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LOWER MISSISSIPPI RIVER SMARTPORT

Storms, Flooding & Sea Level Defense Conference

November 9, 2022


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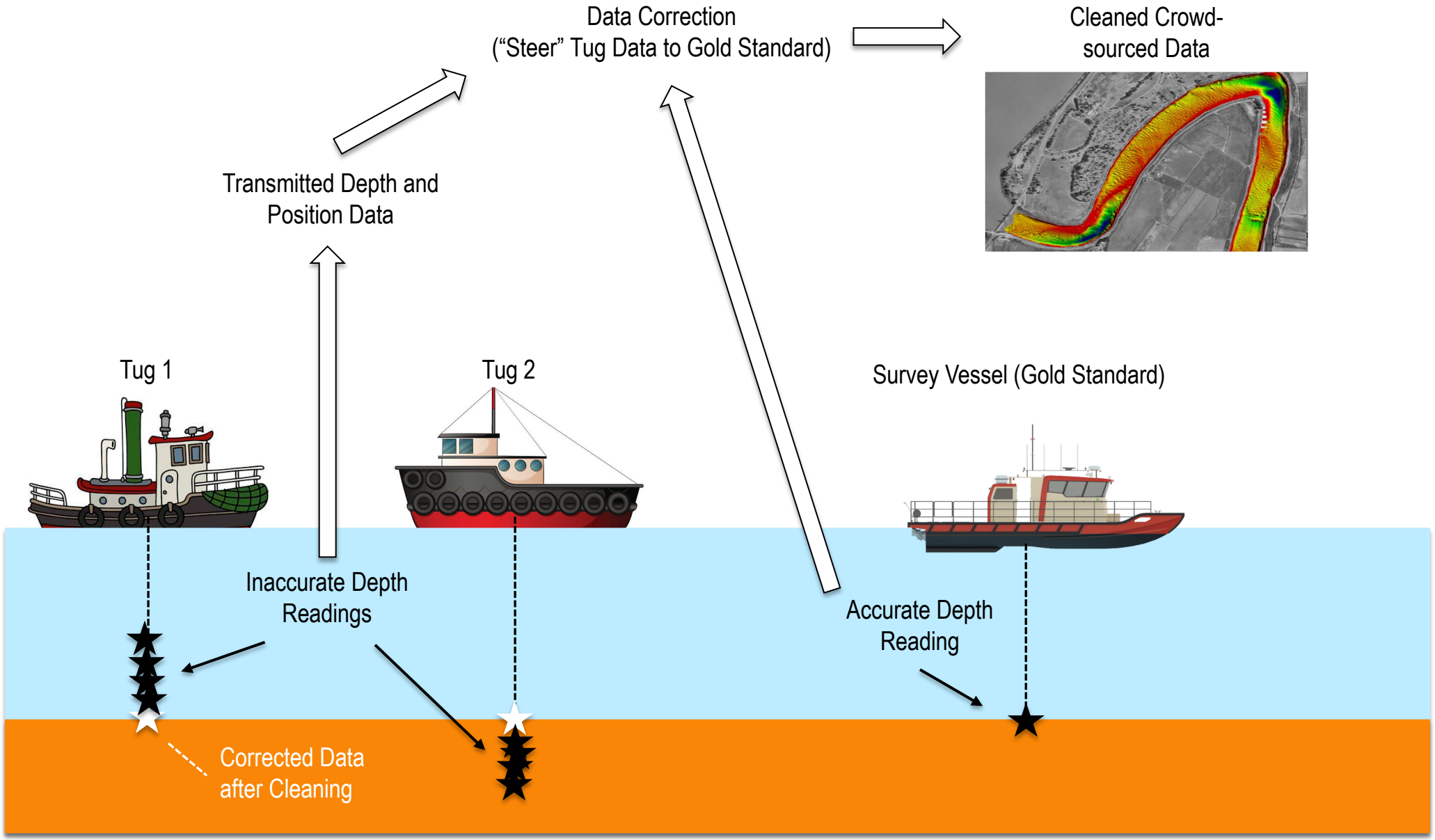
ISRAEL → PORT NOLA→ CRESCENT → PROOF OF CONCEPT

