

Fostering Strong Coastal Program Stakeholder Engagement and Improving Data-to-Decision Making throughout Maryland's Coastal Environments



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Background and Introduction

Maryland's diverse coastal landscape – home to the Atlantic Ocean coast and two estuary systems in the Chesapeake and Atlantic Coastal Bays – is well characterized and has benefited from state and Coastal Zone Management Act (CZMA) investment in data collection and high levels of attention due to the Chesapeake's status as the nation's largest estuary. Maryland's vast shorelines and waters support local coastal economies that possess natural intrinsic values that draw people to the coast. The resource management challenges that the State and CMP face are as varied and vast as the people that use and enjoy these areas.

By 2030, population growth in Maryland will increase by more than half a million and the pressures placed on our coastal and ocean waters will expand as well. Overcoming the challenge of balancing resource conservation with allocation of space for existing and developing uses will increasingly rely on active engagement with many stakeholder groups. These resource management and multi-disciplinary discussions are currently guided by data collection and research conducted throughout the coastal zone. Due to a continually growing stakeholder base, additional focus is needed to translate these very data and research investments to an increasing variety of audiences and ensure that stakeholder feedback is incorporated into decision making in a predictable manner.

Through the State's FY 2011–2015 Coastal Management Program (CMP) CZMA Section 309 Comprehensive Ocean and Coastal Planning strategy, Maryland has undertaken work to enhance data and understanding about coastal resources, human uses of ocean and coastal waters, community vulnerabilities and water quality improvements in and around all three of these water bodies. The CMP has begun work to engage stakeholders and understand how the wide range of data and public input can be most effectively used in and applied to management and policy decisions. To date, this work has focused on offshore renewable wind energy; Mid-Atlantic regional ocean partnership collaborations; a 2012–2014 fellow's project addressing water quality, aquaculture siting and natural filters projects; and, to a more limited extent, State park uses.

These initial applications of data-to-decision making have revealed a need for continued focus on (1) how existing data is applied to a variety of resource, access and coastal economy decisions, (2) stakeholder engagement and (3) the manner in which data, resource priorities and stakeholder input are considered concurrently in decision-making processes. By not addressing these stakeholder engagement and data-to-decision making needs, CMP planning efforts may be hindered and result in less buy-in to final plans and investments.

A Coastal Fellow would have the opportunity to help develop a more comprehensive approach to the CMP's stakeholder engagement and improve data-to-decision¹ making translation. It is anticipated that a Fellow would play a primary role in shaping this work in multiple geographic coastal areas and for multiple applications. This fellowship project will serve as an implementable model for spatial planning stakeholder engagement and guide current and future data and research decision making related to a broad range of coastal management challenges in the state.



Goals and Objectives

This project has two overarching goals, each with three related objectives. They are defined as follows:

Goal 1: Ensure effective stakeholder engagement and improve the predictability with which stakeholder feedback is considered in decision making

Objective: Foster stakeholder engagement in CMP initiatives related to ocean and coastal planning. Primary focus areas will include resource conservation, public access, and coastal economies (e.g. offshore energy, shipping, working waterfronts). Develop approaches for stakeholder engagement that reflect the needs of individual sectors as well as management objectives.

¹ For the purposes of this proposal "data-to-decision making" includes spatial data, research data and stakeholder data.

Objective: In coordination with CMP staff, organize and lead stakeholder engagement on both a sector-by-sector basis and also in an inter-disciplinary manner. Increase and enhance these opportunities for both audiences that have been active in the past, but also for new groups, organizations or sectors.

Objective: Identify and develop applications, products and/or approaches for how stakeholder feedback is compiled and considered in state and developing regional coastal management initiatives. Promote practices that foster the predictability of this work and communicate these approaches to various groups.

Goal 2: Advance data-to-decision making and policy development approaches

Objective: Assess core data that the CMP has collected and/or assembled on its Coastal Atlas² data portal that reflects a “state of the coast” related to the Bay, Shorelines and Ocean. Work with CMP staff to identify the scope of decisions and policies that could be informed by existing and new information. Review how this data synchronizes with data on the Mid-Atlantic regional portal and make recommendations for how to address differences between state-specific and regional-level information.

Objective: Work with CMP staff and the Chesapeake Bay National Estuarine Research Reserve’s (CB-NERR) Research and Stewardship staff to review current and developing research efforts and priorities. Participate in project development efforts that improve translation of this information to a variety of audiences. Contribute to discussions of how to guide these efforts so that it informs specific management needs. Produce materials that translate data for a variety of audiences and applications.

Objective: Support the development and implementation of CMP practices and projects that reflect the application of this data-to-decision making approach.



Milestones and Outcomes

The following milestones and outcomes have been developed to provide a general timeline and outcome schedule for the coastal fellow project.

