GIS USER SURVEY AND NEEDS ANALYSIS STUDY

FINAL REPORT

Contract No. W912PL-09-D-0002, Task Order No. 008

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U.S. Army Corps
of Engineers ®
Los Angeles District

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Privacy Statement

The results of the GIS User Survey and Needs Analysis Study are for planning purposes only. Actual data and responses collected during the survey are housed by the U.S. Army Corps of Engineers Los Angeles District and are not for public distribution.

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1. Executive Summary

The GIS User Survey and Need Analysis Study presented in this report is an initial step towards the implementation of a coordinated approach to identify, catalogue, collect, standardize and store diverse geospatial data and information to support the California Coastal Sediment Master Plan (CSMP). The study was performed by a team consisting of Halcrow and Psomas for the USACE Los Angeles District under Task Order 008 of contract No. W912PL-09-D-002.

As part of the study, the GIS Technical Working Group (TWG), a previously formed group consisting of GIS representatives of key stakeholders, was reconvened. In a series of teleconferences, the GIS TWG provided end-user perspectives, input into their needs and preferences, and assisted in the identification of survey recipients.

The survey was conducted using the online survey tool "SurveyMonkey" (http://www.surveymonkey.com) to facilitate widespread access to the survey forms as well as automatic data tabulation and graphing.

A total of 176 invitations to participate in the survey were sent by email to representatives of 56 organizations including federal, state and local agencies, as well as consultants. Of these, 100 recipients responded, 54 did not respond, 18 opted out, and 4 invitations were undeliverable. Respondents were distributed throughout coastal communities as well as in Sacramento as illustrated in Figure 2.

The User Survey and Need Analysis Study was performed in four tasks as follows:

- Task 1 - On Board Review Meeting and Collection of Information
- Task 2 - GIS TWG Meetings
- Task 3 - User Survey
- Task 4 - User Survey and Needs Analysis

1.1 Key Findings

- Data needs are broad and the first priority are respondents. Respondents identified geographic data needs for 85 themes of data with 44 themes being ranked as essential by 50% of the respondents.

- Easy, fast, and convenient online access to geographic data through a web mapping application is important. The features of the web mapping application are quite basic but the challenge is to provide comprehensive data sources covering the area of interest and assure a high quality user experience through an intuitive interface and fast performance.

- Data discovery is also important. Tools are needed to search and browse for geographic data. These features can be imbedded within the web mapping application to simplify location based data discovery.

- Respondents are overwhelmingly interested in data sharing and collaboration opportunities. There may be some hesitancy to commit to joint projects until the commitments and benefits are understood.

- Respondents want to be informed about coastal geospatial data collection and sharing. Leadership is needed to reach out and establish a forum for joint project discussion.

1.2 Next Steps

The findings of this study provide high level identification of data and software system needs as well as interagency collaboration opportunities. The following next steps are recommended.

- Share this report broadly among potential stakeholders of coastal geospatial data.

- Clarify organizational leadership for communicating and coordinating with organizations.

- Follow-up with survey respondents to engage them in dialog needed to clarify data and application priorities.

- Perform a data cataloging project to identify existing geospatial data sources and their availability for acquisition.

- Acquire and catalog geospatial data in an online repository suitable to support data sharing and integration with a web mapping application.

- Identify priorities for the web mapping enhancements and develop a technology strategy to deliver priority services to stakeholders.
- Continue to engage stakeholders to refine priorities, support data upkeep, and address data gaps through collaborative efforts.
- Promote goals and accomplishments to expand support for the initiatives.
- Secure funding, staff, and technology resources to sustain the data repository and online web mapping application.

This report is an initial step in the evaluation of information needs to enhance coastal sediment management in California. It is important to proceed quickly with the next step of outreach to stakeholders to foster relationships that can lead to better information standardization and accesses through interagency collaboration. Collaboration does not require major financial investment but will provide significant rewards as time goes on.

2. Introduction

The GIS User Survey and Need Analysis Study, presented in this report and performed for the USACE Los Angeles District under Task Order 008 of contract No. W912PL-09-D-002, is an initial step towards the implementation of a coordinated approach to identify, catalogue, collect, standardize and store diverse geospatial data and information to support the California Coastal Sediment Master Plan (CSMP).

The CSMP is a concept borne by the USACE South Pacific Division (SPD) and the California Natural Resources Agency (CA NRA) chaired Coastal Sediment Management Workgroup. The concept is to develop a region-wide sediment management plan encompassing the entire California coastline to maintain and restore the health of California's beaches and shoreline. The plan will incorporate all components (e.g., engineering, environmental, economics, recreation, physical processes and barriers, regulatory, policy, legal, coastal watershed land-uses, current and projected watershed developments, real estate, and financial considerations) that affect the maintenance and restoration of beaches.

The CSMP requires the inventory, collection, and standardization of information and data to support the management of California's beaches and shorelines. The information and data of relevance is owned and managed by a wide range of entities including local, regional, state, and federal agencies. Given the extensive data and information that has been collected and distributed by the various agencies, and the limited access to these by policy makers, planners, scientists, engineers and the general public, a GIS-based database and internet map server was considered necessary.

Completed in 2004, the "GIS Systems Architecture and Design Report" made several recommendations pertinent to data handling methods, the distribution of data to project partners and agencies, the implementation of data standards, and data archiving procedures. In 2006, the "Final GIS Work Plan" was approved. It identified GIS specific objectives and activities to achieve the plan objectives.

These documents defined broad goals and specific actions to support the development of the GIS-based system. Data and information are key prerequisites for the GIS system and its enablement of information presentation, analysis, and sharing. Specifically, the California CSMP requires the development of a geospatial data repository conforming to adopted standards to enable stakeholders to access available information for technical analysis and general

information gathering and viewing. Data inventory, collection, and standardization activities are the essential precursors to developing the geospatial data repository. The purpose of the User Survey and Needs Analysis Study was, therefore, to gain insight on end-user needs and requirements, as well as to identify data sources.

The study was performed jointly by Halcrow, Inc. (Halcrow) and Psomas, hereafter the team. The team consisted of Mr. Claudio Fassardi from Halcrow and Mr. Craig Gooch from Psomas. Mr. Fassardi acted as Project Manager and was responsible for the development of the project, reviewed project deliverables, and provided technical guidance. Mr. Gooch led the development and implementation of the User Survey and performed the Needs Analysis.

3. Methodology

During the planning stages of this study, it was recognized that including the GIS Technical Working Group (TWG) would be important. This previously formed group consisting of GIS representatives of key stakeholders was reconvened and, in a series of teleconferences, the group provided end-user perspectives, input into their needs and preferences, and assisted in the identification of survey recipients. In addition, it stayed engaged throughout the study for input, briefings, and coordination in the use of the resulting repository.

The User Survey and Need Analysis Study was performed in four tasks as follows:

- Task 1 - On Board Review Meeting and Collection of Information
- Task 2 - GIS TWG Meetings
- Task 3 - User Survey
- Task 4 - User Survey and Needs Analysis

In Task 1, the team discussed with the USCAE Los Angeles District the scope of the study and procedures, it acquired contact information of members of the GIS TWG and the Coastal Sediment Management Workgroup (CSMW), and collected reports relevant to the study.

In Task 2, the GIS TWG was reconvened. Teleconferences were conducted to reacquaint the CSMW with the California Sediment Master Plan GIS, gather input and discuss results.

In Task 3, based on input gathered during meetings with the GIS TWG, a survey was developed and performed with the purpose of gaining insight on end-user requirements and concerns, and to identify data sources. Online surveys were used to assess, among others, types of data and queries, data access and analysis needs. Upon the collection of survey results, a Needs Analysis was performed in Task 4.

4. On Board Review Meeting and Collection of Information

At the onset of the study on June 16, 2010 the team conducted an On Board Review teleconference with the USACE Los Angeles District with the objective of presenting the roles and responsibilities of the personnel involved in the study and to describe the procedures to be followed in the conduct of the study. In addition, the collection of the following references was coordinated:

- Everest International Consultants, Inc., 2006. Coastal Sediment Master Plan, Final GIS Work Plan. July, 2006.
- Everest International Consultants, Inc., 2006. Coastal Sediment Master Plan, Beach Restoration Regulatory Guide. December, 2006.
- Parsons Brinckerhoff Quade & Douglas, 2004. GIS System Architecture and Design Report. September 2004.
- USACE Los Angeles District, 2005. California Coastal Sediment Master Plan, Project Management Plan. August, 2005.

5. GIS TWG Meetings

5.1 Teleconference of October 14, 2010

On October 14, 2010 the GIS TWG was reconvened and a teleconference was conducted. The team gave a brief overview of the project, including the background of the CSMP GIS project, and the scope and expectations of the User Survey and Needs Analysis Study, as well as guidelines for the desired outcome of the that first meeting. GIS TWG members are listed in Table 1.

Table 1. GIS TWG members.

Name	Organization
Greg Benoit	CA Coastal Conservancy
Christina Cairns	NOAA
Gerald Comati	BEACON
Clif Davenport	CA Geological Survey
Sophie DeBeukelaer	NOAA
Tim Doherty	San Francisco Bay Conservation and Development Commission
Rose Dopsovic	USACE-SAM
Nancy Ferris	USACE-SPN
Barbara Fosbrink	CA State Parks
Eric Gillies	CA State Lands Commission
Brenda Goeden	San Francisco Bay Conservation and Development Commission
Sandra Hamlat	San Francisco Bay Conservation and Development Commission
Glenn Higdon	USACE-SAM
Mark Johnsson	CA Coastal Conservancy
Susie Ming	USACE-SPL
Chris Potter	CA Natural Resources Agency
Pam Rittelmeyer	CA Ocean Protection Council
Heather Schlosser	USACE-SPL
Paulo Serpa	CA Department of Fish & Game
Becky Smyth	NOAA
Dan Swenson	USACE-SPL
Jon VanCoops	CA Coastal Conservancy
Paul Veisze	CA State Parks
Adam Wagschal	Port of Humbodt Bay
Nate West	USACE-SPL
Florence Wong	USGS
James Zoulas	USACE-SPN

It was emphasized that in order to be efficient, the end-user survey must be developed using a very precise definition of the type of audience to be approached, who specific users and data repositories are, along with a good knowledge of the technologies users have at their disposal, and their analysis needs. Given the specific expertise GIS TWG members have, their wide range of affiliations to state and federal agencies, involvement with and vision of similar GIS-based projects; the team engaged the GIS TWG in a fruitful discussion with the objective of producing the initial guidelines for the development of the end-user survey. Specifically, the team discussed the following items during the meeting:

1) Review and affirm GIS Work Plan goals and approach
2) Identify current TWG initiatives
3) Summarize expected services
    a) Data repository
    b) GIS browser
    c) Applications?
4) Affirm survey objectives are to position the TWG for implementation efforts
5) Discuss survey objectives
    a) User needs for CSMP GIS
        i) Functions / applications / tools
        ii) Accessibility methods
    b) Contact information
        i) Agency
        ii) Contact person
        iii) Role interests (provider, regional aggregator, facilitator,…)
    c) Data source availability
        i) Themes
        ii) Currency

iii) Availability

iv) Extent

v) Maintenance

d) Other information to collect

e) Findings report

6) TWG Follow-up Actions

a) Identify survey targets – specific contacts and general categories

b) Identify priority data sets

c) Review draft survey

The minutes of the meeting are included in Appendix A at the end of this report.

5.2 Teleconference of November 16, 2010

During this meeting the input received from the GIS TWG on the content of the User Survey distributed for review was discussed. The group also discussed who should receive the survey (e.g. specific agencies or classes of agencies and points of contact within agencies), and how to identify which data themes need to be included in the survey to determine the data needs.

The minutes of the meeting are included in Appendix A at the end of this report.

6. User Survey

6.1 Survey Objectives

The objective of the survey was to increase the understanding for data needs, data availability, and data access / analysis tools supporting the study and management of coastal sediment. The survey results will guide future efforts for organizing, managing, and accessing geospatial data to assist in coastal sediment management.

6.2 Survey Approach and Tools

The survey was conducted using the online survey tool "SurveyMonkey" (http://www.surveymonkey.com) to facilitate widespread access to the survey forms as well as automatic data tabulation and graphing. Within the survey, respondents could opt out after identifying themselves, or could complete the survey of 28 questions. Some questions were optional allowing the respondent to skip over them without answering.

The GIS TWG was engaged to identify possible survey recipients from a range of organizations including federal, state, and local agencies as well as consultants. Initially, 100 individuals were identified as targeted recipients of the survey. An email letter was sent to each of the 100 identified recipients on January 26, 2011 requesting their participation in the survey and referrals to others who may be appropriate for participation.

Subsequent communications with survey recipients and the GIS TWG expanded the list of targeted survey recipients to 176 people. Four primary notices were sent via email providing the initial invitation, then 2 reminders and a notice of extended period for response. Telephone calls were also made to non-responding survey recipients. This process of engaging the non respondents with once a week communication was effective in increasing the survey response rate to 57%. Figure 1 shows the distribution of survey participation.

The following summarizes the survey recipient communication:

- Recipients were identified by the GIS TWG members
- Initial survey sent on 1/26/2011 (100 recipients)
- New recipients added and sent surveys following initial survey (45 recipients)
- Reminder sent on 2/1/2011 (123 recipients)

- New recipients added and surveys sent following initial survey (15 recipients)
- Reminder to complete survey sent on 2/8/2011 (104 recipients)
- New recipients added and surveys sent following initial survey (16 recipients)
- Extended notice sent on 2/22/2011 (81 recipients)
- The survey was closed to participants on 3/10/2011

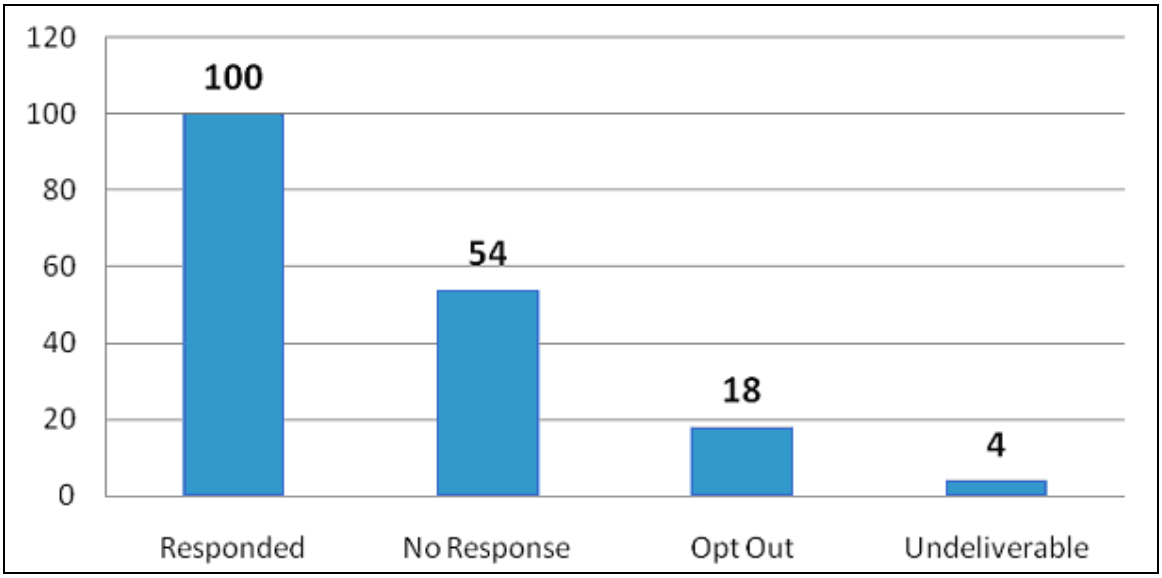


Figure 1. Distribution of survey participation.

6.3 Survey Organization

The survey was organized into several major areas of information consisting of the following groups of questions:

- Introduction
- Respondent Information
- Geographic Information Challenges
- Geographic Information Needs and Sources
- GIS Information Collaboration
- Geographic Information Tools

The User Survey is included in Appendix B.

7. User Survey and Needs Analysis

One-hundred people representing 56 organizations responded to the survey. The respondents represent federal, state, regional, and local governments; research, non-profit, and academic organizations; and private sector firms. Seventy-eight percent of respondents are involved to some extent with coastal sediment planning and management with 50% having an involvement with one or more multi-agency organizations addressing coastal sediment management issues. Sixty-five respondents indicated their experience as high or medium for coastal management, 55 as GIS users, and 30 with experience in GIS data management.

Over 85 geographic data themes were identified as to the level of need and applicability to serve the responding organization's needs. Many additional geospatial data themes were suggested by the respondents.

Nearly 60% of the respondents expressed interest in geographic data collaboration on new projects, more than 50% wanted to learn more about geographic data collaboration, almost 40% have existing data to share and just over 20% would like to coordinate geographic data maintenance.

Respondents identified tools for geospatial data access, data download and map viewing as the highest needs. The existing GIS Sediment Management Map was evaluated for the usefulness of its tools with nine tools being identified as essential by nearly 40%, and all ten tools being identified as useful by at least 60% of the respondents. Respondents provided suggestions for additional geospatial tools. Forty-six of the respondents wanted to receive notices of future activities pertaining to California coastal sediment management and geospatial data.

The survey contained the 28 questions listed below. The analysis associated with each question follows the list.

Q1. Your Information (Include Name, Agency, and Email at a minimum).

Q2. Confidential Information Agreement. My response information may be used as follows:

Q3. Are you involved with coastal sediment planning and management?

Q4. Are you currently a member of a group addressing coastal sediment management issues?

Q5. Please check below if you do not wish to participate in this survey.

