coast Guard requires its icebreaking fleet to conduct multiple missions, including defense readiness; marine environmental protection; ports, waterway, and coastal security; and search and rescue. The Coast Guard plans to acquire three PSCs to recapitalize its heavy polar icebreaker fleet, which currently consists of one operational cutter.

Source: Halter Marine, Inc.

KEY FINDINGS

- Program's revised goals reflect a 2-year delay and a 35 percent cost increase.
- Ship design changes and COVID-19 contributed to schedule delays.
- Program's design maturity remains a significant risk to program execution.

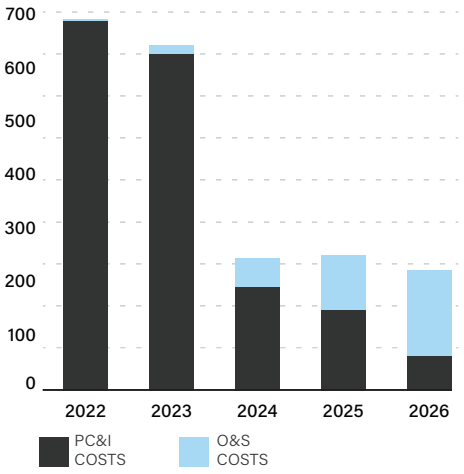
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (01/2018)	3,207	6,594	9,827
Current APB (05/2021)	3,121	10,151	13,272
Current estimate (01/2021)	3,020	8,700	11,751

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



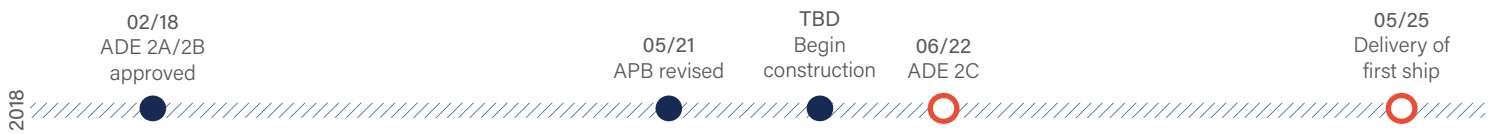
COST AND SCHEDULE

In April 2019, the program awarded a $746 million contract to VT Halter Marine, Inc. (currently Halter Marine, Inc.) for the design and construction of the first PSC. After 2 years of design, in May 2021, the program revised its acquisition program baseline (APB), which reflected a delayed schedule and higher costs than the previously approved January 2018 APB. In 2018, the program's threshold date for ADE 2C—which corresponds to the construction start of the first cutter—was no later than June 2021, with delivery by March 2024. However, the program's threshold date for ADE 2C is currently no later than March 2023, with delivery by June 2026—a delay of over 2 years. According to program officials, the main factors that delayed the schedule goals included design changes and shipbuilder challenges. Specifically, they stated that the shipbuilder's design is larger and more complex than the notional design used to inform the initial APB, which presented challenges such as scaling up production facilities and the workforce. According to Coast Guard officials, the design process was further slowed due to shipbuilder delays in awarding subcontracts, COVID-19 travel restrictions, and an initial lack of virtual coordination tools, which was an obstacle to collaborating with international design partners. Coast Guard officials stated that the program currently plans to start construction of the first PSC by June 2022 with a planned contract delivery date of May 2025. The delivery date reflects new scope requirements in the design prior to the start of construction.

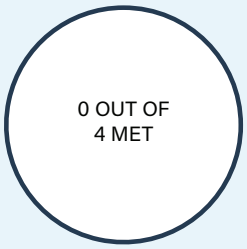
From 2018 to 2021, the program increased its cost goal by about 35 percent, from $9.8 billion to $13.3 billion. Most of the cost increase was driven by increased operations and maintenance costs, resulting from the increased ship size and use of additional historical data to reevaluate projected annual maintenance costs. The program's additional analysis of historical maintenance costs in its January 2021 cost estimate addressed, in part, a recommendation GAO made in 2018 to update the cost estimate in accordance with leading cost estimation practices.

From 2013 through 2021, the program reported receiving $1.75 billion in funding—$1.45 billion in Coast Guard appropriations and $300 million in Navy appropriations. Coast Guard officials stated that the first ship is fully funded, but any funding gaps in the future may result in delays to delivery of the two follow-on cutters.

SCHEDULE



KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
NON-IT	1	Halter Marine Inc.	Fixed-Price Incentive (Firm-Target) with Economic Price Adjustment

PERFORMANCE AND TESTING

In June 2019, DHS's Science and Technology Directorate completed a technology readiness assessment of the program and determined that the PSC had three critical technologies that were mature or approaching maturity: specialized propulsors that generate thrust, the integrated electric propulsion system, and the hull form, which affects the PSC's ability to break ice. For the hull form—the only critical technology designated as not yet mature—the Coast Guard completed ice model and seakeeping testing to reduce risks. The results of the model testing identified that the hull form did not achieve a mature state and did not meet the requirement for breaking out of a channel. According to the program, a virtual early operational assessment was completed in November 2020. The assessment was delayed by 5 months to gather additional data, and the assessment's results will not be finalized until February 2022.

As of April 2021, design maturity continues to be one of the top risks identified by the program, consistent with findings from the program's April 2020 preliminary design review. The program plans to conduct a critical design review by December 2022 to further evaluate design maturity. In July 2021, program officials said the shipbuilder is still behind in its design schedule, completing nearly 30 percent of the design. To help reduce schedule risk and train the shipbuilder's workforce, the program is evaluating whether to start constructing certain parts of the ship deemed to be low-risk prior to completing the ship's design, contrary to GAO's shipbuilding leading practices. The program plans to establish criteria for entry into this early production phase by April 2022. Coast Guard officials stated that the parts constructed for this early production phase will be fully designed before construction and they will not change as the ship's design is finalized.

The program plans to demonstrate its four key performance parameters (KPP) through a series of test events. The program's KPPs are related to the ship's ability to independently break through ice, the ship's operating duration, and communications. In August 2020, DHS's Director, Office of Test and Evaluation approved the program's updated test and evaluation master plan. The program plans to complete initial operational testing by March 2026, about 10 months after the scheduled delivery of the first PSC.

PROGRAM MANAGEMENT

The Coast Guard established an integrated program office and ship design team with the Navy. According to Coast Guard officials, in 2019, the integrated team established a project residence office at the shipbuilder's facility in Pascagoula, Mississippi, to provide oversight of shipbuilding efforts. Coast Guard officials told GAO that the shipbuilder is experiencing challenges recruiting subcontractors for ship construction. In April 2021, the program identified maintaining the shipbuilder's staffing levels as a top program risk, noting competition from other shipyards. The program plans to use the early production phase to help train and retain staff.

In September 2018, GAO made six recommendations to DHS, the Coast Guard, and the U.S. Navy to address risks identified with the PSC program. As of September 2021, two of the six recommendations remain open. For additional information, see GAO-18-600.

TEST EVENTS

2020

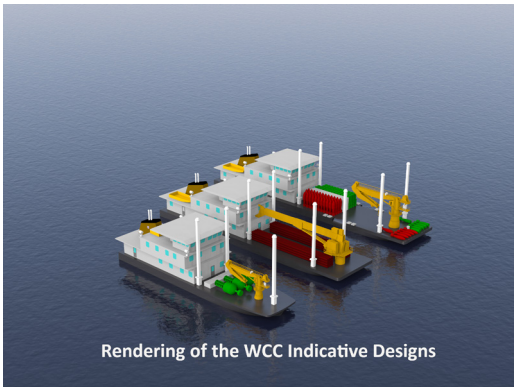
- **11/20** Early operational assessment
- **03/26** Initial operational test and evaluation

PROGRAM OFFICE COMMENTS

Coast Guard officials stated that the PSC represents a top acquisition priority for the Coast Guard. Officials stated the PSC is acomplex ship, and the Coast Guard is working with the shipbuilder to finalize the detail design before approving the start of construction to avoid further delays and increased production costs. Currently, the potential delivery date of May 2025 is not anticipated to impact PSC's operational commitment due to flexibility in the post-production and post-delivery schedule.

WATERWAYS COMMERCE CUTTER (WCC)
U.S. COAST GUARD

WCC is intended to replace the Coast Guard's legacy fleet of inland buoy and construction tenders, which have an average age of more than 55 years. The primary mission for the WCCs are to establish, maintain, and operate aids to maritime navigation on the western rivers and inland waterways. This work supports the flow of economic activity along the nation's waterways. The Coast Guard intends to replace 35 legacy cutters with 30 WCC assets.



Source: Gibbs & Cox.

KEY FINDINGS

- DHS approved WCC for acquisition decision event 2A in April 2021.
- The Coast Guard intends to replace 35 legacy cutters with 30 WCC assets.
- The WCC acquisition effort is broken into two segments developed concurrently.

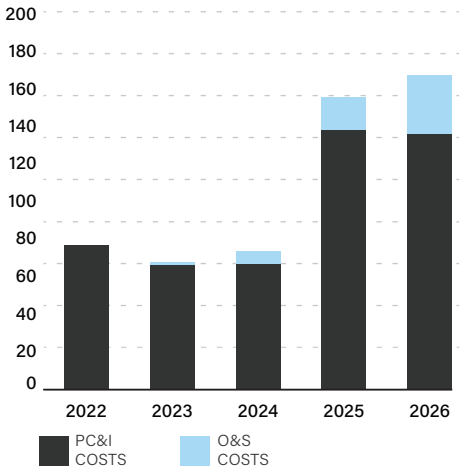
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Preliminary APB (01/2021)	1,075	6,549	7,624
Initial APB	Not yet approved		
Current estimate (03/2021)	1,075	6,549	7,624

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

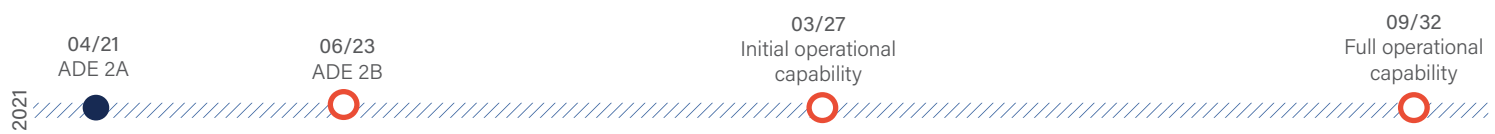
In April 2021, DHS approved the program's acquisition decision event (ADE) 2A, authorizing the program to enter the obtain phase of the acquisition life cycle and to set the low rate production quantity.

The WCC program is intended to replace three types of legacy tenders: river buoy tenders, inland construction tenders, and inland buoy tenders. Tenders are vessels that support the mission to maintain or repair aids to navigation. Due to requirements differences between the inland buoy tenders and the other two tenders, the program has developed an acquisition strategy with two distinct segments that will be developed concurrently. Segment 1 will replace the river buoy tenders and inland construction tenders with a nearly common design, and segment 2 will replace the inland buoy tenders. The expected average program unit cost for segment one is $35 million, and the average unit cost for segment two is $39 million.