There are two main components of this project for a Fellow to pursue: a stakeholder-focused portion (indicated by a [S]) and one that addresses how data (stakeholder data, scientific data, etc.) is used in decision making (indicated by a [D]). These two components require different skill sets and can be adjusted to meet the matched fellowship candidate’s existing skill set, interests and/or skill sets that the individual would like to acquire either through training or direct “field” experience working with stakeholders or data. Based on the fellow’s skill set, training needs and meetings with project partners the milestones, the outcomes, anticipated completion dates and major focuses may be modified as the project develops. The fellow would be directly involved in guiding and making these adjustments.

Certain activities such as participating in and leading stakeholder meetings and data-to-decision making planning sessions may occur throughout the fellowship, the fellow will have the opportunity to work on these aspects of the project for the entire two years. The fellow will be able to develop long-term working relationships with a wide array of groups and industry professionals.

S – indicates a stakeholder-focused portion of the project

D – indicates a data-to-decision making focused portion of the project

August – September 2014

Begin Fellowship. Orientation at the Department of Natural Resources. Meet with the CMP and CB-NERR programs, regional ocean partners and other key partners. Complete orientation of

² <http://dnr.maryland.gov/ccs/coastalatlantlas/index.asp> and, <http://portal.midatlanticocean.org/portal/>

	current data and data portals. Review project description and goals.
September – December 2014	Fellow identifies key subject-matter focus areas based on CMP needs, personal interests and data availability. [S] Develop a work plan for stakeholder engagement for selected focus areas and begin to identify stakeholder groups and key sectors for each.
January – April 2015	[S] Work with CMP staff, project partners and others to define goals and develop and implement stakeholder engagement approaches. Identify policy and programmatic applications of stakeholder feedback. [D] Review existing data and conduct interviews of data collectors/creators and users to begin development of a “data-to-decision making” framework.
Summer – Fall 2015	[S] Work to compile stakeholder feedback and develop applications/products/approaches for consideration of this data in coastal management initiatives. Synthesize user-generated feedback and data. [D] Participate in field-based research projects with CMP partners, as interested, to gain an understanding of data collection and intended and appropriate applications. Present work at a national conference and participate in fellowship meeting.
September – December 2015	[S] Based on stakeholder engagement work to date, formalize practices that foster trust and transparency with users. Present framework for CMP stakeholder engagement. Guide and train other staff on these practices. [D] Compile core data-to-decision making recommendations.
January – March 2016	[S & D] Work with the CMP and CB-NERR programs to participate in annual program planning for grant applications. [D] Provide feedback about management and policy applications of research, data development and stakeholder engagement. Develop data communication and translation products.
April – July 2016	[D] Formulate final recommendations for to support the development and implementation of CMP practices and projects that reflect the application of data-to-decision making approaches. [S & D] Participate in and/or lead re-focused stakeholder engagement efforts and data collection efforts to review how newly-promoted policies and practices have affected government decision making.

Project Description

Overarching outcomes and skills and capacity building goals

The purpose of this fellowship project is to develop a more comprehensive approach to the CMP’s stakeholder engagement and improve data-to-decision³ making translation. While the primary focus of the project is on coastal and ocean resources and human uses, the project would allow for flexibility in subject-matter concentration depending on the strengths and professional development interests of the matched

³ For the purposes of this proposal “data-to-decision making” includes spatial data, research data and stakeholder data.

fellow candidate. Two previous successful fellowship projects looked at developing data to be used in specific, emerging management applications (land conservation and sea level rise; and spatial planning and water quality). This fellowship will build on these efforts and examine how stakeholder engagement may result in new types of data and information that need to be considered in decisions and will also broaden CMP consideration of how data can and should be applied to coastal management challenges.

It is expected that the Fellow will acquire skills in and a broader understanding of: stakeholder and citizen engagement; data-to-decision making applications; science communication and translation; synergies between research-based programs (e.g. CB-NERR) and resource-management programs (CMP); and, inter-governmental coastal management. It is anticipated that the impact of the Fellow's work on the CMP and Maryland's coastal resources will be: a more organized and predictable approach to stakeholder engagement on coastal management issues; inter-disciplinary support on spatial planning; greater clarity and focus on data applications in management decisions; and, improved guidance on future data and research investments.

Stakeholder engagement

Understanding and translating stakeholder feedback for incorporation into state or regional decision-making requires a thoughtful approach to stakeholder concerns, an appreciation of the subject matter and grasp of implications of management decisions. Various formal stakeholder groups exist in Maryland that provides feedback to DNR on a number of issues, regulations and programs. For Maryland's CMP, the need for and use of direct stakeholder engagement has grown since discussions related to offshore renewable wind energy development in 2010 raised the need to bring together multiple sectors to address coastal issues with inter-disciplinary implications. Maryland and the CMP have invested significantly in data collection and analysis, user-generated data, field work and community engagement to begin to meet this need. This project will build on these initial efforts to address resource and human use decision making in a predictable manner.

