

THE COAST GUARD'S NEXT DECADE:
AN ASSESSMENT OF EMERGING CHALLENGES AND STATUTORY NEEDS

Testimony of

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The National Academies of Sciences, Engineering, and Medicine

before the

Subcommittee on Coast Guard and Maritime Transportation
Committee on Transportation and Infrastructure
U.S. House of Representatives

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Chairman Webster, Ranking Member Carbajal, and Members of the Subcommittee, I appreciate the opportunity to appear before you today to testify about the recently issued National Academy of Sciences, Engineering, and Medicine (NASEM) committee report on “The Coast Guard’s Next Decade: An Assessment of Emerging Challenges and Statutory Needs.” Congress requested this report to identify emerging issues that are likely to demand U.S. Coast Guard action over the next decade and then to assess whether the Service’s existing statutory authority will be sufficient to meet these future demands.

I served as the chair of the NASEM committee that developed this report. By way of additional background, I am also the Edward B. Shils Professor of Law at the University of Pennsylvania, where I serve as the Director of the Penn Program on Regulation. I am also currently a Senior Fellow of the Administrative Conference of the United States. The focus of my research and teaching throughout my career has been on administrative law and government regulation, with an emphasis on the empirical evaluation of alternative regulatory processes and strategies and the role of public participation, technology, and business-government relations in regulatory policymaking.

Although I am before you today owing to my service as the chair of the NASEM study committee that led to the report I will be describing, that report is the product of extensive information-gathering, deliberation, and ultimately consensus among the eleven other expert colleagues who served as members of the committee, to which I wish to give great credit and my many thanks: Admiral Thad W. Allen, U.S. Coast Guard (retired); James-Christian B. Blockwood, Partnership for Public Service; Annie Brett, University of Florida; Vice Admiral Sally Brice-O’Hara, U.S. Coast Guard (retired); Martha R. Grabowski, Le Moyne College and Rensselaer Polytechnic Institute; Donald Liu, American Bureau of Shipping (retired) and member of the National Academy of Engineering; Wen C. Masters, MITRE Corporation; Rodrigo Nieto-Gomez, Naval Postgraduate School; Sean T. Pribyl, Holland & Knight LLP; Vice Admiral Sandra Stosz, U.S. Coast Guard (retired); and Rear Admiral David W. Titley, U.S. Navy (retired) and RV Weather.

As part of the committee's efforts to gather information over the course of the more than 17-month period of the study, we benefited greatly from several public meetings at which we heard from senior leadership of the U.S. Coast Guard, including from the Commandant at the time the study commenced (Admiral Karl L. Schultz, now retired) and later from the current Commandant (Admiral Linda L. Fagan). We also benefited from extensive written input from responses to questions we posed to the Coast Guard as well as from consultations at numerous other meetings with more than 50 experts from outside the Coast Guard, including representatives from maritime shipping and other maritime-related industries, other government agencies in the United States and abroad, nongovernmental organizations, experts in technology, policy, and maritime law, and experts in strategic foresight and forecasting. The committee's penultimate report also underwent a rigorous, independent review process involving 12 outside peer reviewers, all in accordance with NASEM's customary procedures.

In a nutshell, the NASEM study's principal results can be distilled into the following four points:

1. The Coast Guard will face new or increasing challenges in the coming decade from climate change, technological and industry innovation, and global strategic competition.
2. The study committee investigated 10 specific and foreseeable developments that will present the Coast Guard with new or increasing challenges. Across these developments, the committee identified a total of 34 different types of actions that the Coast Guard will likely need to take in response.
3. The committee concluded that the Coast Guard likely has sufficient statutory authority to take the needed actions in all but two instances, namely with respect to specific actions related to autonomous vessels and commercial space development. In a third instance—with respect to cybersecurity—the committee did not view new authority as essential but did note that statutory change may be prudent.
4. Even with adequate statutory authority, the Coast Guard will need sufficient mission support capacities and capabilities, such as with respect to data management, technology acquisition, and workforce development, if it is to meet the challenges of tomorrow. Prioritization of strategic foresight will also be needed, and legal foresight analysis should be systematically incorporated into the Coast Guard's ongoing planning for the future.