THE LOWER MISSISSIPPI RIVER SMARTPORT & RESILIENCE CENTER

1. Shoaling Forecast Tool
2. Integrated weather, river and road traffic dashboards
3. Customized and Dynamic Resilience Dashboards
4. Integrated Application: the physical and virtual SmartPort

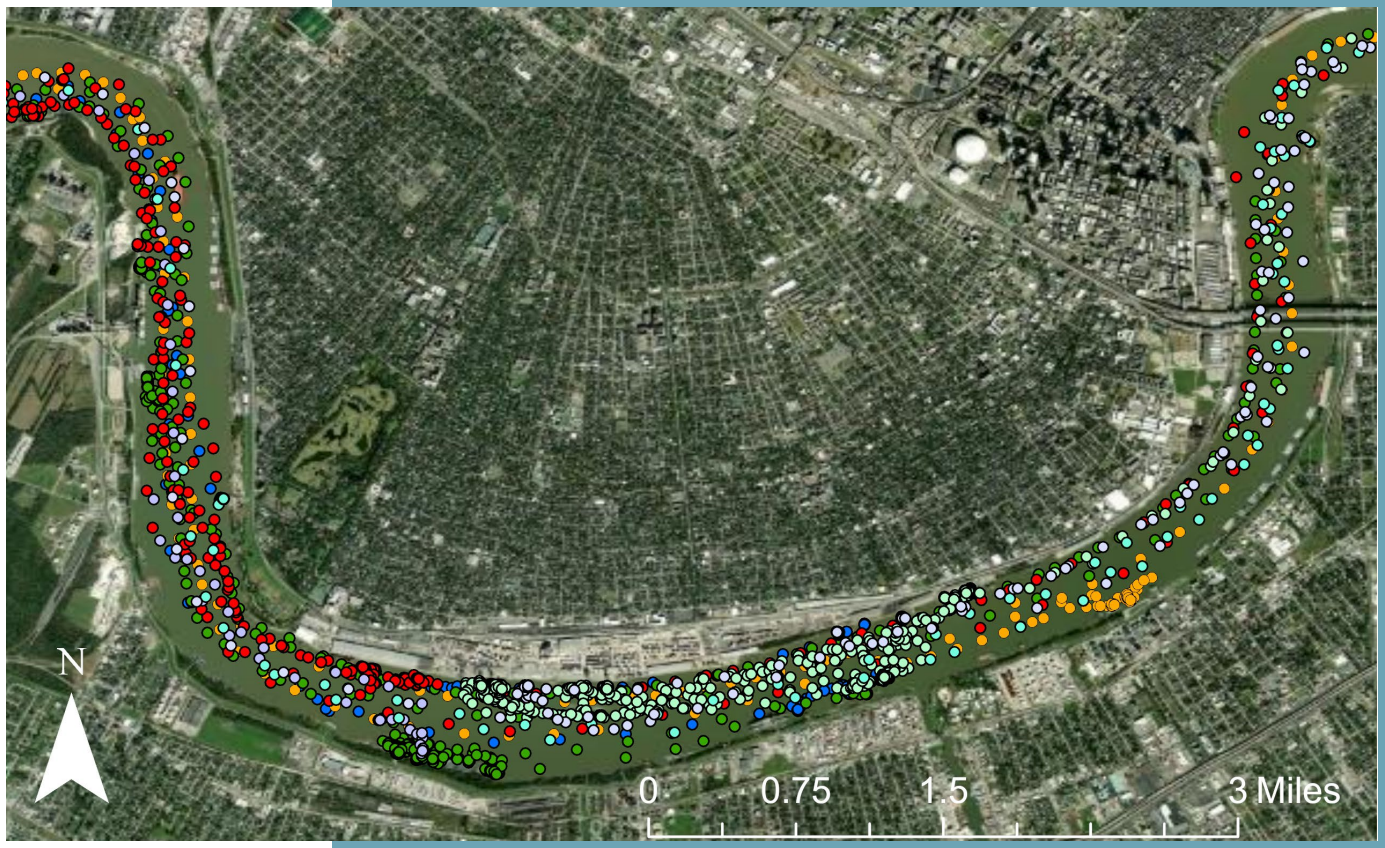
CONCEPT OF TUG-SURVEY CORRECTIONS



COMPANIES ENGAGED IN CROWD-SOURCE EFFORTS

CURRENT STATUS
SHOALING FORECAST TOOL

- Improvements to application during Proof of Concept
- Identifying crowd-source fleet
  - Port engagement
  - AIS data
- Data gathering
- Data storage
- Data analysis/correction

