



Testimony

Before the Subcommittee on Coast Guard and Maritime Transportation, Committee on Transportation and Infrastructure, House of Representatives

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COAST GUARD

Improved Acquisition Portfolio Management Could Help Address Aging Assets and Capability Gaps

Accessible Version

Statement of Marie A. Mak, Director
Contracting and National Security Acquisitions

GAO Highlights

Highlights of [GAO-18-629T](#), a testimony before the Subcommittee on Coast Guard and Maritime Transportation, Committee on Transportation and Infrastructure, House of Representatives

Why GAO Did This Study

The Coast Guard, a component within DHS, is spending billions of dollars to acquire assets, such as cutters and aircraft. This portfolio of major acquisition programs is intended to help the Coast Guard accomplish its missions—including interdicting illegal drugs and search and rescue missions. GAO's extensive prior work on Coast Guard acquisitions has found that the Coast Guard's reliance on its annual budget process to manage its portfolio is a major management challenge. In the report issued today, GAO discusses particular challenges with the Coast Guard's approach in managing its acquisition portfolio, such as not performing a collective assessment of the portfolio to ensure affordability.

This statement addresses the challenges the Coast Guard faces in (1) managing its overall acquisition portfolio, and (2) sustaining aging assets. This statement is based on GAO's extensive body of published and ongoing work examining the Coast Guard's acquisition efforts over several years.

What GAO Recommends

The report on which this statement is primarily based (GAO-18-454) recommends that the Coast Guard work with Congress to include in its annual CIP a discussion of how trade-off decisions could affect other acquisition programs. DHS agreed with this recommendation. GAO has also made other recommendations in this area in the past, as discussed in this testimony.

View [GAO-18-629T](#). For more information, contact Marie Mak at (202) 512-4841 or makm@gao.gov.

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Improved Acquisition Portfolio Management Could Help Address Aging Assets and Capability Gaps

What GAO Found

The Coast Guard's approach of relying on the annual budget process and the 5-year Capital Investment Plan (CIP) to manage its acquisition portfolio does not provide the best basis for making decisions to develop a more balanced and affordable portfolio in the long term. Specifically, the Coast Guard's annual budget-driven trade-off approach creates constant churn as program baselines must continually re-align with budget realities instead of budgets being formulated to support program baselines. Further, Coast Guard officials have told GAO the CIP reflects trade-off decisions made as part of the annual budget process, but it does not describe the effects of those trade-offs because including such information is not statutorily required. This short-term approach has also left the Coast Guard with a bow wave of near-term unfunded acquisition programs, putting future missions at risk. Until these trade-offs are transparent to all stakeholders and decision makers, the effectiveness of Coast Guard's long-term acquisition portfolio planning is limited.

Until new assets being acquired become available, the Coast Guard plans to rely on aging assets, many of which are already past their intended service lives—the time an asset is expected to operate. For example, the Coast Guard plans to replace the Medium Endurance Cutters (see figure) with the Offshore Patrol Cutters beginning in 2023, but the Medium Endurance Cutters exhausted their intended service lives in 2014.

A Medium Endurance Cutter at the Coast Guard Yard



Source: GAO. | GAO-18-629T

The Coast Guard plans to extend service lives for some of the Medium Endurance Cutters to keep them operating longer; however, maintenance for these vessels is becoming more expensive, and some systems are obsolete. GAO will continue to monitor the maintenance effort for the Medium Endurance Cutter and the Offshore Patrol Cutter acquisition in an annual review of Department of Homeland Security (DHS) major acquisition programs.

Chairman Hunter, Ranking Member Garamendi, and Members of the Subcommittee:

I am pleased to be here today to discuss key challenges the Coast Guard faces as it seeks to modernize its aging assets, a process referred to as Coast Guard recapitalization, including the management of the overall Coast Guard acquisition portfolio. The Coast Guard continues to rely on the annual budget process and its 5-year Capital Investment Plan (CIP) for long-term acquisition planning, processes which we found have contributed to capability gaps and funding shortfalls.¹ For example, as the Coast Guard continues this short-sighted approach, it is currently experiencing a gap in its polar icebreaking capability, because the Coast Guard does not have assets available to conduct its missions in both the Arctic and Antarctic regions year round. The Coast Guard identified a need for three heavy and three medium icebreakers in 2010, but to date it has only one active heavy and medium icebreaker. Exacerbating this capability gap is the condition of the Coast Guard's only operating heavy polar icebreaker, the *Polar Star*, which we found has experienced longer than expected maintenance periods in 2016 and 2017 to prepare for its annual mission to Antarctica.²

My statement today will address challenges in the (1) management of the overall Coast Guard acquisition portfolio, and (2) sustainment of certain aging assets. This statement is based on our extensive body of work examining the Coast Guard's acquisition efforts spanning the past several years, including our report on Coast Guard acquisitions released today in