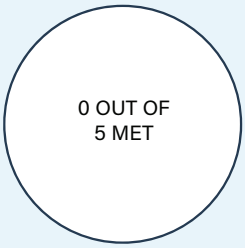
The Coast Guard took steps to accelerate the program by more than a year following congressional direction in the Explanatory Statement accompanying the Consolidated Appropriations Act, 2018. This acceleration is reflected in the program's objective date for initial operational capability of March 2025. Initial operational capability will be achieved following test and evaluation and certification that the first hull of each WCC variant satisfies all key performance parameters, which represent threshold requirements that are essential to perform the aids to navigation mission. Full operational capability, which will be achieved when all cutters have been fully fielded, is planned for 2032.

The program's preliminary acquisition program baseline (APB) outlines the cost, schedule, and performance goals for the acquisition of the 30 tenders. Prior to ADE-2A, the Coast Guard's Chief Financial Officer identified a funding deficit in fiscal years 2022 and 2025. However, program officials stated that WCC completed the documentation supporting this assessment prior to finalizing the preliminary APB and that the fiscal year 2022 budget submission aligns with program needs and does not contain funding deficits.

SCHEDULE



KEY PERFORMANCE PARAMETERS



Note: The Coast Guard has not yet tested if the KPPs are met

PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor and Prime Contract Type	Quantity
NON-IT	1	To Be Determined	30 Tenders

PERFORMANCE AND TESTING

The WCC cutters are intended to conduct the same missions in the same geographic regions as the existing legacy fleet. According to program officials, because the WCC cutters will be slightly more capable, it was determined that fewer were needed to meet mission needs. For example, the WCC tenders have a speed threshold requirement of 11 knots and an objective requirement of 13 knots, whereas the legacy tenders have a speed between 10 and 12 knots. The WCC fleet will also have more endurance and deck load capacity, allowing them to cover more distance during a mission.

Program officials said that they plan to conduct initial operational testing on each vessel variant. The preliminary APB states that to maintain the program's accelerated schedule, initial operational capability is planned to occur before the formal completion of initial operational testing. DHS policy states that operational test and evaluation should be completed to support ADE 3, which is when assets are produced and deployed. Program officials stated they plan to mitigate this risk by having the program's independent test agent, the Navy's Commander Operational Test and Evaluation Force, provide a brief of the preliminary results once testing is complete, but prior to completion of the full initial test report, in order to inform the initial operational capability decision.

PROGRAM MANAGEMENT

The first segment will acquire new river buoy tenders and inland construction tenders. Program officials said that these two assets are being designed together because of their similar requirements and to make sustainment more efficient. Officials expect these two designs to have 95 percent commonality, and the primary differences will be the length of the vessels and the working deck equipment onboard. According to program officials, they released a request for proposals in April 2021 for the first segment, and offers were received in August 2021. The contract award is expected by spring 2022. The program expects to purchase 16 river buoy tenders and 11 inland construction tenders.

The second segment will acquire the inland buoy tenders, which have more unique requirements. The program is working with the U.S. Army Corps of Engineers to develop a Coast Guard specific design for this segment since there is nothing available commercially that meets the Coast Guard's needs. This segment will begin construction after the other two variants because officials said the program wants to focus on the other two variants, which need to be recapitalized first to best meet operational needs. The program expects to purchase three inland buoy tenders.

TEST EVENTS

2023

- **09/23** Early operational assessment
- **12/25** Initial operational testing – segment 1
- **09/28** Initial operational testing – segment 2

PROGRAM OFFICE COMMENTS

Coast Guard officials stated that all information in this assessment is based on Preliminary APB data because the program is early in the acquisition life cycle. Cost and schedule information will continue to be refined and used to update the formal APB at ADE 2B. Coast Guard officials also provided technical comments on a draft of this assessment, which we incorporated as appropriate.

AUTOMATED COMMERCIAL ENVIRONMENT (ACE)

U.S. CUSTOMS AND BORDER PROTECTION (CBP)

ACE is developing software that is intended to electronically collect, process, and manage trade data submitted by the international trade community. ACE aims to provide private and public sector stakeholders with access to information, enhance the government's ability to determine whether cargo should be admitted into the U.S., and increase the efficiency of operations at U.S. ports by eliminating manual and duplicative trade processes and enabling faster decision-making.

Source: U.S. Customs and Border Protection.

KEY FINDINGS

- ACE plans to deploy Collections software releases 4-7 before achieving FOC by July 2024.
- ACE is rebaselining to extend the program life cycle to 2031.
- Core cyber resilience testing was delayed 13 months due, in part, to COVID-19.

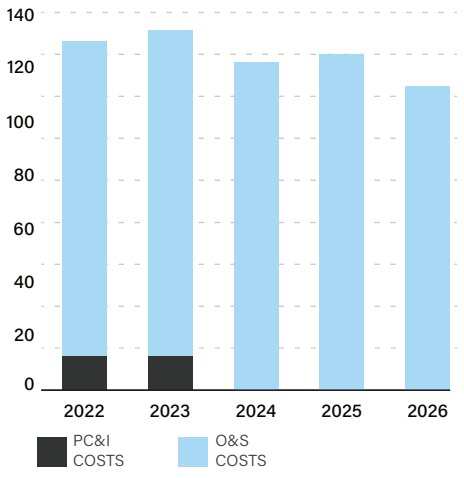
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (08/2013)	2,039	2,412	4,451
Current APB (12/2020)	2,515	3,058	5,572
Current estimate (01/2021)	2,224	3,268	5,492

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



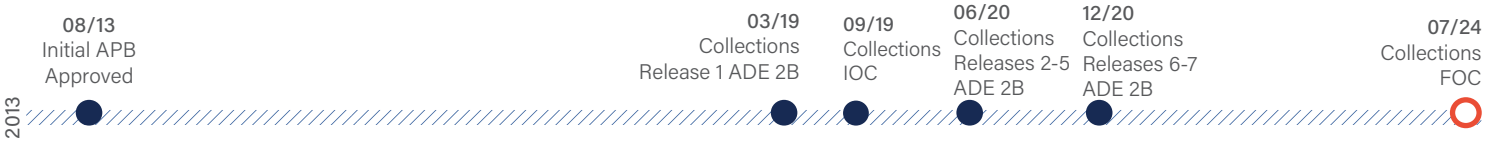
COST AND SCHEDULE

Following a cost and schedule breach in April 2017, CBP separated ACE Core functionality—which established and maintained the ACE system on managing trade data such as the arrival and departure of various goods—from its Collections functionality—which collects and processes duties owed on imported goods and is still being developed. The ACE Core functionality achieved full operational capability (FOC) in November 2018. CBP adopted an incremental approach to developing and deploying Collections functionality through seven DHS-approved software releases with a possible eighth if needed. ACE has deployed Collections software releases 1-3 and expects to deploy Collections software releases 4-7 before FOC, which is expected to be achieved by July 2024.

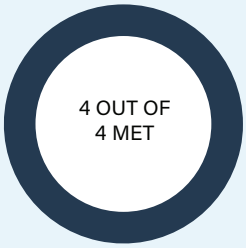
In December 2020, DHS approved the ADE 2B for Collections software releases 6-7, which included the corresponding updated acquisition program baseline (APB) for ACE. The program is funding releases 4-6 with a $15 million transfer from the Technology Modernization Fund, an IT working capital fund, that CBP is required to repay, along with additional funding from CBP to fund release 7. With software releases 6-7, Collections' approved total life-cycle cost threshold is $171 million. The program is monitoring affordability challenges and the potential for an eighth release that would affect future costs. However, release 8 is an enhancement not required to reach FOC, and is not included in the program's latest APB.

The program updated the life-cycle cost estimate in January 2021 and in June 2021 program officials stated that they are updating the APB to extend the program's life cycle from fiscal years 2026 to 2031. Officials further stated that these updates will enable the program to conduct capability enhancements to existing functionalities such as accommodating trade regulatory changes, among other things.

SCHEDULE



KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
IT	1	Dev Technology Group	Firm-Fixed-Price

PERFORMANCE AND TESTING

In November 2018, DHS's Director, Office of Test and Evaluation (DOT&E) determined that ACE Core functionality met all four of its key performance parameters (KPP)—system availability, providing targeted cargo data, processing import and export documents electronically, and acting as a single window for trade data—and was operationally suitable and effective with limitations. Follow-on operational test and evaluation (OT&E) for ACE Core functionality was completed in July 2020, and the test agent determined that all critical operational issues had been resolved. According to CBP officials, as of September 2021, the cyber resilience testing report for ACE Core was submitted but not yet approved by DOT&E, which is 13 months later than originally planned. According to these officials, testing was delayed as a result of the COVID-19 pandemic and the need to address previously identified deficiencies, among other reasons.

In December 2020, DHS approved a revised operational requirements document (ORD), which was updated to reflect ACE Collections critical operational issues and its planned FOC date. OT&E for ACE Collections is planned to begin by September 2022 and will be conducted at various ports of entry. The test agent will review system metrics and interview personnel to determine the effectiveness of the program. There were no Collections updates to the program's four Core KPPs, but DOT&E had concerns on how the program plans to evaluate operational effectiveness for Collections since there are no updated testable requirements for this specific functionality in the revised ORD. Specifically, DOT&E stated, in its November 2020 approval of the revised test and evaluation plan, that the test agent will have to rely on interviews with users to determine to what degree ACE Collections does or does not improve operations.

PROGRAM MANAGEMENT

In July 2020, the General Services Administration (GSA) awarded CBP a $15 million transfer from the Technology Modernization Fund that CBP is required to repay for ACE Collections releases 4-6. Officials stated that the program plans to repay the loan by the end of 2026 from other CBP accounts and with cost savings the program expects to achieve as it shifts from legacy system maintenance to a less costly cloud-based environment. CBP officials meet with GSA regularly to provide reports on the status of the program and alert GSA of any issues with the loan and the work the loan is supporting.

In addition to the funding concerns for the O&S for ACE Collections, CBP officials are tracking and managing program risks related to contracting, among other things. For example, CBP officials stated in September 2021 that bid protests of the Development and Operations and Maintenance Support contract are still ongoing. Furthermore, in September 2021 officials stated the program increased the bridge contract capacity in order to continue development.

