

TITLE PAGE

Proposed Title: Mid-Atlantic Coastal Ocean Observing Regional Association (MACOORA)

Type of Proposal: Regional Observation System Coordination

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MID-ATLANTIC COASTAL OCEAN OBSERVING REGIONAL ASSOCIATION (MACOORA)

I. Background

The span of the coastal ocean between Cape Cod and Cape Hatteras encompasses an expansive continental shelf area, large estuaries, and significant populations. Important resources are located, in both the shelf waters and the increasingly urbanized estuaries—Narragansett Bay, Long Island Sound, Hudson-Raritan River, Delaware Bay and Chesapeake Bay. Into these estuaries, the Connecticut, Hudson, Delaware, Susquehanna, Potomac and James Rivers drain inputs from a significant portion of the eastern United States. Shelf waters generally flowing along the coast from the Gulf of Maine to the south at Cape Hatteras experience the cascading inputs from each of these rivers and estuaries. In addition to the spatial complexities associated with shelf geometry—the long, wide ribbon of water punctuated by headlands, bays, shoals, and canyons—temporal variability is introduced by strong and sometimes episodic forces that constantly push and prod the Middle Atlantic Bight. The 2000 US Census data indicate that the MACOORA footprint encompasses about 23% of the nation’s population. Clearly MACOORA is tasked with uniting and coordinating one of the more, if not the most, complex geographic regions into a Regional Association.

Active Subregional observing systems have served portions of what has been traditionally called the Middle Atlantic Bight, some for over a decade. Despite the societal stake in both inshore and offshore waters, currently no structure exists to coordinate, integrate, and evolve these efforts into a Regional System capable of delivering valued and timely forecasts and analyses of conditions over this complex and connected system of stakeholders. The Mid

Atlantic Coastal Ocean Observing Regional Association (MACOORA)¹ has formed to build an integrated observing system covering the watershed, bays, estuaries, and open shelf waters of the Middle Atlantic Bight. MACOORA has chosen to begin organization into a regional entity by assembling representatives from commerce, navigation, state coastal environmental management/protection, homeland security and science communities to build a Coastal Ocean Observing System. The system will be capable of providing observations, analyses, interpretations, and forecasts to fill both regional and national needs and thereby, justify sustained investment. MACOORA spans the spectrum of interests, from data producers and data analysts, to producers of information (forecasts, analysis products) derived from these data, and finally to the end users of this information.

Organizations that analyze and interpret data, produce forecasts, and engage in outreach and education are crucial to the success of a Regional Association and its Coastal Ocean Observing System (COOS). Examples of such systems are the Regional Fisheries Application Center (RFAC), the Mid-Atlantic Center for Ocean Science and Education Excellence (COSEE), and the 9 Sea Grant Programs in the Mid-Atlantic Region. Some components of MACOORA, such as NOAA's National Data Buoy Center (NDBC), NOAA's Center for Operational Oceanographic Products and Services (CO-OPS), the Alliance for Coastal Technology (ACT), National Estuarine Research Reserve System (NERRS) and the U.S. Army Corps of Engineers Field Research Facility (FRF) represent a national perspective and market, but are active regional participants. The Alliance for Coastal Technologies is especially important, because it fosters the development and testing of sensors and other technologies crucial to meeting regional user needs. A summary of data producers and partners follows in Table 1.

¹ Formally known as the Mid-Atlantic Regional Association (MARA), but changed to include the coastal ocean observing descriptor in the title for clarification and consistency with other regional associations in the IOOS network.

