

Technnology  
Planning and  
Integratation Office  
(TPIO)

United States Department of Commerce  
National Oceanic and Atmospheric Administration  
NOAA Program Observation Requirements  
Document (PORD)

# Consolidated Observation Requirements List (CORL)

## NOAA Program Observation Requirements Document (PORD)

**FINAL with Requirements Validation  
Version 1.1**

**FY 2009**

**Weather and Water Goal**

**Coasts, Estuaries and Oceans (CEO)  
Program  
(WW-CEO)**

**September 4, 2009<sup>1</sup>**

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<sup>1</sup> PORD Document Date reflects date for publication of this [FINAL with Requirements Validation]  
CORL Data was downloaded at [09-04-2009 10:30:03]

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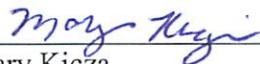
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## Signatures

### Observation Requirement Validation

#### **NOSC Endorsement**

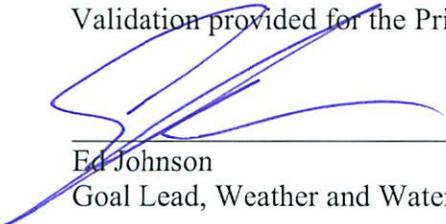
The NOSC has received the Coasts, Estuaries and Oceans (CEO) Program's Observation Requirements with Goal Lead and Line Office concurrence, and is satisfied with the Level-of-Validation provided for the Priority-1 Requirements.

 <hr style="border: 0; border-top: 1px solid black;"/> Mary Kicza Co-Chair, NOSC	6/25/2010 <hr style="border: 0; border-top: 1px solid black;"/> Date	 <hr style="border: 0; border-top: 1px solid black;"/> Endorsed
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 <hr style="border: 0; border-top: 1px solid black;"/> Jack Hayes Co-Chair, NOSC	06/28/2010 <hr style="border: 0; border-top: 1px solid black;"/> Date	 <hr style="border: 0; border-top: 1px solid black;"/> Endorsed
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#### **Goal Lead and Line Office Concurrence**

The Program Manager's Supervisor and Coasts, Estuaries and Oceans (CEO) Program's Goal Team Lead concur with the Observation Requirements and are satisfied with the Level-of-Validation provided for the Priority-1 Requirements.

 <hr style="border: 0; border-top: 1px solid black;"/> Ed Johnson Goal Lead, Weather and Water Goal	5/3/10 <hr style="border: 0; border-top: 1px solid black;"/> Date	 <hr style="border: 0; border-top: 1px solid black;"/> Concurred
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<b>Zdenka Willis</b> <small>Digitally signed by Zdenka Willis          DN: cn=Zdenka Willis, o=IOOS, ou=NOAA/NOS/IOOS,          email=Zdenka.S.Willis@noaa.gov, c=US          Date: 2010.04.23 08:07:50 -04'00'</small> <hr style="border: 0; border-top: 1px solid black;"/> Zdenka Willis Director, Integrated Ocean Observing System	<hr style="border: 0; border-top: 1px solid black;"/> Date	<hr style="border: 0; border-top: 1px solid black;"/> Concurred
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### **Program Manager Validation**

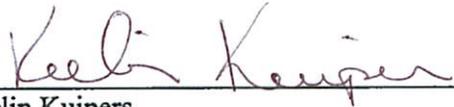
The Coasts, Estuaries and Oceans (CEO) Program Manager has validated the Priority-1 Observation Requirements by providing the Documentation listed in Appendix B as evidence of a substantiated basis for each of the 5 Key Attributes of those requirements.

 <hr style="border: 0; border-top: 1px solid black;"/> Keelin Kuipers Program Manager, Coasts, Estuaries and Oceans (CEO) Program	4/26/10 <hr style="border: 0; border-top: 1px solid black;"/> Date	yes <hr style="border: 0; border-top: 1px solid black;"/> Validated
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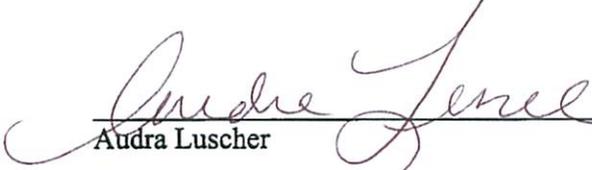
**Observation Requirement Verification**

The Program Manager, with Program Membership concurrence, has verified that the Coasts, Estuaries and Oceans (CEO) Program's Observation Requirements, as documented in the CORL and reproduced in this document, comprise the Coasts, Estuaries and Oceans (CEO) Program's Threshold and Objective level requirements for environmental observations, and are ready for Validation.

