



UNITED STATES COAST GUARD CLIMATE FRAMEWORK

JANUARY 2023



“The Coast Guard Climate Framework focuses on preparedness, resilience, and collaboration with partners and stakeholders to best position the Coast Guard for the challenges climate change presents to all of us.”

ADMIRAL LINDA FAGAN



Letter from the Commandant

The world is changing. Rising sea levels, more frequent severe weather, retreating Polar ice, migrating fish stocks, and coastal infrastructure damage are creating challenges for people around the globe. Increasing pressure to reduce environmental impact is driving change in energy generation and the global economy.

These impacts of climate change will influence every Coast Guard mission. To uphold our tradition of service to the Nation, the Coast Guard must apply strategic foresight to prepare for the challenges ahead. This Climate Framework charts the first waypoint of our journey as we move forward at best speed.

We are the maritime service the American people rely on as the world changes. We will lead crisis response, protect our National security and the Marine Transportation System, and facilitate ingenuity as industry adopts the new technology that will power our economy into the future. Our workforce, infrastructure, and assets will grow more resilient through deliberate investment. The Service will prepare to respond to increasingly frequent weather emergencies and long-term climate trends, and our stakeholders will trust in our strengthened partnerships to enhance maritime safety for all.

Tomorrow looks different, so will we.

Yours in service,

A handwritten signature in black ink that reads "Linda L. Fagan".

Admiral Linda L. Fagan
Commandant

U.S. COAST GUARD'S ROLE IN A RESILIENT NATION: OUR GUIDING PRINCIPLES

Climate change and its impacts will continue to define the 21st Century. From episodic events like flash floods and wildfires to long-term trends of rising sea levels and temperatures, climate-induced risks threaten national security, economic prosperity, and the safety of communities across America. These risks have long-term effects on Coast Guard operations, missions, and infrastructure.

Delivering mission excellence in the face of climate risks requires the Coast Guard to think differently. This Climate Framework endeavors to meet that challenge by setting the Service on a path to maximize our readiness in the face of an era of extremes. This document, in alignment with the U.S. Department of Homeland Security's Strategic Framework for Addressing Climate Change, presents three lines of effort and corresponding priority actions for the Coast Guard to remain "Semper Paratus" to meet the needs of the Nation: (1) Build climate resiliency into our workforce, infrastructure, and assets; (2) Plan for and respond to more frequent weather emergencies and long-term climate trends; and (3) Develop and leverage partnerships to enhance, enable, and ensure maritime safety.

In addition to these specific lines of effort, there are several cross-cutting concepts that are critical to guide the Coast Guard to long-term success.

Strategic Foresight. Climate change will generate economic, social, and technological impacts across every Coast Guard mission. Building resilience and response capability to these risks and the impacts they bring requires adopting a forward-looking approach to help the Service explore and prepare for a range of possible future scenarios. To ensure our workforce remains Always Ready, we will strive to incorporate climate science, predictive modeling, and data analytics into contingency and strategic planning. In doing so, we will enhance our understanding of the most probable impacts of climate change, identify resiliency gaps, and shape priority actions.

Unity of Effort. The Coast Guard is not alone in facing the challenges posed by climate change, nor can we understand, mitigate, and adapt to its impacts in isolation. Building national resilience requires robust cooperation across local, tribal, state, national, and international stakeholders in both the public and private sectors. The Coast Guard supports a balanced, whole-of-society approach to safeguarding communities, ensuring national security, and promoting economic prosperity. We will deepen our engagement with other armed services, federal departments, and agencies to ensure we apply the best available scientific information, support interagency solutions, and align Coast Guard priorities with national and international goals.

The Coast Guard has consistently supported research alongside longstanding intergovernmental partners, from working with the National Oceanic and Atmospheric Administration (NOAA) to map the Arctic seafloor to enabling the National Science Foundation (NSF) in the resupply mission of McMurdo Station, a key U.S. research station. The Coast Guard also enables effective management of marine natural resources across the U.S. Exclusive Economic Zone (EEZ) by supporting NOAA to enforce regulations that manage sustainable fisheries and protect marine sanctuaries, endangered fish, and marine mammals. The Service will continue to leverage these key partnerships and endeavor to strengthen domestic and international relationships with industry, academia, non-governmental organizations, and coastal and inland river communities to synthesize knowledge and share approaches for addressing climate challenges.