Subregional Observing Systems	Education, Outreach, and Research Centers
<p>Martha's Vineyard Coastal Observatory Website: http://mvcodata.whoi.edu/cgi-bin/mvco/mvco.cgi</p> <p>Narragansett PORTS Website: http://www.uscg.mil/d1/units/msoprov/NBPORTS.html</p> <p>My Sound Website: http://www.mysound.uconn.edu/mys_links.html</p> <p>New York Harbor Observing System (NYHOS) Website: http://www.dl.stevens-tech.edu/davidson/soon.html</p> <p>New York/New Jersey PORTS Website: http://co-ops.nos.noaa.gov/nyports/nyports.html</p> <p>New Jersey Shelf Observing System (NJSOS) Website: http://www.thecoolroom.org/</p> <p>NERRS System Wide Monitoring Program (SWMP) Website: http://cdmo.baruch.sc.edu/home.html</p> <p>Weatherflow Website: http://www.iwindsurf.com/support.iws?topic=About+US</p> <p>Delaware Bay Observing System (DBOS) Website: http://newark.cms.udel.edu/~badiey/main.htm</p> <p>Delaware Bay PORTS Website: http://www.co-ops.nos.noaa.gov/dbports/dbports.html</p> <p>Chesapeake Bay Observing System (CBOS) Website: http://www.cbos.org/</p> <p>NASA/Goddard Space Flight Center Wallops Flight Facility Coastal Ocean Observation Laboratory (Wa-COOL) Website: http://osb.wff.nasa.gov/</p> <p>The US Army Corps of Engineers, Field Research Facility Website: http://frf.usace.army.mil</p>	<p>Mid-Atlantic Sea Grant Programs Website: http://www.mid-atlantic.seagrant.org/</p> <p>Mid-Atlantic Center for Ocean Science Education Excellence (MA-COSEE) Website: http://www.macosee.net/index.htm</p> <p>NOAA NOS CO-OPS Website: http://co-ops.nos.noaa.gov/</p> <p>NERRS Coastal Training Program Website: http://www.nerrs.noaa.gov/Training/</p>
Analysis and Forecasting Centers	Partners
<p>Regional Fisheries Application Center Website: http://rfac.smast.umassd.edu/</p> <p>Wave System Mapping for Ocean Observing Systems (JHUAPL) Website: http://www.jhuapl.edu/</p> <p>Alliance for Coastal Technologies Website: http://www.actonline.ws/</p> <p>National Estuarine Research Reserve System (NERRS) Website: http://nerrs.noaa.gov</p>	<p>National Data Buoy Center Website: http://www.ndbc.noaa.gov/</p> <p>Gulf of Maine Ocean Observing System (GoMOOS) Website: http://www.gomooos.org</p> <p>SouthEast Atlantic Coastal Ocean Regional Association (SEACOORA) Website: http://www.seacoora.org</p>

Table 1. MACOORA Data Producers and Partner Activities

The challenge to fully develop the potential of the Coastal Ocean Observing System in the Mid-Atlantic is met through the involvement a broad range of stakeholders—the private sector, including shippers, carriers, and port authorities, representatives of the oil and gas industry, the chemical industry, the fishing industry, consulting engineers, equipment developers, etc. as well as representatives of the public at-large. This engagement is recognized to be an incremental and time consuming one, as first the potential stakeholders must understand the value of their participation. To benefit from lessons learned in other regions, both upstream and downstream from the Middle Atlantic Bight, GoMOOS and SEACOORA have generously shared their experience and governance documents with MACOORA. Representatives of these

regional associations also regularly participate in MACOORA workshops to ensure coordination. To date MACOORA, through first year support, has begun a dialogue with each of sectors identified above, but this engagement is far from complete and represents an area of major focus for the next three years of proposed funding. Much more of the initial interaction is being done at the local level because the region is so large and diverse.

II. Benefits

Given the vast amount of effort, resources, skillful diplomatic compromises, and persistent patience that are required, what are the benefits of developing this Regional Association (RA)? From the many workshop discussions hosted by OceanUS and MACOORA, the answers are emerging. Specifically:

1. Regional coverage is required to answer user needs, even on Subregional scales. The Middle Atlantic Bight is strongly connected to the open ocean, to the adjacent Gulf of Maine and South Atlantic Bight, and to the bays and estuaries along its coast. Local perspectives and local forecast models achieve this connectivity through a coordinated regional effort. In turn, a Regional Association contributes to the functioning of adjacent Regional Observing Systems by helping to establish exchanges at the boundaries.
2. The task of achieving a Regional Coastal Ocean Observing System (COOS) is hard. A concerted, coordinated, and distributed effort is needed to meet this challenge. Combined expertise and division of labor lead to a capacity and capability to overcome impediments that have proved common to most Subregional systems.