Q6. How do you typically delimit coastal geographic areas for coastal sediment management?

Q7. Identify Your Expertise.

Q8. What are the key GIS related issues and challenges for coastal sediment management?

Q9. Identify the importance of mapping the following COASTAL FEATURES.

Q10. Is your organization a data source for COASTAL FEATURES? Please describe.

Q11. Identify the importance of mapping COASTAL STRUCTURES and FACILITIES.

Q12. Is your organization a data source for COASTAL STRUCTURES and FACILITIES?

Q13. Identify importance of mapping PHYSICAL and ADMINISTRATIVE FEATURES.

Q14. Is your organization a data source for PHYSICAL and ADMINISTRATIVE FEATURES?

Q15. Identify importance of mapping and characterizing ENVIRONMENTAL RESOURCES.

Q16. Is your organization a data source for ENVIRONMENTAL RESOURCES?

Q17. Identify importance of mapping and characterizing METEOROLOGIC and OCEANOGRAPHIC CONDITIONS and COASTAL PROCESSES.

Q18. Is your organization a data source for METEOROLOGIC and OCEANOGRAPHIC CONDITIONS and COASTAL PROCESSES?

Q19. Identify importance of mapping and characterizing SEDIMENT SOURCES / DISPOSAL AREAS.

Q20. Is your organization a data source for SEDIMENT SOURCES / DISPOSAL AREAS?

Q21. Identify importance of mapping BEACH CHARACTERISTICS.

Q22. Is your organization a data source for BEACH CHARACTERISTICS?

Q23. Is your organization interested in geographic data collaboration?

Q24. What types of geospatial tools do you need / prefer?

Q25. Please review the online GIS Sediment Management Map.

Q26. Assess the usefulness of the following tools found on the map.

Q27. Identify other mapping sites or tools available for coastal sediment management. Please include the website URL if relevant.

Q28. Thank you for participation in the survey. Anything else?

7.1 Response Detail

Q1. Your Information (Include Name, Agency, and Email at a minimum)

Most respondents completed this question providing contact information and agency affiliation. Respondent's detailed information is not represented in this document but has been provided to the USACE Los Angeles District to enable future contact and coordination with respondents.

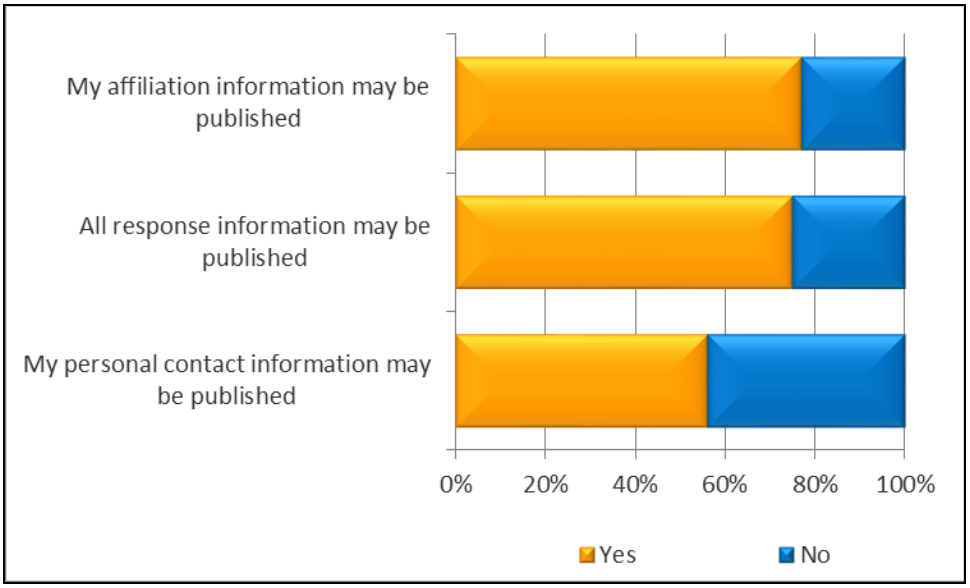
Answers	Response
Name	100.0 %
Title	93.9 %
Agency	98.0 %
Department	62.6 %
Address	87.9 %
Address 2	19.2 %
City	87.9 %
State	87.9 %
Zip	87.9 %
Email	97.0 %
Phone Number	83.8 %
Your Organization's Website	70.7 %

Figure 2 shows the geographical distribution of the survey respondents. Respondents were distributed throughout the California coastal communities, and Sacramento, predominantly representing State agencies.

Figure 2. Geographical distribution of survey respondents.

Q2. Confidential Information Agreement. My response information may be used as follows:

Respondents identified their preference for anonymity in the publishing of the survey findings. Generally the respondents provided permission to release information about their affiliation.



Respondents authorizing their agency information to be released were represented by the following agencies.

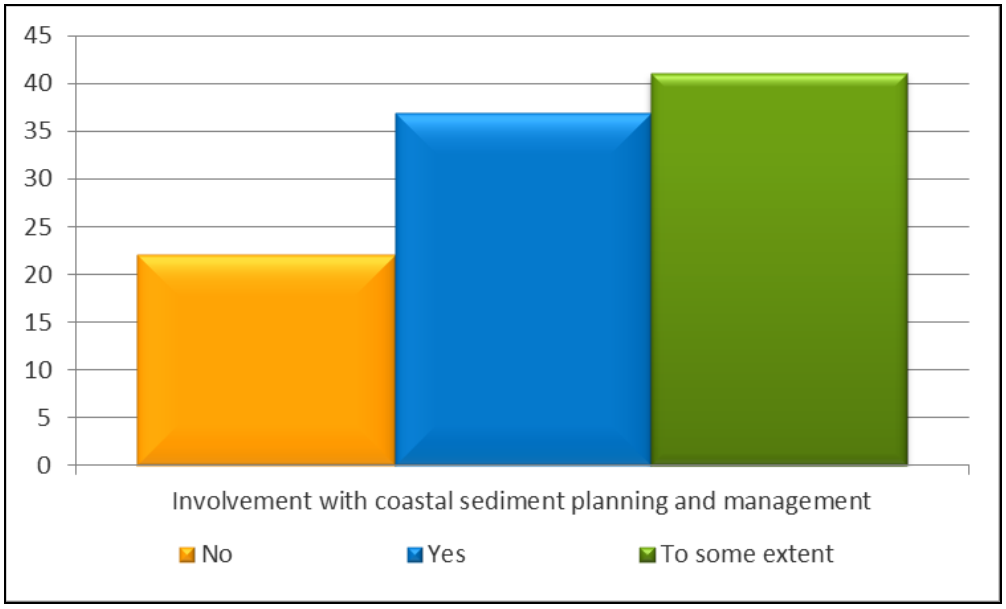
- Agua Hedionda Lagoon Foundation
- Beach Erosion Authority for Clean Oceans and Nourishment (BEACON) (3)
- California Coastal Commission (2)
- California Department of Fish and Game (3)
- California Department of Transportation, District 5
- California Department of Water Resources
- California Geological Survey (3)
- California Marine Affairs and Navigation Conference (CMANC)
- California Natural Resources Agency (2)
- California Ocean Protection Council
- California State Parks (2)

- California State Parks, Park Operations
- California State University Monterey Bay, Division of Science and Environmental Policy
- Center for Ocean Solutions
- City of Carlsbad, Parks and Recreation
- City of Encinitas, Engineering
- City of Monterey, Public Facilities
- City of Morro Bay, Harbor
- City of Newport Beach, Public Works - Harbor Resources
- City of Oceanside, Public Works
- Coastal Frontiers Corporation
- Coastal Zone Foundation
- County of Los Angeles, Chief Information Office
- County of Orange, OC Parks
- Crescent City Harbor District
- Elkhorn Slough National Estuarine Research Reserve
- ESA Phil Williams and Associates (ESA PWA)
- Everest International Consultants, Inc.
- Los Angeles County, Department of Beaches and Harbors
- Monterey Bay National Marine Sanctuary
- Naval Postgraduate School, Oceanography Department
- NOAA Coastal Services Center (CSC), West Coast Regional Office
- NOAA, Monterey Bay National Marine Sanctuary
- NOAA, National Marine Fisheries Service (NMFS)
- Orange County Sanitation District, Information Technology
- Port of Los Angeles, Engineering
- Port San Luis Harbor District
- San Diego Association of Governments Shoreline Preservation Working Group (SANDAG)
- San Francisco Bay Conservation and Development Commission (BCDC)
- San Mateo County, Harbor District Administration
- San Mateo County, Information Services Department

- Santa Cruz County (2)
- Santa Cruz Port District
- Science Applications International Corporation
- Scripps Institution of Oceanography, Earth Section
- State Coastal Conservancy
- State Lands Commission, Division of Environmental Planning and Management
- State Water Resources Control Board, Division of Water Quality
- The Nature Conservancy, Science and Planning
- University of California San Diego, Integrative Oceanographic Division
- University of California Santa Barbara, Marine Science Institute
- U.S. Army Corps of Engineers Los Angeles District (SPL) (2)
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey (8)

Q3. Are you involved with coastal sediment planning and management?

The majority of respondents are involved with coastal sediment planning and management.



Q4. Are you currently a member of a group addressing coastal sediment management issues?

Fifty-five and one-half percent of respondents indicated they are a member of a group addressing coastal sediment management issues. The groups identified are listed below. Note that respondents often identified affiliation with multiple groups.

- American Association of Port Authorities (AAPA)
- American Geophysical Union (AGU)
- American Shore and Beach Preservation Association (ASBPA)
- American Society of Civil Engineers (ASCE)
- Batiquitos Lagoon Foundation
- Beach Erosion Authority for Clean Oceans and Nourishment (BEACON)
- California Association of Harbor Masters and Port Captains (CAHMPC)
- California Coastal Coalition (CalCoast)
- California Coastal Sediment Management Workgroup (CSMW)
- California Marine Affairs and Navigation Conference (CMANC)
- California Ocean Protection Council
- California Ocean Protection Council Coastal Impacts Assessment Project
- California Shore and Beach Preservation Association (CSBPA)
- City of Carlsbad Beach Preservation Committee
- City of Encinitas
- City of Santa Barbara
- Coasts, Oceans, Ports and Rivers Institute of the American Society of Civil Engineers (COPRI)
- Coastal Zone Foundation
- Delta Long-Term Management Strategy Interagency Working Group (Delta LTMS IWG)
- EPA Dredging and Sediment Management Team Wetlands Regulatory Office
- EPA San Francisco Long Term Management Strategy for Dredging (LTMS)
- Elkhorn Slough Tidal Wetland Project
- Humboldt Regional Sediment Management Workgroup
- Interagency Working Group for Ocean and Coastal Mapping (IWG-OCM)

- Morro Bay National Estuary Program
- Monterey Bay National Marine Sanctuary (MBNMS)
- North Half Moon Bay Shoreline Improvement Project Working Group
- Ocean Beach Task Force
- San Diego Association of Governments Shoreline Preservation Working Group (SANDAG)
- San Francisco Bay Conservation and Development Commission (BCDC)
- San Francisco Long Term Management Strategy (LTMS)
- Santa Cruz Port District
- Santa Monica Bay Restoration Commission (SMBRC)
- Save The Waves Coalition (STW)
- Society for Sedimentary Geology (SEPM)
- Southern California Dredged Material Management Team
- Southern California Wetlands Recovery Project (SCWRP)
- Southern Monterey Bay Coastal Erosion Workgroup (SMBCEW)
- Surfrider Foundation
- U.S. Army Corps of Engineers National Regional Sediment Management Program (USACE RSM)
- U.S. Army Corps of Engineers San Francisco Dredged Material Management Office (USACE DMMO)
- U.S. Geological Survey (USGS)
- Watershed Institute at California State University Monterey Bay
- West Coast Governors' Agreement on Ocean Health Sediment Action Coordination Team
- Western Dredging Association (WEDA)

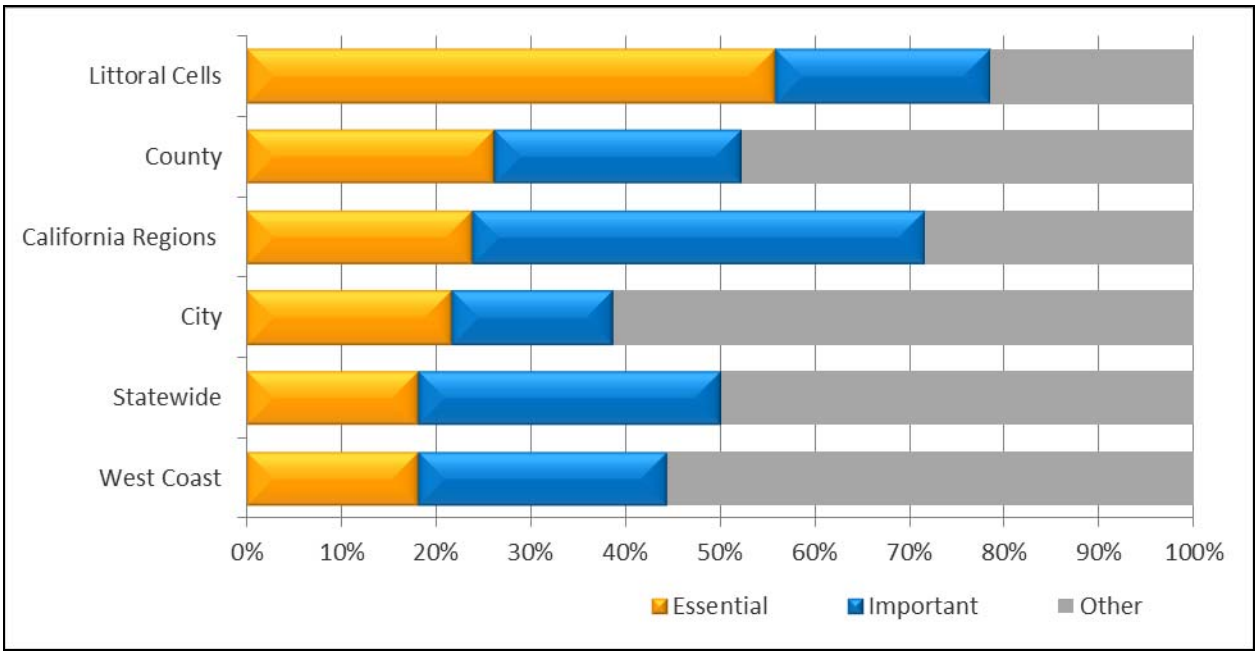
Q5. Please check below if you do not wish to participate in this survey

Nine percent of respondents chose not to participate in the survey. Those leaving comments indicated they were not involved in sediment planning or management and therefore could not participate effectively.

Q6. How do you typically delimit coastal geographic areas for coastal sediment management?

Respondents indicated geographic areas for coastal management were important or essential in the following order of importance:

- Littoral Cells (68)
- California Regions (62)
- County (45)
- Statewide (43)
- West Coast (38)
- City (33)



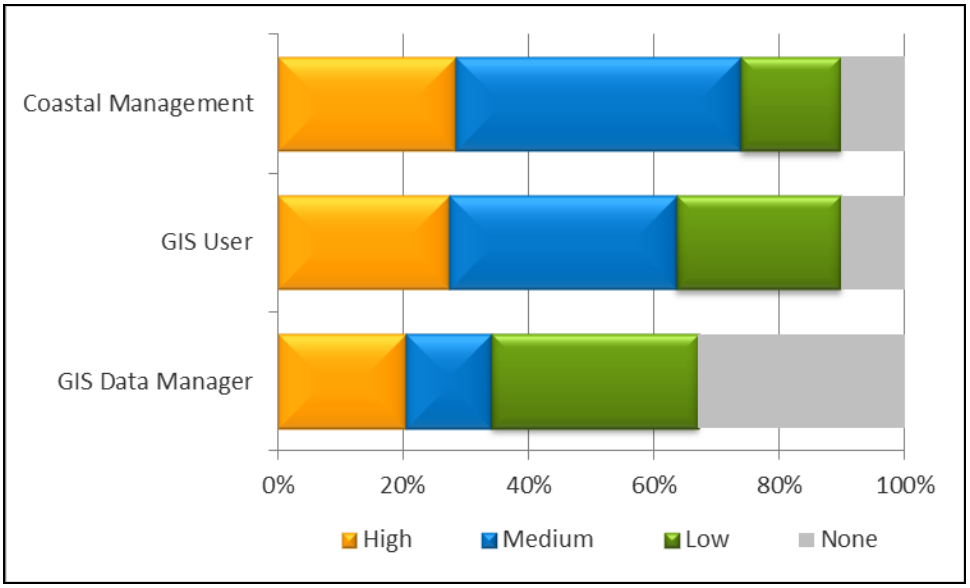
Respondents noted that other areas include:

