CALIFORNIA OCEAN PROTECTION COUNCIL

Staff Recommendation
December 16, 2011

Implementation of AB 2125 Through the Development of a State Geoportal

File No.: 11-070-01
Project Manager: Laura Engeman

RECOMMENDED ACTION: Authorization to develop an agreement with the California Technology Agency to support the integration of California's coastal and marine geospatial data into a state internet-based "geoportal" to improve access to these data by agencies, stakeholders, and the general public.

LOCATION: Statewide

STRATEGIC PLAN OBJECTIVE: Governance, Research and Monitoring

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EXHIBITS

Exhibit 1: Assembly Bill 2125

Exhibit 2: Executive Summary of the *California Coastal and Marine Geospatial Information Management System Scoping Study (2011)*

Exhibit 3: 2010 Resolution of the California Coastal and Marine Geospatial Data Working Group

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RESOLUTION AND FINDINGS:

Staff recommends that the Ocean Protection Council adopt the following resolution pursuant to Sections 35500 *et seq.* of the Public Resources Code:

"The Ocean Protection Council hereby approves the development of an agreement with the California Technology Agency to support the integration of California's coastal and marine geospatial data into a state internet-based geoportal to improve access to these data by agencies, stakeholders, and the general public."

Staff further recommends that the Ocean Protection Council adopt the following findings:

"Based on the accompanying staff report and attached exhibits, the Ocean Protection Council hereby finds that the proposed project is consistent with the purposes of Division 26.5 of the Public Resources Code, the Ocean Protection Act."

PROJECT SUMMARY:

Staff recommends that the Ocean Protection Council (OPC) authorize the development of an agreement with the California Technology Agency (CTA) to support the integration of California's coastal and marine geospatial data into a statewide web portal (geoportal) to improve access to these data by agencies, stakeholders, and the general public. More specifically, OPC staff would develop a work plan, in cooperation with the State's Geographic Information Officer (GIO), outlining the tasks and potential funding needed to effectively prepare and distribute coastal and ocean data through the geoportal. The work plan would also outline steps to be taken by the GIO and OPC to develop sustainable funding and operation strategies to ensure that the geoportal and its associated state agency data systems continue to be maintained over time.

The State's Geographic Information Officer is an official within the California Technology Agency (CTA) and has the responsibility for planning, management and operation of statewide geospatial information services and technology. Over the next six months to a year, the GIO plans to develop a geoportal, which is an internet-based resource with an intuitive user interface where government agencies, private industry, and the public can easily find, access, view, and share geographic information. The state geoportal will serve as a primary access point for all of the state's geographic information, including coastal and ocean information.

Development of a geoportal for coastal and ocean data is a timely and appropriate action for OPC to support as a significant step in advancing implementation of Assembly Bill 2125 ("AB 2125", Exhibit 1 to this staff recommendation), which calls for OPC to "support state agencies' use and sharing of scientific and geospatial information for coastal and ocean decision-making". This action is also consistent with the key recommendation of the recently-completed 2011 *California Coastal and Marine Geospatial Information Management System Scoping Study (*Exhibit 2). Based on substantial consultations with technical and non-technical staff at the state's agencies, the OPC-funded scoping study recommended the state pursue the development of a geoportal for easy discovery and access of California coastal and ocean geospatial data, and outlined the technical requirements that would be needed in order for this system to effectively meet the data needs of the state agencies. Lastly, the geoportal would serve as a central access point for high priority datasets, such as the state's seafloor maps and LiDAR imagery of the shoreline that are valuable for informing a multitude of coastal and ocean planning and decisions.

The goal of the statewide geoportal is to create a state network of databases whereby governmental agencies and the public will be able to use a single website for locating and downloading authoritative coastal and ocean data for California, regardless of where that data is housed. Specifically, the geoportal has the potential to advance access, discovery and use of coastal and ocean data by:

- Making the state's existing coastal and ocean data resources, such as California Department of Fish and Game's MarineBIOS portal for biological data and the State Water Resources Control Board's My Water Quality database for water quality

information, more readily accessible to governmental agencies, private entities and the general public.

- Providing an easy to use and central location for finding high-priority California coastal and ocean geographic information, such as the OPC-funded seafloor and shoreline maps;
- Pointing data seekers to the appropriate state, local, or federal agencies for accessing their data directly
- Providing user-friendly mapping applications that allow a broad range of users to view and print coastal and ocean information in map formats, such as Google Earth; and
- Providing customized tools for overlaying and analyzing data for coastal and ocean management planning and decision-making processes.

