

USACE UPDATE FOR THE AMERICAN ASSOCIATION OF PORT AUTHORITIES

Michael E. Ott, PE, PMP
Chief, Navigation Branch
U.S. Army Corps of Engineers
Washington, D.C.
31 March 2020



Agenda:

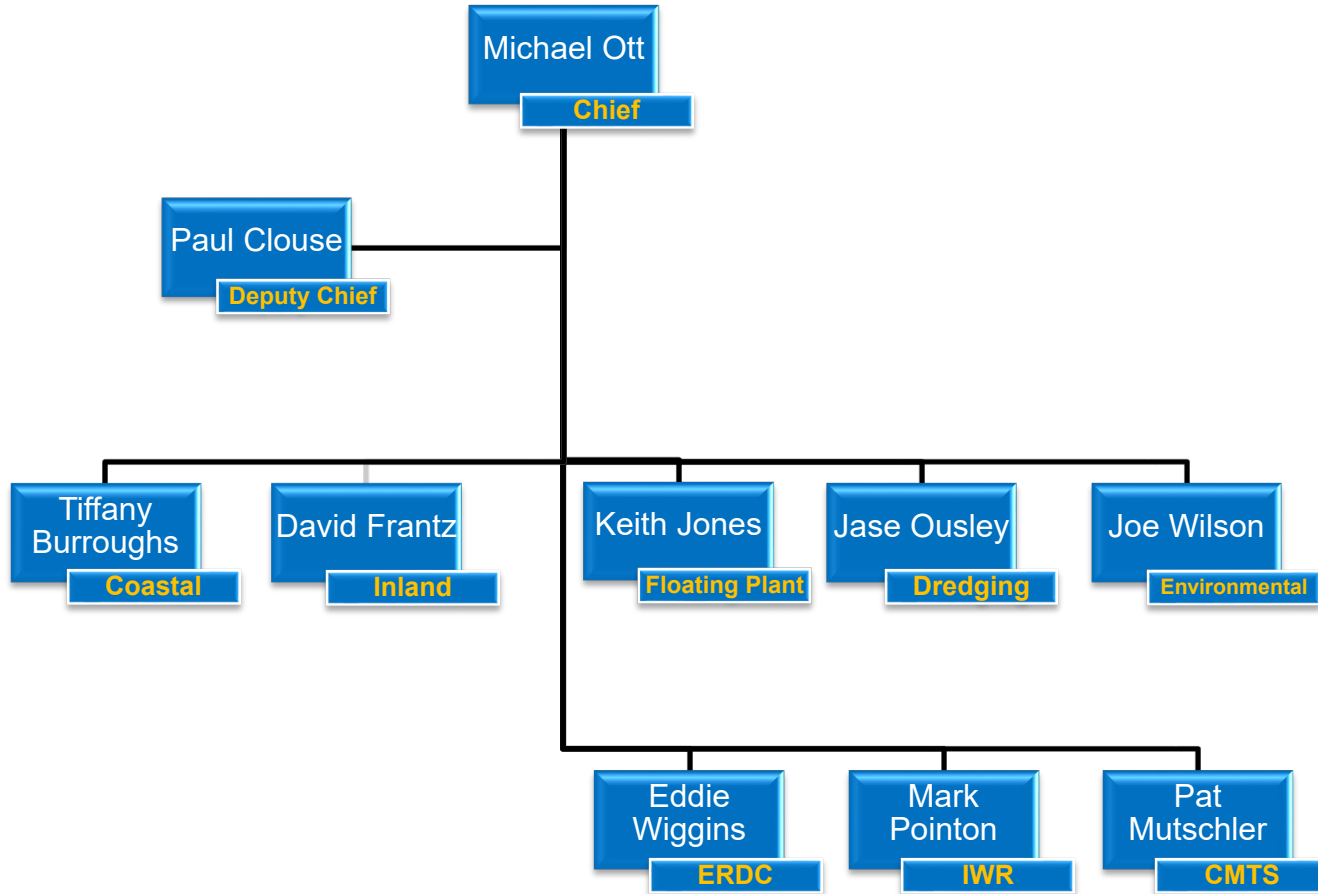
- *HQ Navigation Team*
- *Budget/Appropriations*
- *Revolutionizing USACE*
- *Challenges*
- *Opportunities*
- *Questions*



