INLAND WATERWAYS USERS BOARD

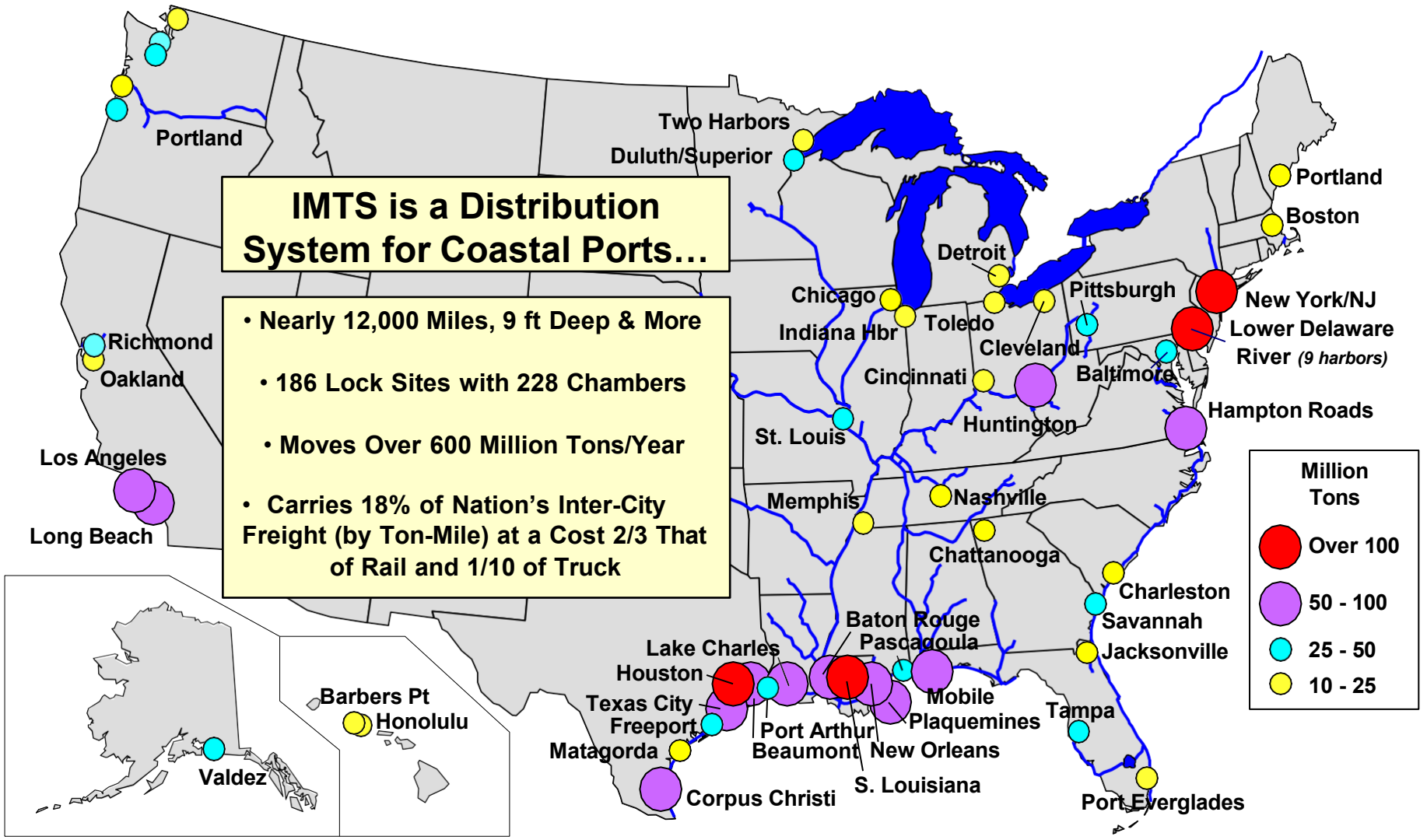
Meeting No. 101

Patrick Chambers
Chief, Operations & Regulatory
Mississippi Valley Division

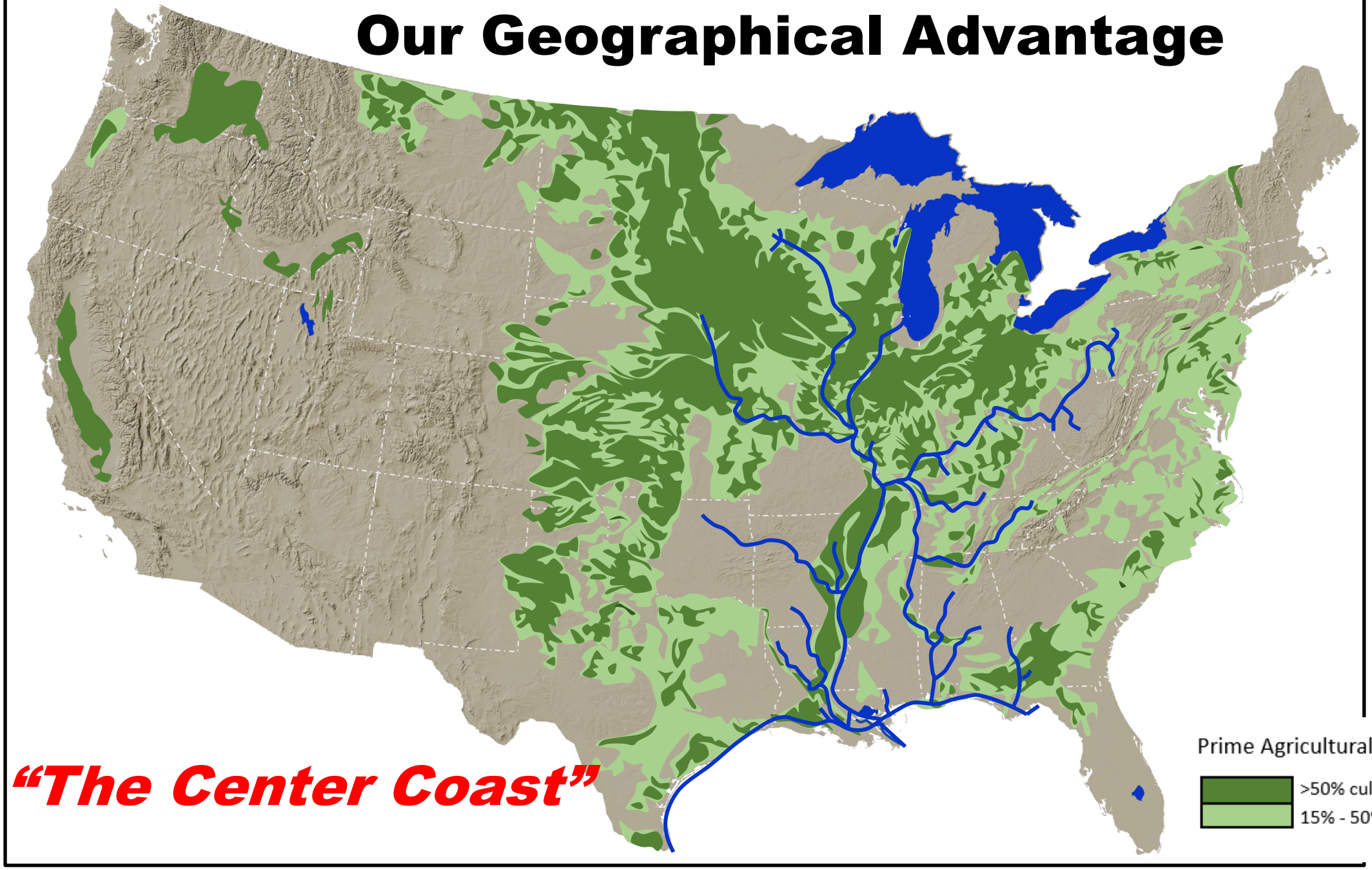
October 19, 2023

US Army Corps of Engineers®

A Maritime Nation



Our Geographical Advantage



"The Center Coast"

MISSISSIPPI RIVER LOW WATER – Water Management

U.S. ARMY | US Army Corps of Engineers

Historic Low Stages

Forecast Location	2022 Low Stage	2012 Low Stage	1988 Low Stage	Post 1965 Record Low *New Record Low
St. Louis, MO	-3.7 (25-Dec)	-4.4	-3.2	-5.2 (1989)
Cairo, IL	4.8 (15-Oct)	7.2	4.9	4.8 (2022) *4.5 (2023)*
Memphis, TN	-10.8 (21-Oct)	-9.8	-10.7	-10.8 (2022) *-11.5 (2023)*
Vicksburg, MS	-0.4 (25-Oct)	-1.1	-1.6	-1.6 (1988)
Baton Rouge, LA	4.2 (21-Oct)	3.4	1.8	1.8 (1988)

MS River @ St. Louis

	Current	28 Day Forecast
Flow	81,000	104,000
Stage	-1.9'	1.0'

MVS

Ohio River @ Cairo

	Current	28 Day Forecast
Flow	135,000	130,000
Stage	5.8'	5.0'

Cairo

MS River @ Memphis

	Current	28 Day Forecast
Flow	136,000	136,000
Stage	-11.5'	-11.5'

