Integrated Ocean Observing System Regional Association Support: The Southern California Coastal Ocean Observing System (SCCOOS)

Submitted in response to Federal Funding Opportunity:
FY 2008 Integrated Ocean Observing System Regional Association Support
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I. **PROJECT SUMMARY**

The Southern California Coastal Ocean Observing System (SCCOOS) is a coordinated, multidisciplinary organization formed in 2003 as the IOOS Regional Association (RA) to understand regional priorities for observations and information, coordinate implementation of the regional observing system needed to address coastal and estuarine issues in Southern California, and achieve a unified network of data collection, management, and product development. SCCOOS brings together within a Regional Association the agencies, managers, data providers and user groups that conduct ocean and coastal observing and monitoring activities, use ocean and coastal resources, and need critical coastal ocean data and information. SCCOOS serves as the RA implementing the Regional Coastal Ocean Observing System (RCOOS) that is this region's coastal component to IOOS.

SCCOOS proposes to build on the progress made in engaging local and regional stakeholders, further engage stakeholders in the design and implementation of the regional coastal ocean observing system, and establishing SCCOOS as the IOOS Regional Association for Southern California. The role of the SCCOOS Senior Advisory Committee, made up of nineteen representatives of local, state, and federal agencies, industry and stakeholder organizations, will be solidified as a key means to facilitate external guidance and communication and engage stakeholders in the design of an observing system that meets regional priorities and national needs under IOOS.

This proposal will continue and expand activities being carried out by SCCOOS to further the development and maturation of a functioning coastal observatory in Southern California that meets local and regional user needs and is in compliance with the standards and protocols for sharing and archiving data in support of IOOS. SCCOOS will conduct comprehensive outreach to and engagement of stakeholders, complete and refine its strategic business plan, further develop the SCCOOS web site and data products and services made available to users and the public, and continue the design of its regional observing system. SCCOOS continues to grow in its capabilities to respond to local and regional needs and formally establish itself as the IOOS Regional Association.

TABLE 1. PROJECT SUMMARY TABLE

Project Title:	Integrated Ocean Observing System Regional Association Support: The Southern California Coastal Ocean Observing System (SCCOOS)
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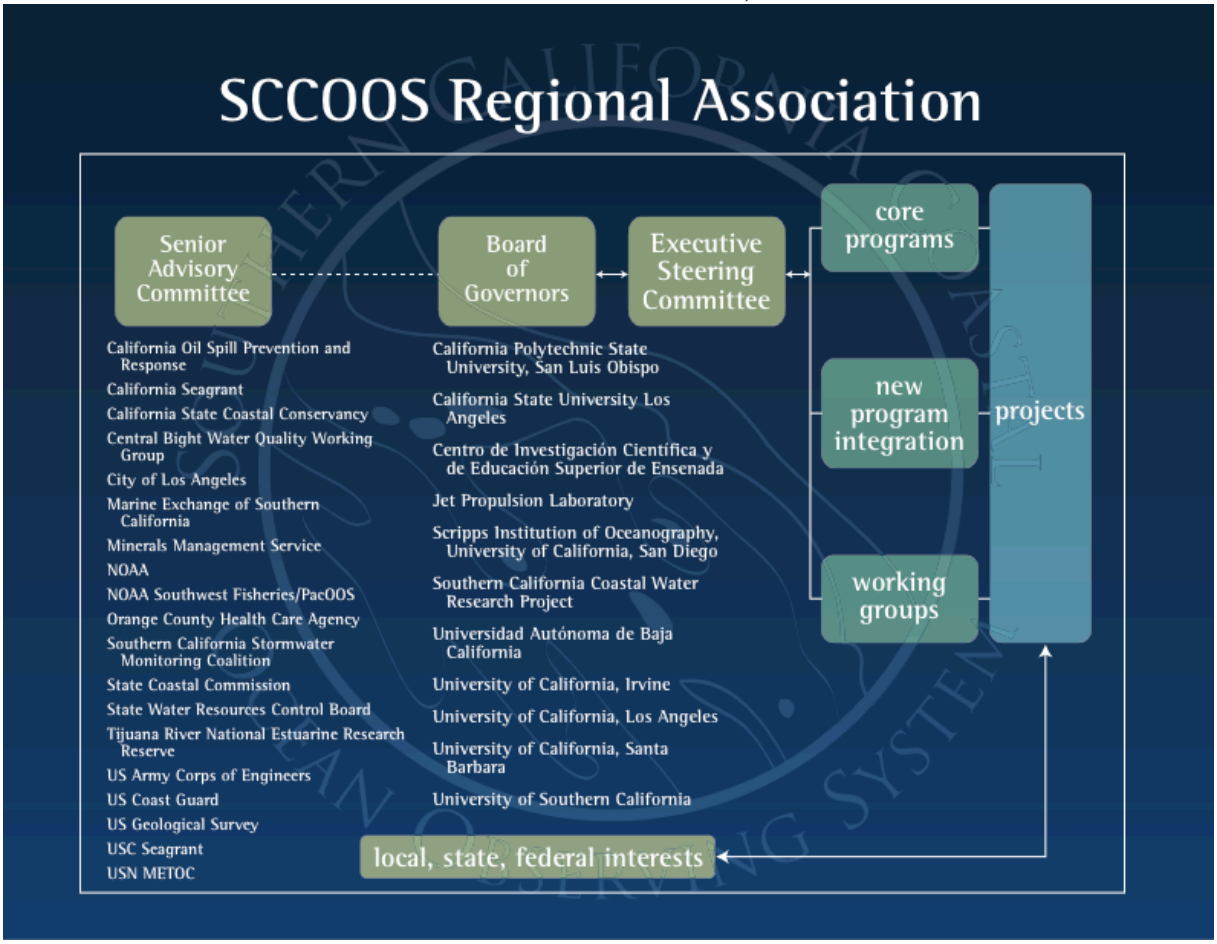
Project Web Site:	www.sccoos.org
Partners:	Key partners include members of the SCCOOS Senior Advisory Committee and Board of Governors (see diagram below), system component implementers and project collaborators (see Appendix E Outreach for detailed list.)



