



# Center For Operational Oceanographic Products and Services

Strategic Plan  
2010-2015

*TURNING OPERATIONAL OCEANOGRAPHIC DATA  
INTO MEANINGFUL INFORMATION  
FOR THE NATION*



# MESSAGE FROM THE DIRECTOR

NOAA's Center for Operational Oceanographic Products and Services (CO-OPS) has a rich history of providing accurate and reliable tide, water level and current information to the Nation. We stem from the Survey of the Coast established in 1807 by President Thomas Jefferson with roots of supporting maritime commerce.

With climate change impacts just beginning to be realized and understood, exponential growth projected for the Marine Transportation System, natural hazards a constant threat to our coasts, and the loss of essential coastal habitat, we are faced with new challenges and opportunities. We need to maintain and build upon our core expertise of over two centuries, while at the same time ensure that we continually adapt and remain relevant to the modern needs of society.

Our new business model relies on partnerships as a way of life. We are committed to providing the Nation with access to the best oceanographic information, products, and services possible. It is rare that a single organization can completely respond to an event or challenge successfully; true success demands the interaction of multiple parties working together and leveraging capabilities to achieve a common goal. We will pursue traditional and non-traditional partnerships throughout NOAA, with other Federal, state and local agencies, non-profit organizations, academia, and private industry, domestically and internationally.

We place great importance on providing our customers and partners with accurate, readily available, and meaningful products and services. It is, therefore, important that we engage in an active education and outreach campaign to ensure that the oceanographic information we provide is properly understood and applied. Furthermore, just as life evolves, the culture of our organization is adapting to changing societal

conditions to ensure that our products and services remain relevant. We are also consciously making use of technological advances to keep up with the fast pace of modern society and to ensure that our products and services are the highest quality.

The foundation of our organization is a tradition of dedicated employees. For two hundred years, we have served our Nation with pride and unique expertise. The CO-OPS of today continues this tradition of applying sound science and providing quality oceanographic products and services to help protect life, property, the environment, and maintain the economic vitality of the Nation. Our people have always been, and will continue to be, our greatest asset. In order to meet the increasing needs of our growing customer-base, we will expand our skill sets by developing a knowledgeable workforce with both traditional expertise and emerging skills in a range of disciplines as needed. We will also leverage capabilities with the private sector.



All of these endeavors will allow us to maintain and improve our center of expertise. We are committed to pursuing the highest standards of operational and organizational excellence. We are aggressively implementing an operating system which results in system reliability, excellence, and efficiency. In parallel, we have dedicated ourselves to the discipline and rigor of project management systems and processes in an effort to ensure optimal use of resources and organizational accountability.

I am pleased to present the Strategic Plan for CO-OPS, 2010-2015. This 5-year roadmap establishes goals and sets forth the necessary strategies to achieve our goals. The plan builds on the strengths of our current organization and partners, and sets markers and strategies for reaching new heights in the future. It takes advantage of anticipated opportunities and addresses potential threats to our mission success.

This plan was created with input from our employees, and with our customers and partners as centerpieces. We are committed to continuously improving our

performance and demonstrating value to NOAA, our customers, and the Nation. Our plan clearly articulates our commitment to being a customer-driven organization. We intend to use innovation and responsiveness to changing conditions as daily operatives. Lastly, by maintaining our core capabilities, working hand-in-hand with our partners, remaining disciplined in implementing our systems and processes, embracing new technologies, and investing in our employees, we will provide operational oceanographic information to the Nation for generations to come.

We look forward to working with our customers and partners to implement this plan, and invite you to read about our mission, vision, and strategic goals. As a companion to this document, the integrated CO- OPS Implementation Plan will contain specific metrics.

Handwritten signature of Michael Szabados.

*Michael Szabados, Director*

## *Introduction and Strategic Context*

CO-OPS is uniquely positioned to support all of NOAA's Mission Goals:

- Protect, Restore, and Manage the Use of Coastal and Ocean Resources Through an Ecosystem Approach to Management;
- Understand Climate Variability and Change to Enhance Society's Ability to Plan and Respond;
- Serve Society's Needs for Weather and Water Information; and
- Support the Nation's Commerce with Information for Safe, Efficient, and Environmentally Sound Transportation.

We are guided by the principles of science, service, and stewardship. CO-OPS is at the center of NOAA's vision for an informed society that uses a comprehensive understanding of the role of the oceans, coasts, and atmosphere in the global ecosystem to make the best social and economic decisions.

Our mission of collecting, analyzing, and communicating oceanographic information is as relevant today as it was 200 years ago. CO-OPS

combines a long legacy of history, reliability, and proven approaches to oceanographic measurement and analysis with innovative ideas to anticipate and respond to customer needs. We set standards for data collection, processing, and analysis. These national standards are based on sound science, good and long records, and accountability. We are an end-to-end organization that provides integrated products and services for many practical applications.



## Customer-Focus

Our 5-year strategic plan highlights our customers as the heart of our existence. Customer requirements drive the development and enhancement of our suite of products and services. There are many applications, both traditional and non-traditional, for our data and products. We recognize the interconnectivity between the different applications and user communities.