Innovation. Innovation is key to reducing greenhouse gas emissions and energy dependence. As a service that fosters a culture of continuous learning, the Coast Guard will work to keep pace with climate innovation, tolerate appropriate risk for experimentation, and adapt to advances in climate-related policy, workforce training, as well as contingency and exercise planning. The Coast Guard will integrate resilient design into the recapitalization of aging assets and facilities and the introduction of new capabilities and standards. As new fuel sources and options, as well as offshore energy developments, create an increasingly complex maritime domain, the Service will stay engaged with and sensibly regulate advancements in the maritime industry, adjust to an accelerated pace of progress, and adapt to emerging technologies.

GOAL

The Coast Guard will sustain mission success by understanding, adapting to, preparing for, and responding to the impacts of climate change.

We will focus on preparedness, resilience, and collaboration with partners and stakeholders to best position the Coast Guard for the challenges climate change presents to all of us.

LINES OF EFFORT

LOE 1: BUILD CLIMATE RESILIENCY INTO OUR WORKFORCE, INFRASTRUCTURE, AND ASSETS.

The effects of climate change require the Coast Guard to bolster our readiness, resiliency, and efficiency. We will train and educate our members on ways to integrate climate-informed decision-making into plans for repairs, recapitalizations, and construction of new infrastructure to ensure they can sustain extreme weather events. By putting people first in our investments, the Coast Guard will ensure our total workforce is prepared to operate in a future where climate impacts are more severe and frequent.

Priority Action 1: Synthesize research addressing the impacts of climate change to Coast Guard missions, assets, and personnel. Scientific research is essential to understanding where, when, and how changes in the physical environment will affect the Coast Guard. The Service will adapt how it plans operations, designs assets, and executes missions to account for climate change, leveraging both internal and external research to enhance our resiliency and mission effectiveness in a changing world. Our understanding of future challenges will be informed by research from the Department of Homeland Security's Science & Technology Directorate and partner Centers of Excellence; the Coast Guard Academy, the Coast Guard Research and Development Center, and other Centers of Expertise; and core intergovernmental partners including NOAA and NSF.

Priority Action 2: Conduct a comprehensive risk assessment of Coast Guard infrastructure and prioritize improvements to fortify high-risk facilities. Coast Guard facilities are increasingly vulnerable to extreme floods, fires, wind, and other climate-related risks. The Service recognizes that further analysis is needed; a comprehensive assessment will provide critical information to help prioritize Service-wide infrastructure improvements based on mission risk and criticality and assist with designing more resilient facilities.

Priority Action 3: Adopt enterprise-wide technologies and capabilities to enable onsite energy generation and enhance energy efficiency. The Coast Guard's first responder role, as well as our commitment to stewardship, drives us to need resilient facilities and systems to ensure mission continuity. As the largest landowner within DHS, the Coast Guard leads the Department in energy performance contracts, energy reduction projects, and onsite renewable energy systems at installations nationwide. The Coast Guard will continue investments in renewable energy and energy storage systems at our facilities. We will also pursue vehicle fleet electrification and build out infrastructure for vehicle charging. The Service's current goal is to achieve 50 percent electrification within ten years.

Priority Action 4: Train and retain a resilient, climate aware workforce. As the impacts of climate change increase demand for Coast Guard services, transform our operations, and alter where we are called to do them, our talent management must account for new realities. The Coast Guard will train and prepare a workforce that embraces its critical role in responding to and addressing climate impacts and understands how to incorporate climate change as a driver in strategic and operational planning.

LOE 2: PLAN FOR AND RESPOND TO MORE FREQUENT WEATHER EMERGENCIES AND LONG-TERM CLIMATE TRENDS.

The Coast Guard responded to fifteen “Type 1”¹ weather driven events between 2017-2021 compared with one (Superstorm Sandy) in the ten years prior. Coast Guard mission success hinges on anticipating, preparing for, and responding to changing climate conditions, and extreme weather events. At home and abroad, Coast Guard leadership on national, regional, and port level preparedness and planning empowers communities to test and improve their ability to confront a range of natural disasters. The Coast Guard’s network of partners and relationships provides a unique opportunity to build resilience across America’s maritime communities.

