WRITTEN TESTIMONY OF
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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

HEARING ON
BUILDING THE FLEETS OF THE FUTURE: COAST GUARD AND NOAA FLEET RECAPITALIZATION

BEFORE THE
SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES, AND COAST GUARD

October 11, 2018

Introduction

Good morning Chairman Sullivan, Ranking Member Baldwin, and Members of the Subcommittee. My name is Rear Admiral Michael Silah, and I am the Director of the Office of Marine and Aviation Operations (OMAO) and Director of the NOAA Commissioned Corps at the National Oceanic and Atmospheric Administration (NOAA), within the Department of Commerce. Thank you for inviting me to testify today on our work providing environmental intelligence gathering platforms for the nation. NOAA appreciates the opportunity to participate today along with our colleagues from the U.S. Coast Guard, Government Accountability Office, and Congressional Research Service.

For over two hundred years, NOAA and its predecessor organizations have provided foundational data, products, and services to support safe, efficient maritime commerce. Each day, nearly every American relies on the data, products, and services NOAA provides. These products and services include daily weather forecasts, navigational tools to support the country's nearly $4.6 trillion in economic activity generated by U.S. seaports, and assessments of the health of the nation's fisheries. Through our network of observations, models, forecasts, and assessments, we put environmental information into the hands of people who need it. Over the years, NOAA has made significant investments to ensure the agency can leverage new technologies to provide the best products and services possible. However, challenges to the agency's observational infrastructure still exist, especially for our aging research and survey ships.

Current Status

Currently, NOAA's fleet includes 16 research and survey ships. Every year, NOAA's ships conduct more than 100 missions for collection of data critical for nautical charts, fishery quotas,

exploration of America's 4.3 million square mile Exclusive Economic Zone, storm surge modeling, and weather forecasting. NOAA's line offices, other U.S. government agencies, communities, and businesses around the nation rely on these data to keep U.S. ports open to maritime commerce, understand changes to the planet, monitor the health of fish stocks, and plan for severe storm events.

The age of NOAA ships represents a continued and pressing concern. NOAA's aging vessels are increasingly unreliable and expensive to maintain. At the conclusion of Quarter 3 FY 2018, unscheduled maintenance on the NOAA fleet had cost $13.5 million and caused more than 425 lost operational days at sea. By the end of 2018, half of the NOAA ships in the NOAA fleet will have exceeded their design service life. Escalating unbudgeted costs and lost days at sea will undermine NOAA's ability to meet its missions, and could have the following impacts: significant degradation of mapping capabilities on the West Coast and in the United States Arctic, including the Pacific Ocean, Bering Sea, and Arctic Ocean; a substantial loss of hydrographic survey capability on the East Coast and the Caribbean; and a reduced ability to conduct fishery and marine mammal stock assessments, monument and sanctuary stewardship in the Central, Southern, and Western Pacific, and trawl-based stock assessments in the Gulf of Mexico.

The NOAA Fleet Plan

The *NOAA Fleet Plan* assesses NOAA's current and projected at-sea observational infrastructure needs in carrying out its mission of protecting lives and property. It evaluates the status of the fleet and the current and future capabilities required to meet NOAA's public safety, economic, and stewardship missions, and sets a plan of action. NOAA treats the *Fleet Plan* as a living document whose execution incorporates new information that impacts acquisition strategies and/or priorities. At a minimum, NOAA plans to reevaluate and revise the plan every five years.

To help formulate the plan, NOAA performed an internal assessment in 2012-2013 to refresh NOAA's mission requirements. The assessment determined that a different mix of ships and a push toward new observational technologies are needed to better fulfill NOAA's mission requirements.

In January 2016, NOAA established an Independent Review Team (IRT) of senior-level scientific and industry experts to assess recapitalization planning for the NOAA fleet, recommend measures required to address identified deficiencies, and identify ways to overcome organizational impediments. The IRT is now a Standing Review Board for OMAO and continues to advise NOAA on its fleet recapitalization efforts.