Climate change is at the forefront of society's concerns, including politicians, scientists, and the general public. It is our responsibility to provide accurate and meaningful information on sea level change and other data from our long-term oceanographic and meteorological measurements so that decision-makers can better understand the effects of climate change and plan accordingly. Our contribution to a National Climate Service can also include providing expertise to our partners in NOAA to better understand the ecosystem and societal impacts of sea level change.

We are in a time where natural hazards are on the rise whether they are hurricanes, tsunamis or harmful algal blooms. And at the same time, more pressures are being placed upon our coasts with an increasing population seeking to live near our coastal waters. Coastal resilience will be more and more essential for communities in order to better plan so that they are prepared to respond and recover more quickly from natural hazards. We must enhance our existing products and services,

and create and tailor new products to help communities become more resilient.

Where wetlands were once destroyed for anthropogenic uses, today they are being restored. We will support wetland restoration projects to ensure that they are effectively designed and monitored for long-term sustainability. Integrated Ecosystem Assessments are replacing single-species management and there is a recognized need for physical oceanographic data to fully understand the holistic nature of ecosystems. Our Information is an

essential part of the geospatial framework needed to conduct effective Marine Spatial Planning.

While these are all relatively new communities to CO-OPS, our traditional customer is the mariner. With the population consuming

more products imported by more and larger ships, the need to support safe and efficient navigation is paramount. We must also anticipate these customers' future needs and find additional ways to support them.

We must also be prepared to embark on new frontiers. With the global energy crisis and concerns about oil supply and costs, it is going to be essential for our Nation to explore renewable energy sources. Our contribution will include data products that support the determination of ideal locations to best leverage tidal and current energy. Nationally, homeland security concerns are a growing concern. With our experience in working with the maritime industry, it is our duty to lend our expertise toward helping to ensure that our Nation's waterways and ports are secure. For example, PORTS® data will be integrated with the U.S. Coast Guard's Automatic Identification System (AIS). Additionally, oceanographic information can be used to support counter-mine warfare in U.S. waters.

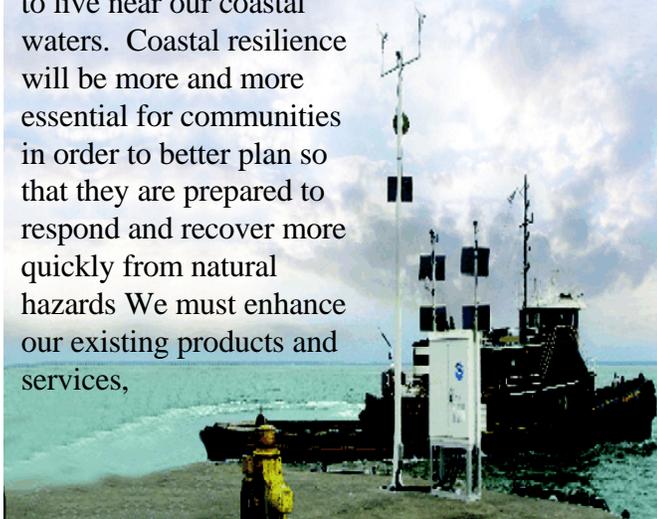
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***Based on studies done in the ports of Tampa Bay and Houston/Galveston, groundings have been reduced by 50% in ports where a NOAA PORTS® system is installed.***

*- Hauke Kite-Powell*

*Estimating Economic Benefits from NOAA PORTS® Information:*

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## *Partners at All Levels*

Working with our partners to accomplish our mission is a cross-cutting theme at the core of every CO-OPS strategy. These partnerships include teaming with our customers, NOAA and other Federal, state and local agencies, academia, private industry, and international partners.

## *Integrated System and Expanded Product Delivery*

It is our job to ensure that our products and services are readily accessible and meet the needs of our customers. We seek over the next five years to evolve our suite of products and services to become a fully integrated, end-to-end observing system which is linked to other appropriate observing systems. It is essential that our customers are fully enabled to use these enhanced products. We will leverage other technologies, systems, and partners to expand product quantity, local agency quality, and delivery mechanisms in order to meet a wider spectrum of customer needs.