- California State Park boundaries
- Watersheds

Q7. Identify Your Expertise

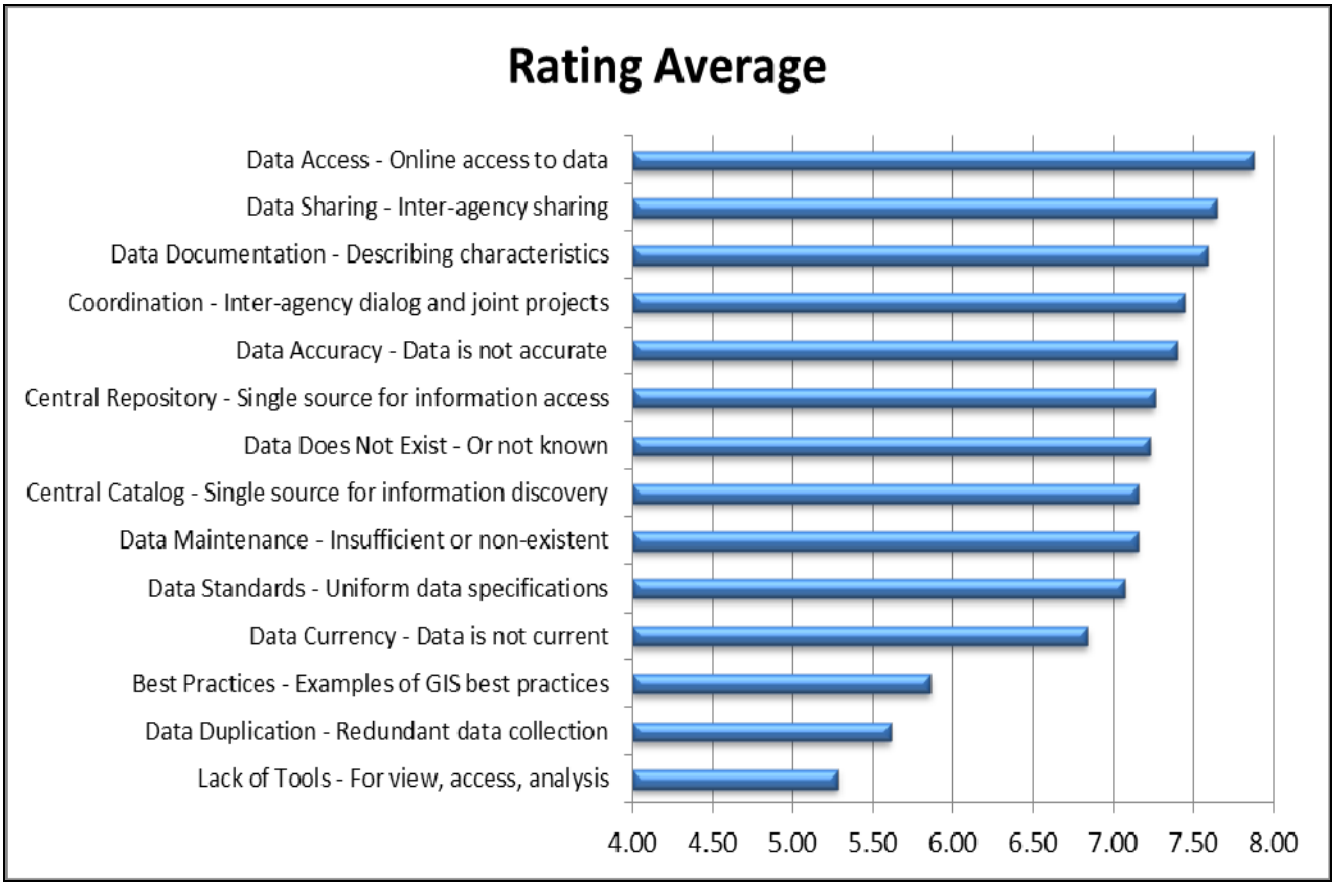
Respondents indicated their experience as high for the following categories.

- Coastal Management (25 respondents, out of 88 responses)
- GIS User (24 respondents, out of 88 responses)
- GIS Data Manager (18 respondents, out of 88 responses)



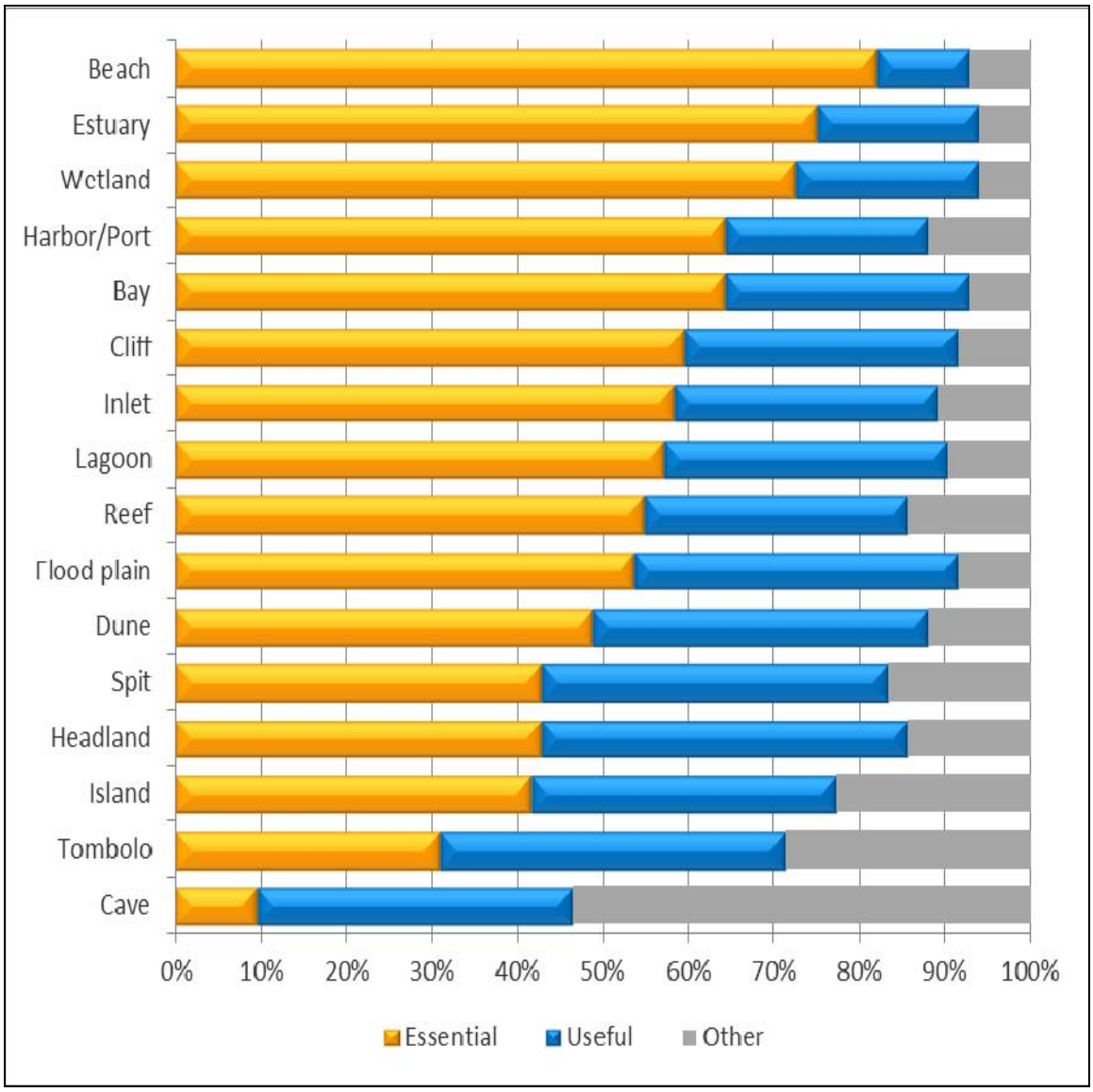
Q8. What are the key GIS related issues and challenges for coastal sediment management?

The graph below shows the average of the ratings given by respondents to each of the GIS related issues and challenges identified for the survey. These are sorted from most important (maximum 10) to least important (minimum 1).



Q9. Identify the importance of mapping the following COASTAL FEATURES.

This question is the first in a series of questions to identify the importance of mapping various geographic features. As the pattern indicates, all but three of the features were identified by 80% of the respondents as being essential or useful.



Respondents noted that other features of interest include:

- Armored coastline or rip-rap coastline
- Breakwaters
- Coastal debris basins
- Groins
- Jetties
- Pericoastal, at risk urban development and infrastructure
- Revetments
- Salients
- Seawalls
- Surfgrass

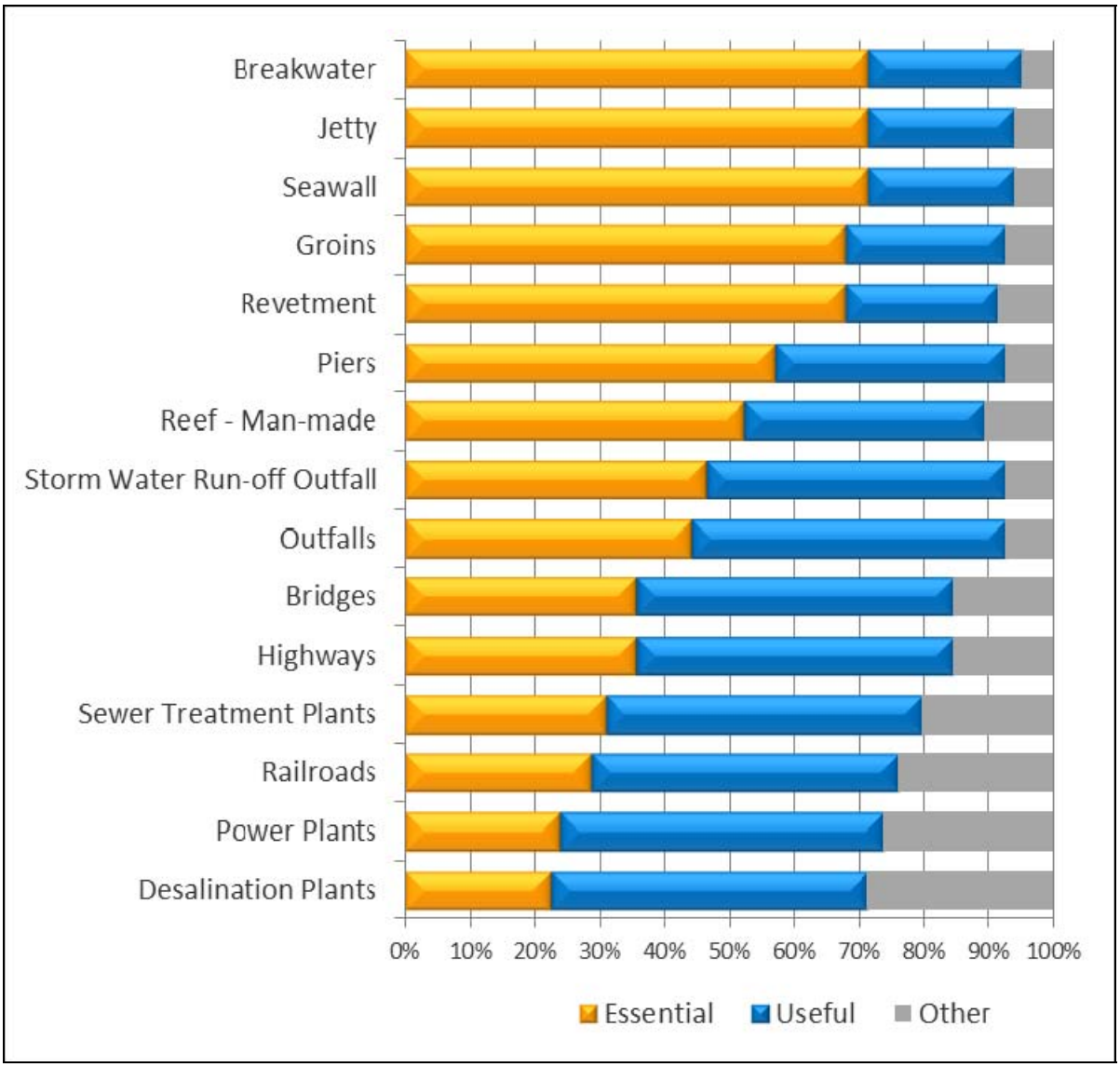
Q10. Is your organization a data source for COASTAL FEATURES? Please describe.

Some respondents stated that the following resources are available from their organizations for the identification/characterization of coastal features. The raw survey data provides references to the agencies who responded to this question enabling follow-up for future data coordination. The survey response detail has been provided to the USACE Los Angeles District.

- Aerial imagery
- Bathymetry
- Beach surface mapping
- Bluff erosion
- Dune migration
- Environmental Impact Reports
- History of coastal projects
- LIDAR
- Seagrass
- Wetlands

Q11. Identify the importance of mapping COASTAL STRUCTURES and FACILITIES.

Respondents identified breakwater, jetty, seawall, groins, revetment, and piers as the highest rated features for mapping. Overall the entire list was ranked high with railroads, power plants, and desalination plants rating lowest.



Other responses identified the following coastal structures and facilities for mapping:

- Pericoastal urban development
- Habitats of particular concern (HAPC)
- Gas lines and all other utilities
- Cultural resources
- Dredging sand placement

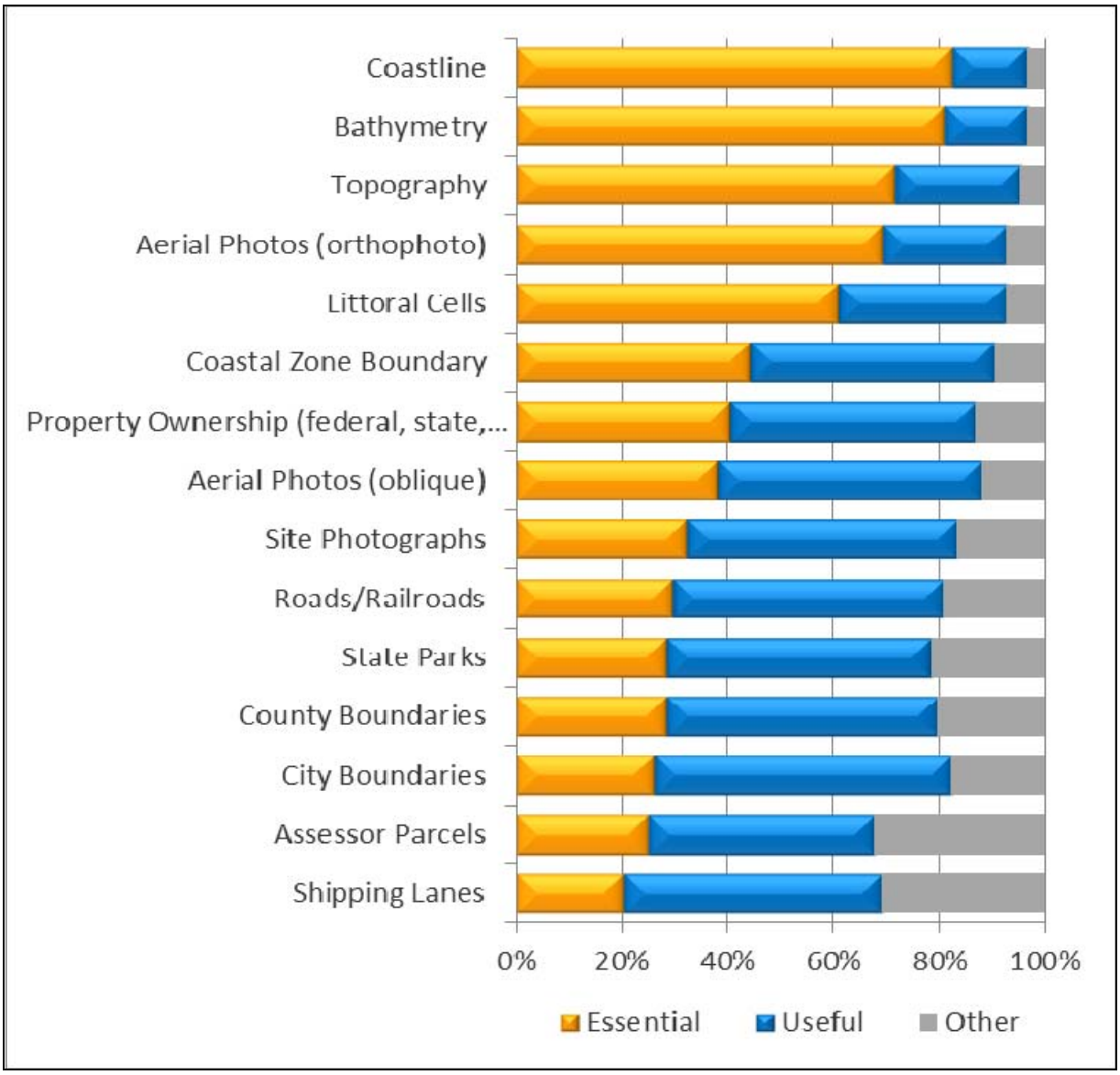
Q12. Is your organization a data source for COASTAL STRUCTURES and FACILITIES?

Some respondents stated that data for the following coastal structures are available from their organization. The raw survey data provides references to the agencies who responded to this question enabling follow-up for future data coordination. The survey response detail has been provided to the USACE Los Angeles District.

- Breakwaters
- Bridges
- Coastal structures
- Culverts
- Docks
- Harbor facilities
- LIDAR
- Piers
- Reefs
- Several categories
- Stormwater infrastructure
- Treatment plants and outfalls

Q13. Identify importance of mapping PHYSICAL and ADMINISTRATIVE FEATURES.

A high number of respondents identified coastline, bathymetry, topography, aerial photos, and littoral cells as essential data sets. In general, all the listed data themes were identified as useful or essential by more than 70% of respondents.