3. Subregional Observing Systems, new or old, struggle with the “chicken-or-egg” problem, where products tailored to user needs lag efforts to establish basic observing system infrastructure. Without a mature infrastructure, nowcasts and forecasts are slow in coming.
4. A critical mass of data producers and end users are needed to achieve the threshold of sustainable support for both regional and Subregional systems. Regional Associations enhance the ability to cross this threshold.
5. Subregional system operators and managers benefit from sharing challenges and solutions to problems that are local, but common across the region.
6. Regional Associations foster standards and interoperability that enable efficient data exchange and storage, and convenient product development at scales ranging from local to super-regional.
7. A regional perspective appears to be the optimal scale to assemble a critical mass of participants but still retain definable and sustainable user themes.

As Regional Associations are forming around the U.S., end users have identified priorities that run the full spectrum from truly regional, such as Search and Rescue (SAR) operations and anadromous fisheries management, to local water quality issues such as nutrient loading and wastewater treatment dispersion. It is the intent of MACOORA to include local issues in its purview, while at the same time not usurping the role or market of its Subregional components. MACOORA will thus foster communication and coordination of members who face common interests shared across the region. To structure the MACOORA Task Force membership and to frame the initial foci of MACOORA, six user themes have been identified.

1. Fisheries

The success of regional fishery management depends to a considerable degree on understanding the factors that affect the abundance of fish stocks. While some fish stocks are local, many stocks, such as striped bass, American shad, and river herring are regional in the sense that they can migrate significant distances from their estuarine nurseries. Estimating fish stock abundances in such a context is a challenge. Recent research suggests that environmental variability influences catchability and hence the estimates of abundance.

Clearly there needs to be a way to incorporate observations of fish stocks in their environment ranging from sub-region to regional scales and on time scales that span recruitment time scales. The operation of a regional coastal ocean observing system will provide the test bed for combining the strengths of the different existing measurement approaches into a composite that enables more reliable fish stock abundance estimates. Because ocean environmental variability is a likely factor in the variability of fish stock recruitment and growth, the basic fisheries observation system must be integrated with the MACOORA regional ocean observation system that measures the physical, chemical, and biological environmental variability.

2. Search and Rescue (SAR)

Coast Guard Search and Rescue (SAR) has three major goals: (1) to minimize loss of life, personal injury, and property loss and damage, (2) to take the “search” out of search and rescue, and (3) to maintain world leadership in maritime search and rescue. Although SAR operations and response to spills of oil and chemicals in coastal waters in the US are two of the most widely cited uses for data and forecasts provided by coastal observing systems, the US Coast Guard (USCG) currently relies on a national system that is accessible through their regional district offices. However, the Coast Guard has developed, and through its R&D Center, continues to

improve a Computer Assisted Search Planning (CASP) system that is activated for all SAR cases outside the 30 fathom mark when the duration of the incident could exceed 24 hours. Critical inputs to the CASP system are surface current estimates, which can vary in both space and time. The Coast Guard R&D Center has evaluated Coastal Ocean Dynamics Applications Radar (CODAR) for SAR applications and found it to be a mature technology for measuring surface currents up to 200 km from shore. Results of the Coast Guard tests indicate that CODAR-derived surface currents are a “vast improvement” over the present operational methodology for determining drift in coastal regions. Academic and government research labs currently operate over 20 CODAR systems for scientific studies within the MACOORA footprint. As a regional association, MACOORA will provide a mechanism to coordinate and facilitate their operation to provide products to Coast Guard SAR users.

