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COAST GUARD

Actions Needed to Better Manage Shore Infrastructure

Statement of Heather MacLeod, Acting Director,
Homeland Security and Justice

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Highlights

Highlights of GAO-22-105513, a testimony before the Subcommittee on Coast Guard and Maritime Transportation, Committee on Transportation and Infrastructure, House of Representatives

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COAST GUARD

Actions Needed to Better Manage Shore Infrastructure

Why GAO Did This Study

The Coast Guard, within the Department of Homeland Security (DHS), owns or leases more than 20,000 shore facilities—such as piers, boat stations, air stations, runways, and housing units—at more than 2,700 locations.

This statement addresses (1) the condition of Coast Guard infrastructure, (2) Coast Guard actions to improve management of its shore infrastructure, and (3) challenges for the Coast Guard to address. This statement is based primarily on four GAO products issued from October 2017 through July 2020 and updates as of October 2021 on actions the Coast Guard has taken to address recommendations from these reports.

GAO analyzed relevant Coast Guard documents and management processes, and interviewed Coast Guard officials. To conduct updates, GAO also reviewed Coast Guard budget information and other documentation, and interviewed officials on actions taken to implement prior GAO recommendations.

What GAO Recommends

GAO has made recommendations in prior reports to improve the Coast Guard's asset management efforts, including reporting shore infrastructure needs more completely and accurately. DHS concurred with most of these recommendations and, in some cases, has taken steps toward addressing them.

View GAO-22-105513. For more information, contact Heather MacLeod at (202) 512-8777 or macleodh@gao.gov.

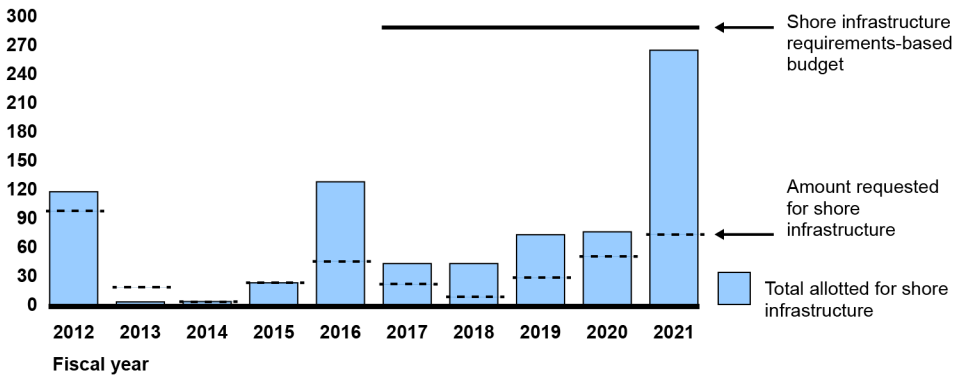
What GAO Found

In 2019, GAO found that almost half of the Coast Guard's shore infrastructure was past its service life and the extent of costs to address its maintenance and recapitalization (major renovations) project backlogs may be understated. GAO also found that Coast Guard data showed at least $2.6 billion in costs to address its backlogs for its $18 billion portfolio of shore infrastructure.

The Coast Guard has taken initial steps toward improving how it manages its infrastructure. For example, in 2019 GAO found weaknesses in how the Coast Guard prioritized shore infrastructure investments. GAO recommended that it incorporate resilience—the ability to prepare and plan for, absorb, and recover from, or successfully adapt to adverse events—into its risk management. In 2021, the Coast Guard revised how it prioritizes infrastructure investments, including incorporating resilience into planning by, for example, identifying the infrastructure most critical to mission operations.

The Coast Guard continues to face challenges in ensuring that its infrastructure investments meet mission and user needs. For example, in 2019 GAO found that the Coast Guard has not provided accurate information to Congress about its requirements-based budget targets for shore infrastructure in its budget requests and its project backlogs. Specifically, Coast Guard recapitalization targets for shore assets were at least $290 million annually, but its budget requests for fiscal years 2012 through 2021 ranged from about $5 million to about $99 million annually (see figure). GAO previously recommended that the Coast Guard include supporting details about competing project alternatives and report trade-offs in congressional budget requests and related reports. The Coast Guard agreed with GAO's recommendation. GAO continues to follow up on the status of the Coast Guard's actions in response to this and other prior GAO recommendations aimed at improving the Coast Guard's management of its infrastructure.

