Marine Minerals Information System (MMIS)

Lora Turner (BOEM Project Lead)
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Alexa Ramirez (QSI PM)
Dave Stein (NOAA COR)

May 30, 2018

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Agenda

- **Background**
- **Challenges**
- **Needs**
- **Progress**
  - ✓ Data Model | Relational Database Management System
  - ✓ Information Technology
  - ✓ Data Development
  - ✓ Access
    - ❖ Demo
- **Plans**
- **Next Steps**

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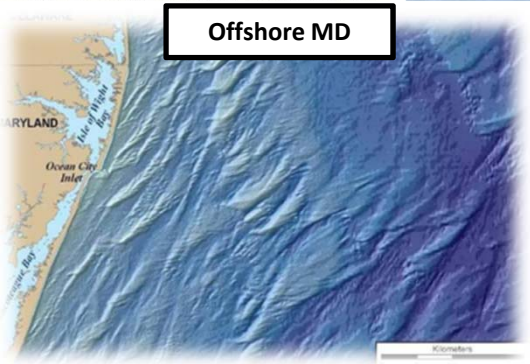
Background

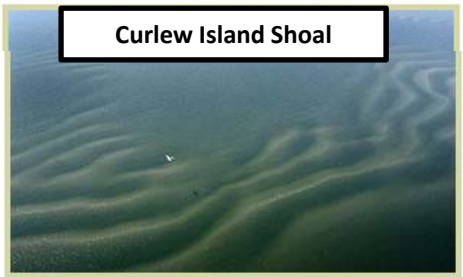
Offshore MD



RN Weeks

Long Beach Island, NJ

Curlew Island Shoal



A seaplane flies about 200 feet above what's left of Curlew Island after Hurricane Katrina devastated the Chandeleur Island chain. The dunes of sand, appearing like ripples in the kiddie pool, crest one or two feet from the surface.
Photographer: Ted Jackson / Times-Picayune

Priorities

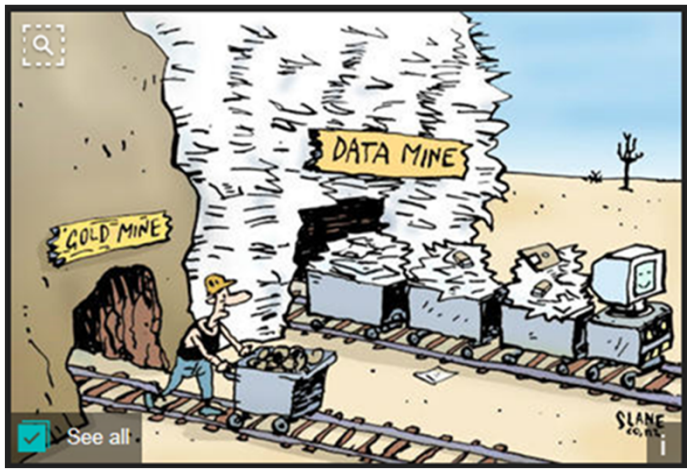
- Creating a National Offshore Sand Inventory
- Strengthening Federal Partnerships
- MMIS Support Tool
- Strengthening State/Academia Partnerships
- Environmental and Sand Resource Studies

Caminada Headland

Restoring and Protecting Our Nation's Coasts through Stewardship of OCS Resources

Challenges on a National Scale

- 25+ years of BOEM's **investments** in offshore marine minerals information is **not accessible within a common framework for internal decision making** – limiting our ability to integrate data to meet BOEM's mission of managing offshore sand resources comprehensively and efficiently
- Information is **disparate, inconsistent** and in **varying data quality** standards and classifications standards to support national, regional and locals scales
- Difficult to demonstrate **sand resource delineations** that support coastal infrastructure projects to our Federal and State Partners
- Source and derived information products are held **across multiple agencies**
- No centralized **data steward** for offshore specific sand resource data
- **Increasing demand** for marine mineral resources has depleted known reserves
- **Competing** Ocean Uses



Foster access to the Nation's offshore mineral resources

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Needs

Compelling Use Cases

the need for authoritative data

Data Steward

- Maintain marine minerals data

Physical Scientist / Analyst

- Characterize the subsurface to support leasing and environmental decisions

Planner

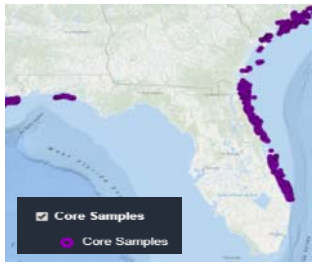
- Consume authoritative marine mineral datasets to identify conflicts with other OCS activities / regional planning

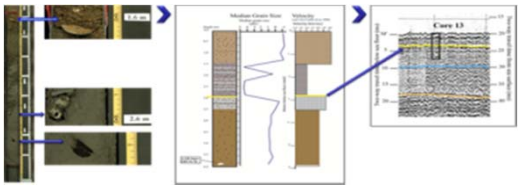
Manager

- To manage the resource, we need to know what we have

Leadership

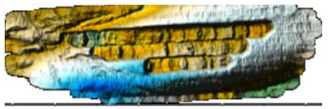
- Oversee the development of marine mineral resources on the OCS



