

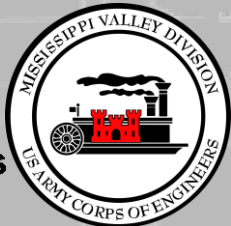
IMPORTANCE OF THE MISSISSIPPI RIVER

COL Andy Pannier
Deputy Commander
Mississippi Valley Division

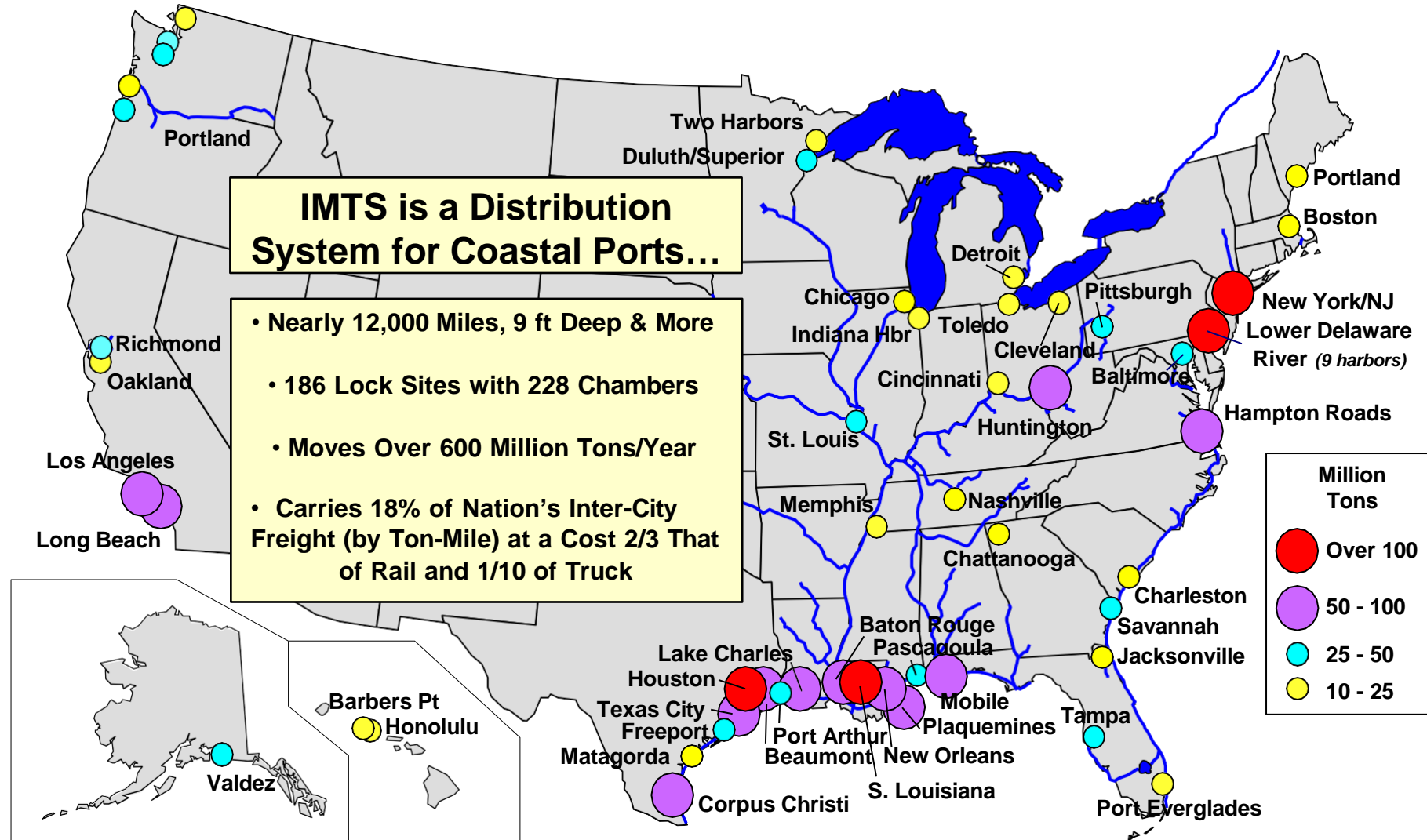
NOVEMBER 2022



US Army Corps
of Engineers®

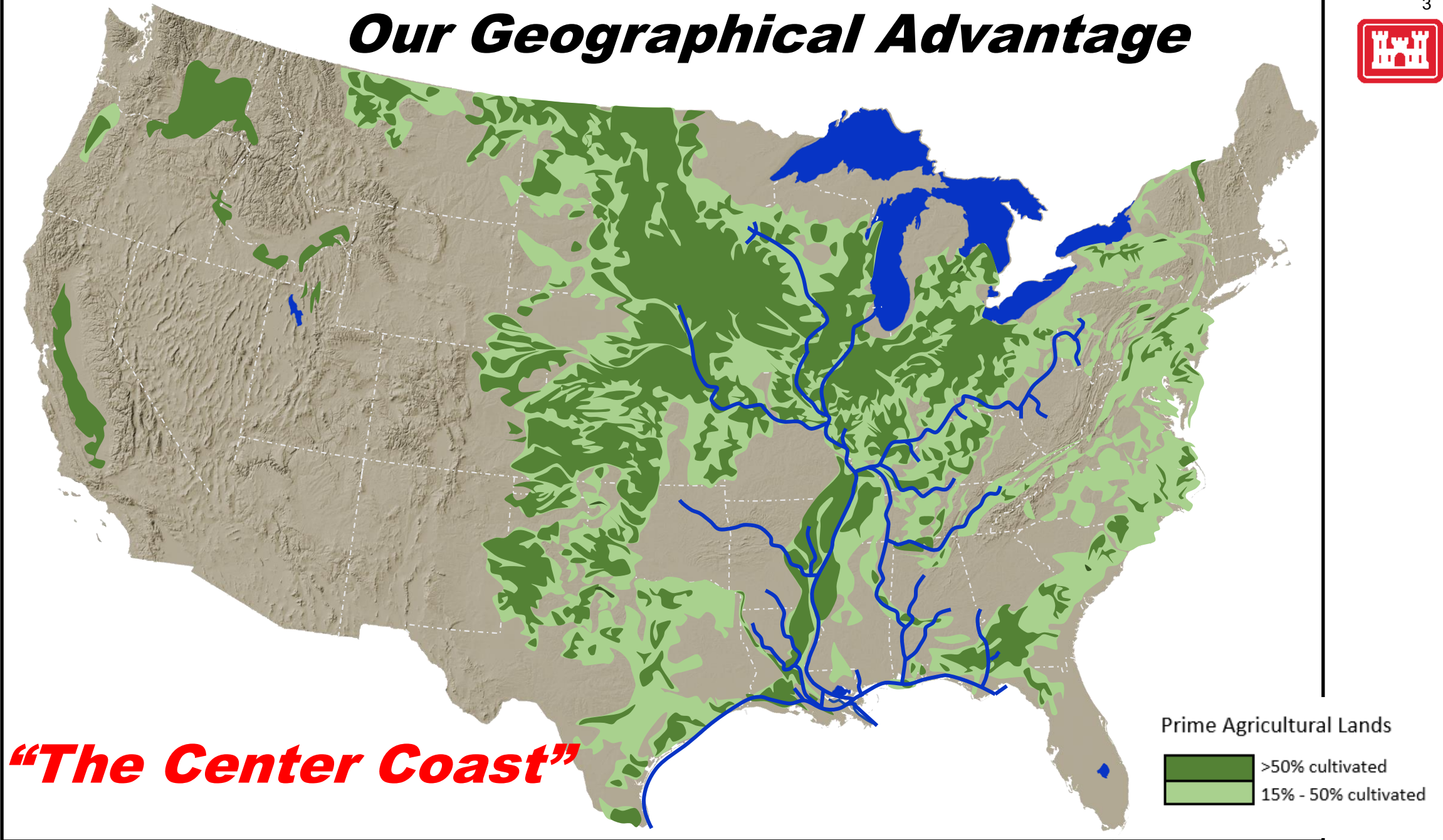


A Maritime Nation





Our Geographical Advantage



“The Center Coast”

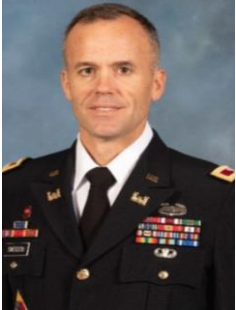


Mississippi Valley Division and Mississippi River Commission

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ST. PAUL
COL Eric
Swenson



ROCK ISLAND
COL Jesse
Curry



MG Diana Holland
Commanding General, MVD
President, MRC



Hon. Robert Miller,
Ph. D.
Civilian
2022



Hon. James
Reeder
Civilian
2018



ST. LOUIS
COL Kevin
Golinghorst



MEMPHIS
COL Brian
Sawser



Hon. Riley James
Civilian
2020



Rear Adm.
Ben Evans
NOAA



VICKSBURG
COL
Christopher
Klein



NEW ORLEANS
COL Cullen
Jones



COL Andy Pannier
Deputy Commander, MVD
Secretary, MRC



Brig Gen. Kimberly
Peebles
Great Lakes &
Ohio River Division



Brig Gen. Geoff
Van Epps
Northwestern
Division



MVD
Mr. Donny
Davidson
Director of
Programs



MVD
Mr. Jim Bodron
Director of
Regional Business



MR&T – VALUE TO THE NATION



- ❖ \$17.3B invested for planning, construction, O&M since 1928
- ❖ \$2.021T flood damages prevented since 1928
- ❖ \$195B flood damages prevented in 2020
- ❖ 4.1 million people protected
- ❖ 117 to 1 return on each dollar invested
- ❖ Over 650M tons of cargo moved on the MS River system each year
- ❖ \$12.5B in transportation savings
- ❖ MR&T System is Currently ~87% complete



