



April 2018

DHS PROGRAM COSTS

Reporting Program-Level Operations and Support Costs to Congress Would Improve Oversight

Accessible Version

DHS PROGRAM COSTS

Reporting Program-Level Operations and Support Costs to Congress Would Improve Oversight

Why GAO Did This Study

O&S costs—the costs used to operate and sustain a program—can account for up to 70 percent of a program's total cost. End users rely on O&S funds for maintenance, spares, and personnel. DHS programs initially identify O&S costs in their life-cycle cost estimate at the outset of the acquisition. This estimate informs the program's budget and affects the amount the department designates for the program's use. In 2015, GAO found that DHS's budget requests did not reflect all estimated costs—including O&S—for certain programs, which limits visibility for decision makers.

GAO was asked to review O&S activities for major acquisition programs at DHS. This report examines the extent that (1) DHS's budget management and reporting affects operations and oversight, and (2) cost estimates are comprehensive and accurate, as well as regularly updated.

GAO selected a non-generalizable sample of 11 major acquisition programs, based on asset type and acquisition status, as case studies from selected DHS components. GAO analyzed selected programs' O&S cost estimates, funding, and spending. In addition, GAO interviewed DHS officials at the headquarters, component, and program office level.

What GAO Recommends

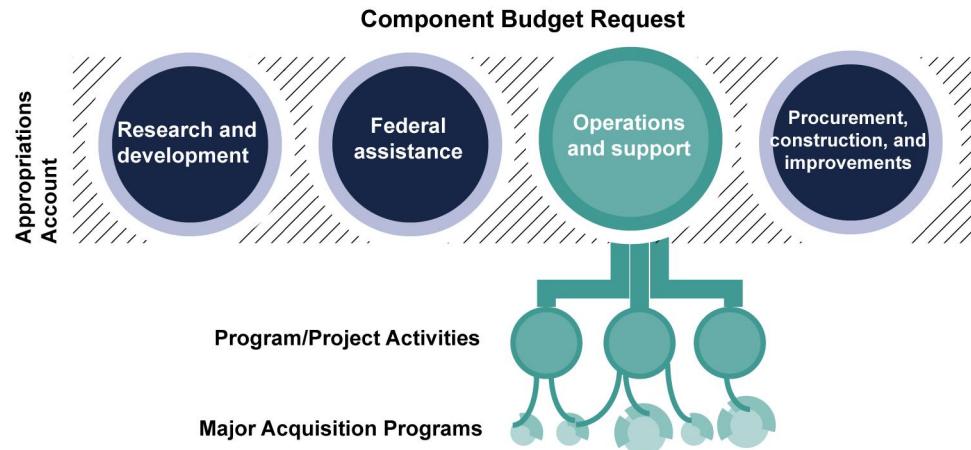
GAO is making three recommendations, including that DHS work with Congress to add program-level O&S funding details to the budget information it provides Congress. DHS concurred.

View [GAO-18-344](#). For more information, contact Marie A. Mak at (202) 515-4841 or makm@gao.gov.

What GAO Found

While the Department of Homeland Security's (DHS) budget management provides flexibility to conduct operations, such as shifting funds to programs within the same mission area to cover unforeseen needs, budget reporting does not provide Congress with insight into specific programs' operations and support O&S costs. The O&S budget information that DHS reports to Congress is oriented by mission—for example, Integrated Operations—instead of by program—for example, the Multi-Role Enforcement Aircraft Program. The figure depicts the mission-oriented nature of the budget.

Department of Homeland Security's Budget Structure



Source: GAO analysis of DHS budget documents. | GAO-18-344

While some program-oriented O&S data are available at the component level, this information does not appear in DHS's budget reports to Congress. This disparity is due in part to the manner in which the department reports budget information. However, these limitations are not insurmountable. Standards for internal controls state that managers should communicate quality information, in this case full program costs. Providing additional data on O&S costs in budget reports would preserve DHS's flexibility in its use of funds while providing Congress a better understanding of the budgetary and programmatic effect of its funding decisions.

GAO reviewed the O&S portion of the most recently approved cost estimates for selected programs and found that 10 of the 11 estimates provided a complete accounting of all resources and associated cost elements. Further, all the programs had appropriately updated their cost estimates as required, a GAO best practice in cost estimating. Due to the sensitive nature of some programs' cost models, GAO could not verify all aspects of accuracy for all estimates reviewed.

Contents

Letter	1
Background	4
Mission-Oriented Budget Management Provides Operational Flexibility, but Limits Visibility of O&S Costs in Reports to Congress	11
Life-Cycle Cost Estimates for All but One Selected Program Were Comprehensive but Many Did Not Provide Evidence of Accuracy, and All Were Updated as Required	18
Conclusions	23
Recommendations for Executive Action	24
Agency Comments and Our Evaluation	24
Appendix I: Objectives, Scope and Methodology	27
Appendix II: Results of Life-Cycle Cost Estimate Analysis	32
Appendix III: Comments from the Department of Homeland Security	37
Appendix IV: GAO Contact and Staff Acknowledgments	40
GAO Contact	40
Staff Acknowledgments	40
Appendix V: Accessible Data	41
Data Table	41
Agency Comment Letter	41
Tables	
Table 1: Selected Department of Homeland Security Major Acquisition Programs	9
Table 2: Selected Department of Homeland Security Major Acquisition Programs	27
Table 3: Results of Operations and Support Cost Estimate Analysis for Selected Customs and Border Protection Acquisition Programs	33

Table 4: Results of Operations and Support Cost Estimate Analysis for Selected Immigration and Customs Enforcement Acquisition Programs	33
Table 5: Results of Operations and Support Cost Estimate Analysis for Selected National Protection and Programs Directorate Acquisition Programs	34
Table 6: Results of Operations and Support Cost Estimate Analysis for Selected Transportation Security Administration Acquisition Programs	35
Table 7: Results of Operations and Support Cost Estimate Analysis for Selected U.S. Coast Guard Acquisition Programs	36

Figures

Figure 1: Department of Homeland Security's Appropriation and Program/Project Activity Account Relationship	6
Figure 2: Department of Homeland Security's Acquisition Life-Cycle for Major Acquisition Programs	8
Figure 3: Cost Estimating Feedback Process	10
Figure 4: Selected Programs' Operations and Support Estimates Are Generally Comprehensive	19
Figure 5: Selected Programs' Operations and Support Estimates Lack Accuracy	21
Accessible Data for Figure 2: Department of Homeland Security's Acquisition Life-Cycle for Major Acquisition Programs	41

Abbreviations

DHS	Department of Homeland Security
LCCE	life-cycle cost estimate
NASA	National Aeronautics and Space Administration
O&S	operations and support
PPA	program/project activity

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



April 25, 2018

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

The Honorable Scott Perry
Chairman
The Honorable J. Luis Correa
Ranking Member
Subcommittee on Oversight and Management Efficiency
Committee on Homeland Security
House of Representatives

The Honorable Bonnie Watson Coleman
Ranking Member
Subcommittee on Transportation and Protective Security
Committee on Homeland Security
House of Representatives

Operations and support (O&S) costs make up the majority—sometimes over 70 percent—of an acquisition program's total lifetime costs.¹ For fiscal year 2017, the Department of Homeland Security (DHS) requested over \$34 billion for O&S. These costs can include funding for fuel and other consumables, spare parts, and personnel who operate and maintain equipment. Also, as a system becomes operational, users rely on O&S funds for support through the duration of the system's lifetime. However, if information on such costs is vague or inconsistent, Congress's ability to conduct oversight would be limited, which in turn can affect its funding decisions for major acquisition programs. If programs experience O&S funding shortfalls, they may fall short of operational goals or not be able to address maintenance needs.

We found in April 2015 that DHS's funding plans for major acquisition programs did not reflect all of the estimated costs for certain programs,

¹To maintain congruence with language used in DHS's budget reporting, we use the term operations and support in this report as all components, with the exception of the Coast Guard, use this language.

particularly for O&S, resulting in potential operational shortfalls.² Specifically, we found that the U.S. Coast Guard programs we reviewed did not provide complete O&S information. This kind of information shortfall could hinder DHS leadership's assessment of plans for delivering capabilities to operators to conduct their missions. We made a recommendation to DHS, with which the department concurred, to account for all O&S funding DHS plans to allocate to each of the Coast Guard's major acquisition programs. DHS and the Coast Guard are continuing to address this recommendation.

You asked us to evaluate O&S activities for DHS's major acquisition programs. This report assesses, for selected major acquisition programs, the extent that (1) DHS's budget management and reporting affects operations and oversight; and (2) O&S life-cycle cost estimates (LCCEs) are comprehensive and accurate, as well as regularly updated.

To conduct our work, we reviewed the DHS Major Acquisition Oversight List as of April 2017 and selected 11 major acquisition programs from five components to serve as case studies for our review.³ We selected a non-generalizable sample of programs, and their corresponding components, in various stages of the acquisition cycle, including programs in deployment. Our case studies included a mix of information technology and other programs that are not generalizable, but provide insight into DHS's O&S activities.

We reviewed fiscal year 2017 DHS budget documents for major acquisition program funding information, but did not find sufficient granularity of O&S data to do our work. As a result, we developed and disseminated a data collection instrument for distribution to DHS program offices to gather information on selected programs' budget requests, budget authority, obligations, and expenditures, including personnel expenditures, from fiscal years 2015 to 2017. We analyzed program responses to compare expenditures and obligations to program budget requests. We also analyzed the DHS portion of the fiscal year 2018 President's budget request to identify changes to that document.

