The background of the slide is a photograph of ocean waves, showing white foam and blue water. The text is overlaid on this image.

MARINE AND COASTAL SPATIAL DATA SUBCOMMITTEE

ANNUAL UPDATE TO FGDC COORDINATION GROUP

TONY LA VOI, MCSD SUBCOMMITTEE CHAIR / NOAA GIO

March 8, 2016

Discussion vs. Update

- ❑ **Is there still a role for the Marine and Coastal Spatial Data [MCSD] Subcommittee?**
- ❑ **What is the relationship of the MCSD and the Water-Oceans and Coasts Theme?**
- ❑ **How do we make the work of MCSD and W-O&C meaningful beyond the FGDC?**

Topics

Brief History of the MCSD – 1993 to Today

Enter the Water – Oceans and Coasts Theme

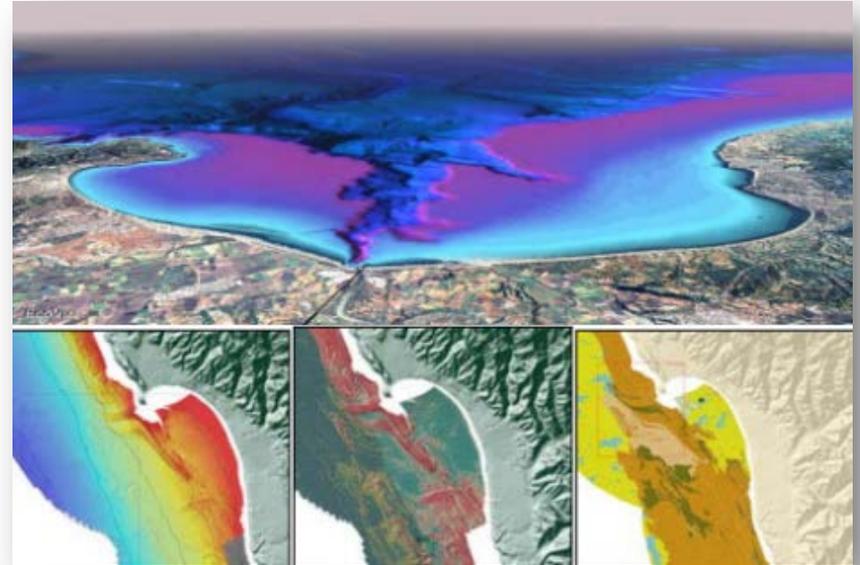
Reflection on MCSD Role in the FGDC NGDA Framework

Next Steps - More than Checking the NGDA Boxes?

Discussion

Brief History of the MCSD

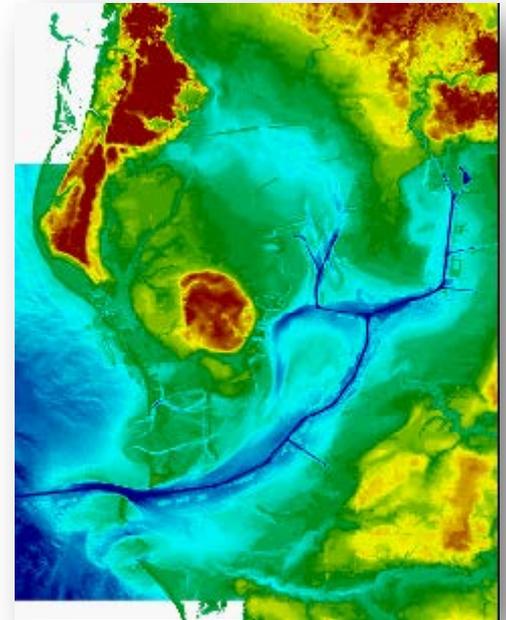
- FGDC Subcommittee on Bathymetric and Nautical Charting Data was created in 1993
- Late 1990's, desire to give a broader voice to the Marine SDI contributions
- Created the Marine and Coastal Spatial Data Subcommittee [MCSD] in 2000
- MCSD active with numerous accomplishments during the period 2000-2010
- MCSD coordination approach changed as other 'ocean GIS' bodies became active
- NGDA process created the Water – Oceans and Coasts [W-O&C] Theme
- NOAA leads both the MCSD and W-O&C Theme



