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United States General Accounting Office

Report to the Congressional Requesters

April 1994

COAST GUARD

Improved Process Exists to Evaluate Changes to Small Boat Stations



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United States General Accounting Office Washington, D.C. 20548

Resources, Community, and Economic Development Division

B-256632

April 1, 1994

The Honorable Frank R. Lautenberg Chairman The Honorable Alfonse M. D'Amato Ranking Minority Member Subcommittee on Appropriations United States Senate

The Honorable Bob Carr Chairman The Honorable Frank R. Wolf Ranking Minority Member Subcommittee on Appropriations House of Representatives

The House Appropriations Committee Report for the Department of Transportation and Related Agencies 1994 Appropriations Bill requested GAO to review all of the Coast Guard's small boat stations to determine if closures or consolidations were feasible. The Coast Guard has more than 180 of these stations along the nation's coasts and waterways. A primary mission of small boat station personnel is to respond to mariners in distress; however, units are also responsible for a variety of other missions, including enforcing U.S. fishing regulations, interdicting drugs and illegal immigrants, and responding to marine environmental pollution.

In 1990, we reported on the Coast Guard's proposal to close or curtail operations at 15 small boat stations.¹ In that review, we found that the Coast Guard had not developed comprehensive criteria or applied a sound, methodical decision-making process for closing the stations or reducing their operations. We made several recommendations to improve this process. This report focuses on (1) the reasonableness of the Coast Guard's new process for evaluating possible station changes² and (2) the potential for closing or consolidating those stations indicated by the Coast Guard's new process.

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¹Coast Guard: Better Process Needed to Justify Closing Search and Rescue Stations (GAO/RCED-90-98, Mar. 6, 1990).

²Station "changes" are defined to include the establishment, consolidation, closure, downgrading, or upgrading of a station.

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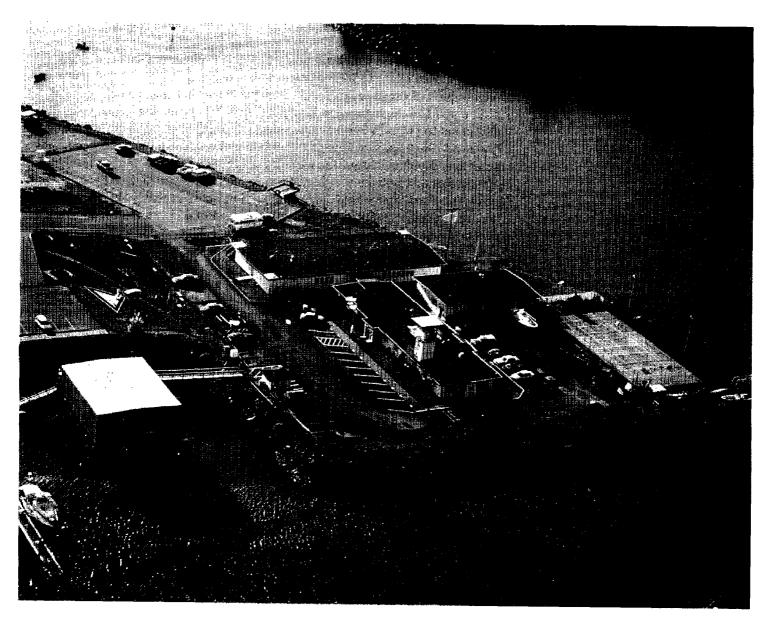
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Results in Brief	The Coast Guard's new process for determining the need for station changes is reasonable and is responsive to the deficiencies noted in our 1990 review. Unlike the previous process, the current process includes detailed criteria for considering such factors as a station's workload, the availability of alternative resources, boating and economic trends, and necessary upgrades to the facility. The process requires that these criteria be applied to all small boat stations under consideration and that the most up-to-date data available be used—two important factors that were missing from the Coast Guard's former effort. If applied correctly, this new process should provide the Coast Guard and the Congress with a reasonable basis for determining the appropriate number of stations and the appropriate resources for those stations.
	Using the Coast Guard's new process, officials have undertaken a comprehensive analysis of small boat stations, which they plan to complete by April 15, 1994. As a result of this evaluation, they expect to recommend closure, consolidation, or substantial downsizing of some stations. Coast Guard officials also expect a net reduction of about 100 positions at small boat stations to meet fiscal year 1995 budget cuts being imposed agencywide. This estimate factors in personnel increases needed at other stations to handle projected workload increases. Coast Guard officials estimate that the small boat stations' operating and facilities costs would be reduced by about \$4.4 million annually if the proposed changes are implemented as planned. GAO did not review the Coast Guard's application of the process and therefore has no opinion on the validity of the specific station changes under consideration.
Background	The Coast Guard is required by 14 U.S.C. sections 2, 88, and 141 to develop, establish, maintain, and operate rescue facilities to aid distressed persons and protect and save property in waters subject to the jurisdiction of the United States. The Coast Guard maintains a search and rescue system on the Atlantic, Pacific, and Gulf coasts; the Great Lakes; and other inland lakes and waterways. (See app. I.) The system consists of more than 180 shore facilities that operate over 1,700 small boats and over 200 larger patrol boats and cutters and 32 air stations/air facilities that have over 180 aircraft. These facilities are staffed by active duty, reserve, and auxiliary personnel. Figure 1 shows a small boat station, including its administrative, operations, housing, fueling, and boathouse facilities. In addition, the Coast Guard receives search and rescue assistance from a variety of sources, including federal, state, and local agencies; Good Samaritans; commercial providers; and foreign nations. For fiscal year