US Army Corps
of Engineers®



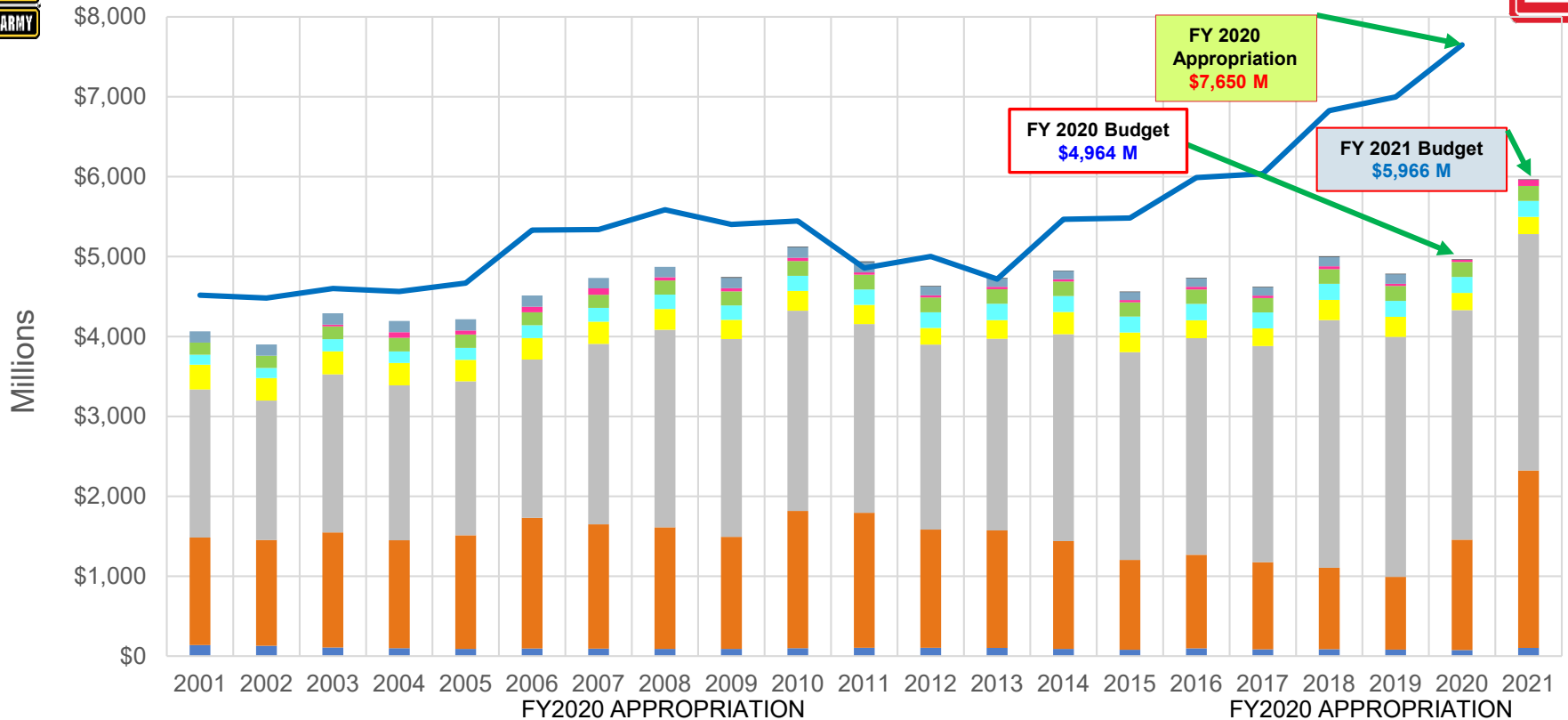
USACE HQ Navigation Team





CIVIL WORKS INVESTMENT TRENDS

(EXCLUDES SUPPLEMENTAL FUNDING)



INVESTIGATIONS
O&M
REGULATORY
FC&CE
ASA(CW)

FY2020 APPROPRIATION

\$ 151 M
\$3,790 M
\$ 210 M
\$ 35 M
\$ 5 M

CONSTRUCTION
MR&T
GENERAL EXPENSE
FUSRAP
HISTORIC APPROPRIATIONS

FY2020 APPROPRIATION

\$ 2,681 M
\$ 375 M
\$ 203 M
\$ 200 M

FY21 Budget is ~20% increase above FY20 Budget

FY20 Budget is ~6.4% nominal* increase above the FY19 Budget

FY20 Work Plan is ~54% increase above the FY20 Budget

FY20 Work Plan is ~9.3% increase above FY19 Work Plan

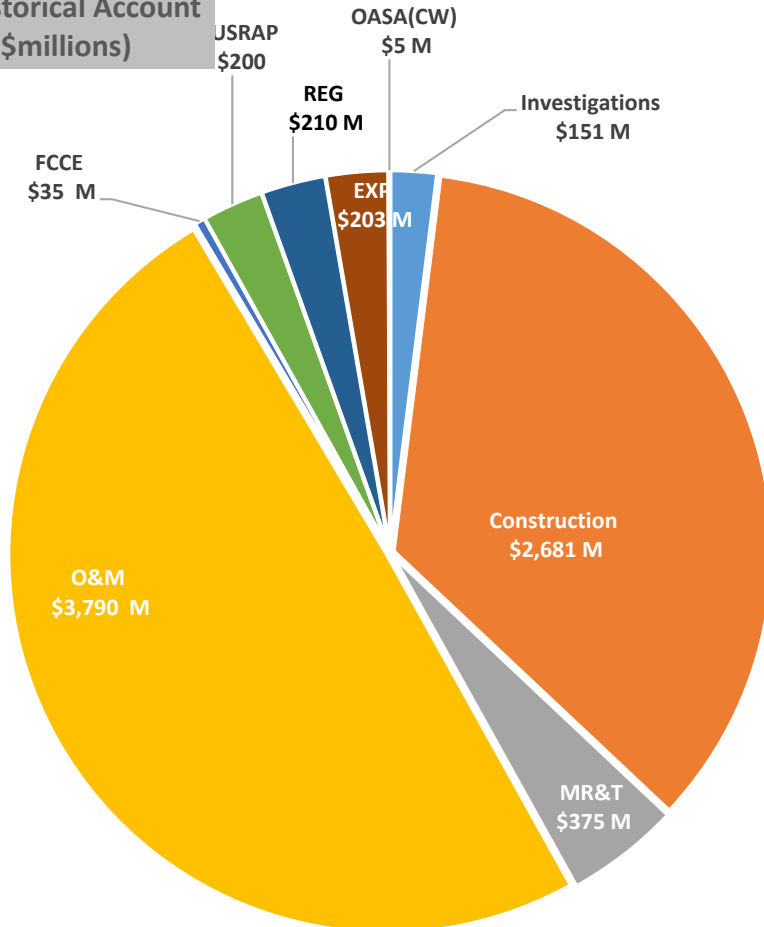
(*FY20 Budget does not include FUSRAP funding. Therefore, the comparison is made by reducing the FY19 Budget (\$120M) for FUSRAP.)



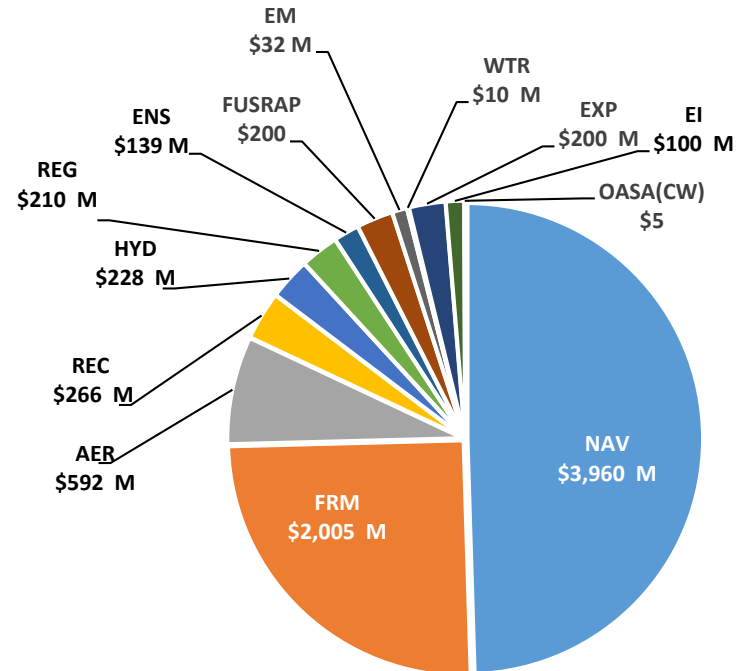
FY20 CW PROGRAM SUMMARY AS APPROPRIATED*



FY2020 Appropriation By Historical Account (\$millions)



FY2020 Appropriation by Business Lines (\$millions)**



**These numbers are subject to change and represent an estimation of the business line distribution at this time. The analysis is still underway and final numbers are not yet available.