¹GAO, *Coast Guard Acquisitions: Actions Needed to Address Longstanding Portfolio Management Challenges*, [GAO-18-454](#) (Washington, D.C.: July 24, 2018); *Coast Guard Acquisitions: Limited Strategic Planning Efforts Pose Risk for Future Acquisitions*, [GAO-17-747T](#) (Washington, D.C.: July 25, 2017); *Coast Guard Recapitalization: Matching Needs and Resources Continue to Strain Acquisition Efforts*, [GAO-17-654T](#) (Washington, D.C.: June 7, 2017); *Coast Guard Acquisitions: Better Information on Performance and Funding Needed to Address Shortfalls*, [GAO-14-450](#) (Washington, D.C.: June 5, 2014); *Coast Guard: Portfolio Management Approach Needed to Improve Major Acquisition Outcomes*, [GAO-12-918](#) (Washington, D.C.: September 20, 2012); *Coast Guard: Actions Needed as Approved Deepwater Program Remains Unachievable*, [GAO-11-743](#) (Washington, D.C.: July 28, 2011).

²[GAO-18-454](#).

conjunction with this statement.³ We also include preliminary information based on our ongoing review of the Coast Guard's heavy polar icebreaker acquisition.

For the reports cited in this statement, among other methodologies, we analyzed Coast Guard guidance, data, and documentation, and interviewed Coast Guard officials at its headquarters and field units to determine the total cost of the Coast Guard's acquisition portfolio and how the Coast Guard manages its acquisition portfolio. Further detailed information on our scope and methodology can be found in the reports cited in this statement. For our ongoing work on the polar icebreaker, we assessed the status of the Coast Guard's efforts to recapitalize its heavy polar icebreaking fleet.

We conducted the work on which this statement is based 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 the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

³For examples of past work see: [GAO-18-454](#); *Homeland Security Acquisitions: Leveraging Programs' Results Could Further DHS's Progress to Improve Portfolio Management*, [GAO-18-339SP](#) (Washington, D.C.: May 17, 2018); [GAO-17-747T](#); [GAO-17-654T](#); [GAO-14-450](#).

Coast Guard Faces Challenges in Effectively Managing its Acquisition Portfolio

Short-term Prioritization through the Annual Budget Process and the 5-Year Capital Investment Plan Limit Effective Planning

We found in September 2012, and in our July 2018 review, that the Coast Guard's approach of relying on the annual budget process and the 5-year CIP to manage portfolio affordability does not provide the best basis for making decisions to develop a more balanced and affordable portfolio in the long term.⁴ Further, in June 2014, we found that there is no evidence that short-term budget decisions will result in a good long-term strategy, and the Coast Guard's annual budget-driven trade-off approach creates constant churn as program baselines must continually re-align with budget realities instead of budgets being formulated to support program baselines.⁵ This situation results in trade-off decisions between capability and cost being pushed into the future. For example, since 2010, the Coast Guard has a stated requirement for three medium polar icebreakers, but it has only one operational medium icebreaker, the Healy, which has an expected end of service life—the total period for which an asset is designed to operate—in 2029. Despite the requirement for three medium polar icebreakers, Coast Guard officials said they are not currently assessing acquisition of the medium polar icebreakers because they are focusing on the heavy icebreaker acquisition and plan to assess the costs and benefits of acquiring medium polar icebreakers at a later time.

As required by statute, the Coast Guard has, since 2012, prepared a 5-year CIP that it is required to update and submit annually with the administration's budget request.⁶ The 5-year CIP is the Coast Guard's key acquisition portfolio planning tool. However, in our July 2018 review,

⁴[GAO-18-454](#) and [GAO-12-918](#).

⁵[GAO-14-450](#).

⁶14 U.S.C. § 2902. Since 2012, the Coast Guard has been required to submit its CIP with the President's budget in any given year. The CIP is approved by DHS and the Office of Management and Budget and, as we have reported in the past, is subject to significant change each year.

we found that shortcomings of that plan that limit its effectiveness.⁷ Specifically, we found that the Coast Guard's 5-year CIPs continue to demonstrate a pattern of certain ineffective planning practices, such as not identifying priorities or trade-offs between acquisition programs and not providing information about the effect of current decisions on the overall affordability of the acquisition portfolio.

These shortcomings limit the Coast Guard's ability to manage the affordability of its acquisition portfolio. Coast Guard officials said the CIP reflects the highest priorities of the department within the given top funding level and that prioritization and trade-off decisions are made as part of the annual budget cycle. However, the reasoning behind these decisions, and the resulting impacts on affected programs, are not articulated in the CIPs. While the Coast Guard is not required under statute to identify the effects of trade-off decisions in the CIP, failing to show which acquisitions would take on more risk—such as delays to certain recapitalization efforts—so other acquisitions can be prioritized and adequately funded within budget parameters also makes it difficult for Congress and other stakeholders, such as Department of Homeland Security (DHS) and the Office of Management and Budget (OMB), to understand any other options the Coast Guard considered. GAO's *Cost Estimating and Assessment Guide* states that comparative analyses showing facts and supporting details among competing alternatives, such as budget priorities, should consider trade-offs needed to identify solutions and manage risk.⁸ In the report we issued today, we recommended that the Coast Guard work with Congress to include a discussion of the acquisition programs it prioritized and describe how trade-off decisions made could affect other acquisition programs in the Coast Guard's annual 5-year CIP.⁹ DHS agreed with our recommendation and plans to include additional information in future CIP reports to address how trade-off decisions could affect other major acquisition programs. The Coast Guard plans to implement this recommendation by March 2020.

