ENTERPRISE DATABASE & TOOLS

Rose Dopsovic, GIS Coordinator

Bowhead Total Enterprise Solutions (BTES) for

The Spatial Data Branch, US Army Corps of Engineers Mobile District

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DATA INTEGRATION FRAMEWORK (DIF)

- A Data Integration Framework (DIF) is combination of processes, standards, people, and tools used to transform disconnected enterprise data into useful, easily accessible information for strategic analysis and reporting.

- The goals of this DIF are to develop a discoverable, easily accessible, and secure information source for USACE and other federal agencies and to act as a model of what might be accomplished across the entire USACE.

- DIF can be applied to different business lines: Navigation DIF (NDIF), Field Research Facility DIF (FDIF)

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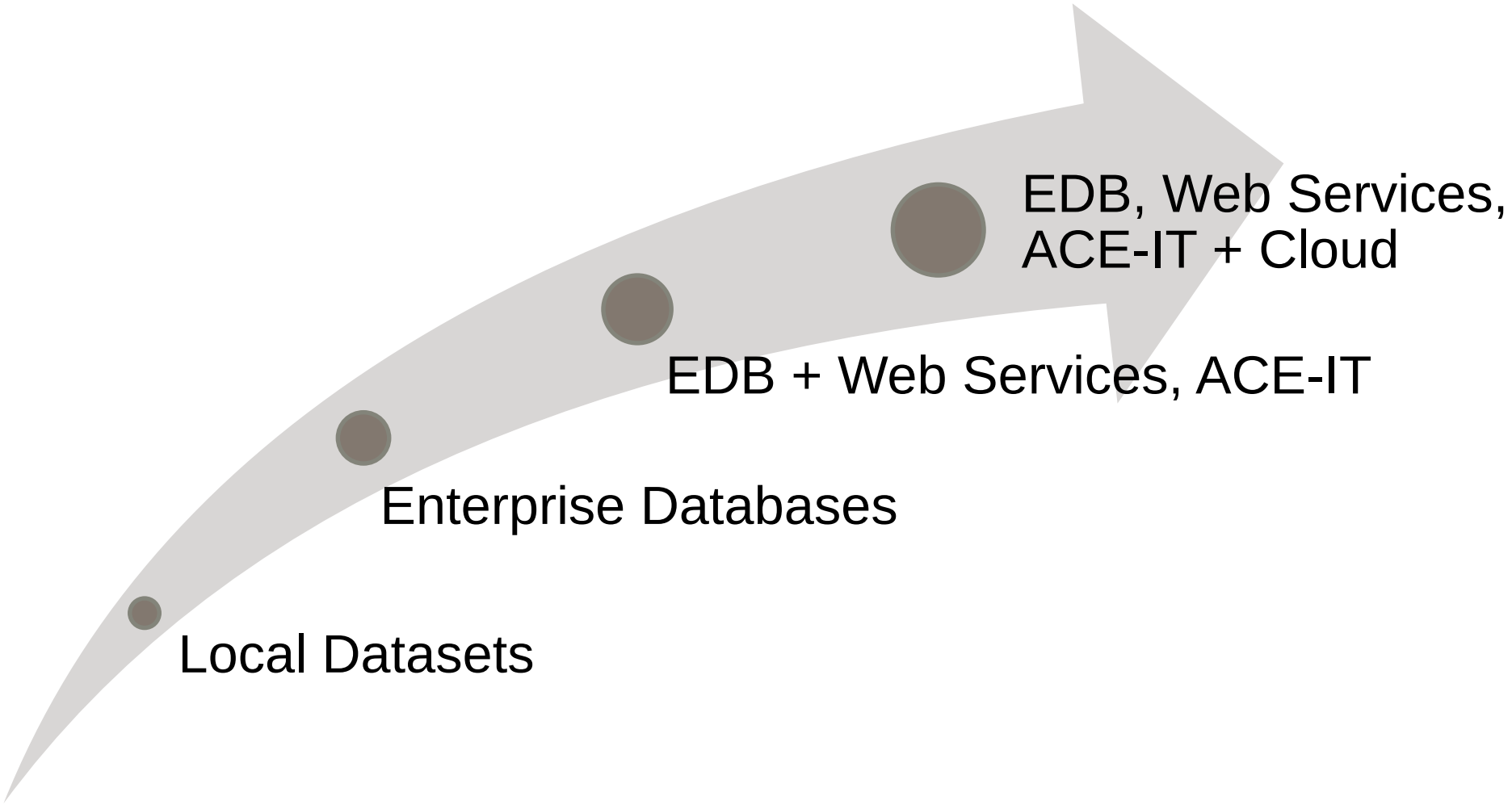
HISTORY OF ENTERPRISE DATABASES IN USACE



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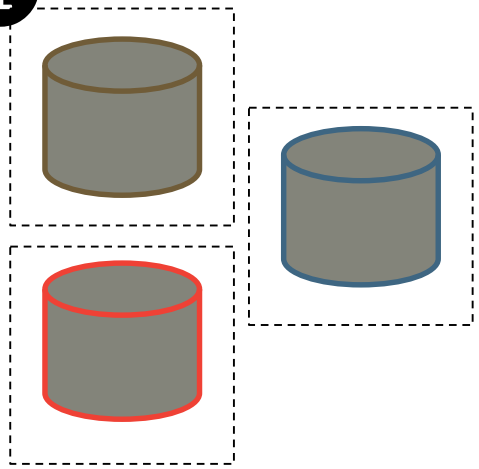
DATA, SERVER, AND WEB SERVICES

1



- Disparate Data
- No inter-District or Public Access
- Desktop Software Required

2

Authoritative Data

FIREWALL

Replication

ACE-IT Database

WEBSITE

ACE-IT Server

3

Authoritative Data

FIREWALL

Web Services

ACE-IT Server

WEBSITE

ACE-IT Server

4

Web Services

Authoritative Data

FIREWALL

Web Services

ACE-IT & ESRI Servers

WEBSITE

ACE-IT Server or Azure

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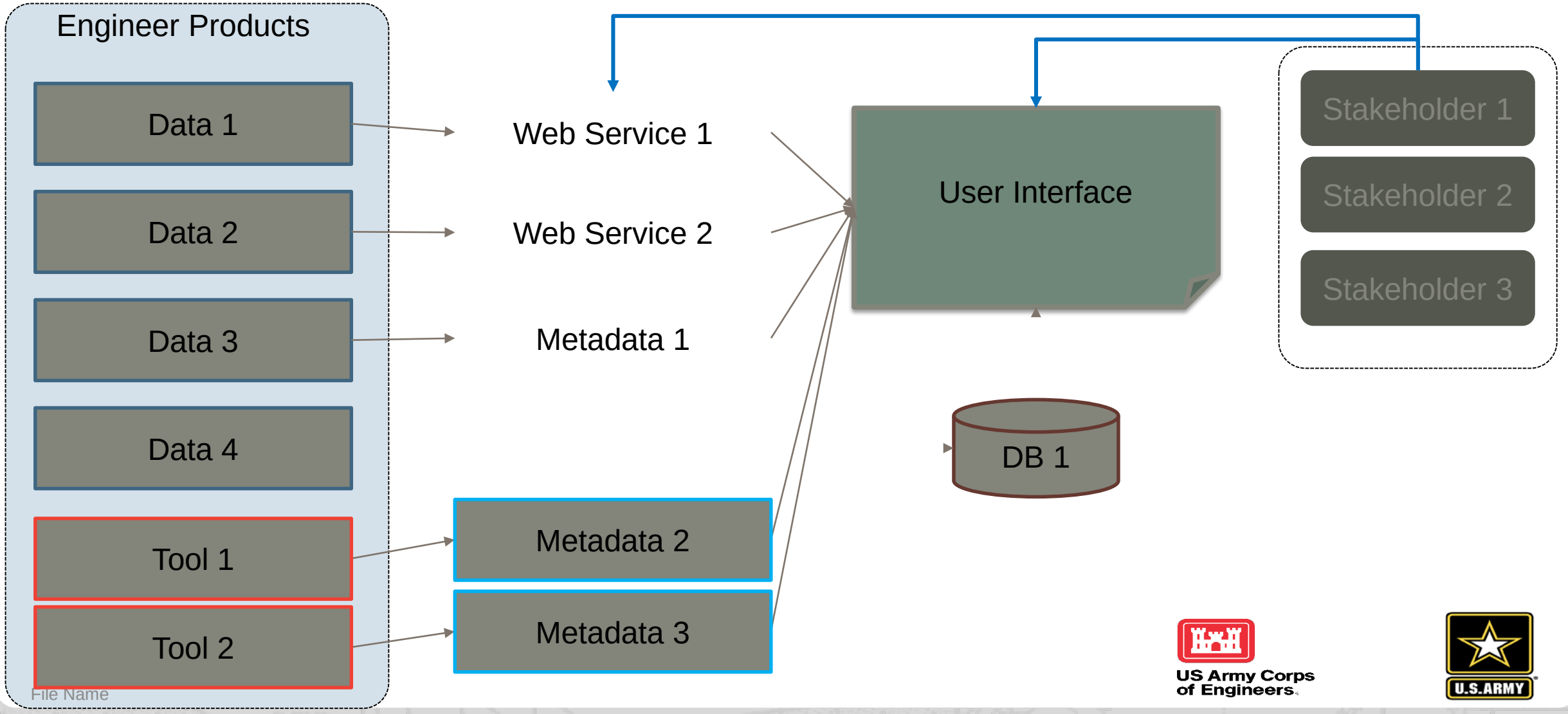
USER INTERFACES AND DATA



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WHAT ARE WEB SERVICES?

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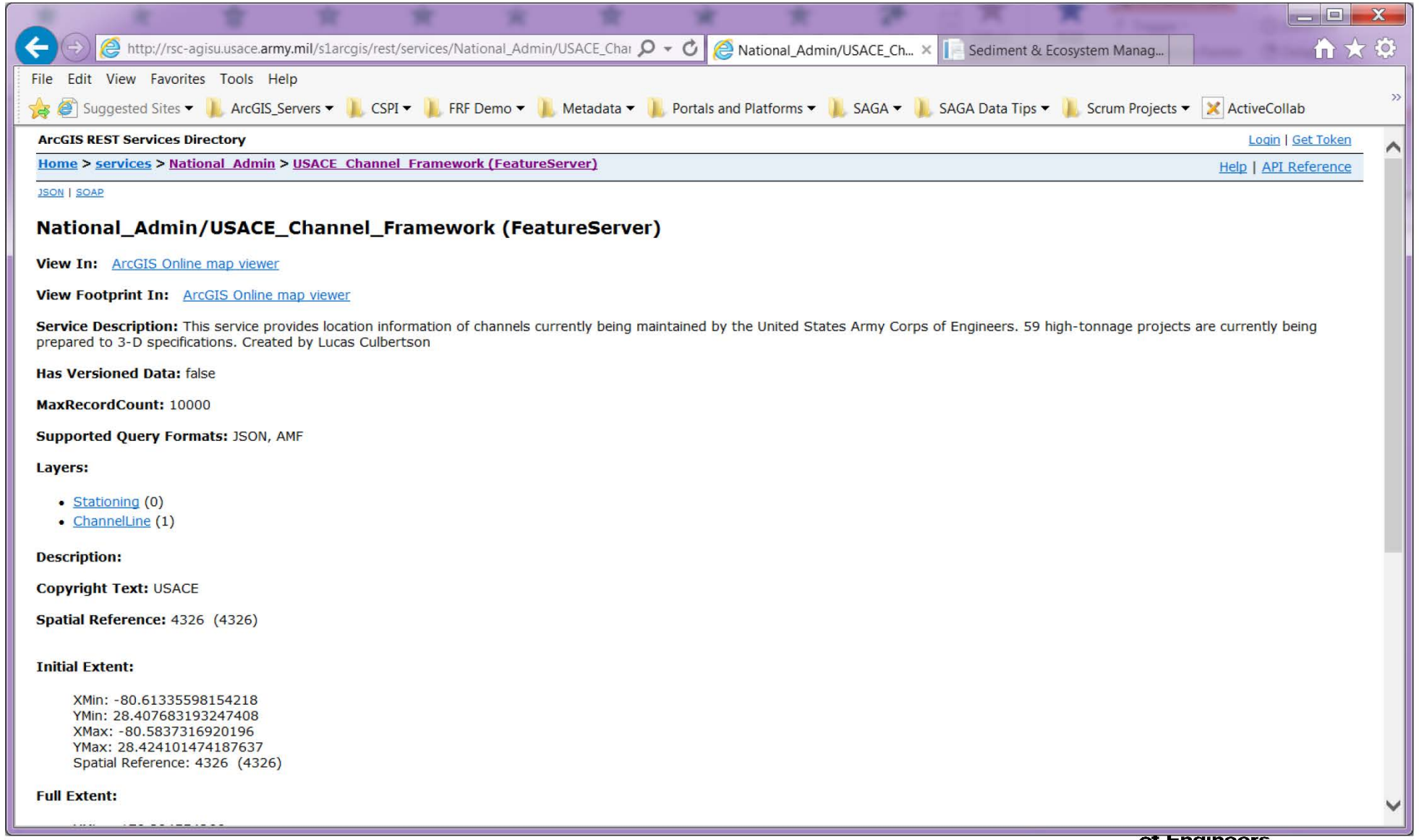
WEB SERVICES = URL TO DATASET