For oil and chemical spills, the USCG has primary responsibility for responding to the incident but relies on the NOAA/ Hazardous Materials Response Office in Seattle, Washington to provide support in spill transport and fate forecasting. In the more general crisis response arena, such as responding to terrorist incidents, explosions, fire, bombs, atmospheric releases of toxic materials, and nuclear fallout, the response would be directed by the USCG, Federal Emergency Management Agency (FEMA), or the Office of Homeland Security (OHS), depending on the location and scope of the event. MACOORA will need to provide data to USCG, NOAA/HAZMAT, and FEMA/DHS representatives, respectively.

3. Nearshore and Estuarine Water Quality and Natural Resource Management

All nine MACOORA states through their Departments of Natural Resources, Environment, and Coastal Management Programs as well as the EPA address local and Subregional environmental issues. Conversations with these agencies and reported experience

from the RA to our north (GoMOOS, 2003) have indicated that MACOORA can play an important role in helping Subregional Observing Systems provide information relevant to the management of these resources, enhancing (rather than competing with) the Subregional operations. In the *Lessons Learned* from GoMOOS, providing state agencies with information on transport and fate of introduced materials from wastewater treatment plants is an untapped market for observing systems.

4. Ports, Navigation, and Military Operations

Many of the MACOORA ports, harbors and estuaries contain Subregional Observing Systems and National Ocean Service PORTS systems operating side-by-side. In addition, the MACOORA region is replete with military bases and operations areas ranging from New London to Norfolk and Aberdeen Proving Ground to offshore test ranges. The Navy Underwater Warfare Center has large Test and Evaluation Ranges throughout the MACOORA region, and the Naval Air Command Patuxent River Naval Air Station operates the Atlantic Range, which extends from Chesapeake Bay, out to the 200-mile long Supersonic Test Range in the Middle Atlantic Bight. The Navy has expressed a strong interest in real-time observing systems that support both nearshore and offshore operations.

5. Education and Outreach

A Mid-Atlantic Coastal Ocean Observing System will also provide valuable data readily adaptable to a myriad of educational uses in both the formal and informal education settings. Such opportunities will extend information to burgeoning coastal populations on many relevant topics such as coastal hazards mitigation, conservation and restoration of coastal ecosystems, and issues of marine recreation and public health.

To facilitate the use of this rich data stream, MACOORA will work in partnership with the Sea Grant College (SG) Programs and Centers for Ocean Sciences Education Excellence (COSEE) in the region. Nine Sea Grant programs—extending from Massachusetts to Virginia—have agreed to support the MACOORA concept and will work on several levels to develop locally relevant, regionally coordinated efforts that build on the Sea Grant’s traditional strengths in outreach and education. Each state SG program shares a core mission of linking university-based expertise to users through outreach and education. A network of extension faculty, communicators and educators work in concert and form a tangible bridge to users that mirror those that MACOORA will engage.

The Centers for Ocean Education Excellence include six partners in states extending from Virginia to New York. A recent OceanUS workshop addressed how the COSEE partners can work to use IOOS information in their programs. MACOORA will work with the existing COSEE programs to promote the use of data and data products in the educational systems.

As part of its outreach strategy, MACOORA has engaged a diverse stakeholder base to build the RA, with a special emphasis on the industrial/commercial sector. With a region spanning nine states and five sub-regions, MACOORA opted to convene Subregional workshops to maximize stakeholder diversity and buy-in. To date, workshop participants have included representatives from 19 private sector entities, 11 federal agencies, 17 state/local agencies, 20 academic institutions, and 5 NGOs.

6. Energy Generation and Transport

Many power generation stations, whether conventional or nuclear, rely on the cooling waters of the bays and estuaries of the Middle Atlantic Bight. In addition to these facilities, wind-generating power stations are envisioned for offshore waters. Regardless of the mode of

generation, these installations would greatly benefit from real-time nowcasts and forecasts of both oceanographic and meteorological information. For example, improved sea breeze forecasts that depend on the land-sea temperature difference are now being used to improve electrical load forecasting for power companies that supply shore communities during the summer peak demand periods to minimize brown-outs and black-outs.

