



**BOEM** Bureau of  
Ocean Energy Management

# Exploring for North Carolina Sand

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A Component of Holistic, Systems-based Regional Sediment  
Management

November 16, 2023

Doug Piatkowski & Ashley Long | NCBIWA 2023 Annual Conference

# National Offshore Sand Inventory (NOSI)

- **Vision**

NOSI is the **first resource** consulted for offshore sediment management information.

- **Mission**

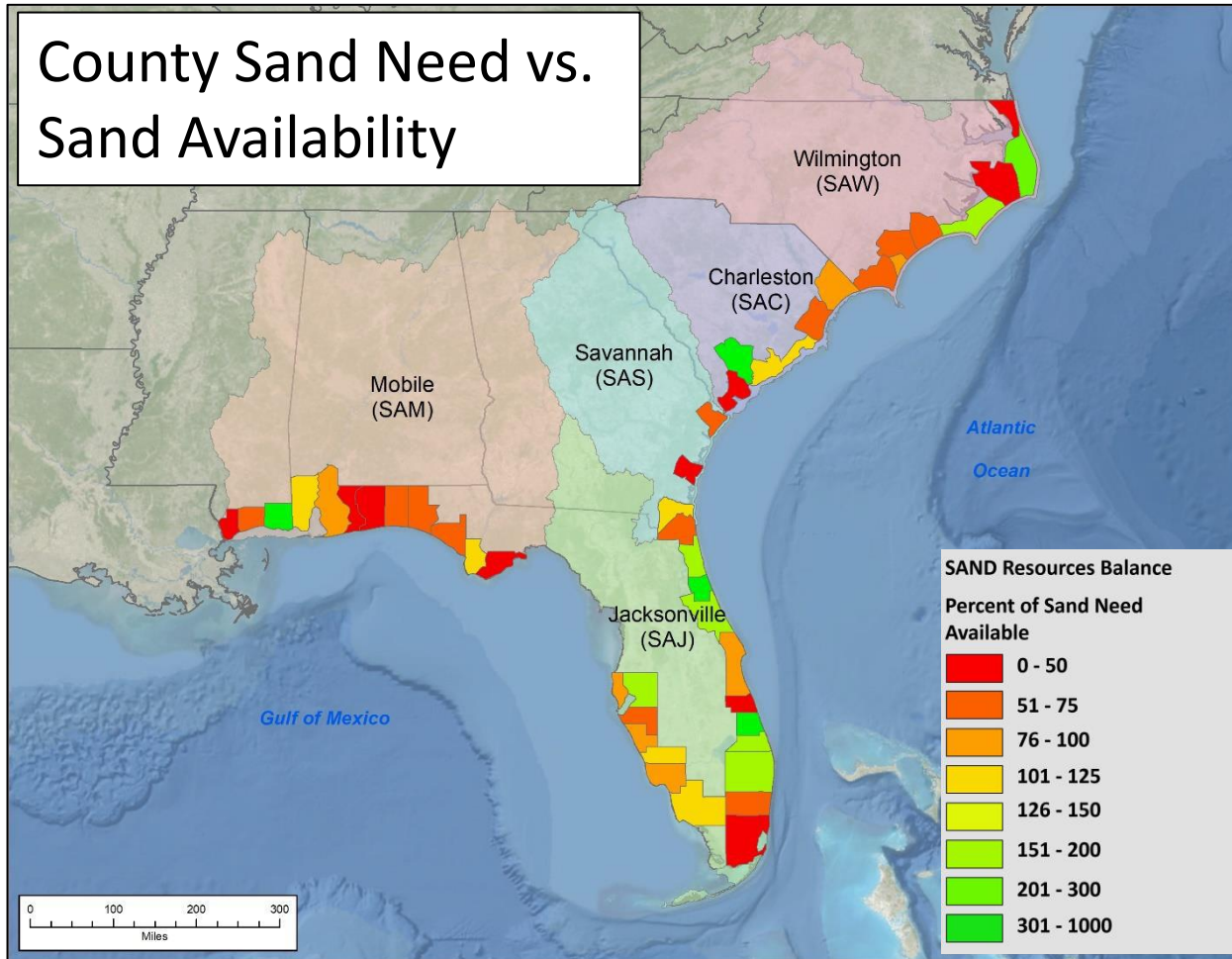
To provide **data, project insights, and analysis** to coastal and marine researchers, engineers; and local, state, federal, and tribal stakeholders; and decision makers for **coastal resilience** and **environmental and resource stewardship**.

- **Priority**

Atlantic and Gulf of Mexico



# Prioritization for Data Collection



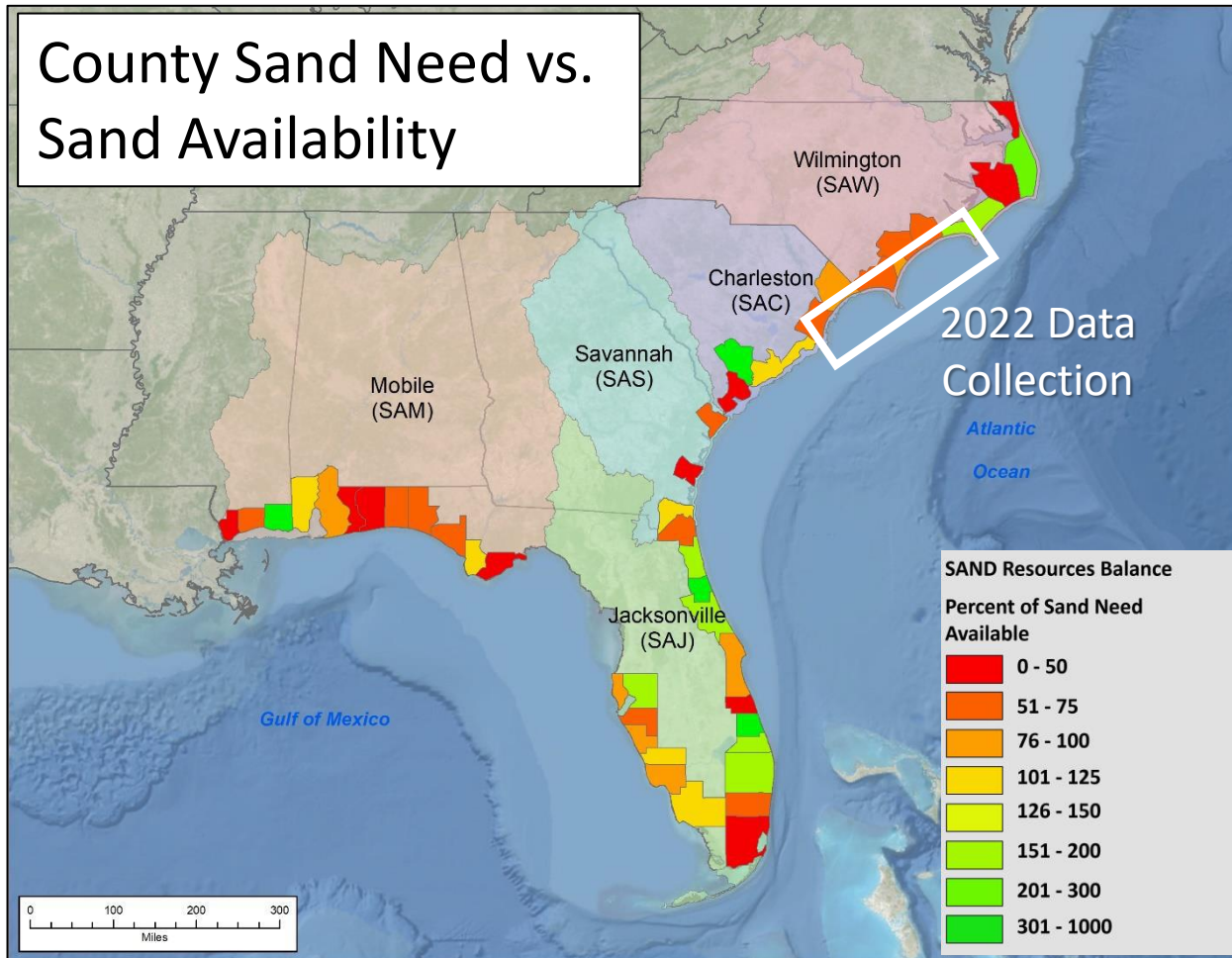
(SAD SAND, 2020)

- **South Atlantic Coastal Study: Sand Availability and Needs Determination (SACS SAND)**
  - Led by U.S. Army Corps of Engineers
  - Highlights counties with sand deficits over the next 50 years