**Program Manager Verification**

 <hr style="border: 0; border-top: 1px solid black;"/> Keelin Kuipers Program Manager, Coasts, Estuaries and Oceans (CEO) Program	4/19/10 <hr style="border: 0; border-top: 1px solid black;"/> Date	yes <hr style="border: 0; border-top: 1px solid black;"/> Verified
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**Program Membership Concurrence**

 <hr style="border: 0; border-top: 1px solid black;"/> Audra Luscher	4/19/10 <hr style="border: 0; border-top: 1px solid black;"/> Date	yes <hr style="border: 0; border-top: 1px solid black;"/> Concurred
 <hr style="border: 0; border-top: 1px solid black;"/> James Boyd	4/19/10 <hr style="border: 0; border-top: 1px solid black;"/> Date	yes <hr style="border: 0; border-top: 1px solid black;"/> Concurred

## 1. Program Summary

The mission of the Coasts, Estuaries, and Oceans (CEO) program is to provide coastal services that ensure the nation's coastal communities and maritime users have the capability to understand their risk, mitigate their vulnerability, and build community resilience in response to coastal inundation, storms, and related natural phenomena. As such, CEO contributes significantly to enhancing coastal community and economic resilience to natural hazards. This is reflected in CEO's outcome, which is to "Improve predictive and response capability for hazardous coastal and ocean water conditions and their impacts for federal, state, and local level managers."

To achieve this outcome, the CEO program provides (a) information, products and services for the nation's coastal communities and maritime users in risk and vulnerability mitigation from coastal natural phenomena; (b) coastal and oceanic tools and information in support of forecasts and numerical predictions and (c) tools and data in support of coastal and oceanic resource stewardship, usage, and health. The CEO program connects our national coastal community and decision makers to national, state, and local information using the following strategies:

- a) Provide products and services for customer assessments and user requirements analysis
- b) Collaborate to address community model development for coastal inundation
- c) Develop and deliver user-driven decision support tools
- d) Coastal Services delivery to build the capacity of the nation's coastal communities through outreach, education, training, dissemination, data access, and tool development
- e) Provide a scientifically sound framework for resilience indicators, a methodology for community self-assessment and adaptive management, and a toolkit of information and resources for implementation.

## 2. Observation Requirements Summary

The Coasts, Estuaries and Oceans (CEO) Program of NOAA's Weather and Water Goal requires a total of 26 environmental observation requirements to address its mission. The following graphs provide a breakdown of these requirements by mission Priority, environmental Discipline and Type.

Total Records: 26

### 2.1 Observation Requirements by Priority

The Coasts, Estuaries and Oceans (CEO) program's observation requirements are distributed among priority levels as follows:

- 6 = **Priority 1, Mission Critical:** Cannot meet operational mission objectives without this data.
- 20 = **Priority 2, Mission Optimal:** Data not critical but would provide significant improvement to operational capability.
- 0 = **Priority 3, Mission Enhancing:** Needed to enhance state of knowledge / assess potential for operational capability.

The following chart provides the distribution of the Coasts, Estuaries and Oceans (CEO) program's requirements by priority.

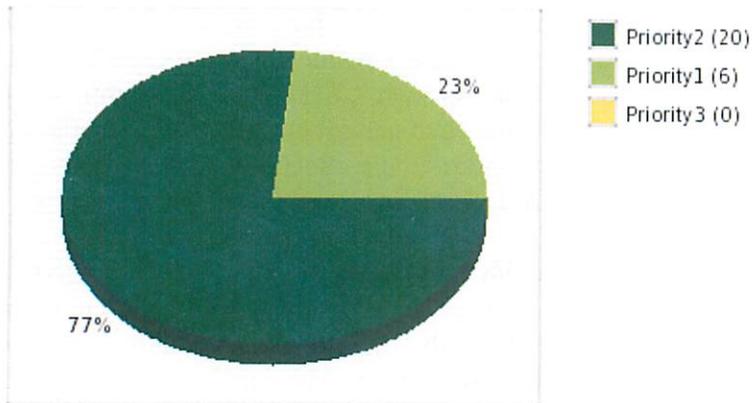


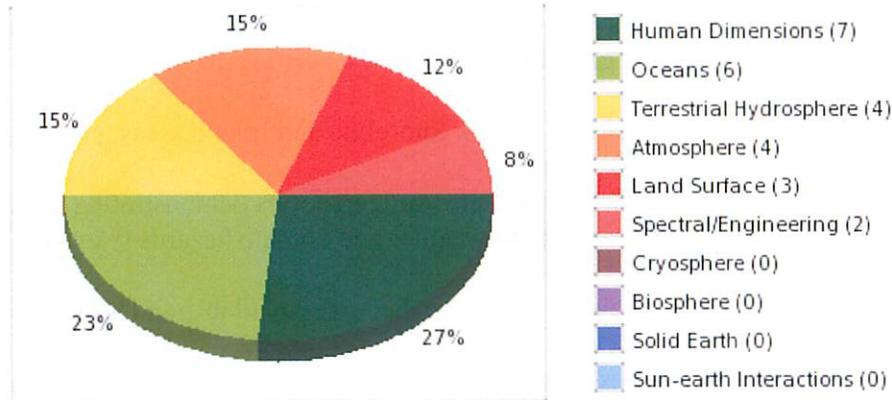
Figure 1: WW-CEO Observation Requirements by Priority (%)

## 2.2 Observation Requirements by Discipline

The Coasts, Estuaries and Oceans (CEO) program's observation requirements are distributed among environmental disciplines as follows:

- 4 = Atmosphere
- 0 = Biosphere
- 0 = Cryosphere
- 7 = Human Dimensions
- 4 = Terrestrial Hydrosphere
- 3 = Land Surface
- 6 = Oceans
- 0 = Solid Earth
- 2 = Spectral/Engineering
- 0 = Sun-earth Interactions

The following chart provides the distribution of the Coasts, Estuaries and Oceans (CEO) program's requirements by discipline.