Allotments for Shore Infrastructure, Amount Requested, and Shore Infrastructure Requirements-based Budget as Determined by the U.S. Coast Guard, Fiscal Years 2012 through 2021



Source: GAO analysis of U.S. Coast Guard documents. | GAO-22-105513

Chair Carbajal, Ranking Member Gibbs, and Members of the Subcommittee:

I am pleased to be here today to discuss our recent and ongoing work on the condition of the U.S. Coast Guard's shore and information technology (IT) infrastructure, and recommendations we have made to help improve its infrastructure management. The Coast Guard, a component of the Department of Homeland Security (DHS), maintains physical assets at over 2,700 locations where it owns or leases more than 20,000 facilities, including piers, boat stations, air stations, runways, and housing units. In addition, the Coast Guard relies on its IT assets, which include over 400 IT systems. In particular, the Coast Guard uses the Marine Information for Safety and Law Enforcement system to track and report mission results for nine of its 11 missions.[1]

In my testimony today, I will discuss (1) the condition of the Coast Guard's shore infrastructure, (2) actions the Coast Guard has taken to improve its management of shore infrastructure, and (3) challenges the Coast Guard faces to ensure that shore and IT infrastructure investments meet mission and user needs.

This statement is primarily based on four reports we issued from October 2017 through July 2020, as well as selected updates to those reports that we conducted through October 2021 regarding Coast Guard efforts to address our previous recommendations.[2] To perform our work for these reports, we analyzed relevant Coast Guard documents and management processes, as well as applicable budgets, laws, policies, and data for managing Coast Guard shore infrastructure. We also interviewed Coast Guard officials responsible for managing shore infrastructure and a key data system. Further details on the scope and methodology for these

[1]Under 6 U.S.C. § 468(a), the Coast Guard's 11 statutory missions are (1) marine safety; (2) search and rescue; (3) aids to navigation; (4) living marine resources; (5) marine environmental protection; (6) ice operations; (7) ports, waterways, and coastal security; (8) drug interdiction; (9) migrant interdiction; (10) defense readiness; and (11) other law enforcement.

[2]GAO, *Coast Guard: Actions Needed to Close Stations Identified as Overlapping and Unnecessarily Duplicative*, GAO-18-9 (Washington, D.C.: Oct. 26, 2017); *Coast Guard Shore Infrastructure: Applying Leading Practices Could Help Better Manage Project Backlogs of at Least $2.6 Billion*, GAO-19-82, (Washington, D.C.: Feb. 21, 2019); *Coast Guard Shore Infrastructure: Processes for Improving Resilience Should Fully Align with DHS Risk Management Framework*, GAO-19-675 (Washington, D.C., Sept. 25, 2019); and *Coast Guard: Actions Needed to Ensure Investments in Key Data System Meet Mission and User Needs*, GAO-20-562 (Washington, D.C.: July 16, 2020).

reports are available within each of the published products. In addition, for our selected updates through October 2021, we reviewed Coast Guard documentation and interviewed officials about actions taken to address recommendations from our previous reports.

This statement also includes preliminary observations from ongoing work related to Coast Guard IT infrastructure management efforts, which we expect to publish in multiple reports in 2022. For these forthcoming reports, we reviewed Coast Guard policies, procedures, and practices related to IT infrastructure and acquisitions; cybersecurity risk management; cloud computing; and cyberspace workforce. We compared these policies, procedures, and practices with evidence of the Coast Guard's actions to implement them. For each of the key areas of review, we interviewed knowledgeable Coast Guard officials.

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.

Almost Half of the Coast Guard's Shore Infrastructure Is Beyond Its Service Life

We found in February 2019 that the condition of the Coast Guard's shore infrastructure was deteriorating and that almost half (45 percent) was past its service life—resulting in recapitalization and new construction and deferred maintenance backlogs.[3] As of 2019, these backlogs totaled at least $2.6 billion. The Coast Guard owns or leases 20,000 facilities, which consist of various types of buildings and structures that are organized into five product lines and 13 asset types, known as asset lines.[4] For example, within its shore operations asset line, the Coast Guard maintains over 200 stations along U.S. coasts and inland waterways to

[3]GAO-19-82. According to the Coast Guard, its overall shore inventory has a 65-year service life, and its asset service life ranges from 6 to 75 years, depending on the type of asset.