²GAO, *Homeland Security Acquisitions: Major Program Assessments Reveal Actions Needed to Improve Accountability*, GAO-15-171SP (Washington D.C.: Apr. 22, 2015). In GAO-15-171SP, we referred to operations and support as operations and maintenance.

³The Master Acquisition Oversight List is a summary of DHS's acquisition portfolio that includes all levels of acquisition, in terms of program costs, and reports on programs in their deployment phase that meet certain criteria.

We analyzed the O&S portion of DHS-approved LCCEs against criteria from GAO's *Cost Estimating and Assessment Guide*, focusing on the characteristics of comprehensiveness and accuracy.⁴ We also assessed each program's LCCE updates against DHS acquisition policy.

We interviewed officials at DHS headquarters; component program and budget offices; Coast Guard Surface Forces Logistics Center in Baltimore, Maryland; Coast Guard Aviation Logistics Center in Elizabeth City, North Carolina; Transportation Security Administration at Reagan National Airport in Washington, D.C.; Customs and Border Protection's Southwest Border Regional Headquarters in Albuquerque, New Mexico; Customs and Border Protection's Tucson Air Branch in Tucson, Arizona; and the Border Patrol's Nogales Station in Nogales, Arizona. We chose these locations as we could often discuss multiple programs during a single site visit. For example, we discussed both of our Coast Guard aircraft programs at the Aviation Logistics Center. Appendix I contains detailed information on our scope and methodology.

We conducted this performance audit from November 2016 to April 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

⁴GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, GAO-09-3SP (Washington, D.C.: March 2009). GAO typically assesses cost estimates against four characteristics: comprehensive, accurate, well-documented, and credible. For the purposes of our review, we assessed two characteristics as we limited our analysis to the O&S portion of programs' LCCEs and because if an estimate is not comprehensive, then it cannot fully meet the well-documented, accurate, or credible best practice characteristics. Regarding the accuracy characteristic, we chose not to assess the accuracy criterion regarding bias as we did not assess program risk. See appendix I for additional information on our methodology.

Background

DHS Budget Structure and Reporting

After the 2002 consolidation of 22 agencies into a single department, DHS had, until recently, different appropriation structures and budget management practices based on agencies' enacted appropriations prior to DHS consolidation. DHS reported that, with over 70 different appropriations and over 100 formal program/project activity (PPA) accounts, it operated for over a decade with significant budget disparities and inconsistencies across its components. The lack of uniformity hindered visibility, inhibited comparisons between programs, and complicated spending decisions.

To address some of these inconsistencies, DHS proposed a new, common appropriations structure to Congress in 2014, according to officials. The House Appropriations Committee then included language regarding a common appropriations structure for the President's budget request in its report that accompanied a proposed House fiscal year 2015 DHS Appropriations Bill. The language in the report directed the DHS Office of the Chief Financial Officer to work with the DHS components, the Office of Management and Budget, and the Committee to establish a common appropriations structure for the President's budget request.⁵ While the specific appropriations bill that the report accompanied did not become law, Congress subsequently enacted a common appropriations structure for the department.⁶ DHS's fiscal year 2016 President's budget request was the first to use this common appropriations structure.

Under the common appropriations structure, DHS uses these four enacted accounts to capture the following costs:

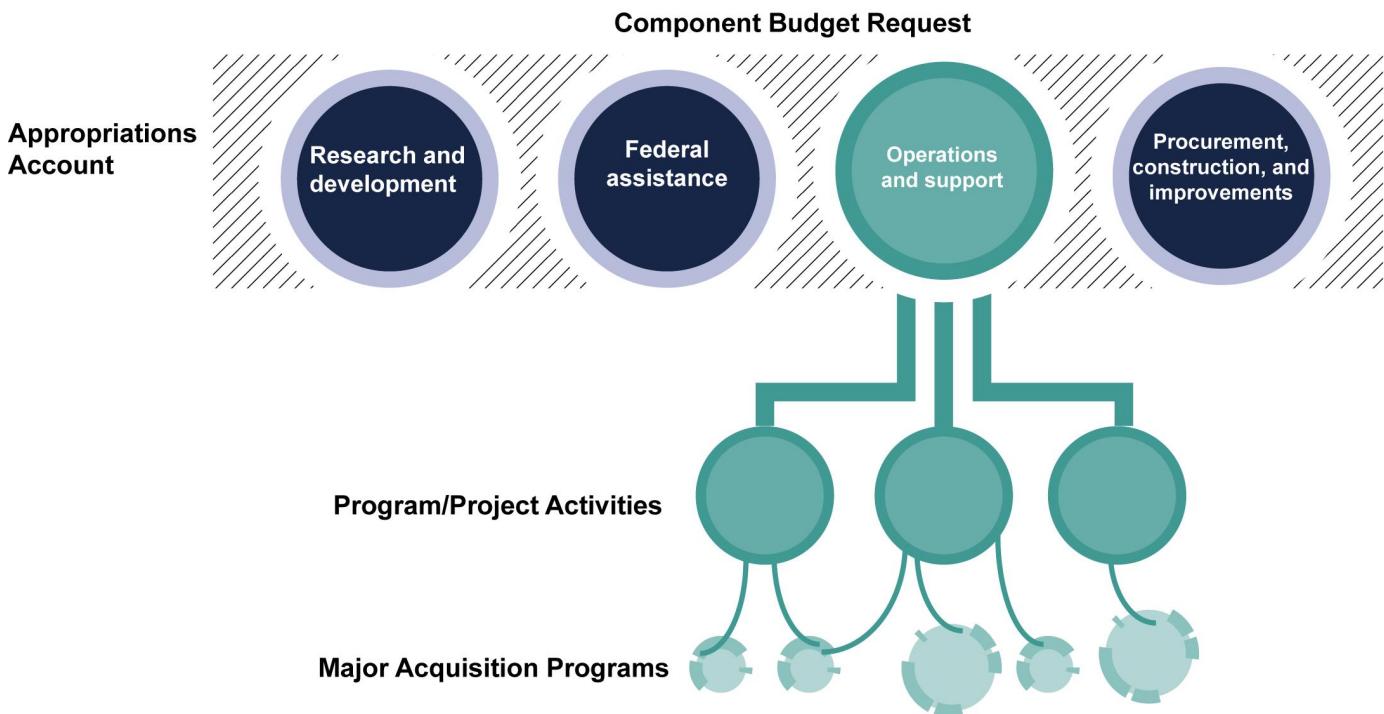
⁵H.R. Rep. No. 113-481, tit. I, at 24 (2014).

⁶See Department of Homeland Security Appropriations Act, 2017, Pub. L. No. 115-31, div. F, 131 Stat. 135, 404-435 (2017). The enactment of the common appropriation structure did not apply to the Coast Guard, which retained its pre-existing appropriations accounts. Coast Guard officials said they expect the agency to be subject to the common appropriation structure once it replaces its financial management systems, a project forecasted for completion in fiscal year 2020.

- **Research and development** – includes funds to support the search for new or refined knowledge and ideas as well as improved products or processes to yield future benefits;
- **Procurement, construction, and improvements** – provides funds for planning, operational development, engineering and purchase of one or more assets prior to deployment.
- **Operations and support** – provides funds necessary for operations, mission support, and associated management and administration activities, including salaries. Operational costs can include funding for fuel and other consumables as well as personnel. Maintenance costs can include routine or critical maintenance, spare parts, and additional personnel; and
- **Federal assistance** – provides monetary or non-monetary support to any entity through various types of loans, grants, and other means.

Within each component's budget request, the four appropriations accounts are subdivided into mission-oriented PPAs that correspond to the components' varied operations. One PPA can include costs for multiple programs and funding for programs may cross multiple PPAs. For example, in the fiscal year 2017 congressional budget justification—the formal budget submission from DHS that comprises its portion of the President's annual budget submission—Customs and Border Protection's Integrated Fixed Towers and UH-60 helicopter programs both requested O&S funds through the Securing America's Borders PPA. Other examples of PPAs include Transportation Screening Operations and Securing and Expediting Trade and Travel. Figure 1 shows the relationship between DHS appropriations PPAs.

Figure 1: Department of Homeland Security's Appropriation and Program/Project Activity Account Relationship



Source: GAO analysis of DHS budget documents. | GAO-18-344

DHS components use the mission-oriented PPAs to develop component budget requests within the President's budget request. The DHS budget request includes components' requested funds within the four appropriations accounts, including O&S, and their PPAs.

DHS also uses the PPAs in its monthly execution reports to Congress to communicate its obligations and expenditures, along with other

information.⁷ The monthly execution report mirrors the format of the congressional budget justification by providing execution data organized by appropriation account and mission-oriented PPA. This monthly snapshot includes personnel costs as part of the O&S costs they report.

The Future Years Homeland Security Program is a database that contains 5-year funding plans for DHS's major acquisition programs and is used to prepare a report to Congress that supplements information in the annual budget request. In addition to the information presented in the budget submission and monthly execution report, this document organizes funding projections by major acquisition program. The 5-year plans in the Future Years Homeland Security Program are intended to allow the department to achieve its goals more efficiently than an incremental approach based on 1-year plans and articulate how the department will achieve its strategic goals within fiscal constraints.

DHS Acquisition Process and Life-Cycle Cost Estimates

The establishment of DHS in 2002 consolidated 22 agencies from multiple cabinet-level departments and independent agencies into a single organization. To help manage its portfolio of acquisition programs, DHS established policies and processes for acquisition management, test and evaluation, and resource allocation. The department uses these policies and processes to acquire and deliver systems that are intended to close critical capability gaps and enable DHS to execute its mission. Figure 2 outlines the acquisition life-cycle for major acquisition programs at DHS.