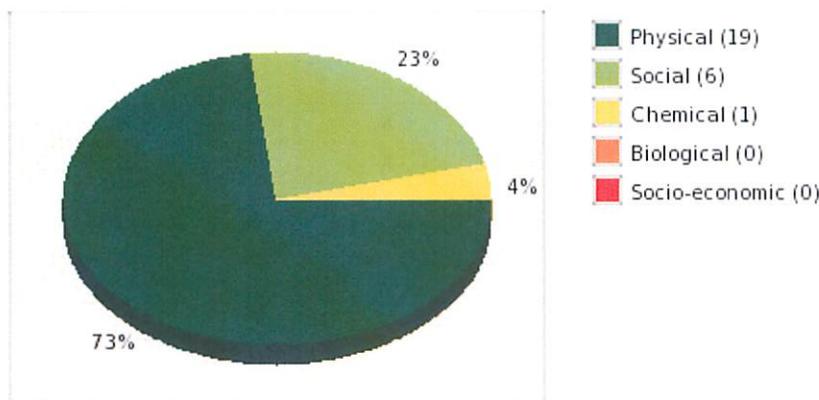
**Figure 2: WW-CEO Observation Requirements by Discipline.**

### 2.3 Observation Requirements by Type

The Coasts, Estuaries and Oceans (CEO) program's observation requirements are distributed among types as follows:

- 0 = Biological
- 1 = Chemical
- 19 = Physical
- 6 = Social
- 0 = Socio-economic

The following Chart gives the distribution of the Coasts, Estuaries and Oceans (CEO) program's requirements by type.



**Figure 3: WW-CEO Observation Requirements by Type.**

### 3. Observation Requirements Mapping to Performance Measures

The following table provides the listing of observation requirements for the **Coasts, Estuaries and Oceans (CEO)** Program of NOAA's Weather and Water Goal by GPRA and Corporate (NOAA) Performance Measures, and Regional Collaboration Priorities (RC).

**GPRA-1:** WW-CEO Cumulative percentage of U.S. Shoreline and Inland areas that have improved ability to reduce coastal hazards impacts

**GPRA-2:** WW-CEO Percentage of U.S. coastal states and territories demonstrating 20% or more annual improvement in resilience capacity to weather and climate hazards (%/yr.)

**NOAA-1:** WW-CEO Increased CEO-related educational courses available and accessible to decision makers

**NOAA-2:** WW-CEO Number of regions in which capacity was built to address coastal hazards

**RC-1:** Hazard Resilient Coastal Communities

**RC-2:** Integrated Ecosystem Assessments

**RC-3:** Integrated Water Resource Services

**Table 1: WW-CEO Observation Requirements Mapping to Performance Measures**

Requirement	Priority	GPRA		NOAA		RC		
		1	2	1	2	1	2	3
Bathymetry/Seafloor Topography	1	X			X	X		
Imagery: Infrared	1					X		
Imagery: Visible	1	X			X	X		
Land Topography	1	X			X	X		
Land Use/Land Cover (High Resolution)	1	X			X	X		
Land Use/Land Cover (Regional)	1	X			X	X		
Coastal Human Population Density	2							
Community Demographic Profile	2							
Community Resilience	2							
Contaminant: Sediment (AOML)	2							
Environmental Values Survey	2							
Hydrological Hazards	2	X			X	X		X
Meteorological Hazards	2	X			X	X		
Natural Resource Use Survey	2							
Precipitation Amount	2							
Precipitation Rate	2							
Precipitation Type	2							
Run-off: Freshwater (AOML)	2							
Shoreline Mapping: Remote Sensing	2							
Socioeconomic Profiles: Current and Historical Social Processes	2							
Surface Water Discharge/Flow	2							
Surface Water: Channel Characteristics (Width)	2							

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Requirement	Priority	GPRA		NOAA		RC		
		1	2	1	2	1	2	3
Surface Water: Stage Height, Lakes/Reservoirs	2							
Tsunami Offshore: Post-event	2							
Tsunami Offshore: Realtime	2							
Water Level	2	X				X		X

#### 4. Status of Program List

As shown in Appendix A, each NOAA Observation Requirement is further specified by spatial, temporal and accuracy related attributes at both Threshold and Objective levels. The following table provides the attribute completion status of the observation requirements list for the Coasts, Estuaries and Oceans (CEO) Program. All attributes at the Priority-1/Threshold Level must be completed to allow for observation gap analyses to be conducted.