⁷[GAO-18-454](#).

⁸GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: March 2009).

⁹[GAO-18-454](#).

In June 2014, we found that the Coast Guard needed to take a more strategic approach in managing its acquisition portfolio.¹⁰ We recommended that the Coast Guard develop a 20-year fleet modernization plan that would identify all acquisitions necessary for maintaining at least its current level of service and the fiscal resources necessary to build these assets. DHS concurred with this recommendation and the Coast Guard is in the process of developing a 20-year Long-Term Major Acquisitions Plan to guide and manage the affordability of its acquisition portfolio, but DHS has not yet approved the plan. Such an analysis would facilitate a fuller understanding of the affordability challenges facing the Coast Guard while it builds the Offshore Patrol Cutter, among other major acquisitions.

The lack of a long-term plan and continuing to determine priorities and make trade-off decisions based on the annual budget have rendered the Coast Guard's acquisition planning reactive. We found that reactive planning and the Coast Guard's constrained budget environment have created a bow wave of near-term unfunded acquisitions, negatively affecting future acquisition efforts and potentially affecting future operations.¹¹ This bow wave consists of new acquisition programs and recapitalization efforts, as well as high-cost maintenance projects that use the same acquisition construction and improvements account, which continue to put pressure on available resources. These projects include some that are not currently identified in the 5-year CIP. For instance, the Coast Guard's 87-foot patrol boats are forecast to require recapitalization beginning in 2023. Additionally, the ocean-going 175-foot coastal buoy tenders are past the point in their service lives when a midlife maintenance availability would normally have been conducted.¹² In July 2018, we found that that the Coast Guard has historically operated

¹⁰[GAO-14-450](#).

¹¹According to GAO's schedule assessment guide and cost estimating and assessment guide, bow wave refers to a large amount of funding that will be required in the future to complete an acquisition due to deferred or delayed work. Often the funding required at the peak of a bow wave is unrealistic. See GAO, *Schedule Assessment Guide: Best Practices for Project Schedules*, [GAO-12-12OG](#) (Washington, D.C.: May 2012) and [GAO-09-3SP](#).

¹²Midlife maintenance availabilities occur near the midpoint of a cutter's life and are intended to correct system obsolescence issues and maintain asset reliability and supportability throughout the remainder of a cutter's service life.

vessels well past their expected end of service life, and it will likely need to do so with these assets given limited available acquisition funding.¹³

Executive Oversight Council Has Not Conducted Annual Reviews of All Acquisitions Collectively

The Coast Guard has a management body—the Executive Oversight Council—in place to conduct oversight of its major acquisition programs; however, this management body has not conducted oversight across the entire acquisition portfolio using a comprehensive, collective approach.¹⁴ Among the Coast Guard’s three cross-directorate groups that have roles in the acquisition process, we found in July 2018 that the Executive Oversight Council is best positioned to oversee the portfolio collectively and has the potential to implement key portfolio-wide management practices, including conducting formal reviews and issuing reports. This council has cross-directorate senior-level management representation, access to information on acquisition programs, and support from the other two cross-directorate groups (the Systems Integration Team and the Resource Councils). However, this council has not carried out these portfolio-wide practices.

In 2014, the Coast Guard updated the Executive Oversight Council’s charter, in response to our September 2012 recommendation, adding the responsibility for portfolio-wide oversight to include conducting an annual review to assess and oversee acquisitions collectively. However, in our July 2018 review, we found that the Coast Guard revised the council’s charter in June 2017, removing this responsibility.¹⁵ According to Executive Oversight Council officials, this responsibility was removed from the 2017 charter because the council did not conduct these annual reviews. Instead, Executive Oversight Council officials indicated that the council facilitates a balanced and affordable portfolio of acquisition programs through the individual program-level reviews. Best practices states that successful organizations assess product investments in

¹³[GAO-18-454](#).

¹⁴According to OMB guidance, portfolio-wide management should collectively prioritize capital assets, such as the Coast Guard’s major acquisition programs.

¹⁵[GAO-18-454](#).

aggregate, rather than as independent projects products or programs.¹⁶ For example, by considering the requirements, acquisition, and budget processes collectively, it helps organizations prioritize their product investments.