1993, the Coast Guard reported that through its search and rescue activities, it saved 4,689 lives and prevented the loss of \$908 million in property.

Figure 1: Aerial Photograph of a Small Boat Station



Source: U.S. Coast Guard.

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	Small boat stations are often involved in other missions unrelated to search and rescue, including recreational boating safety, enforcement of laws and treaties, marine environmental safety, port safety and security, aids to navigation, and military readiness. This involvement varies geographically from one Coast Guard district to another, depending on differing conditions among regions. For example, in South Florida immigrant interdiction is a primary mission at some small boat stations; this mission is virtually nonexistent in the Great Lakes region.
	Over time, the need for small boat stations at particular locations has changed with changes in boating activity, boating equipment, and the capabilities of other search and rescue service providers, such as local police and fire departments. However, over the years the Coast Guard's decisions to close or reduce operations at small boat stations, which were based on changing conditions or budget reductions, have been politically sensitive. These sensitivities were based on perceptions that reduced operations or closures would reduce the agency's ability to save lives and property. Some units have been closed, but more recently the Coast Guard has been unsuccessful in obtaining congressional concurrence to close additional stations. ³ In 1988, the Coast Guard attempted to close some stations to help meet a budget shortfall. However, the Congress directed that the units be reopened until GAO reviewed and reported on this closure decision. In our 1990 report on this matter, we cited serious weaknesses in the Coast Guard's decision-making process and recommended a series of steps to improve this process.
The Coast Guard's New Process for Evaluating Changes at Small Boat Stations Is Reasonable	The Coast Guard has developed a new approach for evaluating changes at small boat stations that is reasonable and is responsive to the deficiencies noted in our 1990 report. Unlike its previous review process, the Coast Guard's current process provides a formal, consistent method of evaluating small boat stations which documents decisions that are based on relevant criteria and the best available data.
Prior Closure Methodology Was Inadequate	In fiscal year 1988, the Coast Guard analyzed its small boat stations and concluded that 15 stations could be closed or downsized. Our analysis of the Coast Guard's methodology found it flawed in several respects. First,
	³ In a fiscal year 1990 Conference Report, H. Rpt. 101-315, for the Department of Transportation and Related Agencies for Fiscal Year 1990 Act, the conferees asked the Secretary of Transportation to seek concurrence from the Senate and House Appropriations Committees for significant increases or decreases in the operational capability of a unit, including closures, through a significant increase or decrease in funding and/or personnel.