⁷DHS submitted the monthly reports in fiscal year 2016 in response to requirements set forth by the Department of Homeland Security Appropriations Act, 2016 (P.L. 114-113, § 513). This legislation required that no later than 30 days after the last day of each month, the Chief Financial Officer of the Department of Homeland Security submit to the Committees on Appropriations of the Senate and the House of Representatives a monthly budget and staffing report that includes total obligations of the department for that month, for the fiscal year at the appropriation, and program, project, and activity levels, by the source year of the appropriation. This legislation also required that total obligations for staffing be provided by subcategory of on-board and funded full-time equivalent staffing levels, respectively. Finally, the legislation required that the report specify the number of, and total obligations for, contract employees for each office of the department. The fiscal year 2017 Consolidated Appropriations Act included a similar reporting requirement for DHS. Pub. L. No. 115-31 § 102. DHS stated that in addition to the monthly reports, it also sends a summary end of year report to Congress at the end of the calendar year, which itemizes the obligations and expenses of PPA accounts.

Figure 2: Department of Homeland Security's Acquisition Life-Cycle for Major Acquisition Programs

Acquisition phases



Source: GAO analysis of Department of Homeland Security (DHS) data. | GAO-18-344

Programs initially identify costs—including those for O&S—in their department-approved LCCE during the analysis phase. When a program becomes operational while still going through its acquisition milestones, programs may use O&S funds during the obtain or deploy phases. For example, the Coast Guard has several operational National Security Cutters, but is also obtaining additional cutters; therefore, it would use O&S funds for support of deployed cutters and procurement funds for acquisition of additional cutters.

GAO's *Cost Estimating and Assessment Guide* notes four characteristics of a high quality cost estimate: comprehensive, well documented, accurate, and credible.⁸ Specifically, a comprehensive cost estimate should include all costs of the program for the O&S phase, while reflecting the current schedule, and should document all ground rules and assumptions. Furthermore, an accurate cost estimate should provide for results that are based on historical data, if available, while containing few, if any, minor errors.⁹

DHS acquisition policy has generally required components to update LCCEs at Acquisition Decision Events, up until the deployment phase, since 2008. However, since issuance of the department's October 2011 acquisition policy revision, LCCE revisions must also be DHS-approved. Prior to the 2008 policy, GAO found that nearly two-thirds of programs did not have life-cycle cost estimates.¹⁰ Each of our 11 selected programs

⁸ GAO-09-3SP.

⁹ For the purposes of this review, we did not assess selected programs against two of the four characteristics of a high-quality cost estimate. For more information see appendix I.

¹⁰ GAO, *Department of Homeland Security: Billions Invested in Major Programs Lack Appropriate Oversight*, GAO-09-29, (Washington, D.C.: Nov. 18, 2008).

has an approved cost estimate. Table 1 lists the programs selected for our study.

Table 1: Selected Department of Homeland Security Major Acquisition Programs

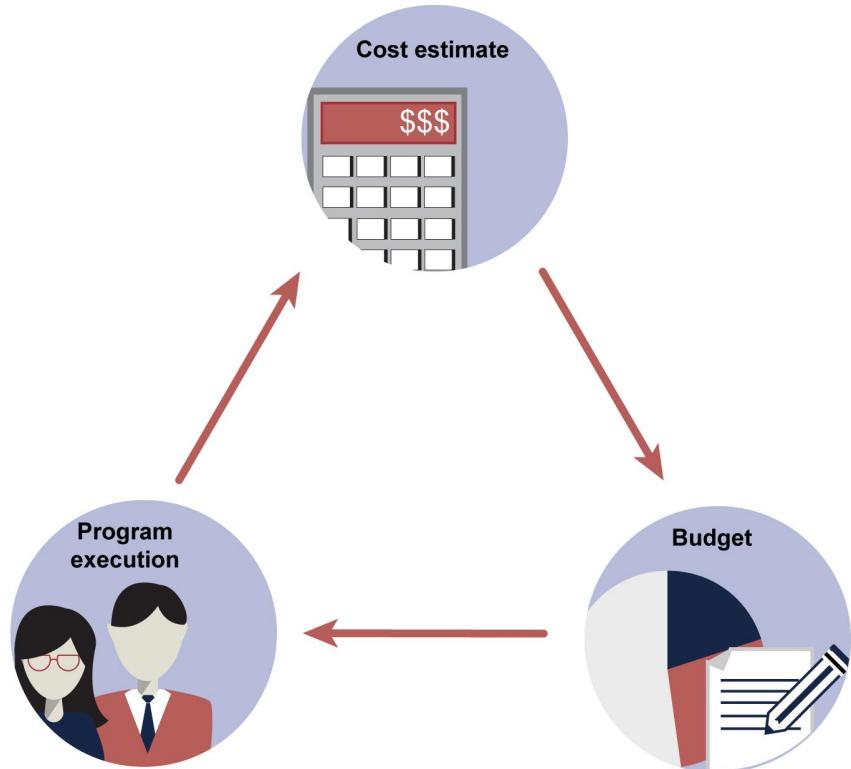
Component	Program	Description
Customs and Border Protection	Integrated Fixed Towers	This program is a network of fixed surveillance tower units equipped with ground surveillance radar, infrared cameras, and communications systems across the southwest border to help the Border Patrol detect and track illegal entries in remote areas.
Customs and Border Protection	Multi-Role Enforcement Aircraft	These are fixed-wing, multi-mission aircraft that can be configured to perform multiple missions, including marine, air, and land interdiction; logistical support; and law enforcement technical collection.
Customs and Border Protection	TECS Modernization ^a	TECS is a law-enforcement information technology system that helps officials determine the admissibility of persons wanting to enter the United States at border crossings and ports of entry as well as pre-screening sites located abroad.
Customs and Border Protection	UH-60 Medium Lift Utility Helicopter	The UH-60 is a medium lift helicopter used for law enforcement and border security operations; air and mobility support and transport; search and rescue operations; and other missions.
Immigration and Customs Enforcement	TECS Modernization	This legacy TECS system has provided case management, intelligence reporting, and information sharing capabilities. The modernization program will provide end users with additional functionality required for mission execution.
National Protection and Programs Directorate	Next Generation Security Networks Priority Services	This program is intended to address a capability gap in the government's emergency telecommunications service, which prioritizes select officials' phone calls when networks are overwhelmed.
Transportation Security Administration	Electronic Baggage Screening Program	The Electronic Baggage Screening Program identifies, tests, procures, deploys, and sustains transportation security equipment across U.S. airports to ensure 100 percent of checked baggage is screened for explosives.
Transportation Security Administration	Secure Flight	This program is a single watch list matching entity applying a consistent matching process, which ensures the same watch list matching standards across all covered aircraft operators.
U.S. Coast Guard	Long Range Surveillance Aircraft	The Coast Guard uses HC-130H and HC-130J aircraft to conduct search and rescue missions, transport cargo and personnel, support law enforcement, and execute operations.
U.S. Coast Guard	Medium Range Surveillance Aircraft	The Coast Guard is conducting a combined acquisition of HC-144A and C-27J aircraft to conduct all types of Coast Guard missions, including search and rescue and disaster response.
U.S. Coast Guard	National Security Cutter	The Coast Guard is acquiring technologically advanced cutters capable of a range of missions, including search and rescue, migrant and drug interdiction, and environmental protection.

Source: GAO review of DHS documents. | GAO-18-344

^aTECS is not an acronym.

In accordance with DHS policy and GAO's *Cost Estimating and Assessment Guide*, the O&S costs in the LCCE should inform the O&S portion of the program's budget request and the funds provided to the program. Accordingly, as programs use these funds in the obtain or deploy phases, they should update the LCCE with spending data to reflect actual costs. Figure 3 illustrates this feedback cycle.

Figure 3: Cost Estimating Feedback Process



Source: GAO Cost Estimating and Assessment Guide. | GAO-18-344

To help facilitate this feedback process, DHS issued a memorandum in January 2016 reminding components that an annual updated LCCE is required for each major acquisition program that has not reached full

operational capacity.¹¹ According to this memorandum, components must submit this cost estimate by April 1st of each year and should include the incurred costs to date through the prior fiscal year as well as how these costs track to prior LCCEs.

Mission-Oriented Budget Management Provides Operational Flexibility, but Limits Visibility of O&S Costs in Reports to Congress

According to agency officials, DHS's mission-oriented budget management provides operational flexibility in using O&S funding. However, DHS's budget justifications and reports aggregate programs' O&S data, limiting oversight of major acquisition programs' O&S costs. While some program-oriented O&S data are available at the component level, this information does not appear in DHS's budget reports to Congress. This disparity is due, in part, to the format of the budget reports.

Consolidated O&S Funds Provide Operational Flexibility

Officials across DHS identified operational flexibility as the primary benefit of the department's mission-oriented budget management. The mission-oriented PPA accounts allow, to a limit, components to move funds between major acquisition programs. For example, officials from Customs and Border Protection's Air and Marine Operations Division stated they consolidate O&S funds within a single account, which makes them more responsive to mission changes. If a new mission requires a specific aircraft capability, flexible O&S funds will support using that asset, as opposed to another. This flexibility is also apparent in other kinds of change or trade-offs components can make in deploying their systems. We could not identify the frequency with which programs or operators made these operational trade-offs because of limitations in the data we obtained. A few examples include the following:

¹¹In this memorandum, DHS cited two prior GAO reports as the basis of this action in an effort to align the budget to robust cost estimates: *Homeland Security Acquisitions: DHS Could Better Manage Its Portfolio to Address Funding Gaps and Improve Communications with Congress*, GAO-14-332 (Washington D.C.: Apr. 17, 2014); and *Homeland Security: DHS Requires More Disciplined Investment Management to Help Meet Mission Needs*, GAO-12-833 (Washington D.C.: Sept. 18, 2012).