MVM

MS River @ Vicksburg

	Current	28 Day Forecast
Flow	205,000	193,000
Stage	1.0'	0.0'

MVK

MS River @ Red River Landing

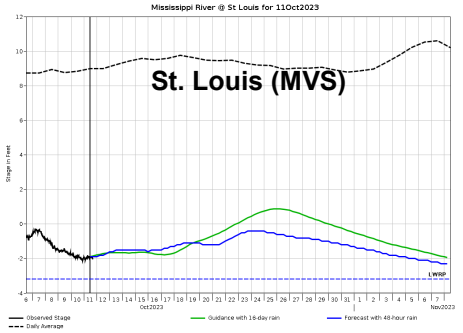
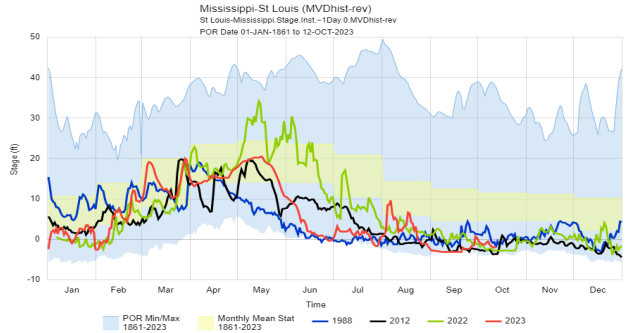
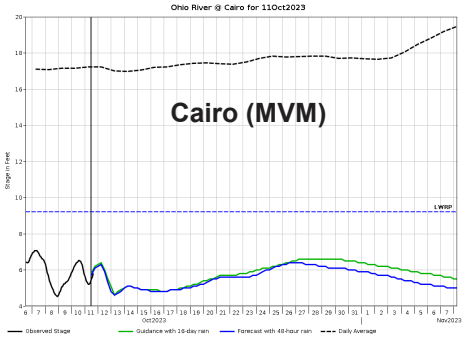
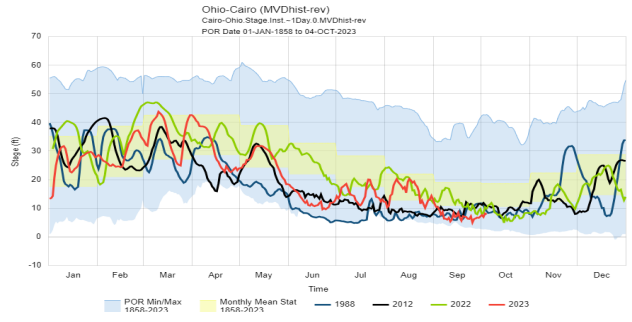
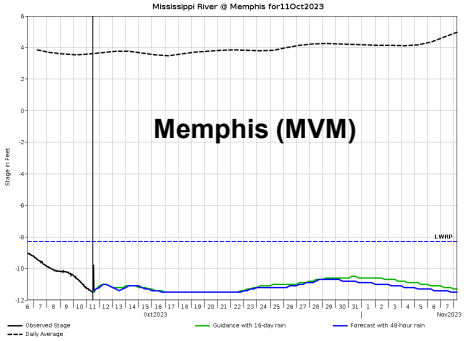
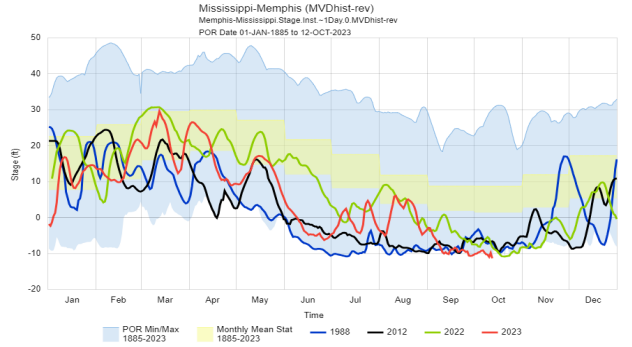
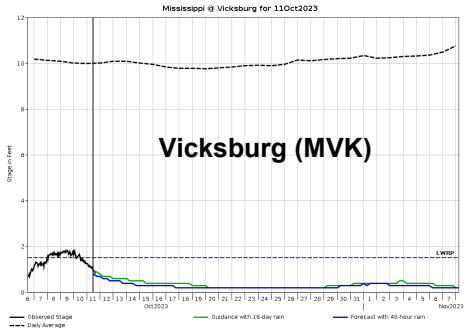
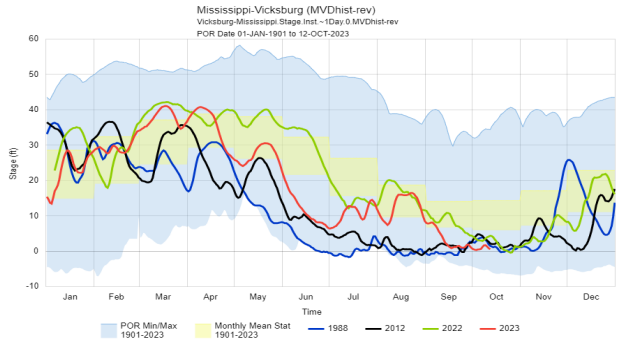
	Current	28 Day Forecast
Flow	157,000	130,000
Stage	15.5'	12.5'