B-256632 the Coast Guard did not use a consistent review process for evaluating stations. It included only 34 stations in its evaluation, and among this group, it did not apply evaluation criteria consistently. Second, the process lacked adequate criteria on the impact that closures or curtailed operations might have on the lives saved and on a station's ability to accomplish its missions unrelated to search and rescue. Third, the Coast Guard did not document its decision-making process until after the fact. Even then, the Coast Guard did not provide the rationale for maintaining operations at 19 of the 34 stations that were initially considered for closure. Furthermore, some of the data used in making closure decisions were incomplete or inaccurate. For example, the Coast Guard used two outdated studies as data sources for its decisions. To improve the Coast Guard's process, we recommended establishing formal instructions to identify the criteria to be used when making closure decisions; requiring that complete, current, and accurate data be used in the application of the criteria; and adding a measurement of the impact that closures and reductions would have on saving lives and carrying out other Coast Guard missions. The Coast Guard and the Department of Transportation agreed with our recommendations, and in 1992 the Coast Guard began developing a new methodology for determining needed station changes. **New Process Addresses** Coast Guard headquarters officials have taken the necessary steps to improve the process for evaluating small boat stations. The new **Prior Weaknesses** procedures identify the criteria to be applied and require that (1) the criteria be consistently applied to all stations under consideration, (2) the decision-making process be completely documented, (3) the most current data be used in the process, and (4) the impacts of the proposed actions be evaluated. Because of the importance of accurate data, headquarters personnel have already taken steps to improve the quality of the data in the Search and Rescue Management Information System (SARMIS) and are involved in several ongoing efforts to continue this improvement. For example, they have made several revisions to a software program to address the problems encountered with the system and have provided information in a newsletter to Coast Guard staff emphasizing the importance of accurate data. This newsletter has also provided information to assist personnel in identifying and correcting common data entry errors. An example of their ongoing effort to improve data quality is a Coast Guard-wide analysis of

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SARMIS to develop a comprehensive set of requirements to improve the functionality, data accuracy, and availability of SARMIS and its data base. Also, the Coast Guard is rewriting the SARMIS manual, which is used as guidance for data entry by Coast Guard staff, to incorporate a new policy on and procedures for reporting on search and rescue activities. They expect that this rewrite will further improve data accuracy.

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The criteria used in the process have been expanded to include the impacts of proposed station changes on such things as (1) the economy of the community surrounding the station, (2) the quality of life of station personnel, and (3) the station's overall effectiveness in terms of saving lives and performing many other missions not related to search and rescue. Table 1 shows more specifically how the Coast Guard, in developing a new process for evaluating station changes, responded to the major recommendations in our 1990 report. (See app. II for a more complete description of the detailed steps of the process.)

1990 GAO recommendation	Coast Guard action taken since 1990 report
Establish formal instructions	A formal document, called the Unit Change Guide (UCG), was developed to provide instructions for a multistep analysis of stations being considered for a change. Compliance with this process is required for any unit change consideration.
Identify the criteria	The UCG has identified specific criteria to be considered when analyzing a station for a potential change. Up to 13 criteria may be considered in the UCG analysis. These criteria include mission performance levels, proximity to other stations, personnel and facility costs, and economic and community impacts.
Apply the criteria consistently	The step-by-step review process requires that criteria are consistently applied to all stations under consideration.
Document the decision-making process	The UCG requires documentation of each analytical step through a series of worksheets that provide justification for all decisions made. Written documentation on all stations analyzed, whether selected for proposed changes or not, is to be included in the final report.
Expand the criteria	The criteria are more comprehensive (more factors are considered) and the impact of a change is evaluated for all missions, not just the search and rescue mission. New measures are used to evaluate effectiveness in saving lives, rather than only measuring the number of lives saved.
Require the use of current, complete, and accurate data	The process requires using the most up-to-date data available to assess station changes, including the search and rescue data base (SARMIS) and other data obtained from local units on alternative resources and economic and community impacts. Also, the Coast Guard is using what we believe to be better analytical techniques for evaluating historical data to project future station activity levels. Efforts have also been made to reduce the subjectivity of and errors in SARMIS data through additional guidance and computerized error checks.