In my testimony today, I will describe the scope and process of our study—that is, what we were tasked to do and what we did—and then I will turn to explaining in greater detail our conclusions and recommendations.

Study Scope and Process

The NASEM study was originally called for in Section 8249 of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021. That legislation directed the Coast Guard to commission an “assessment of Coast Guard Authorities” that was based on “(1) an

examination of emerging issues that may require Coast Guard oversight, regulation, or action; (2) a description of potential limitations and shortcomings of relying on current Coast Guard authorities to address emerging issues; and (3) an overview of adjustments and additions that could be made to existing Coast Guard authorities to fully address emerging issues.” The emerging issues encompassed in the legislation were those “reasonably likely to occur within 10 years.”

Pursuant to this legislation, the Coast Guard tasked NASEM with conducting a study of “emerging issues that are likely to demand Coast Guard services over the next decade and consider whether the Service’s existing statutory authorities are sufficient to meet this demand, and if not, where the Service’s authority could be expanded to do so.” The committee was specifically tasked with considering “changes in technological capabilities, industry trends, cybersecurity risks, climate and environmental conditions, and geopolitical factors that could affect governance and activities in the maritime domain.” Although the statement of task emphasized that the committee should focus on the Coast Guard’s statutory authority to address these emerging issues, it also called for the committee to consider “related abilities” that the Coast Guard would need to respond to the identified developments over the next decade.

In accord with these directions, the NASEM study aimed to assess the adequacy of the Coast Guard’s statutory authority to address challenges arising under its existing missions over the next ten years. The committee sought to identify those emerging issues or foreseeable developments that, as noted in the statement of task, “it believes are likely to have the greatest relevance to and effect on the Coast Guard’s missions.” The study was thus not intended as an overall strategic re-assessment of the roles and missions of the Coast Guard. Moreover, given Section 8249’s emphasis on the Coast Guard’s statutory authority to engage in “oversight” and “regulation,” as well as limitations deriving from the lack of access to classified information, the committee did not engage in systematic inquiry of military actions in response to armed conflicts that could potentially arise in the coming decade. The committee was, however, attentive to national security considerations in full recognition of the Coast Guard’s valuable and essential law enforcement, intelligence, and military responsibilities. Finally, in keeping with the study’s statement of task, the committee focused on statutory authority and not the design of Coast Guard regulations or other legal issues.

Within these parameters, the statement of task called for a sweeping inquiry. To address the fundamental question of the Coast Guard’s potential statutory authority needs, the committee first needed to determine which *foreseeable developments* might hold “greatest relevance” over the next decade to the Coast Guard’s numerous missions—whether as an emergency responder, a maritime law enforcer, a manager of waterways, a defender of maritime safety and security, or a protector and steward of the environment. Next, the committee sought to identify what *potential actions* the Coast Guard would likely need to take in fulfilling these missions in response to the foreseeable developments. Only then was the committee able to assess whether the Coast Guard’s existing *statutory authority* would permit it to undertake these likely actions. The figure at the top of the next page, excerpted from the committee’s report, illustrates the three-step approach the committee took to fulfill its study task.

Figure: NASEM Study Committee Approach



Based on the committee’s engagement with Coast Guard officials and other experts, as well as the committee members’ own experience and judgment, we identified 10 foreseeable developments that the Coast Guard is likely to confront in the coming years. These 10 developments are:

- Autonomous systems;
- Cybersecurity risk;
- Commercial spaceflight operations;
- Offshore wind energy;
- Aquaculture;
- The Arctic domain;
- Ship decarbonization;
- Disasters;
- Migration; and
- Illegal, unreported, and unregulated (IUU) fishing.