MVN

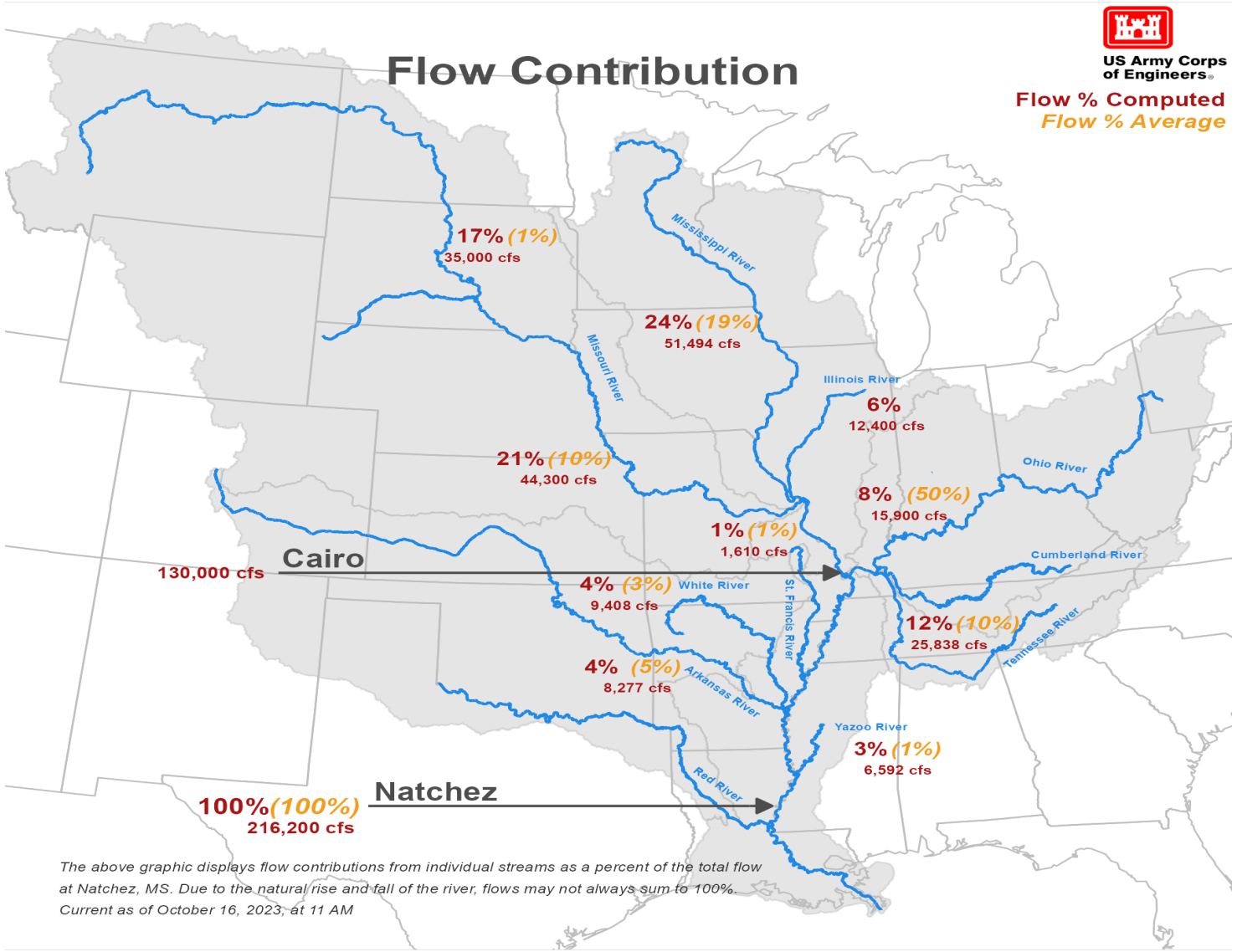
Saltwater Sill

*All forecasts based on 48 hours of future rainfall. 28-Day river forecasts are provided by National Weather Service

