

Massachusetts Ocean Partnership

Request for Qualifications

To

**Support Development of an
Integrated Statewide Ocean Data Network and To Provide Data Analysis**

Necessary

For

Integrated Multi-use Ocean Management in Massachusetts

June 13, 2008

Introduction

The Massachusetts Ocean Partnership (“MOP”) is seeking qualified consultants or teams of consultants (“Consultant”) to support development of an integrated statewide ocean data network in collaboration with existing Massachusetts and regional data management efforts and to provide data analysis in support of integrated ocean management planning in Massachusetts’ state waters. The objective of this project is to improve the integration and management of ocean data, research and monitoring. To accomplish this goal, MOP and the selected consultant will work with data providers to improve data accessibility, enhance interoperability, and advance baseline information to support the state’s planning efforts and the partners’ broader needs.

In collaboration with MOP, the Massachusetts Office of Coastal Zone Management (“CZM”) and the Massachusetts Office of Geographic and Environmental Information (“MassGIS”), the Consultant will work with participating data providers and the Data Network Working Group (“Working Group”) to: (1) identify data necessary for integrated ocean management and relevant to the stakeholders that comprise MOP, and make these data discoverable via metadata portals and other methods for immediate use by coastal resource managers, scientists and other user groups; (2) develop a process for serving data to the data network, considering individual data provider technical and resource constraints; and (3) conduct analyses of environmental and socioeconomic data to support the Commonwealth’s planning needs to meet the requirements of the Oceans Act and the objectives identified in the Partnership’s Strategic Plan, including developing economic and environmental models, decision support tools, and environmental indicators for integrated ocean management.

The data network will be built around the Massachusetts Ocean Resource Information System (“MORIS”), developed by CZM and MassGIS. MORIS is an online data mapping tool, built upon the open source mapping engine, GeoServer. MORIS pulls data from an ArcSDE database hosted by MassGIS and will utilize web mapping services (“WMS”) to dynamically integrate multiple on-line data sources into one or several map images. To aid discoverability and subsequent use, all MORIS data have XML-based, Federal Geographic Data Committee (“FGDC”) compliant metadata. The Consultant will work closely with CZM, MassGIS, and their programming consultant on any enhancements to MORIS functionality, interface, and architecture. MORIS is built upon MassGIS’s OLIVER (Online Data Viewer) which can be accessed at http://maps.massgis.state.ma.us/massgis_viewer/launch.jsp.

The Consultant will respond directly to the needs articulated by the Working Group composed of data managers and staff from Commonwealth agencies (CZM as lead), federal agencies, nonprofits, research institutions, and other organizations that collect and maintain coastal ocean data. The Working Group co-chairs, consisting of the MOP Science Program Manager and the CZM GIS/Spatial Data Unit lead, will be the primary point of contact for the Consultant and will convene the Working Group to provide access to participating and potential data providers and advise the Consultant on the technical issues associated with sharing data to the network.

Background

MOP is a recently established public-private partnership created to advance integrated multi-use ocean management in support of sustainable marine industries and ecosystem stewardship leading to resilient and productive ocean ecosystems in MA waters. Initiated in 2006 with support from the Gordon and Betty Moore Foundation, MOP partners – including government decision makers, marine-dependent industry, scientists, and conservation and education organizations – developed a Five Year Strategic Plan to foster collaborative problem solving on ocean management issues and develop information, tools and processes to improve the integration of science with ocean management. The partnership is now implementing the Strategic Plan, including its science program, with funding through 2010. For more information, please visit our website at www.mopf.org.