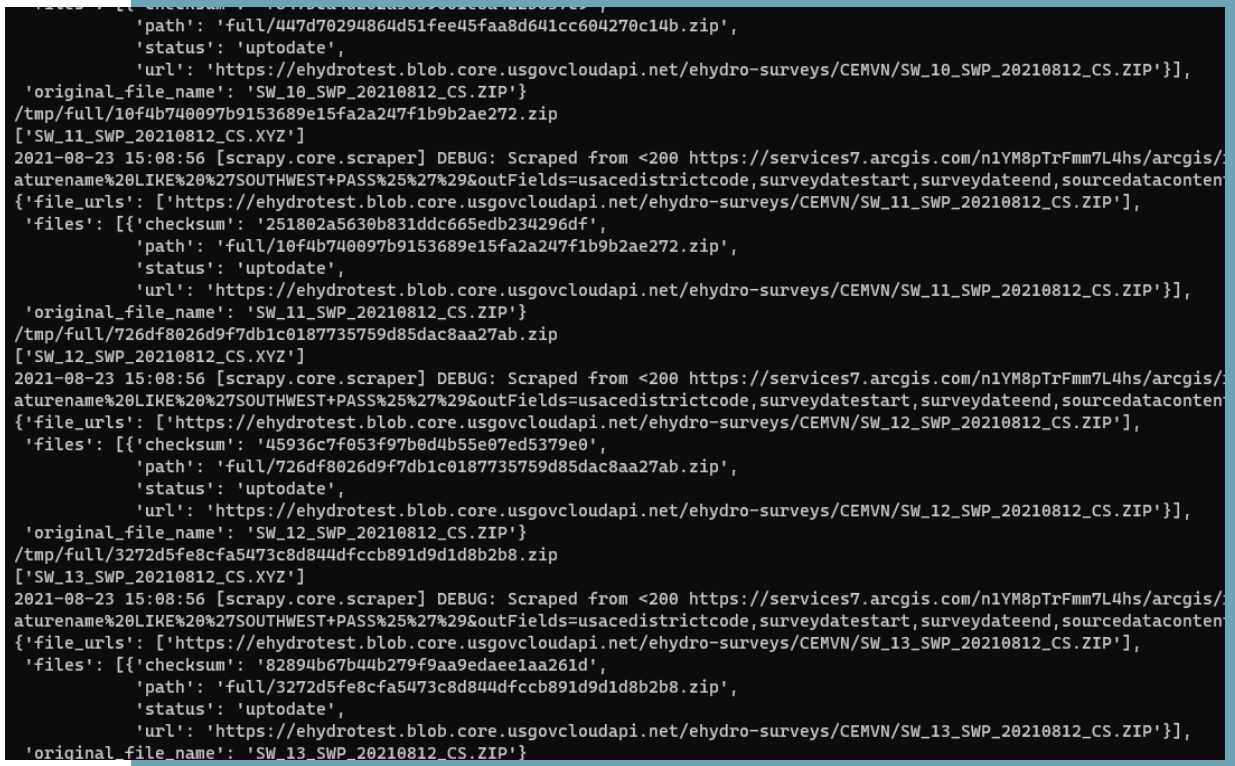


AIS data from Jan. 3, 2020.