Respondents identified the following physical and administrative features for mapping:

- Geology
- Marine reserves and protected areas
- Parks – local and regional
- Marine sanctuary boundaries

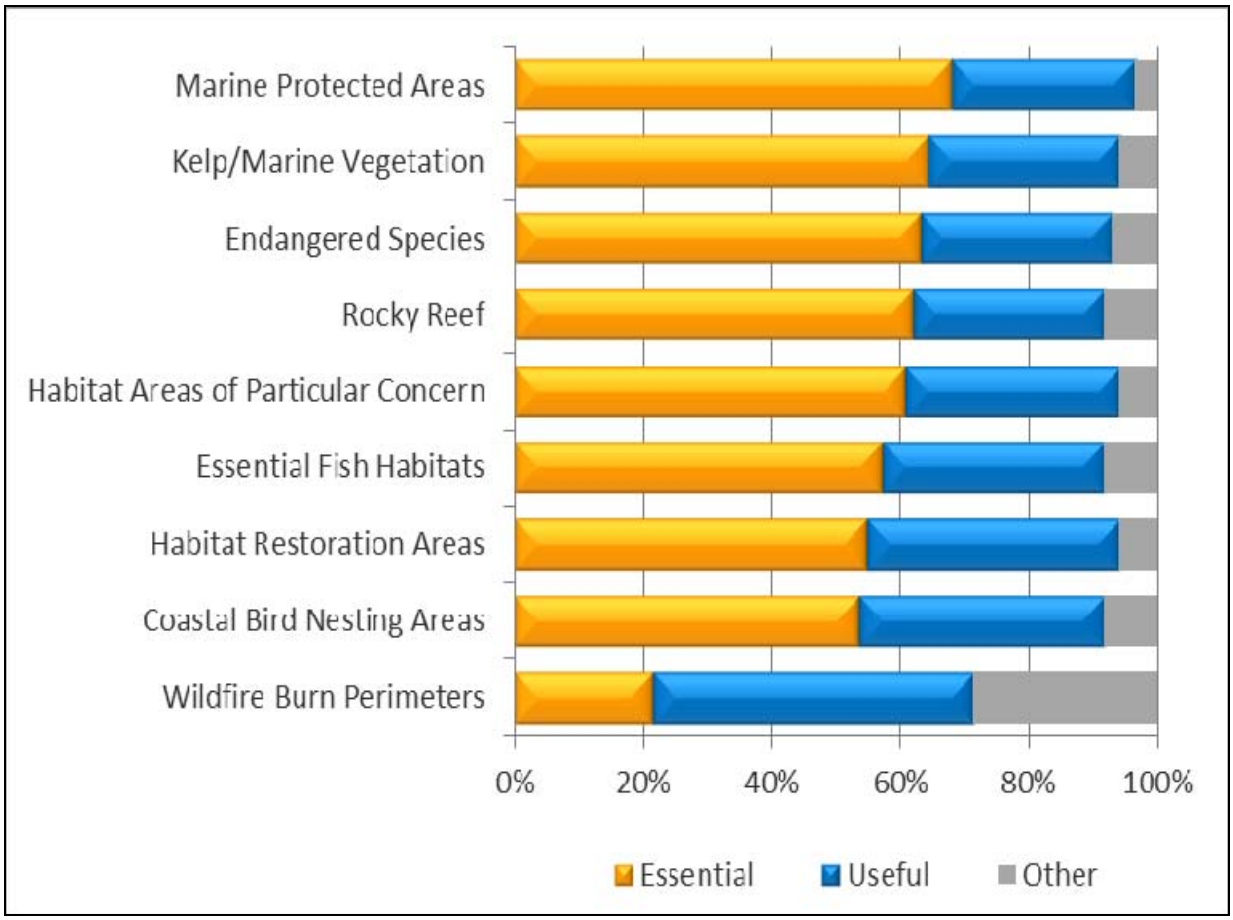
Q14. Is your organization a data source for PHYSICAL and ADMINISTRATIVE FEATURES?

Some respondents stated that data for the following physical and administrative features are available from their organization. The raw survey data provides references to the agencies who responded to this question enabling follow-up for future data coordination. The survey response detail has been provided to the USACE Los Angeles District.

- Beach topography
- Cadastral data
- California protected areas database
- Federal jurisdictional boundaries
- Jurisdictional boundaries
- LIDAR
- Orthophotos
- Parks
- Shipping lane information
- State park boundaries
- Topography

Q15. Identify importance of mapping and characterizing ENVIRONMENTAL RESOURCES.

Responses showed little discrimination among the listed environmental resources with the exception that wildfire burn perimeters were rated substantially lower than the other resources.



Respondents identified the following environmental resources for mapping:

- Environmentally Sensitive Habitat Areas (ESHA)
- Grunion spawning habitat
- Impacted / degraded / polluted areas
- Key surfing reefs
- National Marine Sanctuaries (NMS)
- Surfgrass
- Temporal (time based) mapping

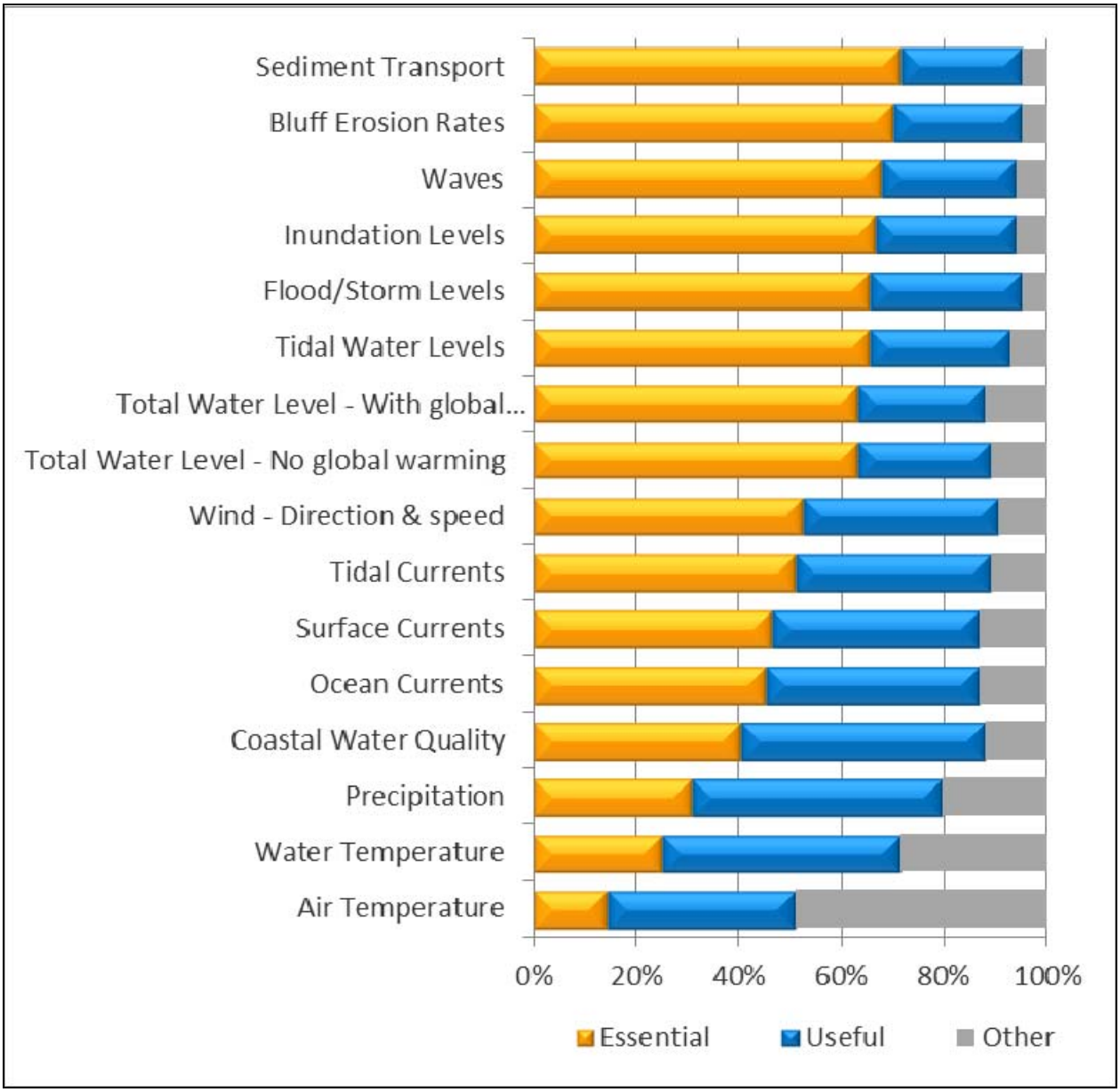
Q16. Is your organization a data source for ENVIRONMENTAL RESOURCES?

Some respondents stated that data for the following environmental resources are available from their organization. The raw survey data provides references to the agencies who responded to this question enabling follow-up for future data coordination. The survey response detail has been provided to the USACE Los Angeles District.

- Bathymetry
- Biotic environmental resources
- EFH
- Endangered species
- ESHA
- Habitat restoration
- HAPC
- Rocky reef
- Salmon distributions
- Sanctuaries
- Snowy plover populations
- Threatened salmonids
- Wildfire burn perimeters

Q17. Identify importance of mapping and characterizing METEOROLOGIC and OCEANOGRAPHIC CONDITIONS and COASTAL PROCESSES.

Responses to this question showed a high response for essential data such as waves, water levels, wind conditions, sediment transport, bluff erosion rates, inundation and storm/flood levels.



Respondents identified the following meteorologic and oceanographic conditions and coastal processes as mapping priorities.

- Salinity
- Backshore type
- Frontal zones
- Geomorphic indicators
- High tide
- Mean high tide
- Nearshore substrate
- Upwelling zones

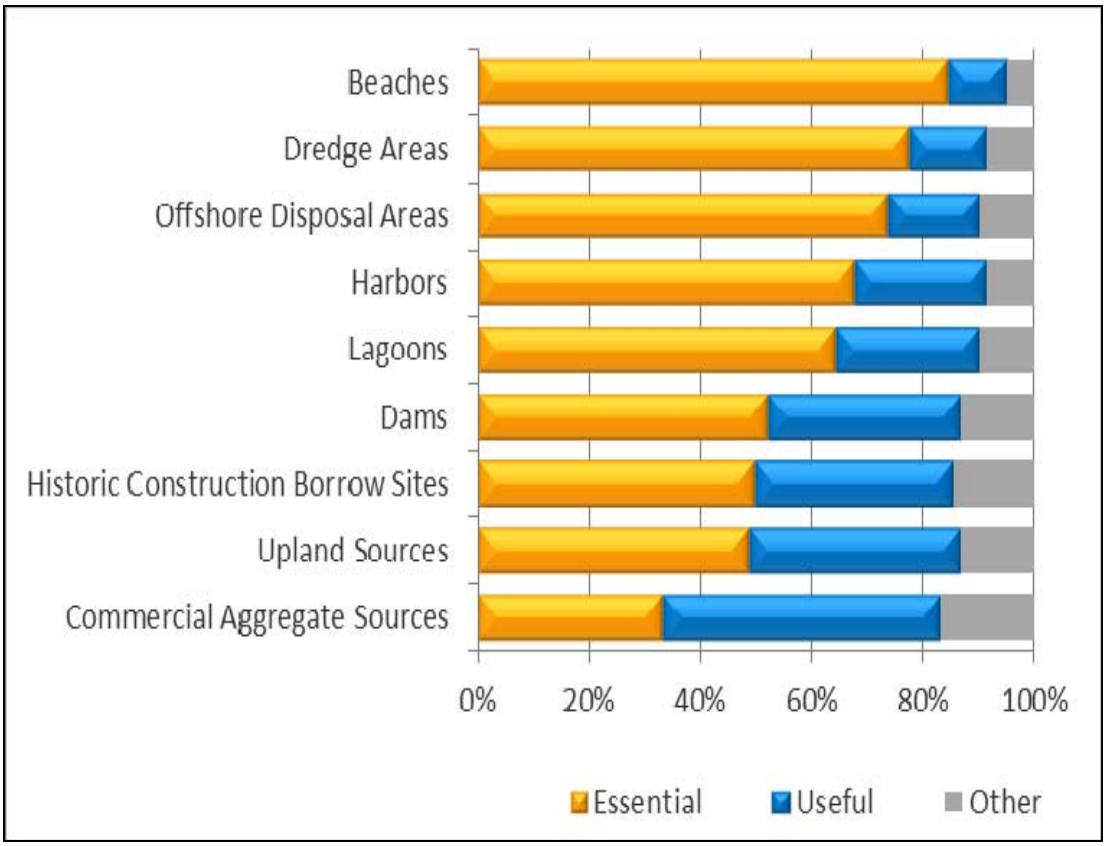
Q18. Is your organization a data source for METEOROLOGIC and OCEANOGRAPHIC CONDITIONS and COASTAL PROCESSES?

Some respondents stated that data sources for the following meteorologic and oceanographic conditions and coastal processes are available from their organization. The raw survey data provides references to the agencies who responded to this question enabling follow-up for future data coordination. The survey response detail has been provided to the USACE Los Angeles District.

- Dune migration
- Meteorologic
- Oceanographic
- Predicted coastal water levels
- Water quality
- Waves and currents

Q19. Identify importance of mapping and characterizing SEDIMENT SOURCES / DISPOSAL AREAS.

Beaches, dredge areas, offshore disposal areas, harbors, and lagoons were identified as the most essential sediment sources and disposal areas.



Respondents identified the following sediment sources and disposal areas as mapping priorities.

- Beach disposal areas
- Rivers
- Sedimentation of harbors deposition areas

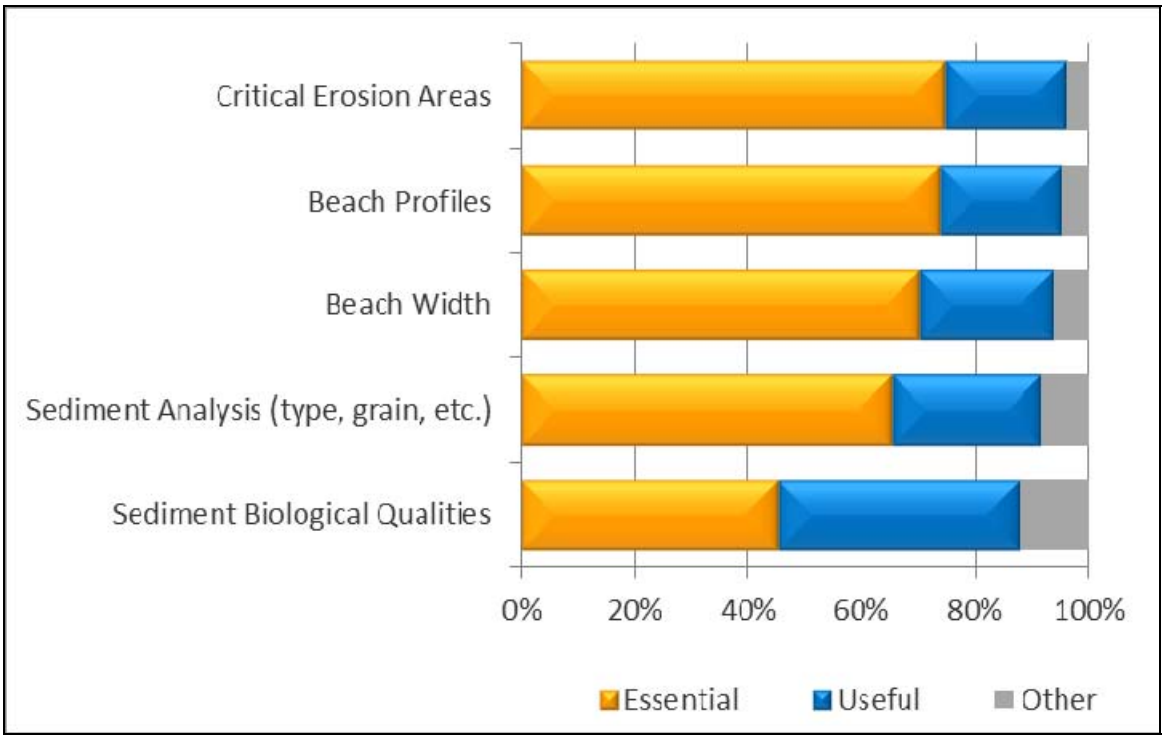
Q20. Is your organization a data source for SEDIMENT SOURCES / DISPOSAL AREAS?

Some respondents stated that data for the following sediment sources and disposal areas are available from their organization. The raw survey data provides references to the agencies who responded to this question enabling follow-up for future data coordination. The survey response detail has been provided to the USACE Los Angeles District.

- Bathymetric surveys of dredge disposal site
- Beaches with progradation
- Dams
- Dredging projects
- Environmental Impact Reports
- Lagoon infilling
- Mining areas
- Regional Sediment Master Plans

Q21. Identify importance of mapping BEACH CHARACTERISTICS.

Respondents consistently identified the following beach characteristics as important with sediment biological qualities rating somewhat less important than critical erosion areas, beach profiles, beach width, and sediment analysis.



Respondents identified the following beach characteristics as mapping priorities.

- Boundaries where littoral drift changes
- Geomorphic indicators (toe of bluff / dune elevation and location, surf zone width)
- Sediment chemical analysis - results and date analyzed
- Type of beach - e.g. is it year round or does it come and go depending upon season, tides, weather, etc.

Q22. Is your organization a data source for BEACH CHARACTERISTICS?