Asset Trade-Off: Customs and Border Protection officials told us they manage aircraft usage to meet mission needs while remaining within the overall O&S budget for the Integrated Operations PPA. At times, they use a less expensive and less capable asset that can still complete the mission as a cost-saving technique. For example, officials told us the UH-60 Helicopter cost per flight hour is nearly three times the cost of a smaller helicopter. The smaller aircraft does not have the same capabilities as the UH-60, but operators can save money and sufficiently complete the mission with this aircraft, according to officials.

Inventory Trade-Off: Coast Guard officials responsible for maintaining aircraft, such as the Medium Range Surveillance Aircraft, noted that recent budget constraints affected their ability to buy sufficient spare parts. To address this shortfall, they sometimes pulled working parts from aircraft that were grounded and awaiting maintenance to install on aircraft already undergoing maintenance.

Contract or Upgrade Trade-Off: Immigration and Customs Enforcement's TECS Modernization program requested \$3 million in O&S funding for fiscal year 2017, but the program did not receive this funding. To mitigate this unexpected shortfall, officials described how they adapted their contracting strategy to stretch funding through the fiscal year until they could receive full funding in fiscal year 2018. Officials stated that additional proposed funding cuts in fiscal year 2018 would leave the program unable to meet its minimum operating costs. According to officials, the program has several mitigation plans that will reduce cost through a new contract and reductions in data housing center costs.

Because O&S funding represents the money available to end users to carry out their missions, we attempted to use program-level data to identify O&S funding shortfalls for our selected programs. Potentially, this information could also identify how frequently system users are making these trade-offs. However, the components' use of consolidated funds for certain programs makes O&S costs difficult to see, particularly at Customs and Border Protection's Air and Marine Operations Division. This component relies on aggregated O&S accounting and could not provide program-level O&S cost information for the Multi-Role Enforcement Aircraft and UH-60 Helicopter programs. As a result, we could not obtain usable information. However, Customs and Border Protection Officials also informed us that they are replacing their internal maintenance cost tracking system, which could help improve expenditure tracking in the future.

Reports to Congress Do Not Consistently Identify Program-Specific O&S Information

DHS first used its common appropriations structure—which DHS proposed and Congress enacted—to address appropriations and budget management inconsistencies in its fiscal year 2016 budget submission. The common appropriation structure streamlined its appropriations, but the resulting reports that the department provides to Congress obscure O&S costs for individual programs. Additionally, while DHS has program-level expenditure data for most of the programs we reviewed, it also relies on fragmented financial management systems that further limit reporting.

Budget Request and Expenditure Reporting Lacks Consistent Program-Level O&S Information

The PPAAs DHS uses to communicate its annual budget requests and projections, as well as monthly obligations and expenditures, are mission-oriented. As a result, the budget reports DHS provides to Congress do not always present a clear accounting of individual programs' O&S costs.

Congressional Budget Justification – Requests for total program O&S funds are not always visible in the DHS congressional budget justification. This document's mission-oriented reporting within the O&S section continues to combine program-level data within PPAAs, as they were for previous budgets. Beginning in fiscal year 2018, DHS added O&S information to the individual program funding request summaries that appear in the procurement, construction, and improvements section of the budget justification, which describes acquisition funding requests.¹² According to officials, this line shows requested funding for O&S for the coming fiscal year and two prior years.

Our review of the fiscal year 2018 congressional budget justification found this information for 5 of our 11 selected programs. However, these program-level details did not appear in the O&S section of the same document, except for one program: Customs and Border Protection's TECS Modernization program, which recently transitioned to its deployment phase. Of the remaining programs we reviewed that did not

¹²Procurement, Construction and Improvements is one of four appropriations through which DHS receives funding from Congress. The others are Operations and Support, Research and Development, and Federal Assistance.

have clear O&S information in this document, two were Customs and Border Protection programs: the Multi-Role Enforcement Aircraft and UH-60 Helicopter. Three were Coast Guard programs: the Long Range Surveillance Aircraft program, the Medium Range Surveillance Aircraft Program, and the National Security Cutter. Both of these components consolidate their O&S funds, meaning they can direct available funds based on program needs. As stated above, this practice also makes it difficult to provide program-level O&S cost information and as a result, the O&S information DHS added to its procurement section is blank for these programs. This new information also does not include programs that completed their procurement phase as DHS requests O&S funds for programs in the deployment phase. Therefore programs in deployment still lack clear program-level O&S data in the congressional budget justification. For example, the Secure Flight program completed procurement and does not have an entry in the procurement section and therefore lacking O&S information.

Monthly Execution Reports – DHS provides monthly execution reports to Congress that include O&S expenditure, obligation, and other budget data, organized by PPA. These reports consist of summary information at the PPA level, again obscuring individual programs' O&S costs. For example, the Customs and Border Protection PPA cited above would include multiple programs in the same way.

Visibility of DHS's O&S costs by program is further limited in congressional budget submissions, as personnel costs are not fully captured. For nearly all of our selected programs, we could not identify funding for personnel who operate and maintain program assets within the congressional budget justification or monthly execution report. Program officials stated that, in certain cases, personnel costs are funded in mission-oriented PPAs not clearly associated with the program. According to officials, Customs and Border Protection's Integrated Fixed Towers program is an example of this scenario. In other cases, the personnel funding associated with a program appears within the same PPA but may fund operations for more than one program. As a result, the full O&S cost of a program—inclusive of operating and supporting personnel—is not clear in the budget request and execution report.

Federal standards for internal control state that managers should communicate quality information to external bodies.¹³ DHS is not clearly

¹³ *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: Sept. 10, 2014).

communicating to Congress the full O&S costs of its programs—inclusive of operating and supporting personnel—in congressional budget justifications and execution reporting. By comparison, agencies such as the National Aeronautics and Space Administration (NASA) and the Department of Defense directly request individual programs' O&S costs, at least until projects launch or begin operations in NASA's case. Further, our best practices on capital decision making state that good budgeting requires that the full costs of a project be considered when making decisions to provide resources.¹⁴ Providing data on full program costs permits Congress to better understand the long term costs of a program and the budgetary and programmatic effect of its decisions. While the recent change DHS made to its congressional budget justification to include program-level O&S cost information in the procurement section is an improvement, Congress still lacks complete information regarding DHS O&S costs as such data are absent from monthly execution reporting.

In the course of our review, DHS initiated a pilot program to use unique identifier codes to track O&S expenditures for individual major acquisition programs. As of January 2018, headquarters officials told us the department was testing the identifier with three components that have relatively simple acquisition portfolios: the Domestic Nuclear Detection Office, Immigration and Customs Enforcement, and the National Protection and Programs Directorate. Following the pilot, officials plan to assess whether and how to implement this identifier within other components' financial management systems. DHS officials stated that they intend to use this information to inform O&S cost estimating for future acquisitions. As of January 2018, DHS did not plan to include the information in any of the budget information provided to Congress. According to DHS officials, they would need to work with Congress in order for Congress to identify how its existing reporting requirements should change, as they did during the development of a common appropriations structure in 2015.

¹⁴*Executive Guide: Leading Practices in Capital Decision-Making*, GAO/AIMD-99-32 (Washington, D.C.: Dec 1, 1998)

Previous Future Years Homeland Security Program Report
Contained Program-Level Information

Prior to fiscal year 2018, the Future Years Homeland Security Program report, which accompanies DHS's annual budget request, provided supplemental data on planned funding for major acquisition programs.¹⁵ For most components, the report included prior year funds and 5 years of estimated procurement funding for O&S as well as government personnel costs for each program. DHS removed this reporting in its fiscal years 2018-2022 Future Years Homeland Security Program report. Officials explained they removed program O&S funding to focus on planned procurement funding. However, in January 2018, DHS officials stated that they plan to re-introduce O&S funding for major acquisition programs in the Future Years Homeland Security Program report for fiscal years 2019-2023. DHS officials based this decision on multiple internal discussions about the best way to present a more comprehensive view of programs' total costs and feedback from key stakeholders, such as the Office of Management and Budget.

With its intention of reflecting program-level O&S costs in the upcoming Future Years Homeland Security Program report, to be submitted with the fiscal year 2019 President's budget request, DHS officials recognize the value in such reporting. This change also aligns to federal standards for internal control and communicating quality information. Re-introducing O&S program cost information would improve the quality of information DHS provides to Congress in its Future Years Homeland Security Program Report. Until DHS takes concrete action to reverse the exclusion of O&S funding at a major acquisition program level in its Future Years Homeland Security Program reports, Congress will lack important information necessary for oversight.

¹⁵The Coast Guard has been the exception to the Future Years Homeland Security Program report's program-level O&S reporting. In our April 2015 report, *Homeland Security Acquisitions: Major Program Assessments Reveal Actions Needed to Improve Accountability* (GAO-15-171SP), we found that the Coast Guard was not reporting complete O&S funding information for its surface and aviation programs. Coast Guard officials told us they have not yet taken steps to improve O&S funding plans, as we recommended, because they are still in the process of replacing the Coast Guard's financial management system.

Program-Level O&S Data Exist at Component Level but Not Utilized for Budget Reporting

Programs can generally track detailed O&S obligations and expenditures within their financial systems; however, department officials told us they do not request this information. Each component uses a different financial system to track its O&S costs and report expenses and, in some cases, must manually transfer data between systems. As a result, headquarters officials told us they do not have direct access to components' systems and request summary information organized by PPA to develop budget requests and monthly execution reports, in accordance with DHS's mission-oriented budget management.