[4]According to Coast Guard guidance, a building is generally defined as a fully enclosed structure that is affixed to the ground, in which personnel work or live or where equipment is stored. Buildings include regional operations centers, aircraft hangars, and houses. A structure is generally defined as any other construction affixed to the ground that does not meet the definition of a building. Structures include helicopter landing pads, docks, and aircraft runways.

carry out its search and rescue operations, as well as other missions, such as maritime security. In 2018, the Coast Guard graded[5] its overall shore infrastructure condition as a C minus,[6] on the basis of criteria it derived from standards developed by the American Society of Civil Engineers. Table 1 shows information about the number of assets, replacement value, service life of, and condition grades assigned by the Coast Guard for each of its asset lines for fiscal year 2018.

Table 1: Asset Numbers and Replacement Values, Percent of Assets Operating Past Service Life, and Condition Grades of Selected Assets, for Fiscal Year 2018, as Determined by the U.S. Coast Guard

Asset line	Number of assets	Replacement value ($ in millions)	Percent of assets past service life[a]	Percent of assets operating more than 5 years past service life[a]	2018 condition grade[b]
Aviation	334	2,570	63	35	D
Base services	4,180	880	50	33	C-
Civil works	6,665	1,872	55	33	C
Community services	1,135	1,394	68	37	D+
Housing	2,901	2,923	28	26	B-
Industrial	52	467	57	38	D-
Sector/district	459	2,029	27	16	C
Shore operations	1,056	1,951	38	19	B
Technology	1,910	835	24	15	D+
Training facilities	174	421	35	25	C+
Waterfront	1,577	2,494	55	26	C-
Total	**20,433**	**17,835**	**46**	**29**	**C-**

Source: GAO analysis of U.S. Coast Guard documents. | GAO-22-105513

[5]The Coast Guard assigned each asset line a letter grade to provide a snapshot of what the Coast Guard considered the condition of its shore infrastructure to be for that year. Considering eight attributes adapted from standards used by the American Society of Civil Engineers, the Coast Guard looked at (1) Capacity, (2) Funding, (3) Operations and Maintenance, (4) Resilience, (5) Condition, (6) Future Need, (7) Public Safety, and (8) Innovation. As noted by the Coast Guard's fiscal year 2018 shore infrastructure reports, these infrastructure grades provide a broad basis for performance analysis and consider how well the Coast Guard is able to achieve mission objectives in relation to its dependencies on shore infrastructure.

[6]According to the American Society of Civil Engineers, an "A" denotes generally excellent condition; a "B" denotes good to excellent condition; a "C" denotes mediocre/fair to good condition but showing signs of deterioration and increasingly vulnerable to risk; a "D" denotes poor to fair condition and mostly below standard; and an "F" denotes failing/critical, unfit for purpose, and in an unacceptable condition, with widespread advanced signs of deterioration.

Note: Table excludes two asset lines—fixed and floating aids to navigation and signal equipment—which are used to mark federal waterways to safeguard maritime safety and commerce.

[a]The Coast Guard does not have complete service life data on all of its assets. For example, the Coast Guard does not have data on the remaining service life for 16 percent of its aviation assets.

[b]According to the American Society of Civil Engineers, upon which the Coast Guard based its grades, an "A" denotes generally in excellent condition; a "B" denotes good to excellent condition; a "C" denotes mediocre/fair to good condition but showing signs of deterioration and increasingly vulnerable to risk; a "D" denotes poor to fair condition and mostly below standard; and an "F" denotes failing/critical, unfit for purpose, and in an unacceptable condition, with widespread advanced signs of deterioration. The formula the Coast Guard uses to assign grades is based on a number of factors, including the results of its facility inspections, and the percent of assets past service life is independent of the grade calculation. According to Coast Guard officials, some of its 2018 data on shore infrastructure may not be complete if field inspectors did not identify and record problems at facilities they inspected. As a result, condition grades could be overly positive.