Towards this same objective, NOAA established an internal team of experts from across NOAA in May of 2016 to assess the NOAA fleet's current composition and capabilities, long-term

recapitalization planning, utilization of alternatives to the NOAA fleet (commercial contracting, Academic Research fleet, other public-funded vessels), current operational systems (crewing, scheduling), current maintenance practices, technology readiness and infusion (instrumentation and mechanical), and risk identification and planning. The efforts of this team produced the *NOAA Fleet Plan*, which outlined a comprehensive solution for long-term recapitalization of the NOAA fleet. The *NOAA Fleet Plan* was approved and published for distribution on October 31, 2016.

The *NOAA Fleet Plan* calls for the acquisition of new ships and at-sea data collection capabilities. NOAA's ships need to be adaptable and extensible to provide the infrastructure and capabilities necessary to meet mission requirements now and in the future. In contrast to the wide variety of vessel types that currently comprise the NOAA fleet, the future NOAA fleet will reduce the overall vessel types and focus on a core mission with secondary missions that make the best use of the vessels' capabilities. NOAA will leverage aspects of previous designs to the extent possible to meet multiple core mission requirements. Standardization is critical for efficient maintenance, sparing, upgrades and optimal crewing models. Each vessel type will incorporate the latest commercial technologies and will be able to accommodate new technologies as they become available. Across the fleet, core equipment types will be standardized as much as possible to reduce operation and maintenance costs as well as help to establish an effective reserve of spares to minimize ship down time. The final decision on ship retirements will be based on the material condition of the ships in concert with the alignment of mission capabilities of the ship and the fleet.

There are distinct considerations to evaluate in order to execute the recapitalization strategy. Efforts will be made throughout the process to leverage proven and existing design features from previous ship classes. This will not only help to create mission system standardization to meet multiple core mission requirements but also will help improve sparing and logistic support across the fleet. A stable budget profile is required for the sequencing of ship acquisitions and is critical to effective planning. Congress has appropriated approximately $75 million annually since 2016, providing continuity and stability in fleet planning and acquisition.

First, NOAA continues to proceed with the design and construction of two new NOAA general purpose oceanographic Class A vessels. These vessels will have primary capabilities to conduct oceanographic monitoring, research, and modeling activities and secondary capabilities for assessment and management of living marine resources and for charting and surveying activities. By utilizing the existing Navy Auxiliary General Oceanographic Research (AGOR) 27 specifications and adapting them to meet NOAA-specific requirements, NOAA will minimize the impact of lost fleet capacity and capability while leveraging government resources, saving years of time and millions of dollars. NOAA has entered into an agreement with the U.S. Navy to utilize their ship acquisition expertise in support of this effort.

Second, NOAA continues to conduct a requirements analysis and will proceed with concept designs for at least two Class B vessels. This class will have a primary capability to perform charting and surveying activities, with secondary capabilities for assessment and management of living marine resources and oceanographic monitoring, research, and modeling activities. Based on the extensive timeline needed for new construction acquisitions, it is critical to initiate the ship design and acquisition process as soon as possible.

Third, NOAA continues its requirements analysis and will proceed with concept designs of at least two multipurpose, low-endurance, shallow-draft, trawl-capable stock assessment Class C vessels. These specialized vessels will meet specific assessment and management of living marine resource requirements in coastal waters and the Gulf of Mexico.

Fourth, NOAA will proceed with initial requirements analysis and concept designs for the Class D vessels. These vessels would support the primary mission of assessment and management of living marine resources (trawl capable) with capabilities for secondary missions of charting and surveying, and oceanographic monitoring, research, and modeling.

Future Fleet and Vessel Procurement Status

The acquisition process is underway for the first two Class A ships. The NOAA AGOR Variant (NAV) is a 240-foot ship designed to commercial standards and capable of oceanographic science and data collection in coastal and deep ocean areas.

The NAV A vessels are being procured through an Interagency Agreement with the U.S. Navy as an assisted acquisition. The Program is currently conducting the Source Selection activities to support contract execution.