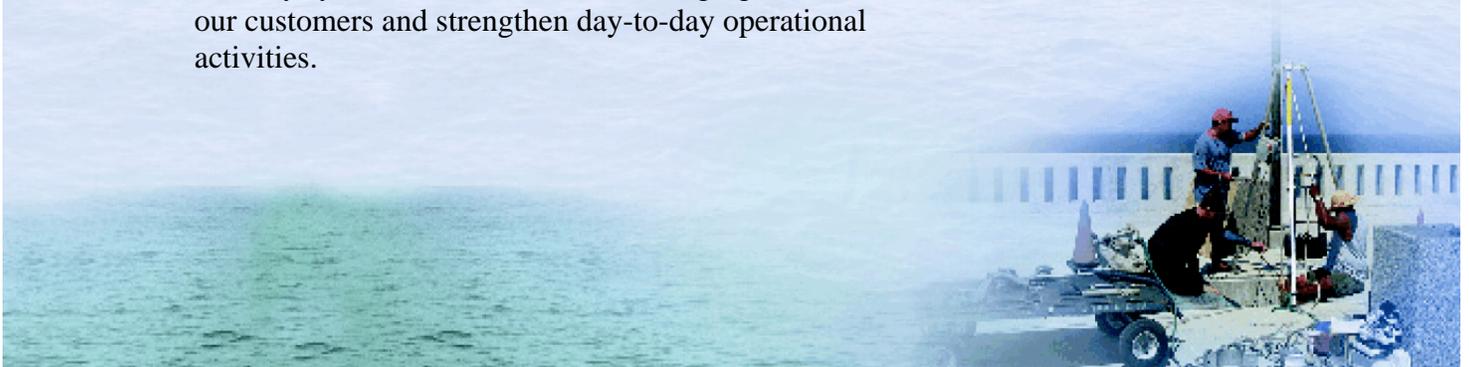
## *Products and Services*

By applying sound science methodologies, practices, and principles, we turn operational oceanographic data into meaningful products for the Nation. It is our job to share our expertise by translating data into relevant and usable information for all of our customers.

## *Organization and Infrastructure*

Nothing happens in CO-OPS without its greatest asset—the people. Our plan outlines a commitment to maintaining a core Federal capability, augmented by contractor teams. New skills for the future must be developed or acquired. Continuous training, retraining, and knowledge transfer are essential. Finally, our database, quality assurance procedures, and standards for performance and accountability all work together to ensure that we consistently deliver meaningful, high-quality products and services.

Our 5-year Strategic Plan is aggressive. We are committed to a new and improved end-to-end oceanographic product delivery system that will meet the emerging needs of our customers and strengthen day-to-day operational activities.



## **Mission**

*To serve as the authoritative source for accurate, reliable, and timely tide, water level, current, and other oceanographic information to support safe and efficient navigation, sound ecosystem stewardship, coastal hazards preparedness and response, and the understanding of climate change.*

## **Vision**

*Everyone has ready access to tide, water level, current, and other coastal oceanographic information needed for informed decision-making.*

## **Values**

**People:** *Our people and the pride we take in our workforce and in each person's contribution to the CO-OPS mission is central to our values.*

**Excellence:** *We are committed to excellence in our products and services which are produced through each person's preparedness and competence.*

**Service:** *Service and commitment to our customers keeps us focused on meeting the needs of our Nation.*

**Integrity:** *We seek truth and integrity in all that we do.*

**Communications:** *Open communications and the constructive and respectful exchange of ideas are essential to our collective success.*

**Adaptability:** *We are adaptable and responsive to a dynamic environment and committed to pushing the envelope of emerging technology.*

**Leadership:** *We believe in leading by example and seek to build leaders at all levels in CO-OPS.*

**One Team:** *Our solidarity leads to our success with an integration of unique expertise and working with unity across functional lines.*

# Partners and Customers

*In support of Navigation, Ecosystem Management, Climate, and Coastal Hazards, we work with the following partners and customers:*

- Ship Captains and Pilots
- Port Authorities
- Shipping Companies
- Recreational Communities
- Habitat Restoration Manager
- Coastal Managers
- Insurance Industry
- Admiralty Lawyers
- Coastal Engineers
- Coastal Communities



- Emergency Managers
- Public Health Officials
- Hydrographic/ Photogrammetric Surveyors
- Commercial Fishing
- Climate Scientists
- Academia
- IOOS Regional Associations
- NOAA and Other Federal, State and Local Agencies

# Products and Services

*We are dedicated to serving our customer communities by turning operational oceanographic data into meaningful and user-friendly information.*



*Marine Navigation & Safety*



*Wetlands Restoration & Monitoring*



*Coastal Management & Engineering*



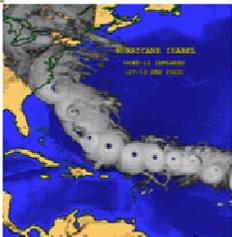
*Storm Surge Monitoring*



*Emergency & Hazardous Response*



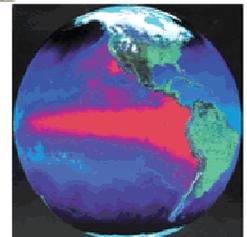
*Tsunami Warning*



*Marine Forecasting*



*Shoreline & Marine Boundaries*



*Sea Level Change & Variability*

# *Strategic Goals: 5-Year Strategies*

## **Customer-Focus**

**Adopt a customer-centered operating model which responds to emerging customer requirements, anticipates new challenges, and improves decision-making capabilities.**

## **Integrated System**

**Evolve the suite of CO-OPS products and services into a fully integrated, end-to-end system which is linked to other public, private, and academic observing systems.**

## **Products and Services**

**Turn operational oceanographic data into meaningful information for the Nation.**

## **Product Delivery**

**Expand and diversify product delivery mechanisms, and incorporate cutting-edge technologies to adapt to changing customer needs and expectations.**

## **Organization and Infrastructure**

**Align the organization's workforce, resources, and infrastructure to consistently deliver high-quality products and services.**

# Strategic Goals and Objectives

## CUSTOMER-FOCUS

*Adopt a customer-centered operating model which responds to emerging customer requirements, anticipates new challenges, and improves decision-making capabilities.*

We recognize that **the customer** is and should be at the center of all that we do. Specific product enhancements vary by customer community, but all improvements share in advancing mutual customer and NOAA mission goals.