II. PROJECT DESCRIPTION

A. GOALS AND OBJECTIVES

The Southern California Coastal Ocean Observing System (SCCOOS), the Regional Coastal Ocean Observing System (RCOOS) for Southern California, makes core observations of physical, chemical, and biological variables within the Southern California Bight (SCB), integrates and distributes new and existing observations, adds new observations, and develops and distributes data syntheses. SCCOOS is working with federal, state and local data providers to form an integrated system whose output can be tuned to a broad audience of users as well as communicate data to federal data repositories.

SCCOOS goals and objectives include:

- Continued development of the Regional Association (RA) / Regional Coastal Ocean Observing System (RCOOS) as the regional entity in which local and regional observations are implemented, coordinated, integrated, and communicated. The SCCOOS RCOOS program is designed to evolve and mature with the development of the Regional Association. SCCOOS will pursue Regional Association certification when that process is formally defined.
- Conduct outreach to identify and work with end users to identify their data product needs, integrate and assimilate their data, and determine best methods for communicating results to the community.
- Provide resource managers and decision makers with science-based, mission-driven, and publicly available data and information products and decision support tools.
- Contribute to the development of a national IOOS comprised of regional and backbone assets.
- Develop, evaluate, and optimize products designed for short-term decision making and long-term environmental assessments.

B. BACKGROUND

Significance of proposed work

The development of the Southern California Coastal Ocean Observing System Regional Association is critical to meet the information and data needs of regional and local coastal managers in addressing key resource, environmental and public health problems along the Southern California coast. Coastal managers, policymakers, and industry within the Southern

California Bight (SCB) have critical information requirements for (a) observing and understanding the fate, transport, and impact of coastal discharges and impaired water quality; (b) knowing environmental factors that affect managing fisheries and endangered marine species; (c) observing conditions (e.g. sea state) that create hazards to enable early warnings; (d) monitoring the health of beaches to preserve recreational activities and provide erosion protection; and (e) observing and predicting algal blooms, specifically harmful algal blooms that kill fish, marine mammals and birds and affect tourism.