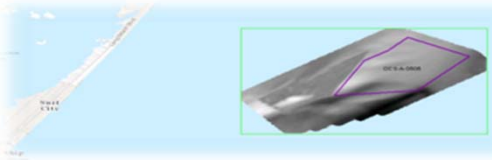


Pre-dredge Survey

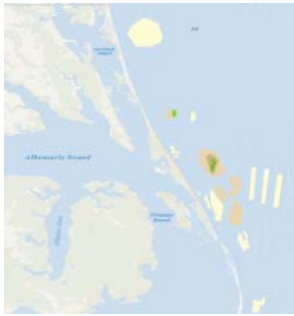
Post-dredge Survey



SC Folly Lease OCS-A-0504



NJ LBI Lease OCS-A-0505



Sand Resources

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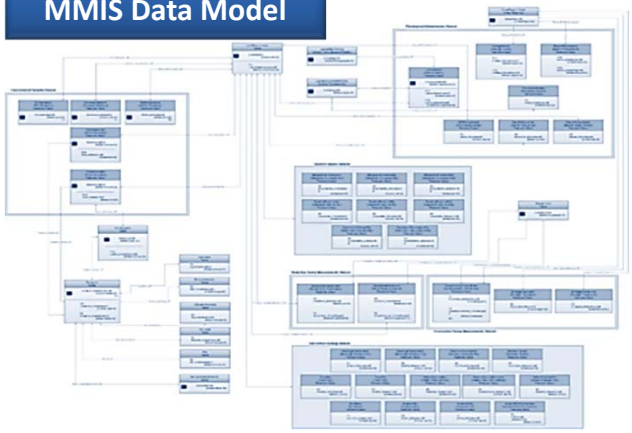
Progress

Data Model | Relational Database Management System

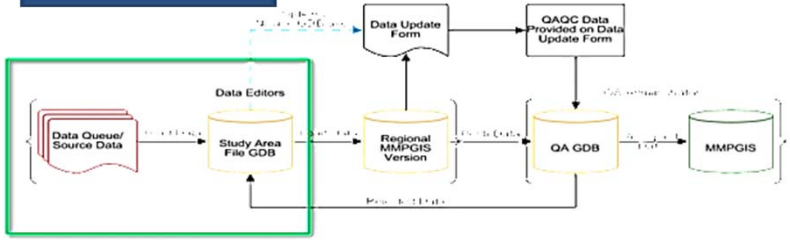
MMIS Data Model



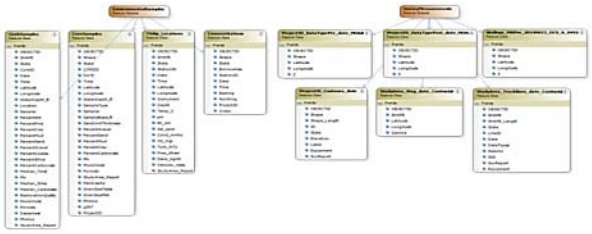
Leveraged

- ***Models***
  - ArcGIS Marine Model
  - Seabed Survey Data Model (Oil and Gas)
- ***Data Management Tools / Resources***
  - USGS Data Management
  - BOEM Science Quality & Integrity
  - NOAA Scientific Data Stewardship

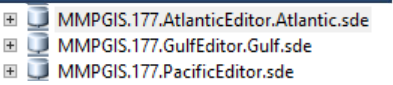
Workflow



Marine Minerals Database Schema



Database Connections



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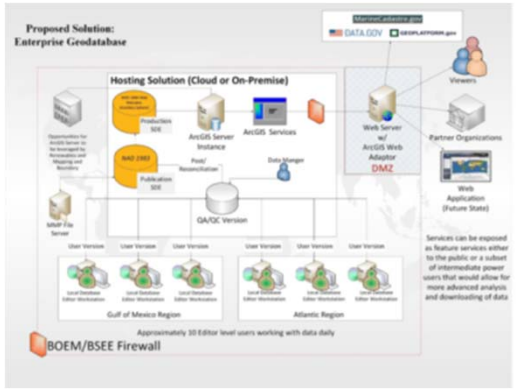
Progress

IT Infrastructure and Services



No ArcGIS server | no database host for MMP data

Data on BOEM local Drives

Documented IT Business Case | requirements

Unable to obtain a feasible IT Host

DOI Host Denver Data Center – Dev|Test Environment

Viewer Designed

Web Services

Obtain Authority to Operate (ATO) (Production Environment)