# Prioritization for Data Collection

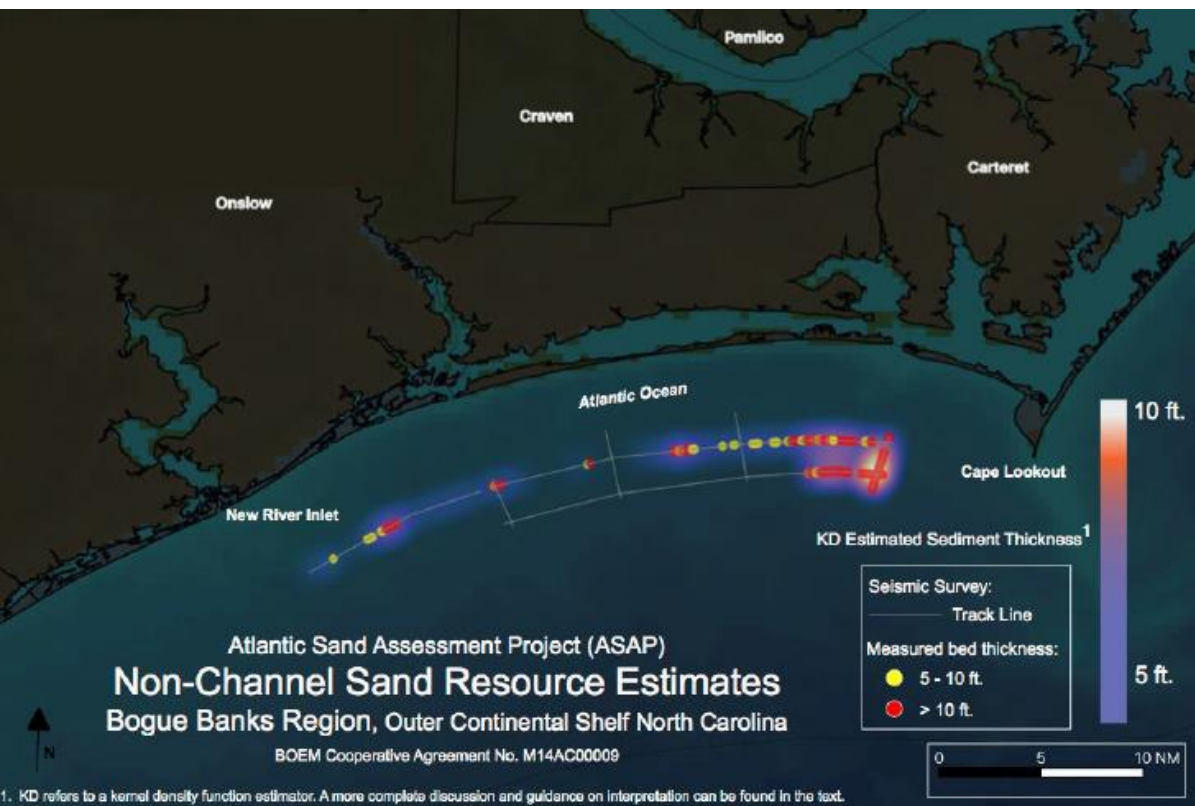


(SAD SAND, 2020)

- Leveraged the results from the **Atlantic Sand Assessment Project (ASAP)**
  - Refine locations for additional data collection
- **Acquire new *reconnaissance* data to address key unknowns in each region**
  - Bogue Banks, Topsail, New Hanover, Brunswick/N. Myrtle, and Myrtle Regions
- **In 2021, BOEM issued a Task Order (TO1) against an IDIQ contract to Aptim Federal Services, LLC**
  - Final Report expected **Q1 2024**

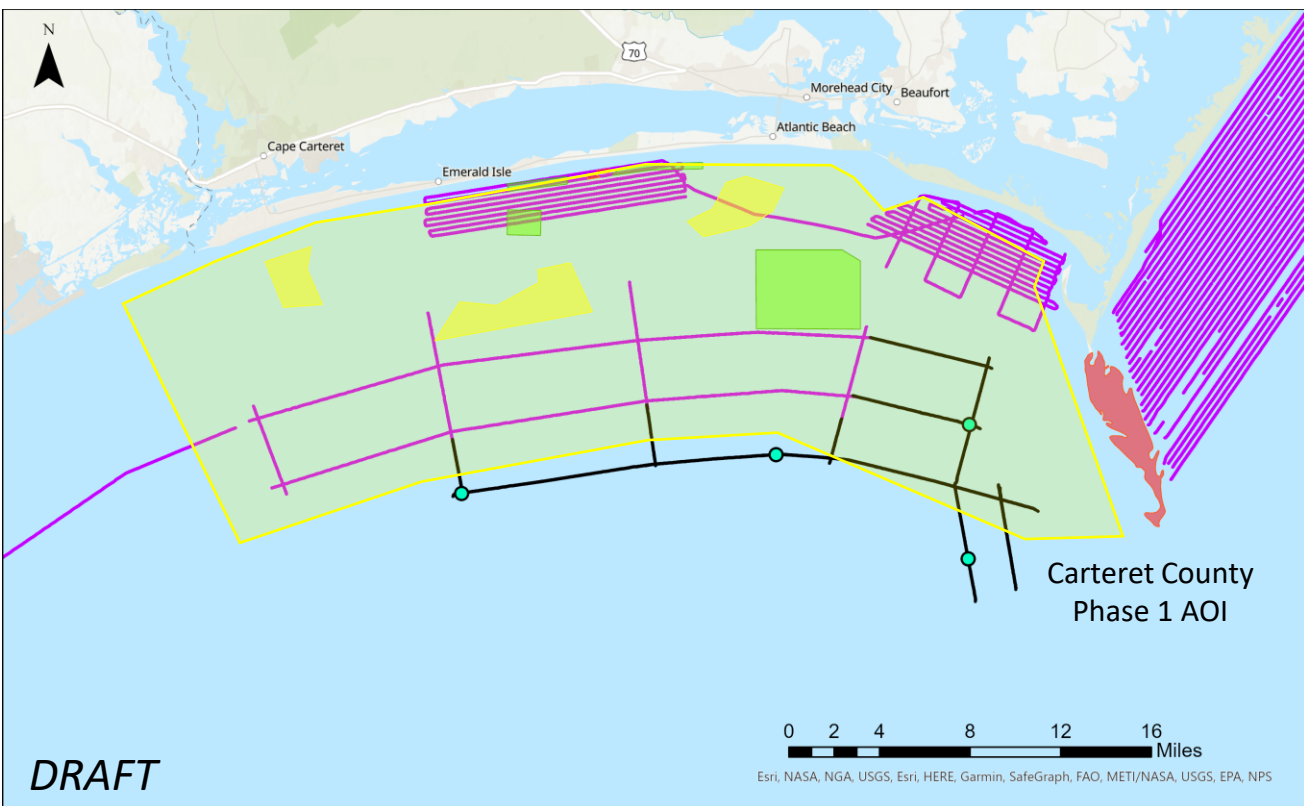


# Bogue Banks Region



(Corbett et al., 2019)

- Compliment existing plans
- Surficial sands, paleochannel fill, and subsurface sand resource targets