ArcGIS REST Services Directory

Execute Task (Calculate Percent Fraction)

sieve_data:
(*GPString*)

subgroup:
(*GPString*)

Options:

Output Spatial Reference:

Process Spatial Reference:

ReturnZ: True False

ReturnM: True False

Return True Curves: True False

Format: HTML

Execute Task (GET) Execute Task (POST)

Input Data | Results-Table 2 | Results-Graph 3

+ Add Row | Calculate | Output Units: phi

1 Sieve Size	Percent Passing	Sieve Units
76.2	100	mm
38.1	100	mm
19.05	100	mm
9.525	100	mm
4.75	100	mm
2.36	100	mm
2	100	mm
1.18	99.8	mm
.6	99.3	mm
.3	97.4	mm
.15	88.9	mm
.075	86.6	mm
.03	85	mm
.005	61	mm
.0015	37	mm

Input Data | Results-Table | Results-Graph

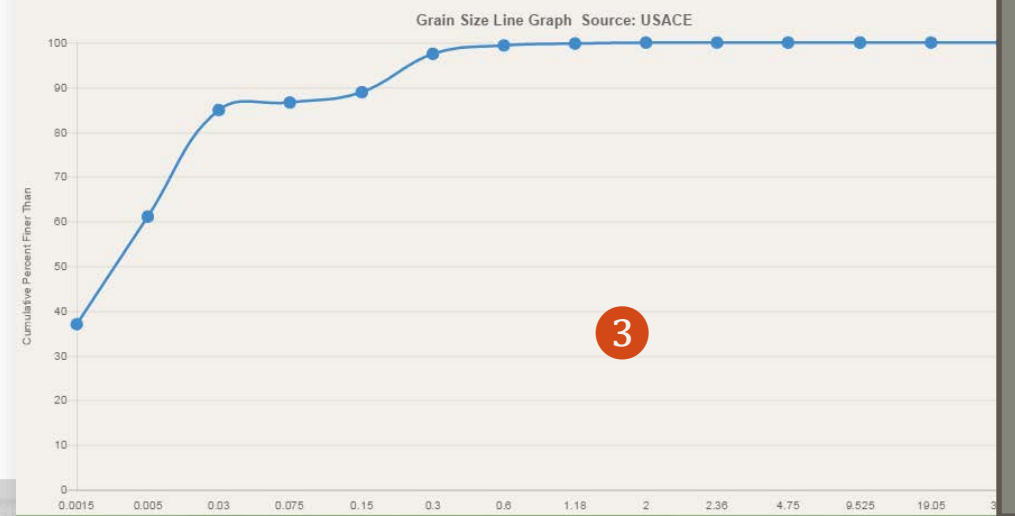
Overall Classification						
American Society for Testing Materials	Gravel (>4750µ)	Coarse Sand (2000-4750µ)	Medium Sand (425-2000µ)	Fine Sand (75-425µ)	Silt (5-75µ)	Clay (<5µ)
	0.0%	0.0%	0.7%	12.7%	25.6%	61.0%
Unified Soil Classifcation	Gravel (>4760µ)	Coarse Sand (2000-4760µ)	Medium Sand (425-2000µ)	Fine Sand (74-425µ)	Silt-Clay (<74µ)	
	0.0%	0.0%	0.7%	12.7%	86.6%	
Wentworth Classification	Gravel (>2000µ)	Coarse Sand (500-2000µ)	Medium Sand (250-500µ)	Fine Sand (62.5-250µ)	Silt (3.9-62.5µ)	Clay (<3.9µ)
	0.0%	0.7%	1.9%	10.8%	25.6%	61.0%

Distribution Statistics, phi					
	D10	D35	D50	D90	Standard Deviation
Overall	N/A	N/A	0.003	0.164	N/A
<62.5µ	N/A	N/A	0.002	0.018	N/A
62.5-250µ	0.104	0.169	0.193	0.275	
>250µ	0.330	0.418	0.482	1.088	

Calculation Source:

The equations that calculate the median, St dev, skewness, & Kurtosis are from Part III, Chapter 1 of the CEM - eqs III-1-2 through III-1-5 on pg III-1-10. CE
Galvin, 1996, Sediment Properties, Part III, Chapter 1 of Coastal Engineering Manual, US Army Corps of Engineers, EM 1110-2-1810, Washington DC.

Input Data | Results-Table | Results-Graph



Grain Size Functions

Input from Sieve Stack – Sieve Size, % Passing, Sieve Units 1

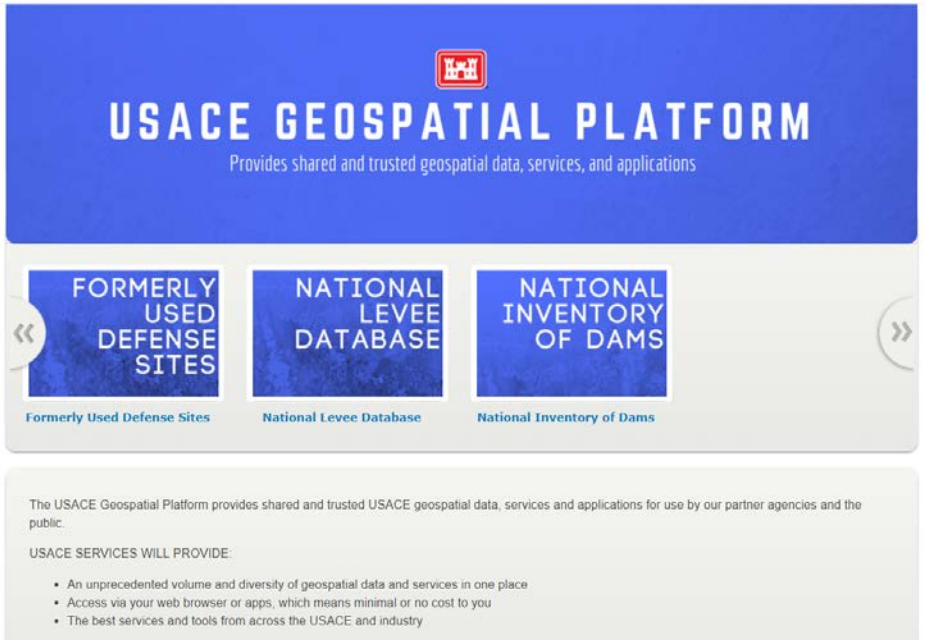
Output Table of 2 Computed Statistics

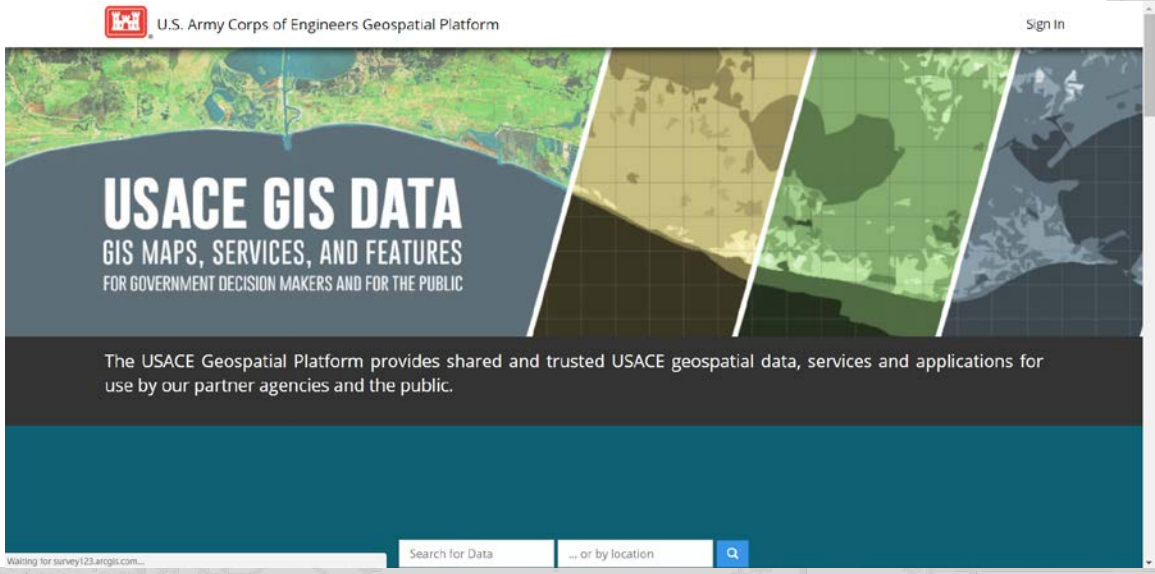
Grain Size Distribution Graph 3

Algorithms used in computations from ERDC-CHL

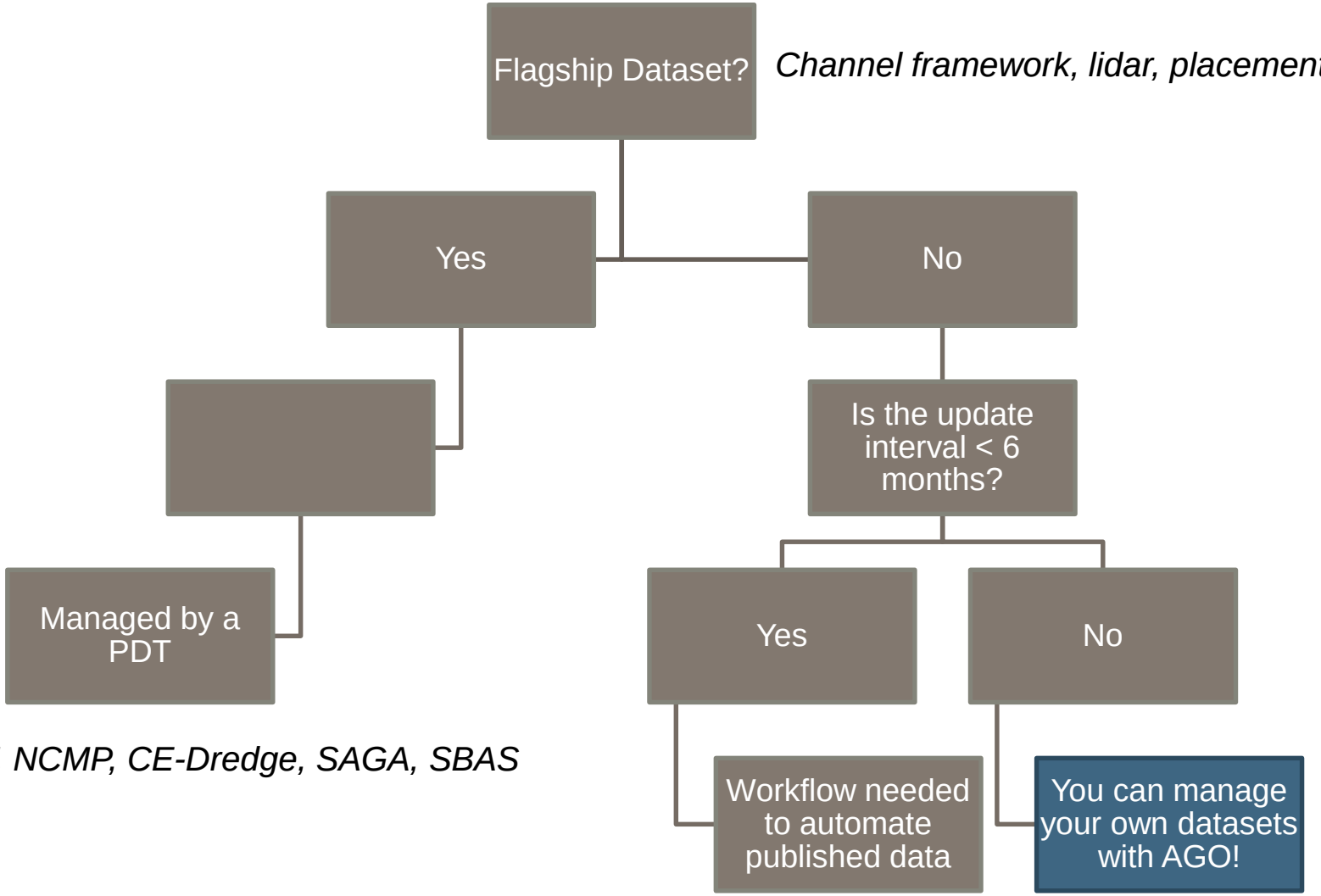
DIF TOOLS

- Commercial Off-the-Shelf Software (COTS)
  - ESRI Portals are hosted on non-USACE, but approved, servers that store and distribute spatial and non-spatial data.
  - USACE Geoplatform
    - Content – Map Based or Non-Spatial Data
    - Story Maps
    - Survey 123
    - Insights
  - USACE Geoplatform – Open Data
    - Public access to discover datasets
    - Data.gov connection
- Custom Solutions
  - eHydro, Dredging Manager, SAGA, TLP, Decision Support Tools, SBAS, Dredging Technologies, CSPI, NCMP