Maintain

Configure

Modify

Test

2014 2015 2016 2017 2018

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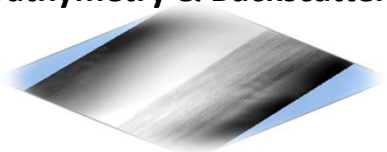
Progress

Data Development

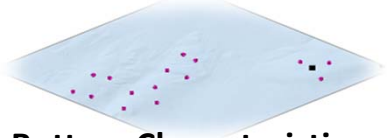
Collaboration with our Partners

MMIS

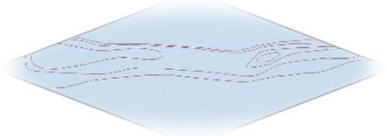
Bathymetry & Backscatter



Environmental Data



Bottom Characteristics



Leasing / Planning/Construction

Discover

Analysis

Id Gaps

A tool to support the National OCS Sand Inventory for Coastal Restoration Projects

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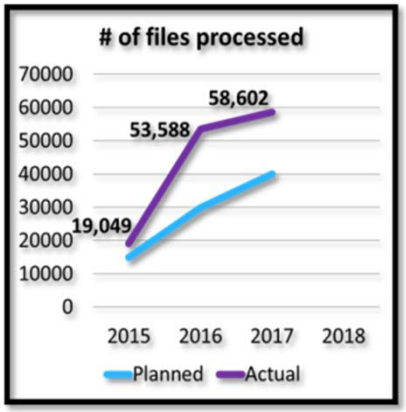
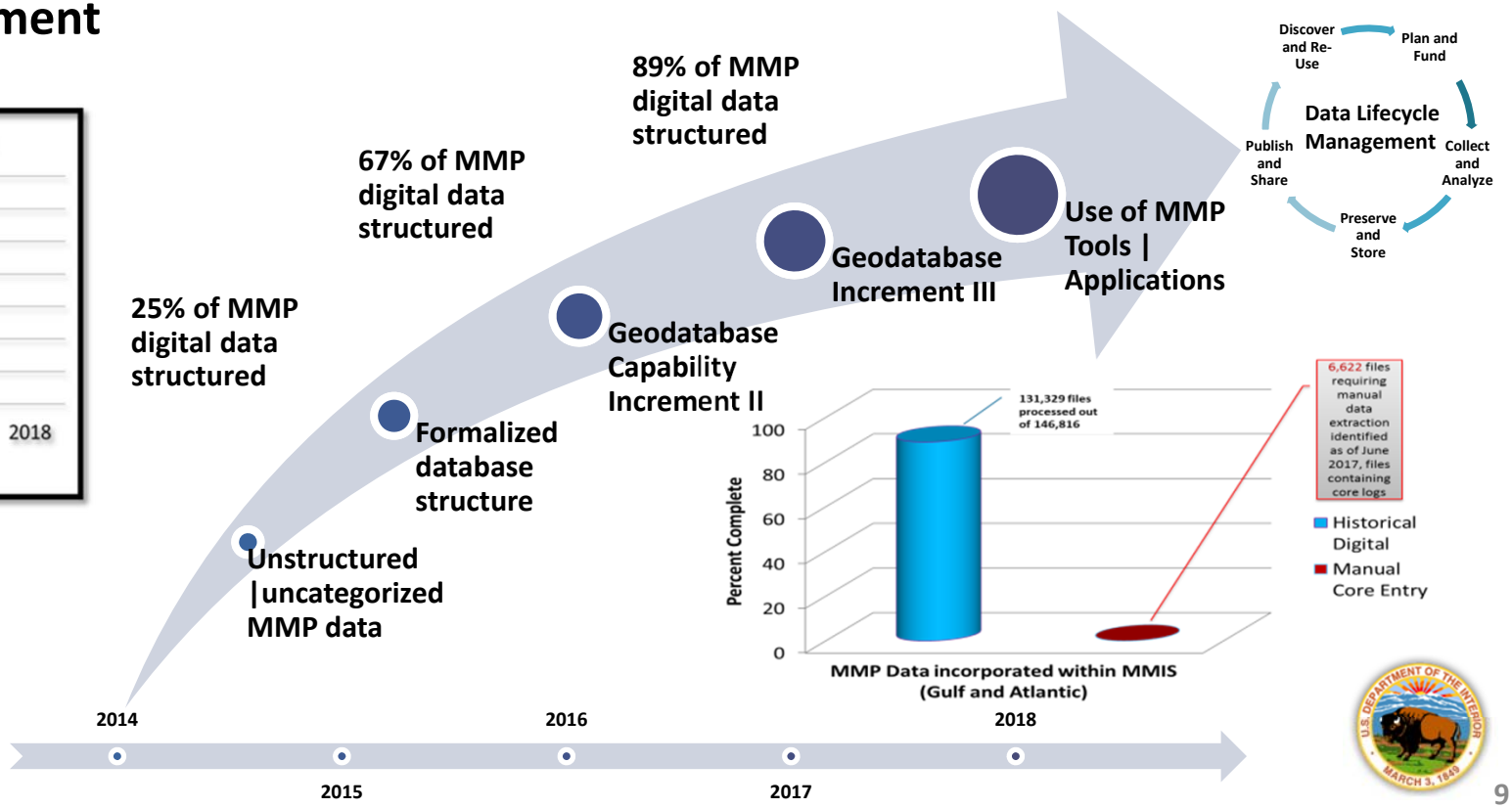
Progress