While the GIO will undertake the procurement and funding of necessary geoportal software, there is a significant opportunity for OPC to work with the GIO to identify ways to customize and develop the geoportal to ensure that it meets the goals of AB 2125. OPC has had preliminary discussions with the GIO to confirm that the portal meets the relevant technical requirements identified in the OPC-funded Scoping Study. Staff has also started collaborating with the GIO, the CCMG-WG members, and other organizations to identify needed actions and funding to maximize the success of the geoportal in serving the needs of state agencies' and other data partners. These activities would form the basis for the agreement between OPC and CTA, and may include:

- Establishing MOUs, technical requirements, data registries and other data management measures necessary to maximize the sharing and access of coastal and ocean data through the geoportal;
- Preparing high priority coastal and ocean data sets to be served through the portal when it is launched;
- Identifying and prioritizing additional data sets that require translation into a geospatial format, and identifying sources of funding for translating them and making them available through the geoportal;
- Assisting the GIO with developing a successful geoportal institutional and governance framework, including strategic collaborations with public and private entities to ensure that the geoportal and its associated state agency data systems continue to be maintained over time.
- Identifying and developing analytical tools, data viewers and other applications that will enable government staff, stakeholders, educators and the general public to further advance their uses of the state's coastal and marine information toward more ecosystem-based decision-making.

PROJECT DESCRIPTION:

Project Background:

In 2010/2011, OPC received two directives which called for OPC to evaluate and identify solutions to improve California agencies' use and sharing of scientific and geospatial information

for coastal and ocean decision-making. The first was AB 2125 (Exhibit 1) which directed the OPC to:

(1) assess the needs of California's public agencies to gather, manage, use and share information and decision-support tools;
(2) increase the amount of information available to agencies in a publicly accessible, electronic and geospatial format;
(3) support the collaborative management and use of this information; and
(4) help identify and support the creation of decision-support tools that serve the state's needs in implementing ecosystem-based management.

The second directive was a resolution issued by the California Coastal and Marine Geospatial Working Group (CCMG-WG) (Exhibit 3) which called for the state to "fund a requirements study for the development of data sharing resources to support the efficient access, management, viewing and downloading of coastal and marine geospatial information for the benefit of natural resource agency staff, decision-makers and the greater public".

In response to both of these directives, OPC funded consultants, Kearns & West and the Spatial Collaborative, to conduct a scoping study to assess the coastal and marine geospatial needs of California's agencies and identify recommended solutions that would enhance the agencies' ability and capacity to share and access this type of geographic information. The executive summary of that study is attached as Exhibit 2, the full study can be found on the OPC website (http://www.opc.ca.gov/2011/04/california-coastal-and-marine-geospatial-information-system-scoping-study/). The various state agency members of the CCMG-WG provided input to the study and oversight of the study to ensure that it accurately represented their needs.

The central finding of the study was that the agencies resoundingly reported the need for a geospatial information management system to access state coastal and ocean geographic information, and provide a web-based, well-organized and user friendly interface for locating, accessing, downloading, and viewing data. The study also found that most of the geospatial data users were non-technical (not trained in GIS) and that agency permitting and planning staff had a preference for software and applications that were less technical, easy to learn, and provided a primary function of viewing and overlaying various data into a map.

To address these needs, the study recommended that the state pursue the development of geoportal technology using one of several software solutions designed to connect various data hubs and provide a central and easy to use web-based "window" for searching, viewing, and accessing the data at different locations. The study recommended geoportal technology as a cost effective solution because it does not require a substantial investment to re-create a central statewide database. Rather, this technology develops a method for creating a network among the robust databases that several resource agencies already have, and provides flexibility for storing some information centrally for more capacity-limited agencies. It also provides one "window" on the internet for searching, accessing, and viewing information across the entire network. The scoping study also provided a list of technical requirements to be passed onto the geoportal developer to ensure that application is designed to meet the needs of the state agencies.

Following the scoping study, OPC worked with several organizations to evaluate the viability and feasibility of the geoportal concept. This included several meetings with the CCMG-WG members and the State's Geospatial Information Officer which solidified that the geoportal was a top priority for the state agencies and that it was consistent with the GIO's plans for developing a large state geoportal for all types of geographic information in the state. The proposed authorization will accelerate the GIO's efforts to build a statewide geoportal by supporting integration of coastal and ocean data into the geoportal as the first stage in the development of this technology.

OPC staff also evaluated case studies of existing web-based portals and information management systems in other states to identify lessons that could be learned from these systems and best practices for long-term viability and success of these systems. The underlying conclusion of these additional assessments was that to succeed in the long term, a web-based portal for coastal and ocean geospatial data needs a strong technological foundation and strong institutional support that includes robust governance and funding.