III. Data Management

It is envisioned that MACOORA will provide prospective users with information via data management and communications systems that conform to established national standards and protocols, including free and open access to data-- that are capable of 24/7/365 operations in real or near real-time as required by the user group; and that provide services, data and useful products delivered in a timely fashion. Such systems will be developed with the input from the respective users groups and MACOORA will serve as the regional coordinator for data management and communications with the data producers in the MACOORA footprint.

These data management and communication systems must be able to acquire, process, integrate, and present products that factor in sea surface height, wave height and direction, surface maps of currents, temperature and color, and water column currents, salinity, and temperature. They must also be capable of data assimilation into models that provide information products such as improved nearshore forecasts to minimize impacts of coastal erosion, open ocean circulation patterns, etc.; and they must be such that they store data and metadata from observing networks in formats that are relevant and useful to commercial users, regulators, researchers, educators, and the public at-large. MACOORA will need to work with its partners to ensure sufficient bandwidth for data communications and the required computing

power for atmospheric and oceanographic modeling. MACOORA will also need to work with its partners to address QA/QC needs prior to delivery of data and products to users.

The very complex and extensive challenges of data and product delivery are not underestimated. MACOORA will be ramping up its coordination capabilities only after there is an approved region-wide organization and governance structure clearly defining the roles and responsibilities of all involved partners and representatives of the six major user groups identified in this proposal. A data management person will be hired to be the point person for MACOORA coordination with Ocean.US and the entire DMAC enterprise. We anticipate that additional data managers from SURA and other COTS programs will supplement the IOOS funded manager we propose.

IV. Overarching Goal:

To build a regional coastal ocean observing system capability, commensurate with levels of sustained funding, that provides observations, analyses, interpretations, and forecasts addressing high priority needs for both the region and the nation.

To accomplish this goal, MACOORA must first formalize the organization and governance structure, taking into account the following guiding principles:

1. Subregional Observing Systems will be maintained, integrated, and gaps filled to attain Regional goals while preserving their local autonomy and market.
2. Data producers and users will together seek funding to support projects of mutual interest.
3. Wide participation by academic, industry, government, and end-user partners will be encouraged.

4. Mechanisms will be built in to ensure continuous improvement of information products through feedback from end users.
5. Provision will be made to ensure rapid incorporation of improved technologies for observation, analysis, data management, visualization, and communication.
6. Outreach and education efforts are essential elements; they, in turn, contribute to the necessary marketing and advertising elements that build public and user support for the system.
7. Data management procedures will be consistent with the standards promulgated by the Data Management Advisory Committee (DMAC) of OceanUS to ensure interoperability.

The data management function is also expected :

- (a) to connect the marine data and models with terrestrial data in water shed areas;
- (b) to demonstrate enhanced data products using data from the national backbone;
- (c) to provide technical assistance and system upgrades through the conduct of pilot projects.

V. Objectives

The objectives stated below assume an interim MACOORA organization and governance structure at the end of the current grant period. A series of workshops involving representatives of the six user themes, the Subregional observing systems operators, and the federal agencies operating within the MACOORA footprint have provided the venues for discussion of critical organizational issues leading to the interim governance structure.

The establishment of a MACOORA Central Office staffed by dedicated personnel is critical to the timely completion of the organizational process and the commencement of MACOORA operations. At present, individuals employed to carry out other full-time

responsibilities are handling the administrative coordination for MACOORA. Personnel dedicated to MACOORA are required to achieve its stated objectives and to make it a candidate for certification as a regional association. It is anticipated that the execution of the MACOORA mission will eventually require a staff complement that includes a Chief Operating Officer, a Chief Financial Officer, a Data Management Coordinator, a Natural Resource Economist, a Webmaster, an Education and Outreach Coordinator, and a Secretary. These individuals will be charged with the preparation and execution of a rolling MACOORA business plan, the writing of proposals/negotiation of contracts necessary to support MACOORA operations and activities, the service as the primary clearing house for all MACOORA activities, the hosting of regional meetings/workshops for relevant partners and users, the provision of a unified web presence, the facilitation of communication, the conduct of cost benefit-analyses in support of the MACOORA mission, the conduct of an outreach and education program, and the representation of MACOORA at national meetings.