Summary of problems to be addressed

These needs are especially acute in Southern California where approximately 20 million people, representing a quarter of the coastal population in the U.S., live within fifty miles of the coast. Beach usage in California is higher than in the other 49 states combined, with 175 million users spending over $1.5 billion annually on tourism. Clean beaches and coastal waters are central to the region's economy and lifestyle. Sources of marine pollution in the Southern California Bight (SCB) are numerous, and dischargers are regulated and granted EPA permits by the California Water Resources Control Board and its nine Regional Water Quality Control Boards. Permit holders are required to monitor coastal waters, collectively spending approximately $32M/year (Schiff et al., 2002) in compliance-based monitoring in the SCB. California presently is dealing with many pressing coastal and ocean issues including designation of and development of monitoring plans for Marine Protected Areas, ongoing beach water quality issues, Harmful Algae Blooms (HABS), and a growing movement toward desalinization and away from once-through cooling technology. There is a tremendous need for coordinated information and data to address these issues.

Status of ongoing efforts to address needs

Recognizing the need for a coordinated network and organization to understand regional priorities, engage local and regional stakeholders, coordinate regional observing implementation, and ensure that local and regional data collection meets local and national needs - and concurrent with the effort at the national level to create the Integrated Ocean Observing System (IOOS) - the Southern California Coastal Ocean Observing System (SCCOOS) Regional Association (RA) was formed in 2003 to coordinate the design and implementations of this region's coastal component to IOOS. SCCOOS serves as the RA implementing the Regional Coastal Ocean Observing System (RCOOS) for Southern California. SCCOOS is the regional entity in which

local and regional observations are implemented, coordinated, integrated, and communicated. SCCOOS serves as the local entry point for regional observations to national data systems and provides broader awareness of federal observations to local users. The development of the regional coastal ocean observing system is designed to evolve and mature with the development of the Regional Association. SCCOOS will pursue Regional Association certification when that process is formally defined.

SCCOOS was established in 2003 by a consortium of eleven Southern California institutions and organizations from Baja California to Morro Bay: California Polytechnic State University, California State University Los Angeles, Centro de Invesigacion Cientifica y de Educacion Superior de Ensenada, Jet Propulsion Laboratory, Scripps Institution of Oceanography, University of California, San Diego, Southern California Coastal Water Research Project, Universidad Autonoma de Baja California, University of California, Irvine, University of California, Los Angeles, University of California, Santa Barbara, University of Southern California. Each organization has a history of coastal observing, ocean modeling, marine research, and development of novel sensors, platforms, and data management techniques. The consortium (http://www.sccoos.org) aims to develop and coordinate institutional efforts to create an integrated, multidisciplinary coastal observatory for the SCB.

SCCOOS is overseen by a Board of Governors, formed in 2004 and composed of senior representatives of the eleven signatories to the Memorandum of Understanding (MOU) that established the RA. The Board of Governors (BOG) effectively serves the role for general voice and operation of the consortium's management. A Board Executive Committee (BEC) and Executive Steering Committee (ESC) were established to provide operational oversight, assist with project and system development, long-range planning, and interface with the BOG, partners, and funding organizations. A significant mark of SCCOOS's development is the unanimous approval of Bylaws by the Board of Governors in February 2006. As a project-based organization operating under a system of partnerships and agreements, the Bylaws define the functional relationships of structural components of the SCCOOS Regional Association.

A second significant milestone of the Regional Association's maturity is the establishment by the Board of Governors of a Senior Advisory Committee (SAC) in February 2006. The Senior Advisory Committee comprises representatives of nineteen local, state and federal agencies, organizations, and industry:

- California Oil Spill Prevention and Response
- California Sea Grant
- California State Coastal Conservancy
- Central Bight Water Quality Working Group
- City of Los Angeles
- Marine Exchange of Southern California
- Minerals Management Service
- National Oceanic and Atmospheric Administration
- NOAA Southwest Fisheries/PacOOS
- Orange County Health Care Agency
- Southern California Stormwater Monitoring Coalition
- State Coastal Commission
- State Water Resources Control Board
- Tijuana River National Estuarine Research Reserve
- US Army Corps of Engineers
- US Coast Guard
- US Geological Survey
- USC Sea Grant
- US Naval Meteorology and Oceanography (METOC)