DHS financial management systems are an area we have designated as high risk since 2003.¹⁶ In September 2013, we found that without sound internal controls over its financial reporting, DHS is hindered in its ability to efficiently manage its operations and resources on a daily basis and provide useful, reliable, and timely financial information for decision making. At that time, we recommended DHS take steps to integrate financial management systems and unify the components' financial management.¹⁷ In September 2017, we found that despite efforts to address long-standing financial management system deficiencies, several factors delayed the Transportation Security Administration and Coast Guard's efforts to replace their financial management systems.¹⁸ Specifically, insufficient resources, an aggressive schedule, complex requirements, increased costs, and project management and communication concerns resulted in cost and schedule growth. DHS is taking steps to mitigate these risks and is revising its acquisition strategy to replace these systems, based in part on the issues we identified.

¹⁶ *High-Risk Series: An Update*, GAO-03-119 (Washington, D.C.: Jan 1, 2003).

¹⁷ GAO, *DHS Financial Management: Additional Efforts Needed to Resolve Deficiencies in Internal Controls and Financial Management Systems*, GAO-13-561 (Washington, DC: Sept. 30, 2013).

¹⁸ GAO, *DHS Financial Management: Better Use of Best Practices Could Help Manage System Modernization Project Risks*, GAO-17-799 (Washington, DC, Sept. 26, 2017).

Life-Cycle Cost Estimates for All but One Selected Program Were Comprehensive but Many Did Not Provide Evidence of Accuracy, and All Were Updated as Required

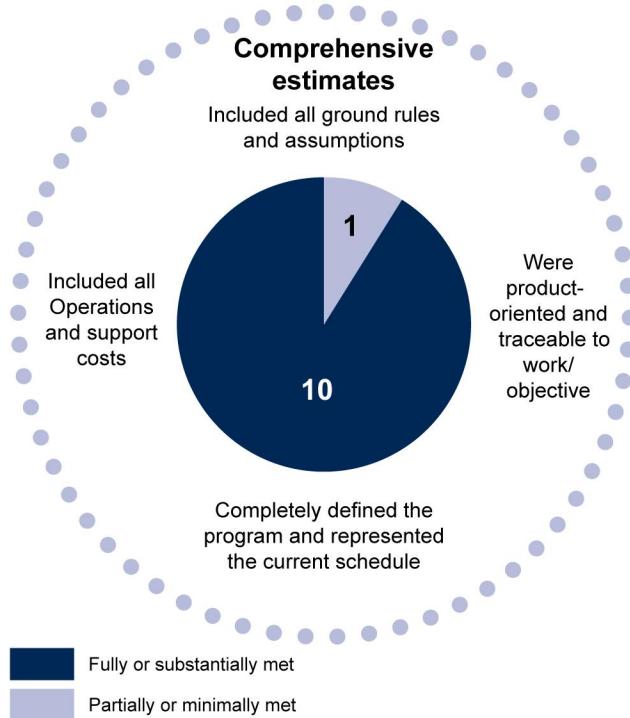
The O&S portion of our selected programs' most recently approved life-cycle cost estimates (LCCEs) were nearly all comprehensive, but lacked elements of accuracy despite annual and other updates. Program-level LCCEs are one of the sources DHS components should rely on for budget development. Specifically, 10 of the 11 selected programs reviewed either substantially or fully met our best practices criteria for comprehensiveness, while only 5 substantially or fully met criteria for accuracy. These programs have met DHS's acquisition policy that major acquisition programs generally revise their LCCEs at major acquisition decision events and generally met DHS's 2016 requirement for annual updates.

Ten of 11 O&S Cost Estimates Were Comprehensive

As of December 2017, 10 out of 11 selected programs' most recent DHS-approved LCCE either substantially or fully met GAO's four criteria for a comprehensive cost estimate.¹⁹ Figure 4 depicts the results of our analysis and the criteria for this characteristic.

¹⁹At the time of this analysis, 9 of the 11 programs had DHS-approved LCCEs while 2 were using DHS-generated independent cost estimates, which they consider approved LCCEs and use to guide management decisions. For the full results of our LCCE analysis, see appendix II.

Figure 4: Selected Programs' Operations and Support Estimates Are Generally Comprehensive



Source: GAO's Cost Estimating Best Practices and analysis of DHS data. | GAO-18-344

Note: For the life-cycle cost estimates analyzed for this figure, GAO cost experts determined all ratings by assessing measures pertaining to the comprehensive characteristic. These measures are consistently applied by cost estimating organizations throughout the federal government and industry and considered best practices for the development of reliable cost-estimates.

GAO best practices in cost estimating note it is important that the O&S portion of a program's LCCE be comprehensive. That is, it should provide an exhaustive and structured accounting of all resources and associated cost elements—hardware, software, personnel, and so on—required to deploy and sustain a program. Five programs fully met and 5 programs substantially met the comprehensive characteristic.

Within those programs that substantially met the characteristic, we found two reasons programs did not fully address criteria. First, 2 of those programs partially met the criterion that requires the estimate to completely define the program, reflect current schedule, and be technically reasonable. Second, despite substantially meeting the characteristic, the Customs and Border Protection's TECS Modernization program did not have a single, authoritative technical baseline document

that contained all the details to satisfy this specific criterion. Instead, multiple technical baselines or baseline documents were present.²⁰

The one program in our review that minimally met criteria for comprehensiveness is the Next Generation Security Networks Priority Services program. It is “acquisition-only,” meaning that its LCCE includes the costs to acquire new capabilities for its parent program—Priority Telecommunication Services. When it has acquired these capabilities, the parent program becomes responsible for O&S costs. This unique acquisition relationship is a reason we selected this program, namely to see how the component would factor O&S costs into its estimate. We also previously reported on variance in the program’s cost estimate, due to changes in how the component included O&S costs.²¹ Our analysis found that the Next Generation Networks Priority Services program’s LCCE contained minimal information on O&S costs. In the program’s recently updated LCCE, which we did not assess, the National Protection and Programs Directorate refined the Priority Telecommunication Services’ O&S costs to identify only those attributable to the Next Generation Networks Priority Services acquisition.

Over Half of Selected Programs Did Not Provide Evidence to Demonstrate Their Cost Estimates Were Accurate

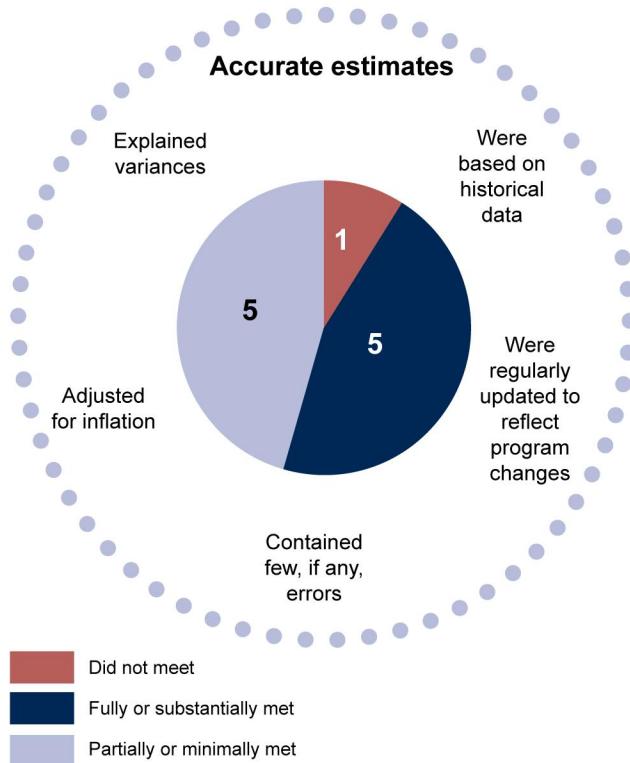
In contrast to the comprehensiveness of programs’ O&S estimates, only 5 of the 11 selected programs we reviewed either fully or substantially met GAO’s five criteria for accuracy.²² Accuracy is critical to ensuring a reliable and well-founded LCCE to support operations. This is important because these estimates serve as the basis to request program funding and provide insight into the overall affordability of the acquisition program. Figure 5 depicts the results of our analysis and the selected criteria for this characteristic.

²⁰TECS is not an acronym.

²¹GAO, *Homeland Security Acquisitions: Earlier Requirements Definition and Clear Documentation of Key Decisions Could Facilitate Ongoing Progress*, GAO-17-346SP (Washington, D.C.; Apr. 6, 2017)

²²For the purposes of this review, we did not assess selected programs against the accuracy criterion stating that the cost estimate results are unbiased, not overly conservative or optimistic, and based on an assessment of most likely costs. For additional information, see appendix I.

Figure 5: Selected Programs' Operations and Support Estimates Lack Accuracy



Source: GAO's Cost Estimating Best Practices and analysis of DHS data. | GAO-18-344

Note: For the life-cycle cost estimates analyzed for this figure, GAO cost experts determined all ratings by assessing measures pertaining to the comprehensive characteristic. These measures are consistently applied by cost estimating organizations throughout the federal government and industry and considered best practices for the development of reliable cost-estimates.

Two programs fully met and 3 programs substantially met the criteria we assessed. Of the programs that substantially met these criteria, we found a common criterion programs struggled to address: they did not document, explain, and review variances experienced between planned and actual costs. DHS acknowledges the importance of including this information and, in its 2016 memorandum, required its components to annually provide a detailed description of any differences between updated and past cost estimates.²³

²³Department of Homeland Security, *Memorandum on Annual Cost Estimates* (Washington, D.C.: January 11, 2016).

