



## Testimony

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

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# COAST GUARD SHORE INFRASTRUCTURE

## Actions Needed to Better Manage Assets and Reduce Risks and Costs

### Accessible Version

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# GAO Highlights

Highlights of [GAO-19-711T](#), 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, 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, from which it carries out its missions.

This shore infrastructure is often positioned along the nation's coastlines where it can be vulnerable to damage from extreme weather.

This statement summarizes GAO findings related to the condition of Coast Guard shore infrastructure, actions the Coast Guard has taken to improve its management of its shore infrastructure, and additional actions it needs to take. This statement is based on three GAO products issued from October 2017 through September 2019, along with selected updates on actions the Coast Guard has taken to address GAO's recommendations from these reports. GAO analyzed relevant Coast Guard documents, management processes and decisions, and interviewed Coast Guard officials. To conduct updates, GAO also reviewed information on the Coast Guard's actions to implement its prior recommendations.

## What GAO Recommends

In the three reports, GAO made 10 recommendations to improve the Coast Guard's asset management efforts, including employing models for predicting investment outcomes, disposing of unneeded assets, and implementing DHS's critical infrastructure risk management framework to guide shore infrastructure resilience decisions. DHS concurred and generally described planned actions to address these recommendations, but has not yet fully implemented them.

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September 2019

# COAST GUARD SHORE INFRASTRUCTURE

## Actions Needed to Better Manage Assets and Reduce Risks and Costs

### What GAO Found

In February 2019, GAO reported that the Coast Guard's \$18 billion portfolio of shore infrastructure was deteriorating, and almost half of it was past its service life as of 2018. Coast Guard data showed that it would cost at least \$2.6 billion to address its maintenance and recapitalization (major renovation) project backlogs at recent funding levels. Coast Guard data also showed that hundreds of projects had not been factored into the backlog costs.

GAO's prior work has shown that the Coast Guard has taken initial steps toward improving how it manages its shore infrastructure, including conducting an initial assessment of shore infrastructure vulnerabilities. However, GAO also found that the Coast Guard had not fully applied leading practices and key risk management steps in managing its shore infrastructure, and needs to take the following actions:

- **Employ models for predicting the outcome of investments and analyzing tradeoffs.** In February 2019, GAO found that the Coast Guard had used a model to determine that it could more efficiently prioritize its investment in aviation pavement—one segment of an almost \$3 billion portfolio of aviation shore infrastructure—and save about \$13.8 million. However, as of February 2019, the agency had not implemented the aviation pavement study results. Moreover, according to Coast Guard officials, the agency could employ models to its entire portfolio of shore infrastructure. By not implementing the results of its aviation pavement model or employing similar models across its shore infrastructure assets, the Coast Guard is missing opportunities to potentially identify and achieve cost savings across other assets.
- **Dispose of unneeded assets.** In October 2017, GAO found that closing boat stations that the Coast Guard had found to be unnecessarily duplicative could potentially generate \$290 million in cost savings over 20 years. However, in February 2019, GAO found that instead of closures, the Coast Guard was planning recapitalization projects at 5 of the 18 stations it had recommended for closure. Given the Coast Guard's competing shore infrastructure priorities and existing project backlogs, GAO recommended disposing of unneeded assets to more efficiently manage resources and better position the Coast Guard and Congress to address shore infrastructure challenges.
- **Implement DHS's Critical Infrastructure Risk Management Framework.** In September 2019, GAO found that DHS has recognized the importance of protecting critical infrastructure from extreme weather and other risks. However, the Coast Guard has not fully aligned its processes for improving shore infrastructure resilience with DHS's five key steps for critical infrastructure risk management. For example, when identifying and then assessing risks to its infrastructure—two of the steps in the DHS process—the Coast Guard did not identify all assets that are critical to its missions, such as aircraft runways, or screen them for all vulnerabilities, such as flooding. Aligning its processes with the DHS steps would provide greater assurance that the Coast Guard is investing its resources to minimize potential damage and expenses caused by future extreme weather events.