## TO1 Sand Resources

### Evaluation Stage

- Potential
- Proven
- Unusable
- Unverified

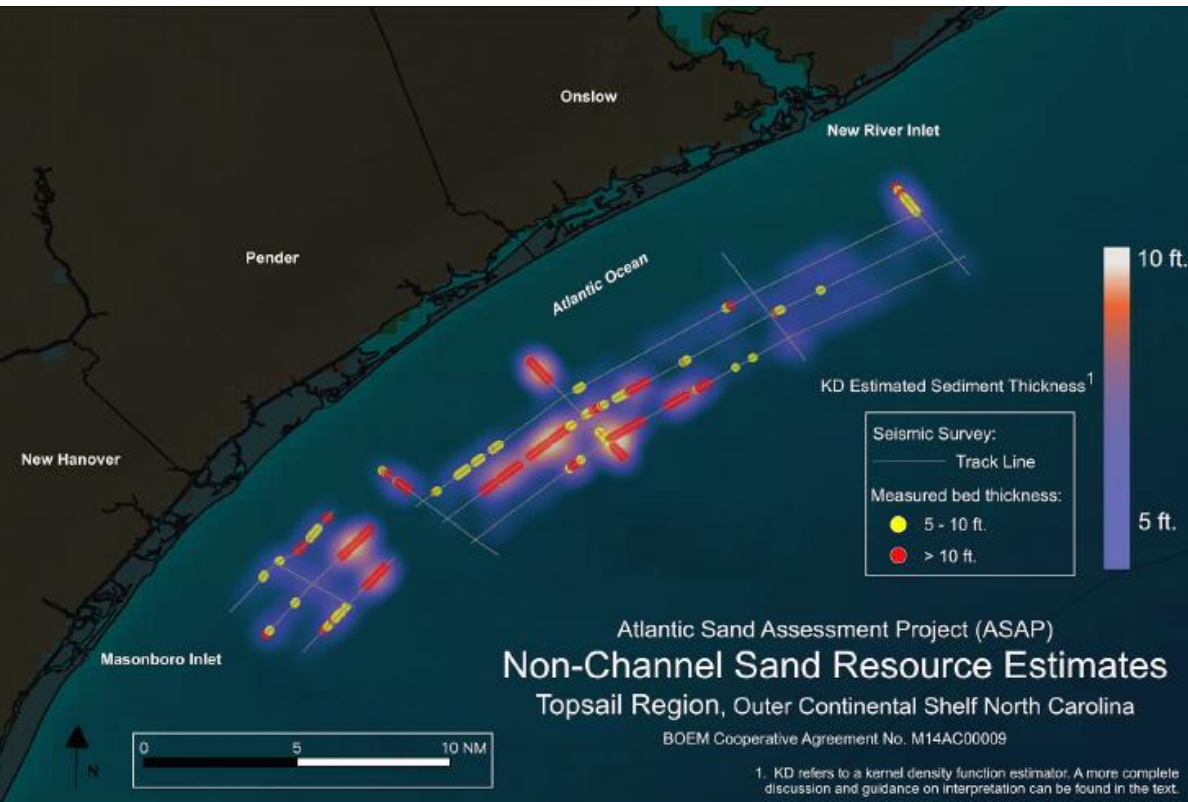
## Sand Resources

- Proven
- Potential
- Unverified
- Unusable

- Paleo Channel System Polygon
- StudyAreaTracklines
- Survey Tracklines
- Core Samples

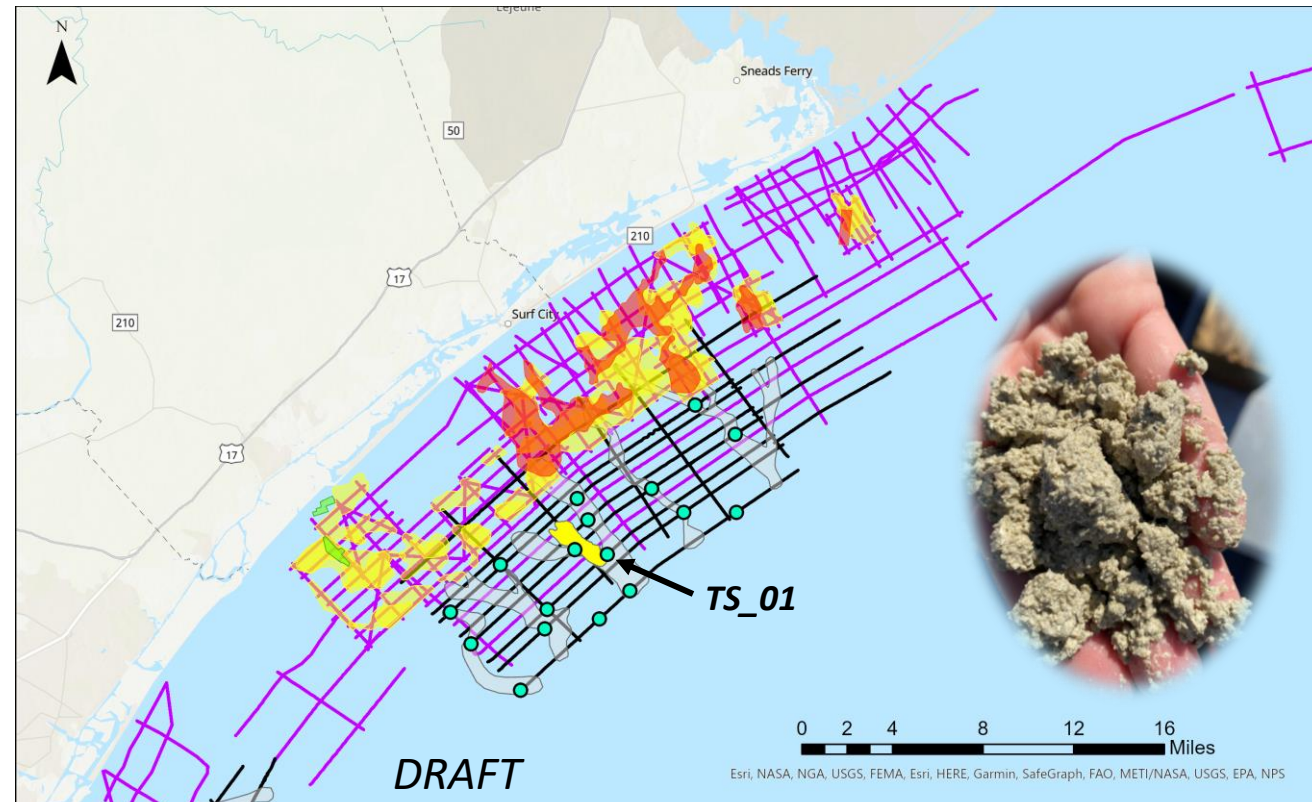


# Topsail Region



(Corbett et al., 2019)

- Down spacing and appraisal survey
- Surficial sands and paleovalley fill sand resource targets