The aging and deteriorating condition of the Coast Guard's shore infrastructure has led to deferred construction projects and maintenance backlogs. With almost half of its infrastructure past its service life, and given recent Coast Guard funding requests for its shore infrastructure, it will take many years for the agency to address these backlogs. For example, in 2018 the Coast Guard estimated that it would take almost 400 years to address the $1.774 billion recapitalization and new construction backlog it reported for that year—assuming an overall 65-year service life and that funding would continue at the fiscal year 2017 appropriations level.[7] This time frame estimate excluded the Coast Guard's $900 million deferred depot-level maintenance backlog, which had increased to $958 million, as of August 2021.[8]

Further, the size and estimated costs of the Coast Guard's backlogs may be understated. In February 2019, we found that 205 projects on the Coast Guard's recapitalization and new construction backlog lacked cost estimates compared with 125 projects with cost estimates.[9] Officials explained that they had not prepared cost estimates for these projects

[7]The number of years it would take to address the backlog is dependent on appropriated amounts, which have varied considerably.

[8]Deferred depot-level maintenance consists of major maintenance tasks that are beyond the capability of an individual unit, such as replacing exterior doors and windows.

[9]GAO-19-82. In 2017, the Coast Guard removed 132 projects from its backlog that it determined were no longer necessary based on mission change, alternative solutions, or the need being met through another project. We did not assess the process the Coast Guard applied to remove projects from its list. The Coast Guard was not able to identify the estimated total cost for projects it removed.

because the estimates were in the preliminary stages of development.[10] As we reported in 2019, these information shortcomings are consistent with previous findings and recommendations that the DHS Office of Inspector General has made.[11] We describe the status of our 2019 recommendation below.

The Coast Guard Has Taken Initial Steps to Improve Its Management of Shore Infrastructure

Our previous reports have identified various steps the Coast Guard has taken to begin to improve how it manages its shore infrastructure. Some of these steps align with leading practices for managing public sector backlogs and key practices for managing risks to critical infrastructure. These include identifying risks posed by the lack of timely investment, identifying mission-critical facilities, and beginning an assessment of shore infrastructure vulnerabilities. Specifically, the Coast Guard has done the following:

- **Identified risks posed by the lack of timely investment.** In February 2019, we found that the Coast Guard had a process to identify, document, and report risks to its shore infrastructure in its annual shore infrastructure reports for fiscal years 2015 through 2017.[12] These reports identified the types of risks the Coast Guard faces in not investing in its facilities, including financial risk, capability risk, and operational readiness risk. For example, as shown in figure 1, the Coast Guard has maintenance facilities that require refurbishment because they cannot accommodate newer, taller boats. The Coast Guard met this leading practice to identify risk in general terms—for example, in terms of increased life cycle costs, or risk to operations.

[10]In 2018, list of unfunded priorities, the Coast Guard's projected costs for individual shore projects with cost estimates ranged from $2 million to approximately $95 million per project. We did not evaluate the Coast Guard's cost estimating practices.

[11]In 2008, DHS's Office of Inspector General (OIG) found that Coast Guard funding for shore infrastructure was well below the industry standard—at 0.03 percent rather than the 2 percent standard for 2003-2006—and that, as a result, the Coast Guard had to use maintenance funds to execute Procurement, Construction, and Improvement projects, which the OIG reported could cause a critical situation with the structural integrity of Coast Guard shore facilities, and which, if uncorrected, could compromise the Coast Guard's overall operational capability.

[12]According to leading practices, agencies should identify the types of risks posed by not investing in deteriorating facilities, systems, and components because this is important for providing more transparency in the decision making process and for communicating with staff at all organizational levels. See GAO, *Federal Real Property: Improved Transparency Could Help Efforts to Manage Agencies' Maintenance and Repair Backlogs*, GAO-14-188 (Washington, D.C., Jan. 23, 2014).