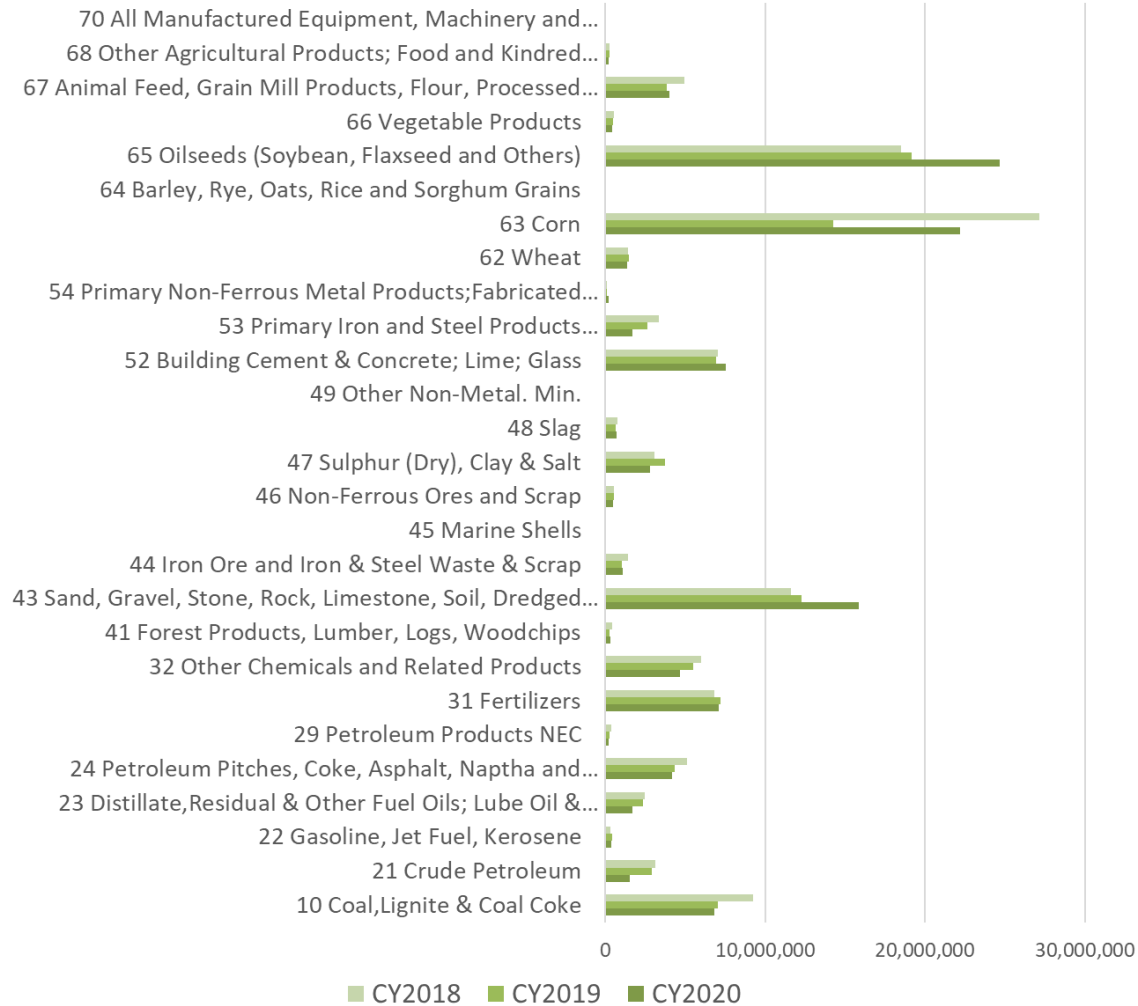
COMMODITIES IN TONS ON OPEN RIVER

ST. LOUIS TO BATON ROUGE

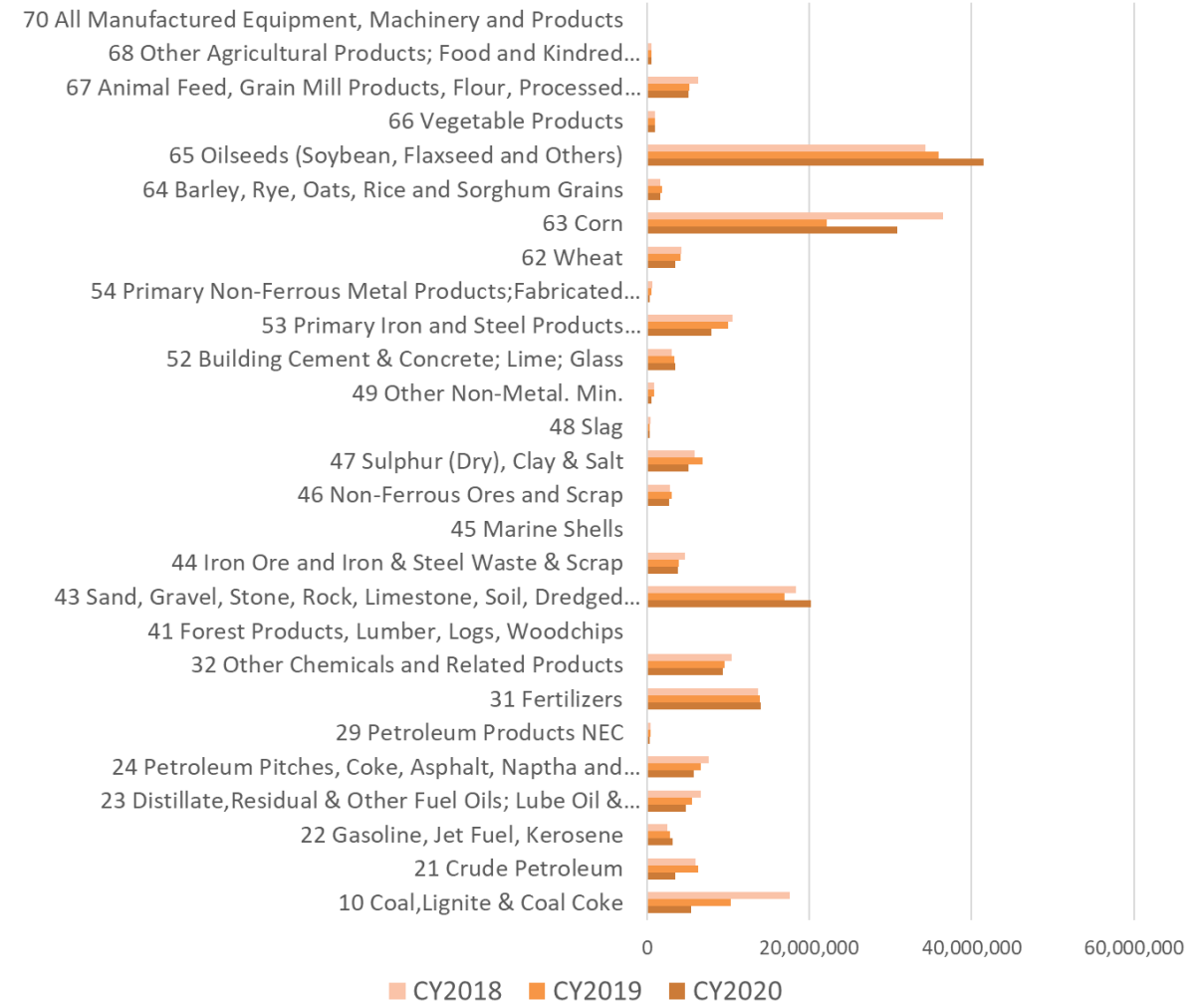
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2020 - Mississippi River, Mouth of Missouri River to Mouth of Ohio River (WATERWAY)



2020 - Mississippi River, Mouth of Ohio River to Baton Rouge, LA (WATERWAY)





THE VALUE OF PARTNERSHIPS



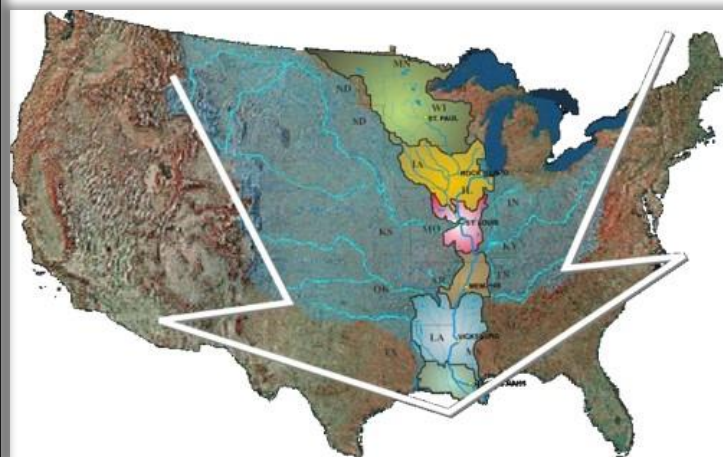
Upper Pontch Relief Well Testing, Pontchartrain Levee District