Chairman Maloney, Ranking Member Gibbs, and Members of the Subcommittee:

I am pleased to be here today to discuss our recent work, including a report that is being released today, on the condition of the U.S. Coast Guard's (Coast Guard) shore infrastructure and recommendations we have made to improve it. The Coast Guard, within the Department of Homeland Security (DHS), is the principal federal agency charged with enforcing laws intended to prevent death, injury, and property loss in the maritime environment. All Coast Guard missions begin and end at the shore.<sup>1</sup> To help carry out its missions, the Coast Guard owns or leases more than 20,000 facilities—such as piers, boat stations, air stations, runways, and housing units—at more than 2,700 locations. Such infrastructure are often positioned along the nation's coastlines where facilities can be vulnerable to damage from extreme weather. We have reported that some Coast Guard facilities have required repair and recapitalization after being damaged by superstorm Sandy, and hurricanes Harvey, Irma, Maria, and Matthew.<sup>2</sup> The costs for some of those recovery efforts, combined, were about \$1 billion.<sup>3</sup>

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<sup>1</sup>Under 6 U.S.C. § 468(a), the Coast Guard's 11 statutory missions are divided between "non-homeland security missions" and "homeland security missions." Non-homeland security missions include (1) marine safety, (2) search and rescue, (3) aids to navigation, (4) living marine resources (fisheries law enforcement), (5) marine environmental protection, and (6) ice operations. Homeland security missions include (1) ports, waterways, and coastal security; (2) drug interdiction; (3) migrant interdiction; (4) defense readiness; and (5) other law enforcement.

<sup>2</sup>In general, recapitalization refers to major renovation or reconstruction activities (including facility replacements) needed to keep existing facilities modern and relevant in an environment of changing standards and missions. Recapitalization extends the service life of facilities or restores lost service life. See, among other reports, GAO, *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).

<sup>3</sup>The Disaster Relief Appropriations Act, 2013, Pub. L. No. 113-2, 127 Stat. 4, 28 (2013) appropriated around \$274 million to the Coast Guard for Acquisition, Construction, and Improvements for necessary expenses related to the consequences of Hurricane Sandy. Bipartisan Budget Act, 2018, Pub. L. No. 115-123, 132 Stat. 64, 82-83 (2018) appropriated around \$719 million to the Coast Guard for Acquisition, Construction, and Improvements for necessary expenses related to the consequences of Hurricanes Harvey, Irma, Maria, and Matthew.

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) key actions needed for the Coast Guard to better align its management of shore infrastructure with leading practices and key risk management steps.

This statement is based on three reports we issued from October 2017 to September 2019 on Coast Guard shore infrastructure, including management of its boat stations, overall shore infrastructure, and shore infrastructure resilience, as well as selected updates we conducted in September 2019 on Coast Guard efforts to address our previous recommendations.<sup>4</sup> To perform our work for the previous reports, we analyzed relevant Coast Guard documents, management processes, as well as applicable laws, regulations, and data for managing Coast Guard shore infrastructure. We also interviewed Coast Guard officials responsible for managing shore infrastructure. Further details on the scope and methodology for these reports are available within each of the published products. In addition, to conduct our selected updates, we reviewed Coast Guard information about actions taken to address recommendations we had made in our previous reports.

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.

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<sup>4</sup>GAO, *Coast Guard: Actions Needed to Close Stations Identified as Overlapping and Unnecessarily Duplicative*, [GAO-18-9](#) (Washington, D.C.: Oct. 17, 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); and *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).

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## Background

The Coast Guard owns or leases more than 20,000 facilities consisting of various types of buildings and structures.<sup>5</sup> The Coast Guard's shore infrastructure is organized into five product lines and 13 asset types, known as asset lines.<sup>6</sup> For example, within its shore operations asset line, the Coast Guard maintains over 200 stations along U.S. coasts and inland waterways to carry out its search and rescue operations, as well as other missions such as maritime security.

Much of the Coast Guard's infrastructure is vulnerable to the effects of extreme weather and can be costly to repair or replace after major storms. From December 2005 through June 2019, the Coast Guard received about \$2 billion in supplemental appropriation funds to, among other things, rebuild or relocate 15 facilities damaged by hurricanes. During this time, the Coast Guard relocated facilities further inland or to higher ground, upgraded facilities to be more resilient, and designed new facilities with features to protect them from natural disasters. For example, after being damaged by Hurricane Ike in 2008, the Coast Guard relocated a regional facility in Houston, Texas further inland to help protect the new facility from extreme weather. The facility was also designed to withstand wind speeds of up to 115 miles per hour. In February 2017, the Coast Guard's Civil Engineering program also issued guidance intended to increase the likelihood that new or recapitalized buildings would be designed to withstand natural disasters, and to enable

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<sup>5</sup>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.