Since MACOORA is in its infancy, full staffing as described in the previous paragraph is premature. However, full-time commitment by a Chief Operating Officer and part-time commitments of a Data Management Coordinator, a Webmaster, and Secretary are required to assure the timely formation of MACOORA. During this proposal period, the receipt and disbursement of funds will be handled through the University of Delaware financial offices. Legal services will be necessary to codify the organization and governance structure in year one; it is planned that these services will be acquired as needed on a negotiated fee basis. In years two and three, the operating costs are anticipated to remain essentially constant; the dollars allocated for legal costs in year one will be reprogrammed to support increasing MACOORA operating

costs, as the breadth of activities continues to grow. Hopefully, the NFRA office can provide legal assistance in the out years. Specific milestones for this 3-year period are as follows:

1. Establish and staff MACOORA administrative office. (YR 1)
2. Adopt and codify the MACOORA organizational/governance structure. (YR 1)
3. Revise, adopt, and execute MACOORA rolling business plan, moving toward eligibility for regional association certification. (YR 2)
4. Coordinate and integrate federal backbone and Subregional ocean observing systems activities within the MACOORA footprint. (YRs 2 & 3)
5. Facilitate communication and management of data streams from multiple sources. (YRs 2 & 3)
6. Plan and seek funding for regional pilot demonstration projects. (Each YR)
7. Coordinate education and outreach activities with Sea Grant offices and COSEE groups. (Each YR)
8. Support the development of IOOS nationally. (Each YR)

With the accomplishment of the above goals, MACOORA will have better positioned itself to interface with and complement the activities of the two regional associations to its north (GOMOOS) and south (SEACOORA) and to be a more capable contributor to the national IOOS network.

VI. Approach

The achievement of stated objectives will be facilitated by the preliminary MACOORA organizational structure outlined in the current grant proposal and shown in Figure 1 on the next page. The recently completed Subregional meetings generated significant input on this draft organizational structure. The comments will be compiled and distributed before the next region-

wide meeting in May 2005, facilitating the progress toward the definition and acceptance of the MACOORA governance structure.

For this proposal cycle, particular attention will be given to strengthening the diversity of interests on the Regional Association Board and with developing The Regional Operations