HOSTING & DISTRIBUTION



eHydro, NCF, NCMP, CE-Dredge, SAGA, SBAS

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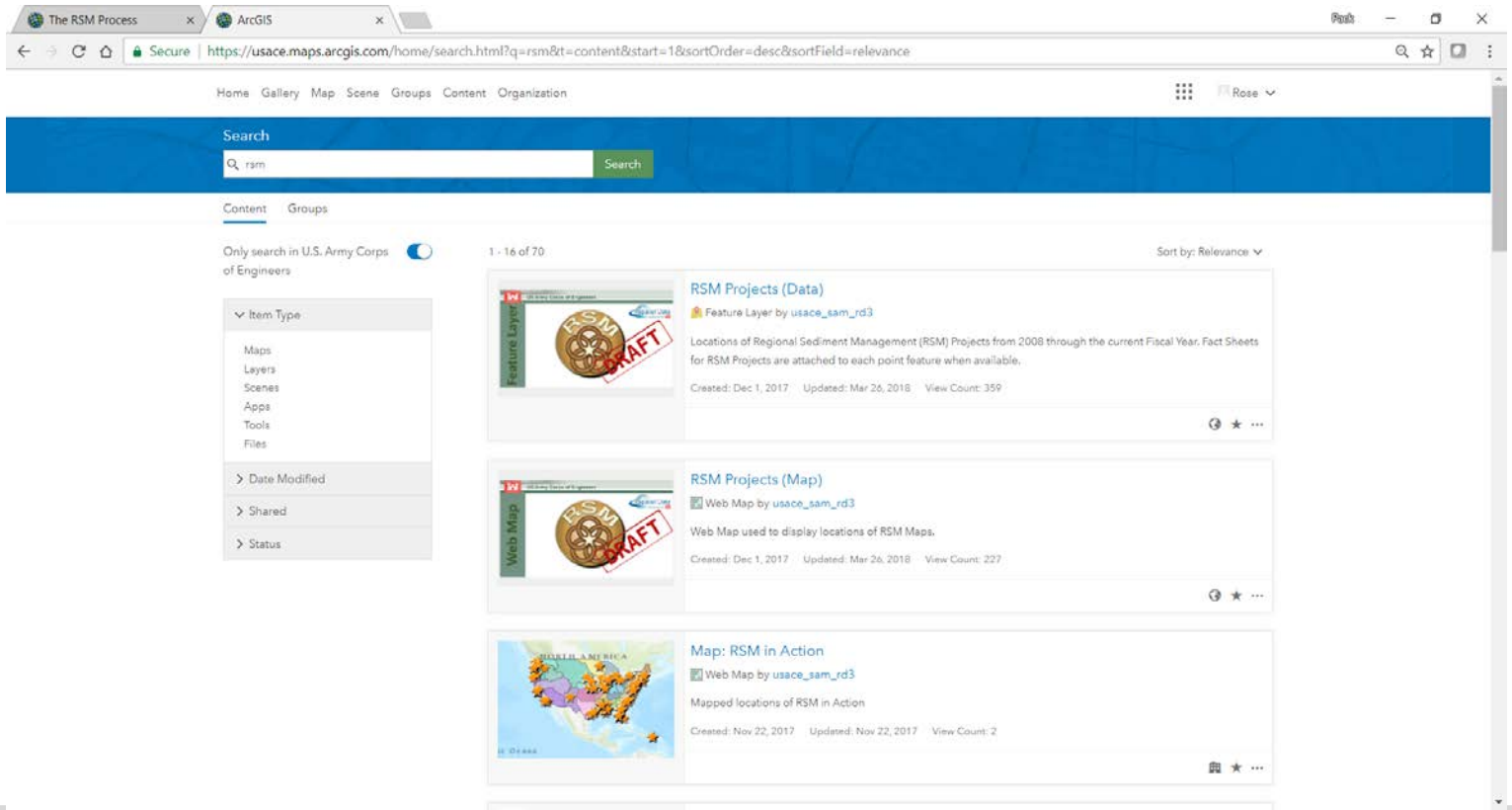
WHAT IS ARCGIS ONLINE (AGO)?

- **ArcGIS Online** is an **online**, collaborative web GIS that allows you to use, create, and share maps, scenes, apps, layers, analytics, and data. You get access to Living Atlas of the World, apps, and Esri's secure cloud, where you can add items and publish web layers.



http://usace.maps.arcgis.com

Home Gallery Map Scene Groups Content Organization

Rose

USACE GEOSPATIAL PLATFORM

Provides shared and trusted geospatial data, services, and applications

Formerly Used Defense Sites

National Levee Database

National Inventory of Dams

The USACE Geospatial Platform provides shared and trusted USACE geospatial data, services and applications for use by our partner agencies and the public.

USACE SERVICES WILL PROVIDE:

- An unprecedented volume and diversity of geospatial data and services in one place
- Access via your web browser or apps, which means minimal or no cost to you
- The best services and tools from across the USACE and industry

Content

Secure | https://usace.maps.arcgis.com/home/content.html?start=1&view=table&sortOrder=desc&sortField=modified&searchTerm=#groups

Home Gallery Map Scene Groups Content Organization

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Content

My Content | My Favorites | My Groups | My Organization | Living Atlas

Store datasets – spatial and non-spatial, create map, build web applications

My Groups

- Open Data Collaboration Group
- Regional Sediment Management (RSM)
- RSM: Beach and Nearshore Placement
- RSM: Comprehensive Regional Surveys and Environmental Mapping

Item Type

- Maps
- Layers
- Scenes
- Apps

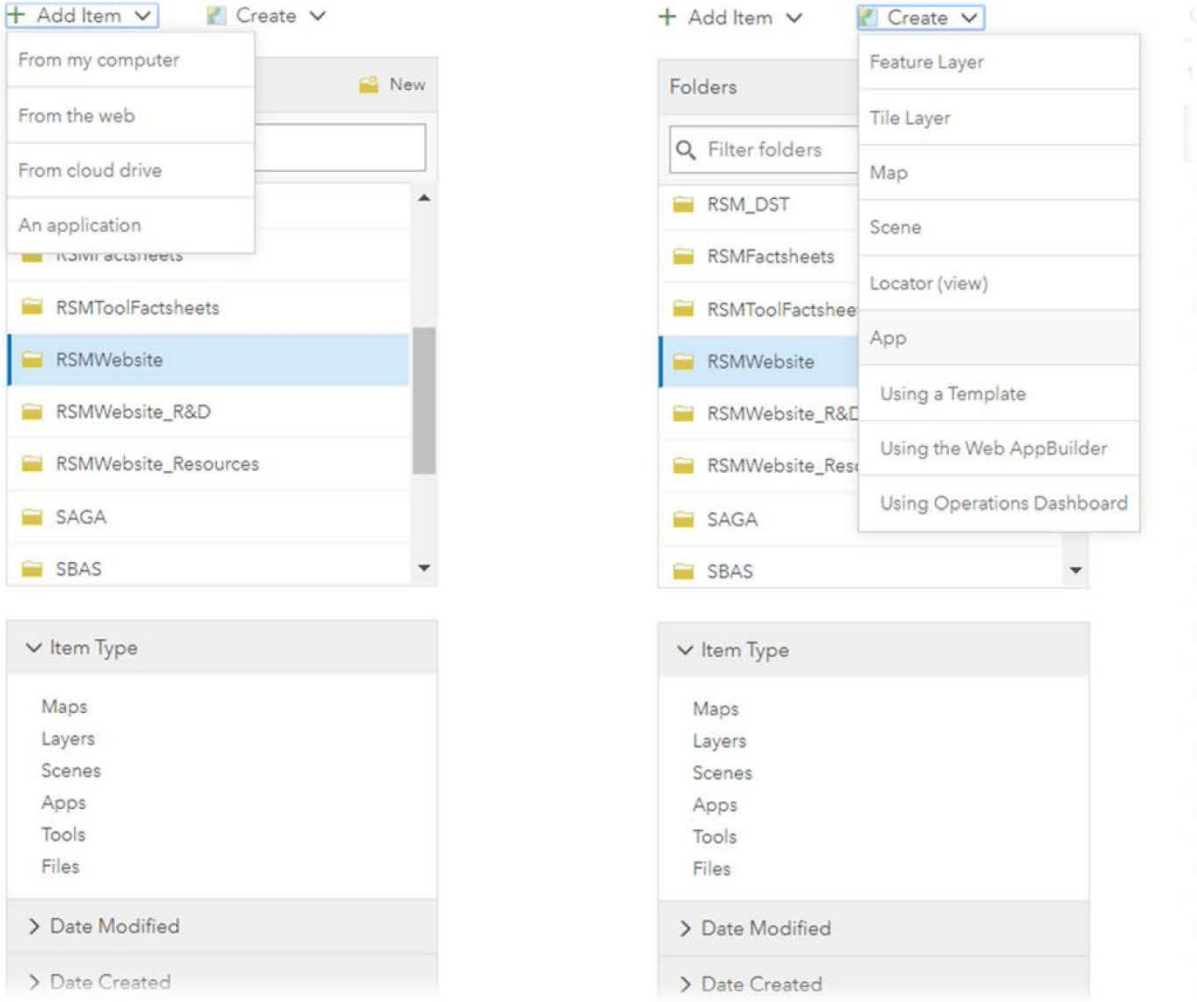
Search Regional Sediment Management (RSM)

1 - 16 of 40

Sort by: Date Modified

Title	Modified	Owner	View Count
CE-Dredge: Decision Support Tool, Galveston District (All Data)	Mar 28, 2018	usace_sam_rd3	15
CE-Dredge: Environmental Data for DST (Map Source)	Apr 11, 2018	usace_sam_rd3	65
CE-Dredge: National Data for the DST	Mar 28, 2018	usace_sam_rd3	41
CE-Dredge: Planning Data for DST	Apr 2, 2018	usace_sam_rd3	65
Published Budgets (Source Map)	Apr 2, 2018	usace_sam_rd3	60
Reviewed TLP Case Studies (View Only)	Apr 2, 2018	usace_sam_rd3	10
RSM Mapper (Mapping Application)	Mar 28, 2018	usace_sam_rd3	74
RSM Tool: ADCIRC Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: AISAP Fact Sheet	Mar 27, 2018	usace_sam_rd3	0

ADDING & CREATING DATA ON AGO



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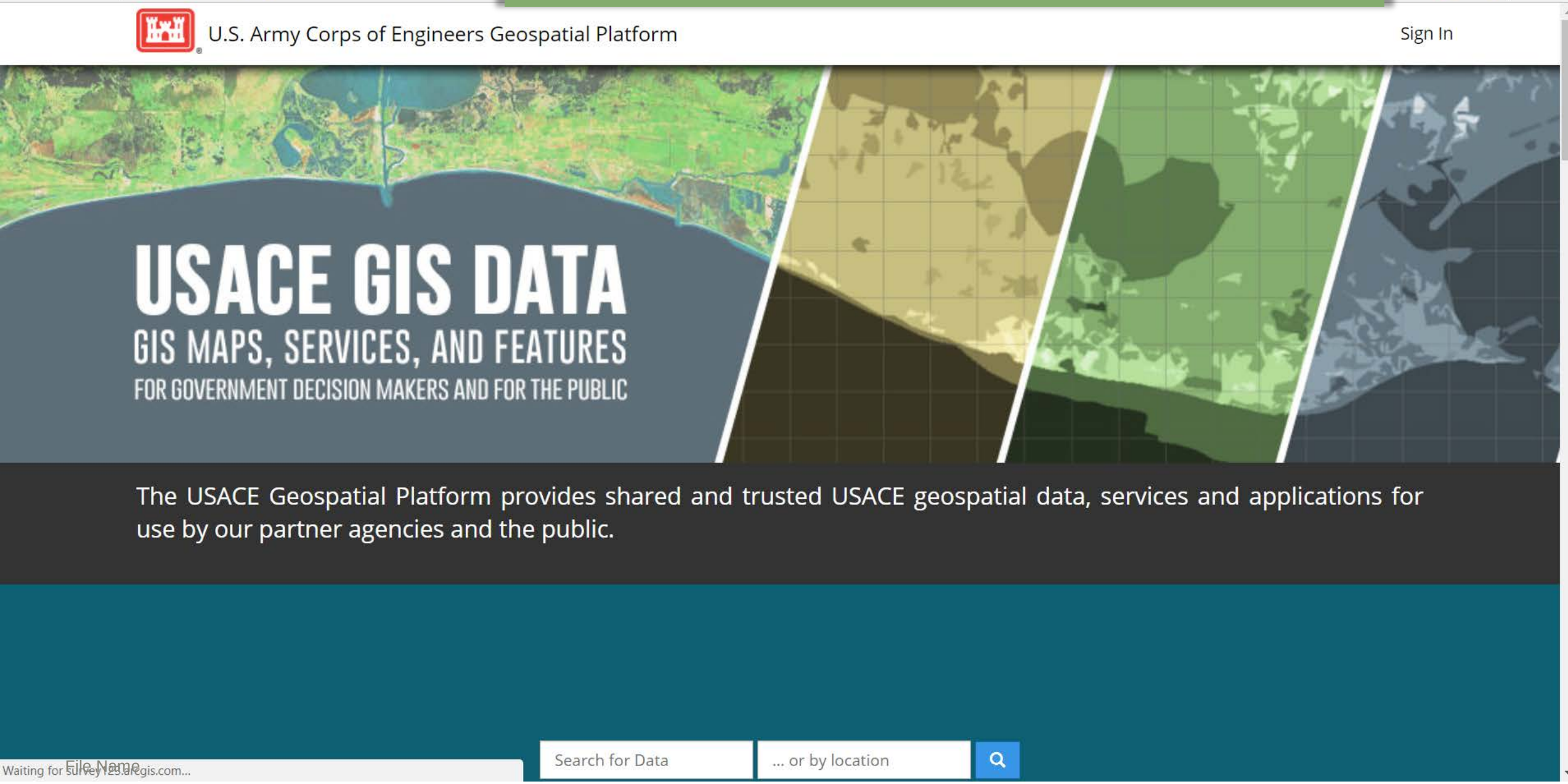
http://geoplatform-usace.opendata.arcgis.com