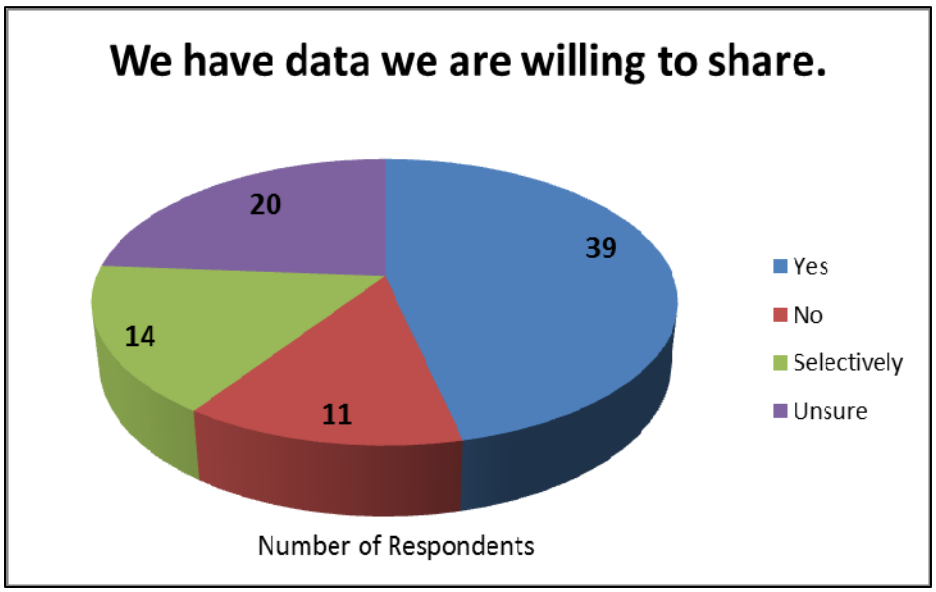
Some respondents stated that data for the characterization of the following beach characteristics are available from their organization. The raw survey data provides references to the agencies who responded to this question enabling follow-up for future data coordination. The survey response detail has been provided to the USACE Los Angeles District. Responses included:

- Beach surveys and sediment analysis
- Topographic surveys and analysis of LIDAR surveys
- Sediment type, and certainly some targeted research on changes in beach profile, beach width, critical erosion areas and model development around those dynamics
- USACE SPL reports for dredging and beach nourishment activities

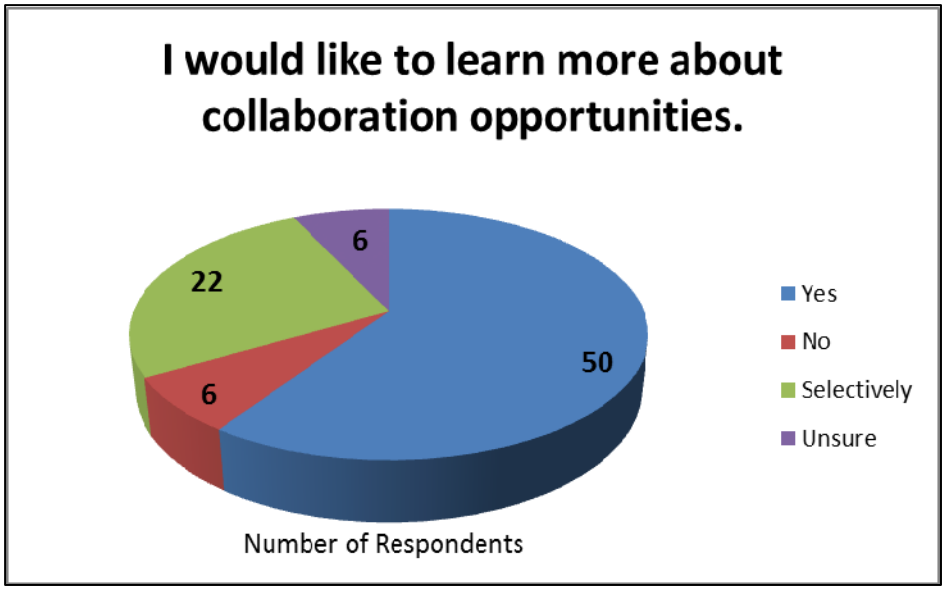
Q23. Is your organization interested in geographic data collaboration?

This question included four different options to assess the level of interest in geographic data collaboration opportunities particularly with new data collection efforts. The responses clearly indicate that interagency data coordination is a key opportunity to leverage existing resources for enhanced data collection and sharing.

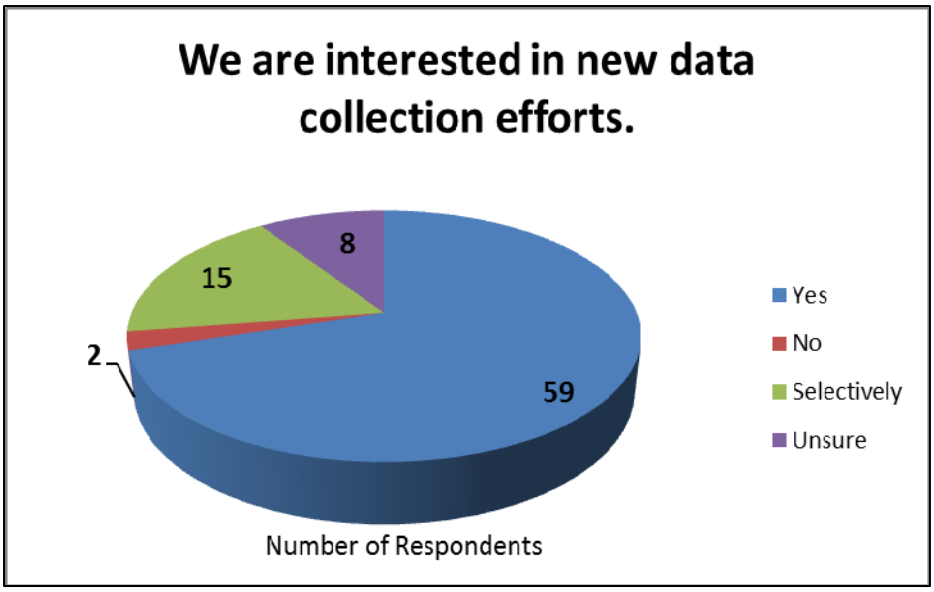
Of the 84 respondents to this question, more than half indicated a willingness to share existing data depending on the specific data and sharing details.



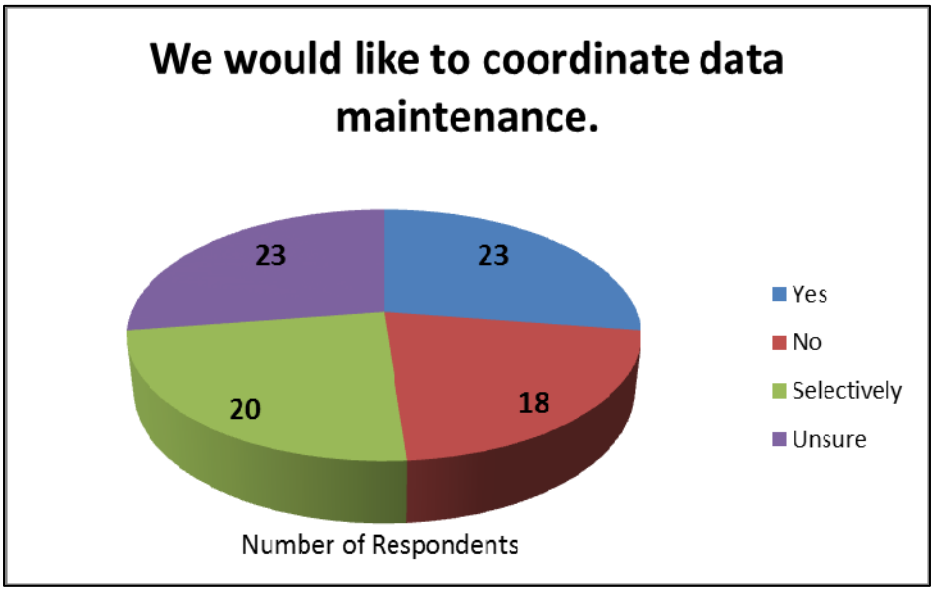
Of the 84 respondents, 85% would like to learn more about collaboration opportunities given the situation.



Overwhelmingly, the 84 respondents indicated their interest in new data collection efforts. The "No" and "Unsure" response categories combined were the lowest responses for this group of questions suggesting clear understanding of the value of collaborative data collection initiatives.



There was much less consensus regarding coordinated data maintenance. Respondents were split between each response category. Perhaps the split is associated with the coordination challenges and possible increase in effort for coordinated data maintenance.



Respondents made the following comments about geographic data collaboration:

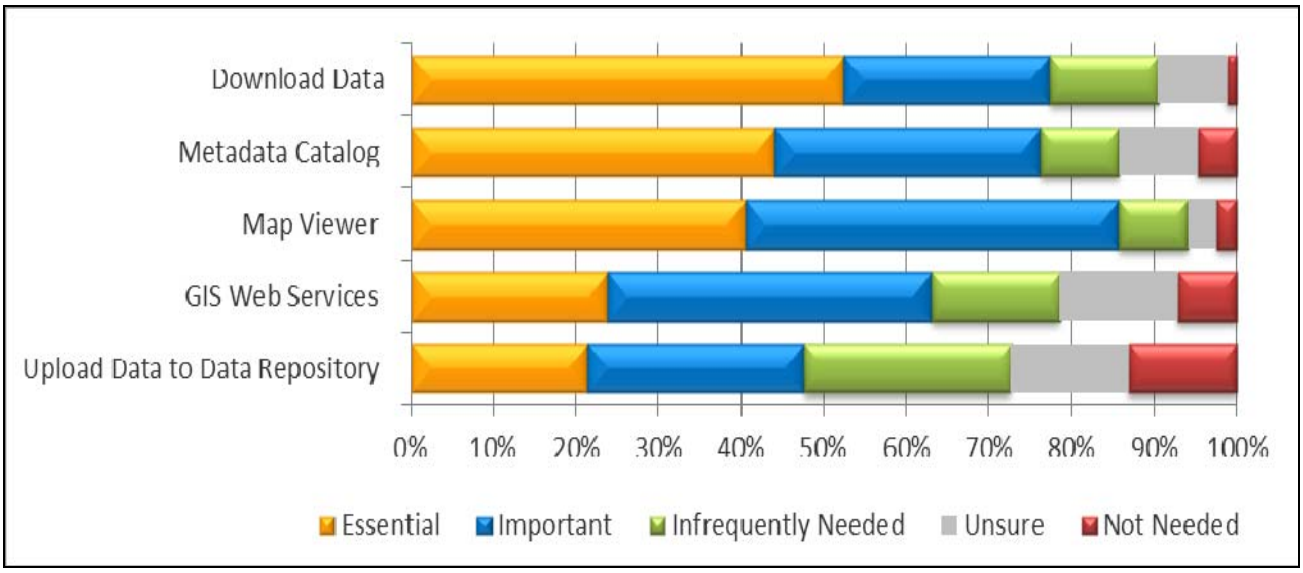
- Data sharing is an existing activity.
- Data collaboration is part of the responsibility of their role as data stewards.
- Uncertainty about the value of agency data to others, but an interest for dialog to assess value and opportunities.
- Objectives should be developed to guide data sharing strategies.
- A general willingness for collaboration dialog.

Q24. What types of geospatial tools do you need / prefer?

The primary tools addressed by the 84 respondents to this question emphasized the need for data downloading, finding data in a metadata catalog, and viewing data online in a map viewer.

GIS web services (the ability to incorporate online interactive maps within a user's mapping application) were indicated as important. Web services are increasingly used as a strategy to integrate other data sources with a user's data while avoiding data management responsibilities.

The Map Viewer response represents the highest response considering essential, important and infrequently needed. Web based map viewers are becoming the most common method of viewing GIS data and are increasingly used by non-technical people.

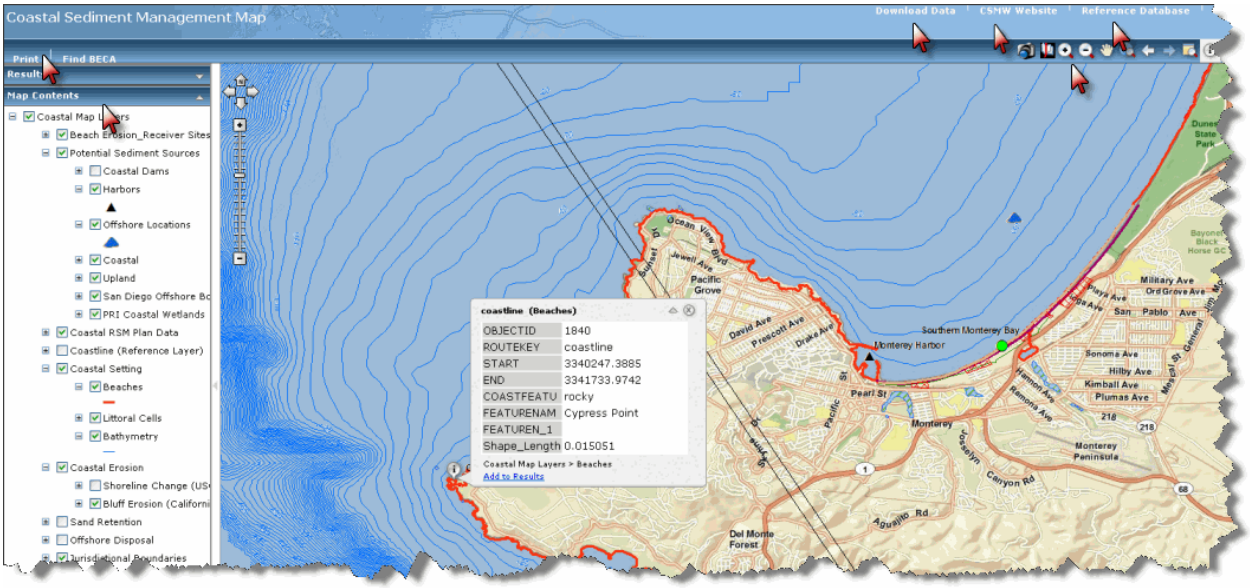


Respondents identified other geospatial tools needed or preferred as follows:

- Contribute features to authoritative data sources.
- The ability to tag online maps with comments.
- Offline interactive maps such as geo PDF documents.
- Tools to support processing of LIDAR data.

Q25. Please review the online GIS Sediment Management Map at:

http://coastalsediment.resources.ca.gov/

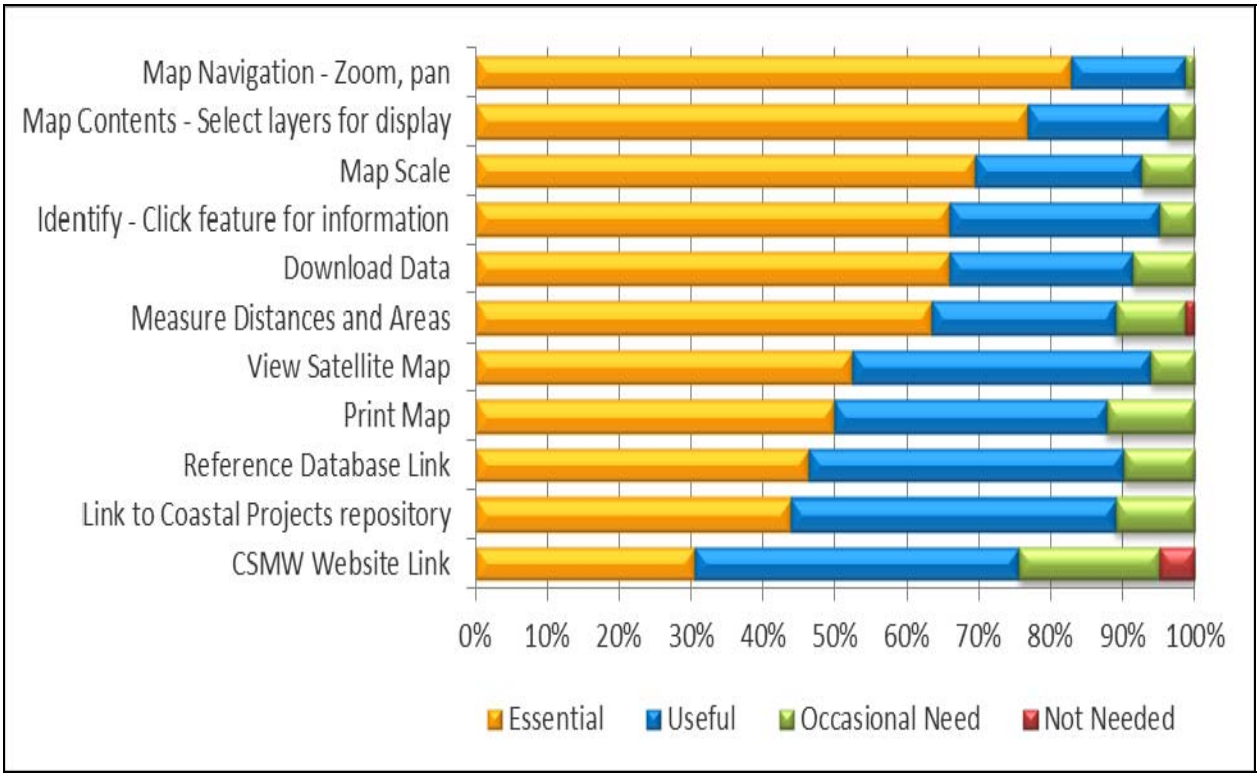


Q26. Assess the usefulness of the following tools found on the map.

Respondents identified six tools as the most essential tools on the site: 1) map navigation, 2) controlling map content, 3) setting map scale, 4) map feature identification, 5) data download, and 6) distance and area measurement. Little differentiation in scoring is represented when both essential and useful ratings are combined.

The top four responses are common elements found in most web based map viewers. Measure tools, view satellite map, and print map are also common tools of web map viewers such as Google or Bing maps. Together the six tools identified by the respondents should be assumed as a tool framework that must be incorporated in an effective map viewer.