Of the 5 programs that partially met criteria for accuracy, we found several reasons for these results, including our lack of access to the cost models used to develop the programs' LCCE and an explanation of any variances. For example, the Coast Guard was unable to share cost models for the programs we assessed, due to information sensitivities. Without access to the cost models, we could not determine whether the estimates had been properly adjusted for inflation and could not determine whether the estimates contained few, if any, errors—one of GAO's criteria for accuracy. Similar to the results of our comprehensiveness analysis, the Next Generation Network Priority Services program did not meet our selected accuracy criteria because it did not include O&S costs in its LCCE.

Selected Programs Are Generally Following DHS Requirements to Update LCCEs

While we could not determine that selected programs' LCCEs were accurate based on the information reviewed, we found that the department is regularly updating LCCEs, a GAO best practice that promotes accuracy. All of the programs met DHS requirements to update their LCCE at each acquisition decision event, as applicable, a policy that also aligns with our cost estimating best practices.²⁴ Updating LCCEs is an important step to maintain the utility of an estimate throughout a program's life-cycle and is critical to budget development. Outdated O&S estimates hamper a program's ability to analyze changes in costs over time. For example, they may not reflect fluctuation in the price of fuel, which could lead to a program requesting insufficient funds for annual operations. DHS relies on the programs' LCCEs to develop initial budget requests, which it subsequently updates with actual expenditures as the program matures.

As of November 2017, 10 of our 11 selected programs also met DHS's requirement for programs not yet in the deployment phase to update their LCCEs annually.²⁵ These new requirements to update LCCEs are making this acquisition document more relevant throughout the life of a program to inform budget requests. The Coast Guard's Long Range Surveillance

²⁴[GAO-09-3SP](#).

²⁵As noted above, in the memorandum that established this requirement DHS cited two prior GAO reports—[GAO-12-833](#) and [GAO-14-332](#)—as the basis of this action in an effort to align the budget to robust cost estimates.

Aircraft program is the only program we selected that did not meet this requirement for fiscal year 2017. Coast Guard officials explained that the program is in the process of revising its LCCE, which is why it did not have a submission within fiscal year 2017.

While components are following DHS policy, programs may vary in their approach to updating O&S reporting elements as newer versions of the LCCE document are developed and approved. For about half of our programs, we observed changes to O&S cost elements in the LCCE, which can reflect program changes. This situation is consistent with our cost estimating best practices, which note that cost elements should be updated as changes occur and the program becomes better defined. For example, the Coast Guard's Medium Range Surveillance Aircraft program's original LCCE was completed in 2009, when the Coast Guard planned to procure a single aircraft type. Since then, the Coast Guard revised its LCCE in 2012 and 2016 to account for changes to the program, namely the addition of a second aircraft type. The Medium Range Surveillance Aircraft program's 2016 LCCE now includes an entirely new set of O&S cost elements for both aircraft. Conversely, a program that has very stable cost elements may not need to make such changes. Officials from Customs and Border Protection TECS Modernization program explained they did not alter its cost elements between its original 2014 LCCE and its 2016 revision because O&S costs are stable and well-known as the program enters its deployment phase.

Conclusions

Operations and Support (O&S) is the bulk of the taxpayer's investment in major acquisition programs and is necessary to meet end user's needs for spares, maintenance, and operations. To support this mission, DHS manages its budget to maximize components' flexibility to use O&S funds across major acquisition programs. This aspect of the department's budget management did not change with enactment of the common appropriation structure.

We do not take issue with DHS's mission-oriented budget management approach; however, with this reliance on broader O&S mission-oriented program/project activity (PPAs) in reporting, program-specific O&S information is difficult to discern. DHS's addition of program-level O&S information to the procurement, construction, and improvements section of the congressional budget justification is a positive step, but still does not address this shortfall for all programs. The identifier pilot program

DHS has underway could add details on O&S costs for major acquisition programs in addition to those already contained in programs' life-cycle cost estimates. Such an action will require additional reporting from the components, which may be challenging due to the department's fragmented financial management systems, as we have observed and made recommendations on in prior reports. DHS could work with Congress to identify ways to strengthen its congressional budget justifications and monthly execution reports by including information on O&S costs.

DHS's recent proposal to shift back to reporting program-level O&S funding in the Future Years Homeland Security Program report demonstrates that the department sees value in providing such information to Congress and that such information is available to some extent. Until DHS takes concrete action to reverse the exclusion of O&S funding at a major acquisition program level in its Future Years Homeland Security Program reports, Congress will lack important information necessary for oversight.

Recommendations for Executive Action

We are making the following three recommendations to DHS:

The Secretary of Homeland Security should work with Congress to add information to its annual congressional budget justification to show O&S funding requests for major acquisition programs within current program/project activity accounts. (Recommendation 1)

The Secretary of Homeland Security should work with Congress to include O&S data in monthly execution reports at a major acquisition program level within current program/project activity accounts. (Recommendation 2)

The DHS Chief Financial Officer should reverse the exclusion of O&S funding at a major acquisition program level in its Future Years Homeland Security Program report for all components. (Recommendation 3)

Agency Comments and Our Evaluation

We provided a draft of this report for review and comment to DHS.

DHS provided written comments, which are reproduced in appendix III. In its comments, DHS concurred with all three of our recommendations and identified actions it plans to take to address them. DHS also 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 <http://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.



Marie A. Mak
Director, Acquisition and Sourcing Management

Appendix I: Objectives, Scope and Methodology

The House Homeland Security Subcommittee on Oversight and Management Efficiency asked us to evaluate operations and maintenance (O&S) activities for the Department of Homeland Security's (DHS) major acquisition programs. This report assesses, for selected major acquisition programs, the extent that (1) DHS budget management and reporting affects operations and oversight; and (2) life-cycle cost estimates (LCCEs) are comprehensive and accurate, as well as regularly updated.

Selection of Case Studies

To conduct our work, we reviewed the DHS Major Acquisition Oversight List as of April 2017 and selected 11 major acquisition programs from five components to serve as case studies for our review. We selected a non-generalizable sample of programs, and their corresponding components, based on their stage in the acquisition cycle, including programs in the deployment phase. We also ensured we had a mix of different DHS components reflecting the broad spectrum of DHS operations. Our case studies included four information technology programs and seven other programs.

Table 2: Selected Department of Homeland Security Major Acquisition Programs

Component	Program	Description
Customs and Border Protection	Integrated Fixed Towers	This program is a network of fixed surveillance tower units equipped with ground surveillance radar, infrared cameras, and communications systems across the southwest border to help the Border Patrol detect and track illegal entries in remote areas.
Customs and Border Protection	Multi-Role Enforcement Aircraft	These are fixed-wing, multi-mission aircraft that can be configured to perform multiple missions, including marine, air, and land interdiction; logistical support; and law enforcement technical collection.
Customs and Border Protection	TECS Modernization ^a	TECS is a law-enforcement information technology system that helps officials determine the admissibility of persons wanting to enter the United States at border crossings and ports of entry as well as pre-screening sites located abroad.

Component	Program	Description
Customs and Border Protection	UH-60 Medium Lift Utility Helicopter	The UH-60 is a medium lift helicopter used for law enforcement and border security operations; air and mobility support and transport; search and rescue operations; and other missions.
Immigration and Customs Enforcement	TECS Modernization	This legacy TECS system has provided case management, intelligence reporting, and information sharing capabilities. The modernization program will provide end users with additional functionality required for mission execution.
National Protection and Programs Directorate	Next Generation Security Networks Priority Services	This program is intended to address a capability gap in the government's telecommunications service, which prioritizes select officials' phone calls when networks are overwhelmed.
Transportation Security Administration	Electronic Baggage Screening Program	The Electronic Baggage Screening Program identifies, tests, procures, deploys, and sustains transportation security equipment across U.S. airports to ensure 100 percent of checked baggage is screened for explosives.
Transportation Security Administration	Secure Flight	This program is a single watch list matching entity applying a consistent matching process, which ensures the same watch list matching standards across all covered aircraft operators.
U.S. Coast Guard	Long Range Surveillance Aircraft	The Coast Guard uses HC-130H and HC-130J aircraft to conduct search and rescue missions, transport cargo and personnel, support law enforcement, and execute operations.
U.S. Coast Guard	Medium Range Surveillance Aircraft	The Coast Guard is conducting a combined acquisition of HC-144 and C-27J aircraft to conduct all types of Coast Guard missions, including search and rescue and disaster response.
U.S. Coast Guard	National Security Cutter	These cutters are replacing High Endurance Cutters and will conduct a range of missions, including search and rescue, migrant and drug interdiction, and environmental protection.

Source: GAO review of DHS documents. | GAO-18-344

^aTECS is not an acronym.

Analysis of Budget Information

To determine how O&S funds are organized within the budget request, we reviewed the O&S and procurement, construction, and improvements appropriations accounts within the fiscal year 2017 and 2018 congressional budget justification by program/project activity account (PPAs) for the 11 programs in our review. We identified the selected programs within these accounts, as possible. To determine whether the PPAs we identified in the O&S budget request were all-inclusive of O&S costs, we developed and disseminated a data collection instrument to program offices, which collected information on selected programs' O&S budget requests, budget authority, obligations, and expenditures, including personnel expenditures, from fiscal years 2015 to 2017. We

compared this information to our analysis of the congressional budget justification and conducted follow-up meetings with each of the component budget offices to understand differences in the data sources and learn if program obligations and expenditures were included in other common component PPAs.