TEST EVENTS

2020

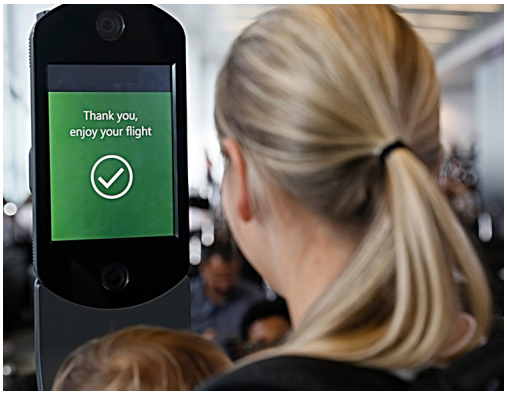
- **08/20** Core follow-on OT&E
- **09/21** Core cybersecurity testing
- **09/22** Collections OT&E for releases 1-5
- **02/24** Collections OT&E for releases 6-7

PROGRAM OFFICE COMMENTS

CBP officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

BIOMETRIC ENTRY-EXIT (BE-E) PROGRAM
U.S. CUSTOMS AND BORDER PROTECTION (CBP)

BE-E aims to identify foreign nationals that stay in the U.S. beyond their authorized periods of admission. To accomplish this, CBP is developing capabilities to match travelers to photos in DHS databases through its Traveler Verification Service (TVS) as they enter and exit the U.S. at air, sea, and land ports of entry. CBP plans to implement BE-E in segments that align with those environments. BE-E has deployed the air segment and is currently focused on the sea segment.



Source: U.S. Customs and Border Protection.

KEY FINDINGS

- Air segment achieved FOC in April 2021 according to CBP officials.
- Sea segment combined ADE 2A/3 has been delayed due to staffing issues and funding constraints.
- BE-E faces continued affordability challenges due to a reduction in visa fees related to COVID-19.

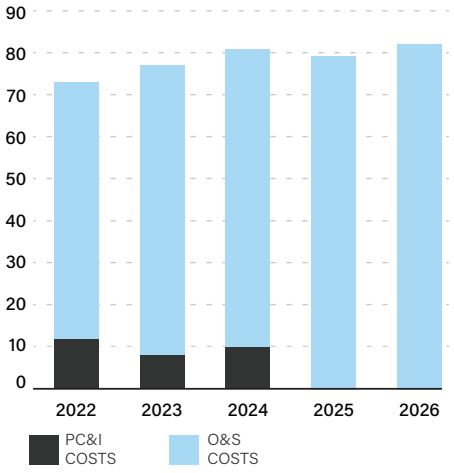
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (05/2018)	197	520	717
Current APB (12/2019)	259	982	1,241
Current estimate (05/2021)	305	932	1,236

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

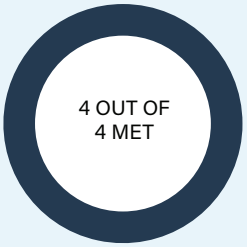
CBP officials said the program's air segment achieved full operational capability (FOC)—the ability to process international air departures at the 20 airports with the highest volume of international flights—in April 2021, 5 months earlier than planned. As of October 2021, DHS has not yet approved the declaration.

According to program officials, the combined 2A/3 acquisition decision event (ADE) planned for the sea segment has been delayed 18 months from June 2021 until December 2022 due to staffing issues and effects from COVID-19. Specifically, they reported that BE-E has faced significant funding challenges because of a decline in visa application fees, which primarily fund the program. These challenges are due mostly to COVID-19, which affected both operations and sustainment (O&S) for the air segment, and efforts to conduct and plan technology demonstrations for sea and land segments. In August 2021, CBP reported that the program received approximately $28 million in funding from fees for fiscal year 2021—at least $75 million less than anticipated—and it expects affordability challenges to continue in fiscal year 2022. However, program officials are coordinating with CBP and DHS officials to assess and identify other sources of funding.

The May 2021 life-cycle cost estimate (LCCE) includes costs for air, sea and land segments, while the 2019 acquisition program baseline (APB) includes only the air segment costs. The APB will be updated at the sea segment ADE 2A/3 to include costs for sea. Program officials stated the sea segment will cost less than the air segment because it will leverage the same industry partnership approach and TVS architecture to process entries and exits.

SCHEDULE

KEY PERFORMANCE PARAMETERS



Note: KPPs met for air-exit capabilities only.

PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor and Prime Contract Type	Airline and Cruise Line Partnerships
IT	1	Multiple / Multiple	46

PERFORMANCE AND TESTING

In October 2021, DHS approved the updated concept of operations (CONOPS) to include both air and sea segments. Further, CBP officials told us the program was coordinating with stakeholders to update the operational requirements document (ORD). The original CONOPS only addressed the air-exit segment BE-E. The update now addresses the air-entry and sea entry-exit segments of the program, which leverage the same partnerships with industry and TVS architecture. The sea segment will likely be structured like the air-exit segment, where cruise line carriers procure and operate cameras and transmit images to the TVS for facial recognition.

In December 2019, DHS's Director, Office of Test and Evaluation (DOT&E) determined that the air-exit segment is operationally suitable and met its four key performance parameters related to flight service capacity, system availability, and two regarding photo match rates. CBP officials stated they continue to coordinate with airlines, airports, and now cruise lines on procuring devices and updating their image capture device standards. The capture rate for biometric matching is above its threshold rate of 90 percent. In July 2021, program officials stated they were developing a plan for cyber resilience, and an adversarial assessment to evaluate operational cyber resilience was conducted in August 2021.

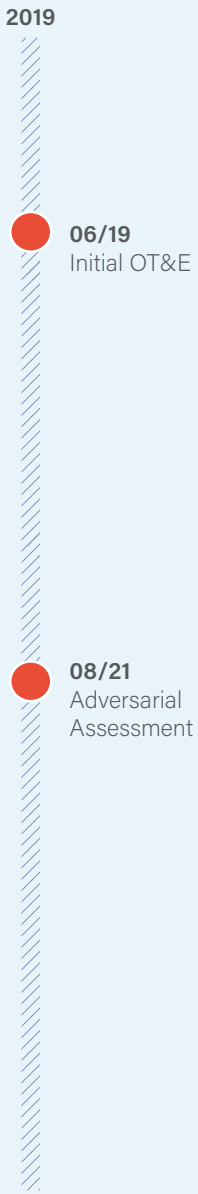
CBP anticipates the land segment (pedestrian and vehicle entry-exit) will be addressed in an updated CONOPS after the sea segment reaches ADE-3. Unlike the air and sea segments' partnership with industry approach, CBP will own, operate, and maintain the camera capture equipment in the land segment. Further, this segment will leverage architecture developed for air and sea, as well as new technology necessary for the complex landscape along the land border. However, the lack of advance manifest information limits CBP's ability to match photos for travelers crossing the land border. As a result, CBP is researching and developing feasible operational requirements and concepts, and conducting technology demonstrations.

PROGRAM MANAGEMENT

CBP continues to pursue public-private partnerships in which airlines, airports, and cruise lines purchase, operate, and maintain the equipment to collect biometric data to reduce program costs and improve the passenger boarding process. In October 2021, CBP officials told us they have received commitment letters from 37 airports and airlines and 9 cruise lines.

According to program officials, there are critical staffing gaps that BE-E is mitigating by using staff from other CBP areas to support the program. Officials stated, in July 2021, that the pandemic led to empty positions they could not fill. As a result, staff had to reprioritize work and it was harder to mitigate staffing risks.

TEST EVENTS



PROGRAM OFFICE COMMENTS

BE-E officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

BORDER WALL SYSTEM PROGRAM
U.S. CUSTOMS AND BORDER PROTECTION (CBP)

The border wall system is intended to prevent the illegal entry of people, drugs, and other contraband by enhancing and adding to existing barriers along the U.S. southern border. The border enforcement zone may also include detection technology, surveillance cameras, lighting, and roads for maintenance and patrolling. The Border Wall System Program is assessing options to restructure following presidential direction in January 2021 to pause construction.

Source: U.S. Army Corps of Engineers, Defense Visual Information Distribution Service.

PROGRAM EXECUTION

The Border Wall System Program was initiated in response to an Executive Order issued in January 2017, which stated that the executive branch is to secure the southern border through the immediate construction of a physical wall on the southern border of the U.S. DHS approved acquisition program baselines (APB) for funding received in fiscal years 2018 and 2019, and a preliminary APB was approved by CBP's Component Acquisition Executive for funding received in fiscal year 2020. DHS received $1.375 billion in funding for construction of barrier systems along the southwest border in fiscal year 2021 but has not developed an APB identifying the scope of work. The Border Wall System Program relies on integration of related surveillance technologies that are not fully accounted for in the approved APBs, such as the Remote Video Surveillance System and Linear Ground Detection System. In addition, the Department of Defense (DOD) provided support and funding for the construction of barriers and infrastructure along the southern border. The U.S. Army Corps of Engineers (USACE) has worked on and been reimbursed for the management of border wall system construction activities—including engineering support and assisting CBP with real estate acquisition—for both DHS and DOD funded efforts. Both USACE and CBP have awarded construction contracts.

In January 2021, after a change in presidential administrations, the new President directed officials to pause construction of the border wall and pause the obligation of funds for the wall, to the extent permitted by law. In response, DHS announced its plan for the use of border barrier funds in June 2021, which outlined how DHS plans to use funds the previous administration was planning to use for border wall construction. DHS took steps to implement the plan by suspending performance on border barrier construction contracts and construction activities, with the exception of activities related to ensuring project sites are safe and secure. DHS expects DOD to turn over multiple barrier projects, previously executed with DOD funding, for DHS to manage. DHS is assessing the status of DOD's projects, but CBP officials stated the projects are in various stages of completion. DHS plans to leverage unobligated funds for necessary clean up of construction sites previously funded by DOD and to mitigate some environmental damage caused by border wall construction, among other things. DHS plans to use the fiscal year 2021 funds, in part, to cover cost overruns due to the suspension of contract performance for construction and for contract modifications due to design changes.

DHS leadership approved three key performance parameters (KPP) for the program—related to preventing unauthorized border crossings, resistance to thrown objects, and maintainability—that apply to all Border Wall System Program baselined segments. According to CBP, as segments of the border wall are constructed, USACE officials validate that the wall meets construction requirements. However, CBP officials stated operational testing of the constructed border wall system, which includes the integration with related surveillance technologies, was paused in response to the January 2021 Presidential Proclamation.

PROGRAM OFFICE COMMENTS

CBP officials reviewed a draft of this assessment and had no comments.

BORDER WALL SYSTEM PROGRAM (FISCAL YEAR 2018)
U.S. CUSTOMS AND BORDER PROTECTION (CBP)

KEY FINDINGS

Effects of COVID-19 and the construction pause directed by the Presidential Proclamation are being assessed.

DHS reported that it reinitiated activities to address the compromised levee in the RGV segment and erosion in San Diego segment.

Program continues to experience delays with land acquisition in the Rio Grande Valley.

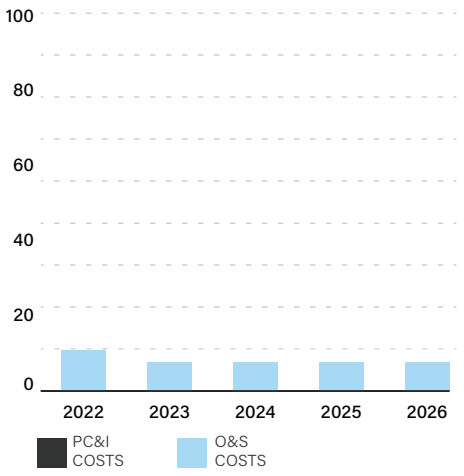
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (01/2018)	1,548	381	1,928
Current APB (06/2020)	1,660	556	2,216
Current estimate (02/2020)	1,351	347	1,699

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

The Border Wall System Program's acquisition program baseline (APB) for funding received in fiscal year 2018 established cost, schedule, and performance goals for approximately 56 miles of barrier in the Rio Grande Valley (RGV) and approximately 11 miles of replacement fencing in the San Diego segment. The program achieved initial operational capability (IOC) for the San Diego segment in March 2020 but is not achieving its baseline goals and has not yet revised its APB. DHS continues to assess the effects of the construction pause directed by the January 2021 Presidential Proclamation and COVID-19.