*Both charts reflects study like activities and sand mitigation in the account and business line in which it has historically been appropriated.



FY20 CW PROGRAM



ADDITIONAL FUNDING = \$2,686,000,000

FUNDING POTS ONLY = \$2,534,364,000

NAVIGATION ONLY = \$1,536,509,000

INVESTIGATIONS	
FLOOD AND STORM DAMAGE REDUCTION	\$6,000,000
FLOOD CONTROL	\$4,000,000
SHORE PROTECTION	\$4,000,000
NAVIGATION	\$7,000,000
COASTAL AND DEEP-DRAFT	\$6,000,000
INLAND	\$9,750,000
OTHER AUTHORIZED PROJECT PURPOSES	\$6,000,000
ENVIRONMENTAL RESTORATION OR COMPLIANCE	\$17,600,000
TOTAL	\$60,350,000

MISSISSIPPI RIVER AND TRIBUTARIES	
DREDGING	\$5,000,000
FLOOD CONTROL	\$105,090,000
OTHER AUTHORIZED PROJECT PURPOSES	\$50,000,000
TOTAL	\$160,090,000

CONSTRUCTION	
FLOOD AND STORM DAMAGE REDUCTION	\$150,000,000
FLOOD CONTROL	\$170,000,000
SHORE PROTECTION	\$50,165,000
NAVIGATION	\$377,878,000
INLAND WATERWAYS TRUST FUND REVENUES	\$75,575,000
REGIONAL DREDGE DEMONSTRATION PROGRAM(NEW)	\$377,650,000
OTHER AUTHORIZED PROJECT PURPOSES	\$85,000,000
ENVIRONMENTAL RESTORATION OR COMPLIANCE	\$100,000,000
ENVIRONMENTAL INFRASTRUCTURE PROJECTS	\$100,000,000
TOTAL	\$1,486,268,000

OPERATION AND MAINTENANCE	
DONOR AND ENERGY PORTS	\$50,000,000
NAVIGATION MAINTENANCE	\$40,156,000
DEEP-DRAFT HARBOR AND CHANNEL	\$532,500,000
INLAND WATERWAYS	\$55,000,000
SMALL, REMOTE, OR SUBSISTENCE NAVIGATION	\$65,000,000
OTHER AUTHORIZED PROJECT PURPOSES	\$85,000,000
TOTAL	\$827,656,000

FUSRAP	\$200,000,000
---------------	----------------------



FY20 NAVIGATION FUNDING OUTCOMES



SUMMARY: The Appropriations provides \$1.5 billion in additional funding for Navigation follows:

- ❑ Investigations –
 - Inland - \$15.3 million to complete one and continue two ongoing PEDs; and, \$1.5 million to initiate one multi-purpose feasibility study (GIWW Coastal Resiliency Study, TX)
 - Coastal: \$6 million to complete one feasibility; initiate two new feasibilities; and initiate two new PEDs.
- ❑ Construction - \$831 million of which \$75.6 million is IWTF funds and \$377.7 million is for a Gulf Region Dredge demonstration program.
 - Inland - **Olmsted L&D, OH (\$63 million-15% IWTF); Kentucky L&D, KY (\$61 million – 50% IWTF); Chickamauga Lock, TN (\$101.7 million – 35% IWTF);** and fully funds remaining mitigation and recreation features of J.Bennett Johnston Waterway, LA (\$40.6 million)
 - Coastal - **Dredge Material Disposal and Sand Mitigation (\$43 million - HMTF);** New starts (\$48.1 million); initiates Mississippi River Ship Channel, LA deepening (\$85 million); initiates and completes Mobile Harbor, AL (\$274 million); completes Cedar Bayou, TX (\$32 million); and, continues Jacksonville Harbor, FL (\$57.4 million), Sault St. Marie (Replacement Lock), MI (\$50 million) and Sabine – Neches Waterway, TX (\$16.6 million)
- ❑ OM - \$742.7 million additional Navigation Operation and Maintenance funding
 - Inland - \$80 million applied to 24 projects
 - Donor and Energy Transfer Ports - \$50 million applied to 17 eligible projects
 - **Small, Remote, or Subsistence Navigation - \$65 million applied to 48 projects (HMTF)**
 - **Deep – Draft - \$546.5 million applied to 86 projects (HMTF)**
 - Remaining Items - \$1 million



Post-Panamax Port Projects/Studies



Seattle
Columbia R.

55
55
51

Tacoma

43
43
51

Coos Bay

50
37

Current Depth **Authorized/Not Complete**
Study/PED Underway **Construction New Start/Underway**

50

Oakland

68
53

Los Angeles/Long Beach

San Diego 47

Boston

47
40

N.Y./N.J.
Channels +
Anchorages

Delaware

Norfolk
(Eliz River/Southern Branch)

Norfolk

Morehead City

Charleston

Sabine-
Neches
Waterway

Miss. River,
Port of New
Orleans

Savannah

Houston/Galveston

55
55
55
45

Mobile

Jacksonville

Canaveral

Freeport

45
48
42
45
45

Brazos Island

52
45

Corpus Christi

54
42

Miss. River,
Gulf to
Baton
Rouge

Houston Ship Channel

Everglades

Port

48
42

Miami

52+
50

San Juan

42+
42+
40

Ponce



USDA REPORT ON THE VALUE OF INLAND MARINE TRANSPORTATION SYSTEM



USDA United States Department of Agriculture
Agricultural Marketing Service

Agribusiness Consulting
Agribusiness Intelligence | Informa

Importance of Inland Waterways to U.S. Agriculture

Analyzing Three Investment Scenarios

August 2019

Barge tow on Chain of Rocks Canal of Mississippi River above St. Louis

This material was produced for the United States Department of Agriculture (USDA), Agribusiness Intelligence Service (AIS), through Cooperative Agreement Number 50-10US07-0001. Informa Agribusiness Consulting (Informa) has used the best and most accurate information available to complete this study. For more information and to learn more about Informa Agribusiness Consulting, please visit AgribusinessIntelligence.com. A more detailed report can be found on USDA AMS website.