Priority Action 1: Improve response readiness by expanding incident management training and contingency planning activities. The Coast Guard will build workforce capacity by prioritizing incident command system qualifications and disaster response training. The Service will expand emergency management and contingency planning with federal, state, and local partners and assess risk and conduct exercises to improve preparedness.

Priority Action 2: Develop a surge staffing model across the total workforce (Active Duty, Reserve, Civilian, Auxiliary) to respond to more frequent emergency events. The Coast Guard has surged at least 2,000 people per year for the last five years to meet contingency demands. This, combined with increased severe weather incidents, poses serious implications for Service readiness. The Coast Guard will develop a more efficient and effective surge-staffing model that identifies members to respond to more frequent response events, including those that are climate-induced.

Priority Action 3: Prioritize the collection and distribution of information to support enhanced maritime domain awareness. More frequent extreme events necessitate an effective and accurate understanding of maritime activity. This understanding is particularly important in areas like the Arctic, as climate change continues to increase access. The Coast Guard will bolster information exchange with other federal entities, including NOAA, the National Aeronautics and Space Administration (NASA), and the Department of Defense, and continue to seek partnerships and information sources to increase maritime domain awareness.

Priority Action 4: Incorporate climate forecasts and information into contingency and strategic planning. Climate change will further degrade aging infrastructure and influence shifts in population concentrations. These stressors will drive irregular migration, illegal fishing, transnational organized crime, and threats to port security, subsequently increasing demand for Coast Guard capabilities. The Service will use the latest climate trend forecasts to inform our strategies and plans to identify risk and enhance preparedness and mission effectiveness.

1 <https://emilms.fema.gov/IS2200/groups/45.html>

LOE 3: DEVELOP AND LEVERAGE PARTNERSHIPS TO ENHANCE, ENABLE, AND ENSURE MARITIME SAFETY.

The Coast Guard is a lead federal regulator of our Nation's waterways and plays a critical role in facilitating safe maritime operations. As the impacts of climate change drive mitigation and innovation in the maritime industry, the Coast Guard must balance stewardship, safety, and security to serve as a responsible regulator. From internal waters to the outer limits of the U.S. EEZ and beyond, the Coast Guard will support and enable both traditional and emerging waterways uses and stakeholders to facilitate a safe and resilient maritime environment.

Priority Action 1: Facilitate and enable industry innovation in response to the quickening pace of change. Reduced carbon fuels, offshore wind, port infrastructure modernization, and emerging technologies are all poised to change the Marine Transportation System (MTS). These innovations will revolutionize how the system, and the maritime industry, operates--presenting the Service with new regulatory, legal, and operational challenges. The Coast Guard will enable the transition of the maritime industry by identifying and addressing regulatory obstacles and ensuring the safety of new technologies and practices.

Priority Action 2: Expand collaborative planning to enable safe operations in an increasingly complex system. The Coast Guard will use mechanisms like Area Committees, Harbor Safety Committees, Port Security Committees, and Area Maritime Security Committees to improve planning among maritime stakeholders. As new technologies and industries come online, the Coast Guard will continue to protect the safe navigation and traditional uses of the maritime domain. The Service will also continue to partner with federal, state, and local agencies and stakeholders to support the adoption of clean energy generation along the U.S. coastline and mitigate risks posed to Coast Guard and maritime operations.

Priority Action 3: Work with established forums and interagency partners to guide policies that shape international climate action. Climate change is a global challenge that requires engagement across the federal government and with partner nations. The Coast Guard will promote cooperation and coordination on climate policy issues and technology development. As a leader in the maritime domain, the Coast Guard will carry this cooperation into our longstanding engagements in international forums, including the International Maritime Organization and the Arctic Council.

Priority Action 4: Foster and leverage partnerships across government, public, and private stakeholders to build resilience in the maritime sector. Strong partnerships at all levels of government enable the Coast Guard to best address climate-induced risks and support sustained resilience in coastal and riverine communities that serve as vital economic engines of the MTS. The Coast Guard will integrate federal cooperation into local, tribal, territorial, and state governments and private sector partnerships through contingency planning, exercises, and regional coordinating mechanisms to facilitate a safe and resilient MTS.