Figure 1: Coast Guard Maintenance Facilities Requiring Refurbishment because They Cannot Accommodate Newer, Taller Boats

Source: GAO. | GAO-22-105513

- **Identified mission-critical and mission-supportive shore infrastructure.** In February 2019,[13] we found that since at least 2012, the Coast Guard had documented its process to classify all of its real property under a tier system and had established minimum investment targets by tier as part of its central depot-level maintenance expenditure decisions.[14] These tiers—which range from mission-critical to mission-supportive assets—were incorporated into guidance that Coast Guard decision makers are to follow when deliberating project funding and to help them determine how to target funding more effectively. For example, Coast Guard guidance for fiscal years 2019 through 2023 prioritized expenditures on shore infrastructure supporting front-line operations, such as piers or runways, over shore infrastructure indirectly supporting front-line operations, such as administrative buildings.

[13]GAO-19-82.

[14]GAO, *Federal Real Property: Improved Transparency Could help Efforts to Manage Agencies' Maintenance and Repair Backlogs*, GAO-14-188 (Washington, D.C.: Jan. 23, 2014). Leading practices state that agencies should identify buildings as mission-critical and mission-supportive to help establish where maintenance and repair investments should be targeted, to ensure that funds are being used effectively.

- **Incorporated resilience into shore infrastructure planning.** In July 2021, the Coast Guard revised how it prioritizes shore infrastructure investments by aligning its processes for incorporating shore infrastructure resilience—the ability to prepare and plan for, absorb and recover from, or successfully adapt to, adverse events—into its shore infrastructure planning. Previously, in September 2019, we identified weaknesses in the Coast Guard's processes for incorporating resilience into its infrastructure risk management, including considering the extent to which infrastructure projects are the most critical to assuring that the Coast Guard could carry out its missions. For example, we found that the Coast Guard had not considered whether certain aircraft runways and other structures were vulnerable to flooding following a severe storm, or which were at greatest risk for flooding.

  We recommended that the Coast Guard revise its processes for improving shore infrastructure resilience, and the Coast Guard agreed with our recommendation. In July 2021, the Coast Guard informed us that its 2021 through 2025 civil engineering work plan prioritizes actions to identify the most operationally critical infrastructure. These are important initial steps toward incorporating resilience into shore infrastructure planning, which we will continue to monitor. As we have previously reported, by aligning its processes for improving shore infrastructure resilience with DHS's recommended risk management framework for critical infrastructure, the Coast Guard will be better positioned to reduce its future fiscal exposure to the effects of catastrophic natural disasters.[15] See figure 2 for an example of incorporating resilience into a Coast Guard facility.

[15]GAO-19-675.

Figure 2. Coast Guard Station in Sabine Pass, Texas, Damaged by Hurricane Ike in 2008 and Rebuilt in 2013 to Be More Resilient

Station Sabine Pass, Hurricane Ike, category II damage to station.

Station Sabine Pass rebuilt to withstand 100 year flood, category III hurricane wind speeds.

Source: U.S. Coast Guard. | GAO-22-105513

Coast Guard Could Further Improve Management of Shore and IT Infrastructure

Although the Coast Guard has taken actions to begin to improve its shore infrastructure management, it continues to face challenges in ensuring that its investments meet mission and user needs for shore and IT infrastructure management. In particular, we found that the Coast Guard could improve its shore and IT infrastructure management in the following four areas:

- **Employ models for predicting the outcome of investments and analyzing trade-offs.** In February 2019, we found that a 2017 Coast Guard Aviation Pavement Study employed a model that determined the Coast Guard could more efficiently prioritize its investment in aviation pavement.[16] A subsequent Coast Guard aviation pavement plan recommended actions to use the study results and potentially save $13.8 million. However, the Coast Guard has not employed such modeling to prioritize investments to all of its shore infrastructure lines, potentially missing opportunities to identify and achieve additional cost savings. As a result, we recommended that the Coast

[16]To ensure that investment decisions are aligned with agency missions and goals, agencies should employ models to predict the future condition and performance of its facilities as a portfolio, according to leading practices. Leading practices state that agencies should align real property with mission needs. GAO-19-82.

Guard employ models for its asset lines that would predict investment outcomes, analyze trade-offs, and optimize decisions among competing investments. The Coast Guard agreed with our recommendation. As of April 2021, officials told us they are assessing modeling tools used by the Department of Defense and others, and plan to begin using models by the end of September 2023. We will continue to monitor actions the Coast Guard is taking to address our recommendations.

