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Office of Coast Survey

STRATEGIC PLAN

FY2020-2024



Office of Coast Survey
National Oceanic and Atmospheric Administration



MESSAGE FROM THE DIRECTOR

The Office of Coast Survey is proud of its long history of service to the nation, providing nautical charts in support of safe navigation and U.S. economic and national security since 1807. Today, Coast Survey charts the seafloor, identifies hazards to navigation, maintains coastal models and data, and helps to maintain a healthy U.S. Marine Transportation System by responding to maritime emergencies. These efforts help to keep people and commerce moving through U.S. waters to support the nearly \$5.4 trillion in economic activity generated by U.S. seaports each year.

As the volume, value, and size of marine vessels in U.S. waters continues to grow, it is essential that Coast Survey resolves critical data gaps, and that we increase the accuracy and frequency of our surveys. Coast Survey envisions a world of Precision Navigation, where all mariners have easy and convenient access to enhanced, high-definition, and seamless digital charts updated with near-real-time information. Hydrographic offices around the world will be in a unique position to modernize services, adopt new S-100 based standards, and focus their efforts on the development of enhanced and innovative electronic navigational charts. Coast Survey's international reputation and leadership in these developments bring us significantly closer to realizing this vision of next generation marine transportation.



There is also growing national demand for ocean mapping data beyond the marine transportation sector. The United States Exclusive Economic Zone including U.S. coastal waters comprises over half of the sovereign U.S., however, only 43 percent is mapped. In other words, a significant portion of America is unexplored, unknown, and virtually unseen. It is a pivotal time in ocean mapping and while we continue our work to deliver real-time data and high-resolution bathymetry for ports and maintain nautical charts for the U.S. marine highway infrastructure, we are also working toward building a comprehensive and high-resolution bathymetric dataset of the unseen America.

Coast Survey will also play a key role in advancing NOAA's Blue Economy initiative by leveraging its data and mapping expertise to support other activities in U.S. waters such as offshore mineral and resource exploration, renewable energy development, coastal hazard planning, and the responsible management of our living marine resources, among many others. Ensuring the data acquired for navigation serves the broadest possible national interest, especially in underserved areas like the Great Lakes, the Arctic, and Pacific Islands and Territories, is a primary focus for Coast Survey's seafloor mapping acquisition efforts in the future.

The continued strength of Coast Survey's valued partners, its highly skilled and dedicated workforce, and its ability to fully leverage technology is key to achieving this substantial modernization effort. Coast Survey leads a coalition of U.S. federal offices that provide hydrographic and meteorological services working in close coordination to achieve shared mapping objectives. Coast Survey is also committed to being a learning organization and a model federal workplace to support its passionate and dedicated employees, and to maintain global leadership in scientific, geospatial, and technical expertise. These capabilities will be supported by the adoption of new IT systems such as cloud computing, expanded utilization of unmanned systems, and other emerging technologies to meet the opportunities and challenges over the next five years.

I look forward to working with our partners and employees as we implement this strategic plan and make great strides towards a safer and more efficient world of digital Precision Navigation.

Rear Admiral Shepard M. Smith
Director, Office of Coast Survey



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MISSION

Provide the nation with navigation services that support ocean-going commerce and coastal economies, keeps people safe and secure, and protects coastal environments.

VISION

The nation's economy is stronger, waters safer, and coasts more resilient.

TAGLINE

Navigate with confidence.

UNIQUE VALUE PROPOSITION

- 1. Safe navigation mandated authority and trusted source:* We are the only mandated U.S. government authority and source for providing U.S. coastal and Great Lakes charts and related information. As the government authority, we are accountable for the accuracy of our navigational charts.
- 2. National impacts:* Coast Survey's products are science and technology based, customer driven and contribute directly to safe and efficient navigation, economic uses of the oceans, and life along the coasts.
- 3. International role:* The Coast Survey director serves as the U.S. National Hydrographer and leads U.S. contributions toward setting global technical standards and policies.
- 4. National centralized data source:* Our extensive data is a unique national resource for ocean and coastal mapping (dating back to the 1800s) for multi-use applications.
- 5. National ocean and coastal mapping leadership:* We provide leadership for integrated ocean and coastal mapping activities for the nation.

STRATEGIC GOALS

Deliver world class digital navigation services to the maritime community.

Map U.S. waters to modern standards.

Sustain high performance of people and systems for mission success.



GOAL 1: Deliver world class digital navigation services to the maritime community

Coast Survey's commitment to delivering world class digital navigation services is essential to the safety and economic success of the maritime community, particularly as the volume, value, and size of commercial ships continues to grow. Successfully delivering these Precision Navigation services will require a redesign of the current chart suite, the development of new products, and more easily accessible dissemination systems. Notably, Coast Survey aims to establish a National Bathymetric Source database to feed the production of new high definition charts for priority ports and other multi-use requirements. An integrated cloud-based dissemination system will then enable users to access products and data in easily discoverable, interoperable, and user-friendly formats for use in navigation, research, or commercial purposes.



1.1 Build a second-generation electronic navigational chart (ENC) suite for U.S. waters.

1.1.1 Release 50% of the planned end-state ENC suite by the end of 2024.

1.1.2 Re-engineer the entire chart maintenance workflow, from data receipt to product publication, to improve the speed, quality, and consistency of chart products.

1.1.3 Establish the ENC as the priority product for U.S. national carriage requirements.

1.1.4 Transition NOAA's chart program to the next generation electronic chart standard (S-101).

1.2 Produce new Precision Navigation products for improved navigation safety, competitiveness, and capacity in commercial ports.