MCSO Objectives

From Original Charter

- **Promote standards** in marine and coastal spatial data financed in whole or in part by Federal funds
- **Exchange information** on technological improvements for collecting marine and coastal spatial data
- Encourage the Federal and non-Federal community to **identify and adopt standards and specifications** for marine and coastal spatial data
- **Engage in partnerships** to develop marine and coastal data



Standards

MCS D Accomplishments

- ❑ Classification of Wetlands and Deepwater Habitats in the United States (1996)
- ❑ Metadata Profile for Shoreline Data (2001)
- ❑ Geospatial Positioning Accuracy Standards, Part 5: Standards for Nautical Charting Hydrographic Surveys (2005)
- ❑ Shoreline Data Content Standard – Public Review Draft (2007)
- ❑ Coastal and Marine Ecological Classification Standard – CMECS (2012)



Standards

MCSA Accomplishments

Marine Boundary Handbook

Technical Assistance

**Marine Managed Areas:
Best Practices for Boundary Making**

*Marine Boundary Working Group
Federal Geographic Data Committee*

Determining Marine Boundaries

It's not what it used to be

Marine Boundary Setting Yesterday and Today



Historically, ocean tenure has been held by the country with the largest naval fleet and the desire to control "its" waters. Boundaries often were defined as the edge of the most powerful cannon from land. As recently as 20 years ago, NOAA national charts clearly marked a marine boundary if at all.

These have changed. Technological advances in surveying, mapping, and data collection have greatly improved man's ability to determine the exact position on earth. Maritime transportation-related companies and the Global Positioning System (GPS), geographic information systems (GIS), and electronic charting display information systems to determine and document exact boundaries in the ocean. Even pleasure boaters are making use of onboard GPS devices.

The stakes are rising when it comes to the implications of a dispute, which is a sector of islands in land (or water) encompassing both the island and the water of those islands. Coastal boundaries are necessary for the enforcement of a myriad of laws that have to do with commerce, natural resources, property rights, research, law enforcement, and environmental protection. The need for precise, accurate, available, and accessible digital boundaries to define jurisdictional claims is unprecedented for business in today's world.

Creating Digital Boundaries

NOAA's National Ocean Service (NOS) is responsible for charting the nation's coastal waters and, therefore, is the lead agency for portraying the maritime limits of the United States. Marine boundaries may be classified as national in scope. Examples of national boundaries are the Territorial Sea, Contiguous Zone, and the Extended Continental Shelf. A sub-set of national boundaries includes waters for parks, sanctuaries, and lease blocks for oil and gas or aquaculture.

Currently, digital ocean cartographic boundaries are not legally recognized. Boundaries exist in hard copy paper form only on NOAA nautical charts, tables, and within the U.S. Code of Federal Regulations.

NOAA is working with the Minerals Management Service to determine a digital baseline from which the State Boundary Line, Territorial Sea, Contiguous Zone, Exclusive Economic Zone and other boundaries can be calculated. This new agreement will form the basis for the Interagency Committee on the Calculation of the United States Baseline, commonly referred to as the Baseline Committee, for official recognition of these digital data.

National Boundary Explanations



The state seaward limit is situated three nautical miles from the baseline from which the territorial sea is measured. However, without measures being taken to define it, the state seaward limit is defined as the baseline seaward limit to determine the exact point at which one crosses the boundary.

What is the United States' Response to Marine Boundary Issues?