**Table 2: WW-CEO Observation Requirement Attributes Remaining [blank] or [tbs]**

Priority	Threshold	Objective
1	0	0
2	274	317
3	0	0
<b>Total</b>	<b>274</b>	<b>317</b>

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## Appendix A Coasts, Estuaries and Oceans (CEO) Program, Observation Requirements

Requirements

Key: V=value, U=units, W=weight

Observation Requirement	Obs Req Prty	T/O	Geo Cov		Vert Range				Vert Res			Horiz Res				Meas Range				Msmnt Accy			Smplng intvl			Data Ltncy			Long Stab		
			V	W	Low	High	U	W	V	U	W	V	U	W	Low	High	U	W	V	U	W	V	U	W	V	U	W	V	U	W	
Bathymetry/Seafloor Topography	1	T	Coastal US	15	-200	0	m	10	na	na	0	5	m	15	-200	0	m	10	0.5	m	15	10	yr	15	1	yr	10	15	cm	10	
		O	Coastal US	15	-200	0	m	10	na	na	0	1	m	15	-200	0	m	10	0.5	m	15	5	yr	15	1	yr	10	15	cm	10	
Imagery: Infrared	1	T	Coastal US	20	na	na	na	0	na	na	0	1.0	m	20	na	na	na	0	na	na	0	3	yr	20	1	yr	20	5	m	20	
		O	Coastal US	20	na	na	na	0	na	na	0	0.5	m	20	na	na	na	0	na	na	0	5	yr	20	1	yr	20	5	m	20	
Imagery: Visible	1	T	Coastal US	20	na	na	na	0	na	na	0	1.0	m	20	na	na	na	0	na	na	0	3	yr	20	1	yr	20	5	m	20	
		O	Coastal US	20	na	na	na	0	na	na	0	0.5	m	20	na	na	na	0	na	na	0	5	yr	20	1	yr	20	5	m	20	
Land Topography	1	T	Coastal US	15	0	100	m	10	na	na	0	5	m	15	-10	2500	m	10	15	cm	15	5	yr	15	1	yr	10	10	cm	10	
		O	Coastal US	15	0	100	m	10	na	na	0	1	m	15	-10	2500	m	10	15	cm	15	5	yr	15	1	yr	10	10	cm	10	
Land Use/Land Cover (High Resolution)	1	T	Coastal US	20	na	na	na	0	na	na	0	5	m	20	na	na	na	0	15	%	20	5	yr	20	1	yr	20	na	na	0	
		O	Coastal US	20	na	na	na	0	na	na	0	2.4	m	20	na	na	na	0	na	na	20	na	na	20	1	yr	20	na	na	0	
Land Use/Land Cover (Regional)	1	T	Coastal US	20	na	na	na	0	na	na	0	30	m	20	na	na	na	0	15	%	20	5	yr	20	1	yr	20	na	na	0	
		O	Coastal US	20	na	na	na	0	na	na	0	2.4	m	20	na	na	na	0	na	na	20	na	na	20	1	yr	20	na	na	0	
Coastal Human Population Density	2	T	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		
		O	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		
Community Demographic Profile	2	T	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		
		O	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		
Community Resilience	2	T	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		
		O	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		
Contaminant: Sediment (AOML)	2	T	EEZ US		bottom	bottom	m		na	na		1	km		na	na	conc		na	na		tbs	tbs		tbs	tbs		tbs	tbs		
		O	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		
Environmental Values Survey	2	T	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		
		O	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		

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Sep. 4, 2009

Observation Requirement	Obs Req Prty	T/O	Geo Cov		Vert Range				Vert Res			Horiz Res			Meas Range				Msmnt Accy			Smping intvl			Data Ltncy			Long Stab								
			V	W	Low	High	U	W	V	U	W	V	U	W	Low	High	U	W	V	U	W	V	U	W	V	U	W	V	U	W						
Hydrological Hazards	2	T	Coastal US		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
		O	Coastal US		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
Meteorological Hazards	2	T	Coastal US		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
		O	Coastal US		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
Natural Resource Use Survey	2	T	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
		O	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
Precipitation Amount	2	T	Hemi US	20	0	0	na		na	na		1	km	20	0	10	mm	15	1	mm	15	6	min	15	3	min	10	2	%	5						
		O	Hemi US	20	0	0	na		0	na		0.5	km	20	0	10	mm	15	0.25	mm	15	1	min	15	1	min	10	2	%	5						
Precipitation Rate	2	T	Hemi US	20	0	0	na		na	na		1	km	20	0	100	mm/hr	15	1	mm/hr	15	6	min	15	3	min	10	2	%	5						
		O	Global	20	0	0	na		0	na		0.5	km	20	0	100	mm/hr	15	0.25	mm/hr	15	1	min	15	1	min	10	2	%	5						
Precipitation Type	2	T	Hemi US	25	0	0	na		na	na		1	km	25	na	na	na		na	na		6	min	25	3	min	15	2	%	10						
		O	Global	25	0	0	na		na	na		0.5	km	25	na	na	na		na	na		1	min	25	1	min	15	2	%	10						
Run-off: Freshwater (AOML)	2	T	EEZ US		0	0	m		na	na		1	km		0	8000	m <sup>3</sup> /s		10	m <sup>3</sup> /sec		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
		O	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
Shoreline Mapping: Remote Sensing	2	T	Coastal US	20	-10	100	m	5		na	na	5	2	m	20	na	na	na	0	5	m	20	20	yr	20	6, 24	mon	10	na	na	0					
		O	Coastal US	20	-10	100	m	5		1	cm	5	0.2	m	20	na	na	na	0	0.5	m	20	10	yr	20	2, 6		10	na	na	0					
Socioeconomic Profiles: Current and Historical Social Processes	2	T	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
		O	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
Surface Water Discharge/Flow	2	T	Hemi US	10	tbs	tbs	tbs		0.01	m	15	0.25	km	15	tbs	tbs	tbs		1	%	10	3	hr	10	6	hr		tbs	tbs		tbs	tbs		tbs	tbs	
		O	Hemi US	10	tbs	tbs	tbs		0.01	m	15	0.25	km	15	tbs	tbs	tbs		1	%	10	1	hr	10	30	min		tbs	tbs		tbs	tbs		tbs	tbs	
Surface Water: Channel Characteristics (Width)	2	T	Hemi US	20	0	0	m	20		na	na		na	na	0.01	10	m	15	1	m	15	1	yr	15	1	day	10	2	%	5						
		O	Hemi US	20	0	0	m	20		na	na		na	na	1	10000	m	15	1	m	15	1	yr	15	1	day	10	2	%	5						
Surface Water: Stage Height, Lakes/Reservoirs	2	T	Hemi US	10	-200	4000	m	15		0.05	m	15	5	km	15	0	50	m	10	0.03	m	10	15	min	10	5	min	10	2	%	5					
		O	Hemi US	10	-200	4000	m	15		0.01	m	15	1	km	15	0	50	m	10	0.01	m	10	5	min	10	1	min	10	2	%	5					