The staff recommendation reflects this conclusion by proposing that OPC develop an agreement with the CTA to jointly undertake several tasks designed to develop robust governance structure, policies, data-sharing agreements, and business strategy critical to ensuring that this investment lasts for the long-term.

Project Details and Scope of Work:

Staff recommends that the Ocean Protection Council (OPC) authorize the development of an agreement with the California Technology Agency (CTA) to support the integration of California's coastal and marine geospatial data into a statewide web portal (geoportal) to improve access to these data by agencies, stakeholders, and the general public.

More specifically, OPC staff would develop a work plan, in cooperation with the State's Geographic Information Officer (GIO), outlining the tasks and potential funding needed to effectively prepare and distribute coastal and ocean data through the geoportal. The work plan would also outline steps to be taken by the GIO and OPC to develop sustainable funding and operation strategies to ensure that the geoportal and its associated state agency data systems continue to be maintained over time.

This work plan would form the basis for the agreement between OPC and CTA, and may include the following tasks:

- Establishing MOUs, technical requirements, data registries and other data management measures necessary to maximize the sharing and access of coastal and ocean data through the geoportal;
- Preparing high priority coastal and ocean data sets to be served through the portal when it is launched;
- Identifying and prioritizing additional data sets that require translation into a geospatial format and identifying sources of funding for translating them and making them available through the geoportal;

- Assisting the GIO with developing a successful geoportal institutional and governance framework, including strategic collaborations with public and private entities to ensure that the geoportal and its associated state agency data systems continue to be maintained over time.
- Identifying and developing analytical tools, data viewers and other applications that will enable government staff, stakeholders, educators and the general public to further advance their uses of the state's coastal and marine information toward more ecosystem-based decision-making.

THE CALIFORNIA TECHNOLOGY AGENCY:

The California Technology Agency, in its current structure, was created in 2010, by Assembly Bill 2408 as the recognized central information technology (IT) organization for the State of California. The CTA is responsible for the approval and oversight of all state IT projects. As the head of CTA and as the state's chief information officer, the Secretary of California Technology provides leadership for the state's IT programs and works collaboratively with other IT leaders throughout the state. The California Technology Agency is the home of the State's Geographic Information Officer who is responsible for creating a California spatial data infrastructure that reduces duplication of effort among agencies, improves quality and reduces costs related to geographic information, and makes geographic data more accessible to the public.

PROJECT HISTORY:

In August 2009, the OPC, in collaboration with the California Ocean Science Trust, the Coastal Services Center of the National Oceanic and Atmospheric Administration, the Center for Ocean Solutions, and The Nature Conservancy, hosted a workshop titled "Collaborative Geospatial Information and Tools for California Coastal and Ocean Managers" at Stanford University. The purpose of the workshop was to assess agencies' current and potential capacities and needs to manage and share geospatial data, with the goal of identifying concrete recommendations for improving geospatial data management at the state level. Workshop attendees identified barriers to managing and sharing geospatial data among agencies and methods to overcome those barriers. The workshop's final report identified a number of recommendations for improving geospatial information management and sharing, including coordinating state agencies' data management efforts; developing common data and metadata standards to facilitate the gathering and interpretation of data over time; and assessing data discovery and search tools for investment by the state of California.

The workshop final report also recommended increased collaboration between agencies and the state's Geospatial Information Officer. In response, the OPC convened the California Coastal and Marine Geospatial Working Group as a formal working group within the California GIS Council. The CCMG−WG includes technical managers and users of coastal and marine geospatial data from the various California state agencies as well as key partners such as the California Ocean Science Trust and the NOAA Coastal Services Center. Pursuant to its charter, the CCMG−WG is dedicated to improving the management, exchange and analysis of geographic information to assist with the protection of California's coastal and marine resources,

support environmental assessment efforts, and improve comprehensive planning in coastal and marine areas. In addition to helping OPC design and oversee the Scoping Study,, the group has catalogued its members' top priority data needs, identified data gaps, and reviewed numerous data management and decision-support tools for potential use by state agencies.

On September 17, 2009, the OPC adopted a resolution to support interagency collaboration and management of geospatial information that will help identify priority uses and address current and future user conflicts in the ocean environment. The OPC also directed staff to analyze and develop recommendations on marine spatial planning, including planning principles and objectives, for future approval by the OPC.

In September 2010, Governor Schwarzenegger signed Assembly Bill 2125 (Exhibit 1) in response to the 2009 workshop recommendations and to the federal Interagency Ocean Policy Task Force findings on coastal and marine spatial planning. AB 2125, which added Public Resources Code Section 35620 to the California Ocean Protection Act, provides that "the OPC shall support state agencies' use and sharing of scientific and geospatial information for coastal and ocean decision-making, including marine spatial planning." Specifically, Section 35620 requires that the OPC assess public agency needs for information related to ecosystem-based management; increase the amount of available baseline scientific and geospatial information in publicly accessible, electronic, and geospatial formats; support agencies' collaborative management and use of relevant scientific and geospatial information; and help identify, adapt, and create relevant decision-support tools.