Further, we found that the Executive Oversight Council has not engaged in overseeing or reporting on the acquisition portfolio collectively and annually. OMB's 2017 *Capital Programming Guide* outlines a capital programming process, including how agencies should effectively and collectively manage a portfolio of capital assets.¹⁷ This OMB guidance states that a senior-level executive review committee should be responsible for reviewing the agency's entire capital asset portfolio on a periodic basis and for making decisions or priorities on the proper composition of agency assets needed to achieve strategic goals and objectives within the budget limits. In the case of the Coast Guard, only the Executive Oversight Council has members at the senior-level executive level and has the responsibility for oversight of its major acquisition programs. Without conducting comprehensive, collective portfolio reviews at the senior management level, the Coast Guard does not have sufficient cross-directorate information to determine needed trade-offs in the major acquisitions realm, considering budget realities. It is also limiting its ability to make strategic decisions on future requirements and capability gaps in a timely manner within the acquisition portfolio. In our July 2018 report on Coast Guard recapitalization efforts, we recommended that the Commandant of the Coast Guard should require the Executive Oversight Council, in its role to facilitate a balanced and affordable acquisition portfolio, to annually review the acquisition portfolio collectively, specifically for long-term affordability.¹⁸ DHS disagreed with our recommendation stating that other bodies within the Coast Guard, such as the Investment Board, Deputies Council, and Investment Review Board—are responsible for making decisions regarding out-year funding, while the Executive Oversight Council works outside of the annual budget process. DHS also stated that, to meet the spirit of our recommendation, the Coast Guard will update the Executive

¹⁶GAO, *Best Practices: An Integrated Portfolio Management Approach to Weapon System Investments Could Improve DOD's Acquisition Outcomes*, [GAO-07-388](#) (Washington, D.C.: Mar. 30, 2007).

¹⁷OMB's 2017 Capital Programming Guide, Supplement V 3.0 OMB Circular A-11, Planning, Budgeting, and Acquisition of Capital Assets.

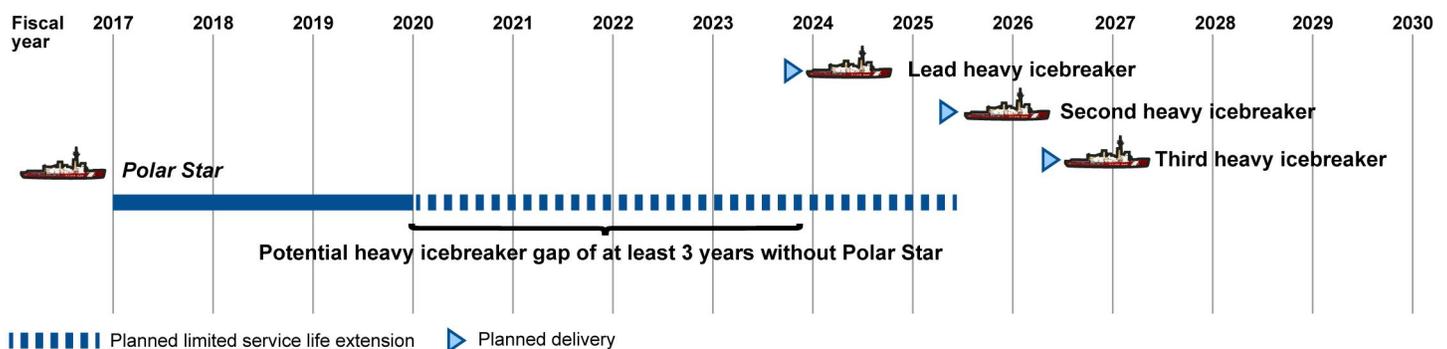
¹⁸[GAO-18-454](#).

Oversight Council’s charter to require a review of the collective acquisition portfolio, specifically evaluating long-term planning. We believe that updating the Executive Oversight Council’s charter to include long-term-planning is a positive step. However, we continue to believe that in addition to long-term planning, the Executive Oversight Council should include the major acquisition portfolio’s budget realities faced by the Coast Guard in its reviews, or long-term affordability. If the planning accounts for long-term funding considerations to achieve the Coast Guard’s acquisition goals and objectives, we believe the intent of our recommendation would be met.

Coast Guard’s Heavy Polar Icebreaker Program’s Optimistic Schedule Is Driven by Capability Gap Rather Than Knowledge-Based Analysis

The Coast Guard’s short-term planning focus has, in part, driven the acquisition of its heavy polar icebreaker program to its current situation—trying to meet a highly optimistic schedule. The heavy polar icebreaker program is intended to field three new icebreakers to replace the Coast Guard’s sole operational heavy polar icebreaker, the *Polar Star*. The *Polar Star* is expected to reach the end of its service life between 2020 and 2023 while the first heavy polar icebreaker is expected to be delivered in fiscal year 2023, with the second and third icebreakers expected to be delivered in 2025 and 2026, respectively. Figure 1 shows the potential icebreaking capability gap.