America's Heartland Requires a Reliable Transportation Corridor

Corn and Soybean Production (Billion Bushels)

- 10 and greater
- 5 to 10
- 2.5 to 5
- 1 to 2.5
- less than 1

Projects by Amount (\$ 1,000,000)

- 500 and greater
- 100 to 500
- 50 to 100
- less than 50

— Navigable Waterways
— Drafting Lower Mississippi River to 50 feet
● River City

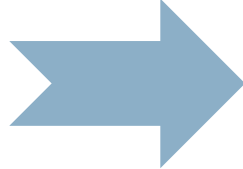
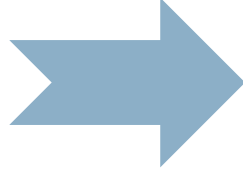
Agribusiness Consulting

Density of U.S. Corn and Soybean Production Areas in Proximity to the Navigable Waterways on the Mississippi River System Depicted in Map



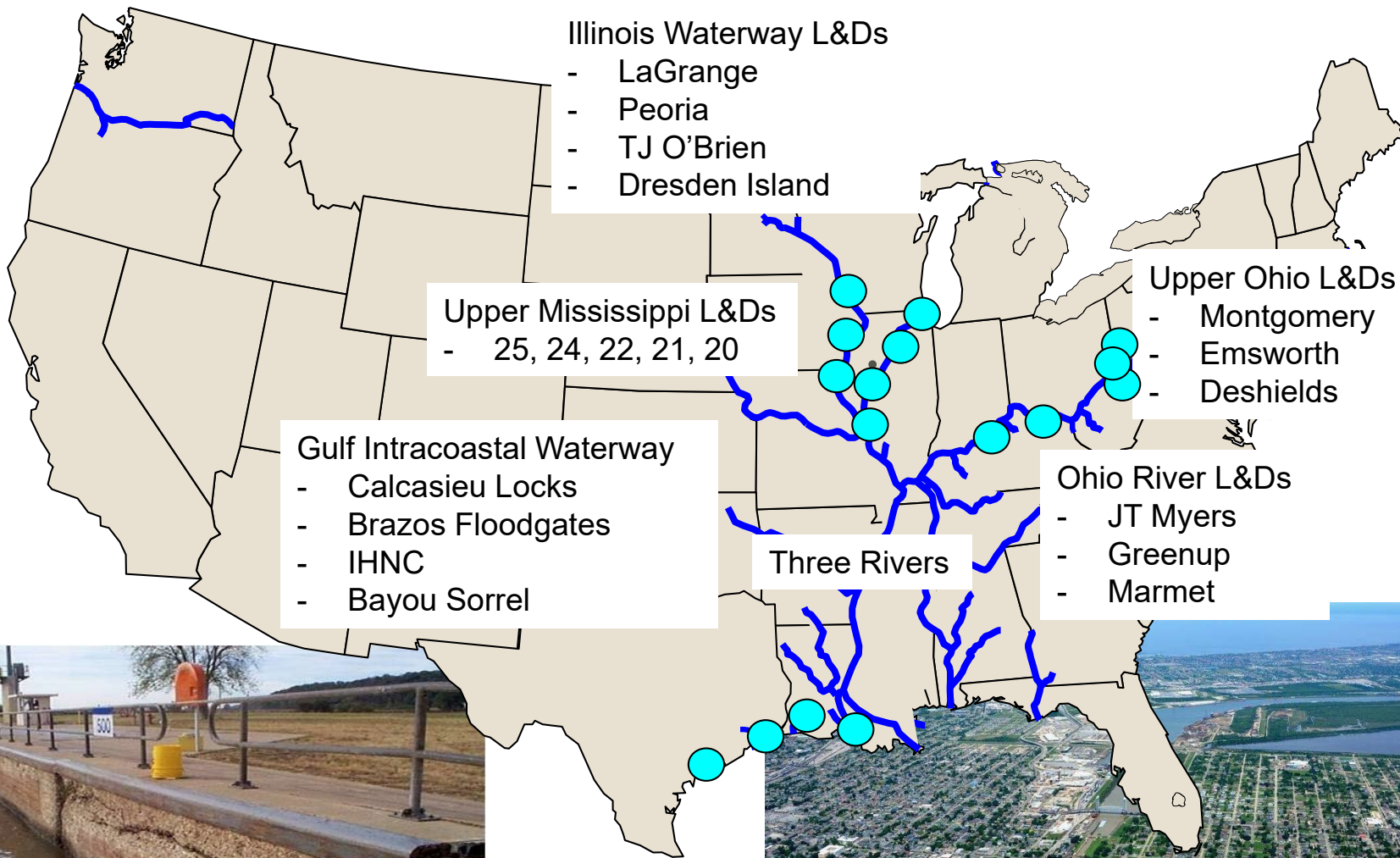
CAPITAL INVESTMENT STRATEGY

AUTHORITY

- **Title II, Subtitle A, Section 2002, (d) of the Water Resources Reform and Development Act of 2014 (WRRDA 2014)** required, in part, for the Secretary of the Army, “in coordination with the Users Board, to develop and submit to Congress a report describing a 20-year strategy for making capital investments on the inland and intracoastal waterways based on the application of objective, national project selection prioritization criteria”

- **WRRDA 2014 also required: (4) STRATEGIC REVIEW AND UPDATE** – “Not later than 5 years after the date of enactment of this subsection, and not less frequently than once every 5 years thereafter, the Secretary, in coordination with the Users Board shall (A) submit to Congress and make publically available a strategic review of the 20-year program, which shall identify and explain any changes to the project-specific recommendations contained in the previous 20-year program.”