12 OCT 2023

28 Day Forecasted Stage	Average Annual Comparative Stage
	
	
	
	

16 OCTOBER 2023 FLOWS



The above graphic displays flow contributions from individual streams as a percent of the total flow at Natchez, MS. Due to the natural rise and fall of the river, flows may not always sum to 100%. Current as of October 16, 2023, at 11 AM

2023 LOW WATER TIMELINE

- Low water event started June 2023
- Weekly MVD Regional Shallow Draft Team meeting to discuss dredging priorities
- Bi-Weekly conference calls with Navigation Industry
- MVD, LRD, NWD, NWS, & TVA coordinate releases at Kentucky/Barkley, Olmsted, an
- Dustpan dredges released from the deep draft early and were able to work the low wa
  - JADWIN released from deep draft on June 13
  - HURLEY released from deep draft on July 5
  - POTTER started working July 15
  - WALLACE MCGEORGE released from deep draft on September 14
- Coordination with the National Economic Council began
- Saltwater sill was built at LMR 64
  - Completed on 29 July
  - Raising of the sill started on 25 September
  - Raising completed 12 October
- Record low stage at Memphis, TN on 11 October (-11.5 ft)
- 28 Nov → Initial impacts of Missouri River reductions at St. Louis, MO
- 14 Dec → Full impacts of Missouri River reductions at St. Louis, MO
- 25 Dec → Lowest stage at St. Louis, MO (-3.9 ft)

LIMITATIONS & LESSONS FROM 2022

- All dustpan dredges are older than 30 years and two are older than 90 years old
- Limitations
  - Potter – Can't work in deep draft or high flows
  - Jadwin – Underpowered for high current areas
  - Wallace McGeorge – Only contract dustpan dredge
- Well funded harbor maintenance dredging minimized light loading/harbor closure
- Lessons Learned from 2022 Low Water
  - TVA, LRD, NWS, and MVD are coordinating reservoir operations much closer
    - More frequent forecasts
    - Hydropower operations are included in forecast
    - Ohio River system is operated more efficiently
  - USCG and USACE are working together on buoys
    - eATONs are updated daily in most circumstances
    - M/V Grugett and M/V Pathfinder augment physical buoy placement
- Channel Improvement Program kept the channel efficient during low flow!!

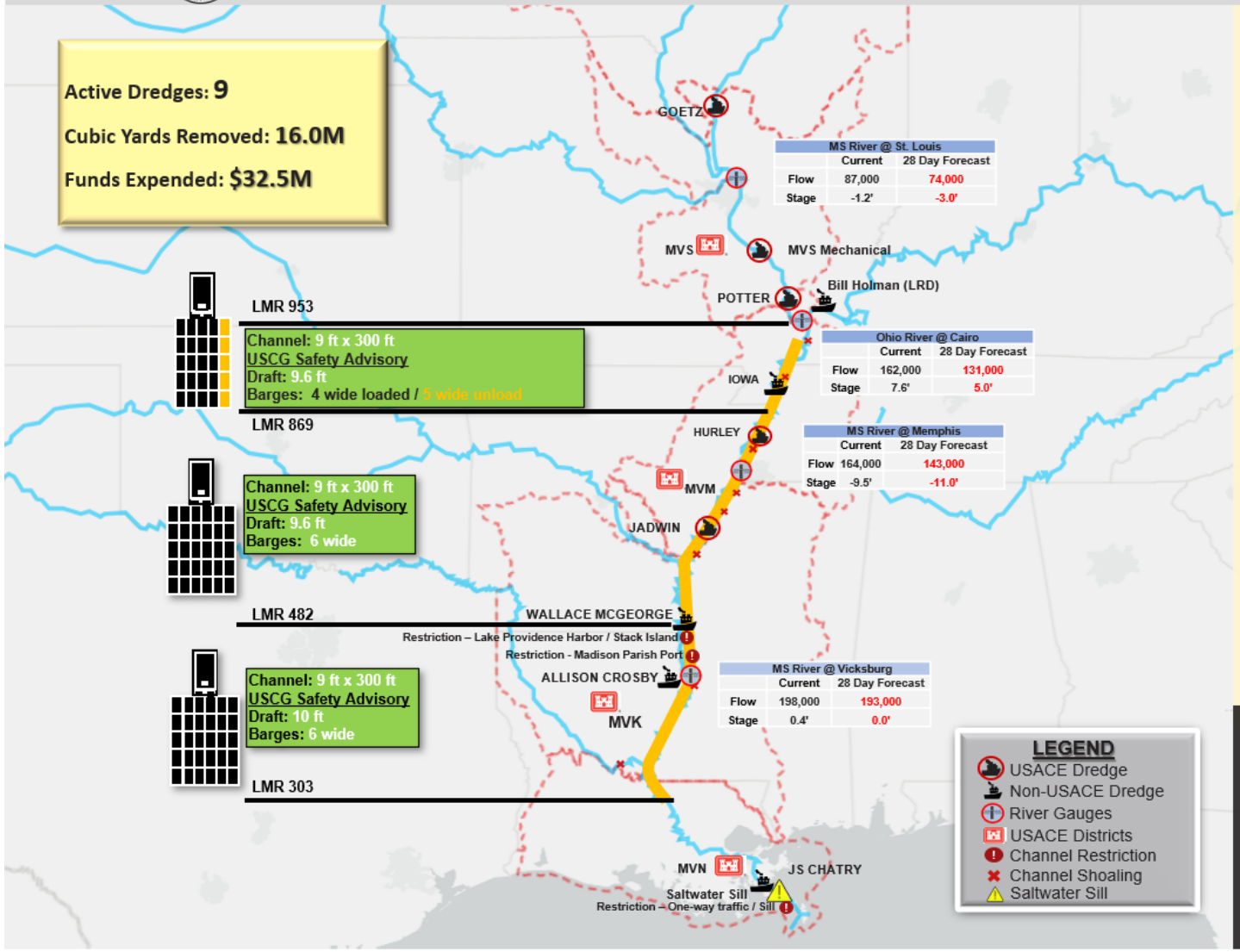
MISSISSIPPI RIVER LOW WATER – Navigation