File Name

U.S. Army Corps of Engineers Geospatial Platform

rsm

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Tags

Rsm (23)
Fact Sheets (19)
Ce-Dredge (3)
Sbas (2)
Sbas-A (2)

More

1 - 10 of 25 results

Relevance

RSM Tool: RIOS

Shared by usace_sam_rd3

RIOS utilizes X-band radar to measure wave breaking and wave speed. Wave observations are then used to calculate depths through bathymetry inversion and scaling. These measurements are particularly suited to determine the location of channels and shoals across shallow, coastal environments such as tidal inlets. The

No license specified 4/5/2018 Document

File Name

Discover Regional Sediment Management

The RSM Process

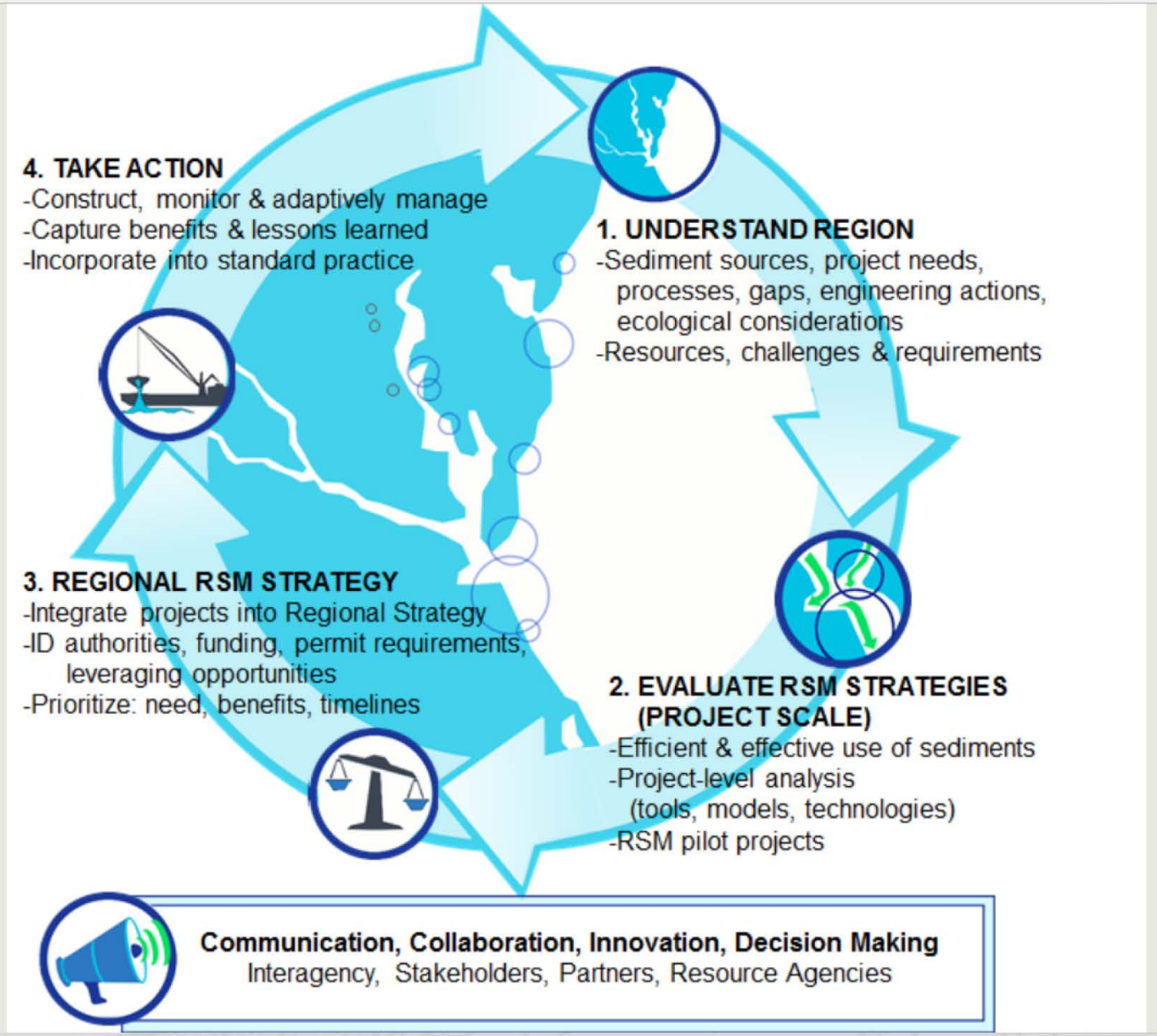
This info-graphic shows the process we have taken over the last 10 years to implement Regional Sediment Management (RSM). The communication and coordination with the community is part of the entire process.

This process can be divided into 2-phases.

Phase 1 is working to develop a better understanding of the region – identifying sediment sources, sinks, and transport. Basically conducting studies, filling gaps, and developing plans.

Phase 2 is taking action and implementing adaptive management strategies to move sediment – getting sand on the beach

In looking back over the last 10-yrs, we find that we have spent considerable time and resources on phase 1. But we have not had the level of success we had



Discover Regional Sediment Management

The RSM Process

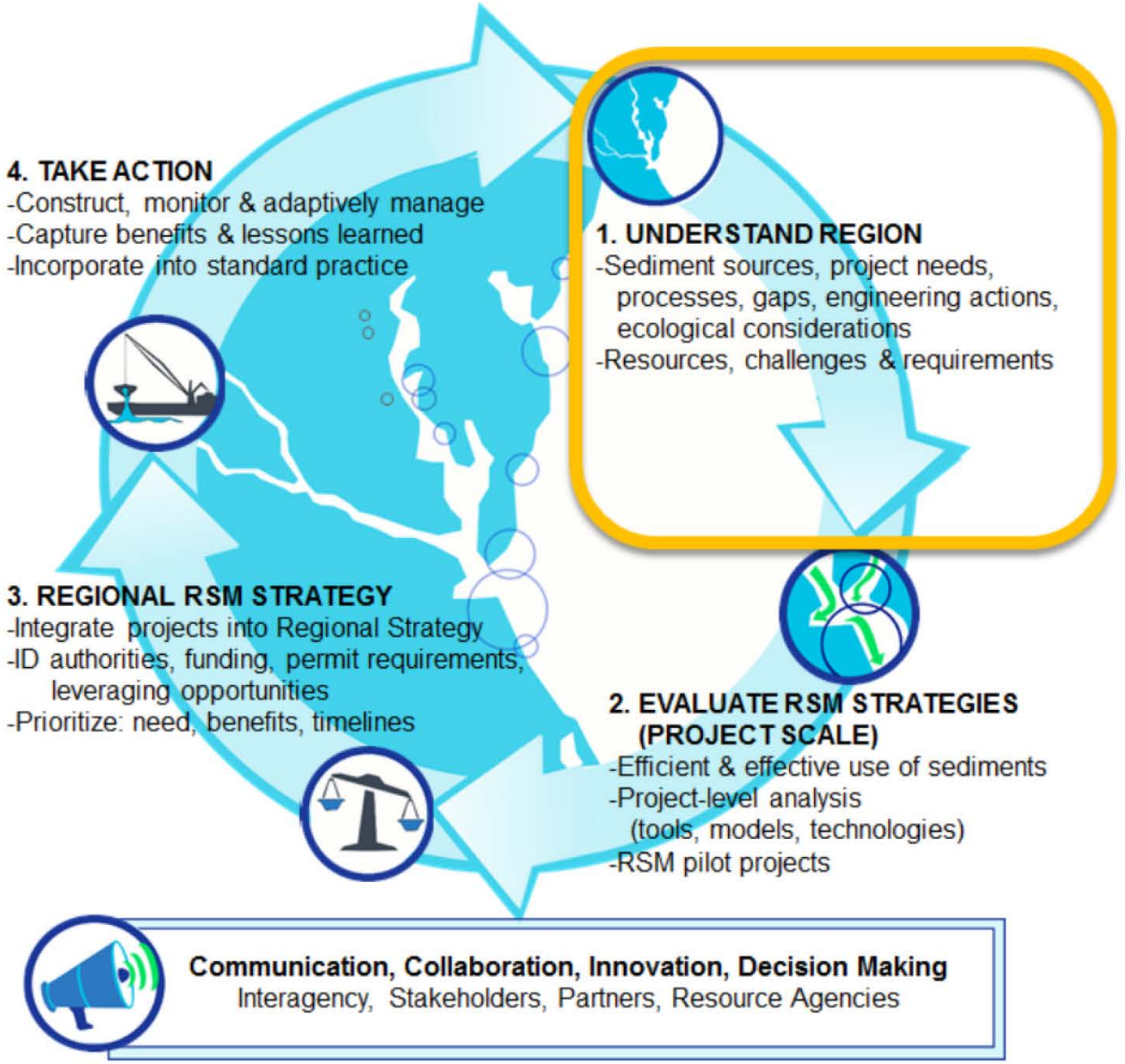
1. Understand the Region

Phase 1: Understand the Region

In order to successfully implement RSM, it is necessary to develop an understanding of the sediment sources and needs, sediment processes, morphologic evolution, ecological conditions, endangered species, pertinent engineering activities, gaps in knowledge, sediment related challenges, and stakeholder and partner goals within a region.

- View All Tools & Fact Sheets applicable to this Phase

Concepts, Tools, and Technologies at the Regional Scale
Key tools and technologies to understand the region include regional sediment budgets as well as application of regional hydrodynamic, hydrologic, sediment transport, and ecological numerical models. Data that may be required to support these tools and technologies include bathymetric and topographic surveys, aerial and hyperspectral imagery, hydrodynamic and hydrologic data, sediment characteristics, ecological data, as well as data about engineering activities such as dredging histories and flood risk management, shore protection, and ecosystem restoration projects. Utilizing Geographic Information System (GIS) capabilities, enterprise databases, and web-based visualization tools greatly enhances the ability to understand and share information on



Discover Regional Sediment Management

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RSM: Phase 1 - Understand the Region

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Web Map — Published Budgets (…
by usace_sam_rd3
Updated: Apr 2, 2018
View Count: 60

PDF — RSM Tool: GSSHA Fa…
by usace_sam_rd3
Updated: Mar 27, 2018
View Count: 0

PDF — RSM Tool: Integrate…
by usace_sam_rd3
Updated: Mar 27, 2018
View Count: 0

PDF — RSM Tool: NCMP Fa…

PDF — RSM Tool: RIOS

PDF — RSM Tool: SBAS Fact…

PHASE 1 TOOLS

Published Budgets (...
by usace_sam_rd3
Updated: Apr 2, 2018
View Count: 60

RSM Tool: GSSHA Fa...
by usace_sam_rd3
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View Count: 0

RSM Tool: Integrate...
by usace_sam_rd3
Updated: Mar 27, 2018
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RSM Tool: NCMP Fa...
by usace_sam_rd3
Updated: Mar 27, 2018
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RSM Tool: RIOS
by usace_sam_rd3
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RSM Tool: SBAS Fact...
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Updated: Mar 27, 2018
View Count: 2

RSM Tool: STWAVE ...
by usace_sam_rd3
Updated: Mar 27, 2018
View Count: 0

RSM Tool: WIS Fact ...
by usace_sam_rd3
Updated: Mar 27, 2018
View Count: 0

SBAS for ArcMap
by usace_sam_rd3
Updated: Mar 27, 2018
View Count: 11

SBAS: Sediment Bu...
by usace_sam_rd3
Updated: Apr 6, 2018
View Count: 2

Submit TLP Case Stu...
by usace_sam_rd3
Updated: Apr 6, 2018
View Count: 0

Submit TLP Case Stu...
by usace_sam_rd3
Updated: Mar 28, 2018
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The RSM Process | The RSM Process

Secure | https://usace.maps.arcgis.com/apps/MapJournal/index.html?appid=ab8a7d5a23d841c182507172db7c6740#

23

Discover Regional Sediment Management

The RSM Process

1. Understand the Region

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ArcGIS Features Plans Map Scene Help

BACK

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RSM: Phase 1 - Understand the Region

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SBAS for ArcMap
by usace_sam_rd3
Updated: Mar 27, 2018
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The RSM Process
by usace_sam_rd3
Updated: Mar 28, 2018
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Discover Regional Sediment Management

The RSM Process

1. Understand the Region

Phase 1: Understand the Region

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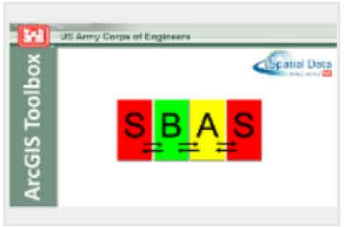
SBAS for ArcMap

Overview



SBAS (Sediment Budget Analysis System) for ArcGIS Desktop provides a framework for formulating, documenting, and calculating sediment budgets, including estimation of uncertainty. This ArcMap Toolbox assists with the building of Sediment Budgets.