- **Inland and Intracoastal Waterways Twenty-Year Capital Investment Strategy Report** drafted in 2015 – published in March 2016.
- **Strategic Review and Update - Inland and Intracoastal Waterways Twenty-Year Capital Investment Strategy Report** – Goal is to have report drafted in 2019 and finalized in 2020



CAPITAL INVESTMENT OPPORTUNITIES





CAPITAL INVESTMENT STRATEGY – 2020 UPDATE

METHODOLOGY



Categorize



Attribute Definition



Attribute Weighting

Category	Description	Tool
1	Ongoing Construction	Weighted Analysis
2	New Construction Authorized	Weighted Analysis
3	Ongoing Study	Weighted Analysis
4	Future Potential Projects	Operational Risk Exposure

Attribute	Sub-Attribute
1 Economic	
	1.1 RBRCR (Remaining Benefit to Remaining Cost Ratio)
	1.2 BCR (Benefit Cost Ratio)
2 Reliability and Condition	
	2.1 Reliability
	2.2 Condition
3 Lock Utilization	
	3.1 Redundancy
	3.2 Delays
	3.3 Lockage
4 National Significance	

Attribute	Attribute Name	Weight
1	Economic	9%
2	Reliability and Condition	38%
3	Lock Utilization	17%
4	National Significance	36%



CAPITAL INVESTMENT STRATEGY – 2020 UPDATE

CATEGORY 1 AND 2 RESULTS



Category 1

Priority	Project Title	Project Location	State
1	Olmsted Locks and Dam	Ohio River	IL
2	Locks and Dams 2, 3, and 4, Monongahela River Navigation Project	Monongahela River	PA
3	Kentucky Lock Addition	Tennessee River	KY
4	Chickamauga Lock	Tennessee River	TN

Category 2

Priority	Project Title	Project Location	State
1	Upper Mississippi River - Illinois Waterway System Navigation and Ecosystem Sustainability Program (NESP)	Lock & Dam 25 (Mississippi River)	MO / IL
2	Three Rivers	MKARNS	
3	Upper Ohio Navigation Locks & Dams Improvements	Montgomery Locks and Dam	PA
4	Upper Mississippi River - Illinois Waterway System Navigation and Ecosystem Sustainability Program (NESP)	LaGrange Lock & Dam (Illinois Waterway)	IL
5	Calcasieu Lock	GIWW	
6	Upper Mississippi River - Illinois Waterway System Navigation and Ecosystem Sustainability Program (NESP)	Lock & Dam 24 (Mississippi River)	MO / IL
7	Inner Harbor Navigation Canal Locks		LA
8	MKARNS 12 ft channel		
9	Upper Mississippi River - Illinois Waterway System Navigation and Ecosystem Sustainability Program (NESP)	Lock & Dam 22 (Mississippi River)	MO / IL
10	Upper Ohio Navigation Locks & Dams Improvements	Erwin Locks and Dam	PA
11	Upper Mississippi River - Illinois Waterway System Navigation and Ecosystem Sustainability Program (NESP)	Lock & Dam 21 (Mississippi River)	IL
12	Upper Mississippi River - Illinois Waterway System Navigation and Ecosystem Sustainability Program (NESP)	Peoria Lock & Dam (Illinois Waterway)	MO
13	Upper Ohio Navigation Locks & Dams Improvements	Dashields Locks and Dam	PA
14	Upper Mississippi River - Illinois Waterway System Navigation and Ecosystem Sustainability Program (NESP)	Lock & Dam 20 (Mississippi River)	MO
15	Thomas O'Brien Lock & Dam major rehabilitation	Illinois Waterway	IL
16	Bayou Sorrel Lock	GIWW	LA



DRAFT SEQUENCING – LIMITED TO \$240 MILLION BALANCE



DRAFT \$240M SCENARIO

ASSUMPTIONS:

- * Ongoing construction funding represents efficient funding profile.
- * New project funding represents capability estimate for efficient design and construction.
- * Cost share is 50% Fed / 50% IWTF, except for Chickamauga in FY20 and Olmsted in all years.
- * Program funding starts at \$240M (\$120M Fed / \$120M IWTF)
- * IWTF revenue grows annually by 1.5%
- * IWTF minimum balance is \$20M. New construction will not start if IWTF balance would drop below \$20M.

		Total Design Cost	Total Construction Cost																															
		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
		\$	309.4	373.1	704.5	105.7	133.4	160.7	200.1	236.5	269.2	299.2	329.2	359.2	389.2	419.2	449.2	479.2	509.2	539.2	569.2	599.2	629.2	659.2	689.2	719.2	749.2	779.2	809.2	839.2	869.2	899.2	929.2	
Project	Project Description	Waterway	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041	FY2042	FY2043	FY2044	FY2045	FY2046	FY2047	FY2048	FY2049	FY2050	
Olmsted	New locks and dam.	Ohio	33.4	20.8																														
Lower Ma	New Lock	Monongahela	111.2																															
Kentucky	New Lock	Tennessee	66.1	103.4	188.1	188.1	74.5																											
Chickamauga	New Lock	Tennessee	94.1	71.3	71.4	95.4	31.1																											
NESP Upper Miss. River L&D 25	New Lock / 1200R / NESP	Mississippi			6.3	10.8	6.4	110.2	113.1	134.9	120.4	124.0	24.4																					
Three Rivers	channel protection	MAKAINS			5.5	5.4	70.5	84.3	87.1	11.1																								
Upper Ohio - Montgomery	New Lock / 600 R / UD #1	Ohio			17.4	7.4	1.2	42.1	102.4	167.7	204.8	145.1	26.4																					
NESP FAW LaGrange L&D	New Lock / 1200R / NESP	Illinois							9.2	13.8	13.0	102.3	105.5	111.8	115.1	38.1																		
Catahoula Lock	lock bypass	GIWW											8.7	22.8	1.5	0.7																		
NESP Upper Miss. River L&D 24	New Lock / 1200R / NESP	Mississippi											9.5	16.5	16.8	136.5	130.5	134.4	138.4	142.8	42.6													
Lower Harbor Navigation Canal (HNLC) Lock	New Lock	GIWW																			168.7	410.3	298.1	217.4	274.5	217.7	132.2	94.5	53.9	14.9				
MAKAINS 12 Channel	channel deepening	MAKAINS											12.0	26.4	79.8	82.2	84.7	87.2	68.9	24.4														
NESP Upper Miss. River L&D 22	New Lock / 1200R / NESP	Mississippi																																
Upper Ohio - Ernsworth L&D	New Lock / 600 R / UD #2	Ohio																																
NESP Upper Miss. River L&D 21	New Lock / 1200R / NESP	Mississippi																																
NESP FAW Peoria L&D	New Lock / 1200R / NESP	Illinois																																
Upper Ohio - Deshields L&D	New Lock / 600 R / UD #3	Ohio																																
NESP Upper Miss. River L&D 20	New Lock / 1200R / NESP	Mississippi																																
TID'Span	Major Rehabilitation	Illinois																																
Beyou Somel Lock	New lock	GIWW																																

NOTES:
 * Total to construct projects shown is \$14.4B from 2020 to 2065.