Our products and services support the following applications:

- *Navigation*
- *Climate Monitoring*
- *Coastal Hazard Mitigation*
- *Ecosystem Management*

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**"The greatest safety concern...is the availability of timely, accurate, and reliable navigation information"**

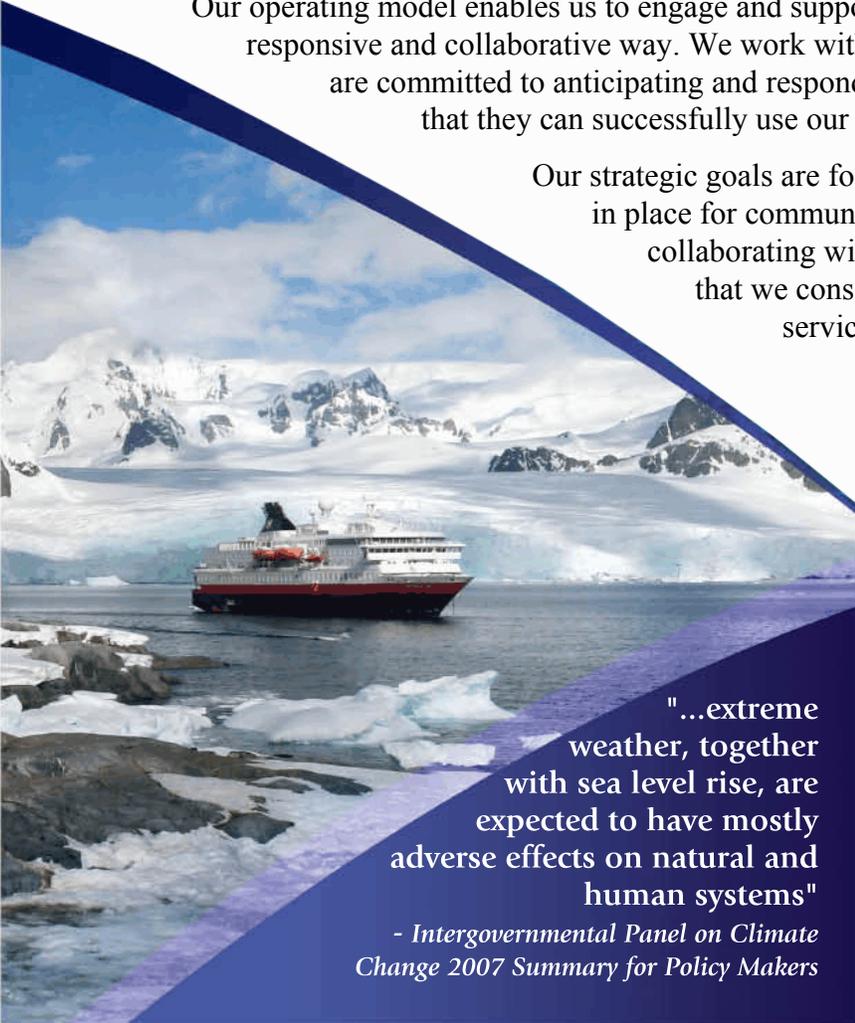
*- 1999 assessment of the U.S. Marine Transportation system - Report to Congress*

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Our operating model enables us to engage and support our customers in a highly responsive and collaborative way. We work with our partners at multiple levels. We are committed to anticipating and responding to customer needs, and ensuring that they can successfully use our products and services.

Our strategic goals are focused on having systems and processes in place for communicating, coordinating, and collaborating with customers and partners to ensure that we consistently provide excellent products and services. We work hand-in-hand with our partners to fulfill our mission. This symbiotic relationship with our partners is one that we are committed to nurture now and into the future.

- ◆ Advance a transparent and ongoing customer-centric system for collecting, understanding and addressing customer requirements.



**"...extreme weather, together with sea level rise, are expected to have mostly adverse effects on natural and human systems"**

*- Intergovernmental Panel on Climate Change 2007 Summary for Policy Makers*



*Tidal and land elevation information coupled with inundation, sea level, and seasonal analyses were used to redesign and reconstruct the Ft. McHenry wetlands and determine ideal planting zones for different vegetation.*

- ◆ Strengthen current partnerships and create new alliances to collaboratively meet customer needs with:
  - NOAA and other Federal, state, regional, local agencies
  - International organizations
  - Academia
  - Private industry
- ◆ Work with our NOAA partners to participate in planned needs assessments.