To determine the inclusion of personnel costs in the program O&S expenditures, we reviewed the congressional budget justification and our data collection instrument for personnel expenditures. We held follow-up meetings with program offices to discuss to what extent DHS used O&S PPA funds for personnel costs, identify those PPAs, and whether personnel costs were shared with other programs.

To determine if monthly execution reports contained program-level O&S cost information, we reviewed the December 2016 monthly execution report, as well as DHS guidance to programs on preparing that report, to determine whether individual program obligations and expenditures could be identified within the report. We determined that O&S cost information is reported by mission-oriented PPA in this report and were unable to identify O&S obligations or expenditures by program. We held follow-up discussions with DHS officials to discuss how this information is collected and reported to Congress.

To determine whether O&S costs were included in the Future Years Homeland Security Program database, we reviewed the fiscal years 2017-2021 and 2018-2022 reports from the Future Years Homeland Security Program database for identification of program costs. We found that program costs were identified. However, while we are able to determine the inclusion of O&S costs in the fiscal year 2017-2021 report, DHS excluded these costs in the fiscal year 2018-2022 report.

We discussed with DHS and components the financial management systems used by the five components to track obligations and expenditures, and the financial management system used by the Department to develop the monthly execution reports and Future Years Homeland Security Program database.

Analysis of Operational Effects

To assess the extent to which the DHS budget management and reporting has affected operations, we reviewed program budget information including the Congressional budget justification, a data

collection instrument, a monthly execution report to Congress, and the fiscal years 2017-2021 and fiscal years 2018-2022 reports from the Future Years Homeland Security Program database. In addition, we conducted interviews with program personnel to discuss the effect of any budget shortfall or surplus on their programs.

Analysis of Life-Cycle Cost Estimates

To assess how DHS incorporated or revised life-cycle cost estimates to include comprehensive and accurate O&S costs, we analyzed the O&S portion of DHS-approved LCCEs for the case study programs, as well as prior versions where applicable, to identify changes in reporting elements over time. We conducted an abridged analysis of programs' approved LCCE against criteria from GAO's Cost Estimating and Assessment Guide, with focus on comprehensiveness and portions of accuracy.

Typically in analyzing a cost estimate against GAO best practices, we examine four characteristics, each defined by multiple criteria:

- comprehensive,
- accurate,
- well-documented, and
- credible.

For this review, we assessed our case study programs' LCCEs against the comprehensive and accurate characteristics, in part, because we limited our analysis to the O&S portion of programs' LCCEs and did not review entire LCCEs. Further, if the cost estimate is not comprehensive (that is, "complete"), then it cannot fully meet the well documented, accurate, or credible best practice characteristics. For instance, if the cost estimate is missing some cost elements, then the documentation will be incomplete, the estimate will be inaccurate, and the result will not be credible due to the potential underestimating of costs and the lack of a full risk and uncertainty analysis.

In addition, we excluded one of the supporting criteria for the accuracy characteristic, which assesses that the cost estimate results are unbiased, not overly conservative or optimistic, and based on an assessment of most likely costs. Because we did not assess program risk as part of the characteristics we excluded, which also considers potential bias, we did not analyze programs against this criterion.

We interviewed officials at DHS headquarters; component program and budget offices; Coast Guard Surface Forces Logistics Center in Baltimore, Maryland; Coast Guard Aviation Logistics Center in Elizabeth City, North Carolina; Transportation Security Administration at Reagan National Airport in Washington, D.C.; Customs and Border Protection Southwest Border Regional Headquarters in Albuquerque, New Mexico; Customs and Border Protection Tucson Air Branch in Tucson, Arizona; and the Border Patrol's Nogales Station in Nogales, Arizona. We chose these locations, in part, as we could often discuss multiple programs during a single site visit. For example, we discussed both of our Coast Guard aircraft programs at the Aviation Logistics Center.

We conducted this performance audit from November 2016 to April 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Results of Life-Cycle Cost Estimate Analysis

Using the GAO Cost Estimating and Assessment Guide, GAO cost experts assessed selected DHS major acquisition programs against 2 of the 4 characteristics of a quality cost estimate.¹ Please see Appendix I for a more detailed description of our methodology and why we did not assess O&S cost estimates against all 4 characteristics.

We determined the overall assessment rating by assigning each individual rating a value:

- Not Met = 1,
- Minimally Met = 2,
- Partially Met = 3,
- Substantially Met = 4, and
- Met = 5.

Next we averaged the individual assessment ratings to determine the overall rating for each of the two characteristics. The resulting average becomes the Overall Assessment as follows:

- Not Met = 1.0 to 1.4,
- Minimally Met = 1.5 to 2.4,
- Partially Met = 2.5 to 3.4,
- Substantially Met = 3.5 to 4.4, and
- Met = 4.5 to 5.0.

Table 3 provides our results of selected Custom and Border Patrol acquisition programs' individual and overall assessment for the comprehensive and accuracy characteristics.

¹[GAO-09-3SP](#).

Table 3: Results of Operations and Support Cost Estimate Analysis for Selected Customs and Border Protection Acquisition Programs

Characteristic	Individual assessment category	Integrated Fixed Towers	Multi-Role Enforcement Aircraft	TECS Modernization ^a	UH-60 Blackhawk
Comprehensive	Overall	Fully met	Fully met	Substantially met	Fully met
Comprehensive	The cost estimate included all costs.	Fully met	Fully met	Partially met	Fully met
Comprehensive	The cost estimate completely defined the program, reflects the schedule, and is technically reasonable.	Fully met	Substantially met	Partially met	Substantially met
Comprehensive	The cost estimate work breakdown structure was product-oriented, traceable to the statement of work, and at an appropriate level of detail.	Fully met	Fully met	Fully met	Fully met
Comprehensive	The estimate documented all cost-influencing ground rules and assumptions.	Fully met	Substantially met	Substantially met	Substantially met
Accurate	Overall	Partially met	Substantially met	Partially met	Fully met
Accurate	The estimate had been adjusted properly for inflation.	Partially met	Substantially met	Minimally met	Fully met
Accurate	The estimate contained few, if any, minor mistakes.	Partially met	Fully met	Partially met	Fully met
Accurate	The cost estimate was regularly updated.	Fully met	Minimally met	Fully met	Fully met
Accurate	Variances between planned and actual costs were documented, explained, and reviewed.	Minimally met	Substantially met	Minimally met	Substantially met
Accurate	The estimate was based on a historical record.	Substantially met	Substantially met	Substantially met	Fully met

Source: GAO analysis of Department of Homeland Security data | GAO-18-344

^aTECS is not an acronym

Table 4 provides our results of the selected Immigration and Customs Enforcement acquisition program's individual and overall assessment for the comprehensive and accuracy characteristics.

Table 4: Results of Operations and Support Cost Estimate Analysis for Selected Immigration and Customs Enforcement Acquisition Programs

Characteristic	Individual assessment category	TECS Modernization ^a
Comprehensive	Overall	Fully met
Comprehensive	The cost estimate included all costs.	Fully met

Characteristic	Individual assessment category	TECS Modernization ^a
Comprehensive	The cost estimate completely defined the program, reflects the schedule, and is technically reasonable.	Fully met
Comprehensive	The cost estimate work breakdown structure was product-oriented, traceable to the statement of work, and at an appropriate level of detail.	Fully met
Comprehensive	The estimate documented all cost-influencing ground rules and assumptions.	Substantially met
Accurate	Overall	Fully met
Accurate	The estimate had been adjusted properly for inflation.	Fully met
Accurate	The estimate contained few, if any, minor mistakes.	Fully met
Accurate	The cost estimate was regularly updated.	Fully met
Accurate	Variances between planned and actual costs were documented, explained, and reviewed.	Substantially met
Accurate	The estimate was based on a historical record.	Substantially met

Source: GAO analysis of Department of Homeland Security data | GAO-18-344

^aTECS is not an acronym

Table 5 provides our results of the selected National Protection and Programs Directorate program's individual and overall assessment for the comprehensive and accuracy characteristics.

Table 5: Results of Operations and Support Cost Estimate Analysis for Selected National Protection and Programs Directorate Acquisition Programs

Characteristic	Individual assessment category	Next Generation Security Networks Priority Services
Comprehensive	Overall	Minimally met
Comprehensive	The cost estimate included all costs.	Minimally met
Comprehensive	The cost estimate completely defined the program, reflects the schedule, and is technically reasonable.	Not met
Comprehensive	The cost estimate work breakdown structure was product-oriented, traceable to the statement of work, and at an appropriate level of detail.	Partially met
Comprehensive	The estimate documented all cost-influencing ground rules and assumptions.	Not met
Accurate	Overall	Not met
Accurate	The estimate had been adjusted properly for inflation.	Not met
Accurate	The estimate contained few, if any, minor mistakes.	Not met

Characteristic	Individual assessment category	Next Generation Security Networks Priority Services
Accurate	The cost estimate was regularly updated.	Partially met
Accurate	Variances between planned and actual costs were documented, explained, and reviewed.	Not met
Accurate	The estimate was based on a historical record.	Not met

Source: GAO analysis of Department of Homeland Security data | GAO-18-344

Table 6 provides our results of the selected Transportation Security Administration acquisition programs' individual and overall assessment for the comprehensive and accuracy characteristics.