DRAFT SEQUENCING – LIMITED TO \$400 MILLION BALANCE



ASSUMPTIONS:

- * Ongoing construction funding represents efficient funding profile.
- * New project funding represents capability estimate for efficient design and construction.
- * Program funding starts at \$400M and grows annually by 1.5%

DRAFT \$400M SCENARIO

NOTES:
 * Total to construct projects shown is \$10.6B from 2020 to 2044.

Total Design Cost:	\$ -	\$ 38.5	\$ 49.9	\$ 38.2	\$ -	\$ -	\$ 9.0	\$ 17.2	\$ 12.7	\$ 24.7	\$ 17.3	\$ 29.6	\$ 28.5	\$ 55.4	\$ 38.1	\$ 33.0	\$ 42.5	\$ 50.3	\$ 23.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Construction Cost:	\$ 309.6	\$ 273.5	\$ 248.5	\$ 281.7	\$ 555.5	\$ 484.1	\$ 557.2	\$ 527.2	\$ 658.1	\$ 517.0	\$ 395.2	\$ 407.1	\$ 460.4	\$ 455.7	\$ 584.6	\$ 526.2	\$ 457.3	\$ 472.7	\$ 708.5	\$ 523.2	\$ 346.6	\$ 376.5	\$ 254.1	\$ 121.3	\$ 69.2

Project	Project Description	Waterway	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041	FY2042	FY2043	FY2044
Olmsted	New locks and dam.	Ohio	38.0	25.8																							
Lower Mon	New Lock	Monongahela	111.0																								
Kentucky	New Lock	Tennessee	66.1	169.4	169.1	186.3	74.7																				
Chickamauga	New Lock	Tennessee	94.5	78.3	79.4	95.4	39.1																				
NESP Upper Miss. River L&D 25	New Lock / 1200ft / NESP	Mississippi		6.7	10.6	6.6	107.0	110.2	113.5	116.9	120.4	23.9															
Three Rivers	channel protection	MKARNS			5.3	5.5	68.4	82.1	84.5	10.8																	
Upper Ohio Montgomery L&D	New Lock / 600 ft / UO #1	Ohio		16.4	7.4	1.1	58.5	96.7	138.1	192.8	136.8	24.9															
NESP IWW LaGrange L&D	New Lock / 1200ft / NESP	Illinois		7.7	13.3	10.9	85.7	88.2	90.9	93.6	96.4	31.9															
Calcasieu Lock	lock bypass	GIWW				0.5	19.1	0.9	0.9	0.5																	
NESP Upper Miss. River L&D 24	New Lock / 1200ft / NESP	Mississippi		7.7	13.3	13.7	103.0	106.1	109.3	112.6	115.9	34.6															
Inner Harbor Navigation Canal (IHNC) Lock	New Lock	GIWW								129.2	340.5	243.2	250.5	216.7	171.8	104.4	74.8	41.7	34.7								
MKARNS 12' Channel	channel deepening	MKARNS						9.0	9.2	59.4	61.2	63.0	64.9	45.3	18.2												
NESP Upper Miss. River L&D 22	New Lock / 1200ft / NESP	Mississippi								8.0	12.7	7.8	89.0	91.7	94.4	97.3	100.2	28.5									
Upper Ohio Emsworth L&D	New Lock / 600 ft / UO #2	Ohio								16.8	17.3	19.2	103.9	168.4	236.7	178.7	53.4										
NESP Upper Miss. River L&D 21	New Lock / 1200ft / NESP	Mississippi											10.4	17.8	18.4	143.3	147.6	152.0	156.6	161.3	46.6						
NESP IWW Peoria L&D	New Lock / 1200ft / NESP	Illinois												10.7	18.4	18.9	96.7	99.6	102.5	105.6	108.8	48.0					
Upper Ohio Dashields L&D	New Lock / 600 ft / UO #3	Ohio													18.7	19.2	21.3	110.6	178.8	251.3	189.9	59.2					
NESP Upper Miss. River L&D 20	New Lock / 1200ft / NESP	Mississippi															11.7	20.1	20.7	106.9	110.1	113.4	116.8	120.3	52.4		
TJ O'Brien	Major Rehabilitation	Illinois																	6.6	83.4	6.6						
Bayou Sorrel Lock	new lock	GIWW																	22.4	23.1	23.8	61.2	126.1	259.7	133.7	68.9	69.2



DRAFT SEQUENCING – ACCELERATED CONSTRUCTION TIMELINE



ASSUMPTIONS:

- * Ongoing construction funding represents efficient funding profile.
- * New project funding represents capability estimate for efficient design and construction.
- * Program funding assumes sufficient funding to complete new projects in 10-years from 2024 to 2034.

DRAFT 10-YR CONSTRUCTION SCENARIO

Total Design Cost:	\$ -	\$ 30.8	\$ 44.6	\$ 67.1	\$ 65.7	\$ 75.5	\$ 76.6	\$ 49.4	\$ 22.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Construction Cost:	\$ 309.6	\$ 273.5	\$ 248.5	\$ 281.7	\$ 433.4	\$ 675.6	\$ 1,090.9	\$ 1,223.2	\$ 1,406.4	\$ 1,213.1	\$ 935.6	\$ 767.9	\$ 379.9	\$ 128.4	\$ 83.3	\$ -