To inform the committee’s assessment of these developments, we sought direct input on each from the Coast Guard as well as independent experts. Some of these developments present challenges already facing the Coast Guard but which will only grow in significance in coming years. Others represent new challenges that are only starting to become discernible.

For each of these 10 foreseeable developments, the committee identified a range of actions—34 in total—that the Coast Guard would likely need to take in response, such as issuing regulations, conducting or expanding operations, and improving monitoring and oversight. (See the Appendix to this testimony for a chart from the NASEM report that lists each of the types of actions considered.) Having identified the types of actions the Coast Guard will likely need to take to address the 10 foreseeable developments, the committee then considered whether existing statutes provide the Coast Guard with sufficient authority to undertake the identified actions over the next decade.

In the next section of my testimony, I detail the committee’s principal findings with respect to statutory authority. But before turning to the committee’s conclusions and recommendations, five additional clarifications of the study’s scope will be helpful to keep in mind.

First, although the committee judged the 10 foreseeable developments listed above as ones having greatest relevance to the Coast Guard’s missions in the coming decade, the committee makes no claim that these are all the important issues that the maritime domain will confront in this time period. As the committee’s report makes plain, we cannot rule out “new, unforeseen scenarios.” Moreover, plenty of existing and longstanding challenges confronting the Coast Guard are unlikely to disappear even as new challenges emerge.

Second, although the committee addressed each of the 10 foreseeable developments separately in its report, they are unlikely to manifest as entirely separate and distinct problems. As the report notes, the effects of these developments on the Coast Guard's missions "are likely to be additive and generative." By way of illustration, consider how a cybersecurity breach could lead an autonomous vessel to damage an offshore energy platform. It seems undeniable that, as the committee notes, "[e]ach of the 10 developments could produce incidents or phenomena that occur simultaneously or in quick succession."

Third, the scope of the committee's legal analysis was necessarily conducted at a high level, with the aim of identifying glaring gaps or priority areas needing additional attention. A more complete legal analysis of the Coast Guard's many existing authorities would need to delve into greater detail with respect to any of the issues considered by the committee. The study committee's task had been defined in terms of breadth rather than depth, in light of the number of major issues likely to confront the Coast Guard in the coming decade. As a result, the study focused on general types of actions that the Coast Guard will likely need to take, even though firm legal conclusions ultimately depend on specifics. Developing those specific details for any new action might well demand its own separate study. We did not, for example, make any determinations about the specific design or content of any new Coast Guard regulations that may be needed to address safety concerns related to autonomous vessels.

Fourth, even though the committee was charged with assessing questions of statutory authority, this does not mean that statutory authority questions will be the only legal questions facing the Coast Guard in the coming decade. As noted in the report, and discussed further below, some important legal questions will arise under international law. Even other important domestic law questions, such as those involving potential federal-state conflicts, fell outside the scope of this study of statutory authority.

Finally, as much as adequate statutory authority is a necessary prerequisite for the Coast Guard to respond effectively to future challenges, such authority will hardly be sufficient. The committee highlighted three "foundational" capacities and capabilities that Congress and the Coast Guard must together ensure are further developed and maintained: data management, government contracting, and workforce readiness. These core capacities and capabilities are discussed further in the next part of this testimony after a review of the study committee's conclusions and recommendations on statutory authority.

Conclusions and Recommendations

Major forces such as climate change, technological innovation, and global economic and political competition are driving change in the maritime domain and presenting new challenges to the Coast Guard. Meeting these challenges will necessitate that the Coast Guard take a broad range of actions in response to foreseeable developments over the coming decade. The NASEM committee reached key conclusions and recommendations about the Coast Guard's statutory authority to take these actions. Just as importantly, it reached conclusions and recommendations about the Coast Guard's need for strong and nimble mission support capacities and capabilities. Finally, it also offered conclusions and recommendations about the Coast Guard's need for

integrating strategic foresight, along with legal analysis, into ongoing planning and decision-making.