# NOAA Program Observation Requirements Document (PORD)

Ver 1.1 - Validate

(WW-CEO)

Sep. 4, 2009

Observation Requirement	Obs Req Prty	T/O	Geo Cov		Vert Range				Vert Res			Horiz Res			Meas Range				Msmnt Accy			Smping intvl			Data Ltncy			Long Stab		
			V	W	Low	High	U	W	V	U	W	V	U	W	Low	High	U	W	V	U	W	V	U	W	V	U	W	V	U	W
Tsunami Offshore: Post-event	2	T	Global Ocean	15	0	6000	m	10	0.5	mm	10	450	km	10	0	10	m	10	1	mm	10	15	sec	15	6	yr	10	2	yr	10
		O	Global Ocean	15	0	6000	m	10	0.5	mm	10	450	km	10	0	10	m	10	1	mm	10	15	sec	15	2	yr	10	5	yr	10
Tsunami Offshore: Realtime	2	T	Global Ocean	10	na	na	na	0	na	na	0	450	km	10	0	10	m	5	0.5	mm	15	1	min	20	5	min	25	2	yr	15
		O	Global Ocean		na	na	na		na	na		450	km	15	0	10	m	10	0.25	mm	10	15	sec	20	1	min	25	5	yr	10
Water Level	2	T	Coastal US	5	0	15	m	10	na	na	10	90	km	0	0	15	m	15	0.02	m	25	6	min	10	6	min	10	5	mm	15
		O	tbs	5	0	15	m	10	0.001	m	10	tbs	na	0	tbs	tbs	tbs	15	tbs	tbs	25	tbs	tbs	10	tbs	tbs	10	tbs	tbs	15

## Appendix B WW-CEO, Priority-1 Requirements Validation

### Appendix B.1 Validation Documents Submitted

The following Validation Documents have been submitted in support of the WW-CEO Program's Priority-1 Observation Requirements.

**Table B-1: Validation Documents provided to support Priority- Requirements**

#	Validation Document Title	Document Type
1	Addressing Habitat Issues with remote Sensing in the National Estuarine Research Reserve System, Needs Assessment, Final Report, Oct-02	NOAA Needs Assessment Final Report
2	IHO Standards for Hydrographic Surveys; 5 <sup>th</sup> Edition, February 2008; Special Publication No. 44	International Hydrographic Organization Special Report
3	A Geospatial Framework for the Coastal Zone National Needs for Coastal Mapping and Charting	National Academies Report
4	Integrated Global Observing Strategy, Coastal Theme Report	Special Report
5	Imagery for the Nation; National States Geographic Information Council	Slide Show
6	Elevation Data for Floodplane Mapping, Committee on Floodplane Mapping Technologies, National Research Council	National Academies Report
7	Report of the First National Lidar Initiative Meeting; February 14-16, 2007; Reston, VA	USGS Report
8	Aerial Mapping and Orthophoto Standards, State of Idaho Document	Published Standards
9	Department of Homeland Security; Federal Emergency Management Agency, Map Modernization Fund	Congressional Budget Justification
10	NOAA Coastal Services Center Coastal Change Analysis Program Effectiveness Review, Summary Report	Summary Report
11	Development of the United States Coastal Change Analysis Program Effectiveness Review, Summary Report, 27-Jun-00	Summary Report

### Appendix B.2 Validation Documents Mapping to Observation Requirements

Coasts, Estuaries, and Oceans and TPIO representatives worked jointly to identify references to validate both the need for an observation requirement and its specific measurement attributes. These validation documents support one or more of the Priority-1 Requirements as shown in Table B-2 below. For occurrences where validation documents could not be identified, Program Subject Matter Experts (SME) justifications are provided.