In 1993, Coast Guard headquarters officials performed a preliminary test of the new process for evaluating small boat stations. A Coast Guard official told us the test was performed to assess the evaluation

Table 1: the Coast Guard's Actions on GAO's Recommendations

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	methodology and to confirm the availability of the data necessary to complete the process. Although this test did not include an analysis of all steps in the process, it led to modifications that further strengthened the process. The official also said that some of these modifications included the addition of an analytical step to more comprehensively measure lifesaving effectiveness—making it a more central part of the overall evaluation. Additional information on workload trends was added to ensure that a station's workload was adequately considered and
	instructions were clarified to ensure that the process would be implemented correctly. GAO also reviewed the process and provided suggestions for improving it. By late 1993, the Coast Guard had adequately responded to our suggestions by adopting all substantive recommendations.
Potential Exists to Close or Downsize Small Boat Stations	The potential exists now and in the future to close or downsize some small boat stations. Coast Guard officials also expect some stations to increase in size as they assume the workloads of closed adjacent facilities. Using the new process, Coast Guard officials have undertaken an analysis of small boat stations and plan to complete this evaluation and prepare a list of proposed station changes by April 15, 1994. From this analysis, officials said they expect to identify stations that could be closed, consolidated, or substantially downsized. We did not validate these proposed station changes because the results of the Coast Guard's analysis, including the data used and the methodology followed, were not available at the time of our review.
	Coast Guard officials anticipate that personnel resources at small boat stations will be reduced by about 100 when the proposed changes are implemented. This estimate factors in staffing level increases at some remaining stations to provide the resources needed to handle projected workload increases at these sites. Overall, Coast Guard officials estimate a \$4.4 million annual reduction in operating and facilities costs when the proposed changes are fully implemented by fiscal year 1997. Budget reductions resulting from these changes would be about \$691,000 for fiscal year 1995 and \$3.75 million for fiscal year 1996.
	Additional station consolidations could occur in the future with the advent of technological advancements, most notably equipment upgrades. The clearest example is a new 47-foot motor lifeboat that the Coast Guard will acquire to replace the 44-foot motor lifeboat currently in use at small boat stations. The Coast Guard is now testing six of these new boats at stations

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on both coasts and plans to procure as many as 100 for delivery to the boat
stations between 1996 and 2000. Coast Guard officials believe the speed of
this boat, which is at least twice as fast as the 44-foot boat, will provide
them with the ability to respond much faster to search and rescue cases,
even in heavy weather conditions.

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The superior speed of the 47-foot boat is likely to increase the geographic area that could be served by one station. As a result, in the future the Coast Guard may be able to further consolidate stations located in close proximity to each other without affecting search and rescue response capabilities. However, the actual potential for station consolidations and the corresponding effect of consolidations on the performance of all small boat missions will not be known until the Coast Guard reapplies the process in the late 1990s. At that time, Coast Guard officials told us, they plan to include new data on the capabilities of the 47-foot boat in their process. They also told us that they plan to use the process regularly to address future needs for change that may result from budget cuts, significant shifts in missions or workloads, or other advances in technology.

Conclusions	The Coast Guard's past decisions to close or reduce operations at small boat stations have been difficult to defend because the Coast Guard did not have adequate criteria and a process to justify its decisions. The Coast Guard's new process is much improved and provides the ability to reassess the need for small boat stations on a continuing basis to accommodate changes in activity levels, technology, and budgetary constraints.
	We believe the results of the Coast Guard's ongoing analysis based on this process should provide the Coast Guard and the Congress with the information needed to make sound decisions on station changes, including closures, consolidations, and upgrades for the fiscal year 1995 budget and future years. However, since we have not validated the results of the Coast Guard's recently proposed changes, it is incumbent on the Coast Guard to ensure that accurate and complete data were used and the appropriate methodology was applied.
Agency Comments	We provided a draft of this report to the Chief, Search and Rescue Division, Office of Navigation Safety and Waterway Services, and an official from the Office of the Director of Resources at U.S. Coast Guard

headquarters. They generally agreed with the facts and conclusions in this report. Where appropriate, we incorporated their comments. As agreed, we did not obtain written agency comments on the draft report.