Statutory Authority

For each of the 34 actions identified in the study, the committee considered questions such as the following: Does the action clearly fall under the Coast Guard’s existing authority? Is the action specifically precluded under existing law? Are there obvious instances where authority to act is missing, insufficient, unduly restricted, or substantially in need of clarification?

In general, the study committee answered these questions by concluding that “the Coast Guard possesses sufficient statutory authority that can be exercised to allow it to respond to most developments foreseeable in the maritime domain over the next decade.” As the committee report further notes, “[f]or an agency with so many vital responsibilities, the Coast Guard is already bestowed with much statutory authority to act, including authority that affords the Coast Guard latitude to take a wide range of actions, both existing and new.”

The Coast Guard’s extensive authority notwithstanding, the range of developments and the number of likely actions needed to respond to them made it not unreasonable to inquire whether the Coast Guard might need some new or modified authority for at least some types of actions. After methodically addressing 34 actions need to respond to the 10 foreseeable developments, the study committee found that “[i]n only a few instances did the committee find reason to suspect that existing authority could have limited or questionable applicability to the kinds of future actions the Coast Guard will likely need to take over the next decade.” In particular, the Coast Guard likely lacks sufficient statutory authority “to respond fully” with specified actions with respect to two of these developments: autonomous vessel technology, and commercial space operations. For a third development—cybersecurity risks—the committee concluded that the Coast Guard already possesses sufficient authority to take all the likely actions needed; however, the committee also noted that it might nevertheless be prudent for Congress to consider clarifying that the Service’s general security authority also includes authority specifically to address cyber incidents. Together, these three areas deserving of additional congressional attention are summarized in Table 1 below, which is excerpted from the committee’s report.

Table 1: Three Candidates for Legislative Attention

Likely Action	Summary Assessment
Autonomous systems: <i>Regulatory</i>	Amend statutory manning requirements (or authorize waivers to them) to allow the Coast Guard to approve, as appropriate, fully autonomous vessels.
Commercial spaceflight activity: <i>Mitigating and responding to risks</i>	Weigh statutory and international law limitations on the Coast Guard’s authority to establish safety zones that are binding on foreign-flagged vessels in the exclusive economic zone.
Cybersecurity risk: <i>Regulatory updates</i>	Consider possible amendments to the Maritime Transportation Security Act and the Magnuson Act to parallel recent changes to the Ports and Waterways Safety Act clarifying that the Coast Guard has authority to address cyberincidents.

As the committee's report makes clear, even with respect to autonomous vessels and commercial space operations, the Coast Guard possesses sufficient authority to take most needed actions. It is simply that, as indicated below, without further legal change the Coast Guard could find itself constrained to take some specific actions that may be needed to address facets of these developments.

Autonomous systems. When it comes to autonomous vessels, it is important to note that the degree of autonomy can vary from mere decision support for the onboard crew to a full level of autonomy that would make it possible for a vessel to operate without any human crew on board. For most of these levels of autonomy, the Coast Guard will have sufficient authority to address safety concerns that may arise for vessels operating with this new technology. As the committee report notes:

The Coast Guard has a broad range of statutory authorities intended for safety at sea, including those related to vessel operation, safety management systems, navigation, and design and engineering. These authorities will likely allow the Coast Guard to address most regulatory needs for autonomous systems, such as perhaps even by eventually creating a comprehensive regulatory regime that addresses a range of issues presented by these systems.

Nevertheless, the committee concluded that the Coast Guard will likely find its authority constrained with respect to taking action that would allow fully autonomous, uncrewed vessels to operate in the marine transportation system (MTS). As noted in the report, "manning requirements for vessels currently call for human operators to be on board all vessels and may thus limit the Coast Guard's ability to approve, as appropriate, vessels that use autonomous systems in lieu of an onboard crew."