**Table B-2: Validation Document Mapping to Observation Requirement**

Observation Requirement	Priority	Document[s] Submitted
Bathymetry/Seafloor Topography	1	1, 2, 3, 4
Imagery: Infrared	1	1, 3, 5
Imagery: Infrared Imagery: Visible	1	1, 3, 5
Land Topography	1	5, 6, 7, 8, 9
Land Use/Land Cover (Regional)	1	10, 11
Land Use/Land Cover (High Resolution)	1	10, 11

### Validation Assessment for Priority-1 Requirements

Coasts, Estuaries, and Oceans and TPIO representatives worked jointly to review the submitted documentation, and identify the “level of validation” for the Threshold value of each of the five key attributes of each Priority-1 Observation Requirement.

**Table B-3: Level of Validation for each Priority 1 Requirement Attribute**

Parameters	Attribute Validated				
	Geo Cov	Vert Res	Horiz Res	MeaAcc	Samp Int
Bathymetry/Seafloor Topography	Coastal US	na	5 m	0.5 m	10 yr
Imagery: Infrared	Coastal US	na	1 m	na	3 yr
Imagery: Visible	Coastal US	na	1 m	na	3 yr
Land Topography	Coastal US	na	5 m	15 cm	5 yr
Land Use/Land Cover (Regional)	Coastal US	na	30 m	15 %	5 yr
Land Use/Land Cover (High Resolution)	Coastal US	na	5 m	15 %	5 yr

**Legend: Level of Validation**

Direct Validation Documentation Submitted	
Associated Validation Documentation Submitted	
SME Consensus Validation Documentation Submitted	
Not Validated	
Attribute not applicable	

## Appendix C Program Acronym List

Acronym	Definition
CL-COM	Climate - Observations and Monitoring
CL-COM_Atmos	Climate - Observations and Monitoring, Atmosphere Sub-Program
CL-COM_CF	Climate - Observations and Monitoring, Climate Forcing Sub-Program
CL-COM_Land	Climate - Observations and Monitoring, Land Sub-Program
CL-COM_Oceans	Climate - Observations and Monitoring, Ocean Sub-Program
CL-CRM	Climate - Research & Modeling
CT-AWX	Commerce and Transportation - Aviation Weather
CT-GEO	Commerce and Transportation - Geodesy
CT-MTS	Commerce and Transportation - Marine Transportation Systems
CT-MWX	Commerce and Transportation - Marine Weather
CT-SFX	Commerce and Transportation - Surface Weather
EC-AQC	Ecosystem - Aquaculture
EC-CMR	Ecosystem - Coastal Marine Resources
EC-COR	Ecosystem - Corals
EC-EOP	Ecosystem - Ecosystems Observation Program
EC-ERP	Ecosystem - Ecosystem Research
EC-HAB	Ecosystem - Habitat
MS-IOS	Mission Support - Integrated Ocean Observing System
MS-EMP	Mission Support - Environmental Modeling
MS-EMP_Atmos	Mission Support - Environmental Modeling, Atmosphere Sub-Program
MS-EMP_Climate	Mission Support - Environmental Modeling, Climate Sub-Program
MS-EMP_Marine	Mission Support - Environmental Modeling, Marine Sub-Program
MS-TRP	Mission Support - Technical Requirements, Planning and Integration
WW-AQL	Weather and Water - Air Quality
WW-CEO	Weather and Water - Coasts, Estuaries and Oceans (CEO)
WW-HYD	Weather and Water - Hydrology
WW-LFW	Weather and Water - Local Forecasts and Warnings
WW-SWX	Weather and Water - Space Weather
WW-WWS	Weather and Water - W&W Science & Technology Infusion
WW-WWS_HURR	Weather and Water - W&W Science & Technology Infusion, Hurricanes Sub-Program
WW-WWS_OCW	Weather and Water - W&W Science & Technology Infusion, Ocean & Coastal Weather Sub-Program
WW-WWS_SEV	Weather and Water - W&W Science & Technology Infusion, Severe Weather Sub-Program
WW-WWS_WR	Weather and Water - W&W Science & Technology Infusion, Water Resources Sub-Program

## Appendix D PORD Table Column Definitions

[Note: In PORA tables "V" = attribute value, "U" = attribute units, "W" = attribute weight]

**Attribute Weight:** The "importance" indicator value for the basic attributes (Geographic Coverage, Vertical Resolution, Horizontal Resolution, Measurement Accuracy, Sampling Interval, Number of Operating Days at Sea (ODS)/Flight Hours (Flt Hrs)) relative to each other. Each of the basic attributes is assigned a value from 1 to 100, with the most important of the attributes given the highest relative value. All weights across a row should add up to 100. See examples in table below.