Federal Geographic Data Committee (FGDC) Marine Boundary Working Group

To address marine boundary issues, numerous government agencies are working together and competing that learn, explore, and research through the FGDC Marine Boundary Working Group. The group is:

- Developing standardized methodologies to produce better marine boundary data
- Characterizing the legal, scientific, and technical issues used to describe marine boundaries
- Working together to maximize resources and avoid duplication of effort
- Creating dissemination requirements for marine boundary data

Participating agencies include the U.S. Minerals Management Service, the National Oceanic and Atmospheric Administration, the National Park Service, the U.S. Fish and Wildlife Service, the National Geospatial-Intelligence Agency, the Federal Communications Commission, the Census Bureau, the U.S. State Department, the U.S. Navy, the U.S. Coast Guard, and the State of Florida.

For more information, visit www.csc.noaa.gov/mbwg/.



NOAA Coastal Services Center
Under Permit, Benthic, and Technology

Data Development and Registries

MCS D Accomplishments

The screenshot shows the DATA.GOV website interface. At the top, there is a navigation bar with 'DATA', 'TOPICS', 'IMPACT', 'APPLICATIONS', 'DEVELOPERS', and 'CONTACT'. Below this is a sub-header for 'OCEAN - DATA CATALOG' with a search bar and 'Organizations' link. A secondary navigation bar includes 'Updates', 'Data', 'Tools', 'Get Involved', 'Map Gallery', 'Regional Planning', and 'Contact Ocean'. The main content area features a search bar with the text 'Search datasets...', a filter for 'Ocean', and a map of North America. The search results show '261 datasets found' with two entries: 'Climate Data Online (CDO)' with 618 recent views and 'DataFerrett' with 172 recent views.

The screenshot shows the MarineCadastr.gov website. The header includes 'MarineCadastr.gov' and navigation links for 'Maps', 'Data', 'Uses', 'Tools', 'News', and 'About'. The main heading is 'Data Registry'. A paragraph explains that the registry provides direct access to data currently available through MarineCadastr.gov, filtered by provider, thematic category, geographic region, and service type. A list of links includes 'Data Fact Sheet', 'How to Contribute Data', 'How to Create Your Own Map', 'MarineCadastr.gov Web Services Frequently Asked Questions', and 'Use MarineCadastr.gov Web Services in ArcMap'. Below the text is a search bar and a 'My Map 0' button. A vertical sidebar on the left is labeled 'Contact and Follow'. The main content area displays a list of datasets with filters and 'Add to Map' buttons:

- Currently displaying 281 Datasets. Clear Filters.
- Theme: Birds, Corals, Economic, Elevation, Federal Georegulations (Show More), Region: Alaska, Caribbean, East Coast, Great Lakes.
- 12NM Territorial Sea (NOAA Office of Coast Survey) - Add to Map
- 2009 to 2014 National AIS at 1 Minute Intervals (NOAA Office for Coastal Management) - Add to Map
- 2009 Vessel Traffic (AIS) (Bureau of Ocean Energy Management) - Add to Map
- 2009-2010 Commercial Vessel Density (October - AIS) (NOAA Office of Coast Survey) - Add to Map

Partnerships / Spin-off Projects

MCSO Accomplishments

MarineCadastre.gov

Maps Data Uses Tools News About

An Ocean of Information

A joint BOEM and NOAA initiative providing authoritative data to meet the needs of the offshore energy and marine planning communities.

Maps Data Uses

Features

- Bird Data
- New National Viewer
- West Coast Ocean Data Portal

Contact and Follow

that Internet Explorer is slow to display this
Firefox, Safari and Chrome browsers work well.

Map Satellite Terrain

Show labels

Imagery ©2010 TerraMetrics - Terms of Use

ArcGIS - My Map

DATA TOPICS - APPLICATIONS DEVELOPERS CONTACT

Tools Get Involved Map Gallery Regional Planning Feedback

es you to discover and access data, information, and decision tools related to our ocean,
t Lakes. The National Ocean Council provides this site to support regional marine planning
country and create a convenient place for anyone to find out more about our marine,
t Lakes environments.

DigitalCoast OFFICE FOR COASTAL MANAGEMENT

Data Tools

More Than Just Data

Dive into the Digital Coast to Get the Data, Tools, and Training Communities Need to Address Coastal Issues.