- ◆ Implement a comprehensive outreach and marketing campaign to educate our partners, and current and potential customers on our products and services. This campaign will also include formal and informal education efforts.
- ◆ Increase the use and impact of our products and services with:
  - Tailored training
  - Technology transfer, including technical guidance and advisory positions
  - Product and project demonstrations
  - Publications and presentations
- ◆ Explore new frontiers and potential opportunities, such as:
  - Climate change
  - Homeland security
  - Renewable energy
  - Emergency response
  - Insurance sector

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**"The [Ft. McHenry] wetlands have never been healthier."**

*- Glenn Page, Director of Conservation,  
National Aquarium In Baltimore  
April 2005*

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# INTEGRATED SYSTEM

*Evolve the suite of CO-OPS products and services into a fully integrated, end-to-end system which is linked to other public, private and academic observing systems.*

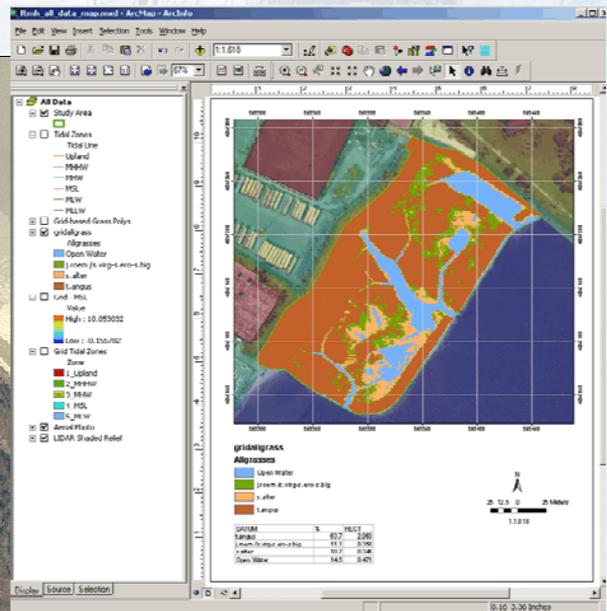
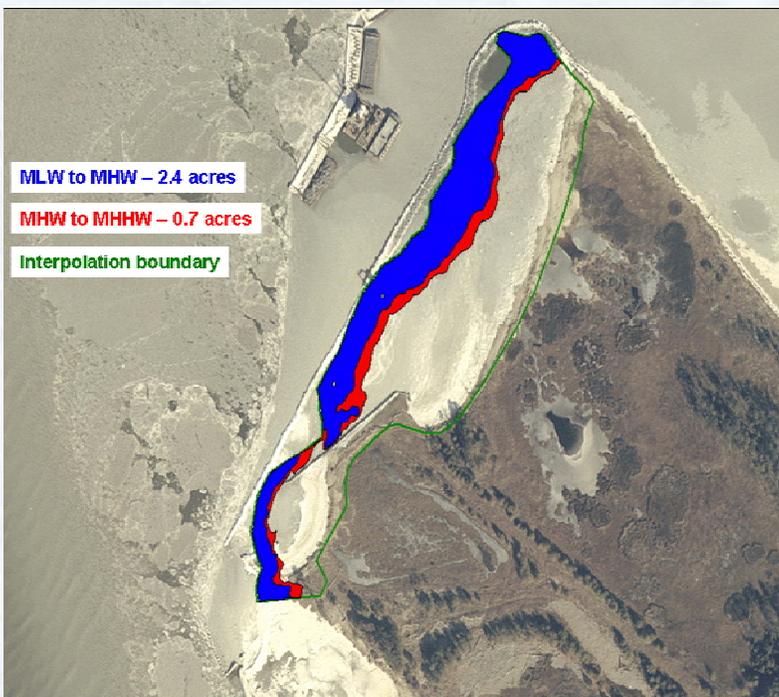
One of the greatest challenges facing both public and private organizations is integrating, analyzing, and applying data and information from multiple sources while ensuring data accuracy and integrity.

NOAA and its partners are working together to integrate oceanographic observation information on many scales. We have historically played and currently play a major role in contributing to the U.S. backbone of oceanographic information.

We are committed over the next five years to focusing on integrating our observing systems. This new integrated system will be expanded to include information from forecasts and additional parameters, as identified by our customers, and will continue to maintain the data integrity and product usability that our customers expect of us.

- ◆ Strengthen our contribution to the national backbone of the Integrated Ocean Observing System (IOOS) to facilitate the connection to other national and international observing systems.
- ◆ Conduct training and technology transfer to promote a uniform observing system and product suite with established standards.
- ◆ Leverage other observing systems' capabilities to incorporate additional data as well as new parameters (e.g., waves, water quality, rain, conductivity).
- ◆ Integrate and expand all of our observing systems (such as the National Water Level Observation Network (NWLON), National Currents Observation Network (NCON), and Physical Oceanographic Real-Time System (PORTS®)) into one system.
- ◆ Use customer requirements to produce an integrated, "one-stop source" of information available in multiple modes.