<sup>6</sup>Coast Guard's five product lines and the 13 asset lines within them are: (1) Tactical Operations—Aviation, Waterfront, Shore Operations; (2) Mission Support—Civil Works, Base Services, Industrial; (3) Mission Readiness—Housing, Community Services, Training; (4) Strategic Operations—Sector/District, Technology; and (5) Waterways Operations—Fixed and Floating Aids to Navigation (ATON), Marine Environmental Response and Signal Equipment.

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the Coast Guard to better manage risks to its operations and personnel, among other things.<sup>7</sup>

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## Almost Half of the Coast Guard's Shore Infrastructure is Beyond Its Service Life, and Project Backlogs Will Cost at Least \$2.6 Billion to Address

We found in February 2019 that the condition of the Coast Guard's shore infrastructure was deteriorating and almost half of it was past its service life<sup>8</sup>—resulting in (1) recapitalization and new construction and (2) deferred maintenance backlogs of at least \$2.6 billion as of 2018.<sup>9</sup> In 2018, the Coast Guard graded<sup>10</sup> its overall shore infrastructure condition as a C minus<sup>11</sup> based on 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.

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<sup>7</sup>U.S. Coast Guard, *Shore Facilities Planning Factors Job Aid* (Norfolk, VA: Feb. 23, 2017). The Coast Guard guidance establishes building elevation requirements to account for storm surge, sea level rise, or periodic flooding, and utility and communication system placement to ensure operational continuity and safety, among other things.

<sup>8</sup>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.

<sup>9</sup>[GAO-19-82](#).

<sup>10</sup>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. Adapted from standards used by the American Society of Civil Engineers, the Coast Guard considered the following eight attributes: Capacity, Funding, Operations and Maintenance, Resilience, Condition, Future Need, Public Safety, and 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.

<sup>11</sup>According to the American Society of Civil Engineers, an "A" is generally excellent condition, a "B" is in good to excellent condition, a "C" is in mediocre/fair to good condition but showing signs of deterioration and increasingly vulnerable to risk, a "D" is in poor to fair condition and mostly below standard, and an "F" is failing/critical, unfit for purpose, and in an unacceptable condition with widespread advanced signs of deterioration.



**Table 1: Asset Numbers and Replacement Values, Percent of Assets Operating Past Service Life, and Condition Grades of Select 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 <sup>a</sup>	Percent of assets operating more than 5 years past service life <sup>a</sup>	2018 condition grade <sup>b</sup>
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-
<b>Total</b>	<b>20,433</b>	<b>17,835</b>	<b>46</b>	<b>29</b>	<b>C-</b>

Source: GAO analysis of U.S. Coast Guard documents. | GAO-19-711T

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, among other things.. We have ongoing work related to Coast Guard’s fixed and floating aids to navigation.

<sup>a</sup>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.

<sup>b</sup>According to the American Society of Civil Engineers, upon which Coast Guard based its grades, an “A” is generally in excellent condition; a “B” is in good to excellent condition; a “C” is in mediocre/fair to good condition but showing signs of deterioration and increasingly vulnerable to risk; a “D” is in poor to fair condition and mostly below standard; and an “F” is 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, in 2018 some of its 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 at least \$2.6 billion in 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<sup>12</sup> to address just the \$1.774 billion

<sup>12</sup>The number of years it would take to address the backlog is dependent on appropriated amounts, which have varied considerably.

recapitalization and new construction backlog—assuming an overall 65-year service life and that funding would continue at the fiscal year 2017 appropriations level. This time frame estimate excludes the Coast Guard’s \$900 million deferred depot-level maintenance backlog.<sup>13</sup> Table 2 provides information on the Coast Guard’s two shore infrastructure backlogs as of August 2018.

**Table 2: U.S. Coast Guard’s Estimated Shore Infrastructure Backlogs, as of August 2018**

<b>Account</b>	<b>Backlog Total (\$ in millions)</b>	<b>Description</b>
Procurement, Construction, and Improvements	1,774	The backlog for which the Coast Guard had prepared cost estimates included 125 recapitalization and new construction projects. In 2017, the Coast Guard removed 132 projects from the backlog that it determined were no longer a priority. <sup>a</sup>
Deferred Depot-Level Maintenance	900	The backlog had increased by \$300 million since fiscal year 2012 and includes more than 5,600 deferred maintenance projects.
<b>Total</b>	<b>2,674</b>	not applicable

Legend: “—” = not applicable.