DATA TOOLS TRAINING STORIES TOPICS

What is the Digital Coast?

This NOAA-sponsored website is focused on helping communities address coastal issues and has become one of the most-used resources in the coastal management community. The dynamic Digital Coast Partnership, whose members represent the website's primary user groups, keeps the effort focused on customer needs.

Learn more in our About section, or just dive in. And please provide feedback as often as possible. Hearing from you is what makes the Digital Coast work.

Learn More about the Digital Coast

About Contributing Partners Watch the Video

Top: Data Tools Training Stories

- Coastal Lidar
- Coastal Change Analysis Program
- Economics: National Ocean Watch
- Electronic Nautical Charts
- Emergency Response Imagery

HIGHLIGHTS

NOAA Releases Tool to View Sea Level Rise Potential

[View this Dataset](#)

Developed by the NOAA Coastal Services Center, the sea level rise viewer offers access to data and information about the risks of sea level rise, storm surge, and flooding along the coastal United States. NOAA's sea level rise viewer allows community planners, city officials and coastal residents the opportunity to identify flood-prone locations in their area.

Partnerships / Conferences

MCS D Accomplishments



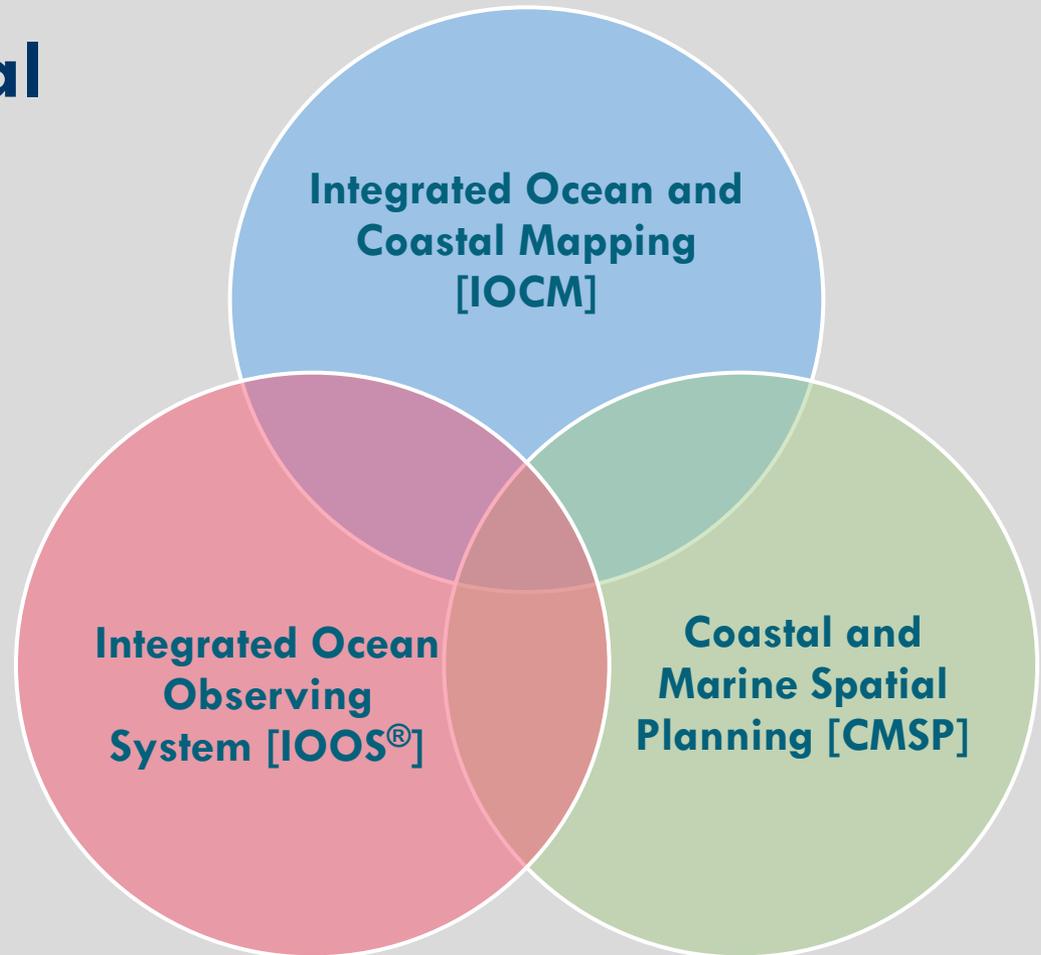
COASTAL
GEO TOOLS

Partnerships / Coordination

MCSD Accomplishments

**Marine and Coastal
Spatial Data
Subcommittee**

*FGDC Water –
Oceans and Coasts
Theme*