The January 2021 Presidential Proclamation states that the Secretary of Homeland Security may make an exception to the border wall construction pause for activities that are urgent measures needed to avert immediate physical dangers. In June 2021, DHS reported that it reinitiated activity on two projects under this exception. First, DHS plans to construct or remediate approximately 13.4 miles of compromised levee in RGV. The second is to address erosion control in the San Diego segment, where work is necessary to protect migrants, border patrol agents, and residents. Further, in October 2021, DHS announced that CBP, in coordination with the U.S. Army Corps of Engineers, intends to cancel all border barrier contracts located in the RGV sector.

Prior to the proclamation, the program reported effects from COVID-19 and requested additional time to assess the effects prior to adjusting baseline goals. Specifically, CBP officials reported construction delays due to multiple cases of COVID-19 among construction workers. In addition, officials explained that COVID-19 restrictions limited federal court proceedings and caused delays in receiving court-ordered real estate possessions. Also, stay-at-home orders implemented throughout the RGV delayed landowner meetings. As a result, the program did not meet its revised IOC date of December 2020 for the RGV segment. The program previously breached its initial IOC date due to land acquisition delays. In January 2021, DHS leadership acknowledged CBP's notification of COVID-19 effects on the program's fiscal year 2018 APB schedule milestones and CBP's request for additional time to assess the effects prior to adjusting the APB milestones. Program officials stated they have not revised the program's APB because they are still assessing the work the program will be able to complete and the cost and schedule effects of the pause in work.

SCHEDULE

BORDER WALL SYSTEM PROGRAM (FISCAL YEAR 2019)
U.S. CUSTOMS AND BORDER PROTECTION (CBP)

KEY FINDINGS

- Program is assessing work planned based on direction in the January 2021 Presidential Proclamation.
- DHS plans to cancel contracts for the construction of border wall system in the Rio Grande Valley.
- DHS reported that about $455 million of the $601 million in Treasury Forfeiture Fund amounts received for border security were returned to the Department of Treasury.

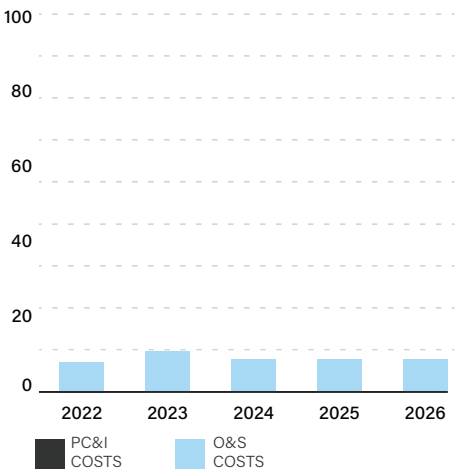
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (05/2019)	1,607	945	2,552
Current APB (05/2019)	1,607	945	2,552
Current estimate (09/2020)	1,216	384	1,600

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS

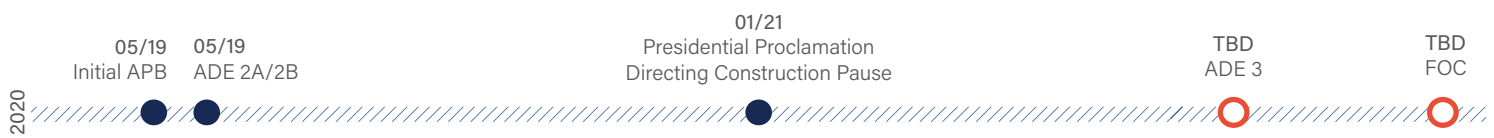


COST AND SCHEDULE

In May 2019, DHS leadership approved the Border Wall System Program's initial acquisition program baseline (APB) for its fiscal year 2019 segment and granted acquisition decision event (ADE) 2A/B approval. The 2019 APB established cost, schedule, and performance goals for an additional 53 miles of border wall system in the Rio Grande Valley sector, which according to CBP officials, includes 43 miles of levee wall. CBP officials initially planned to complete construction of the border barrier as well as provide interfaces for key surveillance technologies, such as the Remote Video Surveillance System and the Linear Ground Detection System, and achieve full operational capability (FOC) by March 2023. In August 2021, CBP officials stated they were in the process of determining how to proceed based on the January 2021 Presidential Proclamation, which directed DHS to pause obligation of funds for construction of the border wall system. Further, in October 2021, DHS announced that CBP, in coordination with the U.S. Army Corps of Engineers, intends to cancel all border barrier contracts located within the Rio Grande Valley (RGV) sector. As a result, the cost and schedule effects for the fiscal year 2019 effort are not yet known.

In fiscal year 2019, DHS received $601 million from the Treasury Forfeiture Fund (TFF) for border security. DHS officials stated that since Treasury funds were redirected from other law enforcement purposes, DHS will end border wall construction funded with TFF funds; terminate contracts after ensuring tasks needed to protect life, safety, and the environment are completed; and return excess funds to the TFF. DHS reported it had returned approximately $455 million in unobligated funds to the Department of Treasury and will return any recovered amounts once they become available.

SCHEDULE



BORDER WALL SYSTEM PROGRAM (FISCAL YEAR 2020)
U.S. CUSTOMS AND BORDER PROTECTION (CBP)

KEY FINDINGS

Acquisition Decision Event 2B is delayed until work planned for the segment is assessed based on direction in the Presidential Proclamation.

DHS plans to cancel contracts for the construction of the border wall system in the Laredo sector.

Preliminary baseline includes costs associated with support structure for border surveillance technologies.

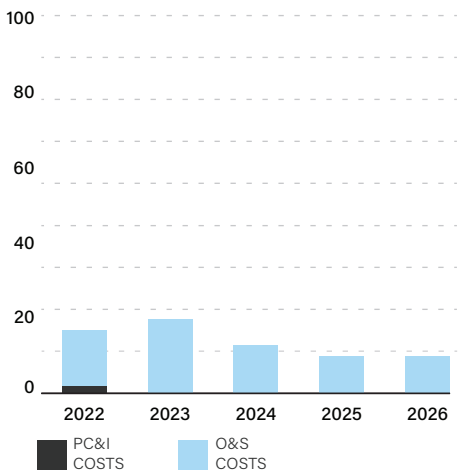
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Preliminary APB (04/2020)	1,611	476	2,088
Initial APB	Not yet approved		
Current estimate (06/2021)	1,233	416	1,648

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

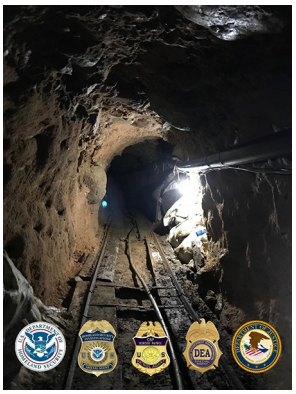
In April 2020, CBP's Component Acquisition Executive approved the Border Wall System Program's preliminary acquisition program baseline (APB) for its fiscal year 2020 effort, which includes approximately 69 miles of new border wall system construction and lighting, camera, and electronic interfaces for the Linear Ground Detection System in the Laredo, Texas, sector. In June 2020, DHS leadership granted the program's acquisition decision event (ADE) 2A and authorized CBP to proceed with awarding contracts with full operational capability (FOC) planned for June 2023. CBP officials stated they were assessing the program's status and that the program's planned ADE 2B is delayed until work planned for the segment is assessed based on the direction in the Presidential Proclamation, which directed DHS to pause obligation of funds for construction of the border wall system. In October 2021, DHS announced that CBP, in coordination with the U.S. Army Corps of Engineers, intends to cancel the remaining border barrier contracts located within U.S. Border Patrol's Laredo sector.

The program's initial total life-cycle cost estimate for the 69 miles in the Laredo sector is approximately $1.8 billion, which includes costs for land acquisition, environmental studies, construction of the barrier, and Linear Ground Detection System. In addition, the surveillance cameras for this segment, such as those deployed by the Remote Video Surveillance System program, will be funded by the Border Wall System Program.

SCHEDULE

CROSS BORDER TUNNEL THREAT (CBTT)
U.S. CUSTOMS AND BORDER PROTECTION (CBP)

CBTT is intended to help CBP identify, acquire, and implement operational services and technologies necessary to surveil areas along the U.S. land border for cross border tunnels. These technologies will help CBP address existing gaps in the prediction, detection, investigation, and remediation of cross border tunnels.



Source: U.S. Customs and Border Protection.

KEY FINDINGS

- CBTT faces affordability challenges to fund Segment 2 of PSD.
- DHS approved CBTT's Test and Evaluation Master Plan for PSD in August 2021.
- CBTT updated its ORD to account for revised IOC miles.

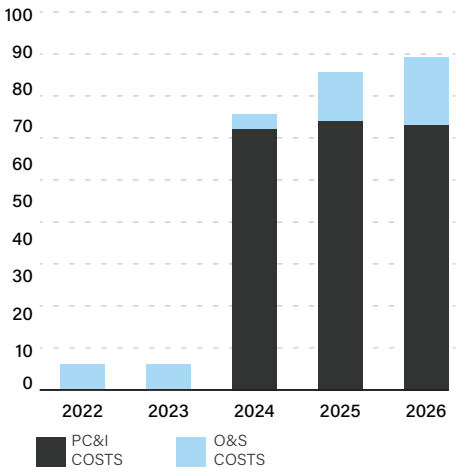
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Preliminary APB (12/2019)	690	1,245	1,935
Initial APB	not yet approved		
Current estimate (04/2021)	821	1,120	1,941

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

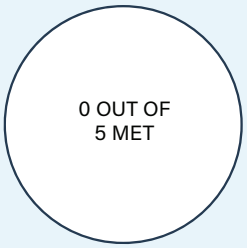
In April 2020, DHS approved CBTT's acquisition decision event (ADE) 2A for its tunnel detection capability—Persistent Surveillance and Detection (PSD). At that time, DHS leadership also authorized the deployment of PSD technologies along Segment 1, which covers 6 miles of southwest border, for initial operational capability (IOC), noting that further deployments will require documentation updates and DHS leadership approval. The program intends to provide systems to support tunnel detection in different geologic and topographic environments. In 2021, CBTT completed system installation along Segment 1 and started installations in two other confidential locations.