Downloading data and reference database link are ranked high as an important tool to enable users to access the underlying data they can view in the online map. Data access capability was rated high in other survey questions.



What other tools would you like to see in this site? Respondents identified various other capabilities they would like to see in the Coastal Sediment Management Map.

- The web mapping tools should run very fast and not have a delay when viewing large areas. Map rendering speed is perhaps the most important factor affecting user satisfaction with web map viewers.
- Several users indicated uncertainty of data availability and functions. This may have been due to slow performance and their expectation for instantaneous data display without scale dependent suppression.
- Enhanced map printing to include user defined title, agency logos, symbol markups, and other textual annotation. Maps should be able to be saved as a PDF or image format to facilitate incorporation into reports and presentations.
- The ability to display the map as a perspective view (such as Google earth) would enhance visual understanding, particularly for non-technical users.
- Users would like to see enhanced information presentation. Attributes should be displayed in formatted web tables / printable reports that suppress irrelevant attributes and use intuitive field names.
- Live metadata links should be provided that include source data date and accuracy in addition to common geospatial metadata.
- The design of the site should foster data discovery by clearly indicating the data content that may be accessed. Terminology of data layers should support non-technical users (BECA, RSM, etc.)
- Users indicated the application should support all major browsers.

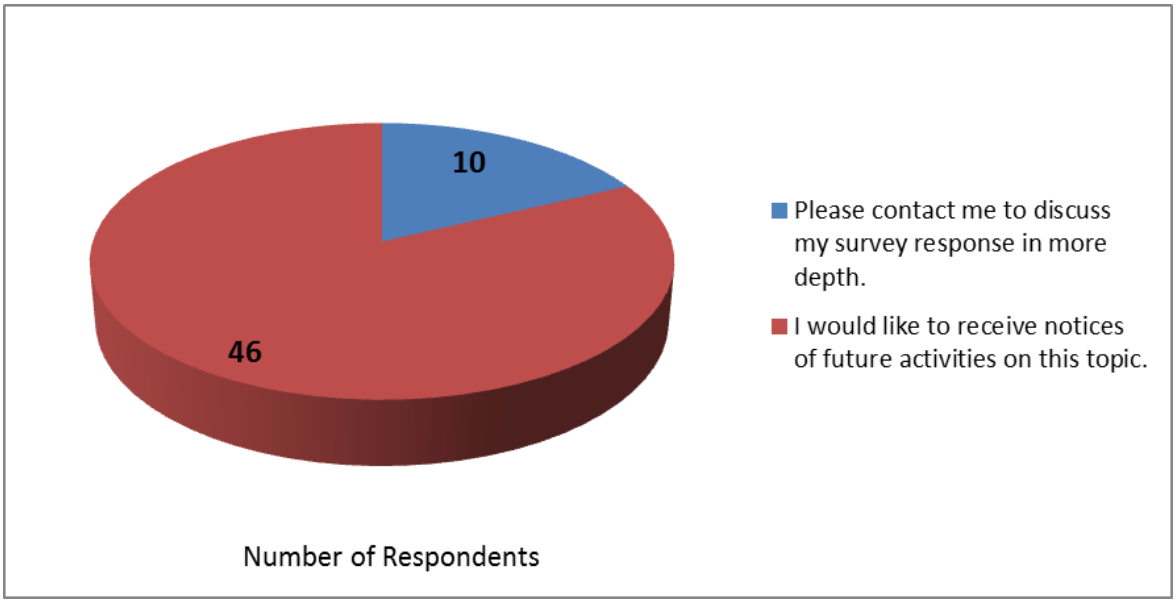
Q27. Identify other mapping sites or tools available for coastal sediment management. Please include the website URL if relevant.

Respondents identified ten other mapping sites that may provide tools and information resources for coastal sediment management.

- http://npdesgis.co.santa-cruz.ca.us/ - This site lets you see the stormwater flow from a user selected point or address to the ocean.
- http://atlas.ca.gov/ - Cal-Atlas
- DORIS: The site for Marine Life Protection Act MPA purposes
- http://northcoast.marinemap.org
- http://coastalmap.marine.usgs.gov/regional/contusa/westcoast/index.html
- http://waterqualitygis.co.santa-cruz.ca.us/ - This site lets you access water quality data
- ESI Data http://response.restoration.noaa.gov/type_subtopic_entry.php?RECORD_KEY%28entry_subtopic_type%29=entry_id,subtopic_id,type_id&entry_id(entry_subtopic_type)=74&subtopic_id(entry_subtopic_type)=5&type_id(entry_subtopic_type)=3
- http://seafloor.csumb.edu/ - Portal to seafloor mapping information
- NOS Data Explorer http://oceanservice.noaa.gov/dataexplorer/welcome.html
- PaCOOS http://tomcat.coas.oregonstate.edu/

Q28. Thank you for participation in the survey. Anything else?

Forty-six of the respondents wanted to receive notices of future activities pertaining to California coastal sediment management and geospatial data. Respondents who indicated they wished to be contacted were contacted during the survey to clarify and discuss comments they had.



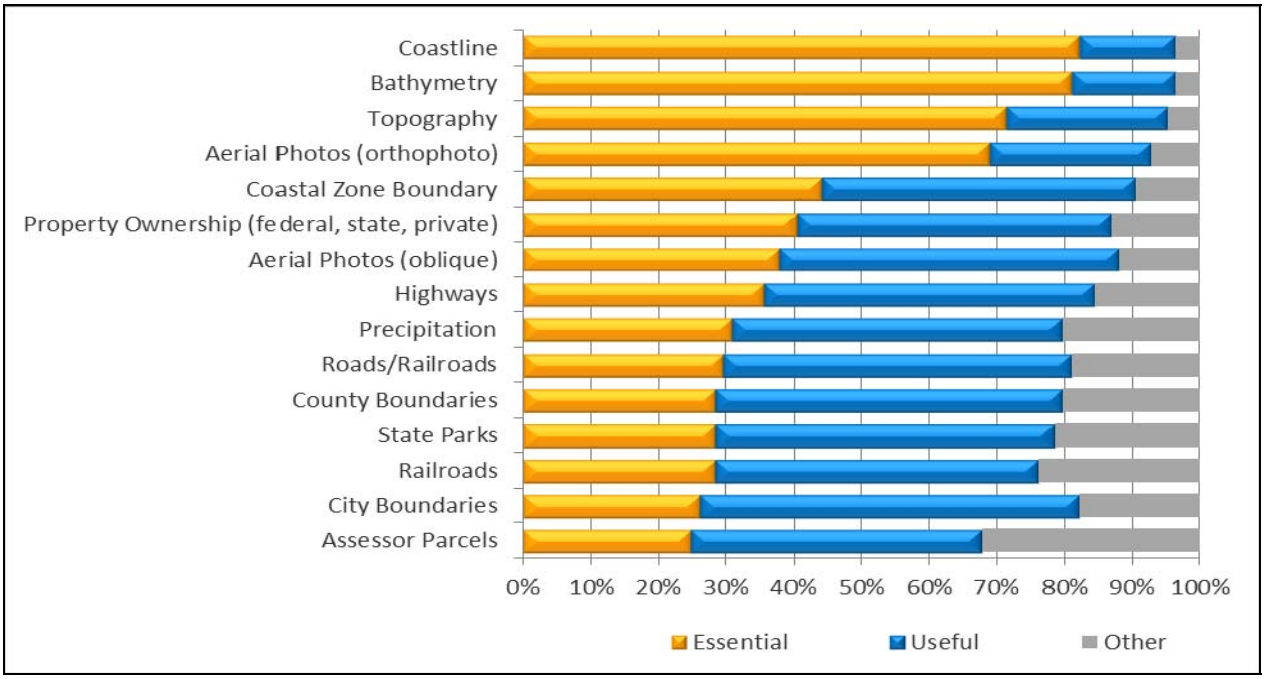
7.2 Analysis of Data Themes

This section presents an analysis of the data themes identified in Question 9 through question 21 that asked about importance of data. Data themes may be best organized into categories based on opportunities for data collaboration, standardization, and data availability. One consideration to data access and data management is to address commonality of need, and overall data availability. It is useful to think of data sources as 1) basemap – where systematic collection and standardized representation of data serves many purposes, and 2) special studies – where data is collected for a specific project as a point in time with little regard for data reuse. The categorization into each theme is somewhat arbitrary and primarily differentiated based on interagency data collaboration opportunities. Each is discussed below.

Basemap Themes

Parcels, orthophotos, streets, topography, bathymetry, and boundaries (parks, cities, counties), etc. are data themes needed by many disciplines and generally for the entirety of the coastal area. These provide high collaboration potential and may be readily accessible through web services that eliminate the need for direct data management.

Survey response scores that may be considered "basemap" elements are illustrated below.



The list of potential basemap themes listed above is a compilation from multiple survey questions and represents categorical overlap (Roads/ Railroads, and Railroads) due to the formation of individual survey questions. The list should be used as a guide for developing basemap data resources to serve diverse coastal management needs. The specific data themes included should be shaped on their availability, completeness of coverage, uniformity of representation, and broad needs. Over time, special studies themes may become basemap themes as the data becomes more standardized and universally collected.

Special Studies Themes

Data themes unique to specific projects may be collected at different points in time, have limited geographic coverage, may be less uniform in data format and content, and may not be regularly maintained. Additionally, the range of data development and management interagency collaboration is more limited than the basemap features. Special studies themes may be reclassified into basemap themes as the data collection and maintenance becomes more standardized, geographic coverage becomes more complete, and the data is reused for multiple purposes.

The majority of data ranked in the survey would be considered "special studies" data Further consideration of the aggregate data needs is suggested to identify existing availability and gaps in data needs. This information would be helpful in crafting a strategy for data commissioning giving consideration to data sustainability through a standardized and coordinated interagency maintenance program.

The following table presents aggregate survey responses rating the importance of specific data themes. The data are sorted from highest ranking on essential, then useful scores. Basemap themes are indicated with (B).

Data Theme	Essential	Useful	Other	N/A	Data Group
Beaches	71	9	2	2	Sediment Sources / Disposal Areas
Coastline (B)	69	12	1	2	Physical and Administrative Features
Beach	69	9	5	1	Coastal Features
Bathymetry (B)	68	13	1	2	Physical and Administrative Features
Dredge Areas	65	12	5	2	Sediment Sources / Disposal Areas
Critical Erosion Areas	63	18	2	1	Beach Characteristics

Data Theme	Essential	Useful	Other	N/A	Data Group
Estuary	63	16	2	3	Coastal Features
Beach Profiles	62	18	3	1	Beach Characteristics
Offshore Disposal Areas	62	14	6	2	Sediment Sources / Disposal Areas
Wetland	61	18	4	1	Coastal Features
Breakwater	60	20	3	1	Coastal Structures and Facilities
Sediment Transport	60	20	3	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Topography (B)	60	20	2	2	Physical and Administrative Features
Seawall	60	19	4	1	Coastal Structures and Facilities
Jetty	60	19	4	1	Coastal Structures and Facilities
Bluff Erosion Rates	59	21	3	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Beach Width	59	20	4	1	Beach Characteristics
Aerial Photos (orthophoto) (B)	58	20	2	4	Physical and Administrative Features
Marine Protected Areas	57	24	2	1	Environmental Resources
Waves	57	22	4	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Groins	57	21	5	1	Coastal Structures and Facilities
Revetment	57	20	5	2	Coastal Structures and Facilities
Harbors	57	20	5	2	Sediment Sources / Disposal Areas
Inundation Levels	56	23	4	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Flood/Storm Levels	55	25	3	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Tidal Water Levels	55	23	5	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Sediment Analysis (type, grain, etc.)	55	22	6	1	Beach Characteristics
Kelp/Marine Vegetation	54	25	4	1	Environmental Resources
Bay	54	24	5	1	Coastal Features
Lagoons	54	22	6	2	Sediment Sources / Disposal Areas
Harbor/Port	54	20	9	1	Coastal Features
Endangered Species	53	25	5	1	Environmental Resources

Data Theme	Essential	Useful	Other	N/A	Data Group
Total Water Level - No global warming	53	22	6	3	Meteorologic and Oceanographic Conditions and Coastal Processes
Total Water Level - With global warming	53	21	6	4	Meteorologic and Oceanographic Conditions and Coastal Processes
Rocky Reef	52	25	6	1	Environmental Resources
Habitat Areas of Particular Concern	51	28	4	1	Environmental Resources
Littoral Cells	51	27	3	3	Physical and Administrative Features
Cliff	50	27	6	1	Coastal Features
Inlet	49	26	7	2	Coastal Features
Piers	48	30	4	2	Coastal Structures and Facilities
Essential Fish Habitats	48	29	5	2	Environmental Resources
Lagoon	48	28	4	4	Coastal Features
Habitat Restoration Areas	46	33	4	1	Environmental Resources
Reef	46	26	9	3	Coastal Features
Flood plain	45	32	6	1	Coastal Features
Coastal Bird Nesting Areas	45	32	6	1	Environmental Resources
Wind - Direction & speed	44	32	7	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Reef - Man-made	44	31	6	3	Coastal Structures and Facilities
Dams	44	29	9	2	Sediment Sources / Disposal Areas
Tidal Currents	43	32	8	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Historic Construction Borrow Sites	42	30	9	3	Sediment Sources / Disposal Areas
Dune	41	33	7	3	Coastal Features
Upland Sources	41	32	8	3	Sediment Sources / Disposal Areas
Storm Water Run-off Outfall	39	39	5	1	Coastal Structures and Facilities
Surface Currents	39	34	10	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Sediment Biological Qualities	38	36	9	1	Beach Characteristics
Ocean Currents	38	35	10	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Outfalls	37	41	5	1	Coastal Structures and Facilities
Coastal Zone Boundary (B)	37	39	5	3	Physical and Administrative Features
Headland	36	36	9	3	Coastal Features

Data Theme	Essential	Useful	Other	N/A	Data Group
Spit	36	34	8	6	Coastal Features
Island	35	30	13	6	Coastal Features
Coastal Water Quality	34	40	9	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Property Ownership (federal, state, private) (B)	34	39	9	2	Physical and Administrative Features
Aerial Photos (oblique) (B)	32	42	7	3	Physical and Administrative Features
Highways (B)	30	41	11	2	Coastal Structures and Facilities
Bridges	30	41	12	1	Coastal Structures and Facilities
Commercial Aggregate Sources	28	42	12	2	Sediment Sources / Disposal Areas
Site Photographs	27	43	10	4	Physical and Administrative Features
Sewer Treatment Plants	26	41	15	2	Coastal Structures and Facilities
Precipitation (B)	26	41	16	1	Meteorologic and Oceanographic Conditions and Coastal Processes
Tombolo	26	34	11	13	Coastal Features
Roads/Railroads (B)	25	43	14	2	Physical and Administrative Features
County Boundaries (B)	24	43	14	3	Physical and Administrative Features
State Parks (B)	24	42	16	2	Physical and Administrative Features
Railroads (B)	24	40	17	3	Coastal Structures and Facilities
City Boundaries (B)	22	47	12	3	Physical and Administrative Features
Water Temperature	21	39	21	3	Meteorologic and Oceanographic Conditions and Coastal Processes
Assessor Parcels (B)	21	36	22	5	Physical and Administrative Features
Power Plants	20	42	19	3	Coastal Structures and Facilities
Desalination Plants	19	41	22	2	Coastal Structures and Facilities
Wildfire Burn Perimeters	18	42	18	6	Environmental Resources
Shipping Lanes	17	41	22	4	Physical and Administrative Features
Air Temperature	12	31	37	4	Meteorologic and Oceanographic Conditions and Coastal Processes
Cave	8	31	40	5	Coastal Features

8. Trends and Challenges for Online Geospatial Information Access

Geospatial information access and use was at the core of the survey. In respect for the survey respondents' time, the number of questions included were limited and focused on understanding respondents' needs and issues. This section of the report introduces several issues and trends affecting coastal sediment management and user experience of online applications.

Survey respondents indicated that online access to geographic information and maps is a key need. Specifically, they stated the need for access to geospatial metadata to support information search and discovery, data downloading, and online access for map viewing and analysis.

To fulfill these needs, users require connectivity to the data and application servers through Internet connections that deliver a positive user experience through a responsive application interface. Server performance and network bandwidth are the primary factors influencing user perceived system performance, but the challenge goes beyond IT systems.

8.1 Geospatial Data Needs

Recognizing technology factors are important, the availability of high quality, current, and well documented data are a greater need of system users. The bulk of the survey focused on data needs, yet much of the needed data is not available for the entire California coastline, at the currency and granularity needed to serve the diverse needs of the potential users.

Thus, data development and accessibility should be addressed as the primary factor in fulfilling the needs of the user community. Inadequate data is a greater impediment to work fulfillment than a slow performing IT infrastructure. Fulfilling data gaps is also a more costly and challenging effort compared to IT infrastructure upgrades. Not only is data collection costly, fulfilling data needs will require inter-agency coordination, increased data standardization, and a commitment to enhance data content and currency.

8.2 Data and Application Servers

IT solutions to support GIS based applications and geospatial data repositories continue to improve in performance and durability while the relative costs decline. No longer must a data

or application provider manage the hardware. Cloud computing and other system hosting options enable agencies to deploy robust and scalable computing environments capable of meeting dynamic demand with guaranteed levels of service. Security and reliability is also easily managed as a core competency of IT infrastructure management.