Desktop Application Template by usace_sam_rd3

Created: Jan 24, 2018 Updated: Mar 27, 2018
View Count: 13

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Details

Size: 83 MB

Owner

usace_sam_rd3

Tags

SBAS, Sediment Budget

Credits (Attribution)

No acknowledgements.

Description

SBAS (Sediment Budget Analysis System) for ArcGIS Desktop provides a framework for formulating, documenting, and calculating sediment budgets, including estimation of uncertainty. This Windows application (ESRI ArcMap Toolbox) allows users to define a conceptual budget visually by creating a series of cells and arrows that represent sources, sinks, and flux rates. It then calculates quantitative "micro" (local) and "macro" (regional) sediment budgets, using a pre-defined sediment-budget equation.

Discover Regional Sediment Management

The RSM Process

1a. Regional Sediment Budgets

Regional Sediment Budgets

Regional sediment budgets are an analysis of sediment sources, sinks, and fluxes within a specified region over a given timeframe that provide a conceptual and qualitative understanding of the sediment patterns and pathways over a region. Developing a sediment budget requires an understanding of the sediment sources, sinks, longshore and cross-shore sediment transport rates, areas of erosion and accretion, morphologic changes, and engineering actions over the region. Sediment budgets can be formulated for a range of conditions and at watershed, regional, and project level scales, to provide insights into potential near- and long-term morphologic response to engineering activities and assist with connecting sediment sources to sediment needs.

- View Published Regional Sediment Budgets in a Map!
- View Sediment Budgets Tools and Fact Sheets

1b. Comprehensive Regional Surveys and Environmental Mapping

Comprehensive Regional Surveys and Environmental Mapping

SBAS Sediment Budget Analysis System

BACK

dgets

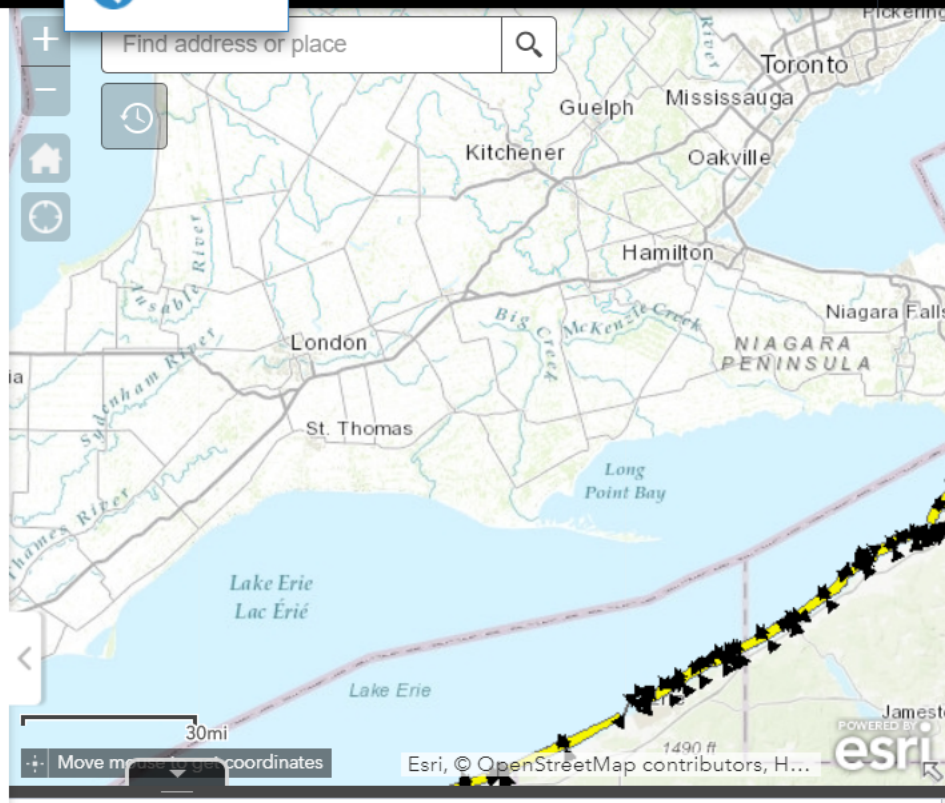
Select a Group to Filter

Budgets, by Alternative

Local Budgets (cells and fluxes), by Alternative

EQUALS

Add Criteria | Apply | Reset



App State

Click to restore the map extent and layers visibility where you left off.

Discover Regional Sediment Management

The RSM Process

1a. Regional Sediment Budgets

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- View Published Regional Sediment Budgets in a Map!
- View Sediment Budgets Tools and Fact Sheets

1b. Comprehensive Regional Surveys and Environmental Mapping

Comprehensive Regional Surveys and Environmental Mapping

RSM: Sediment Budgets

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- Tools
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Date Modified

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Published Budgets (Source Map)

Web Map by usace_sam_rd3

Web service to hosted published sediment budgets. Available budgets were created using the SBAS-A tool.

Updated: Apr 2, 2018 View Count: 60

RSM Tool: SBAS Fact Sheet

PDF by usace_sam_rd3

1 Page Factsheet on the Sediment Budget Analysis System (SBAS)

Updated: Mar 27, 2018 View Count: 2

Discover Regional Sediment Management

The RSM Process

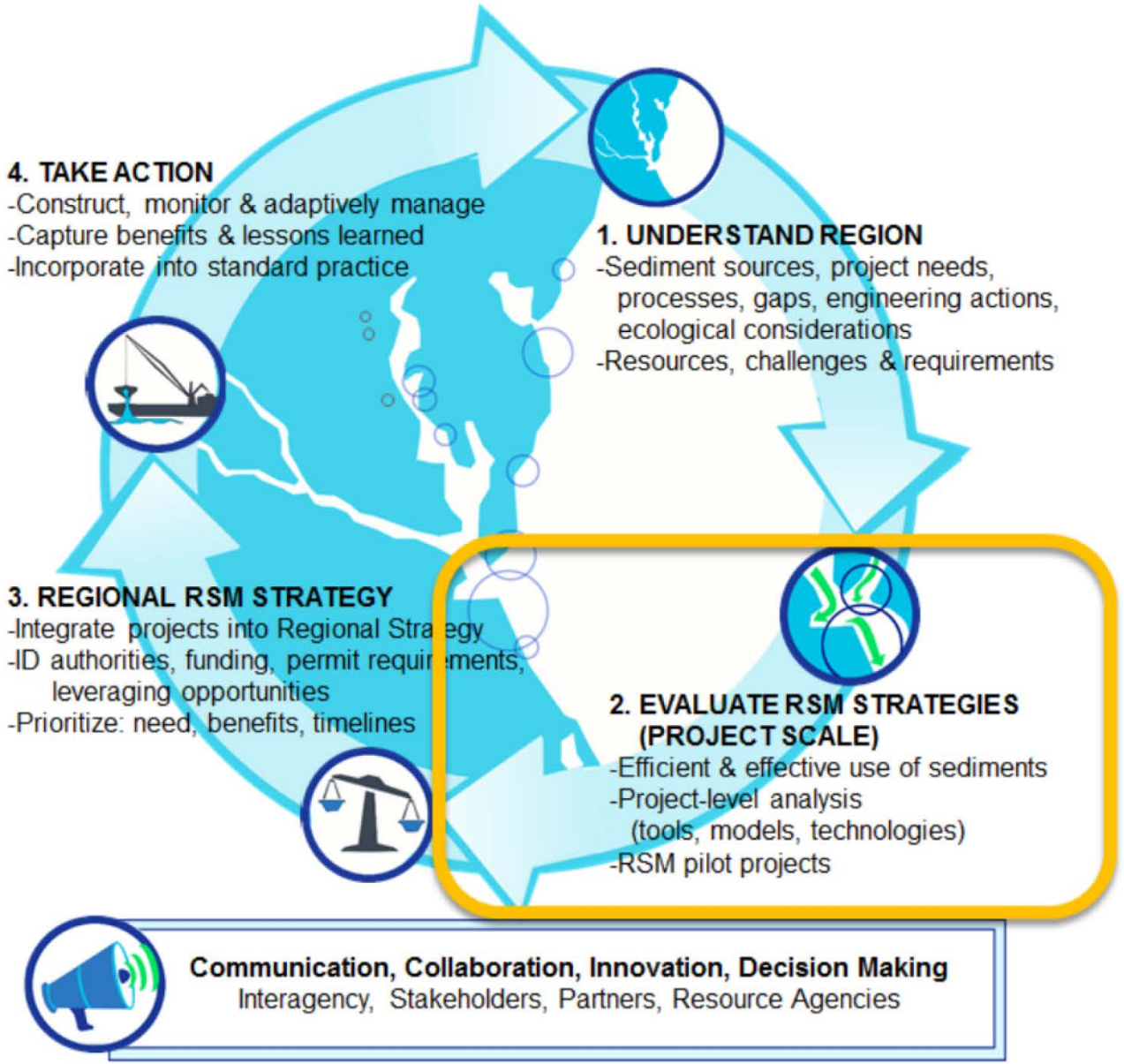
2. Identify & Evaluate RSM Strategies

Once the regional system is understood, RSM strategies to improve the use of sediments are identified and evaluated at the project scale. It is important to continue communicating and coordinating with stakeholders and partners to identify potential strategies, define metrics for success, and to make decisions throughout the evaluation process. This section provides an overview of examples of common RSM strategies, and tools that are available to evaluate strategies that address specific needs and challenges.

- View All Tools & Fact Sheets applicable to this Phase

Applying RSM Goals to Projects

When considering RSM strategies, the overall goals are to keep sediment in the littoral system, reduce unwanted sedimentation that must be managed later, mimic natural sediment processes when appropriate, enhance the environment, and maintain and protect infrastructure. Because there are numerous types of RSM strategies that can be used, the common strategies are outlined below. Where appropriate, tools that aid in identifying and evaluating the specific RSM strategy are identified.



2a. Keep Sediments within the Littoral

Discover Regional Sediment Management

The RSM Process

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2a. Keep Sediments within the Littoral

File Name

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RSM: Phase 2 - Evaluate ategies

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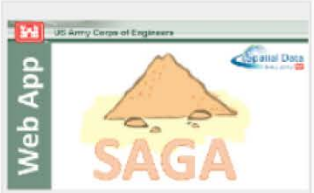
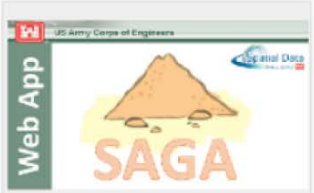
CE-Dredge: Plannin…
by usace_sam_rd3
Updated: Apr 2, 2018
View Count: 65