The SAC provides the BOG and ESC with insight and perspective on technical, market, legislative, and political matters affecting SCCOOS, provides guidance to existing SCCOOS operations, participates in strategic planning efforts, and serves as an external source of information and reference that links SCCOOS with broad stakeholder interests and knowledge within the region. The SAC enables state and federal entities to participate and provide input to SCCOOS development without perceived or real conflicts of interest that arise from funding grantor and grantee situations.

The SCCOOS governance structure operates effectively and is responsive to planning, policy, operations, and funding matters. SCCOOS's efficient governance structure has been developed to foster cohesion of regional stakeholder needs and promote a unified system at both the regional and national levels in a manner that removes conflict of interest.

Relationship of proposed work to other regional or national efforts to develop IOOS

SCCOOS was proactively created in early 2003 to provide a single structure for the region to implement the regional component of the Integrated Ocean Observing System. While SCCOOS has worked toward developing a centralized observational system coupled with a regional network of users, it has also worked with broader IOOS development efforts regionally and nationally. SCCOOS has, and will continue, to participate in IOOS coordination, planning, and Data Management and Communication (DMAC) efforts of NOAA's IOOS program office, Ocean.US, and NOAA Coastal Services Center including meetings, regular conference calls, provision of input, and assistance on ad hoc working groups.

On a technical level, SCCOOS staff has been engaged in data management and observational registries, providing leadership where possible in the leveraging of related IT programs underway in the region. SCCOOS staff and collaborators have also provided leadership in organizing and participating in technical working groups and strategic planning meetings based upon thematic areas. This includes workshops on the Quality Assurance of RealTime Data (QARTOD), the IOOS waves working group, IOOS Observations Registry, several marine metadata workshops, and the RadioWave Operators Working Group (High Frequency radar operators). SCCOOS technical staff and representatives from non-governmental organizations (NGOs), public health agencies, and discharge agencies have attended national planning needs focused on water quality issues and IOOS applications. More recently, SCCOOS has begun working with health risk experts in the region to develop a Southern California proposal to the Oceans and Human Health Initiative.

SCCOOS works closely with our neighboring Regional Association, Central and Northern California Ocean Observing System (CeNCOOS), to ensure interoperability in organizing principles, data management, and technical approaches. SCCOOS and CeNCOOS have established an MOU for data interoperability to ensure that the State of California has a common data access method to statewide variables of interest. A tangible example of this effort is the common HF radar surface current display tool developed for and in use by both regions. SCCOOS and CeNCOOS are also working closely on the development of their strategic business plans to reflect a common relationship to both federal and state agencies while still being tailored to meet regional conditions and needs.

Unique to the State of California is the proactive Ocean Protection Council (OPC) and its executive agency, the State Coastal Conservancy. The Coastal Ocean Currents Monitoring Program (COCMP), funded by the Coastal Conservancy, supports the installation by SCCOOS of HF radar arrays in the region. This activity is leveraged by SCCOOS as part of the development of the RCOOS. SCCOOS will continue to work closely with the State of California, OPC, and Coastal Conservancy representatives in the planning and execution of coastal observing activities for the California coastline.

Many of the data managers involved with SCCOOS are also working on broader IT issues as they relate to IOOS development. This has included efforts to work with NOAA NDBC and NOS to develop the architecture for a national network of HF radar. In addition, the University of California, San Diego was awarded the cyberinfrastructure component of the National Science Foundations ORION program, the NSF contribution to IOOS. By virtue of SCCOOS's proximity to this project, SCCOOS staff has already seeded a number of data management development efforts that are maturing for transition.

SCCOOS outreach has also included efforts to educate other federal agencies on the utility of IOOS to their particular missions. This has included targeted outreach to US EPA, International Boundary and Water Commission (IBWC), Department of Human Services (DHS), US Coast Guard (USCG), and Department of Defense (DOD). At the regional and national level, SCCOOS has been able to provide tangible examples of IOOS uses to resource managers. SCCOOS support of the City of Los Angeles's November 2006 Hyperion Treatment Plant outfall diversion event in Santa Monica Bay (close to 1 billion gallons of sewage discharge nearshore), an event that reached national headlines, illustrated the importance and benefit of IOOS capabilities.