In 2010, the California Coastal and Marine Geospatial Working Group issued a resolution (Exhibit 3) stating that California did not possess a coordinated statewide system for sharing and accessing geospatial data on coastal and marine resources and recommending that the state expediently fund a stakeholder scoping study for the development of data-sharing resources to support efficient access, management, and downloading of coastal and marine geospatial information for the benefit of natural resource management agency staff, decision-makers, and potentially the greater public.

As discussed above, in response to this resolution and the mandate of AB 2125, OPC staff contracted Kearns & West and The Spatial Collaborative to develop the *California Marine and Coastal Geospatial Information Management System Scoping Study*. The study identified the coastal and marine geospatial data priorities of California agencies and outlined specific technical requirements for data management that are needed to support these priorities. The key recommendation of the study was the development of an information management system using modern software such as a geoportal to provide an easy and authoritative hub for accessing, viewing and downloading the state's coastal and marine geospatial information.

CONSISTENCY WITH CALIFORNIA OCEAN PROTECTION ACT:

The proposed action is consistent with Chapter 3 of the California Ocean Protection Act (Sections 35600 though 35625 of the Public Resources Code). Section 35615(a)(1) specifically

directs the OPC to coordinate activities of state agencies to improve the effectiveness of state efforts to protect ocean resources and establish policies to coordinate the collection of scientific data related to the ocean. It is also consistent with Section 35615(a)(5), which directs the OPC to transmit the results of research and investigations to state agencies to provide information for policy decisions. Further, the proposed action implements Section 35620 and 35621, added by AB 2125 and effective as of January 1, 2011, which, as discussed previously, directs the OPC to "support state agencies' use and sharing of scientific and geospatial information for coastal- and ocean-relevant decision-making, including marine spatial planning" and to "enter into interagency agreements, and provide assistance to public agencies and nonprofit organizations to support this effort."

CONSISTENCY WITH THE OPC'S STRATEGIC PLAN:

The project is consistent with the OPC's Five-Year Strategic Plan in the following respects:

Goal A (Governance), Objective 2b: Interagency Collaboration: "Work with all relevant state agencies to develop necessary legislation, regulations, or other tools to improve ocean governance.*"* The proposed action is designed to promote the sharing of geospatial data between various agencies with the goal of promoting effective ocean management. As discussed above, some state agencies have developed sophisticated geospatial data systems. The primary purpose of the proposed project is to improve data sharing between agencies to ensure that all agencies (and other stakeholders) can readily access California's coastal and marine geospatial information.

Goal A (Governance), Objective 4a: Ecosystem-based Management: "Work with all relevant state agencies to develop proposed legislation, regulations, or other tools to integrate EBM principles into agency operations." EBM (ecosystem-based management), as defined in the OPC Strategic Plan, is "an integrated approach that considers the entire ecosystem, including humans." The gathering and sharing of geospatial information on human uses, as well as species and habitat data, is essential for implementing an EBM approach. The proposed action is an essential first step toward improving our ability to assess cumulative impacts, marine use conflicts, and ocean health trends, which are all key aspects to implementing an ecosystem-based management approach to protecting and managing our unique natural resources. The OPC anticipates that it will continue working with the California Coastal and Marine Geospatial Working Group to evaluate the need for and appropriate institutional home for data analysis and visualization tools to support EBM.

Goal B (Research and Monitoring), Objective 2: Monitoring: (f) "Develop and implement a system for data management and a standardized approach to the format and distribution of mapping products." (i) "Establish a mechanism or organization to provide data synthesis services with the goal of assembling scientific results from state and national efforts and producing products for diverse scientific, public, and policy audiences." The proposed action is designed specifically to support the development of a system for managing the state's coastal and marine geospatial data; especially the state's mapping products. The OPC will also continue working with the California Coastal and Marine Geospatial Working Group to develop governance policies to ensure effective agency management, sharing and use of geospatial data, in part through the creation of data standards and data analysis and visualization tools.

COMPLIANCE WITH CEQA:

The proposed project is categorically exempt from review under the California Environmental Quality Act ("CEQA") pursuant to 14 Cal. Code of Regulations Section 15306 because the project involves only data collection, research and resource evaluation activities that will not result in a serious or major disturbance to an environmental resource. Staff will file a Notice of Exemption upon approval by the OPC.