**What should be the relationship of the
Marine and Coastal Spatial Data
Subcommittee and the
Water – Oceans and Coasts Theme?**

Comparison of MCSD and W-O&C

MCSD: The purpose of the Marine and Coastal Spatial Data Subcommittee is to advance and implement the Marine and Coastal National Spatial Data Infrastructure, working to develop strategic partnerships, relevant standards, and enhance access to and utility of coastal and ocean framework data.

W-O&C: Features and characteristics of salt water bodies (i.e. tides, tidal waves, coastal information, reefs) and features and characteristics that represent the intersection of the land with the water surface (i.e. shorelines), the lines from which the territorial sea and other maritime zones are measured (i.e. baseline maritime) and lands covered by water at any stage of the tide (i.e. Outer Continental Shelf), as distinguished from tidelands, which are attached to the mainland or an island and cover and uncover with the tide.

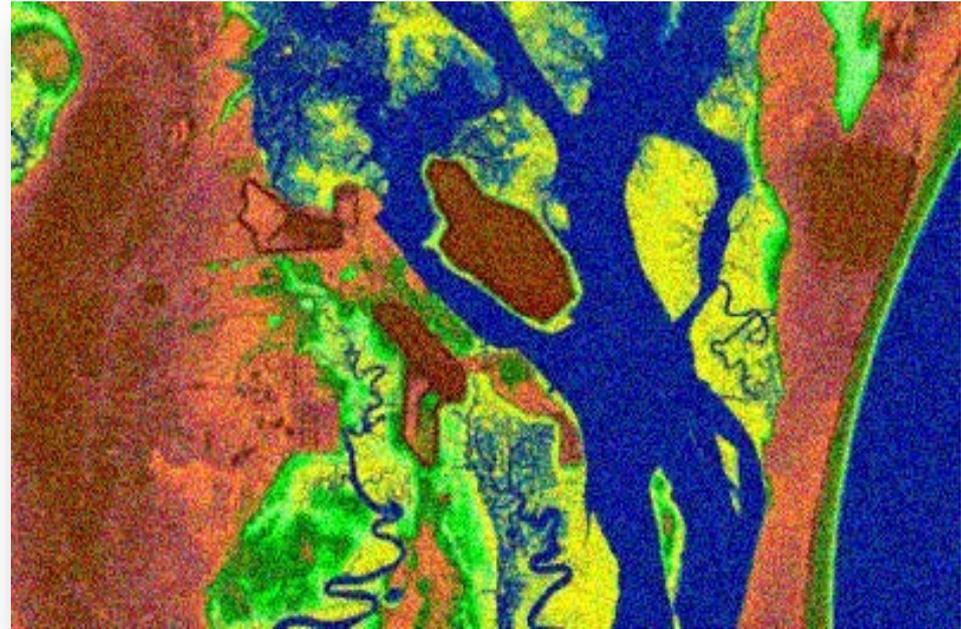
W-O&C Theme = 25 NGDAs by Topic

- ❑ **Boundary Information**
 - ❑ Submerged Land Act Boundaries
 - ❑ 200 Nautical Mile Limit
 - ❑ Outer Continental Shelf Revenue Zone Boundaries
 - ❑ Marine Protected Areas
 - ❑ Maritime Limits and Boundaries (EEZ, Territorial Sea, Contiguous Zone)
- ❑ **Nautical Charts (Electronic/Vector [ENCs] and Raster [RNCs])**
- ❑ **Shoreline Products**
- ❑ **Physical Oceanographic Data**
 - ❑ Sea Level Data
 - ❑ Tides and Water Levels
- ❑ **Observational Data (data from buoys)**