Data Development





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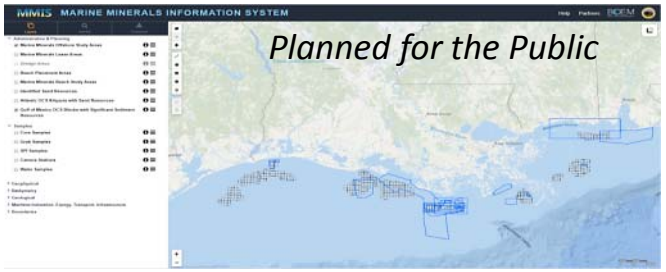
Progress

Access



Viewer Demo

Accessible to Public

Accessible to MMP staff

MMP Resource Areas in development

MMP services available to Marine Cadastre)

MarineCadastre.gov

Lease Areas | GOMR Significant Sediment Registered on Marine Cadastre

NROC Northeast Regional Ocean Council

MARCO Mid-Atlantic Regional Council on the Ocean

Metadata Created (56 feature classes)

ROSSI Regional Offshore Sand Source Inventory

Unable to retrieve data / data re-work

No consistent Metadata

LOUISIANA SAND/SEDIMENT RESOURCES DATABASE (LASARD)

GSAA COAST & OCEAN PORTAL

GCHP GEORGIA COASTAL HAZARDS PORTAL

2014 2015 2016 2017 2018

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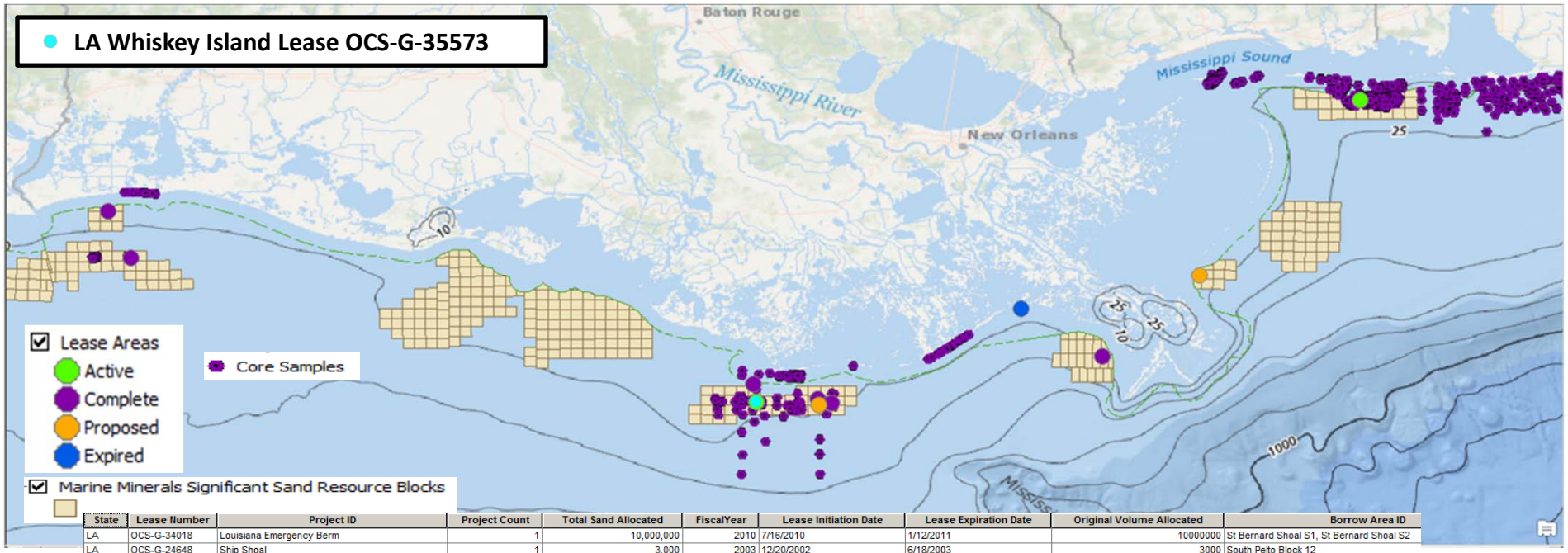
Demo