The Fellow will initially participate in and provide support to the CMP for ongoing stakeholder engagement and community partnership efforts related to offshore wind energy, working waterfronts and community resilience. Participation in these issue areas and efforts will provide the fellow with a broad introduction to different stakeholder groups and their primary interests throughout Maryland's coastal zone. In the first quarter of the fellowship it is expected that several additional issues will be gearing up that will provide the fellow with the opportunity to take a lead role in developing stakeholder engagement efforts. These issues may include regional ocean planning and public access in estuarine environments. As part of this portion of the project, work will be completed to develop and formalize stakeholder engagement approaches that engage individual sectors and that also bring multi-disciplinary groups together to address common issues. For each approach, the stakeholder engagement work would be tailored to ensure that the CMP increases its ability to learn about individual sector needs and preferences but also to seek to balance multiple uses and resource goals. The fellow would assist the CMP in fostering trust, transparency and predictability in decision making.

Data-to-decision making

More traditional, quantifiable types of data and information form the foundation of many spatial planning initiatives and play an important role in decision making. For this portion of the project, significant effort will be spent in reviewing core data that the CMP has collected and/or assembled that reflects a "state of the coast" on its state-based mapping portal, the Coastal Atlas, and in regional portals such as the one hosted by the Mid-Atlantic Regional Council on the Ocean (MARCO). The fellow will work to review data that covers three major topic areas covered by mapping portals: Estuaries, Oceans and Shorelines. Each of these portals houses a different suite of data brought together for various decision support and planning applications. Work will be completed to analyze and describe the scope of decisions and policies that the CMP is involved with that could be informed by current data.

Recognizing the decision-making changes that have arisen over the past few years that rely on data for decision making, the fellow will work with the CMP and other DNR staff to guide data acquisition and development efforts. Specifically, there has been a renewed focus in the State and region on networked partnerships and inter-governmental organizations that jointly address common objectives. The fellow will work with network, state and regional partners to understand the types of data and research that are contributing to decisions about these shared objectives. The fellow will develop products that effectively communicate and translate both data and research information to a variety of audiences. Recommendations will be made for the inclusion of this information in state decision making efforts. The fellow will work with CMP staff to implement some of these recommendations and realize integration of data into decision making and management applications.

Project Deliverables

A number of project deliverables are expected to result from this fellowship that are able to be tailored to the fellow's skill set and interests. They may include:

- Applications and/or formalized guidance for collecting stakeholder feedback from sector-specific or inter-disciplinary groups
 - Decision-support guide for CMP that outlines appropriate approaches
- Formalized stakeholder engagement framework and events
 - Planning, coordination and execution of stakeholder events
 - Synthesis summaries and communications to deploy data, findings and feedback
- Products and/or guidance about how the CMP compiles and considers feedback in state and developing regional coastal management initiatives
 - Guidance documents and/or web materials describing a feedback loop
- Recommendations for and examples of how the Maryland CMP should incorporate participatory- or stakeholder-derived data into data portals and decision-making processes alongside more traditional types of data and information
 - Stakeholder-derived data products
 - Written case studies for distribution/public consumption demonstrating incorporation of this information into decision-making processes
 - Stakeholder interview products or narratives
- Products that communicate and translate data and research for various audiences
 - High-quality data and research translation products that may include displays, infographics, webinars, public presentations or events, written materials or other interpretive products
 - Descriptive web content or use cases for the Coastal Atlas that provides examples of how data already has or is being used to inform decision-making
- Materials that highlight data applications in policy and/or planning applications
 - Data and research audit cross-referenced with policy and/or planning applications

The fellowship will provide an opportunity to network with numerous state stakeholders such as the state's Research Reserve program, other state agency representatives, non-governmental organizations and Federal and regional partners. The Fellow may work closely with staff whose specialties range from scientists and resource managers to planners and modelers – providing the Fellow an opportunity to consider how each of these groups generates, uses and applies data to different scenarios.

Fellow Mentoring

The Fellow will be a member of and represent the Maryland DNR CMP and Chesapeake and Coastal Service (CCS) Unit. Staff within this Unit have a variety of expertise related to coastal management, stakeholder engagement, research and policy development and can offer support and advice based on numerous years

of experience. CMP staff are currently engaged in a number of activities related to resource conservation and management; coastal hazard adaptation; restoration financing and policy; ecosystem restoration; spatial planning; and, data development and research. Working with CMP and other staff across the Unit will provide a variety of opportunities for professional development.

The Fellow will be co-mentored by Catherine McCall and Christopher Cortina. In addition, Gwynne Schultz, the CMP's Senior Coastal and Ocean Policy Advisor leading Maryland's participation in regional Ocean planning efforts, will provide significant guidance on Ocean spatial planning and stakeholder engagement aspects of this project.