Source: GAO analysis of U.S. Coast Guard data. | GAO-19-711T

<sup>a</sup>According to Coast Guard officials, in 2017 the Coast Guard reviewed all projects on the recapitalization backlog to determine if each project was needed and valid based on input from area leadership, Civil Engineering Units, and facility engineers, and removed projects that it determined were no longer necessary based on mission change, alternative solutions, or the need being met through another project. The Coast Guard was not able to identify the estimated total cost for the 132 projects it removed.

Nevertheless, the size and estimated costs of the Coast Guard’s backlogs may be understated. We found in February 2019 that the Coast Guard’s estimated costs did not include hundreds—or the majority—of the projects on the recapitalization and new construction backlog. For example, we reported that there were 205 projects on the backlog without cost estimates.<sup>14</sup> Officials explained that they had not prepared cost

<sup>13</sup>This estimate is as of August 2018. 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.

<sup>14</sup>In 2017, the Coast Guard removed 132 projects 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.

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estimates for these projects because they were in the preliminary stages of development.<sup>15</sup>

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## Coast Guard Has Taken Initial Steps toward Improving Its Management of Its 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 the steps the Coast Guard has taken align with leading practices for managing public sector backlogs and key practices for managing risks to critical infrastructure, including identifying risks posed by the lack of timely investment, identifying mission-critical facilities,<sup>16</sup> disposing of unneeded assets,<sup>17</sup> and beginning an assessment of shore infrastructure vulnerabilities.<sup>18</sup> Specifically, the Coast Guard has:

- **Identified risks posed by 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 2018.<sup>19</sup> 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. The Coast Guard met this leading practice to identify risk in general terms—for example, in terms of increased lifecycle costs, or risk to operations.

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<sup>15</sup>In 2018, the Coast Guard's projected costs for individual shore projects with cost estimates ranged from \$2 million to about \$95 million per project. We did not evaluate the Coast Guard's cost estimating practices.

<sup>16</sup>[GAO-19-82](#).

<sup>17</sup>[GAO-18-9](#).

<sup>18</sup>[GAO-19-675](#).

<sup>19</sup>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., January 23, 2014).

- **Identified mission-critical and mission-supportive shore infrastructure.** In February 2019, 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 established minimum investment targets by tier as part of its central depot level maintenance expenditure decisions.<sup>20</sup> These tiers—which range from mission-critical to mission-supportive assets—were incorporated into guidance that Coast Guard decision makers are to follow in their deliberations about 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 providing indirect support to front line operations, such as administrative buildings.
- **Assessed selected buildings for vulnerabilities.** We issued a report today that discusses the Coast Guard Civil Engineering program’s efforts to conduct a vulnerability assessment of its owned and occupied buildings,<sup>21</sup> which the Coast Guard initiated in 2015 and aims to complete in 2025.<sup>22</sup> The Coast Guard calls this infrastructure review the Shore Infrastructure Vulnerability Assessment. The focus of Phase I of this assessment, completed in 2019, was to determine the vulnerability of certain occupied buildings to 10 natural disasters.<sup>23</sup> Further, the assessment results are intended to assist with

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<sup>20</sup>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. See [GAO-14-188](#).

<sup>21</sup>According to DHS’s Risk Management Framework, it is important to identify assets that are both nationally significant and those that may not be significant on a national level but are, nonetheless, important to state, local, or regional critical infrastructure security and resilience and national preparedness efforts.

<sup>22</sup>See GAO, *Coast Guard Shore Infrastructure: Processes for Improving Resilience Should Fully Align with DHS Risk Management Framework*, [GAO-19-675](#) (Washington, D.C., September 25, 2019).

<sup>23</sup>Specifically, the Shore Infrastructure Vulnerability Assessment analyzed all Coast Guard owned and occupied buildings over 1,000 gross square feet for vulnerabilities to natural disasters. The 10 natural disaster vulnerabilities assessed were: seismic/ earthquake, flood, tsunami, sea level rise, coastal vulnerability index (CVI), hurricane/typhoon wind, wildfire, volcano, tornado/wind, and drought. CVI quantifies the likelihood that physical changes may occur in the coastal zone based on analysis of the location’s tidal range, ice cover, wave height, coastal slope, historical shoreline change rate, geomorphology, and sea level rise. The Coast Guard’s CVI analysis was based on the U.S. Geological Survey National Assessment of Coastal Vulnerability to Sea-Level Rise.