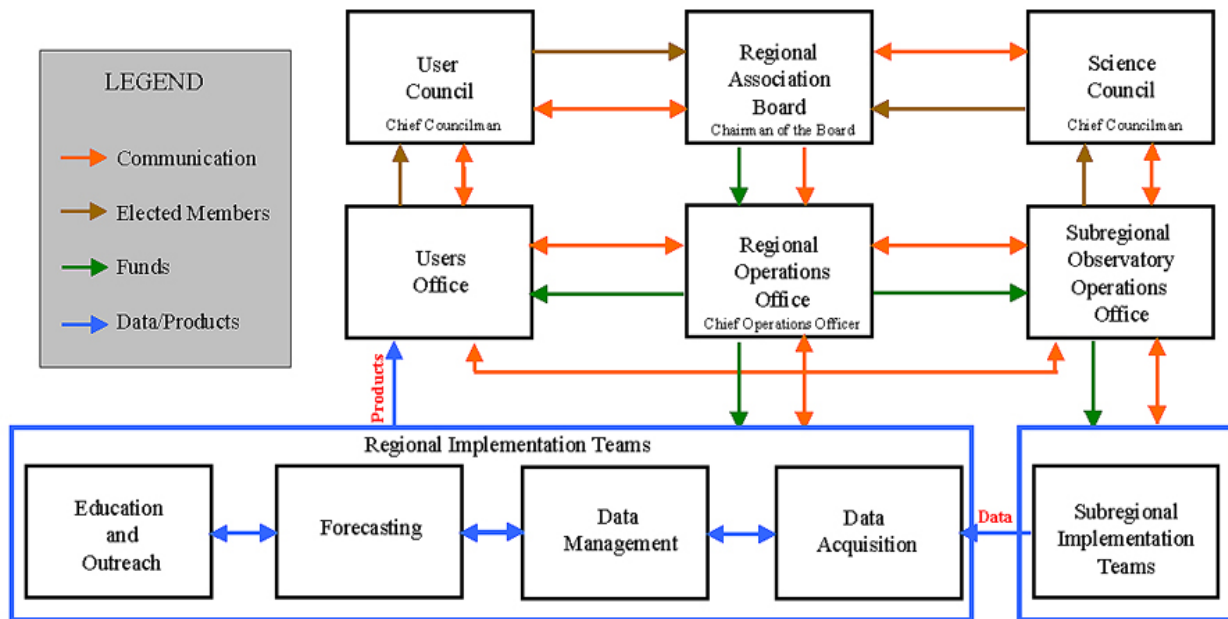


Figure 1. Preliminary MACOORA Organization/Governance Structure

Office and the User Council. The initial Organization/Governance Task Force has grown in size and breadth of affiliation. The overarching philosophy in the operation of the MACOORA Task Force is one of inclusiveness rather than exclusiveness. There is a strong belief among the MACOORA co-investigators that users must be involved from the outset and that the ultimate success of MACOORA rests on informed support and commitment from many different constituencies.

To ensure broad participation from within the inherently complex Mid-Atlantic region, with its nine states and five major ecosystems in addition to the coastal ocean of the Mid-Atlantic

Bight, the P.I. and Co-P.I.s have recruited Subregional coordinators to serve as a MACOORA Steering Committee. Dr. Carolyn Thoroughgood, Vice Provost for Research at the University of Delaware chairs the Steering Committee and the Subregional coordinators are:

South New England Bight: Dr. Wendell Brown and Dr. William Boicourt

Long Island Sound: Dr. Jim O'Donnell and Dr. Larry Swanson

New York Bight: Dr. Michael Bruno and Dr. Scott Glenn

Delaware Bay: Dr. Carolyn Thoroughgood and Dr. Scott Glenn

Chesapeake Bay: Dr. William Boicourt and Dr. Larry Atkinson

This subregional approach is being used to reach and engage as many interested parties in the MACOORA organizational process as possible. The networking skills of the Sea Grant Directors in all MACOORA states are also being tapped to bring their contacts with vested interests in the marine and coastal environments to the planning workshops.

The primary activities in this proposed effort include the establishment and staffing of the MACOORA administrative office, the provision of regular communications via an up-to-date website, the conduct of workshops and the formal legal review and approval of organizational and governance documents. The new Chief Operating Officer and the staff of the MACOORA Operations Office will be responsible for carrying out the day-to-day activities required for accomplishing the stated objectives. The Operations Office will report to the MACOORA Steering Committee until the MACOORA Board is formed. The diverse Task Force membership will continue to work through organization and governance issues until MACOORA becomes codified as an operating entity. It is then expected that members of the Task Force will be eventually distributed throughout the MACOORA organizational model.

During this proposal cycle, three plenary workshops are planned. During the first year of this three-year project period, the workshop will be devoted to finalizing and adopting the organization/governance structure documents. The second workshop held in the fall of 2006 will be devoted to defining the path toward interoperability among MACOORA partners and transparency for users, as well as selecting high priority pilot projects for MACOORA. The third workshop, held in the fall of 2007 will be devoted to an evaluation of MACOORA progress to date and responsiveness to stakeholders and major user communities. To maximize the efforts of workshop attendees and to ensure successful workshops, the MACOORA Steering Committee will provide prior planning, communication, and coordination and the MACOORA membership will be engaged in working groups to accomplish the agreed upon plans of work. The principal investigator and her staff will attend to workshop logistics and coordination with the assistance of the Co-principal investigators. Workshop reports will be assembled and delivered to participants shortly after each meeting. Between workshops, subgroups of the Task Force will be assigned to work on matters of interest to the MACOORA members and to further expand the reach and sphere of influence of MACOORA.