C. AUDIENCE

SCCOOS is on a trajectory to serve a broad spectrum of coastal management needs through the information and data products derived by the implementation of its regional coastal ocean observing system. SCCOOS will address the priorities for coastal ocean information and data products that are identified through the continued outreach and engagement with stakeholders outlined in this proposal.

Existing and potential users of the observing system and the information and products generated from its observations and monitoring activities include public sector agencies at the

local, regional, state and federal levels, NGOs, ocean and coastal related organizations and associations, industry, and public recreational and commercial users of the coast and ocean.

Users of this system, and the areas of information about which they are interested, include:

Fisheries/Ecosystem:

NOAA Fisheries, California Department of Fish & Game, California Ocean Protection Council, California State Coastal Conservancy, California Ocean Science Applications, PaCOOS, State Water Resources Control Board, Regional Water Quality Control Boards, Tijuana River National Estuarine Research Reserve.

Water Quality, including Harmful Algae Blooms:

Users include: Six County Departments of Environmental Health within Southern California; NPDES permit holders including Public Owned Treatment Works (POTWs) and stormwater districts; Central Bight Water Quality Working Group; Southern California Stormwater Monitoring Coalition; Southern California Coastal Water Research Project and its 79 member water agencies; Tijuana River National Estuarine Research Reserve.

Users employ the information and data in the following ways:

- Data and models that describe and predict the fate of ocean discharges from point sources, storm water runoff events, spills and dredging will assist in developing permit requirements and in enforcement.
- Data driven models will allow the determination of flushing rates to quantify pollutant residence time as it affects beach closure times and assess the regional capacity of coastal waters to accept increasing discharges and the associated ecological impacts.
- Water quality managers and policy makers will be provided with a better scientific basis for evaluating the effectiveness of management strategies and prioritizing water quality infrastructure improvements.
- Shoreline samples of indicator species of bacteria are routinely gathered in Southern California by local public health agencies as part of state mandated AB411 monitoring designed to minimize human exposure to poor water quality and assess beach conditions. Working with county health agencies located in San Diego, Orange, Long Beach, Los Angeles, Oxnard, Ventura, and Santa Barbara, SCCOOS has developed a

data aggregation and online data access tool to provide public access to both recent conditions and archived data. The data are transmitted to SCCOOS when data are entered into each individual County's data entry system and are typically available soon after results are generated at the laboratory.

- Analysis of indicator bacterial species samples by the public health agencies takes 24-72 hours. Analysis of ocean data and development of models will allow the development of complementary real-time indicators of water-quality risk based on continuously observed parameters including in-situ and remotely sensed optical properties, in-situ salinity, and ocean transport. Indicators will be tailored to support targeted adaptive sampling within existing agency monitoring activities.

Marine Conditions and Coastal Hazards:

Users include: NOAA, US Army Corp of Engineers, Minerals Management Service, US Geological Survey (USGS), US Coast Guard (USCG), US Naval METOC, California Department of Boating and Waterways, regional metropolitan working groups including San Diego Association of Governments (SANDAG), county and municipal agencies, the beach going public, scuba divers, jet skiers, windsurfers, boaters, kayakers, the recreational, sporting, and commercial fishing community; scientists and researchers.

- Real-time and forecasted wave products for Southern California can be used as a predictive tool for assessing the extent of storm surge and storm driven erosion rates. The analysis and prediction of wave climate changes along the coastline will allow risk assessment of areas of high erosion on a regional basis (or within a littoral cell).
- The prediction of surf zone currents can be applied to models and forecasts of the along-shore transport of sediments, and define regions of accretion and erosion within littoral cells.
- Access to both real-time and archived information regarding wave, currents and wind conditions, publicly available at no charge.