CURRENT STATUS
SHOALING FORECAST TOOL

Data Gathering

- Tug Data
- River Gage Data
- USACE Revetment Surveys
- Air Gap Measurements
- USACE Channel Surveys
- Local Port Surveys

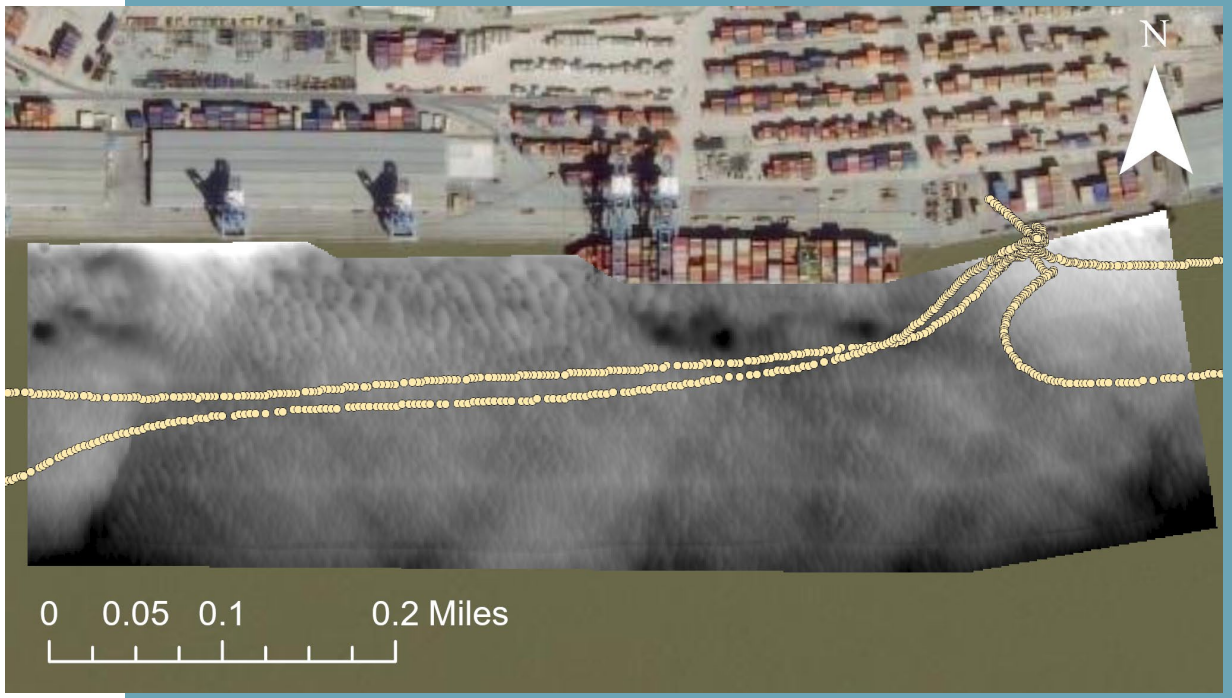


Example of automated data scraping.

CURRENT STATUS
SHOALING FORECAST TOOL

Data Analysis/ Correction

- Tug Elevation Correction using Survey-Grade “Gold Standard” Survey
- Tug vs Tug corrections



Tug elevation correction example. Crescent Towing vessel track overlap with Port of New Orleans multibeam survey. Data from Aug. 10, 2021.