We conducted our work between August 1993 and February 1994 in accordance with generally accepted government auditing standards. During that time, we contacted appropriate Coast Guard headquarters and field officials and reviewed and analyzed relevant data and studies. Details of our scope and methodology are provided in appendix III.

As agreed, unless you publicly announce its contents earlier, we plan no further distribution of this report until 10 days after the date of this letter. We will then send copies of this report to the Secretary of Transportation; the Commandant, U.S. Coast Guard; the Director, Office of Management and Budget; and other interested parties. We will also make copies available to others on request.

Please call me at (202) 512-2834 if you or your staff have any questions. Major contributors to this report are listed in appendix IV.

Kennett le head

Kenneth M. Mead Director, Transportation Issues

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Abbreviations

GAO	General Accounting Office
LESIM	Law Enforcement Simulation Model
SARMIS	Search and Rescue Management Information System
SARQ	Search and Rescue Queuing Model
SARSIM	Search and Rescue Simulation Model
UCG	Unit Change Guide

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The more than 180 small boat stations are located in nine Coast Guard districts. The number of small boat stations in each district varies; for example, 37 stations are located in District 1, while District 11 has 13 stations. Figures 1.1 through 1.8 identify the name and geographic location of each small boat station. Figure I.1: District 1 Small Boat Stations Eastport Jonesport Southwest Harbor Rockland Boothbay Harbor Burlington -South Portland Portsmouth Harbor Merrimac River Gloucester Boston Point Allerton Fishers Island Scituate New London Provincetown New Haven-Cape Cod Canal Eatons Neck-Chatham Brant Point Fort Totten Woods Hole New York-Menemsha Sandy Hook Castle Hill Shark River Montauk Manasquan Inlet Point Judith Shinnecock Block Island East Moriches Fire Island Jones Beach Rockaway

Figure I.2: District 5 Small Boat Stations Barnegat Light Beach Haven Philadelphia Salem -Atlantic City Stillpond Great Egg Curtis Bay Townsends inlet Cape May Fortescue -Roosevelt Inlet Indian River Inlet Annapolis · Ocean City Taylors Island Chincoteague St. Inigoes Parramore Beach Crisfield Cape Charles Milford Haven Portsmouth Little Creek Coinjock Oregon Inlet Hatteras Inlet Ocracoke Hobucken Fort Macon Swansboro Wrightsville Beach Oak Island Figure I.3: District 7 Small Boat Stations Georgetown Charleston Tybee St. Simon Island Mayport Ponce De Leon Inlet Port Canaveral Fort Pierce Lake Worth Inlet Yankeetown Fort Lauderdale Miami Beach Sand Key -St. Petersburg Islamorada Cortez · Marathon

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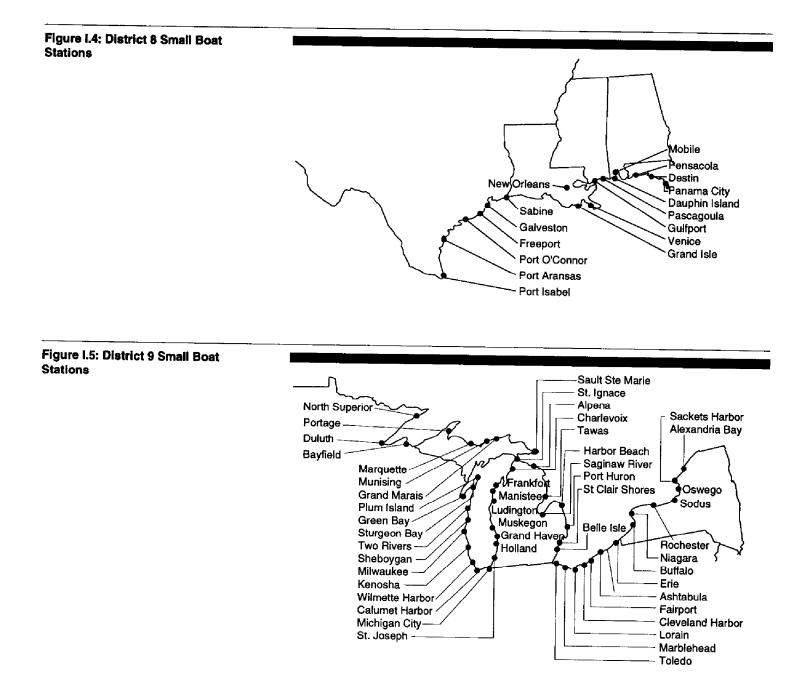
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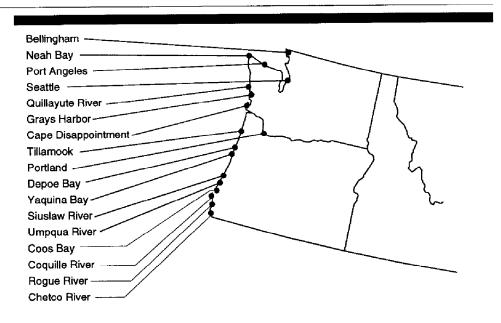
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Figure I.6: District 11 Small Boat Stations