AS OF: 5 October 2023

Active Dredges: 9

Cubic Yards Removed: 16.0M

Funds Expended: $32.5M



Timeline of Event

- **JUN 2023** – Start Multi-MSC Low Water Action Team
- **JUL 2023** – MVN constructs Saltwater Wedge
- **AUG 2023**
- **SEP 2023** – MVN raises Saltwater Wedge
- **OCT 2023** – Min. Average Low stages south of Cairo, IL
- **NOV 2023** – Missouri River flows reduce
- **DEC 2023** – Freezing / "Ice Bite" risk on Upper Miss.
- **JAN 2024** – Min. Average Low St. Louis to Cairo
- **FEB 2024**

MVD Regional Shallow Draft Team coordinates Proactive Dredging (Middle & Lower Miss. River)

Current

Dredging focus Middle Miss. River

ASSUMED: Return to average river stages

Key Points:

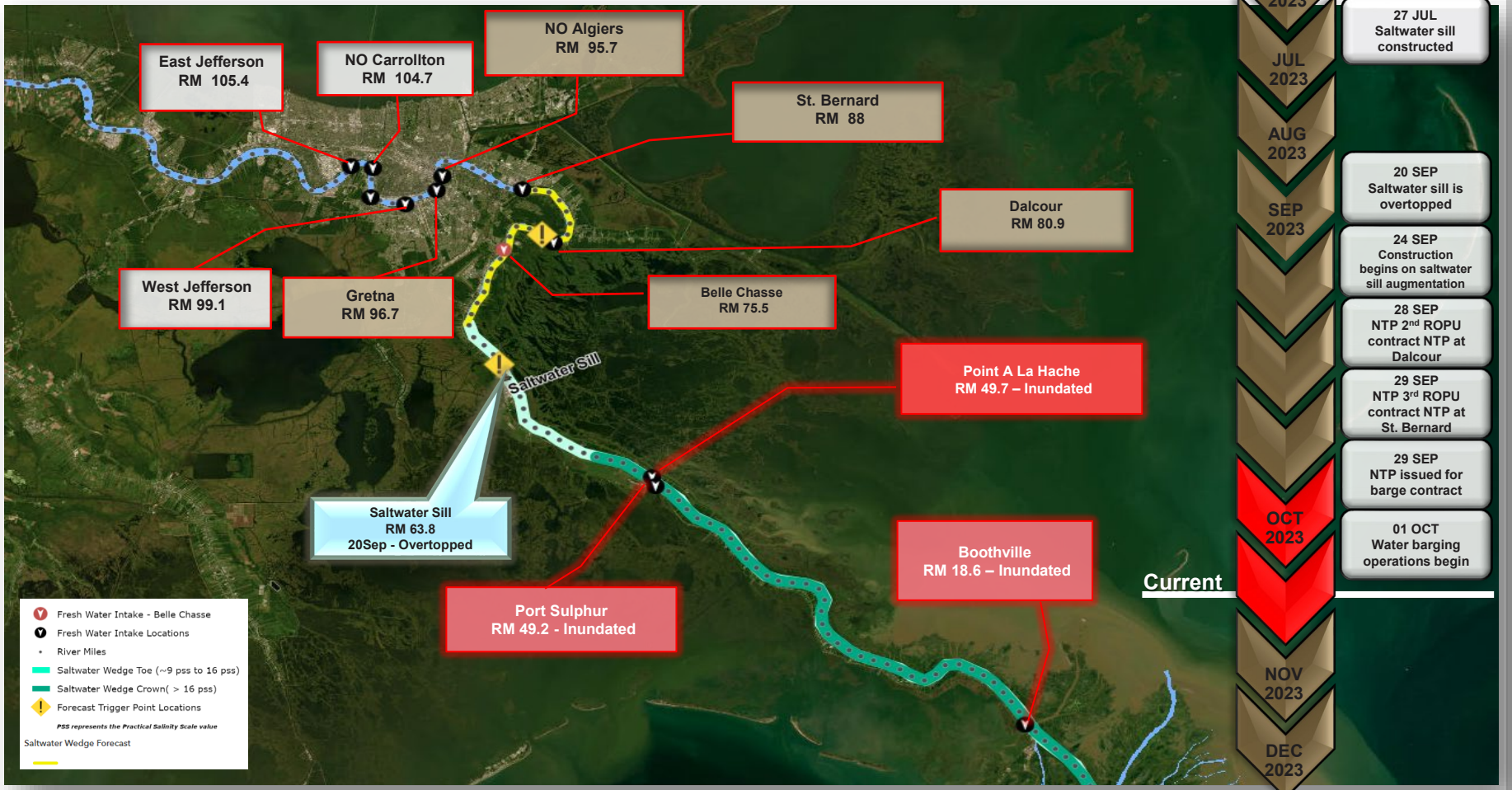
- The sill augmentation is approximately 62% complete, estimated completion o/a 12 OCT. The progression of the saltwater wedge is static since 24SEP, filling a low spot in the river. We expect the wedge will continue progressing upstream in the coming days.
- MVD has 26 dredges within in the MVD area of responsibility; 16 Dredges operating this week on the Mississippi River and 9 Dredges are working the low water emergency.