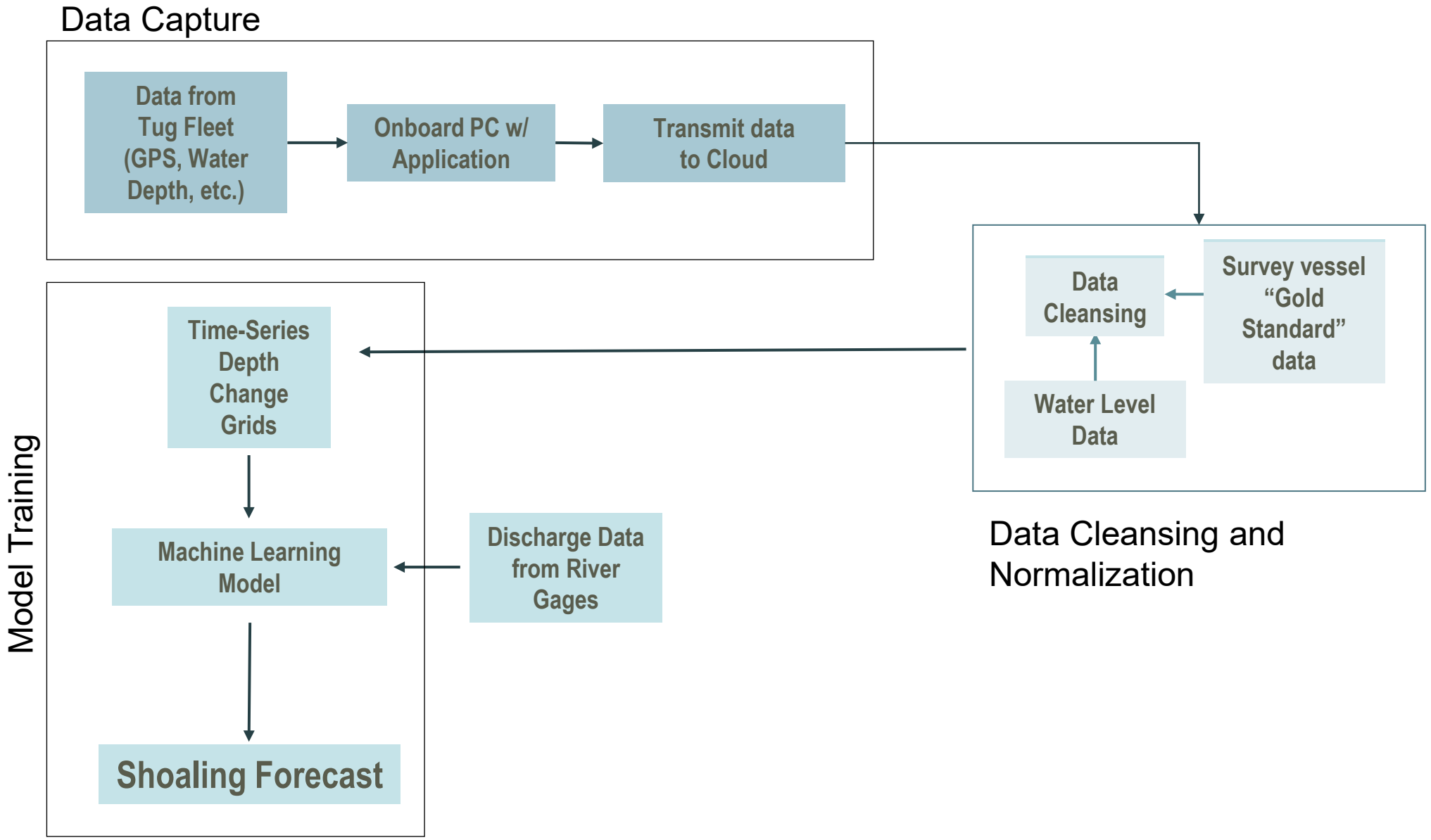
CURRENT STATUS
SHOALING FORECAST TOOL

USACE Coordination

- Coordinating with USACE MVN, MVK, MVM, and MVS to post high-density data to e-Hydro.
  - Typically, posted data has point spacing of 50 ft; high-density data is at 2ft…
- Increased data density provides more robust tug-survey corrections

USACE high-density data from Southwest Pass (Sheet 4) on 11/10/21.