## *Marsh Analysis Planning Tool Integrating Tides and Elevation (MAPTITE)*



*Product develops planting zones used by restoration managers to determine ideal locations for different vegetation.*

# Products and Services

*Turn operational oceanographic data into meaningful information for the Nation.*

It is essential that our products and services are easily understood and used by all customers. We have a 200-year legacy of unique oceanographic and engineering expertise. By applying sound science methodologies, practices and principles, we translate oceanographic data into meaningful products usable by scientists and non-scientists alike.

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*“Coastal and marine ecosystems are intrinsically linked to planetary and biogeochemical cycles... the health and functioning of these ecosystems is critically important to the health of the planet as a whole.”*

*- From COASTAL, the Potential Consequences of Climate Variability and Change, NOAA Coastal Ocean Program Decision Analysis Series No. 21, October 2000*

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- ◆ Continue quality as a corner stone for every facet of CO-OPS product and service development and delivery. We will not compromise data integrity, quality, and accuracy.
- ◆ Translate tidal observations into sea level information and provide analysis tools in support of understanding climate change.
- ◆ Conduct collaborative oceanographic assessments and other tailored analyses to support a comprehensive understanding of our oceans and coasts.
- ◆ Create innovative new tools, enhance and integrate existing products and services.



- ◆ Provide real-time oceanographic and meteorological information for navigation, emergency management, and hazard mitigation.
- ◆ Perform frequency and duration of inundation analyses and seasonal variations from water level information in support of wetland restoration and ecosystem management.
- ◆ Support planning and regulatory processes required for utilization of tides, currents and other oceanographic processes being harnessed for energy generation.
- ◆ Provide geospatial foundation for Marine Spatial Planning.

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*“Accurate tidal information is absolutely critical for planning vessel transits. Maneuvering large commercial ships requires reliable tide and current predictions to ensure both vessel and environmental safety.”*

*- Capt. R. Scott Ireland  
Hudson River Pilots Association*

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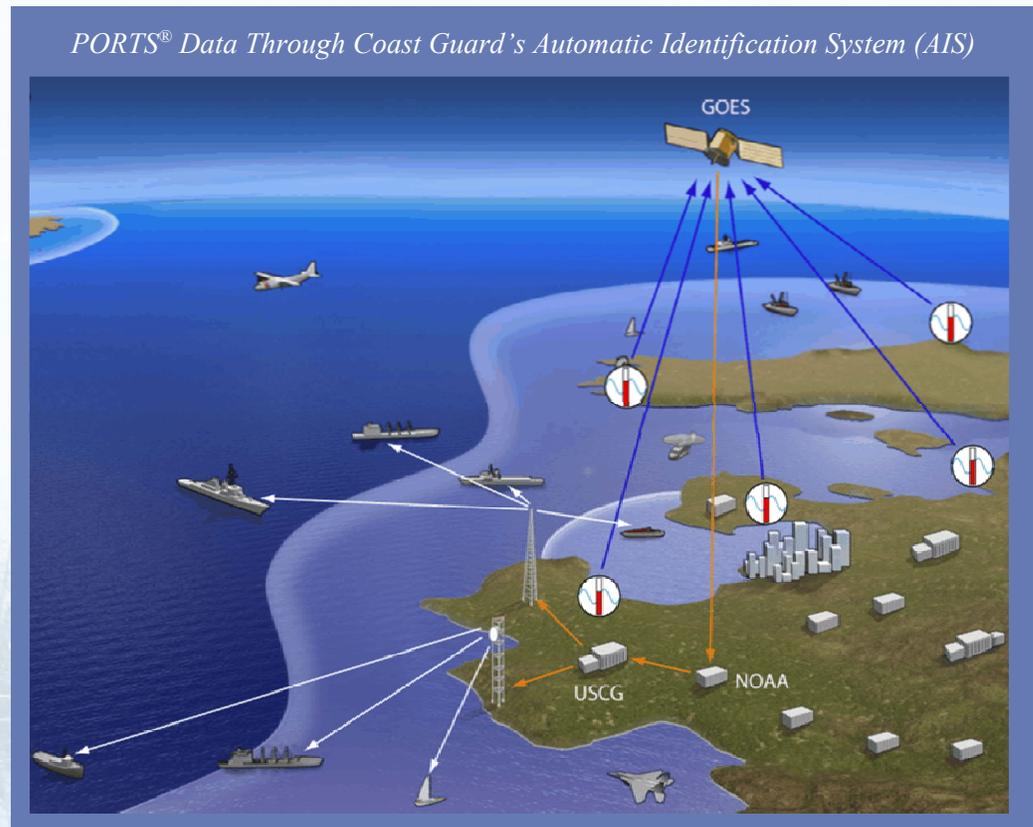
# Product Delivery

*Expand and diversify product delivery mechanisms, and incorporate cutting edge technologies to adapt to changing user needs and expectations.*

Along with a constantly changing global environment comes evolving customer needs and expectations. We are determined to keep pace with changing conditions and adapt our product delivery system to meet these changing needs. Through our formal requirements process, we understand, analyze, develop, test and implement expanded product delivery mechanisms.