Figure 1: The Coast Guard’s Potential Heavy Polar Icebreaker Capability Gap and Planned Delivery of New Heavy Polar Icebreakers



Source: GAO analysis of U.S. Coast Guard documents. | GAO-18-629T

We are currently conducting a review of the heavy polar icebreaker acquisition, and, preliminarily, we have found that the Coast Guard set an optimistic schedule baseline for the delivery dates for new polar

icebreakers based on the ice-breaking capability gap rather than an analysis of what is realistic and feasible. Rather than building a schedule based on knowledge—such as determining realistic schedule targets and analyzing how much time to include in the schedule to buffer against potential delays, and comprehensively assessing schedule risks—the Coast Guard used the estimated end date of the *Polar Star's* service life as the primary driver to set the lead icebreaker's objective (or target) delivery date of September 2023 and threshold (latest acceptable) delivery date of March 2024. Design study information provided by several shipbuilders estimated that it could take up to 3.5 years to build the lead icebreaker, but the Coast Guard is planning for a more optimistic estimate of 2.5 years for the delivery date.¹⁹ Our best practices for developing project schedules state that estimating how long an activity takes should be based on the effort required to complete the activity and the resources available and not driven by a specific completion date.²⁰

In addition, preliminary findings indicate the Coast Guard did not conduct analysis to identify a reasonable amount of margin or time to include in the program schedule baseline to account for any delays in the program. The current heavy polar icebreaker's schedule includes only 6 months of margin between the Coast Guard's target and latest acceptable delivery dates. However, our analysis of recent shipbuilding acquisitions shows that longer schedule delays, whether they are in the program's control or not, should be expected. For example, among the 12 selected shipbuilding acquisition programs active in the last 10 years that we analyzed, the Navy and the Coast Guard have delayed delivery of all but one lead ship from their original planned delivery dates, with delays ranging from 9 to 75 months. We have found in our past shipbuilding work that delays have resulted from a number of issues, including redesign work to address discoveries during pre-delivery testing, and key system integration problems, and design quality issues among others.²¹ However,

¹⁹In February 2017, the Coast Guard contracted with five shipbuilders to conduct design studies to examine major design cost drivers and technology risks for the heavy polar icebreaker program.

²⁰GAO, *GAO Schedule Assessment Guide: Best Practices for Project Schedules*, [GAO-16-89G](#) (Washington, D.C.: Dec. 2015).

²¹[GAO-18-339SP](#); *Defense Acquisitions: Assessments of Selected Weapon Programs*, [GAO-17-333SP](#) (Washington, D.C.: March 30, 2017); *Defense Acquisitions: Assessments of Selected Weapon Programs*, [GAO-15-342SP](#) (Washington, D.C.: Mar. 12, 2017); *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).

Coast Guard officials told us such risks are not accounted for in the Heavy Polar Icebreaker schedule. We plan to issue a report on the Coast Guard's heavy polar icebreaker acquisition this summer. In addition, we will continue to review this program in our annual assessment of major acquisition programs.

Coast Guard Faces Sustainment Challenges for the *Polar Star* and 270-foot Medium Endurance Cutters

We found in July 2018 that the Coast Guard's heavy polar icebreaker *Polar Star* and the Medium Endurance Cutters are currently either approaching or operating beyond the end of their design service lives.²² These cutters are in need of major maintenance overhauls—or Service Life Extension Projects (SLEP)—in order to continue providing capabilities to operators. According to Coast Guard officials, SLEPs are necessary because the Coast Guard does not have the funds available to initiate a new major acquisition program to recapitalize these assets in the short term, or because a significant amount of maintenance work is required to keep these assets operational until replacements are fielded. These planned SLEPs involve several risks including scheduling and funding.

Heavy Icebreaker *Polar Star* has Required More Maintenance than Planned to Remain Operational

After being placed in a nonoperational status in 2006 due to equipment problems, the Coast Guard conducted reactivation work on the *Polar Star* from 2010 to 2013, and the icebreaker resumed its primary mission for the annual deployment to the National Science Foundation's McMurdo Research Facility in Antarctica in 2014. Further, our July 2018 review indicated that the Coast Guard is planning a SLEP on the *Polar Star* to keep it operational until the first and second new heavy polar icebreakers are delivered in order to bridge a potential operational gap. This approach, according to Coast Guard officials, would allow the Coast Guard to operate a minimum of two heavy icebreakers once the first polar icebreaker is delivered and provide the Coast Guard with a self-rescue

²²[GAO-18-454](#).

capability—the ability for one icebreaker to rescue the other if it became incapacitated while performing icebreaking operations.