Buck Chute Construction, MS Levee District



Baton Rouge Phase IV Construction, East Baton Rouge Levee District



Carrollton Floodwall, New Orleans District HQ





INTERNATIONAL PARTNERS



Mekong River Commission



Brazilian Army



Brazilian Army





DYNAMIC CHALLENGES OF FLOOD AND DROUGHT ON THE MS RIVER

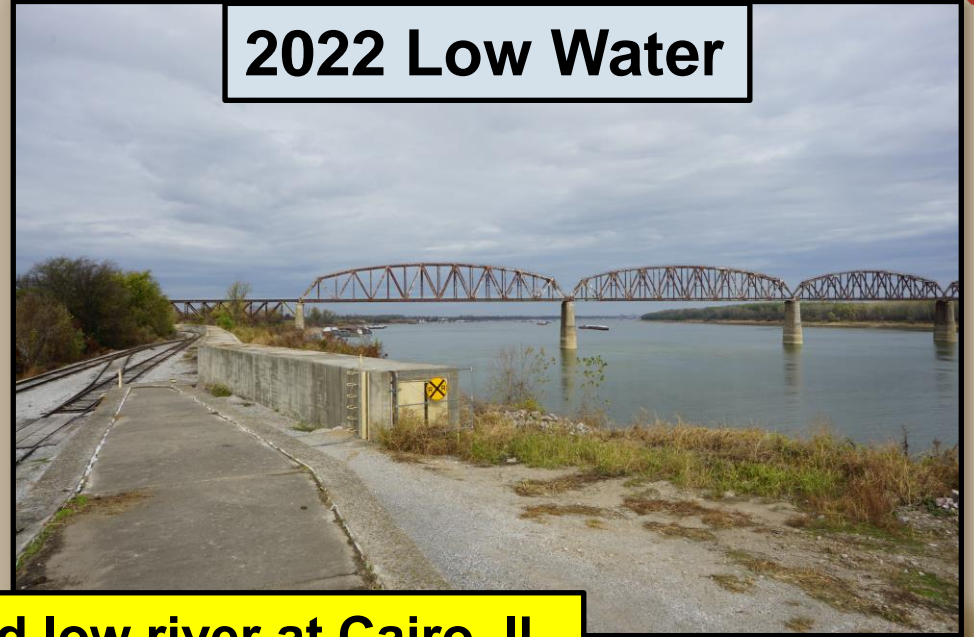
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2011 High Water



2022 Low Water



~56' difference between high and low river at Cairo, IL





Historical Low Water Events

Lower Mississippi River Forecast Center

Current stage and forecast data as of November 11th 2022

Forecast Location	Current Stage	Forecast Low Stage	2012	2000	1988
St. Louis, MO*	2.2 ft	0.3 ft	-4.4 ft	-2.5 ft	-3.2 ft
Cairo, IL*	8.4 ft	8.8 ft	7.2 ft	8.5 ft	4.9 ft
Memphis, TN*	-8.2 ft	-8.8 ft	-9.8 ft	-9.2 ft	-10.7 ft
Arkansas City, AR	-0.8 ft	-1.5 ft	-3.2 ft	-2.9 ft	-5.0 ft
Greenville, MS*	8.1 ft	7.5 ft	6.9 ft	8.2 ft	7.3 ft
Vicksburg, MS	3.5 ft	2.6 ft	-1.1 ft	0.2 ft	-1.6 ft
Red River Landing, LA	17.2 ft	16.2 ft	13.0 ft	13.1 ft	10.0 ft
Baton Rouge, LA	6.0 ft	5.3 ft	3.4 ft	3.9 ft	1.8 ft

* Locations that have preliminarily broken modern day low water records

Numbers in Red are the lowest forecast stage based on the 28 day forecast based on 2 day rainfall forecast