According to CBP officials, the ADE 2B decision for Segment 2—when CBTT will establish its DHS-approved acquisition program baseline (APB)—is delayed 3 years to fiscal year 2024. CBP officials attributed this delay to the need to consider user feedback on three PSD technologies developed by separate vendors. Officials said that comparing the operational use of these systems will support a future decision to select a vendor. In addition, the program delayed its ADE 2B date to further develop a capability within PSD.

CBP officials told us that they continue to encounter affordability challenges. The program previously planned to deploy an IOC of 9 miles of PSD technologies but decreased it to 6 miles due to procurement, construction, and improvements (PC&I) funding constraints. CBTT identified a $2 million affordability gap starting in fiscal year 2022. CBP said that it will need additional PC&I funding to conduct current activities and work towards deploying technologies for Segment 2 of PSD and achieve full operational capability (FOC). Officials said that they continue to tailor the program's deployment schedule and prioritize high-threat areas to align with available funding.

SCHEDULE

KEY PERFORMANCE PARAMETERS



Note: CBP has not yet tested if the KPPs are met.

PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
IT/MIXED	1	Elbit Systems of America	Firm-Fixed-Price

PERFORMANCE AND TESTING

In July 2021, CBTT updated its operational requirements document (ORD) to account for the revised number of IOC miles for PSD to 6 miles. The ORD states that the number of CBTT systems needed to complete initial deployments will depend upon the environmental conditions at each sector along the southwest border.

In its preliminary APB, the program established five key performance parameters (KPP) related to the PSD technologies' probability of detection, ability to detect subterranean activity and locate tunnels, reliability, and cyber resilience. The program plans to procure commercial products and identified three vendors with potential detection systems for deployment within the initial 6 miles. DHS approved CBTT's Test and Evaluation Master Plan (TEMP) in August 2021 for its PSD capability. CBTT plans to start integrated testing and operational assessments by June 2022, following the installation of tunnel detection systems. Prior to ADE 2B, a system acceptance test and integrated tests, including an operational assessment for each vendor's CBTT system, will be conducted. In addition, a cyber tabletop exercise is planned to inform the program's cyber resilience test strategy. These activities will likely address the DHS Joint Requirements Council's direction in October 2019 to conduct cybersecurity and integrated threat assessments when it approved CBTT's ORD. CBTT's TEMP outlines a modeling and simulation approach to support its test and evaluation activities and simulates validated test data where physical testing is not possible.

As of September 2021, CBP officials said that they were making progress in conducting testing. For example, CBP officials told us that they completed initial sensor and threat characterizations at a Department of Defense test facility, which are critical to understanding tunnel construction and usage. These officials said that the methods and procedures for initial operational test and evaluation (IOT&E) remains on track to achieve an ADE 2B decision in 2024.

PROGRAM MANAGEMENT

DHS approved CBTT's systems engineering life-cycle (SELC) tailoring plan in February 2020. The program plans to tailor or remove certain SELC activities because CBTT's PSD capability includes commercial-off-the-shelf and non-development item components. For example, preliminary design and critical design reviews were removed because site-specific designs would be addressed in site-specific integration readiness reviews. CBTT officials sought feedback from DHS's Program Accountability and Risk Management office in August 2021 about CBTT's integrated SELC activities.

TEST EVENTS

2023

- **11/23** Operational Assessment
- **09/24** IOT&E

PROGRAM OFFICE COMMENTS

CBP officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

INTEGRATED FIXED TOWERS (IFT)
U.S. CUSTOMS AND BORDER PROTECTION (CBP)

IFT helps the Border Patrol detect, identify, and classify illegal entries in remote areas of U.S. borders. IFT consists of fixed surveillance tower systems equipped with ground surveillance radar, daylight and infrared cameras, and communications systems linked to command and control centers. CBP plans to deliver or upgrade approximately 48 IFT systems across six areas in Arizona: Nogales, Douglas, Sonoita, Ajo, Tucson, and Casa Grande.

Source: U.S. Customs and Border Protection.

KEY FINDINGS

- CBP approved a schedule adjustment to IFT's FOC date due to COVID-19.
- In August 2021, CBP officials reported that IFT achieved FOC based on final system acceptance testing.
- DHS plans to consolidate IFT and three related programs in fiscal year 2022.

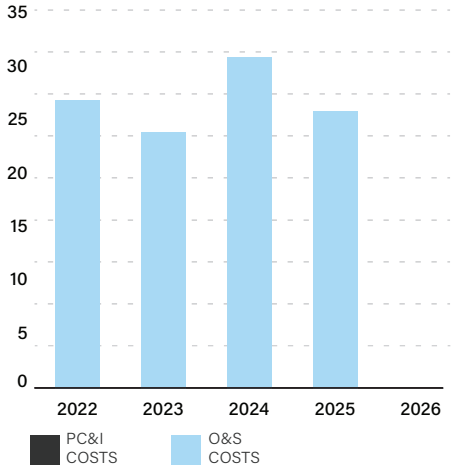
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (03/2012)	288	673	961
Current APB (10/2019)	341	408	749
Current estimate (07/2019)	269	382	651

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



*IFT does not have cost information for fiscal year 2026 because it did not develop a life-cycle cost estimate during fiscal year 2021 due to plans to consolidate into the Integrated Surveillance Towers program.

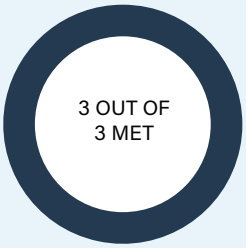
COST AND SCHEDULE

In December 2020, CBP approved a schedule adjustment to IFT's March 2021 full operational capability (FOC) date due to COVID-19-related effects to deployments in Casa Grande, the sixth and final area. Specifically, road construction personnel experienced potential COVID-19 exposure, which disrupted the tower contractor's schedule and further delayed tower construction and system integration. CBP officials reported in August 2021 memos to DHS leadership that IFT satisfied the requirements for declaration of FOC, based on completion of tower deployments to the program's six areas. However, as of September 2021, DHS had not yet acknowledged the declaration.

After breaching its schedule baseline in February 2019 due to ongoing negotiations regarding access to tribal lands in the Ajo and Casa Grande areas, DHS approved a revised acquisition program baseline (APB) in October 2019, which reflected a reduction in the number of towers installed on tribal land from 15 to 10. DHS leadership directed the program to revise its APB, life-cycle cost estimate (LCCE), and other acquisition documents as necessary. However, in May 2021, CBP officials told us that IFT did not develop a LCCE update during fiscal year 2021 due to plans to consolidate it into the Integrated Surveillance Towers (IST) program in fiscal year 2022. Instead, the IST LCCE will include costs for new IFT activities and operations costs for systems.

SCHEDULE

KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	NGN-PS Phase 1 Increments
IT/MIXED	1	EFW, Inc.	Firm-Fixed-Price

PERFORMANCE AND TESTING

In April 2021, IFT completed the final system acceptance test in the Casa Grande area. Since completion of this final system acceptance test, IFT systems are deployed and operational in the six areas, which satisfies the program's requirements for FOC. IFT met all three KPPs which establish a minimum acceptable range for detection and identification and time the system must operate. CBP is developing an updated operational requirements document and test and evaluation master plan for the consolidated IST program. DHS testing officials told us it is too early in the planning process to know what further testing may be required.

PROGRAM MANAGEMENT

In July 2020, CBP presented DHS leadership a plan to consolidate IFT, Remote Video Surveillance System (RVSS), Northern Border-RVSS, and Autonomous Surveillance Towers into a single program. CBP anticipates that this effort will include requirements to link to a separate program common operating picture to support the different capabilities and configurations of the separate surveillance systems into a single, consistent user interface. CBP officials stated that this effort will eliminate the need for separate sustainment activities for each program, among other things, which they believe will result in cost savings and efficiencies for end users. CBP intends to simultaneously transition these existing programs under the new IST program in fiscal year 2022. CBP officials said that, until the effort receives funding and the technologies are consolidated, the surveillance tower programs, including IFT, will continue activities under the existing program baselines.

CBP officials told us that they have transitioned to using the Federal Aviation Administration (FAA) logistics center for IFT's sustainment activities in advance of IFT's consolidation under IST. As of September 2021, CBP officials said that all six areas using IFT systems have transitioned to the FAA logistics center. This effort is consistent with RVSS's use of the FAA for this purpose and both programs anticipate cost savings from this arrangement.

TEST EVENTS

2015

- **06/15** System Acceptance Test (SAT) – Nogales
- **04/17** SAT – Douglas
- **10/17** SAT – Sonoita
- **08/18** SAT – Tuscon
- **12/18** SAT – Ajo
- **04/21** SAT – Casa Grande

PROGRAM OFFICE COMMENTS

CBP officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

MEDIUM LIFT HELICOPTER (MLH)
U.S. CUSTOMS AND BORDER PROTECTION (CBP)

CBP uses MLH for law enforcement and border security operations, air and mobility support and transport, search and rescue, and other missions. CBP's MLH fleet consists of 20 aircraft acquired from the U.S. Army in three different models. CBP previously acquired four modern UH-60M aircraft and converted six of its 16 older UH-60A aircraft into more capable UH-60L models. CBP is also acquiring 10 reconfigured Army HH-60L aircraft to replace the remaining UH-60A aircraft.

Source: U.S. Customs and Border Protection.

KEY FINDINGS

Program expects to accept the 10th reconfigured HH-60L aircraft by September 2022.

April 2021 fleet mix study identified strategies to increase quantity of UH-60s from 20 to 35.

Program plans to rebaseline with the increased number of aircraft by September 2022.

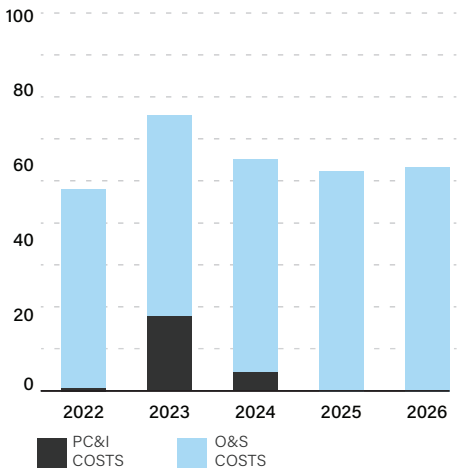
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (01/2016)	306	1,130	2,034
Current APB (06/2018)	403	1,116	1,519
Current estimate (05/2021)	245	959	1,344

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

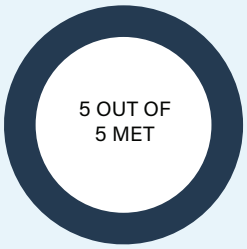
In July 2018, DHS leadership granted approval for the program's acquisition decision event (ADE) 3 to replace CBP's remaining UH-60A aircraft with reconfigured Army HH-60L aircraft on a one-to-one basis for conversion to UH-60L models but temporarily relieved the program from removing the UH-60A aircraft from their inventory in August 2020. As of August 2021, the program has accepted delivery of three of these reconfigured aircraft and anticipates accepting the 10th aircraft by September 2022, at which point the program will achieve full operational capability (FOC) for the current baseline.