However, we found that the Coast Guard’s plans to conduct this SLEP during its annual depot-level maintenance periods—that is, maintenance that is beyond the capability of the crew of a cutter or other asset—may not be feasible given the amount of maintenance already required on the cutter. Specifically, the *Polar Star’s* mission capable rating (an asset’s availability to conduct operations) has been decreasing in recent years and reached a low point of 29 percent—well below the target of 41 percent—from October 2016 to September 2017. Based on mission capable data, we found this was mostly due to additional time spent in depot-level maintenance, which has increased in recent years from about 6 months in 2015 to more than 8 months in 2017. Additionally, the *Polar Star* has required extensions of about 3 months for its annual dry dock periods—the period of time when a cutter is removed from the water so that maintenance can be conducted—in 2016 and 2017 to complete required maintenance activities. These dry docks were originally planned to last between 2 1/2 months and 4 months. We found in July 2018 that these delays and extensions are likely to continue as the cutter ages.²³ According to Coast Guard officials, the *Polar Star’s* SLEP work will be conducted during the annual dry dock periods by adding an additional 1 or 2 months to the annual dry docks. However, if the work is unable to be completed during this timeframe, it could force the Coast Guard to miss its commitment to conduct its annual Antarctica mission.²⁴ Coast Guard maintenance officials stated that until the *Polar Star* completes the SLEP, its repairs will likely continue to get more expensive and time consuming.

As we found in July 2017, the *Polar Star* SLEP effort has a rough-order cost estimate of \$75 million, which is based on the reactivation work completed in 2013.²⁵ However, we found this estimate may be unrealistic based on assumptions the Coast Guard used, such as that it would continue to use parts from the Coast Guard’s other heavy polar

²³[GAO-18-454](#).

²⁴The Coast Guard was previously unable to conduct the annual mission to the McMurdo Research Facility from 2010 to 2013 due to both heavy icebreakers being inoperable. During that time, the National Science Foundation leased a commercial icebreaker to open a channel for resupply ships.

²⁵[GAO-17-747T](#).

icebreaker, the *Polar Sea*, which has been inactive since 2010.²⁶ The Coast Guard's recent assessment of the *Polar Star's* material condition—the physical condition of the cutter, which includes the hull structure, habitability, major equipment systems, and spare parts availability—was completed in January 2018.²⁷ The material assessment stated that many of the available parts from the *Polar Sea* have already been removed and installed on the *Polar Star*. As a result of the finite parts available from the *Polar Sea*, the Coast Guard may have to acquire new parts for the *Polar Star* that could increase the \$75 million SLEP estimate. The *Polar Star's* recent material assessment will form the basis to determine which systems will be overhauled during the SLEP and for a more detailed cost estimate. The Coast Guard expects the *Polar Star* SLEP to begin by June 2020, at which time the *Polar Star* could reach the end of its current useful service life (currently projected to be between 2020 to 2023). This timeline contains risk that the *Polar Star* could be rendered inoperable before the cutter is able to undergo a SLEP. We will continue to monitor the *Polar Star's* SLEP through our annual review of DHS programs.

Coast Guard Is Developing Plans to Extend Medium Endurance Cutters' Service Lives

The Coast Guard operates two fleets of Medium Endurance Cutters (270-foot and 210-foot cutters) and both are either approaching or have exceeded their design service lives. According to Coast Guard officials, there are no plans to extend the service lives of the 210-foot Medium Endurance Cutters due to the age of the vessels (some of the cutters will be over 60 years old when they are expected to be removed from service). However, we found in July 2018 that, according to Coast Guard maintenance officials, the primary problem facing the 270-foot Medium Endurance Cutters is obsolescence of parts.²⁸ The cutters have several

²⁶The *Polar Sea* is the sister ship to the *Polar Star* and has been inactive since experiencing a major engine casualty in June 2010.

²⁷The Ship Structure and Machinery Evaluation Board is the prime source of information on the material condition and remaining service life of the cutter classes. This information allows the Coast Guard to formulate cutter acquisition plans and modernization alternatives. A fundamental step in this planning cycle is to periodically evaluate the remaining service life of each cutter and standard boat class and compare this against the future mission requirements. The board thoroughly evaluates the material condition of the cutter or standard boat class and determines its remaining service life.