Data provided by U.S. Army Corps of Engineers

ENGINEERING A RESILIENT RIVER



Aerial view of dikes on the MS River



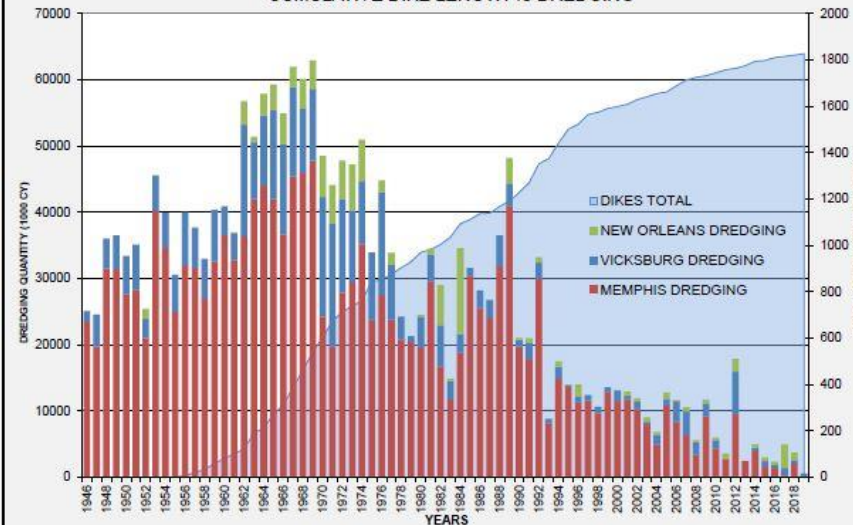
Rock Pinnacle removal at Thebes, IL



Dredging during drought facilitates NAV