State	Lease Number	Project ID	Project Count	Total Sand Allocated	FiscalYear	Lease Initiation Date	Lease Expiration Date	Original Volume Allocated	Borrow Area ID
LA	OCS-G-34018	Louisiana Emergency Berm	1	10,000,000	2010	7/16/2010	1/12/2011	10000000	St Bernard Shoal S1, St Bernard Shoal S2
LA	OCS-G-24648	Ship Shoal	1	3,000	2003	12/20/2002	6/18/2003	3000	South Pelto Block 12
LA	OCS-G-33039	Terrebonne Parish	1	750,000	2013	12/8/2010	12/4/2014	750000	Raccoon Island Borrow Area
LA	OCS-G-35573	Whiskey Island	1	13,400,000	2015	5/28/2015	5/28/2019	13400000	Ship Shoal Block 88
LA	OCS-G-35161	Caminada (Phase II)	1	8,800,000	2014	3/13/2014	3/13/2018	6100000	South Pelto Blocks 13 and 14
LA	OCS-G-23707	Holly Beach	1	4,200,000	2002	5/3/2002	6/27/2003	4200000	Peveto Channel
LA	OCS-G-34667	Caminada (Phase I)	1	5,200,000	2012	8/2/2012	8/2/2016	5200000	South Pelto Blocks 13 and 14
LA	OCS-G-34668	Cameron Parish	1	5,000,000	2012	8/2/2012	8/2/2016	5000000	Borrow Area HF, Borrow Area JF
LA	OCS-G-25379	Pelican Island	1	5,523,000	2002	6/10/2008	6/6/2014	5523000	Sandy Point North, South, Southeast
LA	<Null>	Breton Island	1	3,000,000	<Null>	<Null>	<Null>	<Null>	<Null>
LA	<Null>	East Timbalier	1	<Null>	<Null>	<Null>	<Null>	9000000	South Pelto 12, 13, 18, 19

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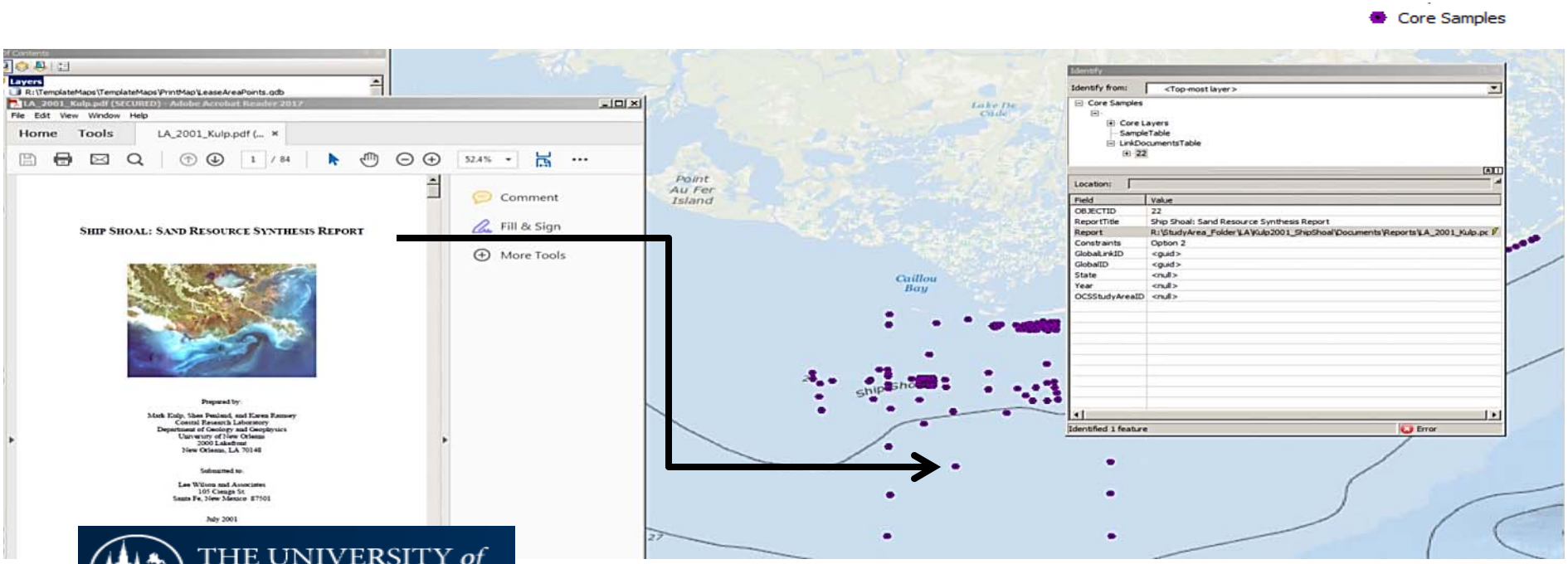
Demo