Development of a dynamic integrated statewide ocean data network is one of four objectives of MOP's science program, developed by a multidisciplinary group of science advisors from resource agencies, NGOs, and academic/research institutions. The program is currently being implemented to provide a scientific basis for integrated ocean management planning that serves a broad array of stakeholders. The partnership's vision for an integrated statewide ocean data network is one that:

- serves as a repository for environmental and socioeconomic/human use information on ecosystem processes, functions, services, and impacts;
- integrates existing data from a variety of sources to improve accessibility, facilitate use in management decision making, applied research and other analyses, and minimizes duplication of data gathering and creation;
- incorporates ongoing ocean observing and other monitoring data and updated socioeconomic and human use information to ensure a dynamic (rather than static) reflection of ocean and coastal systems;
- links with regional efforts; and
- provides a common, spatially explicit information system about the state's coastal ocean for use by managers, scientists, user groups, and other stakeholders including the general public.

Description of Work

The Consultant will support MOP's and the Commonwealth's efforts to develop an integrated statewide ocean data network that leverages state and regional efforts and existing MORIS technology. Specific tasks will be developed on an ongoing basis in conjunction with the various data network partners. The Working Group Co-Chairs (MOP and CZM) have developed a list of potential general services organized in three categories: (1) Data Inventory and Discoverability; (2) Data Integration and Interoperability; and (3) Data Analysis. Specific tasks within these categories may include:

1) Data Inventory and Discoverability

- Inventorying existing data sources, agency reports, and academic/research institution publications relevant to coastal ocean management

- Creating a Massachusetts Ocean Data Network portal on the NASA Global Change Master Directory (“GCMD”) web site
- Working with data providers to place metadata and links to data on the GCMD site
- Exploring other opportunities to improve metadata and data discoverability

2) Data Integration and Interoperability

- Working with data and information technology managers to identify institutional and technological barriers hindering data sharing efforts
- Assessing each data provider’s technical and resource needs for participating in the data network
- Developing standards, exchange templates, and processes for serving data to the data network while taking into consideration the various technical and resource capacities of participating data providers
- Providing technical support to data providers to serve data to the network
- Developing and implement strategies to maintain and update data served to the network to ensure the network is dynamic to the extent possible
- Working with data providers to ensure datasets are correctly interpreted and displayed in MORIS
- Ensuring that all data come with robust FGDC compliant metadata records
- Integrating and coordinating the data network with local and regional data management efforts and real time observation systems, including the Gulf of Maine Ocean Data Partnership, Gulf of Maine Census for Marine Life, Gulf of Maine Ocean Observing System (“GOMOOS”), and Northeastern Regional Association of Coastal Observing Systems (“NERACOOS”)
- Coordinating with CZM, MassGIS and their consultants to identify enhancements to MORIS related to functionality, interface, and data network architecture that consider a full range of likely users
- Developing a needs assessment for the next phase of data network development, including a plan to maintain the data network beyond December 2010
- Providing ongoing technical assistance to data network partners

3) Data Analysis

- Integrating and synthesizing socioeconomic and environmental data for immediate use in decision-making and for ocean management plan development
- Assisting MOP in conceptualizing and implementing technical strategies and action steps to link the data network to the development of ecosystem and economic modeling and decision support tools, scenario and tradeoff analyses, and monitoring of environmental indicators necessary to support integrated ocean management planning

The Consultant will also be expected to assist the MOP Science Program Manager and CZM in obtaining commitments from data providers to participate in the integrated ocean data network, identifying priority datasets, and presenting to potential user groups and data partners.

Qualifications, Skills and Expertise

MOP seeks a Consultant with the range of skills and proven experience necessary to identify, integrate, and interpret coastal ocean data. The Consultant must be able to work in a flexible, changing environment, and understand the various data network uses and potential user groups. The Consultant's skill set should include the following expertise:

- Direct knowledge of the various Massachusetts coastal and ocean data providers and their datasets, including state and federal agencies, academic and research institutions, and trade organizations
- Successful experience working with the various static and web-enabled spatial data formats, flat and relational database technologies, and proprietary and open source products, including but not limited to the suite of current ESRI GIS tools and most common commercial databases
- Ability to immediately implement the chosen methods for sharing and serving data, including but not limited to web mapping services ("WMS") and web feature services ("WFS")
- Working experience with the Open Geospatial Consortium ("OGC") consensus standards and Federal Geographic Data Committee ("FGDC") metadata standards
- Proficiency in a variety of programming languages
- Understanding of the details and experience working with Northeast and Gulf of Maine regional observing systems and related data integration and interoperability efforts
- Demonstrated ability and understanding of data portal design, user interface, and functionality for technical and nontechnical users
- Proven experience developing environmental, social, economic, and spatial data analyses for use in resource management planning and environmental and economic impact assessments
- Familiarity with the data and technology necessary to support economic and ecosystem modeling, decision support tool development, scenario and tradeoff analyses, and to communicate indicators of the ocean's capacity to provide ecosystem services
- Ability to collaborate effectively with a variety of interest groups

Terms

The Consultant will report directly to the MOP Science Program Manager, with the development and implementation of work orders and evaluation of deliverables coordinated closely with CZM and MassGIS. The Consultant will also interface with participating data network partners and their consultants. The selected Consultant will provide services through December 5, 2008 on a work order basis with the possibility of extending services through December 2009. The Consultant's fee will be negotiated at the time of selection and the contract will be administered through the University of Massachusetts Boston ("UMB") as fiscal sponsor of MOP.

Proposal Requirements

Respondents should submit a proposal to the MOP Science Program Manager for electronic receipt no later than 5pm on Friday July 11, 2008. Electronic submissions should be submitted as a single PDF and directed to Nicholas Napoli, MOP Science Program Manager at nnapoli@mopf.org. A copy of the full submission should be cc'd to: Robbin Peach, UMB Co-principal Investigator at robbin.peach@umb.edu.

Respondents should also submit one hard copy each, postmarked no later than July 11, to: Nicholas Napoli, Science Program Manager, MA Ocean Partnership, University of MA/Boston, Healey 10th Fl. 100 Morrissey Blvd., Boston, MA 02125 and to: Robbin Peach, University of MA/Boston, McCormack Graduate School of Policy Studies, 100 Morrissey Blvd., Boston, MA 02125.

At a minimum, all submittals must include:

1. A cover letter
2. A statement demonstrating the team's understanding of the project, indicating how the team meets the desired qualifications, skills and expertise
3. A description of the team's qualifications, including resumes for key personnel, summaries of successfully completed relevant projects and associated deliverables, and a description of each team member's role in those projects
4. A description of the team's structure with an organizational chart identifying the Principal Investigator, each team member's role, and the lead contact from each sub-consultant (if applicable)
5. A statement of availability and loaded daily or hourly rates including fringe and overhead through December 5, 2008 for each of the key personnel
6. A statement identifying matching resources (if any), including cash, in-kind services, and solid funding leads or similar projects currently under consideration for funding

Respondents are encouraged to identify which of the three categories the team would like to be considered for pre-qualification: (1) Data Inventory and Discoverability, (2) Data Integration and Interoperability and (3) Data Analysis. Respondents may seek to be considered for one or more of the work categories.

Proposal Review

A MOP Selection Committee will evaluate proposals based on the team's qualifications, understanding of the project, proven relevant experience, and cost effectiveness. When considered together, these criteria will provide the committee its basis to evaluate the overall value of each proposal with the aim of securing the most advantageous arrangement to meet the goals of the project. Selection of the preferred consultant is expected to be a two step process in which short-listed consultant teams will be asked to provide oral presentations to the MOP Selection Committee, after which the Committee will recommend a preferred consultant team for approval by MOP's Governing Board. The Committee may choose to forego oral presentations if a preferred candidate emerges based solely on the responses to this solicitation. MOP may pre-qualify more than one consultant or team of consultants through this process.

Consultant Briefing

A pre-bid conference will be held on Thursday, June 26, 2008, at 10:00am at the Healey Library, UMB campus. Minutes from the pre-bid conference will be distributed and posted on www.mopf.org within two business days following the pre-bid conference. Please contact Tricia Bonifacio at tbonifacio@mopf.org for further details.

MOP contact:

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