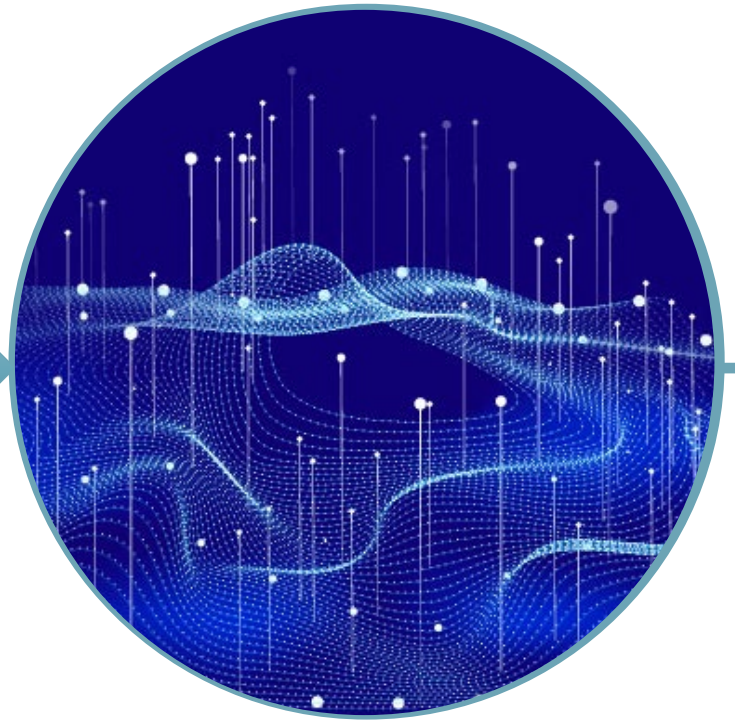
FORECAST TOOL OVERALL WORKFLOW



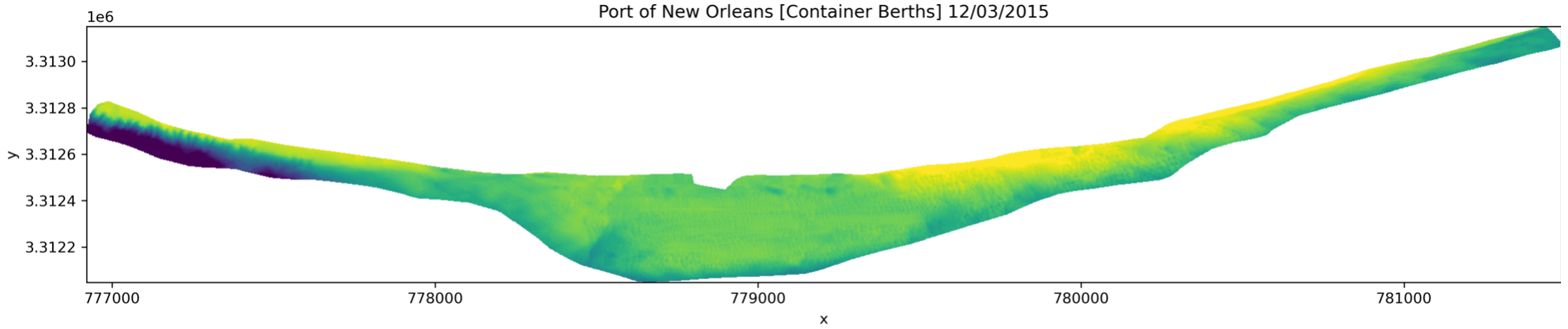
GOAL

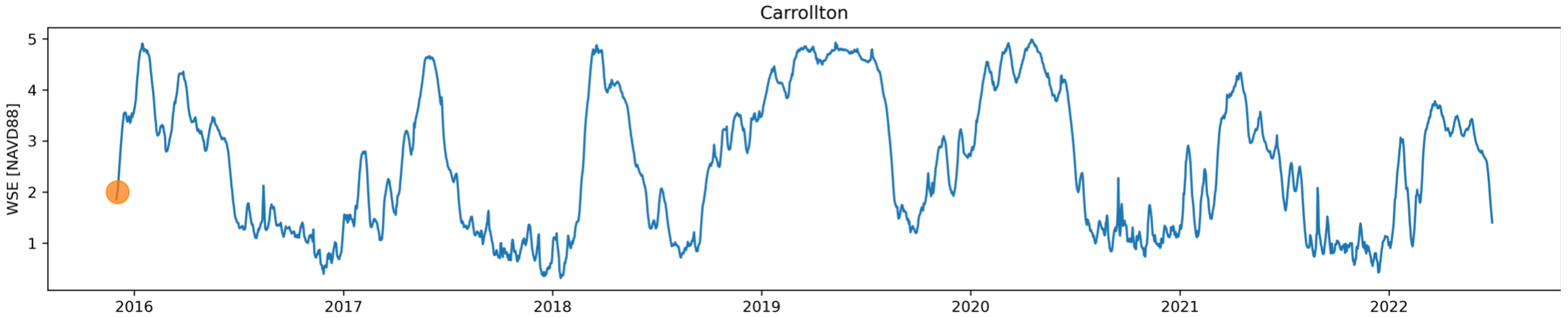
100 Tugs

1 TB data/year



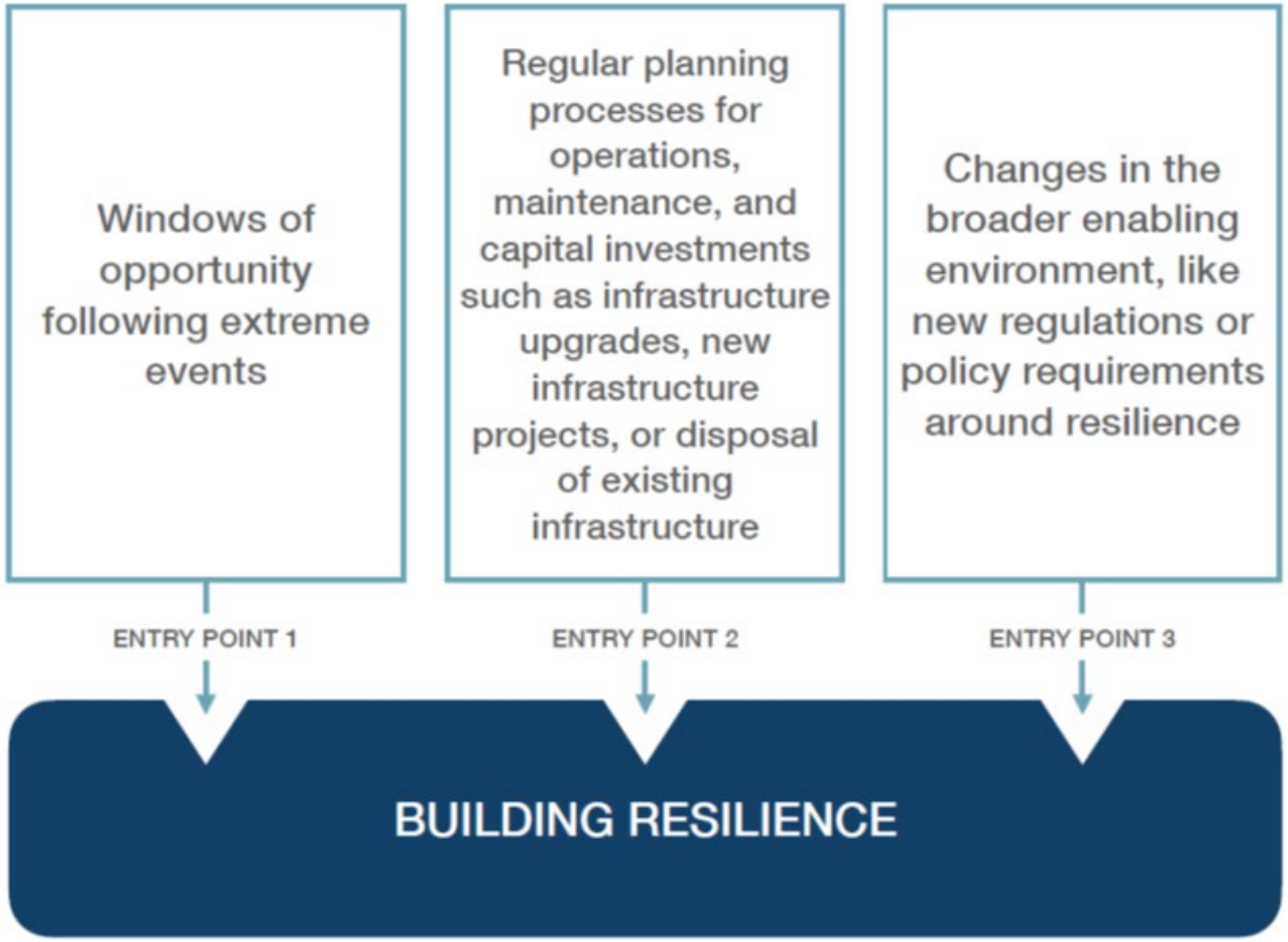
RIVERBED EVOLUTION 2016-2022





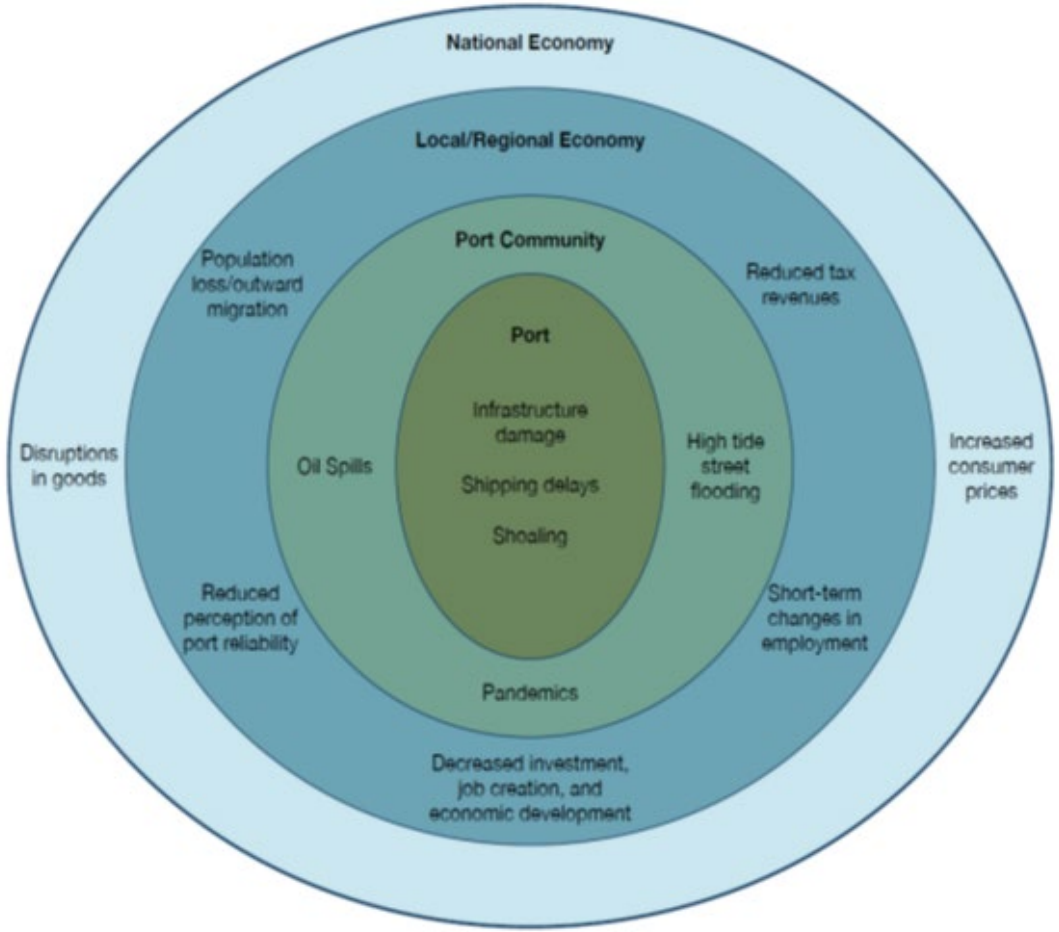
PORT RESILIENCE

RESILIENCE PLANS



RESILIENCE PLANS

- Step 1 – Work with ports to identify risks, hazards, resilience challenges, and the port's goals
- Step 2 – Coordinate with the port to identify and develop strategies to improve resilience
- Step 3 – Develop performance measures to support the port's identified resilience objectives



RESILIENCE PLANS

- Step 4 – Translate strategies into the dashboard to evaluate progress on reaching goals
- Port will be able to update progress towards individual goals

Risk Rating Matrix					
Consequence Rating	Likelihood Rating				
	Rare	Possible	Probable	Expected	Nearly Certain
Minor	Low	Low	Low	Medium	Medium
Moderate	Low	Low	Medium	Medium	High
Severe	Low	Medium	High	High	High

QUESTIONS

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