A-16 Supplemental Guidance

Compliance

- ✓ Executive Champion named
- ✓ Theme Lead named
- ✓ NGDAs selected and approved
- ✓ Metadata for datasets reviewed, verified, and posted to data.gov and Geospatial Platform
- ✓ Theme community page content updated on Geospatial Platform
- ✓ NGDA assessments complete
- ✓ Theme strategic plan *[in progress]*



Community Webpage

WATER - OCEANS & COASTS THEME

Theme Lead Agency: National Oceanic and Atmospheric Administration (NOAA)

Theme Lead: Tony LaVoi (NOAA)



Overview



Committees And Work Groups



Geospatial Standards

NGDA Water Oceans And Coasts Community

Community Type: A-16

Sponsor: FDGC

Sponsor Email: geoplatform@fgdc.gov

You must register or login in order to subscribe to this community.

Water - Oceans and Coasts Theme

Definition: Features and characteristics of salt water bodies (i.e. tides, tidal waves, coastal information, reefs) and features and characteristics that represent the intersection of the land with the water surface (i.e. shorelines), the lines from which the territorial sea and other maritime zones are measured (i.e. baseline maritime) and lands covered by water at any stage of the tide (i.e. Outer Continental Shelf), as distinguished from tidelands, which are attached to the mainland or an island and cover and uncover with the tide.

FGDC Marine and Coastal Spatial Data Subcommittee

FGDC Wetlands Subcommittee

FGDC Marine Boundary Working Group

Interagency Working Group on Ocean and Coastal Mapping

Related Themes

- Biota
- Cadastre
- Elevation
- Government Units

Classification of Wetlands and Deepwater Habitats in the United States (1996)

Metadata Profile for Shoreline Data (2001)

Geospatial Positioning Accuracy Standards, Part 5: Standards for Nautical Charting Hydrographic Surveys (2005)

Shoreline Data Content Standard - Public Review Draft (2007)

Coastal and Marine Ecological Classification Standard (2012)