Table 6: Results of Operations and Support Cost Estimate Analysis for Selected Transportation Security Administration Acquisition Programs

Characteristic	Individual assessment category	Electronic Baggage Screening Program	Secure Flight
Comprehensive	Overall	Substantially met	Substantially met
Comprehensive	The cost estimate included all costs.	Fully met	Fully met
Comprehensive	The cost estimate completely defined the program, reflects the schedule, and is technically reasonable.	Substantially met	Substantially met
Comprehensive	The cost estimate work breakdown structure was product-oriented, traceable to the statement of work, and at an appropriate level of detail.	Substantially met	Substantially met
Comprehensive	The estimate documented all cost-influencing ground rules and assumptions.	Partially met	Substantially met
Accurate	Overall	Substantially met	Substantially met
Accurate	The estimate had been adjusted properly for inflation.	Substantially met	Substantially met
Accurate	The estimate contained few, if any, minor mistakes.	Fully met	Fully met
Accurate	The cost estimate was regularly updated.	Fully met	Substantially met
Accurate	Variances between planned and actual costs were documented, explained, and reviewed.	Minimally met	Partially met
Accurate	The estimate was based on a historical record.	Substantially met	Substantially met

Source: GAO analysis of Department of Homeland Security data | GAO-18-344

Table 7 provides our results of the selected U.S. Coast Guard acquisition programs' individual and overall assessment for the comprehensive and accuracy characteristics.

Table 7: Results of Operations and Support Cost Estimate Analysis for Selected U.S. Coast Guard Acquisition Programs

Characteristic	Individual assessment category	Long Range Surveillance	Medium Range Surveillance	National Security Cutter
Comprehensive	Overall	Substantially met	Substantially met	Fully met
Comprehensive	The cost estimate included all costs.	Substantially met	Fully met	Fully met
Comprehensive	The cost estimate completely defined the program, reflects the schedule, and is technically reasonable.	Partially met	Substantially met	Fully met
Comprehensive	The cost estimate work breakdown structure was product-oriented, traceable to the statement of work, and at an appropriate level of detail.	Fully met	Partially met	Substantially met
Comprehensive	The estimate documented all cost-influencing ground rules and assumptions.	Substantially met	Fully met	Substantially met
Accurate	Overall	Partially met	Partially met	Partially met
Accurate	The estimate had been adjusted properly for inflation.	Minimally met	Minimally met	Minimally met
Accurate	The estimate contained few, if any, minor mistakes.	Partially met	Partially met	Partially met
Accurate	The cost estimate was regularly updated.	Substantially met	Fully met	Fully met
Accurate	Variances between planned and actual costs were documented, explained, and reviewed.	Not met	Minimally met	Not met
Accurate	The estimate was based on a historical record.	Substantially met	Substantially met	Substantially met

Source: GAO analysis of Department of Homeland Security data | GAO-18-344

Appendix III: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528



Homeland
Security

April 6, 2018

Marie A. Mak
Director, Acquisition and Sourcing Management Issues
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Management Response to Draft Report GAO 18-344, "DHS PROGRAM COSTS:
Reporting Program-Level Operations and Support Costs to Congress Would Improve
Oversight"

Dear Ms. Mak:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

The Department is pleased to note GAO's positive recognition of the Department's recent proposal to shift back to reporting program level Operations and Support (O&S) funding in the Future Years Homeland Security Program Report. DHS remains committed to being open and transparent with its stewardship of tax payer dollars.

The draft report contained three recommendations with which the Department concurs. Attached find our detailed response to each recommendation. Technical comments were previously provided under separate cover.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you in the future.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim H. Crumpacker".

JIM H. CRUMPACKER, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Attachment

**Attachment: Management Response to Recommendations
Contained in GAO 18-344**

GAO recommended that:

Recommendation 1: The Secretary of Homeland Security work with Congress to add information to its annual congressional budget justification to show O&S funding requests at a major acquisition program level within current program/project activity accounts.

Response: Concur. Appropriations Committee requirements drive the format of the Department's congressional budget justifications. The DHS Office of the Chief Financial Officer (OCFO), Budget Division, will develop a display for reporting of Operations and Support (O&S) funding requests for each major acquisition program. That information will be provided to congressional stakeholders in support of the FY 2020 budget request. Estimated Completion Date (ECD): February 4, 2019 (based on the expected date for the President to submit the FY 2020 budget to Congress).

Recommendation 2: The Secretary of Homeland Security work with Congress to include O&S data in monthly execution reports at a major acquisition program level within current program/project activity accounts.

Response: Concur. The DHS OCFO, Budget Division, will develop a display that provides major acquisition program level data at the program, project, and activity level within the O&S account. ECD: March 30, 2019.

Recommendation 3: The DHS OCFO reverse the exclusion of O&S funding at a major acquisition program level in its Future Years Homeland Security report for all components.

Response: Concur. The DHS OCFO, Program Analysis and Evaluation (PA&E) Division, has re-instituted planned O&S funding information for major acquisition investments in the Fiscal Years 2019-2023 Future Years Homeland Security Program (FYHSP) Report. Specifically, in Section II, "Capital Investment and Funding Overview," PA&E will break out planned funding for capital investments on the Master Acquisition Oversight List by Component. The funding tables listed for each investment will outline funding by appropriation and having accompanying graphs. One will display the planned Procurement, Construction, and Improvements (PC&I) dollars in relation to the latest adjusted cost estimate, and the other will display the total funding for the capital investment including PC&I, O&S, and Research and Development, where relevant. ECD: April 30, 2018.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

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

Staff Acknowledgments

In addition to the contact named above, J. Kristopher Keener, Assistant Director; Burns Chamberlain Eckert; Peter Anderson; Jessica Berkholz; George Bustamante; Erin Butkowski; Jeff Cherwonik; Juana Collymore; Matthew T. Crosby; Jennifer Echard; Jason Lee; and Robin Wilson made key contributions to this report.

Appendix V: Accessible Data

Data Table

Accessible Data for Figure 2: Department of Homeland Security's Acquisition Life-Cycle for Major Acquisition Programs

- Need
 - DHS officials identify the need for a new acquisition program.
- Analyze / select
 - Program manager reviews alternative approaches to meeting the need and recommends a best option to the decision authority.
- Obtain
 - Program manager develops, tests, and evaluates the selected option, which focuses on the start of production.
- Produce / deploy / support
 - DHS pursues production, delivers the new capability to its operators, and maintains the capability until it is retired; post-deployment activities tend to account for up to 70 percent of an acquisition program's life-cycle costs.

Agency Comment Letter

Accessible Text for Appendix III: Comments from the Department of Homeland Security

Page 1

U.S. Department of Homeland Security

Washington, DC 20528

Homeland Security

April 6, 2018

Marie A. Mak

Director, Acquisition and Sourcing Management Issues

U.S. Government Accountability Office

441 G Street, NW

Washington, DC 20548

Re: Management Response to Draft Report GAO 18-344, "DHS PROGRAM COSTS: Reporting Program-Level Operations and Support Costs to Congress Would Improve Oversight"

Dear Ms. Mak:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

The Department is pleased to note GAO's positive recognition of the Department's recent proposal to shift back to reporting program level Operations and Support (O&S) funding in the Future Years Homeland Security Program Report. DHS remains committed to being open and transparent with its stewardship of tax payer dollars.

The draft report contained three recommendations with which the Department concurs. Attached find our detailed response to each recommendation. Technical comments were previously provided under separate cover.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you in the future.

Sincerely,

Director

Departmental GAO-OIG Liaison Office

Attachment

Page 2

Attachment: Management Response to Recommendations Contained in GAO 18-344

GAO recommended that:

Recommendation 1: The Secretary of Homeland Security work with Congress to add information to its annual congressional budget justification to show O&S funding requests at a major acquisition program level within current program/project activity accounts.

Response: Concur. Appropriations Committee requirements drive the format of the Department's congressional budget justifications. The DHS Office of the Chief Financial Officer (OCFO), Budget Division, will develop a display for reporting of Operations and Support (O&S) funding requests for each major acquisition program. That information will be provided to congressional stakeholders in support of the FY 2020 budget request. Estimated Completion Date (ECD): February 4, 2019 (based on the expected date for the President to submit the FY 2020 budget to Congress).

Recommendation 2: The Secretary of Homeland Security work with Congress to include O&S data in monthly execution reports at a major acquisition program level within current program/project activity accounts.

Response: Concur. The DHS OCFO, Budget Division, will develop a display that provides major acquisition program level data at the program, project, and activity level within the O&S account. ECD: March 30, 2019.

Recommendation 3: The DHS OCFO reverse the exclusion of O&S funding at a major acquisition program level in its Future Years Homeland Security report for all components.

Response: Concur. The DHS OCFO, Program Analysis and Evaluation (PA&E) Division, has re-instituted planned O&S funding information for major acquisition investments in the Fiscal Years 2019-2023 Future Years Homeland Security Program (FYHSP) Report. Specifically, in Section II, "Capital Investment and Funding Overview," PA&E will break

out planned funding for capital investments on the Master Acquisition Oversight List by Component. The funding tables listed for each investment will outline funding by appropriation and having accompanying graphs. One will display the planned Procurement, Construction, and Improvements (PC&I) dollars in relation to the latest adjusted cost estimate, and the other will display the total funding for the capital investment including PC&I, O&S, and Research and Development , where relevant. ECD: April 30, 2018.

GAO's Mission

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

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's website (<https://www.gao.gov>). Each weekday afternoon, GAO posts on its website newly released reports, testimony, and correspondence. To have GAO e-mail you a list of newly posted products, go to <https://www.gao.gov> and select "E-mail Updates."

Order by Phone

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

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

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

Connect with GAO

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

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Website: <https://www.gao.gov/fraudnet/fraudnet.htm>

Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Orice Williams Brown, Managing Director, WilliamsO@gao.gov, (202) 512-4400,
U.S. Government Accountability Office, 441 G Street NW, Room 7125,
Washington, DC 20548

Public Affairs

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

Strategic Planning and External Liaison

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