TO1 Sand Resources

Evaluation Stage

- Potential
- Proven
- Unusable
- Unverified

Sand Resources

- Proven
- Potential
- Unverified
- Unusable

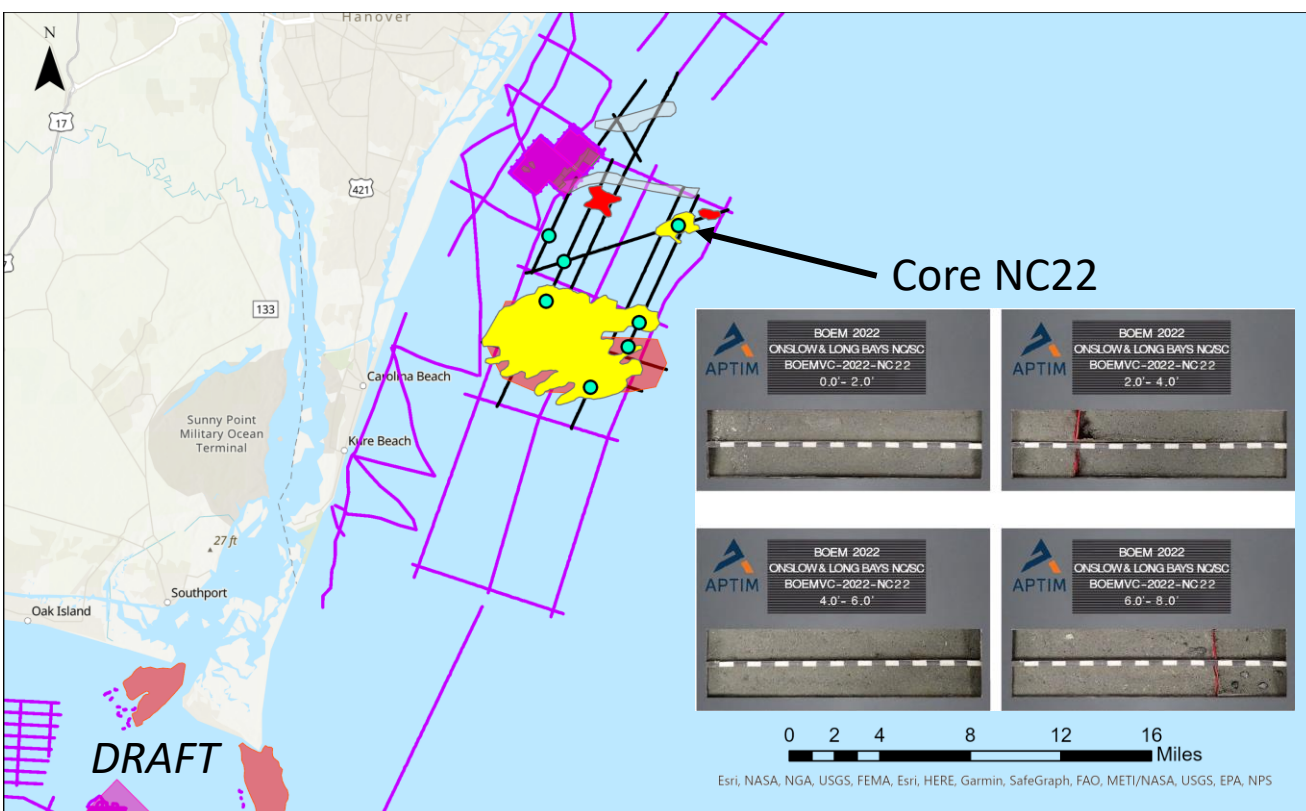
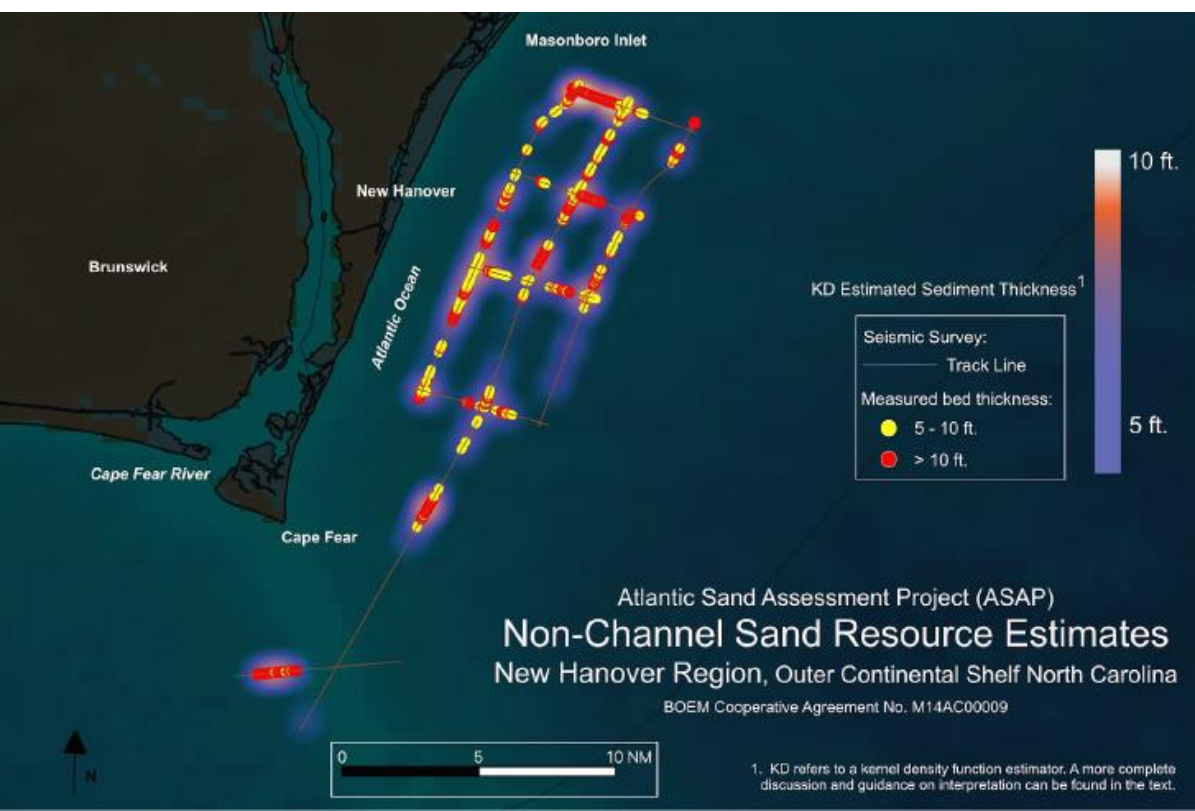
- Paleo Channel System Polygon
- StudyAreaTracklines
- Survey Tracklines
- Core Samples

(Image courtesy of APTIM)



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# New Hanover Region



TO1 Sand Resources

Evaluation Stage

Potential

Proven

Unusable

Unverified

Sand Resources

Proven

Potential

Unverified

Unusable

Paleo Channel System Polygon

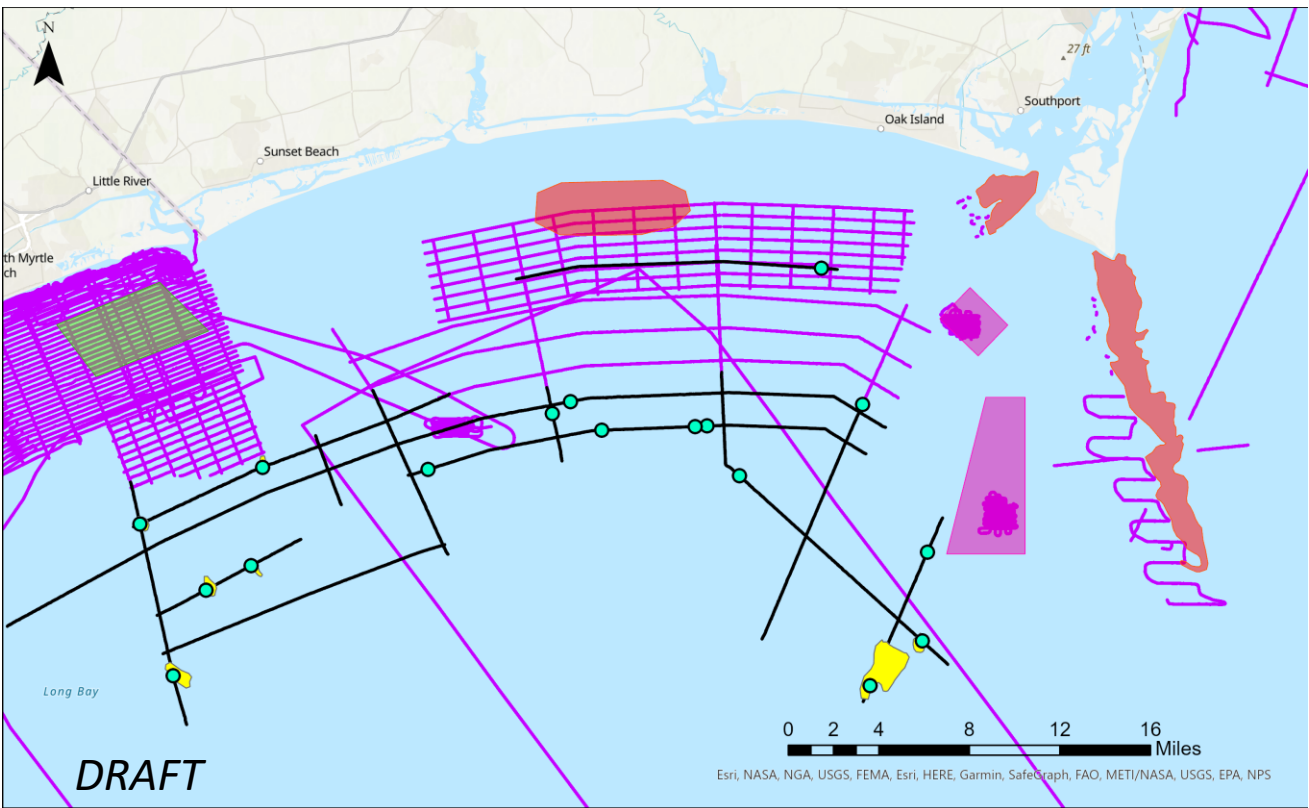
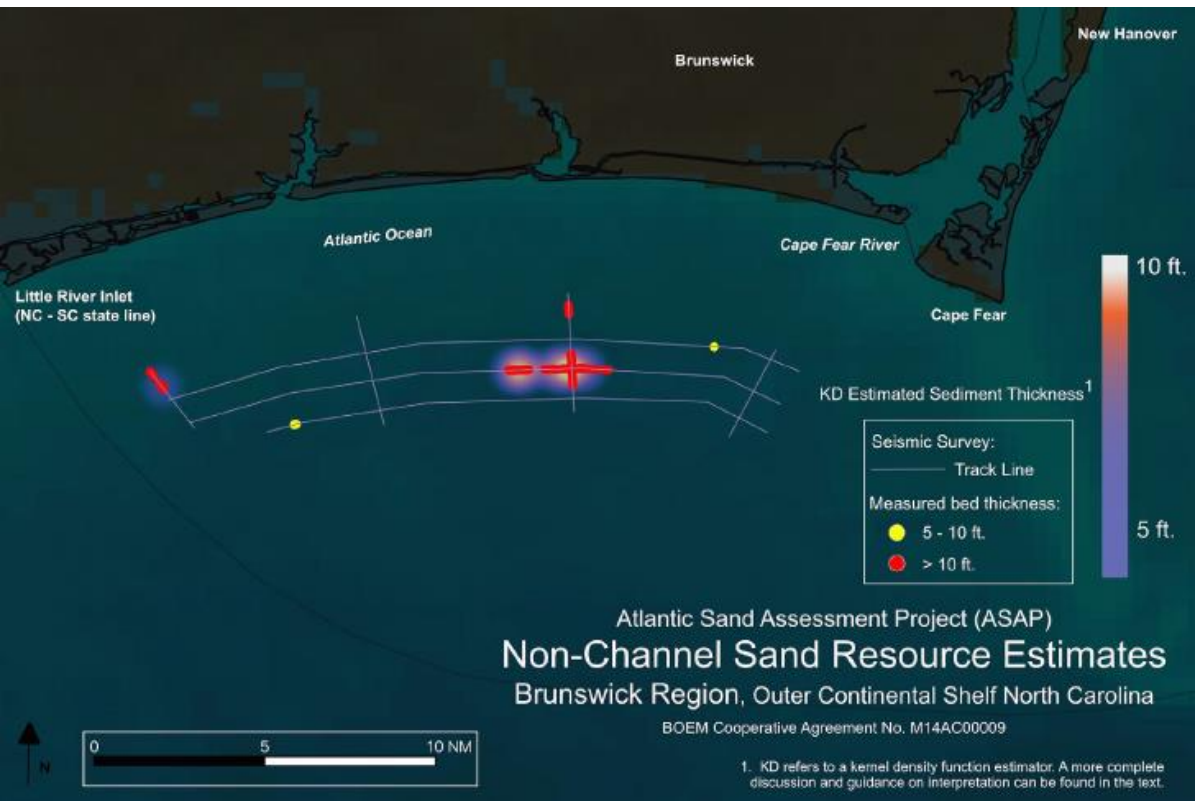
StudyAreaTracklines