Oil Spill Response and Search and Rescue:

Users include: USCG, NOAA HAZMAT, US Navy, US EPA; California Office of Oil Spill Prevention and Response; Ports of San Diego, Long Beach, and Los Angeles, Port

Hueneme; shipping and oil industry; Marine Exchange of Southern California; marine safety offices/lifeguard agencies.

Users will employ waves and wind fields and surface currents observed and forecasted by SCCOOS infrastructure to aid oil spill response and prevention and search and rescue operations:

- Real-time surface currents and trajectories will allow the tracking of spills to aid clean up efforts.
- Real-time wind and wave fields will assist oil spill response personnel in deploying and managing operational assets (booms, spill response vessels, etc.)
- Statistical descriptions of circulation, wind, and wave fields can be used for assessing risk to existing and future sites where spills have a high probability of occurring.
- Surface currents, wind, and wave observations and forecasts are useful to search and rescue operations for both determining search regions and the deployment of recovery assets.

Marine Resources and Marine Protected Areas:

Users include: NOAA Fisheries, National Ocean Service, California Resources Agency, California Department of Fish & Game.

The provision by SCCOOS of velocity and temperature products will be used for:

- Statistical descriptions of surface trajectories help define egg and larval pathways connecting coastal marine communities, something that is particularly important in designing Marine Protected Areas.
- Determining dominant flow patterns and their interannual variability and climatic change is valuable for fisheries modeling, diagnosing environmental impacts on fishery productivity, and eventually factoring climate forecasts into setting fishing limits and fishery closures.
- Estuarine monitoring data directly guide management actions, such as the need for mouth dredging after prolonged hypoxic events.

Vessel Traffic Aids

Users include: California Department of Boats and Waterways, Southern California port districts, USCG, NOAA, US Navy, harbor pilots, commercial cargo vessels, commercial fishermen.

Usage of the information includes:

- The ROMS model will provide hourly sea level predictions in sensitive regions to vessel traffic, including port entrances. The regional observing and modeling efforts will allow these predictions to be driven by tides, local winds, and remote forcing.
- The real-time observations and predictions of waves, winds, and currents are of practical use to mariners for safe and efficient at-sea operations. User-friendly data web pages will be made available.

D. APPROACH

SCCOOS will employ the following approach in fulfilling the charge of the Regional Association to further engage stakeholders, design the regional system to address regional priorities, and conduct data collection, data delivery, and data product development.

Regional Association Governance

The governance structure and administration of the Regional Association will continue toward formalization. With the SCCOOS Board of Governors (BOG) and SCCOOS Senior Advisory Committee (SAC) formally established and the adoption of Bylaws, final steps include approval of the completed strategic business plan and certification of the RA. Refinement of the strategic business plan will occur during the three years of this grant. The BOG and SAC will be engaged through conduct of meetings and regular communications to administer the Regional Association, maintain the Bylaws, get input and guidance on operation and activities that develop the RCOOS and network, conduct strategic planning, and provide an external link to stakeholders. SCCOOS will also begin development of a Concept of Operations (CONOP) document as part of our conceptual design.

User Outreach and Customer Development

SCCOOS will organize engagement of users by both sub-regional areas, such as coastal municipal or local working groups, and thematic based problem areas, such as water quality. Thematic areas include water quality, climate and ecosystem change, marine safety, nearshore waves and erosion.

Relationships with existing users will be maintained and nurtured, and SCCOOS will work toward developing new relationships with user groups that have not been directly engaged thus far with SCCOOS. Examples of new and direct engagement by SCCOOS with users and

user groups including Multi-Agency Rocky Intertidal Network (MARINe), the Ports of Los Angeles and Long Beach, the Marine Exchange of Southern California, the City of Los Angeles, and the lifeguard community. Some of the users to which SCCOOS will outreach include regional chapters of Surfrider; regional chapters of the California Coastkeeper Alliance; the Southern California Wetlands Recovery Project; fishing associations such as United Anglers of Southern California, and Kayak Fishing Association of California; the marine and boating community including Southern California Yachting Association and Southern California Marine Association.