- **Dispose of unneeded assets.** In October 2017, we found that disposing of unneeded assets, such as closing unnecessarily duplicative boat stations[17] that were identified by the Coast Guard using a sound analytical process, could potentially generate $290 million in cost savings over 20 years.[18] Specifically, the Coast Guard analyzed its nearly 200 stations and identified 18 unnecessarily duplicative boat stations with overlapping coverage that could be permanently closed without negatively affecting the Coast Guard's ability to meet its mission requirements, including its 2-hour search and rescue response standard.[19] The Coast Guard has made multiple attempts in previous years to close such stations but was unable to do

[17]In 2010, federal law required that within departments and throughout the government, we identify programs, agencies, offices, and initiatives with duplicative goals and activities and report annually. Pub. L. No. 111-139, § 21, 124 Stat. 29 (2010), 31 U.S.C. § 712 Note. See GAO's Duplication and Cost Savings web page for links to the 2011 to 2017 annual reports: http://www.gao.gov/duplication/overview.

[18]GAO-18-9. In February 2019, we reported that leading practices state that agencies should efficiently employ available resources, limit construction of new facilities, and that facilities that are not needed to support an agency's mission should be disposed of whenever it is cost effective to do so. GAO-19-82.

[19]Coast Guard guidance calls for its stations to plan to arrive to the scene of the search and rescue distress cases within their area of responsibility within 2 hours. U.S. Coast Guard, *U.S. Coast Guard Addendum to the United States National Search and Rescue Supplement to the International Aeronautical and Maritime Search and Rescue Manual*, COMDTINST M16130.2F (Washington, D.C.: January 2013).

so due to congressional intervention and subsequent legislation prohibiting closures.[20]

In February 2019, we recommended disposing of unneeded assets to more efficiently manage resources and better position the Coast Guard and Congress to address shore infrastructure challenges. The Coast Guard agreed with our recommendation. In April 2021, Coast Guard officials told us that they planned to consolidate four stations with larger adjacent stations as part of the fiscal year 2021 appropriations omnibus, in a step toward disposing of the 18 unnecessarily duplicative stations it identified in 2013. However, as of October 2021, officials have told us that the Coast Guard reconsidered the planned disposition of some unnecessarily duplicative stations and no longer plans to consolidate them. Given the Coast Guard's competing acquisition, operational, and maintenance needs, and its existing backlog of recapitalization and new construction projects, closing unnecessarily duplicative stations could help to mitigate some of its resource challenges.

- **Report shore infrastructure information more completely and accurately.** In February 2019, we found that the Coast Guard could increase budget transparency for shore infrastructure by accurately reporting project backlogs and costs in congressionally-required plans.[21] For example, we found that the Coast Guard had not provided complete information to Congress in its Unfunded Priorities

[20]Department of Transportation and Related Agencies Appropriations Act, 1989, Pub. L. No. 100-457, 102 Stat. 2125, 2126 (1988). Id. at § 350, 102 Stat. 2125, 2156. See also, 14 U.S.C. § 910. See Howard Coble Coast Guard and Maritime Transportation Act, 2014, Pub. L. No. 113-281, § 225(b), 128 Stat. 3022, 3039 (2014). See also, 14 U.S.C. § 912. In 1990, we reported that the Department of Transportation's Inspector General recommended that the Coast Guard close 21 stations, and the Coast Guard recommended additional closures. See GAO, *Coast Guard: Better Process Needed to Justify Closing Search and Rescue Stations,* GAO/RCED-90-98 (Washington, D.C.: Mar. 6, 1990). We have reported on the Coast Guard's efforts to close stations over many years. In 1994, we reported that the Coast Guard had created a new process for determining the need for boat station changes. We also found that the new process included detailed criteria to evaluate the appropriate need for stations, such as boating and economic trends and the availability of alternative search and rescue resources. The Coast Guard then unsuccessfully attempted to close stations in 1995 using this process, and again in 2008. GAO, *Coast Guard: Improved Process Exists to Evaluate Changes to Small Boat Stations*, GAO/RCED-94-147 (Washington, D.C.: Apr. 1, 1994); See also, GAO-18-9.