Survey Tracklines

Core Samples



# Brunswick/North Myrtle Region



TO1 Sand Resources

Evaluation Stage

Potential

Proven

Unusable

Unverified

Sand Resources

Proven

Potential

Unverified

Unusable

Paleo Channel System Polygon

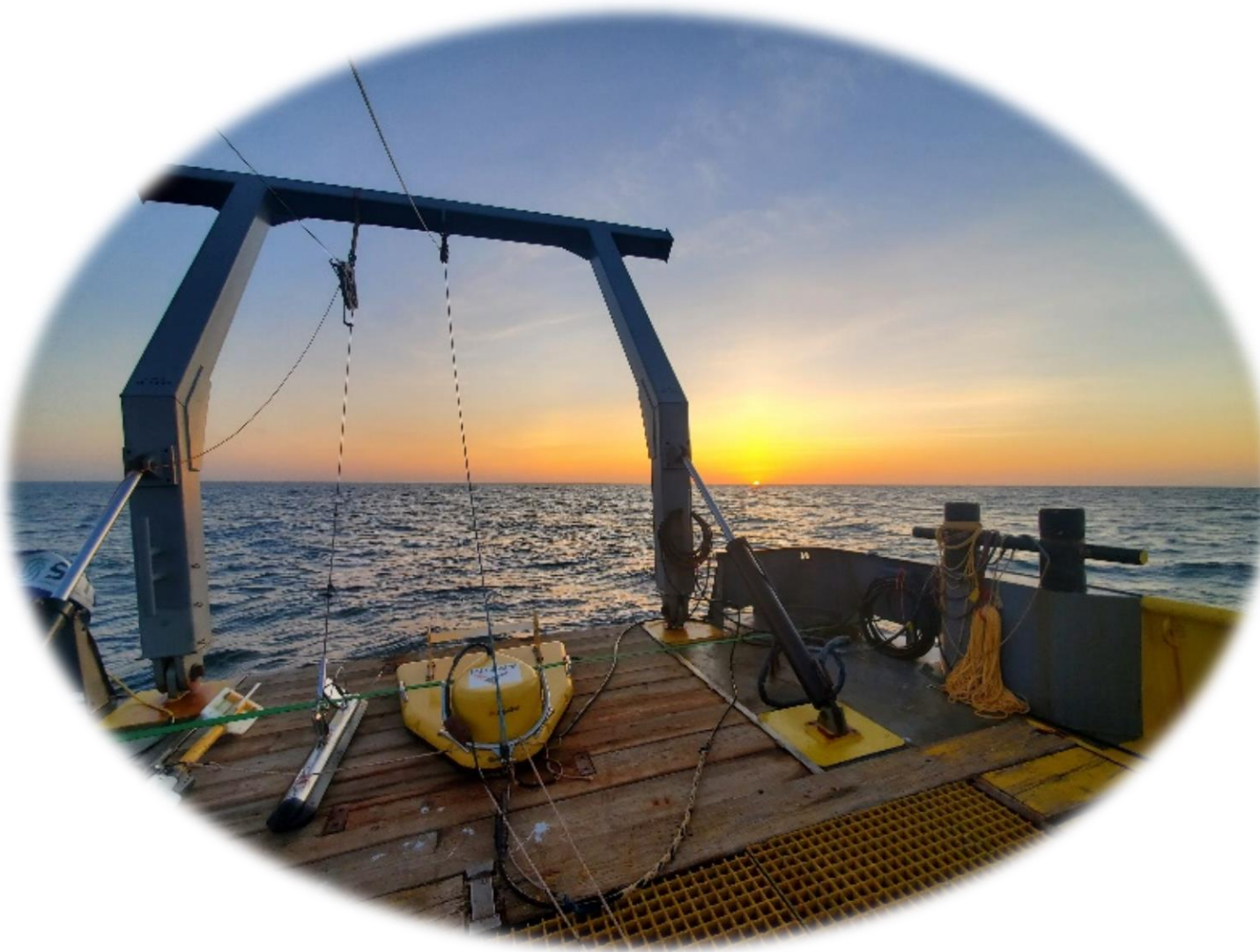
StudyAreaTracklines

Survey Tracklines

Core Samples



# Resource Evaluation – One Piece of the RSM Puzzle



(Image courtesy of APTIM)



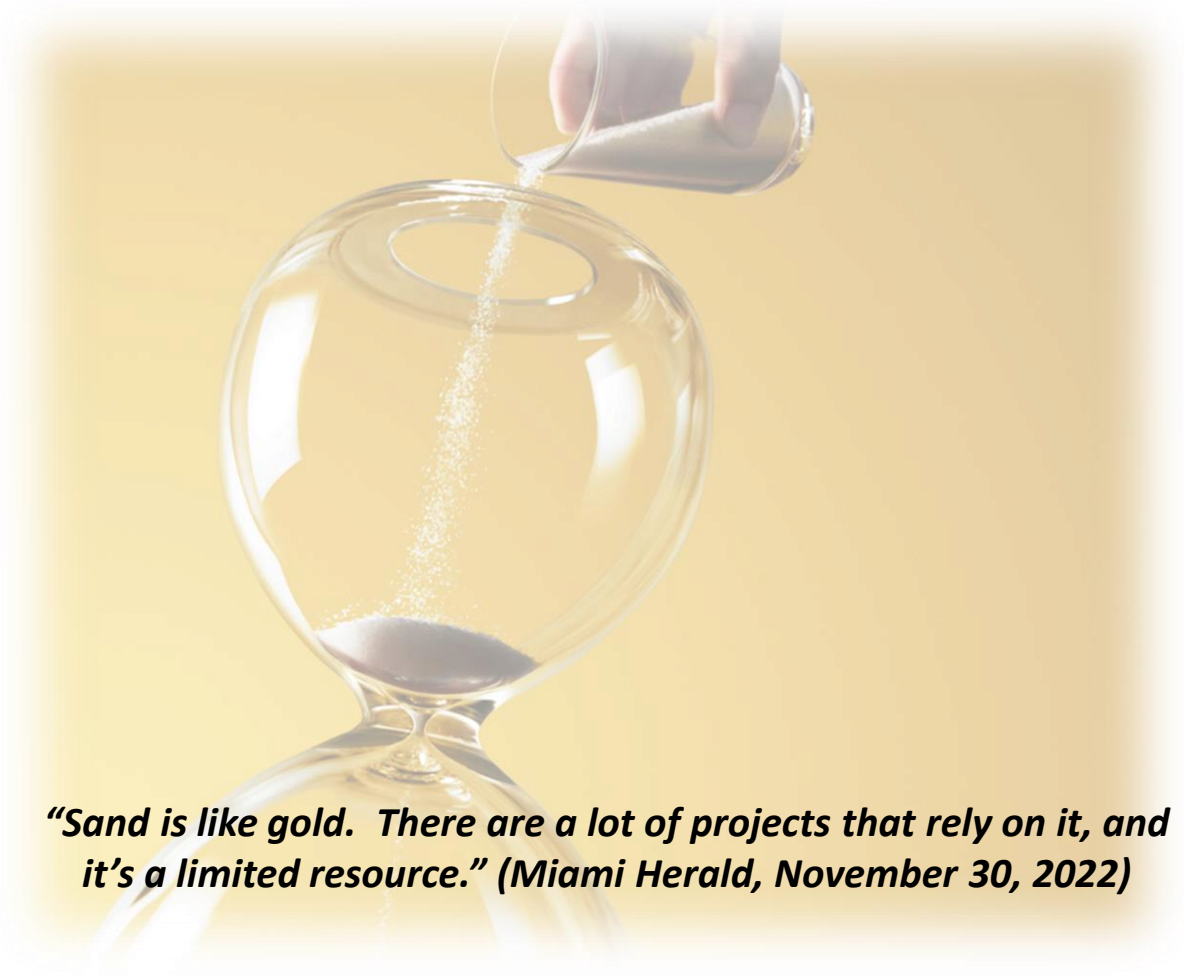
# BOTTOM LINE: Sediment is a Finite Resource that Must be Strategically Identified, Accessed, and Managed