MISSISSIPPI RIVER & TRIBUTARIES PROJECT
CUMULATIVE DIKE LENGTH vs DREDGING



Aerial view of Rock Pinnacles





DELIVERING THE SUPPLY CHAIN

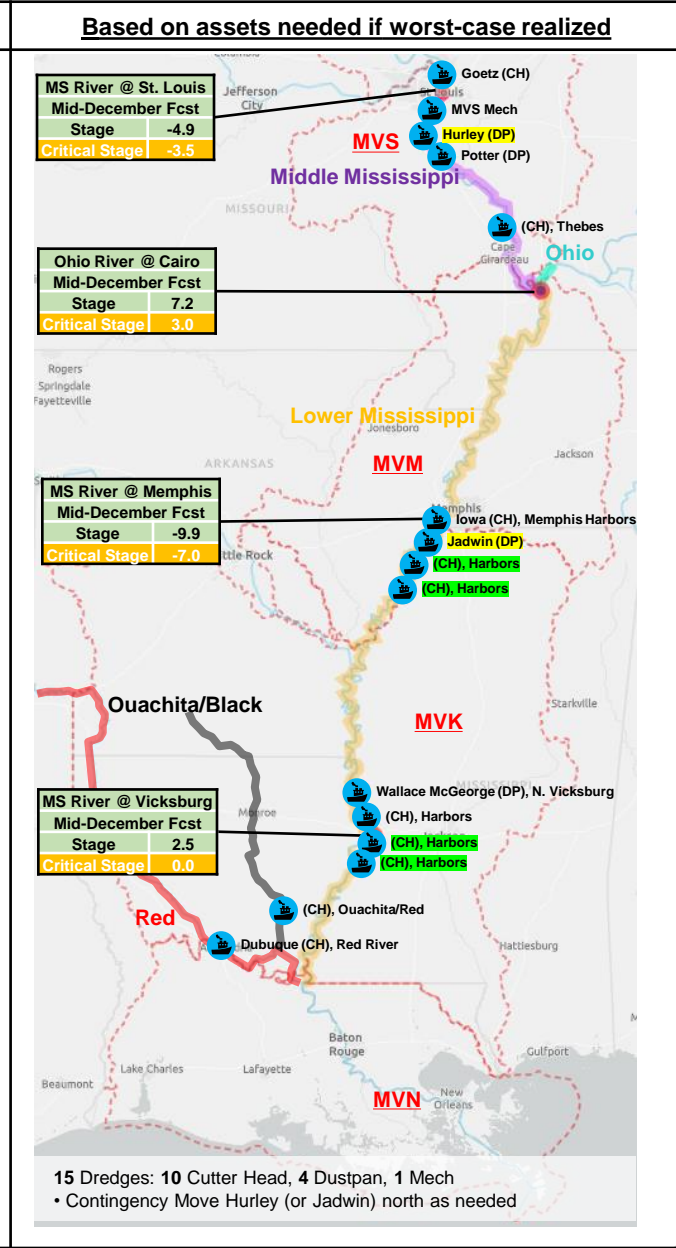
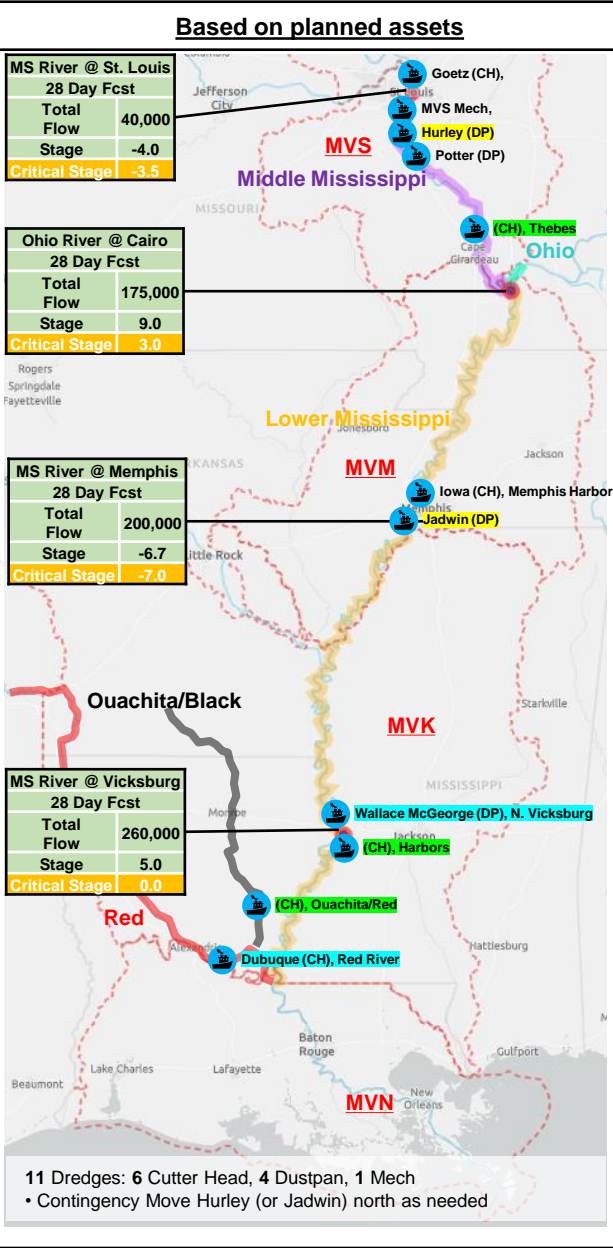
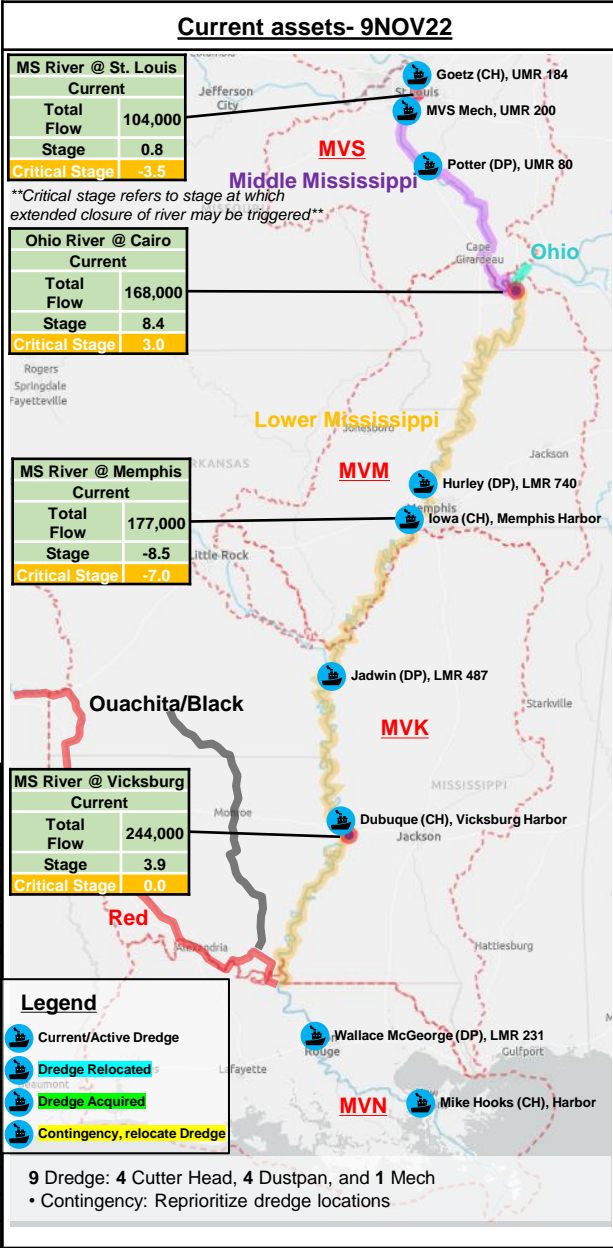