Emerging needs must be fed into our internal operating system to ensure a timely and targeted response to new conditions. It is imperative that we leverage existing systems, technologies and partner innovations to offer diversified and efficient delivery mechanisms.

- ◆ Increase the amount, quality, and value of our products.
  - Increase the temporal and geographic coverage of information.
  - Improve the timeliness, accuracy, and reliability of information.
  - Expand the types of measurements and models.
  - Provide metadata and product guidance.
  - Increase data rescue, recovery, and archival efforts.



- ◆ Diversify our delivery mechanisms.
  - Make use of GIS technology for spatial data presentation and future information systems.
  - Utilize emerging communications devices and displays in line with trends (e.g., text messaging, PDA).
  - Explore new data visualization techniques.
  - Continuously improve the CO-OPS website to accommodate new products and requirements.
  - Provide the user with the capability to customize products.
- ◆ Leverage existing and new partners and programs to broaden the distribution of our oceanographic information.

# Organization and Infrastructure

*Align the organization's workforce, resources, and infrastructure to consistently deliver high-quality products and services.*

Our goals for the next five years are ambitious. The major foundation for our success is our infrastructure of people, systems, financial resources, technologies and processes. This infrastructure provides the “raw materials” from which we develop and implement our suite of products and services.

Our 200-year legacy derives from the expertise, dedication, professionalism and pride of our workforce. Today, our government and contract employees remain as committed to the CO-OPS mission as ever.

Our commitment is to enable and empower each employee to be the very best that they can be and produce products and services which exceed our customer expectations.

A significant portion of our 5-year strategic plan is devoted to putting strategies and actions in place which position us for success by having the right people, systems, processes, and tools to realize our customer-focused agenda.

## *Workforce*

- ◆ Maintain core competencies and expand or acquire skills and capabilities to meet evolving needs.
  - Implement a strategic workforce management and development plan.
  - Link organizational needs with employee development plans.
  - Promote diversity across all organizational levels.
  - Implement a comprehensive training program which emphasizes a team approach.
  - Maintain a 20-20 Program to foster continued Education.
- ◆ Attract and retain a high caliber workforce.
  - Promote equal opportunity.
  - Provide challenging and meaningful work.
  - Provide leadership opportunities.
  - Offer continued education opportunities.
  - Formally and informally recognize the contributions of individuals.
  - Provide state of the art technology, tools and facilities.
  - Create a healthy work environment with fair leadership, merit-based advancement that fosters an open exchange of ideas and is free of criticism and harassment.

## Workforce Management Plan

- Recruitment and retention
- Training
- Strategic staffing
- Career development
- Succession planning
- Knowledge transfer system
- Leadership development

- ◆ Create a flexible cross-trained workforce.
  - Formalize and promote participation in a CO-OPS rotational assignment program for internal and external opportunities.
  - Identify critical skill sets and ensure adequate depth is available to prevent single points of failure.
  - Strengthen cross-program team efforts to support an integrated product suite and service model.
  - Formalize management and leadership development programs.
  - Leverage formal leadership development programs for CO-OPS candidates.
  - Develop and implement a CO-OPS succession plan.

- Implement a multi-tiered mentoring system.
- Implement a system for knowledge transfer tied to the Reliable Operating System.



### *Infrastructure*

Re-engineer information systems for integrated database management, storage, quality control and archiving, and stay up-to-date with current technology.

- ◆ Stay up-to-date with current technology.
- ◆ Ensure continuity of operations (COOP) for critical services.
- ◆ Effectively transition technologies from research to operations.
  - Implement a continually updated technology infusion plan.
  - Support a collaborative test, evaluation and implementation program for new technologies.
  - Improve overall system reliability and accountability.
  - Demonstrate full Reliable Operating System compliance by adhering to day-to-day standards, protocols, and guidelines.
  - Consider ISO 9001 certification.
- Implement Capability Maturity Model Integration (CMMI).
- Adjust performance plans to align with mission and organization priorities.
- Maintain commitment to standardized project management and the corporate system for prioritization.
- Fully implement the use of Microsoft Project for planning and execution purposes.
- Implement common performance metrics across products and services.
- ◆ Modernize equipment and facilities to keep pace with the mission and evolving customer demands.