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contingency planning by identifying which Coast Guard facilities are likely to remain operational after a natural disaster.

During Phase I of this assessment, completed in 2019, the Coast Guard analyzed 3,214 buildings, almost 16 percent of its infrastructure, for vulnerabilities to disasters such as floods, earthquakes, and hurricanes. The analysis identified Coast Guard-wide infrastructure vulnerabilities to coastal risks such as shoreline loss, coastal erosion and earthquakes, as well as tsunami risks on the West Coast of the United States, Alaska, Guam, and Hawaii, and immediate and serious flood risks in Puerto Rico and the Gulf and East Coasts. The Phase I report recommended that Coast Guard units and contingency planners consider these vulnerabilities when preparing contingency plans or making capital investments. The Coast Guard has also initiated a follow up effort involving structural analyses for buildings it believes to be more susceptible to damage from earthquakes and wind. Officials involved said their aim is to complete this effort in 2025.

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## Coast Guard Has Not Fully Applied Leading Practices and Key Risk Management Steps in Managing its Shore Infrastructure

The Coast Guard has taken actions to begin to improve its shore infrastructure management. However, as we previously reported, the Coast Guard has not fully applied leading practices and key risk management steps to improve its shore infrastructure management. Specifically, we found, among other things, that the following actions could help improve the Coast Guard's shore infrastructure management efforts:

- **Employ models for predicting the outcome of investments and analyzing tradeoffs.** In February 2019, we found that a 2017 Coast Guard Aviation Pavement Study employed a model that found that the Coast Guard could more efficiently prioritize investment in aviation pavement.<sup>24</sup> A subsequent Coast Guard aviation pavement plan recommended actions to use the study results and potentially save \$13.8 million. However, we found that the Coast Guard had not fully implemented its own recommended actions to achieve the cost savings.

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<sup>24</sup>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. [GAO-19-82](#).

Additionally, we found that while a similar analytical approach to efficiently prioritizing investments in aviation pavement could be applied to all of the shore infrastructure asset lines, the Coast Guard had not applied the approach to other asset lines. By not employing similar models across its asset lines for predicting the outcome of investments, analyzing tradeoffs, and optimizing decisions among competing investments, the Coast Guard is missing opportunities to potentially identify and achieve cost savings across other asset lines. We recommended that the Coast Guard employ models for its asset lines that would predict the investment outcomes, analyze tradeoffs, and optimize decisions among competing investments. The Coast Guard agreed with our recommendation but as of August 2019 had not addressed it. The Coast Guard stated that it plans to assess the use of modeling tools used by the Department of Defense as well as other alternatives to enhance its real property asset management capability. We will continue to monitor its actions.

- **Dispose of unneeded assets.** In October 2017, we found that disposing of unneeded assets, such as closing unnecessarily duplicative boat stations,<sup>25</sup> based on a sound analytical process, could potentially generate \$290 million in cost savings over 20 years.<sup>26</sup> Specifically, the Coast Guard 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

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<sup>25</sup>In 2010, federal law required that within departments and government-wide 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>. Overlap occurs when multiple agencies or programs have similar goals, engage in similar activities or strategies to achieve them, or target similar beneficiaries. Duplication occurs when two or more agencies or programs are engaged in the same activities or provide the same services to the same beneficiaries.

<sup>26</sup>[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](#).