Project	Project Description	Waterway	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
Olmsted	New Locks and dam.	Ohio	38.0	25.8													
Lower Mon	New Lock	Monongahela	111.0														
Kentucky	New Lock	Tennessee	66.1	169.4	169.1	186.3	74.7										
Chickamauga	New Lock	Tennessee	94.5	78.3	79.4	95.4	39.1										
NESP Upper Miss. River L&D 25	New Lock / 1200ft / NESP	Mississippi		6.7	10.6	6.6	107.0	110.2	113.5	116.9	120.4	23.9					
Three Rivers	channel protection	MKARNS			5.3	5.5	68.4	82.1	84.5	10.8							
Upper Ohio Montgomery L&D	New Lock / 600 ft / UO #1	Ohio		16.4	7.4	1.1	58.5	96.7	158.1	192.8	136.8	24.9					
NESP IWW LaGrange L&D	New Lock / 1200ft / NESP	Illinois		7.7	13.3	10.9	85.7	88.2	90.9	93.6	96.4	31.0					
Calcasieu Lock	lock bypass	GIWW					0.6	19.7	0.9	0.9	0.6						
NESP Upper Miss. River L&D 24	New Lock / 1200ft / NESP	Mississippi			8.0	13.7	14.1	106.1	109.3	112.6	115.8	119.4	35.7				
Inner Harbor Navigation Canal (IHNC) Lock	New Lock	GIWW						118.2	311.6	222.6	229.3	198.3	157.2	95.5	68.4	38.2	31.8
MKARNS 12' Channel	channel deepening	MKARNS				8.2	8.4	54.3	56.0	57.7	59.4	41.5	16.6				
NESP Upper Miss. River L&D 22	New Lock / 1200ft / NESP	Mississippi				7.1	11.3	7.0	79.1	81.4	83.9	86.4	89.0	25.3			
Upper Ohio Emsworth L&D	New Lock / 600 ft / UO #2	Ohio				14.1	14.5	16.1	87.0	141.1	198.2	149.7	44.7				
NESP Upper Miss. River L&D 21	New Lock / 1200ft / NESP	Mississippi					8.4	14.5	14.9	116.5	120.0	123.6	127.3	131.2	37.9		
NESP IWW Peoria L&D	New Lock / 1200ft / NESP	Illinois					8.4	14.5	14.9	76.3	78.6	81.0	83.4	85.9	37.9		
Upper Ohio Dashields L&D	New Lock / 600 ft / UO #3	Ohio						14.7	15.2	16.8	87.3	141.2	198.4	149.9	46.7		
NESP Upper Miss. River L&D 20	New Lock / 1200ft / NESP	Mississippi						8.7	14.9	15.4	79.5	81.9	84.4	86.9	89.5	39.0	
TJ O'Brien	Major Rehabilitation	Illinois									5.1	63.9	5.1				
Bayou Sorrel Lock	new lock	GIWW							16.7	17.2	17.7	45.5	93.8	193.2	99.5	51.3	51.5

NOTES:
 * Total to construct projects shown is \$9.45B from 2020 to 2034.



INLAND WATERWAYS INITIATIVES

- Synchronized maintenance
- System and Component Standardization



Location	Q4CY19				Q1CY20			Q2CY20		Q3CY20		Q4CY20		Q1FY21		Q2FY21	
	NO	MA	MA	A	NO	MA	MA	AU	NO	MA	MA	AU	NO	MA	MA	AU	
Brandon Road												75	15	10			
Dresden Island												75	15	10			
Marseilles												90	120				
Starved Rock												75	15				
Peoria													60				
LaGrange													90-120				

Location	Q2CY21			Q3CY21			Q4CY21			Q1CY22			Q2CY22			Q3CY22			Q4CY22			Q1FY23			Q2FY23			Q3FY23			Q4FY23					
	MA	AU	NO	MA	AU	NO	MA	AU	NO	MA	AU	NO	MA	AU	NO	MA	AU	NO	MA	AU	NO	MA	AU	NO	MA	AU	NO	MA	AU	NO	MA	AU	NO			
Brandon Road																																				
Dresden Island																																				
Marseilles																																				
Starved Rock																																				
Peoria																																				
LaGrange																																				

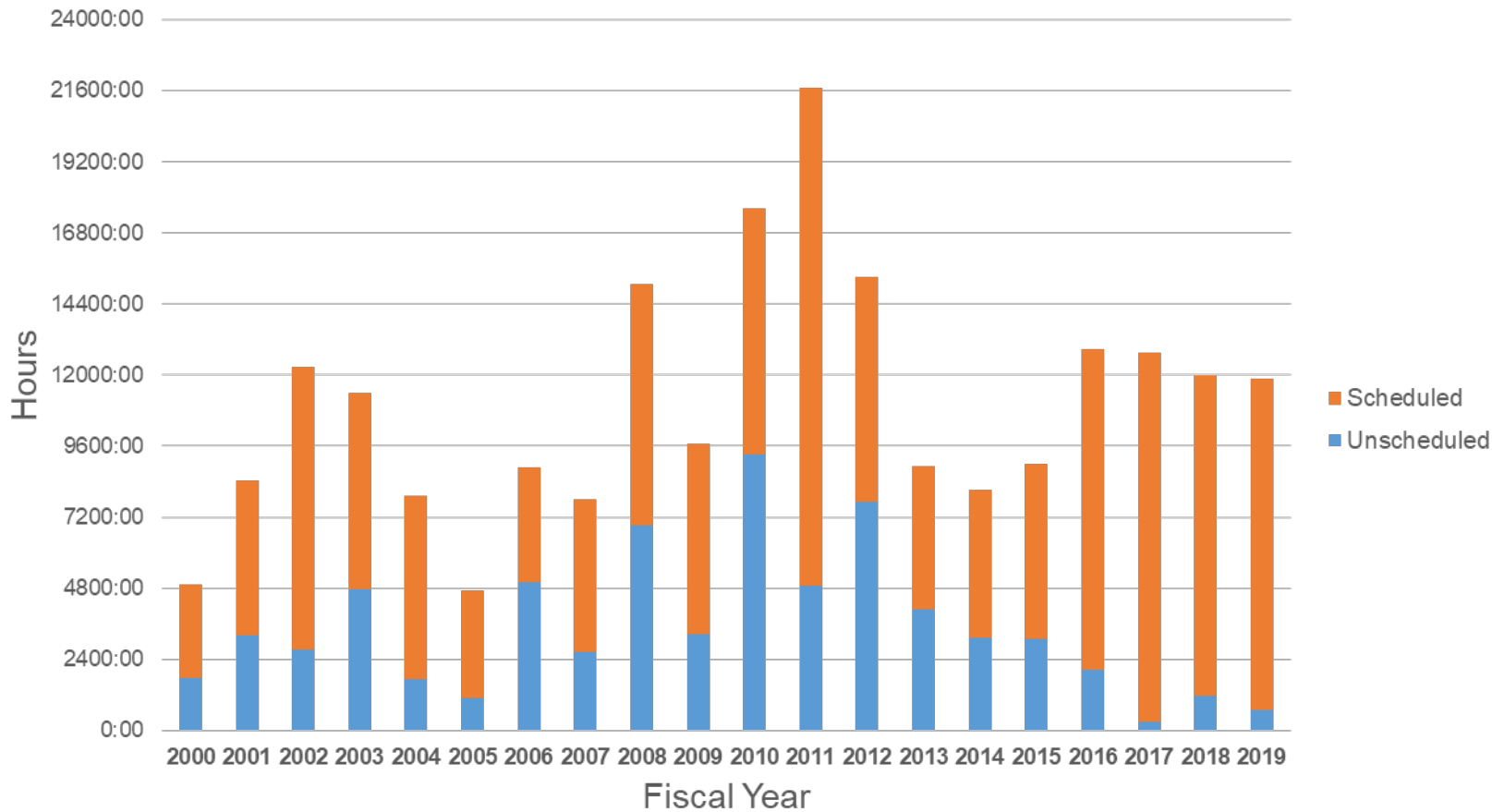
- Legend:**
- Open** (Green): No planned impedance to traffic; unscheduled delays possible.
 - Partial Closure** (Yellow): Closed during the day (typically 8-12 hours), and pass traffic at night. Typically partial closures also include width/length restrictions.
 - Full Closure** (Red): Lock closed; no ability to pass traffic.