Humboldt Bay	
Noyo River	
Bodega Bay Mare Island Rio Vista Golden Gate San Francisco	Lake Tahoe
Santa Cruz	 \sim
Monterey	
Channel Island Harbor	
Los Angeles/Long Beach	
San Diego	

Figure I.7: District 13 Small Boat Stations



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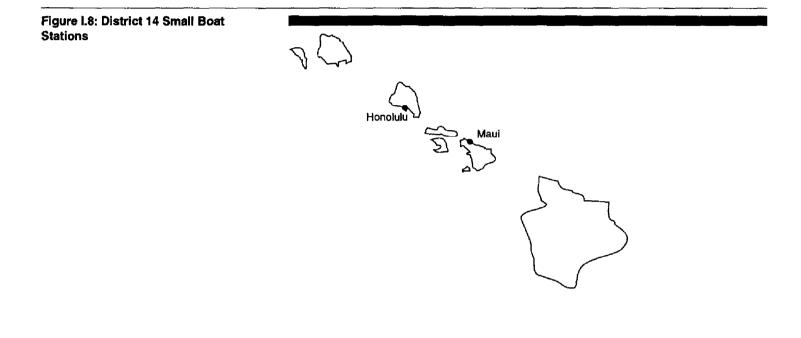
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The Coast Guard's Process for Determining Changes Needed at Small Boat Stations

The Coast Guard's process for determining changes needed at small boat stations consists of four main steps that are performed by headquarters staff: (1) identify stations to be considered for change; (2) evaluate stations to ensure that contemplated changes are appropriate and possible; (3) recommend to decisionmakers a list of potential station changes; and (4) implement the recommendations. The first two steps serve as "screens" that narrow down the number of stations being considered by comparing them against specific criteria. The third step organizes the results into a report, and the fourth step directs the recommendations through the approval process. A brief description of each of these steps follows. Step 1: Identify This step involves screening the stations being considered for change by comparing certain station factors and characteristics to three different criteria—mission performance (workload), proximity to other resources, and mandated circumstances. Each criterion serves as a "gate" for the criterion that follows. That is, only those stations selected after applying the mission performance criterion are considered in the proximity criterion; similarly, only those selected after applying the proximity criterion are considered by the mandated circumstances criterion. Mission performance (workload) of stations is checked against established criteria. For example, all stations being evaluated for possible closure are "flagged" if their workloads fall below 110 hours of time on sortie.¹ Only these "flagged" stations are evaluated further-the other stations are eliminated from consideration for closure at this point. Stations "flagged" in the above step are compared to criteria relating to their proximity to other resources (e.g., other stations). Stations selected on the basis of the proximity criteria are considered for mandated circumstances or restrictions, which may affect the Coast Guard's plans to change a station's operations. These restrictions may include congressional legislation, property restrictions, and other restrictions affecting the status of units. All remaining stations selected during this phase are forwarded to the Evaluate step. Step 2: Evaluate This step analyzes all of the stations selected in the Identify step to ensure that contemplated changes are both appropriate and possible. This step considers two types of factors or criteria-decision factors and prioritizing

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¹Defined as time in hours that the Coast Guard's small boats spend under way on search and rescue sorties, as reported in the SARMIS data base.