IMPLEMENTATION

In order to implement the framework’s lines of effort, applicable Coast Guard programs are assigned ownership and responsibility for implementing priority actions. The below chart lists both lead and supporting offices associated with each priority action. Identified offices shall develop and execute plans for carrying out these actions, while also coordinating together, as needed, to align efforts.

LOE 1: Build climate resiliency into our workforce, infrastructure, and assets.		
Priority Actions	Lead Assistant Commandant	Supporting Offices
PRIORITY ACTION 1: Synthesize research addressing the impacts of climate change to Coast Guard missions, assets, and personnel.	CG-9/CG-7	CGA, CG-SPW, CG-926, RDC, CG-771
PRIORITY ACTION 2: Conduct a comprehensive risk assessment of Coast Guard infrastructure and prioritize improvements to fortify high-risk facilities.	CG-4	CG-43, CG-44, DOL-3, DOL-4, CG-8, SILC
PRIORITY ACTION 3: Adopt enterprise-wide technologies and capabilities to enable onsite energy generation and enhance energy efficiency.	CG-4	CG-926, CG-46, CG-6, CGA, RDC
PRIORITY ACTION 4: Train and retain a resilient, climate aware workforce.	CG-1	CGA, CG-7, FORCECOM, DCMS-DPR, CG-R, CG-PSC, CG-11, CG-12, CG-13, SILC

**LOE 2:
Plan for and respond to more frequent weather emergencies
and long-term climate trends.**

PRIORITY ACTION 1: Improve response readiness by expanding incident management training and contingency planning activities.	CG-5R	CG-5RI, FORCECOM, CG-7, CG-R
PRIORITY ACTION 2: Develop a surge staffing model across the total workforce (Active Duty, Reserve, Civilian, Auxiliary) to respond to more frequent emergency events.	CG-1	CG-PSC, CG-13, CG-12, CG-SPC, CG-R, DOL-1, CG-1B, CG-5R
PRIORITY ACTION 3: Prioritize the collection and distribution of information to support enhanced maritime domain awareness.	CG-2	ICC, CG-5R, CG-5P, CG-7
PRIORITY ACTION 4: Incorporate climate forecasts and information into contingency and strategic planning.	CG-5R	CG-5RI, DOL-4

**LOE 3:
Develop and leverage partnerships to enhance,
enable, and ensure maritime safety.**

PRIORITY ACTION 1: Facilitate and enable industry innovation in response to the quickening pace of change.	CG-5P	CG-5PS, CG-5PC, CG-5PW
PRIORITY ACTION 2: Expand collaborative planning to enable safe operations in an increasingly complex system.	CG-5P	CG-5PW, CG-5RI
PRIORITY ACTION 3: Work with established forums and interagency partners to guide policies that shape international climate action.	DCO-I	CG-5RE, CG-5RI, 5P
PRIORITY ACTION 4: Foster and leverage partnerships across government, public, and private stakeholders to build resilience in the maritime sector.	CG-5R	CG-5RI

CONCLUSION

The Coast Guard will only continue to be “*Semper Paratus*” by building our capacity for adaption, flexibility, and resiliency. The impacts of climate change will continue to challenge our missions, our members, our infrastructure, and the Nation we serve and protect. By leveraging strategic foresight, unity of effort, and innovation as we implement this framework, its lines of effort, and corresponding priority actions, the Coast Guard will ready itself to more effectively operate and adapt within a climate changed environment. In doing so, we will maximize Coast Guard readiness, model resilience, and ensure that we are Always Ready to meet mission demands.

APPENDIX

KEY TERMS

- **Climate Resilience:** The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from climate related disruptions, challenges, and risks through adaptability, innovation, and preparedness.²
- **Adaptation:** Adjustment of natural or human systems to a new or changing environment . These actions are generally taken to reduce risk to people or communities.³
- **Mitigation:** Reducing emissions of and stabilizing the levels of heat-trapping greenhouse gases in the atmosphere.⁴

2) https://www.dhs.gov/sites/default/files/publications/mgmt/environmental-management/mgmt-dir_023-03-climate-resilience.pdf

3) https://www.dhs.gov/sites/default/files/publications/mgmt/environmental-management/mgmt-dir_023-03-climate-resilience.pdf

4) <https://climate.nasa.gov/solutions/adaptation-mitigation/>



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