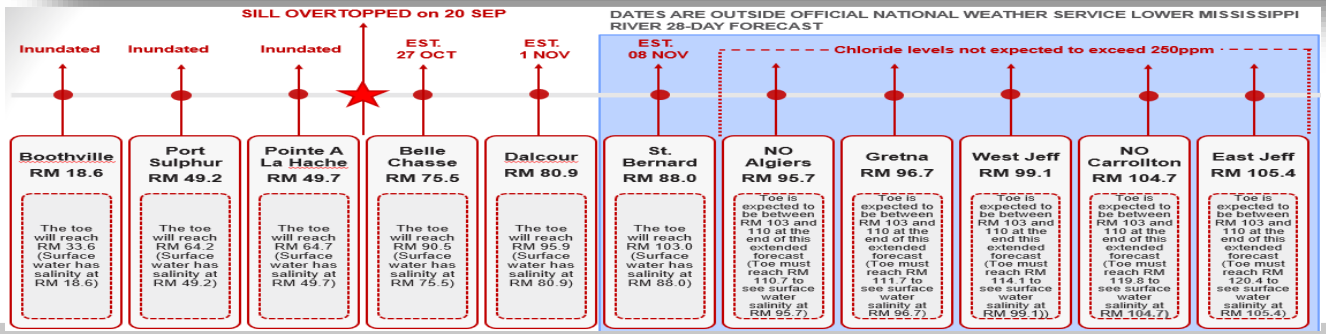
MVN SALTWATER WEDGE

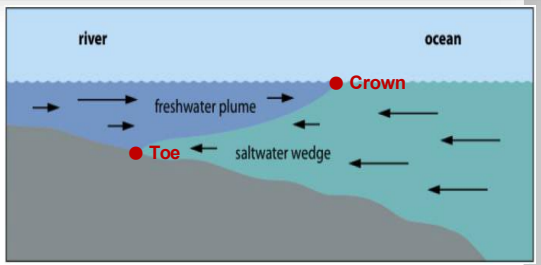
as of 1600 12OCT23

Monitor and Track the Saltwater Wedge

- Location of toe: RM 63.9
- Location of crown: RM 48.9
- Current flow rate: 172K CFS ⬆
- Yesterday's flow rate: 157K CFS
- 21-Day flow forecast: 141K CFS
- Increased flows push saltwater wedge downstream