# Opportunity Statement

- Proactively identify and manage finite sediment resources to support the nations long-term coastal resiliency needs
  - Sediment Identification
  - System Dynamics
  - Resource Optimization

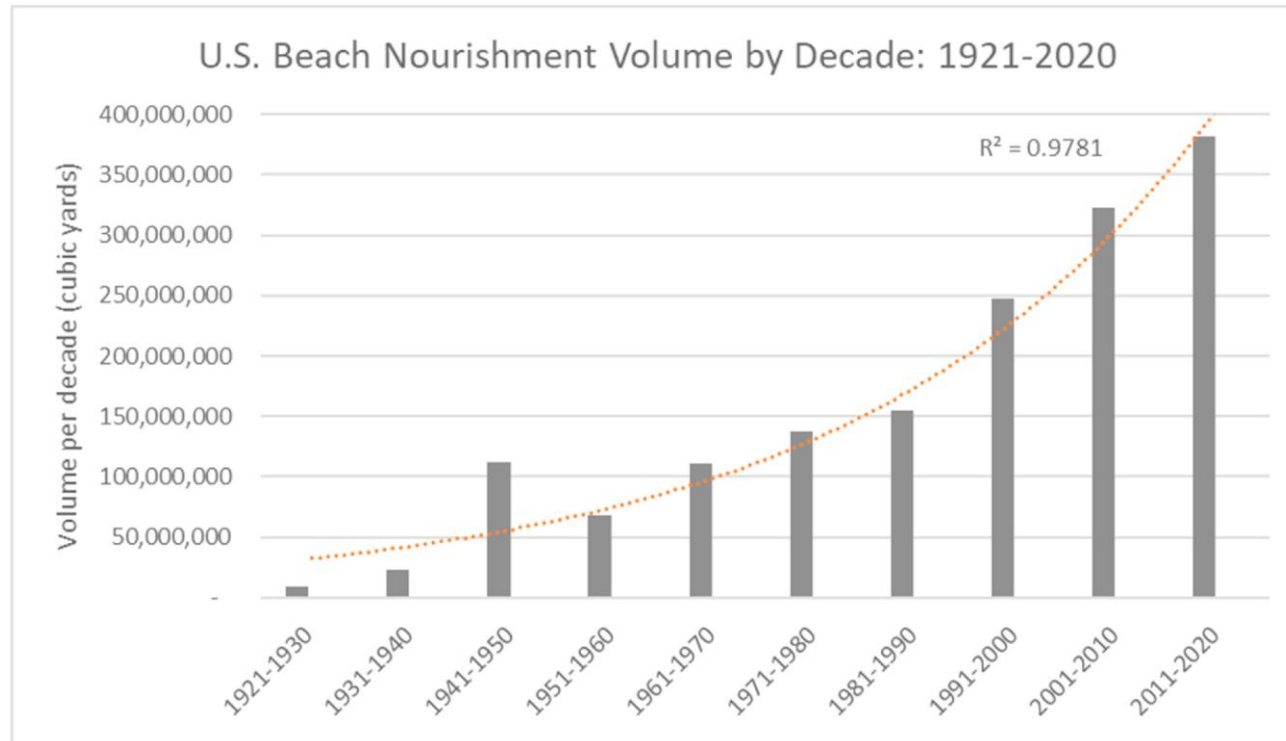


***“Sand is like gold. There are a lot of projects that rely on it, and it’s a limited resource.” (Miami Herald, November 30, 2022)***



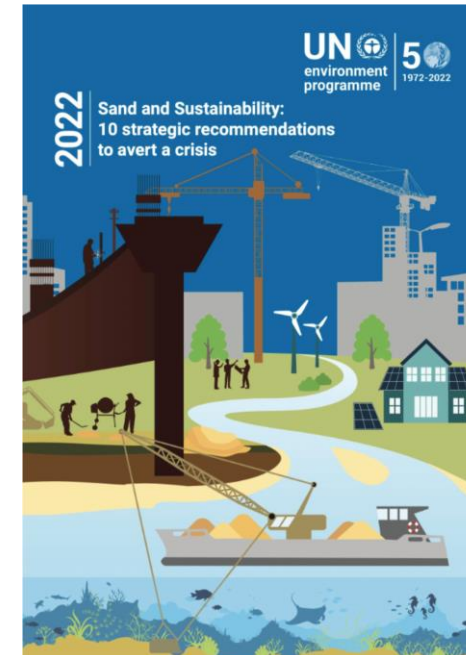
# WHY: Growing Demand and Competing Uses for a Finite Resource

## “A Century of U.S. Beach Nourishment”



(Elko et al., 2021)

- Recognize sand as a strategic resource that delivers critical ecosystem services
- Map, monitor, and report sand resources for transparent, science-based and data-driven decision-making



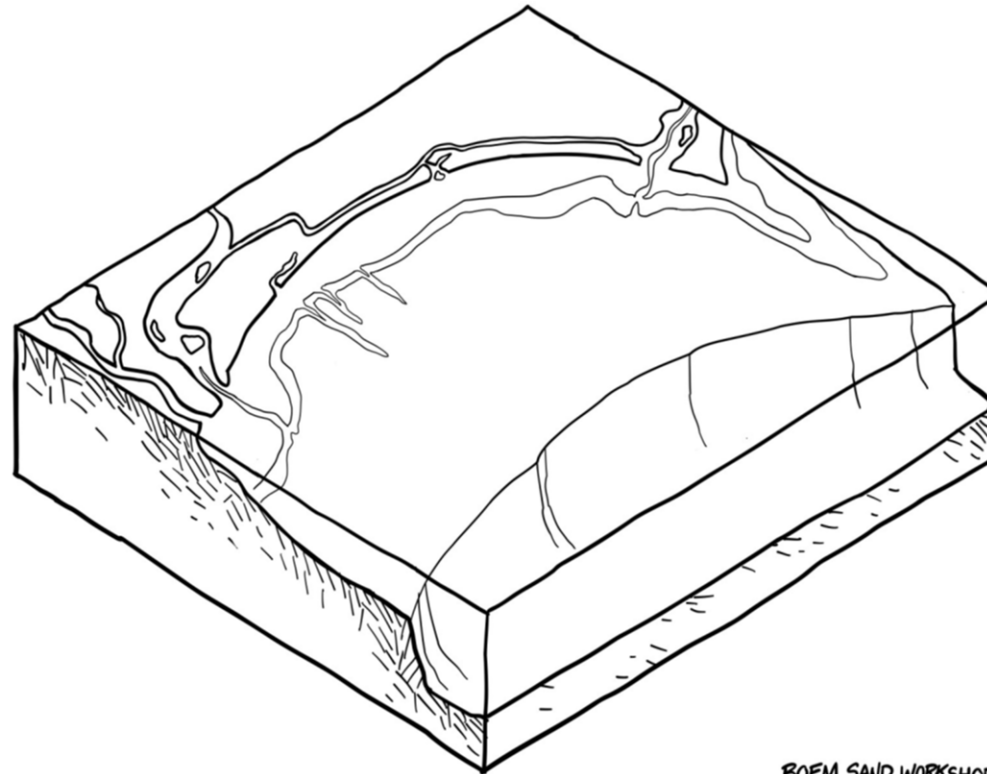
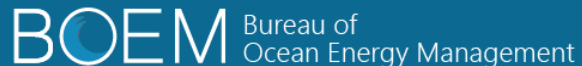
*“The ongoing failure to safeguard sand as a strategic resource is a significant multi-generational crisis that threatens the entire global response to climate change (UNEP, 2022)”*