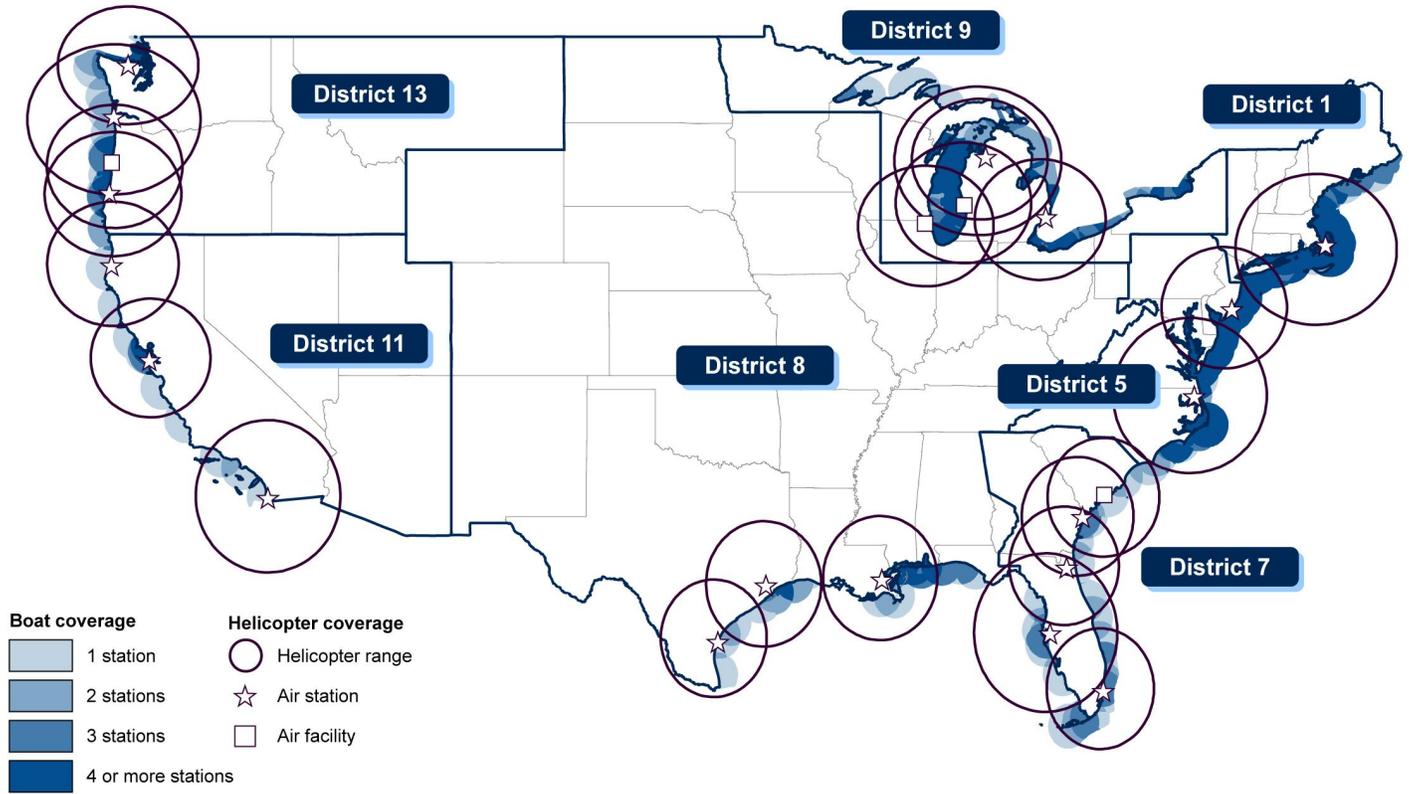
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response standard.<sup>27</sup> In 2017, the Coast Guard affirmed that its leadership believes the study remains valid, but as of September 2019 it has not closed any stations. Figure 1 depicts the extent of the Coast Guard's overlapping boat and air station search and rescue coverage, as identified by the Coast Guard, some of which the Coast Guard determined to be unnecessarily duplicative.

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<sup>27</sup>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. The analytical process the Coast Guard used to identify unnecessarily duplicative stations was designed to ensure the Coast Guard was able to meet or exceed requirements to maintain search and rescue coverage, and to account for such factors as boat downtime and surge capacity to respond to incidents. Further, the boat station analysis did not include consideration of potential search and rescue responses by the Coast Guard's air stations and facilities, which can provide additional overlapping coverage. 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).

**Figure 1: Overlap of U.S. Coast Guard Search and Rescue Coverage Provided by Boat Stations, Air Stations, and Air Facilities, May 2017**



Source: GAO analysis of U.S. Coast Guard information; MapInfo (map). | GAO-19-711T

In February 2019, we found that 5 of the 18 boat stations recommended for closure had projects listed on the Coast Guard's current project backlog.<sup>28</sup> For example, Station Shark River, in New Jersey, was recommended for recapitalization in fiscal year 2017, despite Coast Guard recommendations to close the station in 1988, 1996, 2007, and 2013.<sup>29</sup> Notably, the Coast Guard has made multiple attempts in previous years to close such stations but was unable to do so due to congressional intervention, and subsequent legislation prohibiting closures.<sup>30</sup>

In October 2017, we recommended that the Coast Guard establish and implement a plan with target dates and milestones for closing boat stations that it has determined provide overlapping search and rescue coverage and are unnecessarily duplicative. In February 2019, we further 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 recommendations. As of September 2019, the Coast Guard reported that it was considering changes in the

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<sup>28</sup>Leading practices state that agencies should efficiently employ available resources, limit construction of new facilities, adapt existing buildings to new uses, and transfer ownership of unneeded buildings to other public or private organizations to align real property with mission needs. In addition, facilities that are functionally obsolete, not needed to support an agency's mission, not historically significant, or not suitable for transfer or adaptive reuse should be demolished whenever it is cost effective to do so, under this leading practice.