Appendix II The Coast Guard's Process for Determining Changes Needed at Small Boat Stations

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	factors. Stations are first screened by the decision factors: mission performance, resources, environmental impact, and changes to other units. These four factors are used to determine if, strategically, the proposed change for the stations can be accomplished. A mission performance analysis is performed for each station under consideration at this point to determine whether other stations can provide needed service if the proposed change is implemented. Stations selected after applying this factor are subjected to another analysis to determine if sufficient resources are available to perform all assigned missions and to determine the costs associated with the proposed change. Next, an evaluation is performed on the impact of a change on the physical and natural environment. The final decision factor involves an evaluation to ensure that a proposed change to a station is not in conflict with a change to an adjacent unit. If a station fails to meet the criteria of any of the decision factors, it is removed from further consideration.
	Stations that meet all the decision factors may be reviewed again at this point before being evaluated by the prioritizing factors. This review confirms the availability of alternate resources identified in the mission performance review, ensures that personnel and cost data and all cost/savings data associated with a proposed change are accurately accounted for, checks to ensure that no environmental issues may alter future impact assessments, and rechecks the proposed changes.
	Stations selected after applying the decision factors are evaluated in terms of six prioritizing factors to determine the desirability of the proposed changes identified by the previous evaluation steps. Units are not eliminated from further consideration by prioritizing factors. In cases where there are conflicts between proposed changes, the prioritizing factors help to determine the most desirable change. The prioritizing factors are (1) trends—including boating, population, economic, and workload trends; (2) economic impact; (3) community impact; (4) costs and benefits; (5) acquisition, construction and improvements proposals; and (6) quality of life.
Step 3: Recommend	This step organizes the list of stations developed from the two previous steps into a report format for consideration by decisionmakers. This step provides documentation for the decision-making process, identifies the stations selected for change, and prioritizes suggested station changes from the most to least desirable. During this step, a list of the stations not

stations selected for change, and prioritizes suggested station changes from the most to least desirable. During this step, a list of the stations not selected for change is prepared, and information is provided on the factor 1

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	that aliminated each station from further consideration for shange. The
	that eliminated each station from further consideration for change. The report also includes information on the overall evaluation, such as who directed the review, why the review was conducted, the universe of stations considered, implementation recommendations, the chartering memorandum from the authority initiating the review, the completed worksheets used in the analysis, and a list of the actual data sources used in the review. This report is then addressed to the appropriate level for consideration of the proposed changes.
Step 4: Implement	The final step of the process is to implement approved recommended changes. If existing processes for implementing the changes are available, they must be used to facilitate the implementation of those changes. For example, Operating Facility Change Orders and Personnel Allowance Amendments may be required for certain types of station changes. A key element of this step is ensuring that an appropriate level of community and political notification and involvement occurs.

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Appendix III Scope and Methodology

To assess the Coast Guard's progress in developing criteria for evaluating station changes, we interviewed Coast Guard headquarters officials from the offices of Navigation Safety and Waterway Services; Engineering Logistics and Development; Acquisition, Readiness and Reserve; and the Director of Resources. The interviews focused on detailed issues raised in the previous GAO report and the corresponding actions by the Coast Guard taken to resolve these issues. In our discussions with Coast Guard headquarters officials responsible for drafting the evaluation process, we conducted a step-by-step review of how a basic change might be evaluated by the Unit Change Guide to determine exactly how the criteria and process would be applied. We also discussed how the Coast Guard's 1992 Small Boat Releveling Plan would be used in conjunction with the Unit Change Guide.