Currently, federal statutory law requires that "vessels propelled by machinery or carrying passengers shall have a licensed master" and "shall be under the direction and control of a pilot" with "a suitable number of watchmen." As these so-called manning requirements contemplate human personnel being present on vessels, it would seem to require statutory change for the Coast Guard to allow the operation of uncrewed vessels. Congress has authorized, of course, the Coast Guard to grant limited waivers from these manning requirements, but so far only with respect to one specific use of autonomous technology: uncrewed vessels used for at-sea recovery of components of commercial space vehicles. At some point in the coming decade, uncrewed autonomous vessel technology may have demonstrated sufficient safety to justify its more widespread general use. For this reason, the NASEM committee recommended that the Coast Guard and Congress continue to monitor this technology as well as assess whether, at an appropriate time, to lift statutory "constraints on the ability of the Coast Guard to approve vessels that use fully autonomous systems in lieu of an onboard crew."

Commercial space operations. Over the last five years, commercial space launches and reentries in the maritime domain have more than doubled. The Coast Guard has already taken a host of regulatory actions to protect safety and security of waterways during periods of space operations, including by establishing hundreds of safety zones at varying times every year. The Coast Guard possesses sufficient statutory authority to establish these safety zones for all vessels in U.S.

territorial waters and for U.S.-flagged vessels even outside of territorial waters. But as commercial space operations move farther to sea, the Coast Guard lacks the authority to impose binding safety orders on the operation of foreign-flagged vessels outside of territorial waters. At present, the Coast Guard can only provide non-enforceable safety warnings to such foreign-flagged vessels operating outside territorial waters. The committee concluded:

Limitations on the authority to establish spaceflight-related safety zones that are binding on foreign-flagged vessels in the exclusive economic zone (EEZ) may impede the Coast Guard’s ability to protect both those vessels and commercial spaceflight operations in the EEZ.

It is imperative to note, though, that these two limitations on the Coast Guard’s statutory authority—both for commercial space operations as well as autonomous vessel technology—have corresponding constraints in international law. With respect to autonomous vessels, for example, several international maritime conventions include manning requirements similar to those reflected in U.S. legislation. And the limitation on the Coast Guard’s authority to impose mandatory safety zones on foreign-flagged vessels outside of U.S. territorial waters derives as much from international law’s protection of the freedom of navigation as it does from a lack of statutory authority. It is for this reason that the committee did not recommend any specific legislative changes at this time, but instead simply recommended that Congress “closely analyze” these matters further. As the committee report notes, before making any legislative changes with respect to these two issues, Congress “should carefully weigh [such changes] against U.S. adherence to principles of international law” and “consider coordinating any statutory changes with any changes in international legal standards.”

Cybersecurity risk. With respect to a third foreseeable development—cybersecurity—the study committee noted that “it may be prudent for Congress to consider making a clarifying set of changes” to statutory law. Cyberattacks are increasing across all sectors of the economy, including in the maritime domain. In the coming years, as maritime transportation further relies on advanced digital systems and satellite navigation, the vulnerability for serious disruption to the MTS from cyber incidents are likely only to increase. The Coast Guard is already taking numerous actions to address cybersecurity risks in the maritime domain, including adopting regulations under the Maritime Transportation Security Act (MTSA). The study committee concluded that the Coast Guard possesses adequate authority to take necessary future actions under the MTSA and other relevant existing statutes. In 2021, however, Congress amended the Ports and Waterways Safety Act to clarify that this legislation does encompass the authority for the Coast Guard to address cyber incidents. Having made this change to one statute, it may be appropriate for Congress now to affirm that the MTSA and the Magnuson Act of 1950 also authorize the Coast Guard to take actions addressing cybersecurity risks.