<sup>29</sup>Projects added to the recapitalization and new construction backlog in 2017 involving stations previously recommended for closure included Station Oxford in Maryland, Station Ocracoke in North Carolina, Station Fortescue in New Jersey, and Station Kenosha in Wisconsin.

<sup>30</sup>Department of Transportation and Related Agencies Appropriations Act, 1989, Pub. L. No. 100-457, 102 Stat. 2125, 2126 (1988). *Id.* at § 350, 102 Stat. 2156. See also, 14 U.S.C. § 910 (formerly cited as 14 U.S.C. § 675). 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 (formerly cited as 14 U.S.C. § 676a). In 1990, we reported that the Department of Transportation Inspector General recommended that the Coast Guard close 21 stations, and the Coast Guard recommended additional closures. See [GAO/RCED-90-98](#). 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](#).

operational status of several stations, such as closing the stations during the winter months when they conduct few, if any, search and rescue cases. The Coast Guard estimated that it will continue to consider changes until March 2020. These are positive steps, but we continue to believe that it is important for the Coast Guard to dispose of unneeded assets. Given the Coast Guard's competing acquisition, operational, and maintenance needs, and its existing \$1.774 billion project backlog of recapitalization and new construction projects, these actions may help to mitigate some of its resource challenges. We will continue to monitor the Coast Guard's efforts to implement these recommendations.

- **Report shore infrastructure project backlogs accurately.** In February 2019, we found areas in which the Coast Guard could increase budget transparency for shore infrastructure by accurately reporting project backlogs and costs in Congressionally-required plans.<sup>31</sup> Specifically, we found that the Coast Guard had not provided accurate information to Congress necessary to inform decision-makers of the risks posed by untimely investments in maintenance and repair backlogs.<sup>32</sup> For example, the Coast Guard had not provided complete information to Congress in its Unfunded Priorities Lists of shore infrastructure projects, including information about tradeoffs among competing project alternatives, as well as the impacts on missions conducted from shore facilities in disrepair.<sup>33</sup> We also found that Coast Guard budget requests related to shore infrastructure for fiscal years 2012 through 2019 generally did not identify funding to address any backlogs of deferred maintenance or recapitalization, except for one fiscal year—2012—when the Coast

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<sup>31</sup>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, among other things. [GAO-19-82](#).

<sup>32</sup>Coast Guard and Maritime Transportation Act, 2012, Pub. L. No. 112-213, § 213, 126 Stat. 1540, 1552-53 (codified as amended at 14 U.S.C. § 5102, formerly cited as 14 U.S.C. § 2902). The Coast Guard was statutorily required to annually provide a list of each unfunded priority, including unfunded shore infrastructure priorities, to certain committees of Congress to support the President's budget, and its 5-year Capital Investment Plan. 14 U.S.C. § 2902 (2018). See 14 U.S.C. § 5108.

<sup>33</sup>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 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. 14 U.S.C. § 2902(c) (2018). See 14 U.S.C. § 5108.

Guard requested \$93 million to recapitalize deteriorated/obsolete facilities.

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 Coast Guard officials, a requirements-based budget is an estimate of the cost to operate and sustain its shore infrastructure portfolio of assets over the lifecycle of the asset, from initial construction or capital investment through divestiture or demolition.<sup>34</sup> Further, we found that Coast Guard recapitalization targets showed a far greater need than was reflected in the appropriations it requested from fiscal years 2012 through 2019. Specifically, Coast Guard targets for recapitalization of shore assets indicated the Coast Guard needs \$290 to \$390 million annually for its recapitalization efforts. However, its budget requests for fiscal years 2012 through 2018 have ranged from about \$5 million to about \$99 million annually.