# WHAT: Create a Vision and Develop an Action Plan

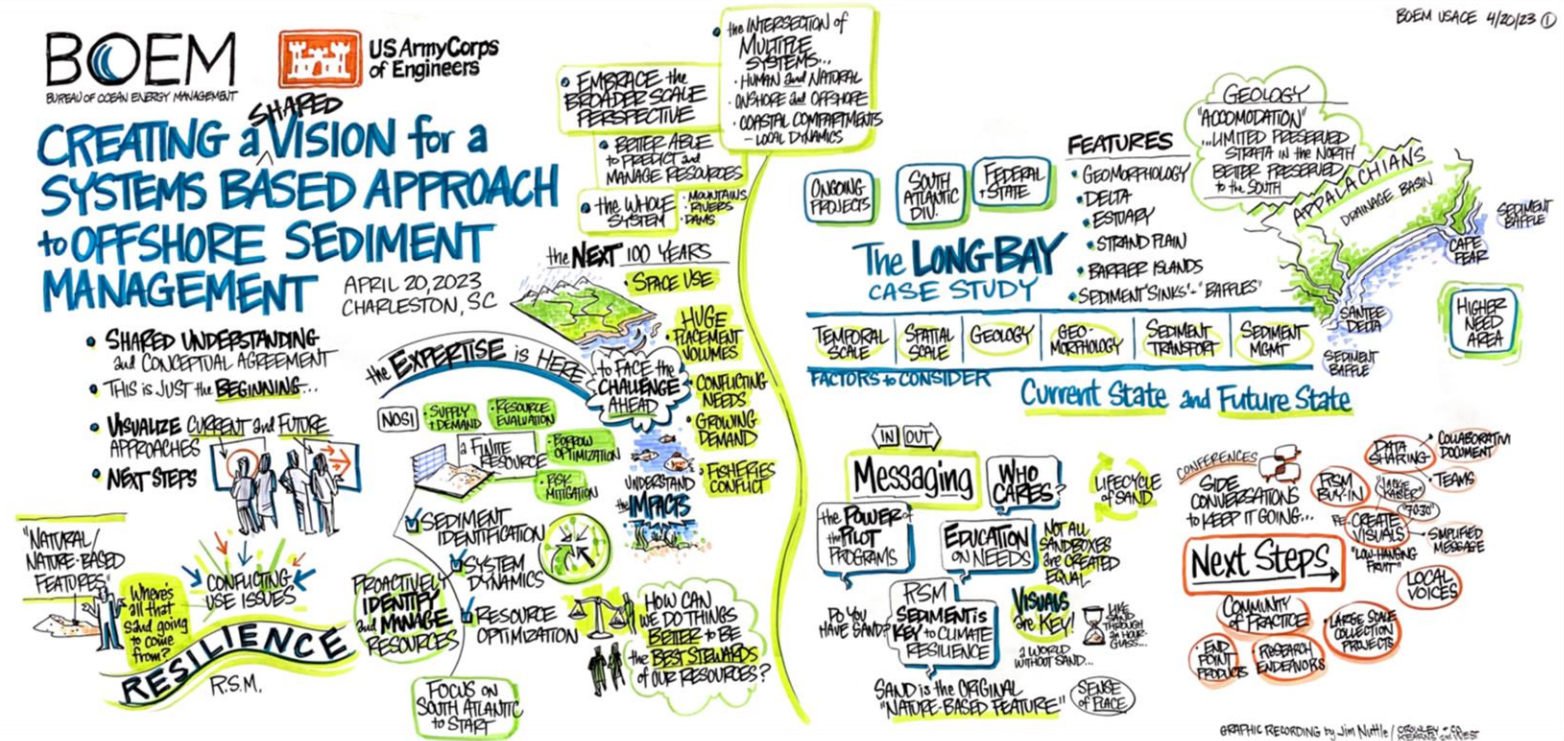
Define what a collaborative, strategic, and systems-based approach to offshore sediment management looks like and how to get there



BOEM SAND WORKSHOP



# HOW: Facilitated Discussion using Collaborative Design Techniques



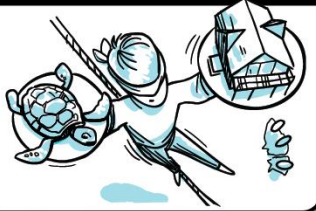
- Workshop Objectives
  - Establish a shared understanding
  - Reach consensus on a working definition
  - Visualize complex concepts
  - Explore tangible next steps