SCCOOS will serve as a conduit for industry participation in Regional Association and IOOS development. Industry interests vary: they have data needs to improve their industry, there are industries that are third party value-added product developers, and industry is in the business of systems integration and operator/implementers. SCCOOS will work with the Senior Advisory Committee and with national efforts to understand the appropriate role for industry in the development and implementation of the regional ocean observing system.

Product Development

In conjunction with the development of the regional coastal ocean observing system (SCCOOS RCOOS), SCCOOS will maintain and continue management of data, data products, and delivery of products. SCCOOS will conduct marketing of the RCOOS through examples of real world ocean observing applications and usage of products developed. SCCOOS will work with users in continuing to understand their needs and user requirements.

Regional Integration

SCCOOS will coordinate with regional, state and national ocean observing efforts including Central and Northern California Ocean Observing System (CeNCOOS), California Ocean Protection Council, NOAA's IOOS program office, Ocean.US, ORION, OOI and other programs. SCCOOS will participate in IOOS Regional Coordination meetings, IOOS Observations Registry, IOOS DMAC workshops and meetings, and other IOOS development activities. To foster regional integration, SCCOOS will communicate national planning activities and areas for broader stakeholder engagement, communicate data standards to data provider and user groups, and work with regional data providers for integrating data and providing centralized data warehouse.

Educational Outreach

SCCOOS will continue its work with the California Center for Ocean Sciences Education Excellence (COSEE), the Ocean Institute in Dana Point, California, local aquariums including the Birch Aquarium and Aquarium of the Pacific, and regional public education entities to further education and outreach to this network of users. SCCOOS will conduct targeted analyses and outreach to develop markets for the educational user groups. Currently, SCCOOS works with the Ocean Institute in support of the nationally recognized 5th grade science standards-based curriculum that uses real-time data and products delivered by SCCOOS and made possible by support from the NOAA COTS program. This program is designed to reach up to 15,000 students in more than 250 schools in Orange County, California.

E. BENEFITS

Benefits to Users and Society

The work funded by this grant will continue SCCOOS's development of an ocean observing system that will benefit the public good by combining and improving the existing ocean observing activities in the Southern California Bight. This system will provide needed data products to a variety of users, as described above under Audience, including:

- local, regional, state and federal agencies responsible for water quality monitoring, search and rescue, oil spill prevention and clean-up, maritime safety/lifeguard service, marine and vessel transport
- the public including beach goers, water sports enthusiasts, boaters and sailors, kayakers, divers, the recreational and sports fishing community
- NGOs, environmental, and marine organizations including Heal the Bay, Surfrider, Coastkeeper, wetlands restoration groups, boating and sailing associations

The benefits that will be achieved for those users include:

- information about marine conditions easily accessible at no charge on a publicly available web site
- user-friendly data products
- access to both real-time and archived ocean and coastal information

This system will benefit society as a whole through the collection, synthesis, and understanding of ocean observations and provision of information and data that improve our ability to:

- detect and forecast oceanic components of climate variability
- improve the health of marine environments
- facilitate safe and efficient marine operations and reduce marine hazards
- protect human lives and public health
- improve national security and assist national defense and homeland security efforts
- predict environmental changes and improve our understanding of environmental changes
- manage resources for sustainable use and to improve protection of species
- preserve and restore healthy marine ecosystems
- assist coastal and marine commercial industries (fisheries, aquaculture, mariculture, energy production and mineral management) with information to improve business management
- provide scientific basis for resource management decisions
- mitigate natural hazards
- educate the public about the importance of coastal and marine environment
- assist economies related to coastal and marine industries, including tourism and production of marine-related goods

User Requirements Guiding the Proposed Work

SCCOOS development of information and data products are guided through ongoing discussion and involvement with the end users. As part of its identification of users and regional priorities, SCCOOS is able to acquire the needed input on user requirements for information and data. Many agencies using SCCOOS products serve on the Senior Advisory Committee and provide direct input into user requirements. SCCOOS staff interacts directly with users in meetings and workshops with stakeholders and user groups, such as the Southern California Marine Monitoring Conference, the Multi-Agency Rocky Intertidal Network (MARINe), and CSO IOOS Workshop focused on ocean observing and water quality and MPAs. The SCCOOS web site and SCCOOS email provide additional avenues for users to share with us their user requirements such as through an ongoing online survey available to complete. Recently, SCCOOS obtained valuable information from users of SCCOOS wind field information through

a direct email outreach to users that had contacted us about the service being temporarily down due to maintenance.