DHS leadership also directed CBP to address requirements for additional medium lift capability beyond the scope of the program's acquisition program baseline (APB). CBP officials stated a desire to replace its other medium lift helicopters as they are retired from the fleet with additional reconfigured HH-60L aircraft converted to the UH-60L model. In September 2019, the program revised its operational requirements document, which increased the FOC quantity from 20 to 35 aircraft. The program leveraged a federally funded research and development center to conduct a fleet mix study to determine the optimal strategy to achieve this new FOC quantity and identify a replacement solution for the 10 aging UH-60A aircraft, which was completed in April 2021. Based on the study's results, the program plans to continue with the 10 HH-60L conversions that were already approved and convert five additional HH-60L aircraft to the UH-60L model while pursuing the modernization of the 10 UH-60A aircraft.

The program updated its life-cycle cost estimate (LCCE) in May 2021, but it only reflects the costs of the 20 aircraft. As of August 2021, CBP officials plan to revise key acquisition documents, including the LCCE and APB to account for the increased FOC quantity of 35 aircraft by September 2022.

SCHEDULE

KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
NON-IT	1	Yulista Aviation, Inc.	Cost-Plus-Fixed-Fee

PERFORMANCE AND TESTING

CBP determined that the converted UH-60L and UH-60M aircraft met all five of the program's key performance parameters (KPP) related to marine, air, and land interdiction; transporting of persons and equipment; and conducting search and rescue missions through operational test and evaluation (OT&E) conducted in fiscal years 2012 and 2014. However, DHS's Director, Office of Test and Evaluation did not validate these results because UH-60 was not considered a major acquisition when the tests were conducted.

In January 2016, DHS leadership directed the program to conduct acceptance functional flight checks on a reconfigured HH-60L to the UH-60L model prototype prior to receiving approval to proceed replacing the remaining UH-60A aircraft. This testing concluded in February 2018. This testing identified one issue, which CBP officials said a minor design change resolved, resulting in ADE 3 approval to replace the remaining seven UH-60A aircraft. A retrofit was completed on the initial HH-60L, and the design change will be implemented on subsequent aircraft. CBP officials also noted that they are coordinating with the Army to develop cyber resilience requirements for the upgraded aircraft.

CBP does not plan to conduct formal OT&E on the reconfigured HH-60L because, according to CBP officials, the aircraft has minimal differences from the converted UH-60L aircraft that was previously tested. CBP officials also stated that the program has been able to leverage Army test data, which reduced the program's risk and testing costs. CBP officials noted that pilots will perform additional inspections prior to accepting all future reconfigured aircraft. In June 2021, CBP officials told us that delivery of the fourth and fifth reconfigured HH-60L aircraft will be delayed by up to 3 months to account for required engineering and design changes that were identified during acceptance testing of the second and third aircraft.

PROGRAM MANAGEMENT

CBP plans to reduce the number of disparate aircraft types within its fleet while increasing the capabilities of common platforms. Specifically, CBP intends to divest its less capable aircraft, such as the UH-1, to maintain a more capable and common fleet of UH-60s, which CBP reported are the only medium lift helicopters that fully meet vertical lift capability requirements for their designated missions. Further, the common fleet of aircraft and mission system configurations will streamline logistics systems and standardize crew training.

CBP previously acquired UH-60 as a part of its Strategic Air and Marine Program (StAMP). In July 2016, DHS leadership designated UH-60 as a separate and distinct major acquisition program. In October 2018, CBP officials told us they continue to maintain a consolidated program office where the same staff from StAMP support all remaining acquisitions, including MLH. CBP officials said they have refined the program's staffing profile and taken steps to mitigate staffing gaps, such as having some program personnel fill multiple roles.

TEST EVENTS

2019

- **11/11** UH-60M Initial OT&E
- **06/12** UH-60L OT&E
- **03/14** UH-60M follow-on OT&E
- **10/17** Prototype acceptance functional flight check and additional testing

PROGRAM OFFICE COMMENTS

CBP officials reviewed a draft of this assessment and provided no comments.

MULTI-ROLE ENFORCEMENT AIRCRAFT (MEA)
U.S. CUSTOMS AND BORDER PROTECTION (CBP)

MEA are fixed-wing, multi-engine aircraft that can be configured to perform multiple missions, including maritime, air, and land interdiction as well as signals detection to support law enforcement. The maritime and air interdiction MEA are equipped with search radar and an electro-optical/infrared sensor to support maritime surveillance and airborne tracking missions. MEA will replace CBP's fleet of aging C-12, PA-42, and BE-20 aircraft.

Source: U.S. Customs and Border Protection.

KEY FINDINGS

- Seven of 13 air interdiction aircraft have been delivered with full operational capability planned for fiscal year 2025.
- Program expects to receive approval for six aircraft in the land interdiction configuration in October 2021.
- Program plans to address cyber resilience requirements by September 2022.

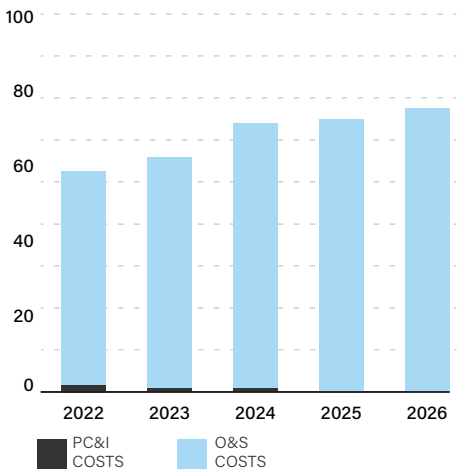
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (01/2016)	365	1,151	1,516
Current APB (02/2019)	741	1,584	2,325
Current estimate (05/2021)	684	1,464	2,148

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



COST AND SCHEDULE

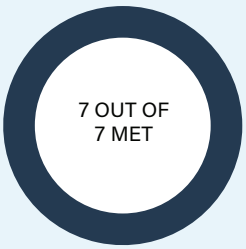
The program's current acquisition program baseline (APB) approved in 2019 supports procurement of 29 MEA: 16 maritime interdiction (MI) aircraft and 13 air interdiction (AI) aircraft. The program accepted delivery of the final MI aircraft in February 2019. In September 2019, DHS leadership granted the program acquisition decision event (ADE) 3 approval for the AI configuration—authorizing full-rate production. As of September 2021, CBP officials confirmed that the program has accepted delivery of seven AI aircraft and anticipates delivery of the remaining six by December 2022 with full operational capability planned for fiscal year 2025.

Future configurations of the MEA will provide land interdiction (LI) and signals detection capabilities. In 2020, the program received funding to procure the radar for the LI aircraft, and, in fiscal year 2021, CBP received funding to procure the prototype MEA in the LI configuration. CBP is accelerating the acquisition schedule for the LI configuration and plans to use fiscal year 2022 funds to initiate LI aircraft procurement.

The program updated its life-cycle cost estimate (LCCE) in May 2021, but this estimate does not include the preliminary costs for the addition of the LI aircraft. However, CBP officials plan to update key acquisition documents to achieve ADE 2A approval for six aircraft in the LI configuration, which is expected to occur by October 2021.

SCHEDULE

KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
NON-IT	1	Sierra Nevada Corporation	Firm Fixed-Price/ Time and Materials

PERFORMANCE AND TESTING

In April 2016, CBP identified capability needs in three additional mission areas and proposed increasing the program's quantity from 16 MI aircraft to 38 total MEA by adding 13 AI aircraft (which were approved in the February 2019 APB), six LI aircraft, and three signals detection aircraft. The Joint Requirements Council (JRC) endorsed CBP's findings but recommended CBP develop a number of requirements documents to fully validate the findings. In response, CBP developed an operational requirements document for the LI aircraft, which the JRC validated in February 2021. In June 2021, CBP officials said they are drafting the requirements for the signals detection aircraft.

The program previously met all five of its key performance parameters (KPP) for the MI configuration related to interdiction, air mobility, and mission system integration and operation. The program established two additional KPPs for the AI configuration related to radar detection. According to CBP officials, the radar software is the only difference between the MI and AI configurations.

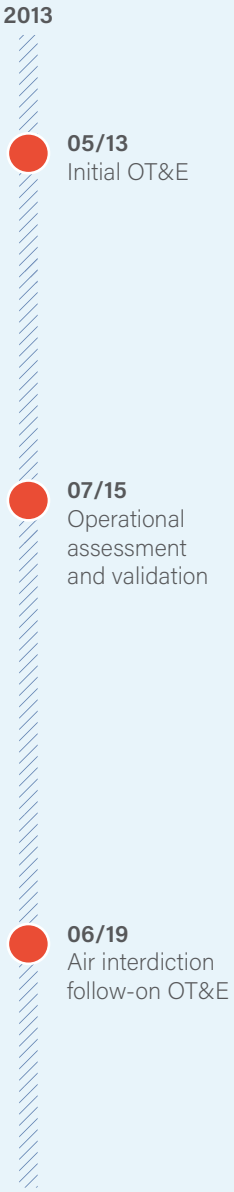
The program initiated a two-phased follow-on operational test and evaluation (OT&E) effort in May 2019. During the first phase, the program met the two AI KPPs. In August 2019, DHS's Director, Office of Test and Evaluation (DOT&E) assessed the results and found the AI radar software to be operationally effective but operationally suitable with limitations primarily because of a lack of spare parts, which affected the mission readiness of the MEA fleet. DOT&E recommended that the program develop a maintenance program to better track failure rates and project spare requirements, purchase spares at the level necessary to support the fleet, and complete OT&E of cyber resilience, among other things. In July 2020, CBP officials told GAO they were making progress in addressing DOT&E's recommendations. For example, these officials reported that CBP's Air and Marine Operations (AMO) is increasing the quantities of spare parts for key equipment to increase aircraft availability that AMO is investing in a new logistics and maintenance tracking system to improve their ability to track and project equipment levels for the entire fleet.

The second phase of OT&E will assess cybersecurity. In June 2021, CBP officials told us they completed a threat assessment for the program in 2020. CBP officials said they have also coordinated with stakeholders and subject matter experts to begin the process of assessing cyber resilience of the aircraft and plan to address cyber resilience by September 2022.

PROGRAM MANAGEMENT

CBP previously acquired MEA as a part of its Strategic Air and Marine Program (StAMP). In July 2016, DHS leadership designated MEA as a separate and distinct major acquisition program. In October 2018, CBP officials told GAO they continue to maintain a consolidated program office where the same staff from StAMP support all remaining acquisitions, including MEA. In June 2021, CBP officials said they hired a cybersecurity subject matter expert to assist the MEA and other CBP programs with cybersecurity testing and are leveraging staff from other offices within CBP, as needed, to mitigate staffing gaps in other areas.

TEST EVENTS



PROGRAM OFFICE COMMENTS

CBP officials provided technical comments on a draft of this assessment, which GAO incorporated as appropriate.