SAGA Online - Sedi…
by usace_sam_rd3
Updated: Apr 2, 2018
View Count: 4



SAGA: Tier II Screeni…
by usace_sam_rd3
Updated: Apr 2, 2018
View Count: 4

Tier II Screening Eval…
by usace_sam_rd3
Updated: Apr 2, 2018

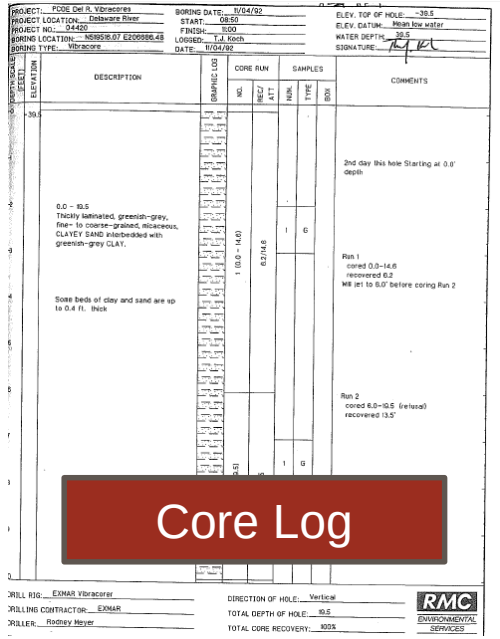
PHASE 2 TOOLS

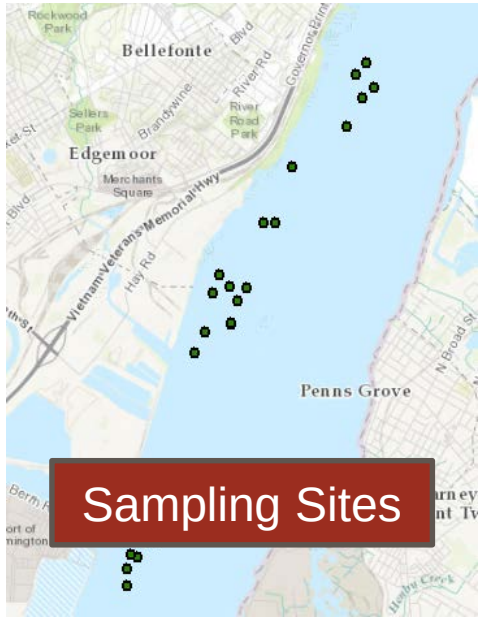
CE-Dredge: Decision Support Tool, Galveston District (All Data)	Mar 28, 2018	usace_sam_rd3	15
CE-Dredge: Environmental Data for DST (Map Source)	Apr 11, 2018	usace_sam_rd3	65
CE-Dredge: National Data for the DST	Mar 28, 2018	usace_sam_rd3	41
CE-Dredge: Planning Data for DST	Apr 2, 2018	usace_sam_rd3	65
RSM Tool: AISAP Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: CE-Dredge Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: CMS Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: CMS Flow Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: CMS Wave Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: CPT Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: CSAT Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: Depth of Closure Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: DST Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: Ecological Data Synthesis Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: eHydro Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: PTM Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: SAGA Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
RSM Tool: SMT Fact Sheet	Mar 27, 2018	usace_sam_rd3	0
SAGA Online - Sediment Analysis & Geo-Application	Apr 2, 2018	usace_sam_rd3	4
SAGA: Calculate Percent Fraction	Apr 2, 2018	usace_sam_rd3	0
SAGA: Calculate Percentile	Apr 2, 2018	usace_sam_rd3	0
SAGA: Calculate Standard Deviation (Grain Size)	Apr 2, 2018	usace_sam_rd3	0
SAGA: Calculate Volumetric Fraction	Apr 2, 2018	usace_sam_rd3	0
SAGA: Database Content	Apr 2, 2018	usace_sam_rd3	0
SAGA: Sampling Sites	Apr 2, 2018	usace_sam_rd3	9
SAGA: Tier II Screening Evaluations for Open Water Disposal of Dredged Material	Apr 2, 2018	usace_sam_rd3	4
Tier II Screening Evaluations for Open Water Disposal of Dredged Material	Apr 2, 2018	usace_sam_rd3	5

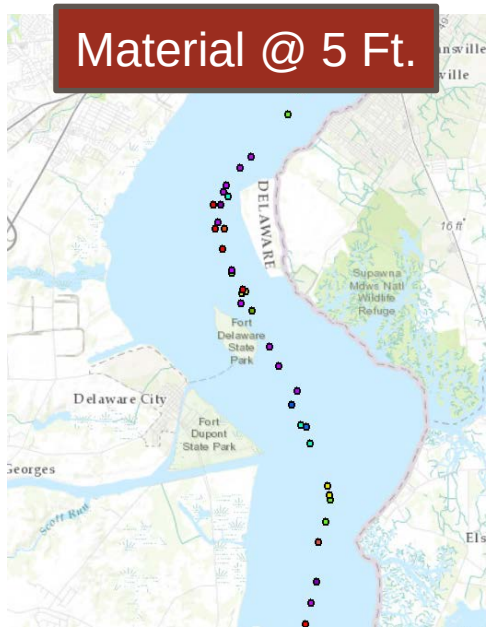
File Name

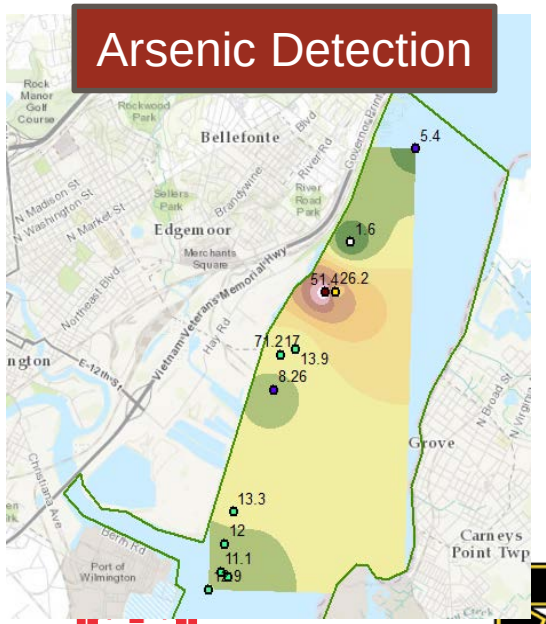
SAGA DATABASE

- Analysis of physical data is not a standardized process. It is also often time-consuming due to the lack of a consistent archive method and data storage format. As a result, most analyses are completed with dated techniques that cannot fully realize the potential of the digital dataset.
- In SAGA, the database is designed so intelligent filters can be applied and maps symbolized.









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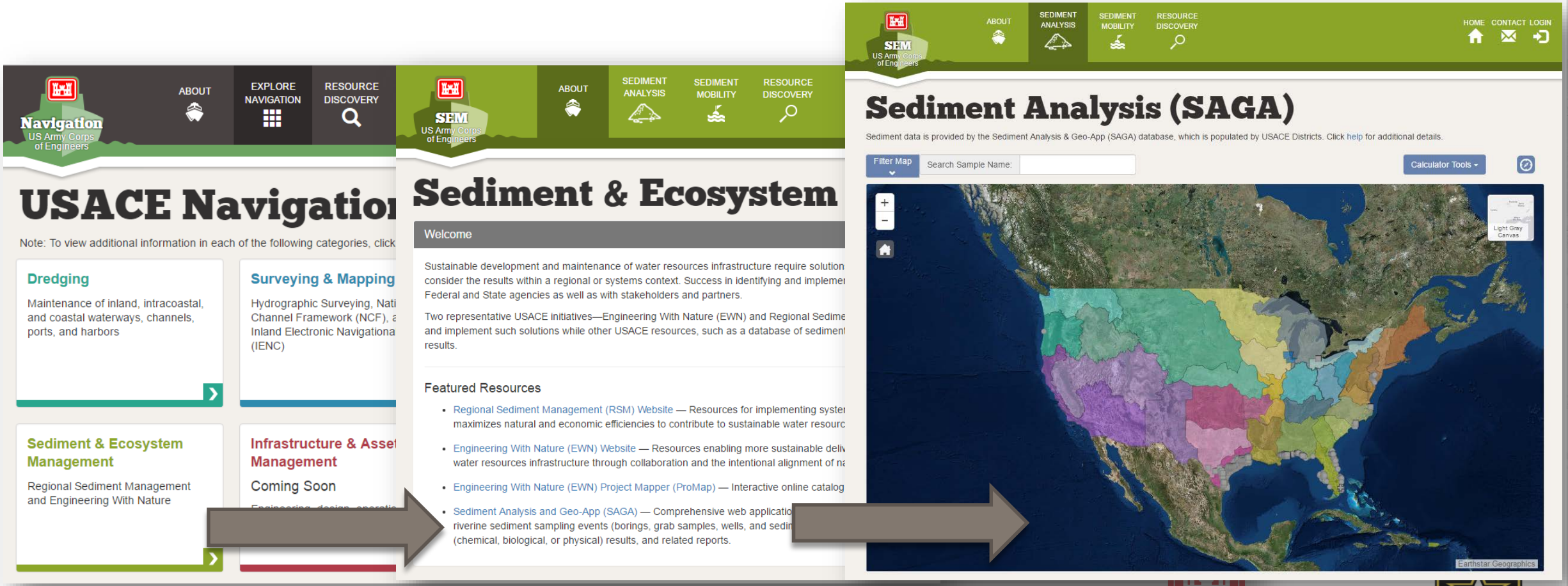
PUBLIC WEBSITE

- http://navigation.usace.army.mil/SEM/Analysis



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SAGA ONLINE

Mapped Sites

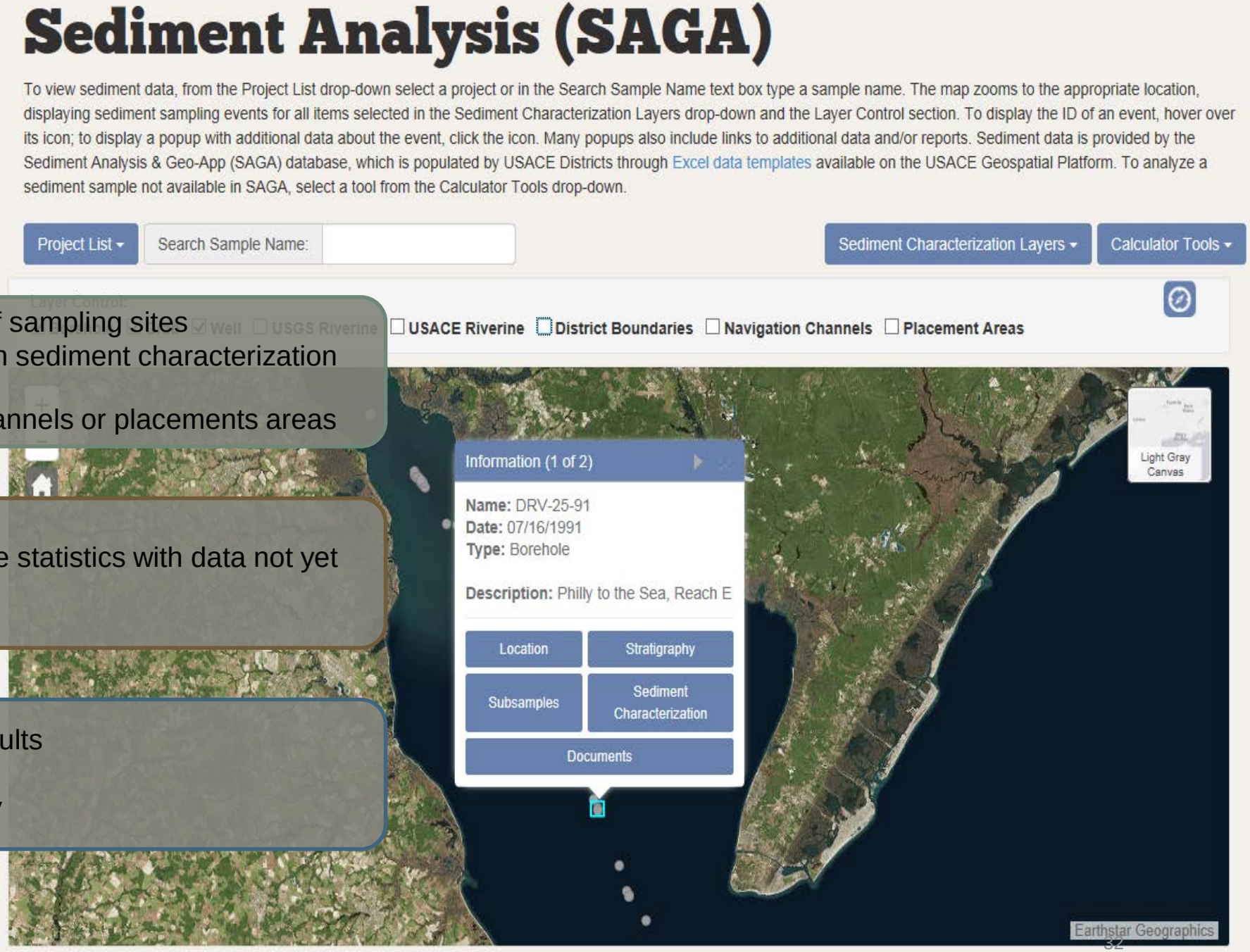
- Show distribution of sampling sites
- Filter sites based on sediment characterization testing
- View navigation channels or placements areas

Tools

- Compute Grain Size statistics with data not yet stored in SAGA

Site Details

- Retrieve testing results
- View documents
- Access stratigraphy



Discover Regional Sediment Management

Edit

The RSM Process

No issues detected

3. Regional RSM Strategy

Once RSM strategies are evaluated at the project level, the next phase in the RSM process is to develop a regional RSM strategy that integrates the projects across the region and identifies economic value, avenues for construction (authorities, funding, etc.), timelines, necessary coordination, and prioritization. Tools designed to aid in the decision-making phase of USACE projects integrate information on how the system is behaving and synthesize measurements and metrics into indicators of system operation. Peak system operation is best achieved through optimizing available resources. For USACE projects, these resources often fall into three categories: sediment or natural resources, authorities and financial resources, and equipment. Examples of these optimization tools and resources are included in the following sections.