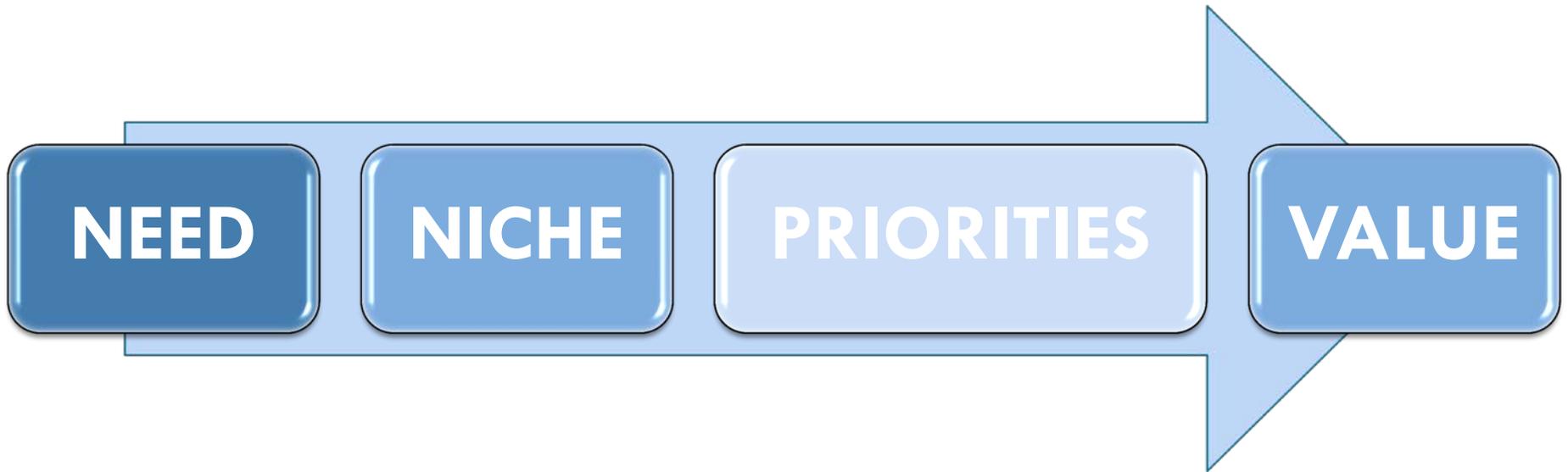
Lifecycle Maturity Assessments

Dataset	Submission Status	Overall	Inventory					Use			Agency Abbreviation	
			General	Define	Evaluate	Obtain	Access	Maintain	Evaluate	Archive		
Maritime Limits and Boundaries of the United States of America	Complete	5/5	3/5	5/5	5/5	5/5	5/5	5/5	4/5	4/5	5/5	DOC-NOAA
NOAA Coastal Mapping Shoreline Products	Complete	5/5	5/5	5/5	5/5	5/5	4/5	5/5	5/5	5/5	2/5	DOC-NOAA
NOAA Electronic Navigational Charts (ENC)	Complete	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	DOC-NOAA
NOAA Raster Navigational Charts (RNC)	Complete	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	DOC-NOAA
OCSLA Sec. 8(g) Revenue Zone Boundary - Alaska Region NAD83	Complete	4/5	4/5	2/5	5/5	5/5	5/5	5/5	3/5	3/5	2/5	DOI-BOEM
OCSLA Sec. 8(g) Revenue Zone Boundary - Atlantic Region NAD83	Complete	4/5	4/5	2/5	5/5	5/5	5/5	5/5	3/5	2/5	2/5	DOI-BOEM
OCSLA Sec. 8(g) Revenue Zone Boundary - Gulf of Mexico Region NAD27	Complete	3/5	4/5	2/5	5/5	4/5	5/5	5/5	1/5	3/5	2/5	DOI-BOEM
OCSLA Sec. 8(g) Revenue Zone Boundary - Pacific Region - West Coast NAD 83	Complete	4/5	4/5	2/5	5/5	5/5	5/5	5/5	1/5	3/5	2/5	DOI-BOEM
ODIN: Observational Data Interactive Navigation, an interactive map of all CO-OPS active stations	Complete	5/5	5/5	4/5	5/5	4/5	5/5	5/5	5/5	4/5	2/5	DOC-NOAA
Outer Continental Shelf 200 Nautical Mile Limit - Gulf Of Mexico Region NAD27	Complete	4/5	4/5	2/5	5/5	5/5	5/5	5/5	1/5	3/5	2/5	DOI-BOEM
Outer Continental Shelf Submerged Lands Act Boundary - Alaska Region NAD83	Complete	2/5	4/5	2/5	0/5	4/5	3/5	3/5	1/5	3/5	2/5	DOI-BOEM
Outer Continental Shelf Submerged Lands Act Boundary - Atlantic Region NAD83	Complete	4/5	4/5	2/5	5/5	5/5	5/5	5/5	1/5	3/5	2/5	DOI-BOEM
Outer Continental Shelf Submerged Lands Act Boundary - Gulf of Mexico Region NAD27	Complete	4/5	4/5	2/5	5/5	5/5	5/5	5/5	1/5	3/5	2/5	DOI-BOEM
Outer Continental Shelf Submerged Lands Act Boundary - Pacific Region - West Coast NAD 83	Complete	4/5	4/5	2/5	5/5	5/5	5/5	5/5	1/5	3/5	2/5	DOI-BOEM
Sea Levels Online: Sea Level Variations of the United States Derived from National Water Level Observation Network Stations	Complete	5/5	5/5	4/5	5/5	5/5	5/5	5/5	3/5	4/5	2/5	DOC-NOAA
U.S. Marine Protected Areas Boundaries: MPA Inventory	Complete	4/5	4/5	4/5	3/5	4/5	5/5	5/5	3/5	3/5	3/5	DOC-NOAA