NON-INTRUSIVE INSPECTION (NII) SYSTEMS AND NII INTEGRATION PROGRAMS

U.S. CUSTOMS AND BORDER PROTECTION (CBP)

NII Systems provides an effective and nondestructive means to detect and prevent illegal entry and exit in the U.S. while allowing the legitimate flow of travel and commerce. CBP uses large- and small-scale NII units at air, sea, and land ports of entry to examine containers, railcars, and other items. NII Integration is intended to help CBP integrate existing and future NII units into CBP's network, among other things.

Source: U.S. Customs and Border Protection.

KEY FINDINGS

- NII Systems revised its baseline to reflect changes in procurement quantities and additional operating years.
- NII Integration delayed its ADE 2A date 8 months to February 2022 to refine key acquisition documentation.
- Staffing gaps continue to pose risks for both NII Systems and NII Integration.

APB THRESHOLDS VS. CURRENT ESTIMATE

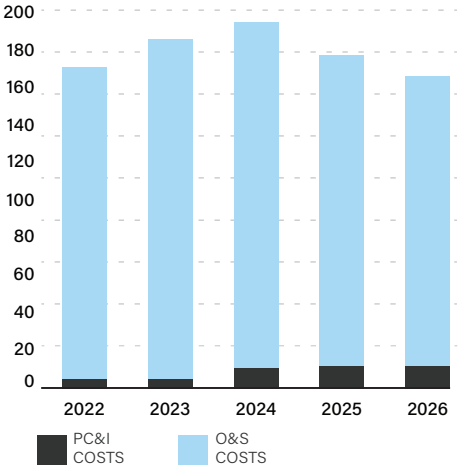
DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (01/2016)	1,896	2,616	4,512
Current APB (03/2021)	1,802	4,860	6,662
Current estimate (01/2021)	1,689	4,540	6,229

Note: NII Systems costs only.

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



Note: NII Systems costs only.

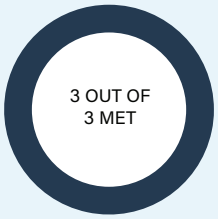
COST AND SCHEDULE

In March 2021, NII Systems revised its 2016 acquisition program baseline (APB) to reflect changes in the quantity of units deployed for full operational capability (FOC) based on user needs. CBP officials stated the requirements for small-scale units, such as handheld technology, have decreased from 5,455 to 4,879 and requirements for large-scale units increased from 342 to 405. In addition, the current APB includes 9 additional operating years for NII Systems through its sunset date of fiscal year 2035 and a resulting $2.2 billion increase in the program's cost estimate. In fiscal year 2022 and beyond, additions to the inventory and replacements of existing NII units will be considered NII Integration inventory.

As of September 2021, CBP officials said that NII Systems achieved FOC. However, DHS has not yet approved the declaration. NII Systems plans to initiate the transition to sustainment in fiscal year 2023 while ushering in the NII Integration program. No NII units will be replaced beyond fiscal year 2026, and the deployed inventory will be maintained through fiscal year 2035.
CBP is planning for an incremental acquisition approach for NII Integration, with baselines and acquisition decision events (ADE) 2A for each operational environment—land, sea, and air solutions. According to CBP officials, NII Integration delayed its multiple ADE 2A decisions by 8 months to February 2022 to incorporate changes in key acquisition documentation.

SCHEDULE

KEY PERFORMANCE PARAMETERS



Note: NII Systems key performance parameters, prime contractor, and contract type only.

PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor and Prime Contract Type	NII Systems FOC Quantities
MIXED (IT/NON-IT)	1	Various Firm-Fixed-Price	Reduced small-scale from 5,455 to 4,879 and increased large-scale from 342 to 405

PERFORMANCE AND TESTING

According to CBP officials, NII Systems is currently meeting its three program level key performance parameters (KPP), which focus on inspection rate, examination rate, and operational availability. In addition, NII Systems also has 14 KPPs that are specific to equipment type, such as baggage and package X-ray equipment, that CBP officials said the program has met. NII Systems predated the current DHS acquisition policies and testing division. For this reason, DHS leadership decided that the program does not need a test and evaluation master plan and does not need to redo testing so long as it purchased equipment aligned with the existing operational requirements document. DHS's Test and Evaluation Division has not validated CBP's assertion that it met its KPPs.

However, NII Integration will develop a test and evaluation master plan. CBP officials said that they anticipate that the KPPs for NII Integration will differ from the existing ones for NII to account for the integration requirements. Specifically, NII Integration will include command centers for remote operations, and the program's KPPs might include assessing if operational goals for increased inspection and examination speed and improved detection were met through systems integration. In addition, CBP officials stated that they plan to include a KPP for cyber resilience. According to CBP officials, due to new capabilities and operational construct, NII Integration will develop a new operational requirements document by December 2021.

In June 2020, the Alternatives Analysis Executive Steering Committee reported concerns and directed NII Integration to conduct several actions following the program's briefing to the committee about its alternatives analysis study plan. Specifically, the committee requested that NII Integration 1) engage with CBP's Office of Trade for potential reuse of the technology under acquisition and 2) include alternatives discussion as needed in the study plan and future reviews. The committee reported concerns about the aggressive timeline for completion of studies to evaluate the commercial and nondevelopmental items as part of future NII Integration solutions. In January 2021, CBP approved NII Integration's alternatives analysis report—a required acquisition document for an ADE 2A decision.

PROGRAM MANAGEMENT

The NII Systems program continues to face staffing gaps. NII Systems program staff are also supporting the NII Integration program, which exacerbates workforce challenges. In the interim, NII Systems is mitigating risks to program execution as a result of the staffing gaps with government personnel from within CBP, such as the Office of Acquisition, and is leveraging contracted staff when possible. According to program officials, the program requested additional staff through CBP to address staffing shortfalls. The fiscal year 2021 staffing plan for NII Integration assumes the program will be funded by fiscal year 2023, and NII Systems will start to transition its operational staff to NII Integration in the same year. According to the plan, the staffing strategy for NII Integration is evolving.

TEST EVENTS

2021

03/21
Site Acceptance Test of baggage system

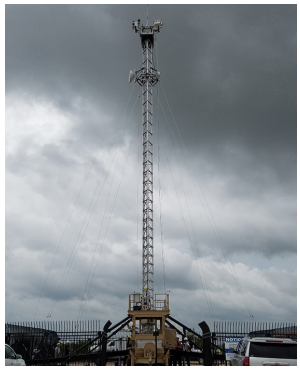
08/21
First Article Testing of handheld X-ray system

PROGRAM OFFICE COMMENTS

CBP officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

REMOTE VIDEO SURVEILLANCE SYSTEM (RVSS)
U.S. CUSTOMS AND BORDER PROTECTION (CBP)

RVSS provides daylight and infrared video cameras mounted on fixed or relocatable systems to help the Border Patrol detect and identify illegal entries across U.S. borders. From 1995 to 2005, CBP deployed approximately 310 RVSS towers and, in 2011, upgraded legacy towers in Arizona. In 2016, DHS leadership approved RVSS as a level 1 program, expanding deployments to additional southwest border sectors.



Source: U.S. Customs and Border Protection.

KEY FINDINGS

- DHS approved an initial APB for deployments to Rio Grande Valley and Laredo sectors in October 2020.
- DHS plans to consolidate RVSS and three related programs in fiscal year 2022.
- No new RVSS towers were deployed in 2021 due to the Border Wall System Program's construction pause and COVID-19.

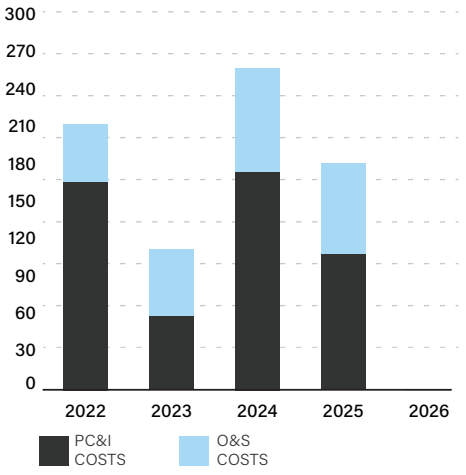
APB THRESHOLDS VS. CURRENT ESTIMATE

DOLLARS IN MILLIONS

	PC&I COST	O&S COST	LIFE-CYCLE COST
Initial APB (10/2020)	581	617	1,198
Current APB	Not applicable		
Current estimate (06/2020)	1,892	1,805	3,698

PROGRAM COSTS FOR FISCAL YEARS 2022 - 2026

DOLLARS IN MILLIONS



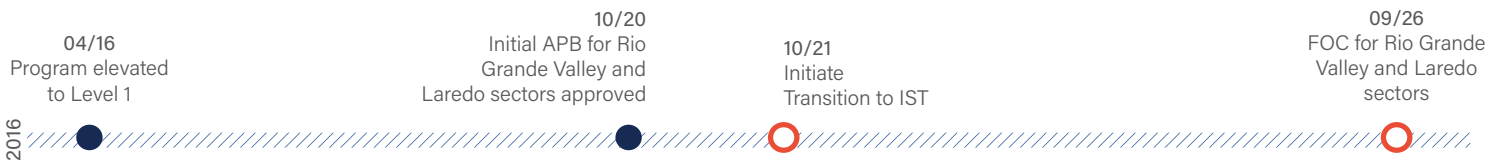
Note: RVSS does not have cost information for fiscal year 2026 because its current cost estimate will be superseded due to plans to consolidate into the Integrated Surveillance Towers program.

COST AND SCHEDULE

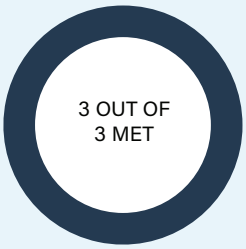
In April 2016, DHS approved RVSS as a level 1 program, expanding it to include deployments to the Rio Grande Valley and Laredo sectors in Texas and five additional sectors along the southwest border—Del Rio, Big Bend, El Paso, El Centro, and San Diego. DHS leadership directed the program to revise its acquisition program baseline (APB) and obtain approval for additional deployments. DHS approved the initial APB in October 2020 for the Rio Grande Valley and Laredo sectors in Texas.

In June 2021, CBP officials told us RVSS did not develop a life-cycle cost estimate (LCCE) update during fiscal year 2021 due to plans to consolidate it into the Integrated Surveillance Towers (IST) program in fiscal year 2022. Instead, the IST LCCE will include costs for new RVSS deployments and sustainment costs for legacy systems. Until this consolidation is complete, RVSS is taking actions to manage costs across these programs. CBP officials told us that the consolidation of their Network Operations Center/Security Operations Center in Arizona and the transition to using the Federal Aviation Administration's logistics center for support activities resulted in a 31 percent cost reduction or $2.1 million in annual cost savings for 65 deployed sites. This effort is consistent with the Integrated Fixed Tower program's use of the Federal Aviation Administration's center for this purpose and both programs anticipate cost savings from this arrangement.