Mission Support

Beyond these three issues of statutory authority that merit congressional attention, the study committee also concluded that “[o]ther congressional support may be needed to strengthen the Coast Guard’s mission support capacity and capability, ensuring that it has the necessary resources and authority to be nimble and effective in its preparation and responses.” In other

words, statutory authority alone will not be sufficient to meet the many demands that the Coast Guard will confront in the years ahead. If the Coast Guard is to meet new and unexpected challenges, it must strengthen three core mission support pillars, namely its ability to (1) manage and analyze data, (2) act nimbly to procure needed technology, and (3) develop and maintain a workforce ready and able to meet future demands.

These three mission support capabilities and capacities will be so crucial to the Coast Guard’s performance over the next ten years that the committee devoted an entire chapter in its report to detailing the abilities that the Service will need in each of these three areas. Table 2 below, taken from the committee report, illustrates the types of institutional capabilities addressed in the report with respect to each of these vital mission support pillars. The report elaborates on these needs in much greater detail and relays important ideas for strengthening each of these pillars.

Table 2: Vital Mission Support Capacities and Capabilities

Foundational Area	Needs
Data management and analysis	<ul style="list-style-type: none"> • New sources of data, management infrastructure, and analytic tools • More data sharing and integration • Protections for critical data and systems
Acquisition and procurement	<ul style="list-style-type: none"> • Rapid prototyping and fielding • Use and strengthening of pilot authority • Multiyear funding for modernizing
Workforce	<ul style="list-style-type: none"> • Training and skill development for new technologies • Increased scope for recruitment, hiring, retention, and contracting • Flexible Reserve force deployment

As the committee report explains, congressional action will be needed not only to provide necessary fiscal resources to sustain these mission support functions but also potentially to make targeted statutory changes that can alleviate barriers or give the Coast Guard new management-related authorities. Although the scope of the study precluded the committee from fully analyzing potential statutory reforms related to mission support, the committee was in agreement that further exploration of these issues would be definitely warranted by both Congress and the Coast Guard. As the committee recommended:

The Coast Guard will need the mission support capacity and capabilities to meet foreseeable demands and to respond quickly and effectively to developments that may not be foreseen. Congress should ensure that the Coast Guard has the requisite statutory authority and flexibility to (a) manage, share, and analyze data; (b) procure and manage assets; and (c) support and develop a workforce, all in a manner that is suited to a fast-changing environment. Because the Coast Guard already has many existing broad authorities for mission support, the Service should continue to review the latitude afforded by these existing authorities, including the procedures and processes used to implement them, to make sure that

the authorities are being used in the most effective manner, such as to update internal systems and meet evolving workforce needs.

The committee also emphasized that, “[w]hile these three domains are by no means the only areas of institutional capability that matter, they emerged as recurring themes in the committee’s gathering of information, and, in the committee’s view, they are foundational to the Coast Guard’s ability to respond effectively to a range of future demands.”

Strategic and Legal Foresight

The NASEM study revealed more than potential gaps in the Coast Guard’s statutory authority and renewed needs for strong mission support. Given the likelihood that “the Coast Guard may well face other developments that are difficult if not impossible to anticipate now,” the Coast Guard will need to remain vigilant and ready to adapt as needed to respond to all that comes its way in the next decade and beyond. The undeniable dynamism of the maritime domain means that the Coast Guard will continue to benefit from the scenario-building and other forecasting efforts that are part of its Evergreen process. As the committee concluded:

No matter what the future holds, it behooves the Coast Guard, with its many responsibilities in the vast and varied maritime domain, to continue to monitor the horizon for future developments and assess their likely implications on Coast Guard actions, plans, and preparations.

The committee observed that the Coast Guard’s Evergreen process could do more to incorporate a “wider range of strategic foresight methods [that] can be valuable for maximizing insights.” The committee also considered “the importance of having a dedicated institutional capacity for the continual execution of strategic foresight planning, as opposed to ad hoc, periodic exercises conducted to inform leadership transitions.” Rapid flux in the maritime environment makes plain the need for giving strategic planning “a high priority among the Coast Guard leadership.”