We also reviewed relevant Coast Guard studies and guidance, focusing our analysis on the Unit Change Guide, Releveling Plan, and supporting documentation for selected criteria developed in these documents. Three simulation models-the Search and Rescue Simulation (SARSIM), the Search and Rescue Queuing (SARQ), and the Law Enforcement Simulation (LESIM)—are cited in the Unit Change Guide as sources for analyzing various options when considering unit changes. We examined available documentation for two of these models-SARQ and SARSIM. SARQ is no longer actively used, but SARSIM is occasionally used to provide supplemental analyses of the effects of proposed station changes. We discussed the process followed when the SARSIM model is used with Coast Guard officials in the Search and Rescue Division of the Office of Navigation Safety and Waterway Services. We also discussed the LESIM model with an official from the Coast Guard Research and Development Center, who said that it is under development and currently is not being designed for use in small boat station assessment.

We also reviewed the National Search and Rescue Manual, the Search and Rescue Program Description, the SARMIS Manual, and a Search and Rescue Program Standards Review document. We also reviewed data retrieved from SARMIS and the Abstract of Operations Manual of Boats-1992. We used these data to analyze missions, activity levels, and the nature of search and rescue incidents for all stations visited.

To assess the potential for closing or consolidating stations, we reviewed the analysis and results from the Coast Guard's 1993 preliminary test of the Unit Change Guide. In addition, we visited 6 Coast Guard District offices, 8 Group offices, and 36 small boat stations and talked with Coast 100

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Guard officials at various levels about operations, resources, staffing, and other issues that must be considered to make sound decisions on substantive station changes.

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The following is a list of units and locations we visited.

Coast Guard Districts

District 1, Boston, MA

District 5, Norfolk, VA

District 7, Miami, FL

District 8, New Orleans, LA

District 9, Cleveland, OH

District 13, Seattle, WA

Coast Guard Groups

Group Woods Hole, Woods Hole, MA

Group Baltimore, Baltimore, MD

Group Cape May, Cape May, NJ

Group Miami Beach, Miami Beach, FL

Group Key West, Key West, FL

Group New Orleans, New Orleans, LA

Group Buffalo, Buffalo, NY

Group Astoria, Warrenton, OR

Coast Guard Small Boat Stations

Station Provincetown, Provincetown, MA

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Station Chatham, Chatham, MA Station Cape Cod Canal, Sandwich, MA Station Woods Hole, Woods Hole, MA Station Menemsha, Menemsha, MA Station Castle Hill, Newport, RI Station Point Judith, Narragansett, RI Station Taylors Island, Taylors Island, MD Station Barnegat Light, Barnegat Light, NJ Station Beach Haven, Beach Haven, NJ Station Atlantic City, Atlantic City, NJ Station Great Egg, Ocean City, NJ Station Townsends Inlet, Townsends, NJ Station Cape May, Cape May, NJ Station Indian River Inlet, Rehobeth Beach, DE Station Miami Beach, Miami Beach, FL Station Islamorada, Islamorada, FL Station Marathon, Marathon, FL Station Key West, Key West, FL Station New Orleans, New Orleans, LA Station Grand Isle, Grand Isle, LA Station Venice, Venice, LA

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Station Fairport, Grand River, OH Station Ashtabula, Ashtabula, OH Station Erie, Erie, PA Station Buffalo, Buffalo, NY Station Niagara, Youngstown, NY Station Niagara, Youngstown, NY Station Rochester, Rochester, NY Station Rochester, Rochester, NY Station Sodus, Sodus Point, NY Station Sodus, Sodus Point, NY Station Oswego, Oswego, NY Station Oswego, Oswego, NY Station Sackets Harbor, Sackets Harbor, NY Station Alexandria Bay, Alexandria Bay, NY Station Tawas, Tawas, MI Station Grays Harbor, Westport, WA Station Cape Disappointment, Ilwaco, WA

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Appendix IV Major Contributors to This Report

Resources, Community, and Economic Development Division, Washington, D.C.	Allen Li, Associate Director Judy K. Pagano, Senior Operations Research Analyst
Seattle Regional Office	Randall B. Williamson, Assistant Director Steven N. Calvo, Evaluator-in-Charge Dawn E. Hoff, Site Senior

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