SCHEDULE



KEY PERFORMANCE PARAMETERS



PROGRAM INFORMATION

Acquisition Type	Acquisition Level	Prime Contractor	Prime Contract Type
MIXED	1	General Dynamics One Source	Firm-Fixed-Price

PERFORMANCE AND TESTING

In September 2020, RVSS updated its operational requirements document in response to direction from DHS leadership to address the expanded tower deployment locations within the Rio Grande Valley and Laredo sectors. CBP is developing an updated operational requirements document and test and evaluation master plan for the consolidated IST program. DHS testing officials told us that it is too early in the planning process for them to know what further testing may be required.

According to CBP officials, RVSS towers deployed under the legacy program demonstrated that they met the program's three key performance parameters (KPP) based on a limited user test in 2015. These KPPs, which establish a minimum acceptable range for detection and identification and the percentage of time the system must be available to operators, will apply to future towers. These officials said that program does not plan to conduct additional testing unless there are major technological changes. CBP officials told us that, while RVSS systems are cyber secure, legacy RVSS systems deployed early in the program's history are not necessarily compliant with current cybersecurity requirements. To mitigate program risks, CBP officials told us that they are analyzing options to address these requirements and continue to request funding for cybersecurity activities.

PROGRAM MANAGEMENT

In July 2020, CBP officials presented DHS leadership a plan to consolidate RVSS, Integrated Fixed Towers, Northern Border-RVSS, and Autonomous Surveillance Towers into a single program. CBP anticipates that this effort will include requirements to link to a separate common operating picture to support the different capabilities and configurations of the separate surveillance systems into a single, consistent user interface. CBP officials stated that this will eliminate the need for separate sustainment activities for each program, among other things, which will result in cost savings and efficiencies for end users. CBP intends to simultaneously transition these existing programs under the new IST program in fiscal year 2022. CBP officials said that until the consolidated effort is funded and the technologies are consolidated, the surveillance tower programs, including RVSS, will continue activities under the existing programs.

According to CBP officials, as of September 2021, RVSS has not deployed new towers in 2021 due to the Border Wall System Program's construction pause in January 2021 and challenges related to COVID-19. Specifically, CBP officials reported that COVID-19 travel restrictions and social distancing requirements resulted in land acquisition delays, particularly in south Texas. CBP officials said that RVSS real estate acquisition is no longer tied to the Border Wall System Program and new RVSS deployments are planned for the second quarter of fiscal year 2022.

TEST EVENTS

2015

August
Limited user test

PROGRAM OFFICE COMMENTS

CBP officials provided technical comments on a draft of this assessment, which we incorporated as appropriate.

Appendix II: Objectives, Scope, and Methodology

The objectives of this audit were designed to provide congressional committees insight into the Department of Homeland Security's (DHS) major acquisition programs. We (1) examined the extent to which selected DHS major acquisition programs are meeting their baseline goals and (2) described the programs' efforts to mitigate Coronavirus Disease 2019 (COVID-19)-related cost and schedule effects.

To address these questions, we selected 29 of DHS's 37 major acquisition programs.[1] We selected 13 of DHS's Level 1 acquisition programs—those with life-cycle cost estimates (LCCE) of $1 billion or more—that had at least one project, increment, or segment in the obtain phase—the stage in the acquisition life cycle when programs develop, test, and evaluate systems—at the initiation of our audit. Additionally, we reviewed 16 other major acquisition programs that we identified were at risk of not meeting their cost estimates, schedules, or capability requirements, based on our past work and discussions with DHS officials. Two of these 16 programs were level 2 acquisitions with LCCEs between $300 million and less than $1 billion in the obtain phase. The other 14 programs were level 1 or level 2 programs that had not yet entered or were beyond the obtain phase. We met with representatives from DHS's Office of Program Accountability and Risk Management (PARM)—DHS's main body for acquisition oversight—as a part of our scoping effort to determine which programs, if any, were facing difficulties in meeting their cost estimates, schedules, or capability requirements. The 29 selected programs were sponsored by seven different components, and they are identified in table 9, along with our rationale for selecting them.

[1]Our review included 28 of the 30 programs we reviewed in GAO, *DHS Annual Assessment: Most Acquisition Programs Are Meeting Goals but Data Provided to Congress Lacks Context Needed for Effective Oversight*, GAO-21-175 (Washington, D.C.: Jan. 19, 2021).

Table 9: Rationale for Selecting DHS Major Acquisition Programs for Review

Component	Program	Level 1 program in the obtain phase at the initiation of our audit	Level 1 and Level 2 program identified to be at risk[a]
Cybersecurity and Infrastructure Security Agency	Continuous Diagnostics and Mitigation	X	—
	National Cybersecurity Protection System	X	—
	Next Generation Network Priority Services Phase 1	—	X
	Next Generation Network Priority Services Phase 2	—	X
DHS Management Directorate	Homeland Advanced Recognition Technology	X	—
Federal Emergency Management Agency	Grants Management Modernization	—	X
Science and Technology Directorate	National Bio and Agro-Defense Facility	X	—
Transportation Security Administration	Checkpoint Property Screening System	X	—
	Credential Authentication Technology	—	X
U.S. Coast Guard	270’ Medium Endurance Cutter Service Life Extension Program	X	—
	Fast Response Cutter	—	X
	H-65 Conversion/Sustainment Program	—	X
	Long Range Surveillance Aircraft (HC-130J)	—	X
	Medium Range Recovery Helicopter (MH-60T)	X	—
	Medium Range Surveillance Aircraft	X	—
	National Security Cutter	—	X
	Offshore Patrol Cutter	X	—
	Polar Security Cutter	X	—
	Waterways Commerce Cutter	—	X

Component	Program	Level 1 program in the obtain phase at the initiation of our audit	Level 1 and Level 2 program identified to be at risk[a]
U.S. Customs and Border Protection	Automated Commercial Environment	X	—
	Biometric Entry-Exit Program	—	X
	Border Wall System Program	X	—
	Cross Border Tunnel Threat	X	—
	Integrated Fixed Towers	—	X
	Medium Lift Helicopter	—	X
	Multi-Role Enforcement Aircraft	—	X
	Non-Intrusive Inspection Systems	—	X
	Non-Intrusive Inspection Integration	—	X
	Remote Video Surveillance System	—	X

Legend: X = applicable rationale ; — = not applicable

Source: GAO analysis of Department of Homeland Security (DHS) data. | GAO-22-104684

[a]Programs with Xs in this column are either Level 2 programs in the obtain phase or Level 1 and 2 programs that had not yet entered or were beyond the obtain phase that we identified were at risk of not meeting their cost estimates, schedules, or capability requirements based on our past work and discussions with DHS officials.

To determine the extent to which DHS's major acquisition programs are meeting their cost, schedule, and performance goals, we collected key acquisition documentation for each of the 29 programs, such as all LCCEs and acquisition program baselines (APB) approved at the department level since DHS's current acquisition management policy went into effect in November 2008. DHS policy establishes that all major acquisition programs should have a department-approved APB—which establishes a program's critical cost, schedule, and performance parameters—at ADE 2B. Twenty-four of the 29 programs had one or more department approved LCCEs and APBs between November 2008 and September 30, 2021.[2] We subsequently determined that one of these 24 programs, the Border Wall System Program, should be excluded from our aggregated analyses, due to the January 2021 Presidential Proclamation directing a pause in the construction of the border wall to the extent permitted by law. We used these APBs to identify the initial and current cost and schedule goals for the programs. We then developed a data collection instrument to help validate the information from the APBs.

[2]The remaining five programs—Cross-Border Tunnel Threat, Non-Intrusive Inspection Systems Integration, Next Generation Network Priority Services Phase 2, Medium Range Recovery Helicopter (MH-60T), and Waterways Commerce Cutter—did not receive department approval of their initial APBs by September 30, 2021. Therefore, we excluded them from our assessment of whether programs are on track to meet their schedule and cost goals during fiscal year 2021.

Specifically, for each program, we prepopulated data collection instruments to the extent possible with the schedule and cost information we had obtained from the APBs and our prior assessments (if applicable) to identify schedule and cost goal changes, if any, during fiscal year 2021. We shared our data collection instruments with officials from the program offices to confirm or correct our initial analysis and to collect additional information to enhance the timeliness and comprehensiveness of our data sets.

We also met with program officials to identify causes and effects associated with any identified schedule and cost goal changes, including changes as a result of the COVID-19 pandemic. We identified the number of programs with DHS-approved APBs that achieved performance goals during fiscal year 2021 by determining the number of programs that 1) conducted testing of deployed capabilities and 2) DOT&E determined that the program's key performance parameters were generally met. If programs did not meet one or more key performance parameters because they did not yet complete testing of capabilities, we counted those programs as not meeting their performance goals for that reason. If programs had unmet performance goals but met goals that were testable, then we counted those programs as meeting performance goals for those goals possible to test.

To determine programs' efforts to mitigate COVID-19–related cost and schedule effects, we first reviewed the October 2020 DHS memorandum granting level 1 and selected level 2 programs the ability to adjust their APB schedule baseline goals up to 6 months (or more with leadership approval) due to effects related to COVID-19. We then reviewed baseline adjustment memorandums associated with programs that made use of this authority, as applicable. We also reviewed program documentation and conducted interviews with programs in our scope to determine any additional COVID-19 cost and schedule effects and how programs mitigated these effects.

Subsequently, we drafted preliminary assessments for each program. When drafting these assessments, we combined the Non-Intrusive Inspection Systems Program with the Non-Intrusive Inspection Integration program because the Non-Intrusive Inspection Integration program is a follow-on effort that has not yet established a preliminary APB. In addition, we drafted three assessments for the Border Wall System Program—one for each of fiscal years 2018, 2019, and 2020—because the program established acquisition program baselines for each fiscal year that funding was provided. Finally, we drafted the Next Generation

Networks Priority Services Phase 1 and 2 programs as two assessments because the Phase 2 program established a preliminary acquisition program baseline during our review period. After drafting the assessments, we shared them with program and component officials and gave these officials an opportunity to submit comments to help us correct any inaccuracies, which we accounted for as appropriate (such as when new information was available).

We conducted this performance audit from December 2020 to March 2022 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

Marie A. Mak at (202) 512-4841 or makm@gao.gov

Staff Acknowledgments

In addition to the contact listed above, Angie Nichols-Friedman (Assistant Director), Scott Purdy (Analyst-in-Charge), John Crawford, Andrea Evans, TyAnn Lee, and Philip Oyoo made key contributions to this report. Other contributors included Erin Butkowski, Alexandra Dew Silva, Lorraine Ettaro, Alexandra Gebhard, Stephanie Gustafson, Katheryn Hubbell, Claire Li, Alexis Olson, Jenny Shinn, Anne Louise Taylor, Alyssa Weir, and Robin Wilson.

Appendix IV: Additional Source Information for Images and Figures

This appendix contains credit, copyright, and other source information for images, tables, or figures in this product when that information was not listed adjacent to the image, table, or figure.

Front cover: U.S. Coast Guard (H-65 helicopter).

Appendix I: GAO analysis of Department of Homeland Security data and information (all figures).

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