We recommended that the Coast Guard include supporting details about competing project alternatives and report tradeoffs in Congressional budget requests and related reports. Without such information about the Coast Guard's budgetary requirements, the Congress will lack critical information that could help to prioritize funding to address the Coast Guard's shore infrastructure backlogs. While the Coast Guard agreed with our recommendation, in August 2019 officials reported that they will continue to develop budgets as the agency has done but will include additional information in future required reports to Congress. We will continue to monitor these actions.

- **Fully implement DHS's Critical Infrastructure Risk Management Framework.** In September 2019, we found that the Coast Guard has taken some steps to improve the resilience of its shore infrastructure by rebuilding storm-damaged facilities and initiating a vulnerability assessment, but its processes to improve shore infrastructure resilience are not fully aligned with the five steps DHS has identified for critical infrastructure risk management (DHS Critical Infrastructure

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<sup>34</sup>According to the Coast Guard, 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).

Risk Management Framework).<sup>35</sup> The five steps include: (1) setting goals and objectives, (2) identifying critical infrastructure, (3) assessing and analyzing risks and costs, (4) implementing risk management activities, and (5) measuring the effectiveness of actions taken.<sup>36</sup>

We found that the Coast Guard is not positioned to provide decision makers with complete details of which infrastructure facilities are critical, and the type of information the DHS Critical Infrastructure Risk Management Framework recommends for making cost effective risk management decisions. The Coast Guard identified occupied buildings that may be important to operations and assessed their vulnerability through its Shore Infrastructure Vulnerability Assessment process, but this process did not identify all shore infrastructure assets that are critical to its missions—such as aircraft runways—or screen them for all vulnerabilities, such as flooding. Similarly, we found that while the Coast Guard identified almost 800 buildings that may be vulnerable to tornadoes and another 1,000 buildings vulnerable to hurricanes, it has not analyzed the potential consequences, such as economic losses, costs for rebuilding, and impact on mission, should this infrastructure suffer damage from those vulnerabilities.

Without a complete understanding of both the vulnerabilities of its infrastructure and the consequences to its mission operations if its infrastructure is damaged, the Coast Guard risks questionable recapitalization investments for improving resilience when selecting projects to fund. Such an understanding is especially important given its existing project backlogs of at least \$2.6 billion. The five steps of the DHS Critical Infrastructure Risk Management Framework are intended to guide decision making and prioritize actions to more

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<sup>35</sup>See GAO, *Coast Guard Shore Infrastructure: Processes for Improving Resilience Should Fully Align with DHS Risk Management Framework*, [GAO-19-675](#) (Washington, D.C., September 25, 2019).

<sup>36</sup>In 2013, DHS updated its National Infrastructure Protection Plan guidance for critical infrastructure owners and operators to emphasize security and resilience as the primary aim of homeland security planning efforts for critical infrastructure. As part of this effort, DHS established a five step risk management framework for assessing critical infrastructure (DHS Critical Infrastructure Risk Management Framework) and recommended that owners and operators of critical infrastructure whether private or public use the framework to identify priorities, articulate clear goals, mitigate risk, measure progress, and adapt based on feedback and the changing environment. See, Department of Homeland Security, *2013 National Infrastructure Protection Plan, Partnering for Critical Infrastructure Security and Resilience* (Washington, D.C.: December 2013).

effectively achieve desired outcomes. Therefore, in September 2019 we recommended that the Coast Guard implement risk management processes that more fully align with the five key steps outlined in DHS's Critical Infrastructure Risk Management Framework to better guide its shore infrastructure investment decisions. The Coast Guard agreed with our recommendation. It stated that it plans to make progress towards implementing the recommendation while developing and implementing its Component Resilience Plan, in accordance with the recently mandated DHS Resilience Framework.<sup>37</sup> It intends to complete these efforts by the end of 2021. The Coast Guard also intends to develop, by July 2020, goals and objectives for measuring the effectiveness of actions taken to identify resilience readiness gaps and resource needs. We will continue to monitor these efforts.

Chairman Maloney, 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.

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## GAO Contact and Staff Acknowledgments

If you or your staff members have any questions about this testimony, please contact me at (202) 512-3841 or [andersonn@gao.gov](mailto:andersonn@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; Peter Haderlein; Landis Lindsey; Calaera Powroznik, and Molly Ryan 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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<sup>37</sup>In 2018, DHS required all operational components to participate in the development of the DHS Resilience Framework, including developing individual component resilience plans, to guide DHS's approach to resilience planning. According to the Coast Guard officials, their plan was submitted to DHS in August 2019.

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