MSDI NGDAs not Limited to W–O&C Theme

Theme	Sample datasets of interest	Water – Oceans and Coasts datasets
Biota	Environmental Sensitivity Index (ESI)	
Cadastre	Outer Continental Shelf datasets	Shoreline Products Outer Continental Shelf Boundaries
Elevation	Coastal Lidar Digital Elevation Models Multibeam Bathymetric Data	
Geology	Outer Continental Shelf Sand and Gravel Outer Continental Shelf Wells	
Governmental Units		Maritime Limits and Boundaries Marine Protected Areas Boundaries Lands Act Boundaries
Imagery	Coastal Mapping Remote Sensing Data	
Land Use – Land Cover	Coastal Change Analysis Program data	
Transportation	Ports	Nautical Charts
Utilities	Outer Continental Shelf Pipelines	
Water - Inland	National Wetlands Inventory	

**A potential approach for moving forward
– and bringing value.**



Step One: Confirm Need for the MCSD

- ❑ **Solicit input from FGDC membership and related coordination bodies on the need for the MCSD**
- ❑ **Potential groups with similar interests to engage**
 - ❑ National Ocean Council Data and Information WG [NOC DIWG]
 - ❑ Interagency WG on Ocean and Coastal Mapping [IWG-OCM]
 - ❑ Integrated Ocean Observing Systems [IOOS]
 - ❑ Committee on Marine Transportation [CMTS] and IHO
 - ❑ UN Global Geospatial Information Management [UN GGIM]
 - ❑ Group on Earth Observations [GEO]
 - ❑ Marine Planning Portal Network [MPPN]
- ❑ **Discuss the MCSD's purpose, its stewardship role for the W-O&C Theme, and coordination with other related groups**
- ❑ **Outcome: Go or no-go on the MCSD**

Step Two: Define Niche and Housekeeping

- ❑ **Reach agreement on the purpose of the MCSD/W-O&C Theme**
 - ❑ Is it just about compliance with the NGDA requirements or is there more?
- ❑ **Need to tightly define scope**
 - ❑ Data stewardship/access?
 - ❑ Strategies and technologies related to acquisition of data?
 - ❑ Use of data – societal impacts?
 - ❑ Voice of the U.S. MSDI?
 - ❑ Partnerships?
- ❑ **Membership – recommend leads for other ocean/coast coordination bodies be the MCSD principal members**
- ❑ **Outcome: Updated Charter, Membership, and web presence**

Step Three: Establish Priorities

- ❑ **The MCSD will collapse under its own weight if it tries to embrace the entirety of the MSDI concept and required implementation steps on its own**
- ❑ **Must set a limited and doable short-list of initial priorities**
 - ❑ Focus on where gaps exist, what is not currently being addressed by other topical coordination efforts
 - ❑ Fewer is better
- ❑ **Discuss with other groups how to build a comprehensive work plan that captures contributions of all groups**
- ❑ **Receive commitments to develop W-O&C Theme Strategy by FGDC deadline**
- ❑ **Outcome: Shared work plan and path to develop W-O&C strategy**

Step Four: Explain the Value

- ❑ No one wants to carry-out the NGDA activities for the sheer bureaucratic pleasure of paperwork
- ❑ All FGDC/NGDA efforts should focus on what is the purpose and how does it bring value
- ❑ Audience must be beyond the FGDC community
- ❑ Ocean and Coasts are under increasing pressures from multiple forcing factors – focus on delivering value to issues of strong societal value [e.g. GEO Societal Development Goals]
 - ❑ Coastal Resilience and Climate Impacts
 - ❑ Healthy Coastal Ecosystems
 - ❑ Economic Development
- ❑ Outcome: Ability to articulate why this matters

Discussion.

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