THE UNIVERSITY of NEW ORLEANS

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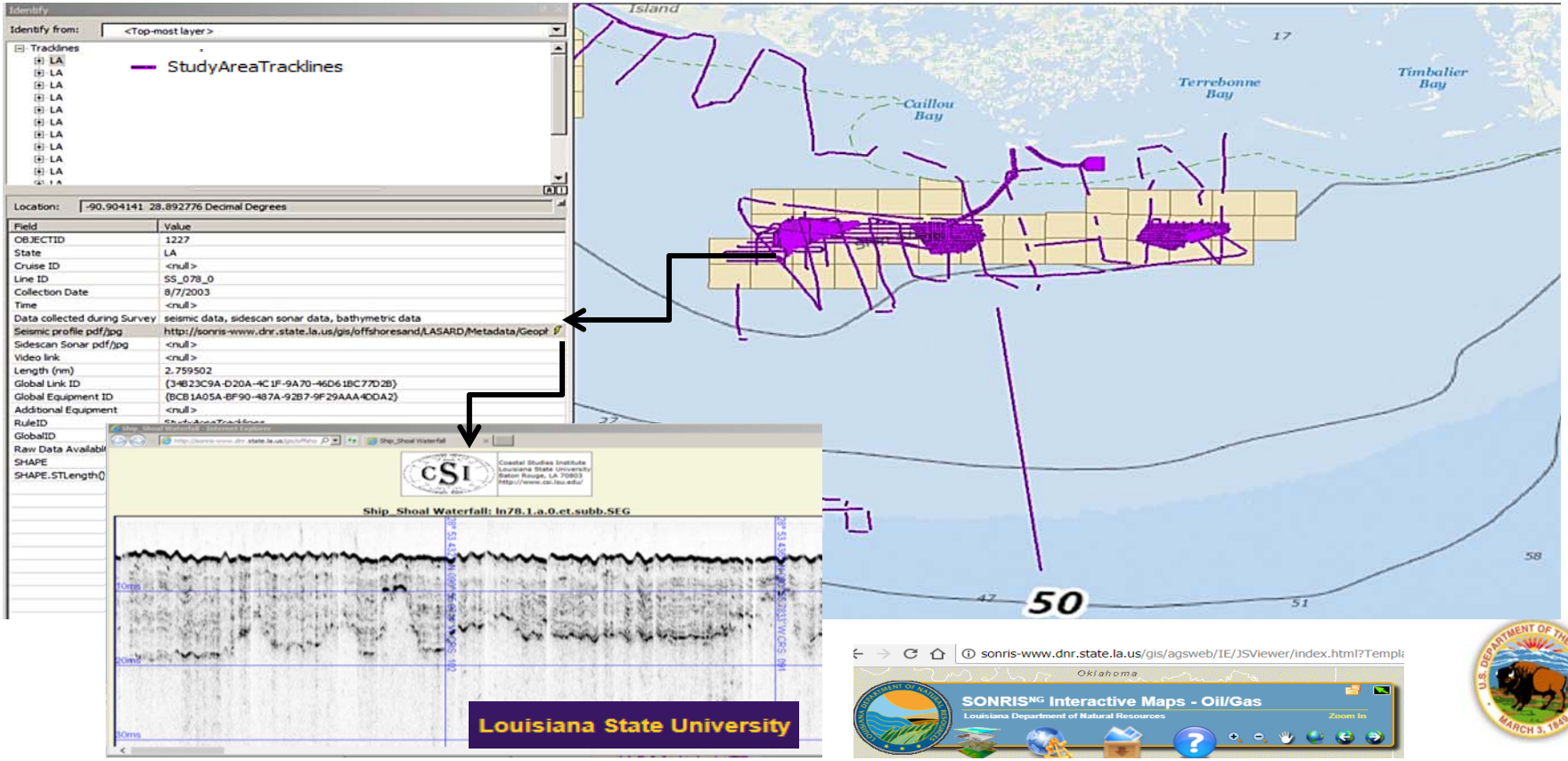
Demo