At the same time, the NASEM study revealed “the critical importance of building stronger connections between legal foresight and operational and strategic planning.” After all, it is not just the operational maritime environment that is changing, but the legal environment can change as well, with new developments occurring in international law or with domestic courts changing their approaches to statutory interpretation. These legal changes, combined with changes in the operational environment, make it critical that the Coast Guard integrate legal foresight into its strategic planning processes. By “legal foresight,” the committee means the

regular, systematic assessment of statutory authorities to ensure that they will be sufficient to allow the Coast Guard to take needed actions and to build the capacity to carry them out. Such legal foresight would seek to anticipate not only the likely adverse impacts of foreseeable developments, but also the statutory authority needs that the Coast Guard will require to address them.

Robust strategic planning, combined with legal foresight, will not only help the Coast Guard be better prepared for the future, but it will also better ensure that Congress can “act responsively to ensure that the Coast Guard has the flexibility and capacity, through its statutory authority and other resources, that it will need to face a rapidly changing maritime domain with agility and efficacy.”

Finally, the NASEM committee believes that the value from its study goes beyond the insights reflected in its conclusions and recommendations. This study and its conceptual framework also offer a kind of a template for future efforts at legal foresight by the Coast Guard itself. It shows by its example “how to search for obvious instances where new and expanded Coast Guard actions may be needed—and then to assess whether such action might be precluded or inhibited by insufficient or unclear statutory authority.”

* * *

In conclusion, I wish to thank you—Chairman Webster, Ranking Member Carbajal, and Members of the Subcommittee—for the opportunity to testify before you about the NASEM committee report, “The Coast Guard’s Next Decade: An Assessment of Emerging Challenges and Statutory Needs.” The Coast Guard has throughout its history protected the nation by successfully undertaking a broad and diverse array of vital missions that protect, among other things, maritime safety, homeland security, and environmental quality. These mission demands appear likely only to increase in significance over the coming decade. Indeed, precisely because the future will bring new developments and increased challenges calling for continued Coast Guard response, I am grateful for your committee’s support in seeking to ensure that the Coast Guard will have the statutory authority and mission support capabilities it needs to act with agility in the face of these future challenges.

Appendix: List of 10 Foreseeable Developments and 34 Likely Response Actions

Foreseeable Development	Likely Coast Guard Action
Autonomous systems	<ul style="list-style-type: none"> • Regulatory • Confronting nefarious uses • Adoption of autonomous technology • Workforce training and development
Cybersecurity risk	<ul style="list-style-type: none"> • Cyberincident response • Collection of cyberincident data • Threat sharing • Regulatory updates • Cyberrisk management • Clarification of roles and responsibilities
Commercial space operations	<ul style="list-style-type: none"> • Mitigating and responding to risks
Offshore wind energy	<ul style="list-style-type: none"> • Interagency coordination • Port access studies • Search and rescue capabilities • Navigational safety aids and security measures
Aquaculture	<ul style="list-style-type: none"> • Assessment of facility siting proposals • Oversight and management of facilities
Arctic domain	<ul style="list-style-type: none"> • Regulatory action • Data and data infrastructure • Expanding and strengthening partnerships
Ship decarbonization	<ul style="list-style-type: none"> • Guidance and regulatory oversight • Workforce training and development • Pollution incident response • Emissions monitoring and reporting • Engagement and collaboration
Disasters	<ul style="list-style-type: none"> • National response framework and contingency plans • Surge operations • Mobilizing Coast Guard Reserve • Preparing Coast Guard facilities
Migration	<ul style="list-style-type: none"> • Contingency planning
IUU fishing	<ul style="list-style-type: none"> • Data collection, sharing, and analysis • Bilateral fisheries agreements • Nontraditional partnerships • Force and asset deployment