The goals and objectives set forth in this proposal will require a fellow to take a team-based approach and work with a variety of people and staff with different backgrounds. The Fellow will work in a networked manner with staff from all thematic areas of the CMP and other CCS groups.

The Fellow will be encouraged to attend relevant meetings, conferences and workshops and receive training in facilitation, data communication and translation and coastal policies. This will allow the Fellow to gain a broad understanding of how coastal management is implemented at the state level, while keeping in mind that many issues cross multiple disciplines and require different types of solutions. The Fellow may become involved in activities which would further the professional development of the Fellow (e.g. special short-term coastal projects) depending on his/her interests and the progress of the project.

Project Partners

Through this project, the Fellow will have the opportunity to develop professional working relationships with a variety of groups and individuals currently engaged in spatial planning, stakeholder engagement, inter-governmental planning and resource management not only in Maryland but in the Mid-Atlantic region. In addition to CMP staff, the fellow will have the opportunity to work with other DNR groups including the Fisheries Service Unit, the Boating Services Unit, the Communications Office, the Maryland Geological Survey, the Habitat Restoration & Conservation Division and the Land Acquisition and Planning Unit. Other project partners will include MARCO partners – comprised of principally other state coastal program staff – and Regional Planning Body partners – comprised of state, federal and tribal representatives.

It is anticipated that in order to complete this project the Fellow may also work with other regional, state and local government programs; non-governmental organizations; and businesses, citizens and private organizations that may have a stake in various resource management decisions. These partners and stakeholders will play a role in shaping the outcomes of the Fellow's project.

Cost Share

The Maryland CMP will provide the Fellow with a work space complete with a personal computer, software and a telephone. The Fellow will be set up with a State ID to gain access to parking facilities and state buildings, a State e-mail account, and access to network data drives. The Fellow will also have access to a shared printer, office supplies, mailing, secretarial support, necessary training and resources that include a program laptop and projector and other specialty software for presentation and document design needs. The CMP will also commit some limited, additional travel and/or training funds for the Fellow above and beyond what will be provided through the fellowship.

The Chesapeake and Coastal Service Unit (within which the CMP is located) will provide the 2-year \$15,000 non-federal fellowship match.

Strategic Focus Areas

The proposed project addresses the “Vibrant and Sustainable Coastal Communities” and the “Healthy Coastal Ecosystems” strategic focus areas.

1. **Primary Focus Area.** Related to the “Vibrant and Sustainable Coastal Communities” strategic focus area, this fellowship project addresses the four following items:
 - Promote policies and practices that foster trust, transparency, predictability, and efficiency in government decision-making for coastal and ocean uses.
 - Assist coastal decision makers in conserving active and passive recreational uses and in preparing for existing and emerging coastal and ocean uses by providing socioeconomic data, information, visualizations, technical assistance, funding, and tools.
 - Build capacity of coastal states and communities to foster ecologically sustainable economic development and activities.
 - Understand, quantify, visualize, and communicate ecosystem services of key natural areas along the coasts to inform decision-making.

Through the fellow’s work in fostering strong and transparent stakeholder engagement practices for Maryland’s citizens, user groups, businesses and many others, the project will assist coastal decision makers in balancing multiple uses, coastal conservation and public resource enjoyment. The project will build the capacity of not only the CMP, but also the CB-NERR program and other CCS and Departmental staff engaged in coastal decisions that affect coastal industries and communities. The data communication and translation portion of this project will help the State and its stakeholders to understand the value of key natural areas along Maryland’s coasts.

2. **Secondary Focus Area.** Related to the “Healthy Coastal Ecosystems” strategic focus area, this fellowship project addresses the following three items:
 - Build innovative natural and social science research capacity, products, and applications that reflect user-driven science, and synthesize, visualize, communicate, and transfer research results to strengthen policies and decisions, and effectively manage coastal and ocean resources.
 - Increase and enhance opportunities for the public, students, and teachers to experience, understand, and appreciate coastal resources and make informed environmental decisions.
 - Support coastal and ocean resource managers through cooperative funding, data, information, tools, training, technical assistance, analysis, and exchange of best practices to strengthen ecosystem policies, build capacity, and implement prioritized management efforts.

Through the fellow’s work developing a framework for stakeholder engagement, this project will improve the state’s use of user-generated data in decision-making. Through the actual work with stakeholder groups, this will result in increased opportunities for the public to understand coastal resources, the public’s perspective and how the state and region is using this information to make informed environmental and human use decisions for our coastal environments. Through the data-to-decision making portion of this project, the fellowship will build capacity for the CMP and state through a more informed analysis of data and information used in decision making processes. The ultimate result of this will be a greater capacity to plan for and implement decisions based on sound science.