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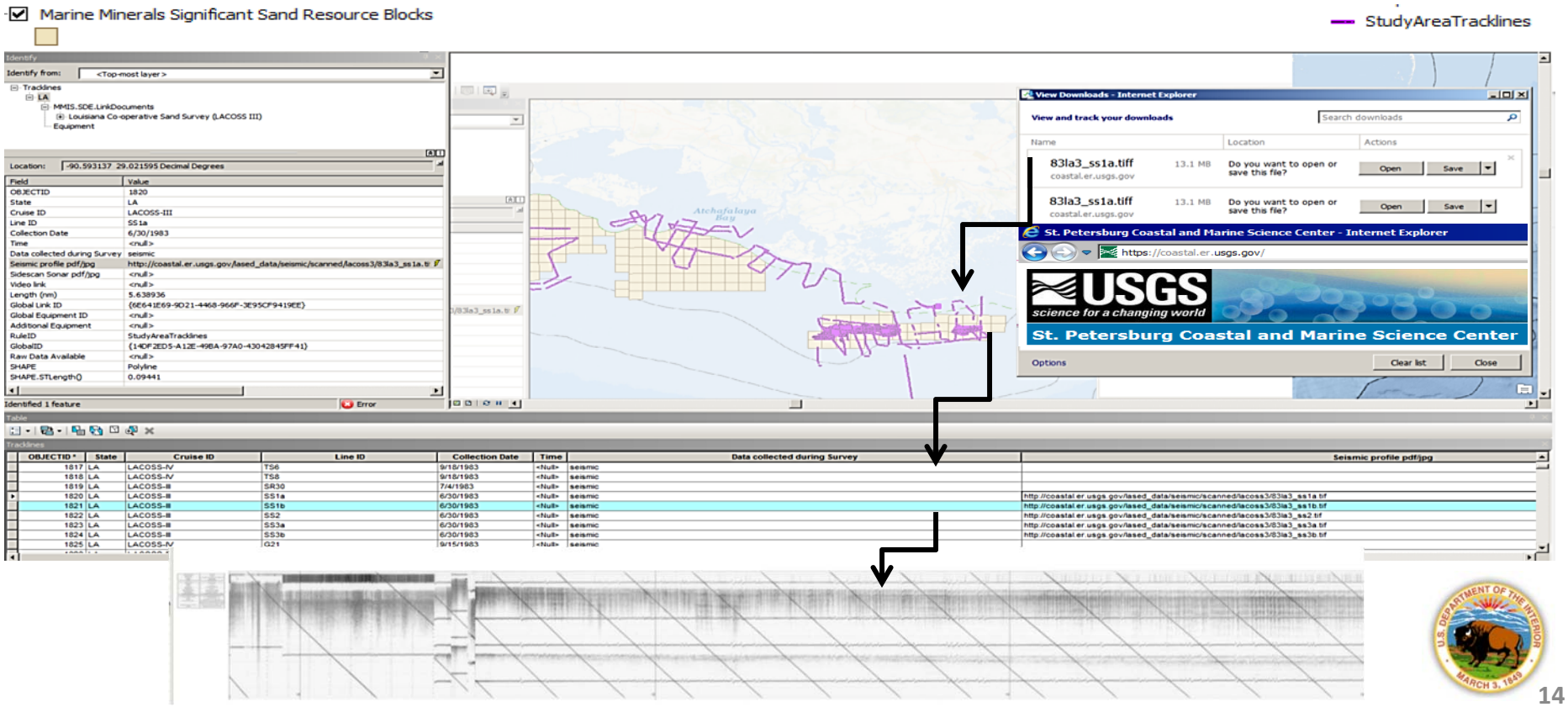
Demo



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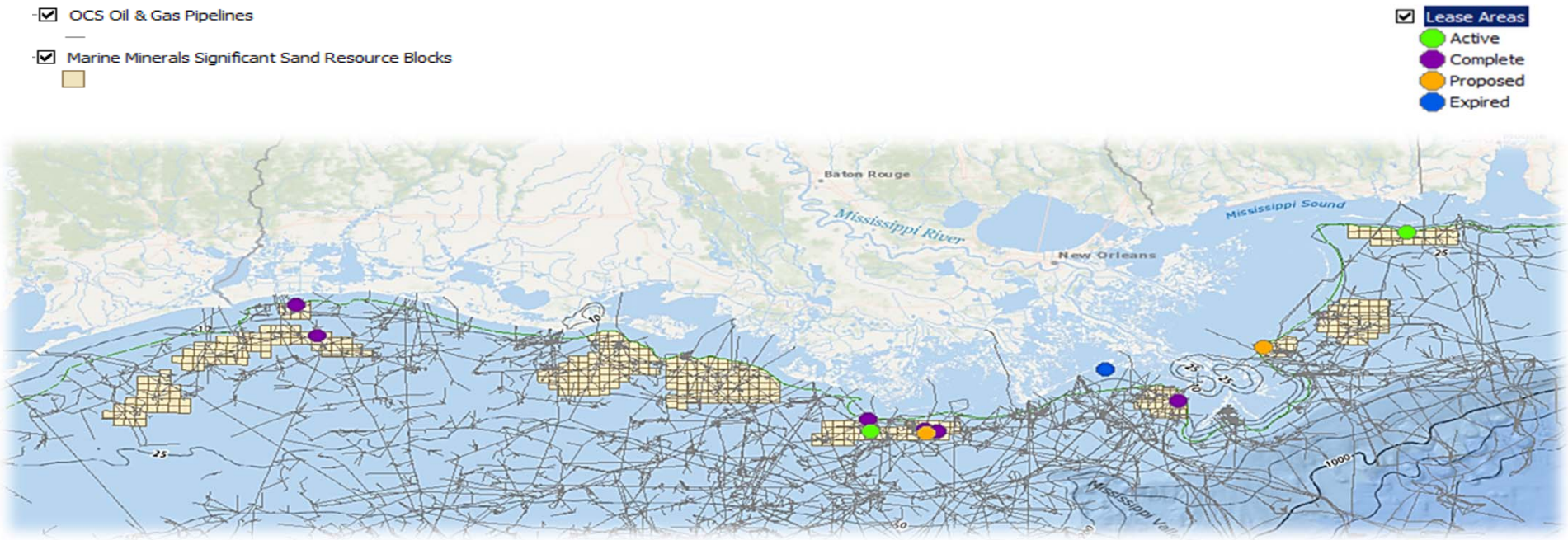
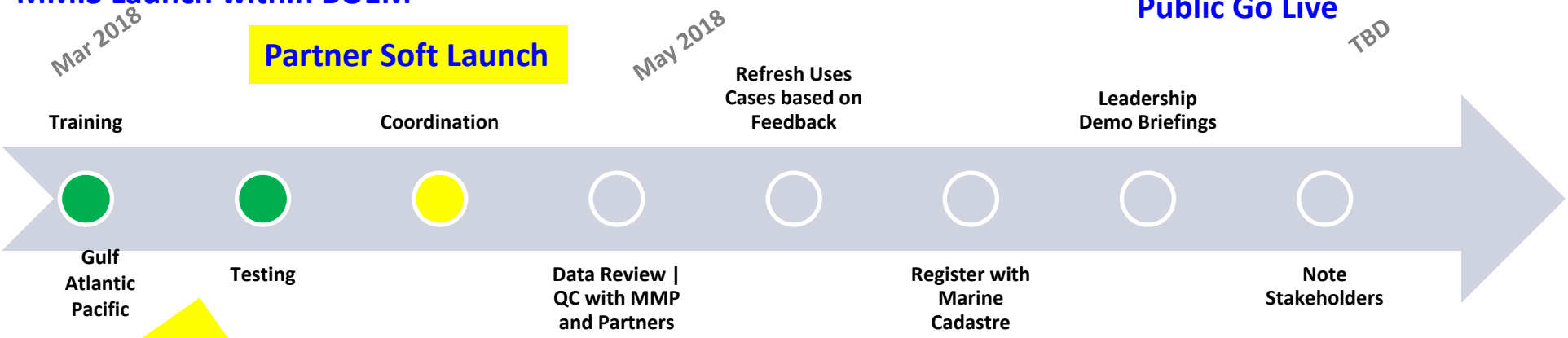
Demo