[21]GAO-19-82. According to leading practices, agencies should structure maintenance and repair budgets to differentiate between funding allotted for routine maintenance and repairs, and funding allotted to addressing maintenance and repair backlogs.

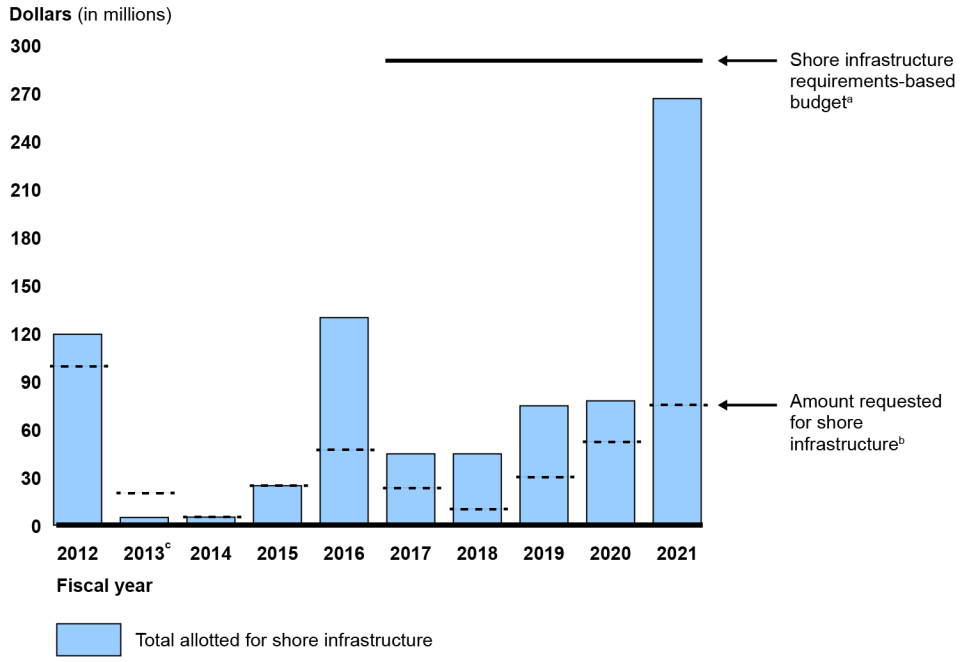
Lists of shore infrastructure projects, including information about trade-offs among competing project alternatives, as well as the impacts on missions conducted from shore facilities in disrepair.[22] This information could help to inform decision makers of the risks posed by untimely investments in maintenance and repair backlogs.

We also found that the Coast Guard had not provided accurate information about its requirements-based budget targets for shore infrastructure in its budget requests. According to the Coast Guard, a requirements-based budget is an estimate of the cost to operate and sustain its shore infrastructure portfolio of assets over the life cycle of the asset, from initial construction or capital investment through divestiture or demolition.[23] We found that Coast Guard targets for recapitalization of shore assets exceeded $290 million annually. However, its budget requests for fiscal years 2012 through 2021 ranged from about $5 million to about $99 million annually, and allotments ranged from about $5 million to about $266 million annually. (see fig. 3).

[22]The term "unfunded priority" means a program or mission requirement that (1) has not been selected for funding in the applicable proposed budget; (2) is necessary to fulfill a requirement associated with an operational need; and (3) the Commandant of the Coast Guard would have recommended for inclusion in the applicable proposed budget, had additional resources been available or had the requirement emerged before the budget was submitted. See 14 U.S.C. § 5108.

[23]According to Coast Guard officials, its requirements-based budget planning is based on industry standards and that it aligns with the National Academy of Sciences benchmarks for sustainable facility and infrastructure management. National Research Council of the National Academy of Sciences, *Stewardship of Federal Facilities: A Proactive Strategy for Managing the Nation's Public Assets* (Washington, D.C.: National Academies Press, 1998).

Figure 3: Coast Guard Allotments for Shore Procurement, Construction, and Improvements from its Appropriations and Shore Infrastructure Requirements-based Budget, Fiscal Years 2012 through 2021



Source: GAO analysis of U.S. Coast Guard documents. | GAO-22-105513

Notes: Current-year dollars.