The vessels are expected to come on-line as existing assets are retired; minimizing or eliminating fleet capacity gaps is critical for data collection that feeds weather forecasts and fishery quotas, protects marine monuments, and maps our nation's Exclusive Economic Zone.

It is for these same reasons that NOAA has initiated early design and acquisition planning activities for Class B and C vessels. To the greatest extent practicable, we will seek to leverage common hull, machinery, and/or mission systems to gain economies during the acquisition process as well as to reduce life cycle and fleet management costs.

Partnerships

NOAA has decommissioned more ships in the last ten years than it has introduced. Since 2008, the NOAA fleet has decreased from 21 to 16 operational ships. There are capacity gaps and,

therefore, requirements that could not be met by the NOAA fleet. To the extent possible, NOAA has implemented mitigation strategies to minimize the requirements gaps, including: increased maintenance, increased use of charters, changes to ships working grounds, "piggyback projects", and introduction of new technology. Mitigation strategies are limited regionally, by capability requirements and availability, and by project requirements. Thus, these mitigations are largely maximized in current fleet operations.

NOAA continues to coordinate with its maritime partners to maximize days at sea productivity by assessing and incorporating government and commercially-driven technologies such as unmanned, autonomous, and remotely operated systems, as well as data analytics. These operational assessments have included unmanned operations from the Arctic to Antarctic as well as across NOAA's mission sets. Having a multi-mission, inter-operable, and coordinated federal oceanographic fleet with groundbreaking technologies will improve operational capacity at the federal level. NOAA is currently assessing the efficiency and effectiveness of meeting requirements through unmanned systems. We will use the results of this analysis to develop a comprehensive NOAA-wide plan that ensures it is using unmanned systems in a way that supports NOAA requirements in the most cost-effective manner.

Other Opportunities

The future NOAA fleet must be adaptable and extensible to provide the infrastructure and capabilities to evolve with future changes in technology and mission requirements. While it is impossible to predict all future advances in technology or changes in requirements, new ships must provide capabilities to allow for and support efficient operations, evolving requirements, and increasingly sophisticated technology.

Unmanned airborne and marine vehicles are enhancing ocean science at NOAA and extending the data collection capacity of the NOAA fleet. This includes autonomous underwater vehicles, tethered remotely operated vehicles, unmanned surface vehicles powered by wind, sun, and waves, and portable aerial systems launched from NOAA ships. In fiscal year 2018, NOAA invested $2 million to accelerate autonomous hydrographic mapping and autonomous sampling of ocean conditions towards operational maturity. NOAA is also incorporating unmanned systems requirements into the new ship designs. Future vessels will be able to operate multiple unmanned systems in tandem with on-board technologies, significantly expanding mission capacity and potentially reducing the cost per unit effort of these observations.

Every effort is being made to follow the process outlined in the *NOAA Fleet Plan* while taking advantage of arising opportunities that may facilitate the process. Based on the near term and pressing need to bring new ships online, NOAA is investigating the possibility of acquiring vessels from federal partners. NOAA is committed to an open and competitive process to carry out conversions, repairs, and new builds. The Miller Act waiver provided in the recently enacted

John S. McCain National Defense Authorization Act for 2019 will also provide much needed flexibility and open up more shipyards to work on the NOAA fleet.

Conclusion

NOAA plays a unique and important role in providing critical informational infrastructure to support safe, reliable, and efficient marine navigation and environmental intelligence gathering across the planet. Partnerships are integral to achieving success in this ever-evolving and challenging environment. There is more work to be done to facilitate ship acquisitions but NOAA is working to develop and apply new technologies and collect data in innovative ways to improve our products and services.

NOAA will continue to properly, efficiently, and effectively acquire new vessels while mitigating the challenges of an aging fleet and maintaining an inherently governmental capability to conduct NOAA critical missions.

Thank you again for the opportunity to testify today. I appreciate the Subcommittee's time and attention and look forward to answering your questions.