1.2.1 Ensure that operational ocean forecast systems (OFS) support Precision Navigation priority regions and ports.

1.2.2 Produce and operationalize high definition charts for priority Precision Navigation ports.

1.2.3 Establish a National Bathymetric Source database to feed nautical charts, S-102 products, coastal modeling, and multi-use requirements.

1.3 Expand the access and usability of navigation services and data.

1.3.1 Build and deploy an integrated marine navigation dissemination system.

1.3.2 Provide relevant, authoritative NOAA navigation data in interoperable, easily discoverable, and user-friendly open source and international formats.

1.3.3 Promote broad adoption of new services in navigation systems.

1.3.4 Digitally enable the U.S. Coast Pilot® to be compatible as overlays with ENCs including new S-100 formats and geotagged text.

1.3.5 Develop and provide authoritative theme layers in support of the Federal Geospatial Data Act.



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GOAL 2: Map U.S. waters to modern standards

Mapping the unseen America including the nation's seafloor, coasts, ports, harbors, and approaches is essential to Coast Survey's ability to provide accurate and reliable charts and models to support safe and efficient marine navigation. This mapping is also critical to other missions across NOAA and the federal government. As a result, Coast Survey is deeply committed to working in close collaboration with its federal partners to ensure that surveys are coordinated and conducted as efficiently as possible. This means sharing survey data, joint planning, and the elimination of chart discrepancies or data duplication, especially in underserved areas like the Great Lakes, the Arctic, and Pacific Islands and Territories. As an organization with a deep history and expertise in surveying, Coast Survey is in a unique position to lead these efforts and maximize value for both marine navigation and partner data needs.

Precision Navigation Ports

Precision Navigation ports are critical underkeel clearance, channels, and anchorage areas with less than 25% of underkeel clearance for deep draft ships. The maintenance of high confidence surveys in these areas enables our nation's commercial success and national security.



- 2.1 Lead a national coalition to double the rate of surveying in unmapped U.S. waters to increase coverage from 42% to 52%.
 - 2.1.1 Build on the existing coalition of ocean mapping programs (including Navy, National Geospatial-Intelligence Agency, U.S. Geological Survey, Bureau of Ocean Energy Management, National Marine Fisheries Service, NOAA Office of National Marine Sanctuaries, and NOAA Office of Ocean Exploration and Research) and leverage additional federal resources to increase the rate of mapping to 2% of all U.S. waters annually.
 - 2.1.2 Eliminate redundancy in survey efforts by aggressively pursuing both external and crowd source data to update nautical charts before planning new survey efforts.
 - 2.1.3 Increase the speed, quality, consistency, and transparency of external source data ingest to Coast Survey.
- 2.2 Maintain federal channels, anchorages, and fairways within high volume U.S. ports at Category – Zone of Confidence (CATZOC) A1. The CATZOC rating helps the mariner determine the accuracy, date, and extent of the bathymetry.
 - 2.2.1 Enable maximum use of U.S. Army Corps of Engineers and port authority surveys to improve their port's CATZOC rating.
- 2.3 Reduce the backlog of 10,000 chart discrepancies through hydrographic surveys and cartographic analysis.
 - 2.3.1 Resolve discrepancies and update charts in critical areas of the top 30 ports within one year of the report.
 - 2.3.2 Reduce the number of all chart discrepancies from a 50-year backlog to a 10-year backlog.

Allocation of survey effort - OCS will dedicate:

- 40% survey level of effort to increase the rate of mapping to 2% of all U.S. waters annually
- 40% survey level of effort to object detection surveys in ports
- 20% survey level of effort to reducing the number of chart discrepancies



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GOAL 3: Sustain high performance of people and systems for mission success

At the core of Coast Survey's ability to deliver world class digital navigation services and mapping the unseen America are the dedicated, passionate, and highly skilled men and women who give their all to Coast Survey and its mission every day. Coast Survey is committed to establishing a model federal workplace – a workplace that supports the training and development of its employees, a culture of diversity, inclusivity, and flexibility, and which attracts and retains world renown talent. Other mission underpinnings include the development and sustainment of Coast Survey's IT and fleet infrastructure, as well as the integration of new technologies into operations, such as unmanned systems and other emerging opportunities as they arise. As technology requirements change over time, Coast Survey will continue to leverage new and existing technology capabilities to meet mission objectives.



- 3.1 Be a model federal workplace as measured by the Federal Employee Viewpoint Survey.
 - 3.1.1 Cultivate an organizational culture that sets the federal standard for diversity, inclusivity, and flexibility.
 - 3.1.2 Promote training and development for sustained technical and professional expertise.
- 3.2 Lead the world in marine geospatial expertise.
 - 3.2.1 Influence interagency and international policies, standard setting and service bodies for charting, mapping, and oceanographic modeling.
 - 3.2.2 Sponsor post-graduate level educational programs in hydrographic and cartographic science in conjunction with leading universities.
- 3.3 Respond to changing customer needs.
 - 3.3.1 Consolidate and analyze user and stakeholder feedback to inform product and service improvements.
- 3.4 Develop and maintain critical infrastructure.
 - 3.4.1 Evolve IT infrastructure to support mission operations, cloud computing, and expanding mission demands.
 - 3.4.2 Support the hydrographic readiness and full utilization of NOAA ships, infrastructure, and onboard systems.
- 3.5 Integrate new and innovative technologies into mission priorities.
 - 3.5.1 Continually assess and incorporate new technologies, such as unmanned systems and cloud storage, through a guiding technology plan to enhance operational capacity and efficiency.
 - 3.5.2 Maintain a robust applied research and development program in partnership with leading institutions of higher education and focused on advancing technology in hydrographic, ocean mapping, oceanographic modeling, and cartographic sciences.