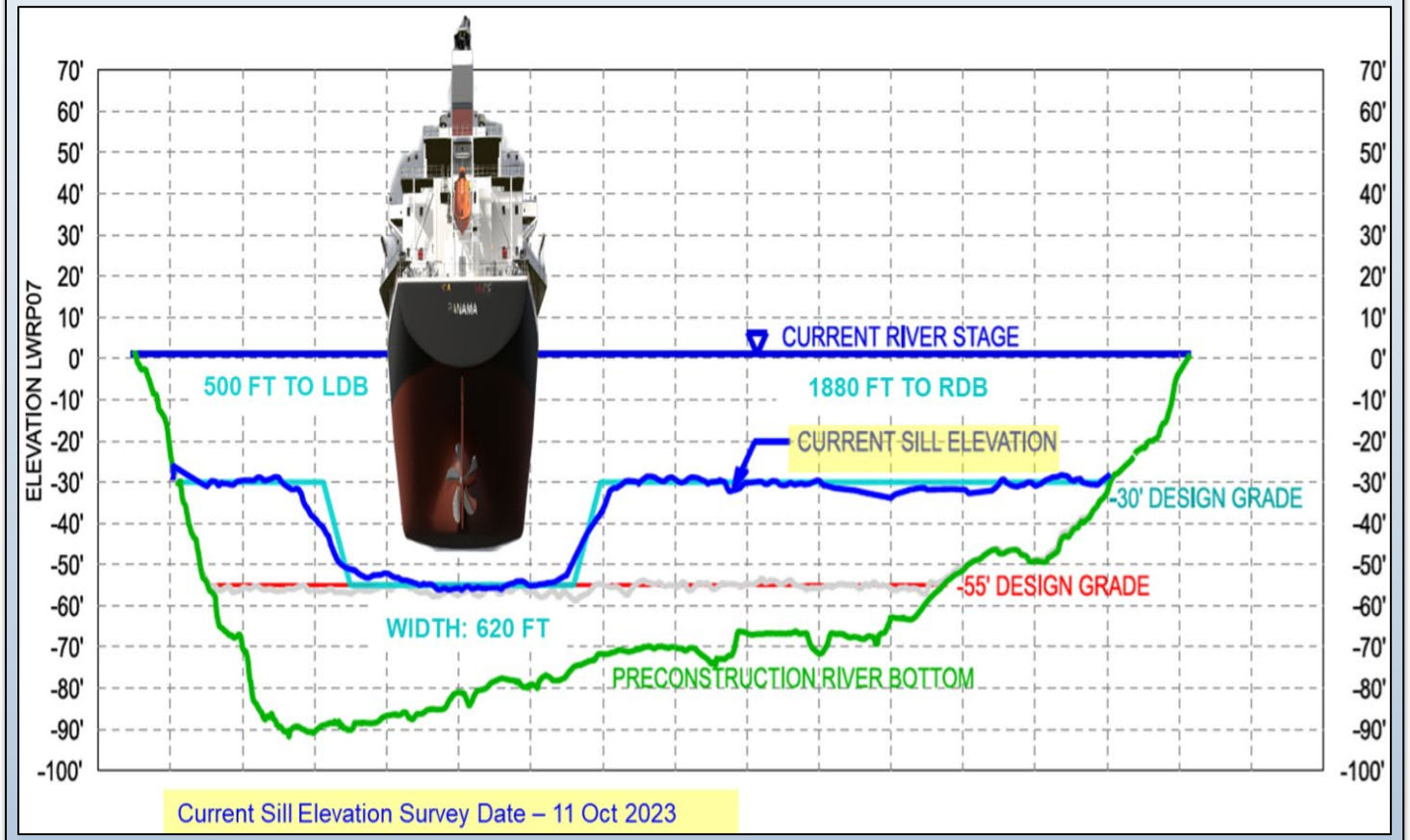




IMPACT TO NAVIGATION

Saltwater Sill Augmentation

- Current 100% complete
- Completion Date: 12 Oct
- ~1.9 M cubic yards dredged



UNITED STATES COAST GUARD SECTOR NEW ORLEANS

MARINE SAFETY INFORMATION BULLETIN

Volume XXIII Issue: 056 Time: 1200 Date: September 22, 2023

VTS Safety Measure – Saltwater Barrier Sill Construction – MM 63.8 AHP LMR – Update 2

The Captain of the Port New Orleans is issuing Vessel Traffic Service (VTS) Safety Measures to protect persons and vessels from the potential safety hazards associated with the U.S. Army Corps of Engineers' raising of the emergency Saltwater Barrier Sill at Lower Mississippi River Mile Marker (MM) 63.8 Above Head of Passes (AHP). The new sill is being constructed to an elevation of minus 30' with a 620' wide, minus 52' cut along the Left Descending Bank (LDB) allowing for deep draft vessels to transit. The following channel restrictions will be in effect **beginning on September 23 at 1200**:

In Closing...