VII. Milestone Schedule

Year One

May, 2005	Anticipated start date
July, 2005	Staff the MACOORA administrative office as proposed
October, 2005	Workshop I: Organizational/Governance workshop
January, 2006	Official codification of MACOORA organization

Year Two

May, 2006	Start of second year funding
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October, 2006 Workshop II: Interoperability ;pilot project planning workshop

Year Three

May, 2007 Start of third year of funding and progress report on Year Two

October, 2006 Workshop III: Progress evaluation; stakeholder/user satisfaction

April, 2008 Project Final Report

VIII. Project Budget

Dr. Carolyn Thoroughgood is the Principal Investigator and Coordinator of the project; co-investigators Drs. William Boicourt, Scott Glenn, and Larry Atkinson, who bring the perspective and experience of Subregional Ocean observing system operators, will assist her. The salary budget provides for three-quarter time in Year 1 and full-time in Years 2 and 3 for a Chief Operating Officer and increasing time commitments over the three years for the Data management coordinator, Webmaster, and Secretary. Funds are requested in year 1 for a marine studies graduate student and in years 2 and 3 for a business and economics graduate student to assist with business plan development. Funds have been budgeted to support three workshops (1.5 days each). The budget has been designed to provide travel grants of up to \$200 per meeting for 50 workshop attendees; overnight accommodations will be provided for 75 attendees. Travel assistance will be provided on an as-need basis. A separate travel budget of \$3000 has been requested to cover business travel of the MACOORA dedicated staff. Legal fees are budgeted in Year 1 to cover costs associated with codification of MACOORA organization and governance documents. Support funds are requested for Data Management and Education and Outreach activities. Lastly, a conservative Supplies and Expenses request is made to cover general Regional Association administrative office operations.

Mid-Atlantic Coastal Ocean Observing System Regional Association (MACOORA)

Budget

Category	Year 01	Year 02	Year 03	Summary
Chief Operating Officer, 9.0 mm; 12.0 mm; 12.0 mm	\$75,000	\$100,000	\$104,000	
Data Management, 1.0 mm; 3.0 mm; 3.0 mm	\$5,000	\$15,600	\$16,224	
Webmaster, 1.5 mm; 6.0 mm; 9.0 mm	\$7,500	\$31,200	\$48,454	
Student, 12.0 mm; 12.0 mm; 12.0 mm	\$20,535	\$12,000	\$12,000	
Secretary, 2.0 mm; 3.0 mm; 3.0mm	\$5,000	\$7,800	\$8,112	
Total Salaries	\$113,035	\$166,600	\$188,790	
Fringe Benefits				
30.0% x \$87,500; 30.0% x \$146,800;	\$26,250	\$44,040	\$50,603	
30.0% x \$168,678	\$616	\$360	\$360	
3.0% x \$20,535; 3.0% x \$12,000 3.0% x \$12,000	\$2,175	\$3,393	\$3,529	
43.5% x \$5000; 43.5% x \$7,800; 43.5% x 8,112				
Total Salaries & Benefits	\$142,076	\$214,393	\$243,282	
Supplies and Expenses	\$2,200	\$2,200	\$2,500	
Travel	\$3,000	\$3,000	\$3,000	
Workshops				
Conference Rooms and Meals	\$5,000	\$5,000	\$5,000	
Travel Grants	\$10,000	\$10,000	\$10,000	
Rooms	\$7,500	\$7,500	\$5,850	
Legal Fees	\$4,338	\$0	\$0	
Data Management Support	\$1,000	\$7,500	\$7,500	
Education and Outreach Support	\$2,500	\$2,500	2,500	
Total Direct Costs	\$177,614	\$252,093	\$279,632	
Indirect Costs, 43.0%	\$76,374	\$108,400	\$120,242	
Total Costs	\$253,988	\$360,493	\$399,874	