Observational Requirement Title	Geographic Coverage Weight	Vertical Resolution Weight	Horizontal Resolution Weight	Measurement Accuracy Weight	Sampling Interval Weight	Number of ODS/Flt Weight
Air Temperature: Surface	50	0	10	30	10	0
Land Cover	0	0	30	50	20	0
Water Vapor: Profiles	20	30	10	30	10	0
At Sea Data Collection	20	10	10	10	10	40
Airborne Data Collection	30	10	10	10	10	30

**Data Latency (Data Ltncy):** Elapsed time from data acquisition until delivery of data to the user. Latest time by which an element can be delivered and still be useful to the customer.

**Data Latency Units:** Measurement units for data latency of the element.

Use:

- "sec" for 1-59 seconds
- "min" for 1-59 mins
- "hr" for 1-23 hours
- "day" for 1-6 days
- "wk" for 1-3 wks
- Etc.

**Data Latency Weight:** See "Attribute Weights."

**Geographic Coverage (Geo Cov):** See table below.

**Geographic Coverage Weight:** See "Attribute Weights."

**GPRA:** Government Performance and Results Act

**Horizontal Resolution (Horiz Res):** The dimension of the smallest object, horizontal area represented by the parametric value. Spatial granularity with which the information is required.

<b>PORD Appendix D: PORD Table Column Definitions</b> <b>Ver 1.1 - Validate (WW-CEO) Sep. 4, 2009</b>
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**Horizontal Resolution Units:** Measurement units for horizontal resolution of the element. Use:  
"km" for kilometers  
"m" for meters  
Etc.

**Horizontal Resolution Weight:** See "Attribute Weights."

**Long-Term Stability (Long Stab):** The maximum excursion of the short-term average measured value of a parameter under identical conditions over a stated period of time (e.g. decade). The smaller the maximum excursion, the greater the stability of the observations. The short-average is the average of a sufficient number of successive measurements of the variable under identical conditions such that the random error is negligible relative to the systematic error.

**Long-Term Stability Units:** Measurement units for Long-Term Stability of the element.

**Long-Term Stability Weight:** See "Attribute Weights."

**Measurement Accuracy (Msmnt Accy):** The systematic error, as specified by the difference between a measured or derived parameter and its true value in the absence of random errors. It can be thought of as the looseness of truth and is measured by the bias or systematic error of the observation, that is, the difference between the short-term average measured values of a variable and the truth. The short-term average is the average of a sufficient number of successive measurements of the parameter under identical conditions such that the random error is negligible relative to the systematic error.

**Measurement Accuracy Units:** Measurement units for Measurement Accuracy of the element. If possible use %.

**Measurement Accuracy Weight:** See "Attribute Weights."

**Measurement (Meas Range) Range Low:** Lowest value of range of parameter, within which the parameters must be measurable or reportable (e.g., for temperature 273 to 303 Kelvin enter 273)"

**Measurement Range High:** Highest value of range of parameter, within which the parameters must be measurable or reportable (e.g., for temperature 273 to 303 Kelvin enter 203)"

**Measurement Range Units:** Measurement units for measurement range of the element. For example: Kelvin enter "K"

**Measurement Range Weight:** See "Attribute Weights."

**Observational Requirement:** Requirement Name

<b>PORD Appendix D: PORD Table Column Definitions</b> <b>Ver 1.1 - Validate (WW-CEO) Sep. 4, 2009</b>
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**Observational Requirement Priority (Obs Req Prty):**

"1" = Mission Critical / Cannot meet operational mission objectives without this data. Not having these data will prevent performance of the mission or preclude satisfactory mission accomplishment.

"2" = Mission Optimal / Data not critical but would provide significant improvement to operational capability.

"3" = Mission Enhancing / Needed to enhance state of knowledge / assess potential for operational capability.

**RC:** Regional Collaboration Priorities

**Sampling Interval (Smping Intvl):** Average time interval between consecutive measurements of the same area of the environment.

**Sampling Interval Units:** Measurement units for sampling interval of the element. For example: Use:

- "sec" for 1-59 seconds
- "min" for 1-59 mins
- "hr" for 1-23 hours
- "day" for 1-6 days
- "wk" for 1-3 wks
- Etc.

**Sampling Interval Weight:** See "Attribute Weights."

**Threshold (T)/Objective (O):** Threshold is the minimum acceptable specification. Objective is the optimal specification that, if met, would significantly enhance meeting the mission.

**T/O:** Threshold/Objective. See definitions above.

**Type:** Observation requirement type

- "B" = Biological
- "C" = Chemical
- "P" = Physical
- "S" = Socio-economic
- "E" = Economic

**Vertical Range (Vert Range) Low:** Lowest value of vertical range of parameter, within which the parameters must be measurable or reportable (e.g., for temperature profile with vertical range of surface to 15 kilometers enter 0)"

**Vertical Range High:** Highest value of vertical range of parameter, within which the parameters must be measurable or reportable (e.g., for temperature profile with vertical range of surface to 15 kilometers enter 15)"

**PORD Appendix D: PORD Table Column Definitions**  
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**Vertical Range Units:** Measurement units for vertical resolution of the element.

Use:

- “km” for kilometers
- “m” for meters
- “hPa” for hectopascal
- Etc.