Application solutions for broad distributed access to geospatial data and tools are standardizing web based application access. For example, ESRI ArcGIS server is a leading solution providing flexible high performance geospatial computing capabilities. Modern geospatial solutions are open, allowing content accessed from multiple servers to be combined through web map services and other means. The Open Geospatial Consortium (OGC) continues to adopt and publish international standards that facilitate system interoperability. The geospatial community will enjoy continued advancement of GIS based solutions to deliver improved system performance, greater functionality, and better accessibility to data stores.

Application developers serving the Coastal Sediment Management community and other interest should strive to deploy applications that are user intuitive, function specific, and optimized for maximum performance. Attention to interface design, cartographic rendering, and back-end processing performance will have major impacts on a positive user experience.

8.3 User Connectivity and User Engagement

User expectations of web hosted data and application tools supporting coastal sediment management are increasing as they are exposed to multiple application and data solutions. Users will likely seek out various data and tool providers to fulfill their individual business needs. This means any initiative to serve the user community must view the mission as a competitive effort to attract and retain users by delivering the best possible services.

User expectations will follow the consumer technology trends. Mobile computing, easy to use and ubiquitous mapping (e.g. Google Maps), tablet computing (e.g. iPad), and smart phones will further expectations for fast, easy, and purpose specific solutions.

An emerging trend of crowd sourcing data may be relevant for the coastal sediment management community. GPS enabled cameras and smart phones provide a convenient and increasingly accessible solution to spatially reference diverse information observed and recorded by a broad population of scientists and the public. A program structure encouraging and

facilitating data collection and cataloging of heterogeneous information may help build a more robust data repository.

Industry trends and geospatial best practices indicate that the technology infrastructure will advance considerably throughout this decade. Less certain is the rate of progress in developing standardized and robust data to serve the coastal sediment management needs. A focus on data development is needed to keep pace with needs and expectations of the users.

9. Appendix A

GIS Technical Working Group Meeting Notes, October 14, 2010

GIS Technical Working Group Meeting Notes, November 16, 2010

10. Appendix B

User Survey

Appendix A

GIS TWG Meetings Notes

CSMP GIS User Needs Survey
GIS Technical Working Group 1st Meeting
Meeting Notes, October 14, 2010
Conference Call from 10:00am to 10:57am

Meeting Agenda

1. Review Project Objectives
2. Discuss User Needs Analysis Study
3. Outline Next Steps

Attendees:

Susie Ming	USACE-SPL
Claudio Fassardi	Halcrow, Inc.
Craig Gooch	Psomas, Inc.
Rose Dopsovic	USACE-SAM
Clif Davenport	CA NR
Glenn Higdon	USACE-SAM
James Zoulas	USACE-SPN
Nancy Ferris	USACE-SPN
Tim Doherty	BCDC
Mark Johnsson	CA CC
Jon VanCoops	CACC
Christina Cairns	NOAA
Florence Wong	USGS
Paul Veisze	State Parks
Sophie DeBeukelaer	NOAA
Adam Wagschal	Port of Humboldt Bay
Paulo Serpa	CA DF&G
Greg Benoit	CA Coastal Commission
Nate West	USACE-SPL

Susie Ming opened the teleconference meeting at 10:06am by introducing Claudio Fassardi from Halcrow, and Craig Gooch from Psomas. She noted that these are the two firms that are contracted to prepare and distribute the GIS survey.

Susie stated that some of the people on the call are part of the previous GIS Technical Working Group (TWG); however, others are new to the group. She added that the User Needs Survey and Analysis is a small task of the GIS CSMP project, planned to be funded in the current fiscal year.

Claudio Fassardi, from Halcrow, gave a brief overview of the project. He referred to the memo that was distributed that outlines the background of the User Survey and the purpose for the teleconference today.

Claudio stated that Halcrow is the contracted company and Psomas is part of the Halcrow team. Claudio added that Halcrow is an international consulting and engineering firm and that Psomas develops GIS applications and provides consulting services. The two firms have put forth collaborated efforts to provide GIS and consultancy services to achieve the objectives of the plan and get insight such as who has data, where it is stored, what format it is currently in and what inadequacies there might be.

Claudio said the first task is to develop the survey using input from the TWG members, and to decide on the next steps for achieving a clear understanding of the points going forward.

Craig Gooch, from Psomas, then opened up the discussion to the working group members to revisit the past accomplishments and get direction to set the stage for the survey going forward. Craig stated that the objectives are as follows:

1. Frame the context for the survey
2. Establish clear objectives
3. Move forward with the survey

Paul Veisze requested that someone email him the memo for the call today.

Craig Gooch indicated the team has reviewed three key GIS documents:

- GIS System Architectural and Design Report September 13, 2004
- Coastal Sediment Master Plan Final GIS Work Plan July 13, 2006
- California Coastal and Marine Geospatial Working Group Project Charter and Workplan.

These documents are fundamentally aligned although some specifics may have changed. These will assist in understanding the work goals and see the need to approach any changes, if any.

Christina Cairns will send a copy of the California Coastal and Marine Geospatial Working Group Project Charter and Workplan to everyone.

Key elements of the Coastal Sediment Master Plan GIS Work Plan:

1. Establish a geospatial portal
2. Ability to access data
3. Decision support tools

Susie Ming stated that the key elements of the GIS CSMP remain the same.

Craig Gooch asked if there were any other initiatives in progress and the consensus of the TWG was that no.

Christina Cairns stated TWG is composed of GIS techs and project managers specialized in the coastal and marine disciplines. Major work tasks under the three categories identify priority geospatial tools to assist and

identify future planning issues that could be solved and identify audiences for those. There needs to be a decision point looking at developing geospatial data for agency use and agency staff. She would like to coordinate whatever efforts of the work group that are needed specifically on this project.

Craig Gooch then stated that we don't want to overlap unnecessarily.

Christina Cairns said we are cross pollinating quite well.

Craig Gooch asked if anyone is currently serving as technical advisor. There were no responses. Clif Davenport indicated prior staff who served in this capacity are no longer available.

Clif Davenport stated that Coastal Sediment Management Workgroup (CSMW) has a GIS viewer available through the CSMW WebMapper http://coastalsediment.resources.ca.gov/

Rose Dopsovic said that the Navigation and Coastal Databank (NCDB) has a navigation coastal database set up and they are working on a GIS viewer.

Clif Davenport asked if there is anyway that the WebMapper could be improved to make it more useful. There are lots of data out there and guidance is needed to make WebMapper more useful. WebMapper has a few tools. You can click on a spot, bring up coastal records. The Cal Atlas page has a pull down file. The application developer has left, so currently there is no one doing tool updates.

Craig Gooch and Clif Davenport clarified that Cal Atlas is the tool that stores geospatial information. The goal of Cal Atlas is to identify and store data so it's accessible and shareable. It populates meta-data inventory of available data.

Paul Vieisze asked if there were lessons learned from Marine Map. Adam Wagschal emphasized end user needs are important to guide tool and services design. Marine Map is a system designed for a narrow group of technical experts and may be perceived as complicated by those unfamiliar with it. Tools should be designed with the end user in mind.

Craig Gooch said the objective of the survey will be to collect information about available data sources and points of contact so TWG can access data and incorporate the data into the browser and applications.
The intent is to work with TWG to identify specific participants for the survey and general classes of organizations to survey. The short term goal is to develop a draft survey to share with TWG to edit with the right content and context. This will be accomplished using a web based survey using Survey Monkey to capture and compile data. While it is not practical to capture everything, they will strike a balance to compile the most important information to achieve a high response rate.

Craig Gooch asked if the survey should address both tools and data.

Susie Ming said there should be coordination on the data. Tools are needed to analyze the data. Such as a web based portal to view and download data as necessary.

Clif Davenport said they have tried to pull together data re: sediment management and environmental limitations but haven't been able to put their hands around what kind of tools people need to assist them in doing their jobs. His intent is to make it more useful to a wide variety of people.

Adam Wagschal said we need help to define goals and the user's needs. New GIS users need to be able to share information. People need tools to allow them to draw shapes and upload data.

Craig Gooch said that the survey will identify user needs for tools and application features including:

- To make it user friendly for non technical users
- Have a download button to get to the underlying data
- Identify analytical tool needs

Respondent Information to collect:

- Name of respondents
- Role of the respondents
- Agency information
- Contact information
- Interest in serving as a coordinator for data aggregation or other role

Data information to collect:

- Data needs
- Data sources
- Availability
- Currency
- Maintenance
- Present a list of data themes based on TWG expert opinion
- Identification of additional data types?
- Scope of Survey
- Input needed from the TWG
- Areas of participation? – What groups of users will be included
- Statewide outreach?
- Leveraging regional groups?
- Find regional facilitators?

Christina Cairns asked what the timeframe is to get the survey out? She said there needs to be coordination on who to reach out to with efforts to joint agencies. There is a need for offline conversation to coordinate on the survey.

Craig Gooch said there will be follow-up discussions and then they will start to produce a draft and scope of work that will be provided for commentary review. Then it will be edited and refined.

The timing will be based on TWG response and their ability to participate. The draft survey will be distributed to the TWG in November 2010.

Claudio Fassardi said the TWG needs to come up with a survey participant list, type of data needed, the class of participants and the user survey.

Clif Davenport said folks can “Google” the CSMW website. Spatial data is on the right side of the page.

Susie Ming requested to have the meeting notes sent out in draft form for editing.

The date for a follow-up meeting was not set. It will be approximately four weeks out to allow time for responses from the committee members. The intent of the next meeting is to review the draft survey and make the plans on how to roll it out.

Susie asked Nate West to coordinate setting up the next meeting in one month. This would be late November or early December.

Paul Veisze asked if there was anyone who can help identify the go-to person for coastal LIDAR data. The go-to person is Sheila Semans from the Ocean Protection Council.

It was asked how Cal Parks could get the status of the project content? Heather Schlosser from USACE is the point of contact.

Meeting adjourned 10:57am

Respectfully submitted,

Linda Hambey
Halcrow, Inc.

CSMW GIS User Needs Technical Working Group Meeting #2
MEETING MINUTES FOR November 16, 2010
Conference Call from 1:10pm to 1:58pm

Craig Gooch opened the meeting at 1:10pm. The attendees stated their names for the record. See list at the end of the minutes.

Craig stated the user survey was sent out to the working group to seek input to develop the survey forms.

There were two basic questions to the working group participants.

1. Who should receive this survey? (Seeking specific agencies or classes of agencies and points of contact within agencies.)

2. How do we identify which data themes need to be included in the survey to determine the needs?

Craig thanked all who sent feedback through email (note: 6 people replied). Their input will be included in the questionnaire.

Craig received suggestions for points of contact. He will follow-up on those suggestions. Overall there are 23 agencies identified for the survey.

There will be two different audiences that will receive the survey. This will be technical users of data and providers of data. There is a concern that the providers of data may not understand the context of sediment master planning and the need for this data. This could, however, be altered for the providers to understand if necessary.

Sophie DeBeukelaer stated that it is a good idea to split the survey for the two different audiences; however, some people will be both users and providers. Perhaps questions could be separated or drilled down if people are both.

Tim Doherty suggested the language should be easy to read for both groups.

Christina Cairns agreed with Tim's suggestion and also pointed out that #22 & 23 (Endangered species) are the same.

Craig stated that the list will be distributed to the working group for a final critical review before it goes out to the users.

A draft PDF survey will be sent out using survey monkey. The survey is subject to refinements and modification. Craig said he would like input from the attendees of this meeting to assist in drilling down to get the survey ready to distribute.

The first screen will be an introduction screen. That will be followed by a background screen leading into the survey that will provide context.

The beginning of the survey gives a basic introduction to the meaning of the survey and its purpose.

Next there is a screen with background information regarding the context of this effort so it's clear to all what information the survey hopes to gather and what sediment is about.

The survey requests information about the individual, their organization and how to contact them. We want to get a sense of who they are and what they know. And, are they involved with sediment planning and management.

Craig stated that as we go through this survey today, he would like input and comments from the group.

There will be an option on the survey to opt out if the respondent chooses to do so.

Christina Cairns suggested that a place be added to insert comments so respondents can state if they are involved with coastal planning and management.

Craig Gooch said there are issues and challenges to the survey. He would like input as to the ranking of importance. He noted that all questions have the ability for write ins.

Florence Wong said that the survey asks about involvement in a work group. Is that commonly understood? It would be good to give examples of coastal working groups. It's easier to put them in rather than to have respondents type them all in.

Once we profile the issues, then we can find out the tools needed.

We need a balance in the questions. And we need to make sure the terminology is clear between the technical and non-technical. If something is already in existence, it's ok. We need to determine whether there is a need and how to fulfill it.

Florence Wong said that if respondents say what they use, that will help us to know what they need.

Craig Gooch said there are data oriented categories. He asked if those categories should be grouped into themes. Currently they are alphabetically sorted.

The general consensus is that grouping the categories into themes will simplify the review and then generate more feedback. Additionally, the boxes have a multiple selection capability so respondents can choose more than one option.

There are two questions around data theme.

1. How are they important to you?
2. Is there a need for a collaborative maintenance program?

Christina suggested that "BECA" needs to be defined on the survey.

Craig Gooch said the terms need to be descriptive rather than technical theme layers.

There are two additional questions.

1. What are the benefits?

2. Why are these layers important?

Another important aspect might be scales. Is this for all of California? Can we use locally or regionally? Is there a distinction?

Tim stated that scale absolutely matters. It correlates with resolution of data.

More questions:

1. Regarding currency. What vintage is this data?
2. Data that's dynamic. Is there an upkeep program so that it gets refreshed periodically?

That information is very important.

Any other data characteristics that are essential?

We already talked about scale, vintage, currency and maintenance.

Tim suggested a level of detail within the data. It depends on how the data will be used, but that is good info to know.

Craig stated that this is good for building a strategy and providing tools. What is the sequence of progression? What is the overall business plan for engaging users? Can we get the essential data in one step? Should this survey develop a drill down so we can capture some of those key data characteristics?

We want to get have a survey with the broad brush of the landscape. And then have outreach programs to engage those responders who have data to get that data registered in a data repository that includes data documentation.

There are two different major strategies to take. One concern with surveys is asking too much of the respondents so people don't want to respond.

Florence asked what is the survey aimed at? Is it where to direct resources? Or collecting data or prioritizing data?

Clif stated it's to identify data needs that will then drive collection efforts. As well as other initiatives.

Sophie asked should the layers that are already on the coastal management website be separated out?
It's important that if you already do have a list in there whether it needs to be updated or on a smaller scale and maybe some follow-up questions in case something's might need a change.

Florence said one direction to go might be to ask what have you tried to use? Did it take care of your needs? Or did you wish a higher resolution or more recent or more historical increments?

Craig said they will go back and work through some of the key points and structure the survey accordingly to try to produce a first working draft that accommodates some of these issues and discussion points that have come out today. This has been constructive input. Of course, we may end up with more questions. We are seeking to get a sense from a benefit perspective what the importance is.

Next there is a thank you and a close out on the survey. And then a question if they would like to be contacted or not. And if they want to stay involved.

Craig asked what questions weren't asked that are important regarding data availability and data needs?
No one had any suggestions.

The next step for the next few days is to work the comments into the survey and re-distribute to all the members so they can carefully review and evaluate it. Then to provide any written comments or suggestions. That will assist in refining the process.

Clif stated that one of the main reasons for initiating this effort is try to find ways to make the GIS database and Webmapper more useful for more people. He's hoping that this effort will be a benefit to a wide variety of people involved with coastal and marine activities but not just solely and specifically coastal marine management. He said that much of this data is multi use.

Christina wanted to clarify that the OPC is going to do a scoping study that will be asking the very same questions. She would like to reduce any redundancy between this survey and what OPC will do early next year. In regard to the data questions, what is on the survey is great. The OPC survey won't get to the data layers as much as this one does.

Clif said there are a couple of tools on Webmapper. Such as displaying, viewing and the ability to download specific GIS layers.

Pam Rittelmeyer said the OPC scoping study is going to be pretty broad so if this survey is trying to answer all the broader questions it needs to be addressed or should they wait for the OPC survey for the broader marine spatial planning type questions.

Craig asked if there is concern there is too much similarity or overlap between the two surveys?

Pam answer slightly. But it can be worked out. The GIS survey is more specific.

Craig and Clif will meet to go through the skill sets to come up with for relevant areas and then send 1st draft for review.

Christina will send the scope of work to Clif so he can see what direction they are headed.

Craig thanked everyone for taking the time to join the meeting. He said the next steps are to incorporate the comments into the survey then distribute it within the next few working days so members can provide comments back for a better review.

Christina would like to receive notices of future activities on the topics.

Adjourn 1:58 pm

Attendees:

Claudio Fassardi	Halcrow, Inc.
Craig Gooch	Psomas, Inc.
Rose Dopsovic	USACE-SAM
Clif Davenport	CA NR
Susie Ming	USACE-SPL
Tim Doherty	BCDC
Christina Cairns	NOAA
Florence Wong	USGS
Sophie DeBeukelaer	NOAA
Adam Wagschal	Port of Humboldt Bay
Nate West	USACE-SPL
Pam Rittlemeyer	SCC
Eric Gillies	CSLC

Respectfully submitted,

Linda Hambey
Halcrow, Inc.

Appendix B

User Survey

Coastal Sediment Management User Needs Survey

Introduction

Coastal Sediment Management Workgroup

CALIFORNIA natural resources AGENCY

US Army Corps of Engineers®

A collaborative effort by federal and state agencies chaired by the U.S. Army Corps of Engineers South Pacific Division and the California Natural Resources Agency

Welcome. You are invited to participate in this GIS User Needs Survey to identify GIS data and analysis tools to support coastal sediment management in California.