Beginning in fiscal year 2019, the President's budget requests refer to Procurement, Construction and Improvements, which previously referred to Acquisitions, Construction, and Improvements in the annual fiscal year appropriations.

[a]Beginning in 2016, the Coast Guard started using a requirements-based budget to determine shore infrastructure budget needs and applied it for the first time with its fiscal year 2017 submission. According to this budgeting approach and Coast Guard officials, the Coast Guard's targets for recapitalization of shore infrastructure exceeded $290 million annually as determined by the U.S. Coast Guard.

[b]"Amount requested" represents the amount requested in the President's budget, as identified in the Coast Guard's fiscal year congressional justifications.

[c]Values for 2013 reflect sequestration.

As a result, we recommended that the Coast Guard include supporting details about competing project alternatives and report trade-offs in congressional budget requests and related reports. Without such information about Coast Guard budgetary requirements, Congress will lack critical information that could help to prioritize funding to address the Coast Guard's shore infrastructure backlogs. The Coast Guard agreed with our recommendation, but in July 2021,

the Coast Guard informed us that while it concurs with the intent of our recommendation, addressing it is not feasible. We are in discussions with the Coast Guard about this recommendation.

- **Ensure that investments in data infrastructure address mission and user needs.** Our recent and ongoing work on the Coast Guard's IT infrastructure indicates that the Coast Guard could better apply certain decision processes as it manages investments in these systems. Specifically, in July 2020, we found that the Coast Guard could better invest in IT infrastructure to address challenges that limited its planning and other mission needs.[24] For example, we found that in the Coast Guard's most recent efforts to upgrade a key data system—Marine Information for Safety and Law Enforcement—it did not follow key systems development processes nor deliver some planned functionalities, such as the ability to remediate duplicate vessel records. While these efforts began in 2008, the Coast Guard has since initiated further efforts to obtain or develop undelivered functionality since the release of the upgraded system in 2015. However, in its fiscal year 2019 operational analysis of this system, the Coast Guard identified additional major system deficiencies and user dissatisfaction that it reported require consideration as it pursues system enhancements.

  As a result, we recommended that the Coast Guard take multiple actions; key among them was to follow its key systems development processes to identify needed enhancements, identify and analyze alternatives, and objectively select the preferred solution for its Marine Information for Safety and Law Enforcement system to meet approved mission needs. The Coast Guard agreed with all of our recommendations and described planned actions to address them. In May 2020, the Coast Guard notified us that it had decided to replace this system. It is too early for us to assess whether DHS and the Coast Guard are following the appropriate development steps to ensure that the replacement data system they eventually deploy will meets mission needs.

  In addition to following up on the status of actions the Coast Guard is taking to address the aforementioned issues, we have preliminary work reviewing Coast Guard policies, procedures, and practices for IT infrastructure, cybersecurity risk management, cloud computing, IT acquisitions, and cyberspace workforce. Our preliminary work indicates there may be gaps in how the Coast Guard has applied

[24]GAO-20-562.

policies, procedures, and leading practices to management of its IT infrastructure and the associated workforce. For example, our preliminary observations suggest that the Coast Guard lacks complete and accurate hardware, software, and other equipment. They also suggest that the Coast Guard lacks network capacity planning capabilities that would assist it in forecasting network traffic demands and categorizing and prioritizing different types of data. We will complete our reviews of the areas above and publish our results in 2022.

Chair Carbajal, Ranking Member Gibbs, and Members of the Subcommittee, this completes my prepared statement. I would be happy to respond to any questions you may have at this time.

GAO Contact and Staff Acknowledgments

If you or your staff members have any questions about this testimony, please contact Heather MacLeod, Acting Director, Homeland Security and Justice, at (202) 512-8777 or macleodh@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. In addition to the contact above, Dawn Hoff, Assistant Director; Andrew Curry, Analyst-in-Charge; Dominick Dale, Michele Fejfar; Peter Haderlein; Eric Hauswirth; Paul Hobart; David Hooper; Emily Hutz; Landis Lindsey; and Adrian Pavia made key contributions to this testimony. Other staff who made key contributions to the reports cited in the testimony are identified in the source products.

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