**Vertical Range Weight:** See “Attribute Weights.”

**Vertical Resolution (Vert Res):** The smallest height increment of the data. Spatial granularity in the vertical with which information and data are provided, For example: distance between adjacent vertical grid points in a radiosonde observation.

**Vertical Resolution Units:** Measurement units for vertical resolution of the element.

Use:

- “km” for kilometers
- “m” for meters
- Etc.

**Vertical Resolution Weight:** See “Attribute Weights.”

**Weight:** See “Attribute Weights.”

**Geographic Coverage Table**

CORL Geographic Coverage Category	Definition
Coastal Global	The coast is defined as the part of the land adjoining or near the ocean. Coastal is a few km either side of water/land boundary. Includes both littoral and sub littoral ( <a href="http://en.wikipedia.org/wiki/Littoral_zone">http://en.wikipedia.org/wiki/Littoral_zone</a> ).
Coastal US	The coast is defined as the part of the land adjoining or near the ocean.
CONUS	Contiguous U.S. rectangle, 3000 km N/S by approx 5000 km E/W.
CONUS+AK+HI	Contiguous U.S. rectangle, 3000 km N/S by approx 5000 km E/W. Plus Alaska and Hawaii.
CONUS+AK+HI+US EEZ	Contiguous U.S. rectangle, 3000 km N/S by approx 5000 km E/W. Plus Alaska, Hawaii and US Exclusive Economic Zone (see below for definition of EEZ.)
EEZ Global	Under the law of the sea, an Exclusive Economic Zone (EEZ) is a sea zone over which a state has special rights over the exploration and use of marine resources. Generally a state's EEZ extends to a distance of 200 nautical miles (370 km) out from its coast. The exception to this rule occurs when EEZs would overlap; that is, state coastal baselines are less than 400 nautical miles apart. When an overlap occurs, it is up to the states to delineate the actual boundary. Generally, any point within an overlapping area defaults to the most proximate state. States also have rights to the seabed of the continental shelf up to 350 nautical miles from the coast, where this extends beyond the EEZ, but this does not form part of their EEZ.
EEZ US	The Exclusive Economic Zone starts at the coastal baseline and extends 200 nautical miles out into the sea, perpendicular to the baseline. Thus, the EEZ overlaps both the contiguous zone and territorial waters.
Global	Of, relating to, or involving the entire earth; worldwide. ( <a href="http://www.thefreedictionary.com/global">http://www.thefreedictionary.com/global</a> )
Global Land	The continents and islands that cover nearly 30% of the surface of the earth.

**PORD Appendix D: PORD Table Column Definitions**  
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CORL Geographic Coverage Category	Definition
Global Ocean	The whole body of salt water that covers 71% of the surface of the earth.
Great Lakes	One of the eight NOAA identified ecosystem regions.
Hemi Eur.	On the observing side, a geostationary satellite provides only capability within the footprint of that particular satellite. Hemi Eur capability refers to geostationary satellites that cover Europe and Africa.
Hemi India	On the observing side, a geostationary satellite provides only capability within the footprint of that particular satellite. Hemi India capability refers to geostationary satellites that cover the India and the corresponding offshore waters.
Hemi Japan	On the observing side, a geostationary satellite provides only capability within the footprint of that particular satellite. Hemi Japan capability refers to geostationary satellites that cover the Japan, Australia and southeast Asia.
Hemi US	On the observing side, a geostationary satellite provides only capability within the footprint of that particular satellite. Hemi US capability refers to geostationary satellites that cover the US.
Offshore	The zone beyond the near shore zone where sediment motion induced by waves alone effectively ceases and where the influence of the sea bed on wave action has become small in comparison with the effect of wind; the portion of the littoral system that is always submerged.
Point Source	There are several observing systems, particularly research systems, that are located in one location only.
Aircraft Track	NOAA P3 ave airspeed is 400km/hour, 12 hr flight =800km traveled
Ship Track	NOAA Ship Nancy Foster has a cruise speed of 11kts, 24 hrs/day =89 km traveled
Targeted Mesoscale	On the capabilities side, there are several networks of observing platforms that are located in one geographic region only and do not provide much if any observing capability to anything other than that region.
tbs.	To be specified by program
GEO In-situ, Global	A local geosynchronous observation required at multiple locations in that orbit
Heliocentric	A location relative to the center of the sun, or in some cases, relative to the center of the observed solar disk.
L1 In-situ	An observation made at the solar Lagrange point, or libration point, between Earth and sun. At this position a satellite can remain between Earth and sun as Earth revolves about the sun. It is about 99 % of the distance from sun to Earth or 0.99 AU (astronomical units) from the Sun. The location is about 1.5 million km from Earth or about 230 Earth radii from Earth towards the sun.
LEO In-situ, Polar	A local observation made in low-Earth polar orbit
MEO; 3-axis orthogonal	Medium Earth Orbit located above Low Earth Orbit (LEO) and below geosynchronous orbit (GEO); 3-axis orthogonal refers to 3 measurements made at 90 degrees to each other to define a vector
Whole Sun	Whole Sun plus out to some distance in corona (about 2 solar radii)