The survey is sponsored by the U.S. Army Corps of Engineers as a member of the Coastal Sediment Management Workgroup (CSMW) that is a collaborative effort of state and federal agencies. The mission of the CSMW is to facilitate regional approaches to protecting, enhancing and restoring California's coastal beaches and watersheds through federal, state and local cooperative efforts. GIS information and analysis tools are necessary to support various initiatives of the CSMW.

Your participation in this survey is appreciated. We are seeking input from both GIS experts and coastal data users. Please identify those in your organization who can respond to the survey. Contact Craig Gooch below to have request sent to other people in your organization if appropriate. **Please complete the survey by February 28, 2011.**

Contact Nathaniel R. West at nathaniel.r.west@usace.army.mil if you have questions about this survey. Please contact Craig Gooch at cgooch@psomas.com with any technical questions.

Susan M. Ming,
Chief, Coastal Studies Group
US Army Corps of Engineers
Los Angeles District
Planning Division

Coastal Sediment Management User Needs Survey

Background

Coastal management addresses a broad range of environmental, economic, engineering and recreational topics. Geographic information is needed for analysis and planning for coastal management issues. Although this survey is focused on geographic information availability and access related to coastal sediment management, the findings may assist in broad collaboration of organizations addressing coastal management issues. Findings of this study will be shared with other groups unless the survey respondent chooses for the information not to be shared.

Links

The following links provide reference information pertaining to this project and what other groups are doing. (Links will open in a separate browser window).

Glossary of coastal terms

Coastal Sediment Management Workgroup

Coastal Sediment Management Map

Links to other organizations and resources

Survey Sections

The survey is organized into the following sections

- Introduction
- Background
- Respondent Information
- Respondent Survey
- Geographic Information Challenges
- Geographic Information Needs
- GIS Information Collaboration
- Geographic Information Tools

The progress bar presented at the top of the page represents your progression through the survey.

Coastal Sediment Management User Needs Survey

Respondent Information

1. Your Information (Include Name, Agency, and Email at a minimum).

Name

Title

Agency

Department

Address

Address 2

City

State

Zip

Email

Phone Number

Your Organization's Website

2. Confidential Information Agreement. My response information may be used as follows:

	Yes	No
All response information may be published	◯	◯
My personal contact information may be published	◯	◯
My affiliation information may be published	◯	◯

Other (please specify)

3. Are you involved with coastal sediment planning and management?

◯ Yes

◯ To some extent

◯ No

Coastal Sediment Management User Needs Survey

4. Are you currently a member of a group addressing coastal sediment management issues?

- ◯ No
- ◯ Yes

Enter groups you are a member of.

5. Please check below if you do not wish to participate in this survey

- ◯ I choose not to participate in the Survey.

Comment

6. How do you typically delimit coastal geographic areas for coastal sediment management?

	Essential	Important	Somewhat important	Not important	Unsure
West Coast	◯	◯	◯	◯	◯
Statewide	◯	◯	◯	◯	◯
California Regions (i.e., Northern, Central, or Southern CA)	◯	◯	◯	◯	◯
Littoral Cells	◯	◯	◯	◯	◯
County	◯	◯	◯	◯	◯
City	◯	◯	◯	◯	◯

Other (please specify)

7. Identify your expertise

	High	Medium	Low	None
Coastal Management	◯	◯	◯	◯
GIS User	◯	◯	◯	◯
GIS Data Manager	◯	◯	◯	◯

Coastal Sediment Management User Needs Survey

Geographic Information Challenges

8. What are the key GIS related issues and challenges for coastal sediment management?

	Most Important				Least Important	N/A
Best Practices - Examples of GIS best practices	○	○	○	○	○	○
Data Maintenance - Insufficient or non-existent	○	○	○	○	○	○
Central Catalog - Single source for information discovery	○	○	○	○	○	○
Data Standards - Uniform data specifications	○	○	○	○	○	○
Lack of Tools - For view, access, analysis	○	○	○	○	○	○
Data Sharing - Inter-agency sharing	○	○	○	○	○	○
Coordination - Inter-agency dialog and joint projects	○	○	○	○	○	○
Data Documentation - Describing characteristics	○	○	○	○	○	○
Data Duplication - Redundant data collection	○	○	○	○	○	○
Data Access - Online access to data	○	○	○	○	○	○
Data Accuracy - Data is not accurate	○	○	○	○	○	○
Data Does Not Exist - Or not known	○	○	○	○	○	○
Central Repository - Single source for information access	○	○	○	○	○	○
Data Currency - Data is not current	○	○	○	○	○	○

Other (please specify)

Coastal Sediment Management User Needs Survey

Geographic Information Needs

9. Identify the importance of mapping the following COASTAL FEATURES.

	Essential	Useful	Limited	N/A
Bay	◯	◯	◯	◯
Beach	◯	◯	◯	◯
Cave	◯	◯	◯	◯
Cliff	◯	◯	◯	◯
Dune	◯	◯	◯	◯
Estuary	◯	◯	◯	◯
Flood plain	◯	◯	◯	◯
Harbor/Port	◯	◯	◯	◯
Headland	◯	◯	◯	◯
Inlet	◯	◯	◯	◯
Island	◯	◯	◯	◯
Lagoon	◯	◯	◯	◯
Reef	◯	◯	◯	◯
Spit	◯	◯	◯	◯
Tombolo	◯	◯	◯	◯
Wetland	◯	◯	◯	◯

List other COASTAL FEATURES and their importance

10. Is your organization a data source for COASTAL FEATURES? Please describe.

Coastal Sediment Management User Needs Survey

Geographic Information Needs

11. Identify the importance of mapping COASTAL STRUCTURES and FACILITIES.

	Essential	Useful	Limited	N/A
Breakwater	◯	◯	◯	◯
Bridges	◯	◯	◯	◯
Desalination Plants	◯	◯	◯	◯
Groins	◯	◯	◯	◯
Highways	◯	◯	◯	◯
Jetty	◯	◯	◯	◯
Outfalls	◯	◯	◯	◯
Piers	◯	◯	◯	◯
Power Plants	◯	◯	◯	◯
Railroads	◯	◯	◯	◯
Reef - Man-made	◯	◯	◯	◯
Revetment	◯	◯	◯	◯
Seawall	◯	◯	◯	◯
Sewer Treatment Plants	◯	◯	◯	◯
Storm Water Run-off Outfall	◯	◯	◯	◯

List other COASTAL STRUCTURES and FACILITIES and their importance

12. Is your organization a data source for COASTAL STRUCTURES and FACILITIES? Please describe.

Coastal Sediment Management User Needs Survey

Geographic Information Needs

13. Identify importance of mapping PHYSICAL and ADMINISTRATIVE FEATURES.

	Essential	Useful	Limited	N/A
Aerial Photos (oblique)	◯	◯	◯	◯
Aerial Photos (orthophoto)	◯	◯	◯	◯
Assessor Parcels	◯	◯	◯	◯
Bathymetry	◯	◯	◯	◯
City Boundaries	◯	◯	◯	◯
Coastal Zone Boundary	◯	◯	◯	◯
Coastline	◯	◯	◯	◯
County Boundaries	◯	◯	◯	◯
Littoral Cells	◯	◯	◯	◯
Property Ownership (federal, state, private)	◯	◯	◯	◯
Roads/Railroads	◯	◯	◯	◯
Shipping Lanes	◯	◯	◯	◯
Site Photographs	◯	◯	◯	◯
State Parks	◯	◯	◯	◯
Topography	◯	◯	◯	◯

List other PHYSICAL AND ADMINISTRATIVE features and their importance

14. Is your organization a data source for PHYSICAL and ADMINISTRATIVE FEATURES?

Please describe.

Coastal Sediment Management User Needs Survey

Geographic Information Needs

15. Identify importance of mapping and characterizing ENVIRONMENTAL RESOURCES.

	Essential	Useful	Limited	N/A
Coastal Bird Nesting Areas	◯	◯	◯	◯
Endangered Species	◯	◯	◯	◯
Essential Fish Habitats	◯	◯	◯	◯
Habitat Areas of Particular Concern	◯	◯	◯	◯
Habitat Restoration Areas	◯	◯	◯	◯
Kelp/Marine Vegetation	◯	◯	◯	◯
Marine Protected Areas	◯	◯	◯	◯
Rocky Reef	◯	◯	◯	◯
Wildfire Burn Perimeters	◯	◯	◯	◯

List other ENVIRONMENTAL RESOURCES features and their importance

16. Is your organization a data source for ENVIRONMENTAL RESOURCES? Please describe.

Coastal Sediment Management User Needs Survey

Geographic Information Needs

17. Identify importance of mapping and characterizing METEOROLOGIC and OCEANOGRAPHIC CONDITIONS and COASTAL PROCESSES.

	Essential	Useful	Limited	N/A
Air Temperature	◯	◯	◯	◯
Bluff Erosion Rates	◯	◯	◯	◯
Coastal Water Quality	◯	◯	◯	◯
Flood/Storm Levels	◯	◯	◯	◯
Inundation Levels	◯	◯	◯	◯
Ocean Currents	◯	◯	◯	◯
Precipitation	◯	◯	◯	◯
Sediment Transport	◯	◯	◯	◯
Surface Currents	◯	◯	◯	◯
Tidal Currents	◯	◯	◯	◯
Tidal Water Levels	◯	◯	◯	◯
Total Water Level - No global warming	◯	◯	◯	◯
Total Water Level - With global warming	◯	◯	◯	◯
Water Temperature	◯	◯	◯	◯
Waves	◯	◯	◯	◯
Wind - Direction & speed	◯	◯	◯	◯

List other METEOROLOGIC and OCEANOGRAPHIC CONDITIONS and COASTAL PROCESSES and their importance

18. Is your organization a data source for METEOROLOGIC and OCEANOGRAPHIC CONDITIONS and COASTAL PROCESSES?

Please describe.

Coastal Sediment Management User Needs Survey

Geographic Information Needs

19. Identify importance of mapping and characterizing SEDIMENT SOURCES / DISPOSAL AREAS.

	Essential	Useful	Limited	N/A
Beaches	◯	◯	◯	◯
Commercial Aggregate Sources	◯	◯	◯	◯
Dams	◯	◯	◯	◯
Dredge Areas	◯	◯	◯	◯
Harbors	◯	◯	◯	◯
Historic Construction Borrow Sites	◯	◯	◯	◯
Lagoons	◯	◯	◯	◯
Offshore Disposal Areas	◯	◯	◯	◯
Upland Sources	◯	◯	◯	◯

List other SEDIMENT SOURCES / DISPOSAL AREAS and their importance

20. Is your organization a data source for SEDIMENT SOURCES / DISPOSAL AREAS? Please describe.

Coastal Sediment Management User Needs Survey

Geographic Information Needs

21. Identify importance of mapping BEACH CHARACTERISTICS.

	Essential	Useful	Limited	N/A
Beach Profiles	◯	◯	◯	◯
Beach Width	◯	◯	◯	◯
Critical Erosion Areas	◯	◯	◯	◯
Sediment Analysis (type, grain, etc.)	◯	◯	◯	◯
Sediment Biological Qualities	◯	◯	◯	◯

List other BEACH CHARACTERISTICS and their importance

22. Is your organization a data source for BEACH CHARACTERISTICS? Please describe.

Coastal Sediment Management User Needs Survey

GIS Information Collaboration

Geographic information collaboration is the inter-agency coordination to develop and maintain geographic information. Collaboration may take many forms such as one-time data development, coordinated maintenance, or data exchange and sharing. Collaboration improves data standardization, accessibility, and reduces costs.

23. Is your organization interested in geographic data collaboration?

	Yes	No	Selectively	Unsure
I would like to learn more about collaboration opportunities.	◯	◯	◯	◯
We have data we are willing to share.	◯	◯	◯	◯
We are interested in new data collection efforts.	◯	◯	◯	◯
We would like to coordinate data maintenance.	◯	◯	◯	◯

Comments

Coastal Sediment Management User Needs Survey

Geographic Information Tools

24. What types of geospatial tools do you need / prefer?

	Essential	Important	Infrequently Needed	Not Needed	Unsure
Metadata Catalog - Find data and review its characteristics	◯	◯	◯	◯	◯
Upload Data to Data Repository - Add your data to a repository to allow access by others	◯	◯	◯	◯	◯
Map Viewer - See online maps of data	◯	◯	◯	◯	◯
GIS Web Services - Link GIS online sources to your GIS mapping	◯	◯	◯	◯	◯
Data Download - Download data from a repository	◯	◯	◯	◯	◯

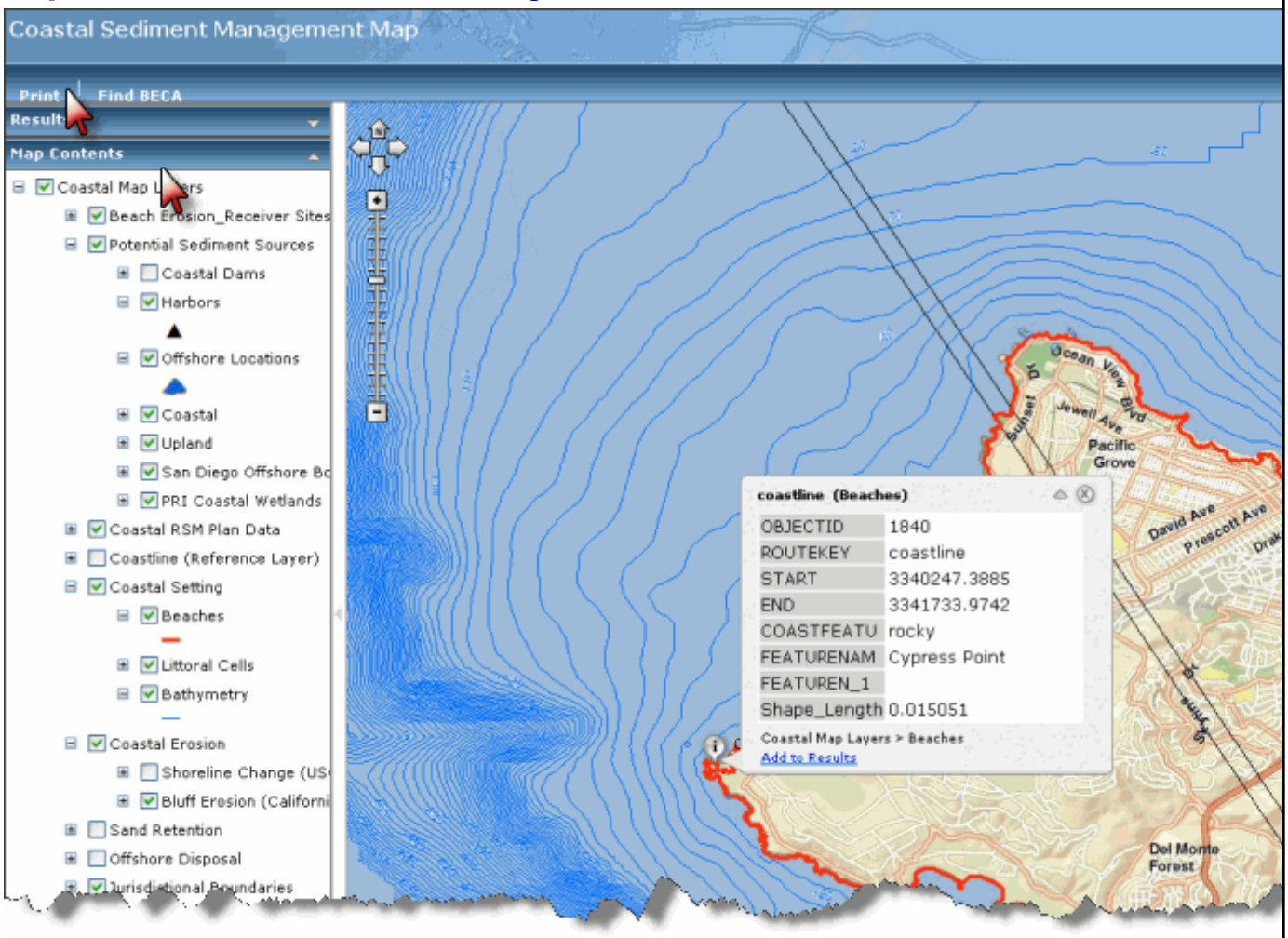
Please specify other tools.

Coastal Sediment Management User Needs Survey

Geographic Information Tools

25. Please review the online GIS Sediment Management Map at

http://coastalsediment.resources.ca.gov/



The graphic above includes red arrows to highlight the location of the tools referenced below.

Coastal Sediment Management User Needs Survey

26. Assess the usefulness of the following tools found on the map.

	Essential	Useful	Occasional Need	Not Needed
Measure Distances and Areas	◯	◯	◯	◯
Map Contents - Select layers for display	◯	◯	◯	◯
Reference Database Link	◯	◯	◯	◯
Identify - Click feature for information	◯	◯	◯	◯
View Satellite Map	◯	◯	◯	◯
Download Data	◯	◯	◯	◯
Link to Coastal Projects repository	◯	◯	◯	◯
Map Navigation - Zoom, pan	◯	◯	◯	◯
CSMW Website Link	◯	◯	◯	◯
Print Map	◯	◯	◯	◯
Map Scale	◯	◯	◯	◯

What other tools would you like to use on this site?

27. Identify other mapping sites or tools available for coastal sediment management. Please include the website URL if relevant.

Site/Tool

Site/Tool

Site/Tool

Site/Tool

Site/Tool

Site/Tool

Coastal Sediment Management User Needs Survey

Thank you for your participation in the survey.

28. Anything else?

☐ Please contact me to discuss my survey response in more depth.

☐ I would like to receive notices of future activities on this topic.

Other Comments

This concludes the survey.

Thank you for your participation.