- View all Tools and Fact Sheets in this Phase

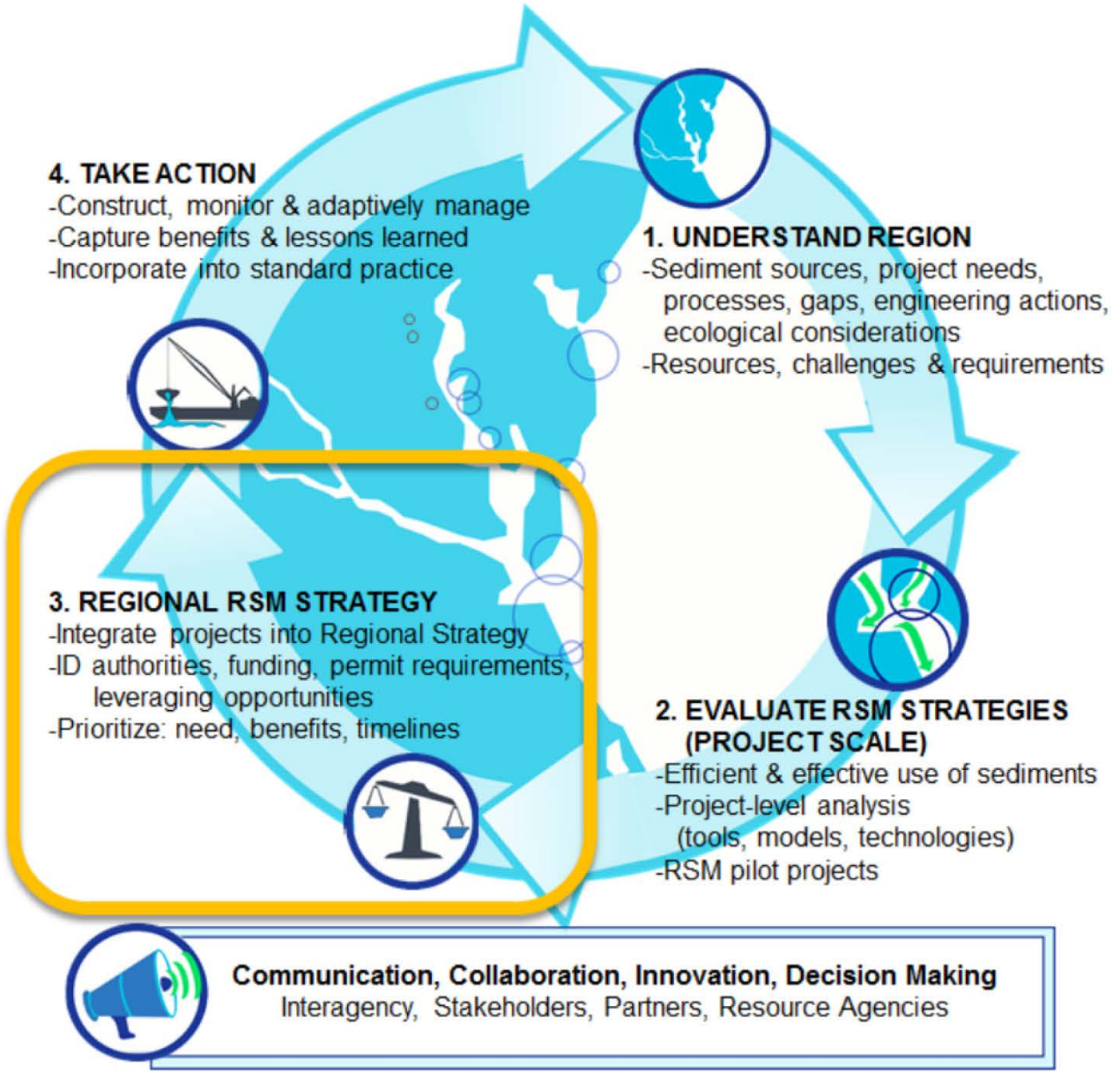
RSM Economic Value and Dredge Fleet Scheduling Optimization

The RSM Economic Value and Dredge Fleet Scheduling Optimization Tool documents the economic value through 1) linking projects and regionally managing sediments across navigation and shore protection projects, and 2) optimizing scheduling of the dredge fleet across the region through the Dredge Fleet Scheduling Optimization Tool. The web tool serves as a knowledge management portal regarding potential efficiencies available across navigation and shore protection projects. The tool documents potential value and allows Districts and decision makers to maximize return on investment of appropriated dollars. The RSM Economic Value and Dredge Fleet Scheduling Optimization Tool was developed and applied as a pilot within the USACE South Atlantic Division. For more information on this capability, view RSM Economic Value and Dredge Fleet Scheduling Optimization Pilot Fact Sheet.

Dredge Fleet Scheduling Optimization

The Dredge Fleet Scheduling component identifies additional efficiencies that can be gained by evaluating the dredge plants assigned to navigation projects and the planned schedule over the course of the dredging season. The optimization model considers localized constraints such as minimum dredging requirements, scheduling due to environmental windows, and suitability of particular dredge plants for specific navigation and/or beach nourishment projects. The result is an optimized dredge utilization schedule synchronized with navigation projects identified for a dredging season. More information on the Dredge Optimization Tool can be located on the Dredge Optimization Tool Fact Sheet.

File Name



PHASE 3 TOOLS

RSM Tool: Dredge Fleet Fact Sheet

PDF by usace_sam_rd3

1 page fact sheet on Dredge Fleet Assignment/ Scheduling Optimization Model

Updated: Mar 27, 2018 View Count: 0

RSM Tool: Fleet Scheduling Optimization Pilot Fact Sheet

PDF by usace_sam_rd3

1 page fact sheet on the RSM Economic Value and Dredge Fleet Scheduling Optimization Pilot

Updated: Mar 27, 2018 View Count: 0

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Discover Regional Sediment Management

Edit

The RSM Process

No issues detected

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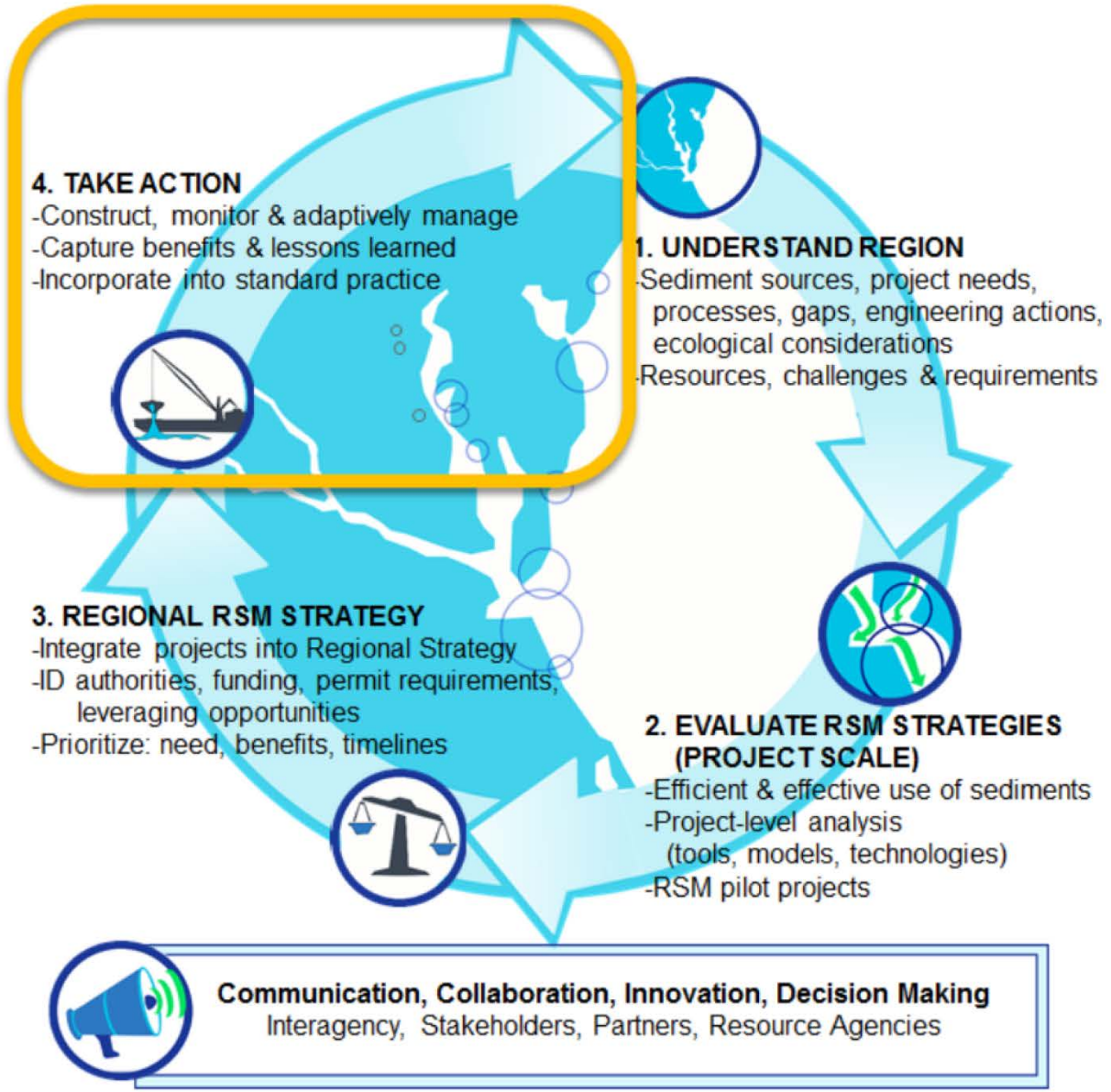
4. Take Action

Once Phases 1, 2, and 3 of the RSM process are completed: 1) the regional sediment system is understood, 2) the RSM strategies are identified and evaluated at the project scale, and 3) a regional strategy has been developed, the next phase in the process is to take action and construct. Once the project is constructed it is important to monitor and adaptively manage to ensure the project is performing as expected, and to improve as needed to achieve expected performance. The value and/or benefits gained through the improved use of sediments are quantified to document and outreach successes. Projects are also monitored to validate tools and technologies that were applied. It is important to document and share lessons learned in order to assist others working to implement similar strategies. Continued collaboration and communication with stakeholders, resource agencies, and partners is necessary to incorporate the
RSM strategies into standard practice. The tools, technologies, and programs summarized in previous sections apply to this section.

File Name



ADDITIONAL RESOURCES

- National Placement Data Manager
- eHydro
- Dredging Technologies
- Thin Layer Placement
- Coastal Systems Portfolio Initiative (CSPI)
- Dredging Manager

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NPDM & Dredging Manager

Planning Tool

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NPDM & Dredging Manager

https://sam-db02mob-dev.sam.ds.usace.army.mil/Applications/OPJ/A065/DredgingHistories/Default.aspx?auth_key=7bf64c96-229e-4fa6-9f

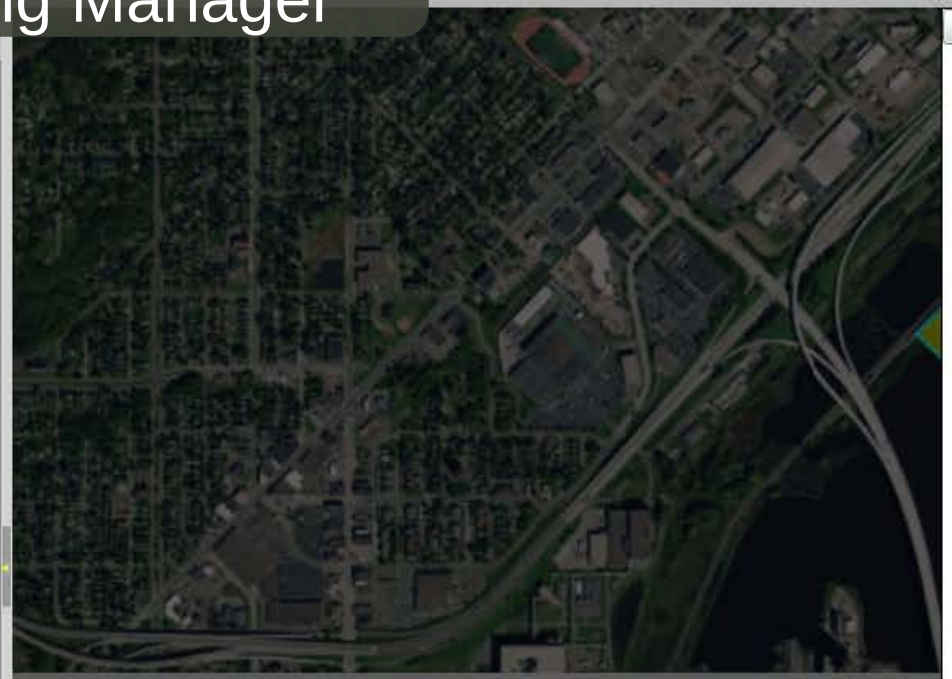
Dredging | National_... | CE-Dr...