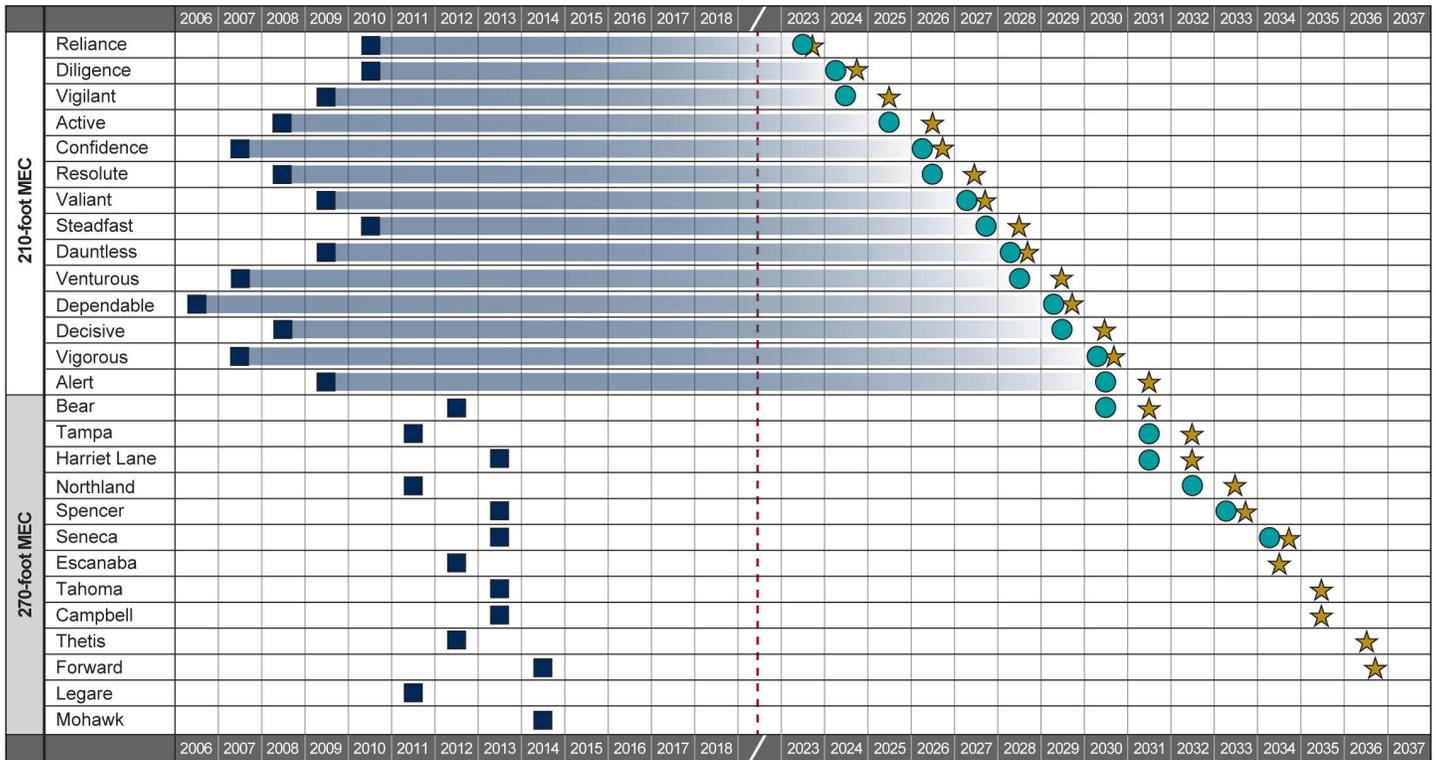
²⁸[GAO-18-454](#).

systems that are no longer manufactured, and in many cases the original manufacturer no longer makes parts for the systems, such as the generators, fire pumps, and main diesel engines. To sustain the 270-foot Medium Endurance Cutters until the replacement cutters—the Offshore Patrol Cutters—are delivered, the Coast Guard is planning to conduct a SLEP. Coast Guard officials stated they are evaluating how many of the 13 270-foot cutters will undergo the SLEP.

According to Coast Guard officials, the Offshore Patrol Cutter acquisition program is on track to meet its cost and schedule goals. The Coast Guard is in the process of completing the design of the cutter before starting construction, which is in-line with GAO-identified shipbuilding best practices. In addition, Coast Guard officials stated that the program is using state-of-the-market technology that has been proved on other ships as opposed to state-of-the-art technology, which lowers the risk of the program. The Coast Guard expects to start construction of the first Offshore Patrol Cutter in fiscal year 2019 and procure a total of 25 ships, with plans to initially fund one cutter per year and eventually two cutters per year until all 25 cutters are delivered. Further, Coast Guard officials have stated that if the Offshore Patrol Cutter program experiences any delays, it will likely decrease the Coast Guard's operational capacity because the legacy Medium Endurance Cutters will likely require increased downtime for maintenance and other issues, reducing their availability. As we indicated earlier, short-term planning limits the Coast Guard's ability to identify and consider tradeoffs with its acquisition portfolio.

The Coast Guard is evaluating how long the 270-foot Medium Endurance Cutters should remain in service. According to Coast Guard officials, this decision is at least partially dependent on the delivery of the Offshore Patrol Cutters—specifically the shipbuilder's ability to deliver 2 cutters per year, which is expected to start in fiscal year 2024 with the 4th and 5th cutters. Officials stated that the Coast Guard does not plan to operate any Medium Endurance Cutters once all 25 Offshore Patrol Cutters are operational, yet the fiscal year 2018 through 2022 CIP report indicates that 7 of the 270-foot Medium Endurance Cutters will still be in service when all 25 Offshore Patrol Cutters are delivered and operational. Officials said this is a contingency plan in case not all Offshore Patrol Cutters are delivered on time. Figure 2 shows the planned delivery dates for the Offshore Patrol Cutters and the proposed decommissioning dates for the legacy Medium Endurance Cutters.