# Traditional Sediment Management

## Environmental



## Resource Identification



## Data

## Resource Use



## Engineering



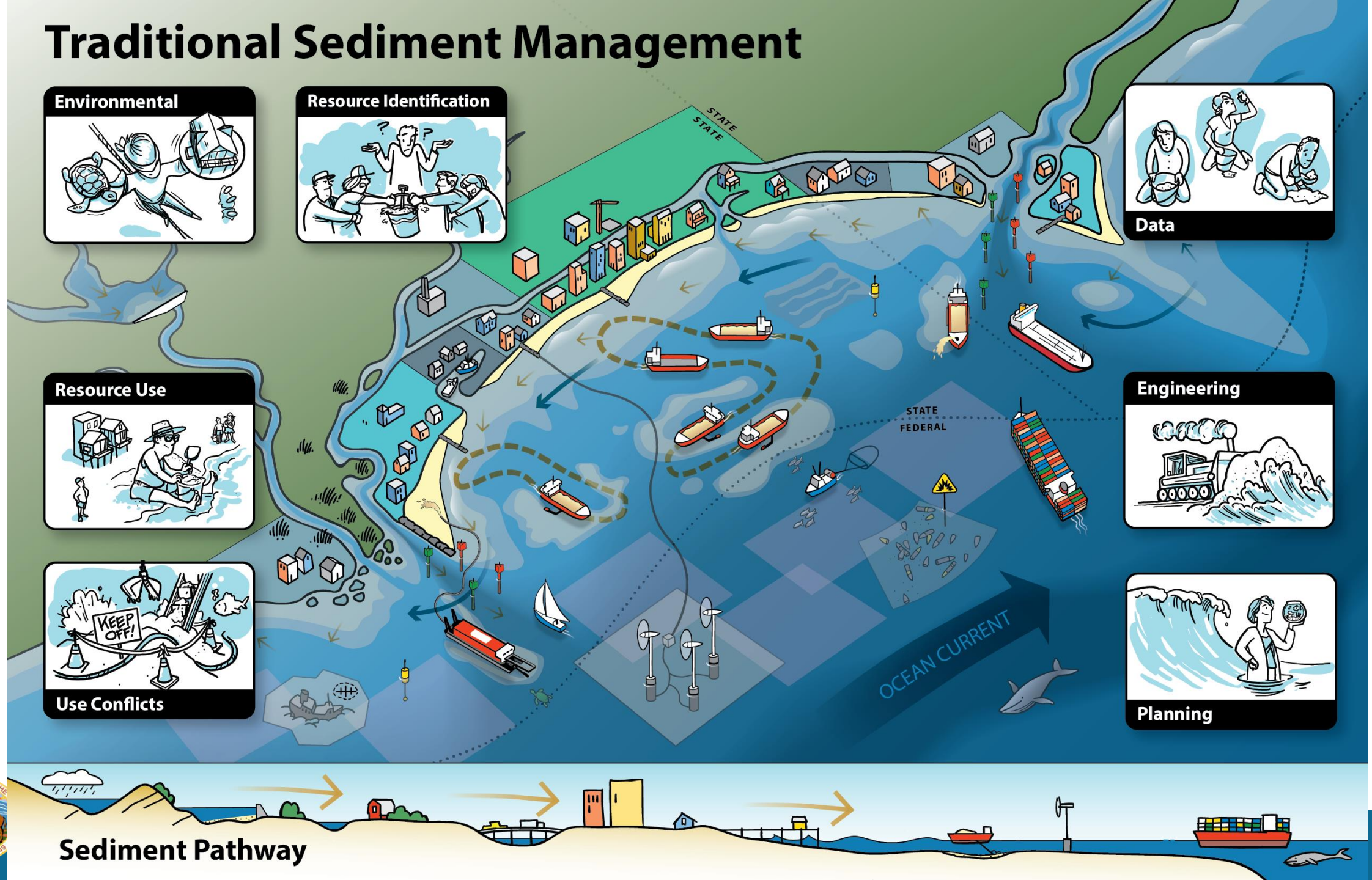
## Use Conflicts



## Planning



## Sediment Pathway





# Ideal Sediment Management

## Environmental



## Resource Identification



## Data



## Resource Use



## Use Conflicts



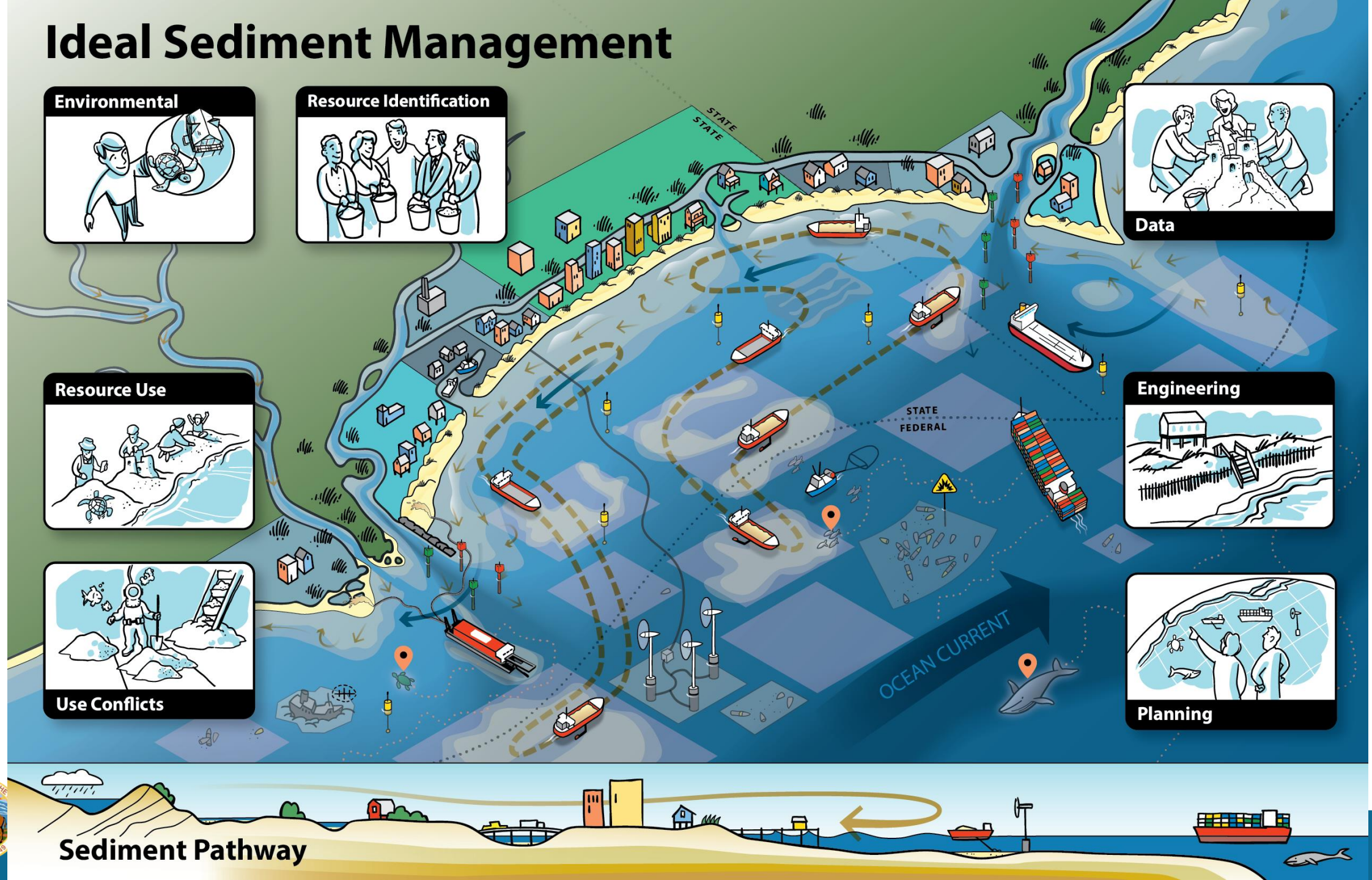
## Engineering



## Planning



## Sediment Pathway





# WHEN: Draft Timeline

**Kickoff Visioning  
Workshop (Phase I)**  
Charleston, SC  
April 20, 2023

**Workshop Products  
(Notes/ Graphics)**  
Summer/Fall 2023

**Workshop Participants  
Internally Shop Vision**  
Fall 2023

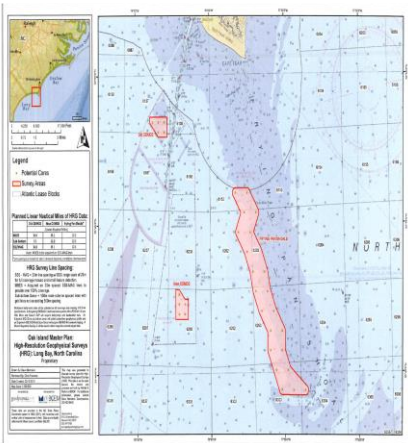
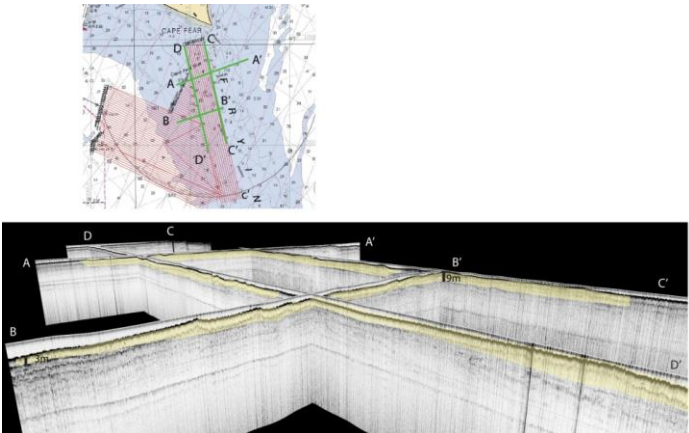
**Stakeholder Engagement  
ASBPA / NCBIWA / ?**  
Fall/Winter 2023

**Informal Team Coordination  
(Scoping Next Steps)**  
Winter 2023

**Visioning Workshop (Phase II) 2024**

**Federal, State, &  
Local Briefings  
TBD**  
2024-2025

**2025 and  
Beyond??**



# References

- Corbett et al., 2019. North Carolina Outer Continental Shelf Sand Resource Investigation: Final ASAP Technical Report, BOEM Cooperative Agreement No. M14AC00009, [https://www.boem.gov/sites/default/files/mm-research/2021-10/CSI2019\\_M14AC00009FinalASAPTechReport\\_Revised\\_MAY2019.pdf](https://www.boem.gov/sites/default/files/mm-research/2021-10/CSI2019_M14AC00009FinalASAPTechReport_Revised_MAY2019.pdf)
- Elko et al., 2021. A century of U.S. beach nourishment, Ocean & Coastal Management, Volume 199, 2021, <https://doi.org/10.1016/j.ocecoaman.2020.105406>
- South Atlantic Division Sand Availability and Needs Determination (SAD SAND) Summary Report, 2020. W912BU-15-D-0006, [https://www.sad.usace.army.mil/Portals/60/siteimages/SACS/508%20SAND\\_FINAL\\_Report\\_15Sep\\_CC.pdf?ver=0m6wxMybXbFmX\\_UJdid1kg%3d%3d](https://www.sad.usace.army.mil/Portals/60/siteimages/SACS/508%20SAND_FINAL_Report_15Sep_CC.pdf?ver=0m6wxMybXbFmX_UJdid1kg%3d%3d)







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