*Delivery of Information to U*sers

Information and data products developed are made available through the Internet at the SCCOOS web site, www.sccoos.org. SCCOOS will use an approach of design, build, assess, and build to improve delivery of information to end users.

Contribution of Proposed Work to Establishment of IOOS at the Regional and National Level

As a regional component of IOOS, SCCOOS will contribute to developing the nationwide ocean observing system with a standard backbone of observations, as well as provide the inshore component of the west coastwide, fisheries-based Pacific Coastal Ocean Observing System (PaCOOS). SCCOOS efforts will foster awareness and build support for establishment of IOOS at the regional level. IOOS-based applications, products and decision-support tools will be readily and routinely available.

F. MILESTONE SCHEDULE

Year One Tasks and Activities

1. Convene at least one meeting of the Board of Governors. Additional meetings will be held either in person or through conference calls, email, and regular communications.
2. Convene two meetings of the SCCOOS Senior Advisory Committee. Additional work of the SAC will be conducted through additional meetings, conference calls, individual meetings, email, and regular communications.
3. Complete any revision process needed of the Strategic Business Plan, expected to be presented for review to the SAC and BOG in January 2008, and present final plan to Board of Governors for approval.
4. Work with NFRA, IOOS program office, and Ocean.US on development of certification requirements for Regional Associations and other steps to formalize as the IOOS Regional Association.
5. Begin to develop a concept of operations (conops) document as part of the SCCOOS RCOOS conceptual design.

6. SCCOOS will broaden and continue outreach to user groups and end users. A targeted outreach plan will be developed to broaden outreach to users not directly engaged yet in SCCOOS. For example, outreach will be targeted in this first year to:

- coastal municipalities in the SCCOOS region
- chapters of organizations including Surfriders, California Coastkeeper, wetlands restoration groups

7. Convene two workshops with an identified user group to raise awareness of SCCOOS and solicit user needs information.

8. SCCOOS will development an outreach strategy designed to assess usage of SCCOOS data services and products by users and make improvements in meeting user needs.

9. Continue data aggregation and tailored data product development efforts based on input obtained about user needs and data assimilation requirements. Develop data integration plan.

10. Participate in IOOS development and regional integration efforts and in maintenance and refinement of IOOS Regional Observations Registry

Year Two Tasks and Activities

1. Convene at least one meeting of the Board of Governors. Additional meetings will be held either in person or through conference calls, email, and regular communications.

2. Convene two meetings of the SCCOOS Senior Advisory Committee. Additional work of the SAC will be conducted through additional meetings, conference calls, individual meetings, email, and regular communications.

3. SCCOOS will broaden and continue outreach to user groups and end users.

4. Design, organize and convene at least two workshops with identified user groups not directly engaged or to further solicit input on data products and development of the RCOOS.

5. Continue data aggregation and tailored product development activities with data provider and data user groups.

6. Participate in IOOS development and regional integration efforts and in maintenance and refinement of IOOS Regional Observations Registry

Year Three Tasks and Activities

1. Convene at least one meeting of the Board of Governors. Additional meetings will be held either in person or through conference calls, email, and regular communications.

2. Convene two meetings of the SCCOOS Senior Advisory Committee. Additional work of the SAC will be conducted through additional meetings, conference calls, individual meetings, email, and regular communications.

3. SCCOOS will broaden and continue outreach to user groups and end users based on sub-regional and thematic areas not yet targeted for focused outreach. SCCOOS will continue to outreach to existing users of the system to refine products and meet information and data needs.

4. Design, organize and convene at least two workshops with identified user groups not directly engaged or to further solicit input on data products and development of the RCOOS.

5. Continue to grow data aggregation, data delivery, and tailored product development efforts with user groups and stakeholders.

6. Interface SCCOOS development efforts with local and regional, state, and federal agencies to ensure interoperability.