BOTTOM LINE: Given current forecasts, MVD can maintain a 9' channel, even when the Missouri flows drop off.

Key Points:

- 1) Analysis based on operations continuing through mid-January
- 2) Missouri River flow reductions will be begin on November 18, impacts will start on the mainstem MS River around November 28 with full impacts being felt in mid-December
- 3) At -5.0 ft (St. Louis gage) extended closures due to dredging expected along the entire reach from St. Louis to Cairo and rock pinnacles become a factor at a stage of -7.0 ft

Dredge Type	Owner	Dredges
Current Assets (9)		
Cutter Head (CH)	USACE	Goetz
Mechanical (Mech)	USACE	MVS Mech
Dustpan (DP)	USACE	Potter
Cutter Head (CH)	Contract	Iowa
Dustpan (DP)	USACE	Hurley
Dustpan (DP)	USACE	Jadwin
Cutter Head (CH)	USACE	Dubuque (12 in.)
Dustpan (DP)	Contract	Wallace McGeorge
Cutter Head (CH)	Contract	Mike Hooks (ends 11NOV)
Available Assets (6)		
Cutter Head (CH)	Contract	Mike Hooks (27 in.)
Cutter Head (CH)	Contract	Alaska (30 in.)
Cutter Head (CH)	Contract	Alison Crosby (24 in.)
Cutter Head (CH)	Contract	Borinquen (24 in.)
Cutter Head (CH)	Contract	E Stroud (24")
Cutter Head (CH)	Contract	Integrity (24") (uncertain)



• Coordination Efforts

- External
 - Calls with Navigation Industry
 - US Coast Guard
- Internal
 - Regional Shallow Draft Team
 - MVN Deep Draft Channel manager
 - Water Management offices
 - LRD & NWD