Competing Ocean Uses

Viewer Plans

MMIS Launch within BOEM



In Progress Data Reviews

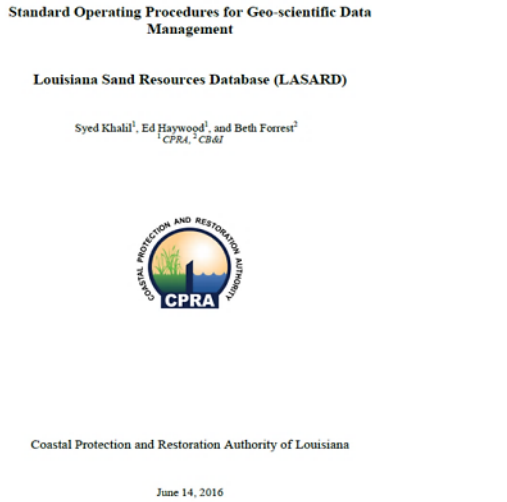
MMP Team Review
Active Coop Agreement Partners Preview
(ME, NH, MA, RI, NY, NJ, DE, MD, VA, NC, SC, GA, FL, MS, TX, CA)
State Partners Review
(LA, AL)
Fed Partners Review
(USGS St Petersburg, Woods Hole, Santa Cruz), NOAA, USACE Districts
RPB Review

Next Steps

Interoperability Opportunities

Louisiana Systems

- Department of Natural Resources
  - Strategic Online Natural Resources System (SONRIS)
- Coastal Protection and Restoration Authority
  - Louisiana Sand Resource Database (LASARD)



Standard Operating Procedures for Geo-scientific Data Management

Louisiana Sand Resources Database (LASARD)

Syed Khalil[1], Ed Haywood[1], and Beth Forrest[2]
[1]CPRA, [2]CB&I

Coastal Protection and Restoration Authority of Louisiana

June 14, 2016

Next Steps

- Quantum Spatial (contractor) supporting application with Department of Interior
- Developing Marine Minerals data planned through 2019
- Maintaining the system with Department of Interior
- Training
- Continued analysis work and products development
- Continued coordination with our partners (Cooperative Agreement States, Regional Planning Bodies, State Agencies, Academia, USACE, NOAA, USGS…)

Value driver	Commitment
Quality	Meet or exceed established levels
Responsiveness	Adjusting to meet the needs of our external partners
Sourcing	Establish and manage effective partnerships
Agility	Maintain the ability to change services / flex the data model (scaling them up or down) supporting new initiatives
Innovation	Develop new products and services to support BOEM and our partners

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Thank You

https://www.boem.gov/Marine-Minerals-Program/

marineminerals@boem.gov