File Edit View Favorites Tools Help

Bowhead | My Active Projects | OPJ Management Tools | Portals and Platforms

Layer List | Legend

Map Layers



Drag a column header and drop it here to group by that column

	Name	Project	Date Of Capacity
View	Erie Pier	DULUTH-SUPERIOR HARBOR MN	20 Sep 2016
View	Parent to Cell #5		
View	Dickenson Island East Cell		
View	Lakeside Quarry		
View	Cell #5	DETROIT RIVER MICHIGAN	
View	Cheboygan Harbor Placement Area	CHEBOYGAN, MI	

Current User
User: ROSE DOPSOVIC
District: LRE
ID: 1032657890

Cancel

Selected Site: Erie Pier

REPORTED PLACEMENT | PROJECTED PLACEMENT | SITE MANAGEMENT | SUMMARY

DATE	CALCULATIONS	CY
9/20/2016	Remaining Capacity	2,530,000
	Reported Placements	0
	Site Management	0
2017	Remaining Capacity	2,530,000
	Projected Placements	-702,500
2037	Projected Remaining Capacity w/o Site Mgmt	1,742,620
	Projected Site Management	42,440
2037	Projected Remaining Capacity w/ Site Mgmt	1,785,060

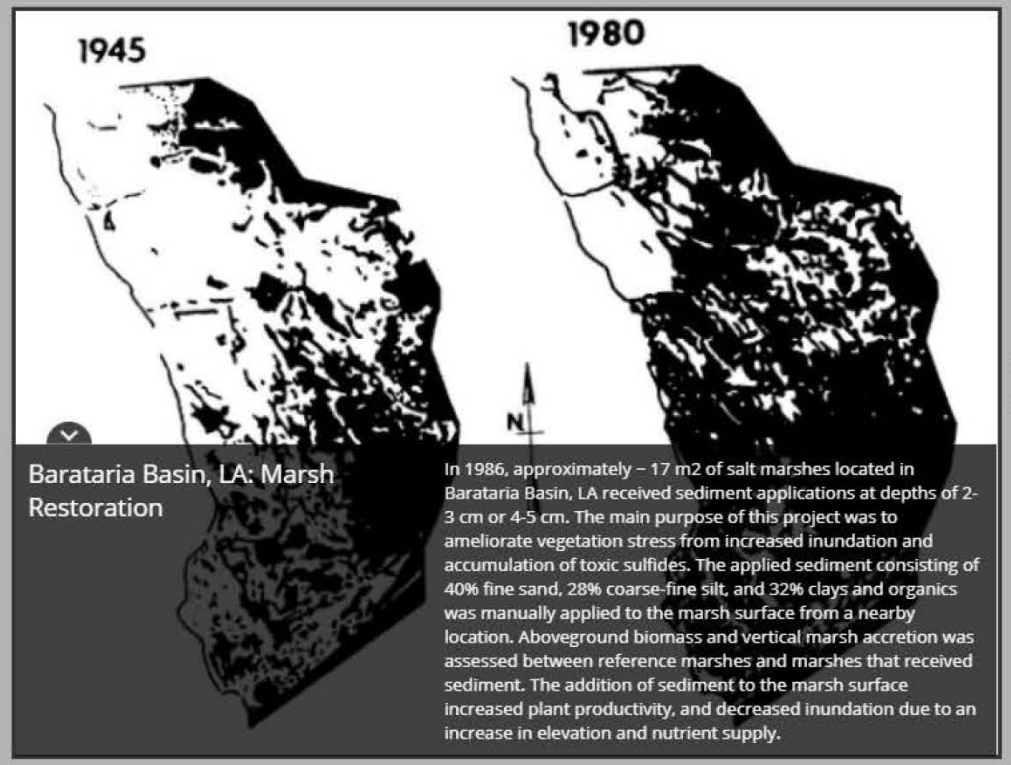
Thin-Layer Placement Map-Based Portal

No issues detected × | Edit × | TLP

Case Studies | Submit Case Study | Analysis Map

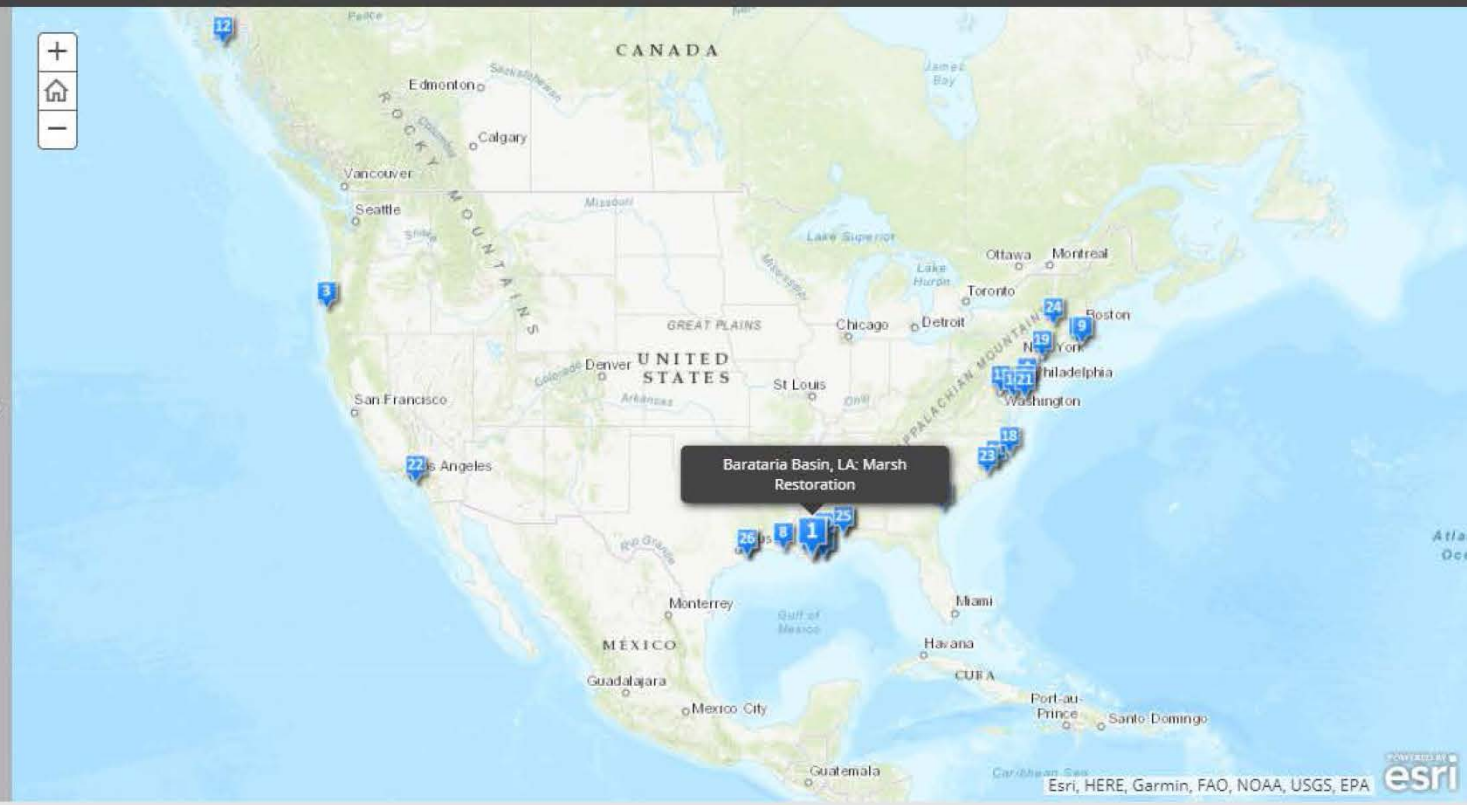
Discover TLP Case Studies

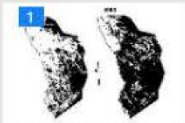
Browse pictures or click on the map to view a summary of each project.

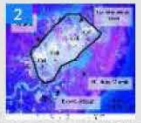


Barataria Basin, LA: Marsh Restoration

In 1986, approximately ~ 17 m2 of salt marshes located in Barataria Basin, LA received sediment applications at depths of 2-3 cm or 4-5 cm. The main purpose of this project was to ameliorate vegetation stress from increased inundation and accumulation of toxic sulfides. The applied sediment consisting of 40% fine sand, 28% coarse-fine silt, and 32% clays and organics was manually applied to the marsh surface from a nearby location. Aboveground biomass and vertical marsh accretion was assessed between reference marshes and marshes that received sediment. The addition of sediment to the marsh surface increased plant productivity, and decreased inundation due to an increase in elevation and nutrient supply.




1 Barataria Basin, LA: Marsh Restoration


2 Barataria Basin, LA: Marsh Restoration


3 South Slough National Estuarine Research Reserve,


4 Commercial Township Salt Hay Farm, NJ: Habitat


5 John H. Chafee National Wildlife Refuge, RI: Habitat


6 Northern Mississippi River Delta, LA: Marsh Restoration


7 Prime Hook National Wildlife Refuge, DE: Habitat


8 Paul J. Rainey Wildlife Sanctuary, LA: Marsh


9 Sachuest Point National Wildlife Refuge, RI: Habitat


10 Sachuest Point National Wildlife Refuge, RI: Habitat


11 Freeman Creek, NC: Marsh Restoration


12 Ward Cove, AK: Sediment Remediation/Thin Layer


13 Anac Wetlan

Coastal Systems Portfolio Initiative Project Database

US Army Corps of Engineers

Find CSPI Projects:

- by State
- by USACE Coastal District

Welcome

What is Coastal Systems Portfolio Initiative?

The Coastal Systems Portfolio Initiative (CSPI) databases provide an archive for data to support many of the CSPI initiatives.

As the federal agency authorized by Congress to study, plan, design, construct, and renourish coastal risk reduction projects, the USACE is tasked with providing technical input on current and future needs for coastal projects. Accurate, up-to-date, and accessible technical information serves as a valuable resource for decision makers responsible for making balanced, information-based decisions for managing coastal programs.
This web database presents the “big picture” about current and future needs for coastal projects within USACE. As the nation’s engineer, the USACE collected and presented technical data and estimated costs, with consideration of project reliability and risk. The process used by the USACE to examine federal projects as a total system instead of as individual projects will continue to be refined over time. This technical review is an initial systems-based tool that decision makers at any level can use to make more informed judgments as they manage coastal risk reduction projects in the United States, both now and in the near future.
Use the **list to the left** to filter projects by location.

- Use the Documents link above to access the latest digital products of the CSPI program.
- Looking for an online map? Follow the link above to view the locations of the CSPI projects.

Hydrographic Surveys

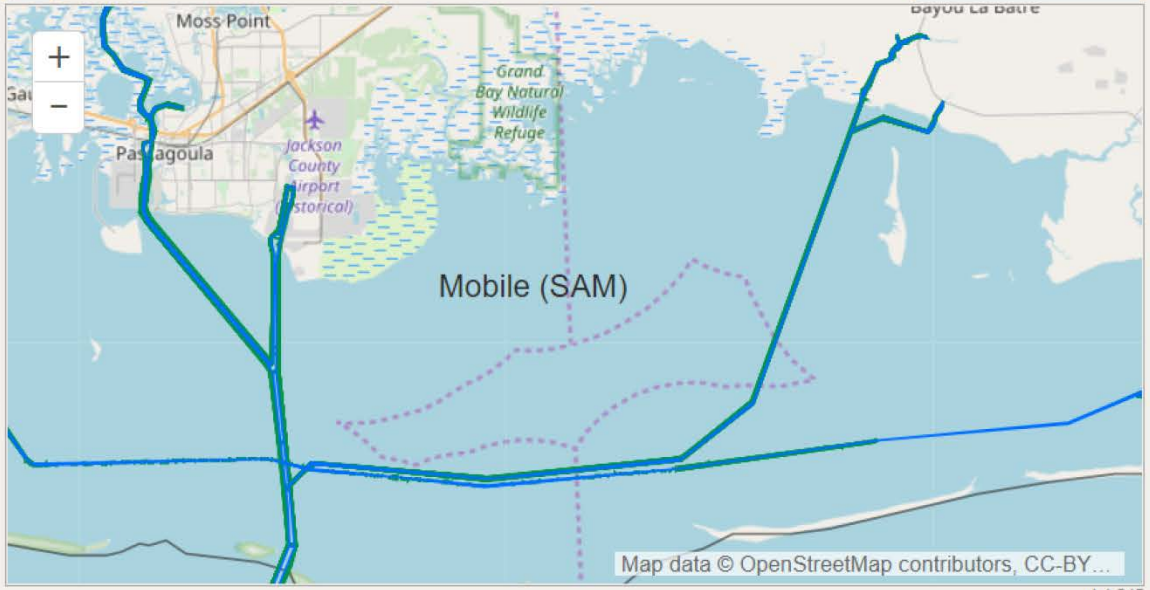
The hydrographic surveys provided by this application are to be used for informational purposes only and should not be used as a navigational aid. Channel conditions can change rapidly and the surveys may or may not be accurate. Click help for additional details.

Alabama | CESAM_BL_01_BLS

Date	Survey Name	Download
5/7/2018	BL_01_BLS_20180508_CS	Select
7/12/2017	BL_01_BLS_20170713_CS	Select
9/28/2016	BL_01_BLS_20160929_CS	Select
4/4/2016	BL_01_BLS_20160405_CS	Select
6/2/2015	BL_01_BLS_20150603_CS	Select

<< Displaying Survey(s) 1 - 5 out of 11 >>

Select Basemap



1.1.245

Dredging Technologies

A tool to identify appropriate models based on selected criteria

Problem Criteria

Dredge Type

+ Hydraulic
+ Mechanical

Location

+ Dredging Location
+ Placement Location/Type

Problem Type

- [ ] Confined Disposal Facility Design
- [ ] Containment Transport
- [ ] Sediment Transport

Models

Hydrodynamic

- CSTORM-MS
- ADH
- ADCIRC
- CMS

Sediment Transport

Confined Disposal Facility

Contaminant Transport

Health Risk Assessment

Sediment Assessment and Management

Water Quality

THANK YOU!

More information visit http://arcgis.com and search for RSM content.

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