Figure 2: Comparison of the End of the Useful Life for the Legacy Medium Endurance Cutter and the Planned Offshore Patrol Cutter Delivery Dates



- End of service life as of 2012
- Assets not undergoing Service Life Extension Program
- Decommissioning date in fiscal year 2018 Capital Investment Plan
- Full operational date for each Offshore Patrol Cutter

Source: GAO analysis of Coast Guard documents. | GAO-18-629T

Note: The fiscal year 2018 Capital Investment Plan does not specifically list when each hull will be decommissioned, but lists the number of hull to be decommissioned each year. We notionally went in order of the oldest to the newest cutters as provided by the Coast Guard.

The Coast Guard plans to have two Offshore Patrol Cutters delivered per year starting in 2024, but the full operational date is two years later due to the need for post-delivery work.

The Coast Guard conducted a Midlife Maintenance Availability on the 210-foot Medium Endurance Cutters between 1987 and 1998 that added 15 years to their service lives. The end of service life shown represents this 15 year extension.

The fiscal year 2018 through 2022 CIP shows that there is little, if any, gap between when the 210-foot and 270-foot Medium Endurance Cutters will be removed from service and when the Offshore Patrol Cutters will be operational. However, both Medium Endurance Cutter classes will be well past their end of service lives by the time they are decommissioned. For

instance, in our July 2012 report, we found that the 210-foot Medium Endurance Cutter *Dependable* reached its end of service life in 2006.²⁹ Nevertheless, based on the fiscal year 2018 through 2022 CIP, we found that the Coast Guard plans for the cutter to operate for an additional 23 years (until 2029) without any major sustainment work to extend its service life. While it is not unusual for the Coast Guard to operate cutters for longer than originally planned, the lack of a more comprehensive, collective portfolio management approach, in part, will result in some of the Medium Endurance Cutters operating over 60 years, which is 30 years beyond their original design service lives.

In addition, the Coast Guard's own assessments indicate likely challenges. For instance, the Coast Guard's February 2017 Sustainability Assessment of the 210-foot Medium Endurance Cutters, it rated 5 of the 14 cutters as a high risk for sustainability, which reflects either a poor material condition or high maintenance costs.³⁰ Moreover, the most recent material condition assessments for the Medium Endurance Cutters, completed in 2015, found that

- 210-foot Medium Endurance Cutters cannot be expected to meet operational requirements using the normal depot-level maintenance funding levels due to the time required to complete maintenance and the increased maintenance costs in recent years; and
- mission effectiveness of the 270-foot Medium Endurance Cutters will continue to degrade without a near-continuous recapitalization of older sub-systems.

In July 2012, we found that as assets age beyond their design service lives, they can negatively affect the Coast Guard's operational capacity to meet mission requirements as the cutters require more maintenance.³¹

We will continue to monitor the Medium Endurance Cutters' SLEP and the Offshore Patrol Cutter acquisition in our annual review of major acquisition programs.

²⁹GAO, *Coast Guard: Legacy Vessels' Declining Conditions Reinforce Need for More Realistic Operational Targets*, [GAO-12-741](#) (Washington, D.C.: July 31, 2012).

³⁰Sustainability Assessments are annual assessments that rank each cutter's ability to be affordability sustained.

³¹[GAO-12-741](#).

In conclusion, as the Coast Guard continues modernizing its fleet and sustaining existing assets for longer than planned, it is important that it develops a more strategic and comprehensive approach for managing its portfolio so that future requirements and capability gaps can be addressed in a timely manner. The Coast Guard has a history of using its annual budgets to plan its acquisition portfolio, which leads to ever changing priorities and creates deferred acquisitions and a bow wave of future funding requirements. This bow wave has begun and the Coast Guard will continue to add to it until it begins to have a longer-term focus, such as with the creation of the 20-year Long Term Major Acquisition Plan that we recommended in 2014. The Coast Guard has an opportunity with this plan to lay the foundation for the success of the future acquisition portfolio by showing what assets are needed and how much it is expected to cost, and it will position itself to provide decision makers with critical knowledge needed to prioritize its constrained acquisition funding. In the meantime, the Coast Guard would benefit from describing in the 5-year CIP how the annual trade-off decisions that are made could affect other acquisition programs. This would help decision makers understand the needs of the Coast Guard so that they can know how to better allocate taxpayer dollars as they invest in new more capable Coast Guard assets.

Chairman Hunter, Ranking Member Garamendi, and Members of the Subcommittee, this concludes my prepared statement. I would be pleased to respond to any questions.

GAO Contact and Staff Acknowledgments

If you or your staff have any questions about this statement, please contact Marie A. Mak, (202) 512-4841 or makm@gao.gov. In addition, contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Individuals who made key contributions to this testimony include Rick Cederholm, Assistant Director; Peter W. Anderson; John Crawford; Claire Li; Roxanna Sun; and David Wishard.

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