## *A Long-Term Commitment to National Public Service and Partnerships for Excellence*

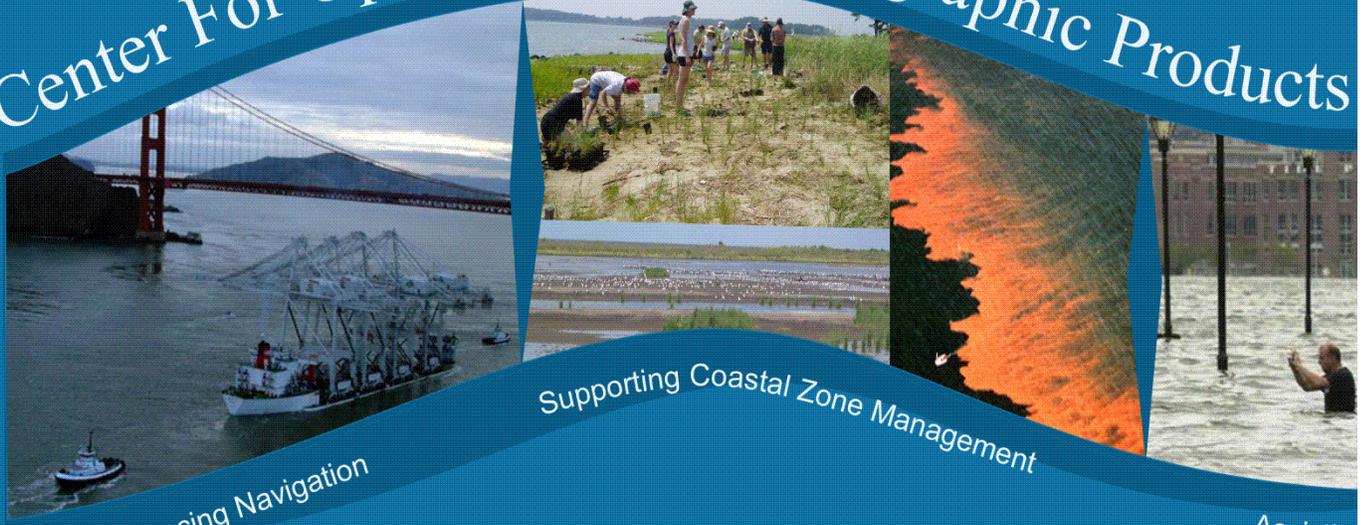
The CO-OPS Strategic Plan for 2010 – 2015 is comprised of five interlocking goals that cannot be achieved in isolation. We are committed to focusing and working across lines within CO-OPS, NOS, and NOAA and with internal and external partners and customers at all levels.

With the support of our Agency's leadership and our continued commitment to working with communities at all levels, we are confident that we will provide the Nation with the service required to thrive in a changing and challenging world.

By the end of 5 years, we are determined to reach higher levels of productivity and performance enabling us to match the expanding needs of the Nation.



# Center For Operational Oceanographic Products

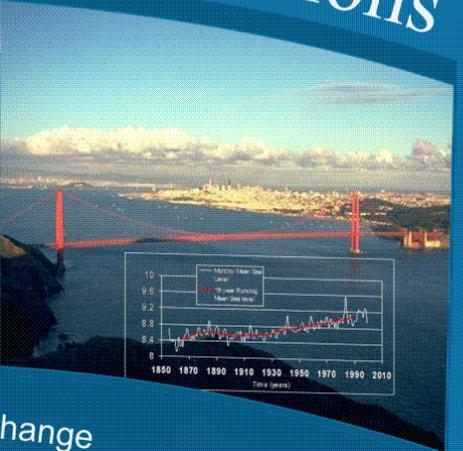
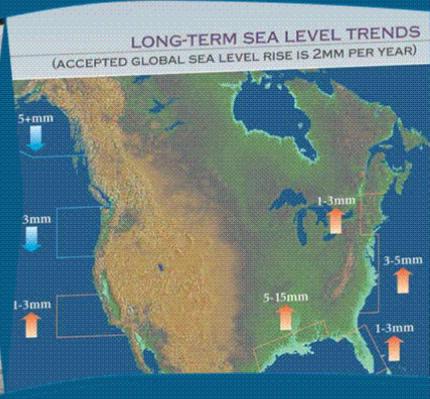
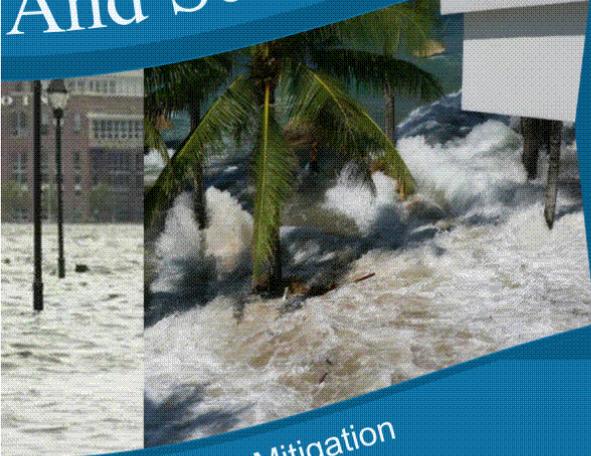


Enhancing Navigation

Supporting Coastal Zone Management

Assisting

# And Services Supporting NOAA's Missions



Monitoring Climate Change

Coastal Hazard Mitigation

<http://tidesandcurrents.noaa.gov>



U.S. Department of Commerce  
National Oceanic and Atmospheric Administration  
National Ocean Service

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