• Keeping the Channel Open

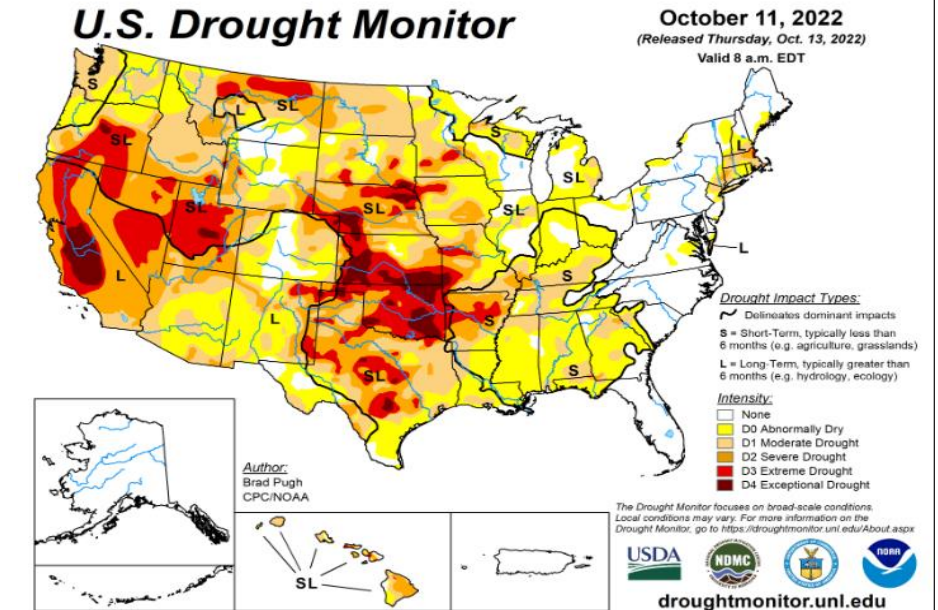
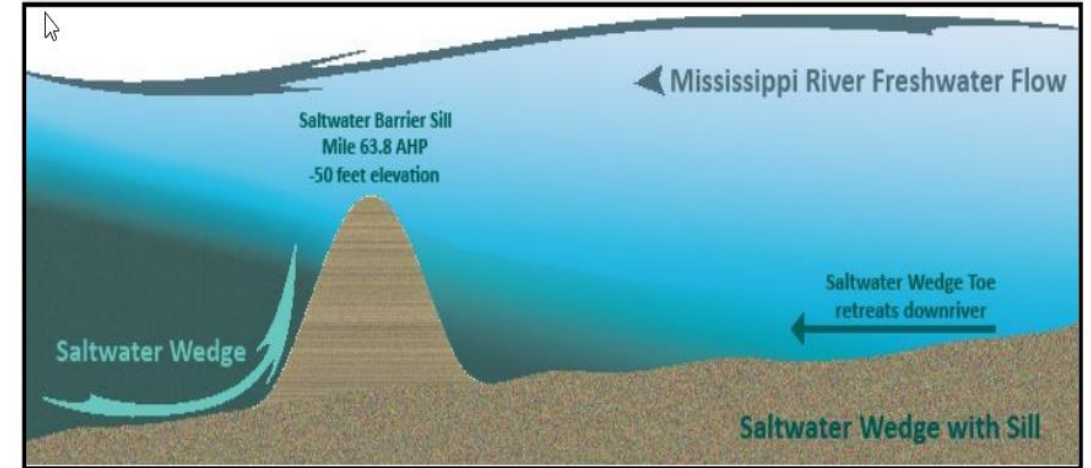
- Dredging → Harbors & River
- Buoys → Assisting USCG with marking the channel
 - Electronic Aids to Navigation (E-ATON)

• Saltwater Wedge

- Constructing an underwater sill in the channel to stop progression of saltwater

• Underwater Rock Pinnacles

- River Mile 41-46, Upper Mississippi River
- Becomes a concern at a -7.0 ft. on the St. Louis Gage.
- Stretch becomes challenging at a -5.0 on the St. Louis Gage.





DELIVERING THE SUPPLY CHAIN DURING EXTREME DROUGHT

(AS OF 17 NOV 2022)

VALUE TO THE NATION

MISSISSIPPI RIVER
ANNUAL TONNAGE VALUE:

~\$2 TRILLION

MISSISSIPPI RIVER
ANNUAL TONNAGE:

681 MILLION
SHORT TONNES OF CARGO

TOP FIVE MISSISSIPPI RIVER COMMODITIES



PETROLEUM &
PETRO-CHEM
PRODUCTS



CHEMICALS &
RELATED PRODUCTS



COAL



FOOD & FARM
PRODUCTS
(Corn & Soybean Primarily)



CRUDE
MATERIALS

U.S. ARMY CORPS OF ENGINEERS

MISSISSIPPI RIVER

LOW WATER EVENT 2022

START DATE OF EVENT: 01 SEP 2022

When our nation's busiest commercial waterway is impacted by low water levels, USACE working with Federal, State, and Local partners levy resources to create action.

CONSISTENT INVESTMENT | USACE MISSISSIPPI RIVER INVESTMENT SINCE 2012

BIPARTISAN
INFRASTRUCTURE LAW

\$274
MILLION

Investment to address damages incurred to revetments and dikes from prior high water events and to address dredging needs.

MISSISSIPPI RIVER &
TRIBUTARIES PROJECT (MR&T)

\$1.52
BILLION

Investment in revetments and dikes; nearly 2.2M revetment squares sunk equaling roughly 120 miles of work, and approximately 14 miles of new dikes constructed.

REGULATED WORKS

\$55.2
MILLION

Investment to remove additional rock at Thebes and Grand Tower (Pinnacles), placed 3.5 miles of revetment to stabilize the river channel and to construct nearly 50 river training structures including dikes, weirs and chevrons.

PROACTIVE MITIGATION



NUMBER OF ACTIVE
DREDGES BY TYPE:

8 TOTAL

CUTTERHEAD
DREDGE 3

DUSTPAN
DREDGE 4

MECHANICAL
DREDGE 1

DOLLARS INVESTED IN LOW
WATER 2022 DREDGING
SINCE 01 SEP 2022:

\$29.6 MILLION

CUBIC YARDS (CYS)
OF DREDGED MATERIAL
SINCE 01 SEP 2022:

9.2 MILLION CYS



U.S. Army Corps
of Engineers®





Questions?