INCREASED INVESTMENT = FEWER UNSCHEDULED CLOSURES



Lock Closures
Main Chamber Mechanical Unavailable Hours
(Events longer than 7 days)





COASTAL DREDGING CHALLENGE



Recurring, adverse impacts to Federal commercial navigation projects are on-going nationwide

- Historic storm events – increasing duration and intensity
 - Particularly in the Gulf Coast region
 - Significant shoaling
- Exceeds routine annual maintenance dredging
- Compounded by other work: port deepening, shore restoration, supplemental, and private work

High demand for dredges

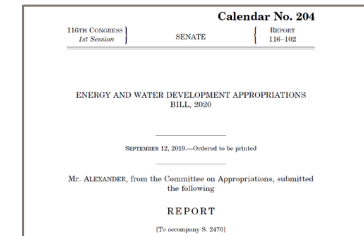
- Affects both pipeline and hopper
- Limits dredge availability for nationally significant dredging projects
- Impacts to acquisition process

Typical hopper dredge





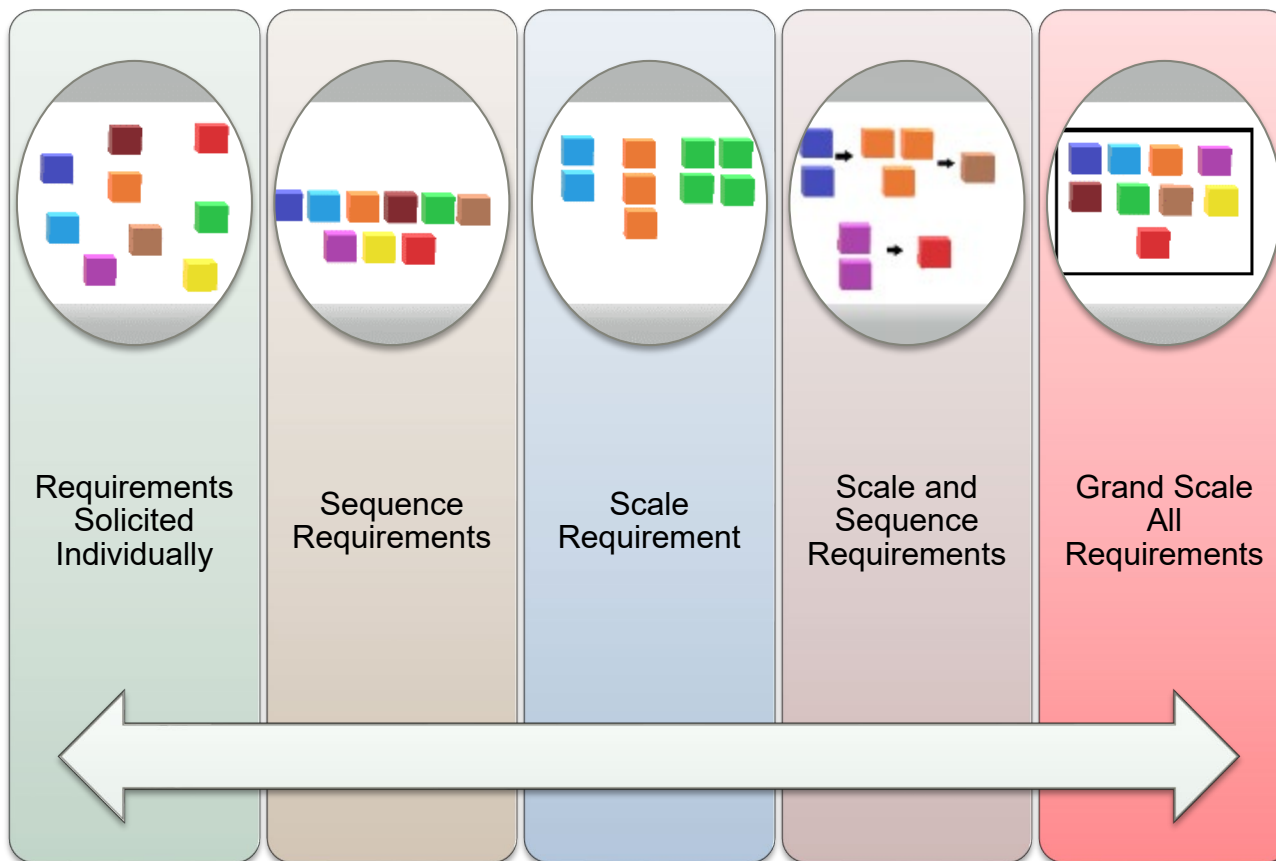
GULF REGIONAL DEMONSTRATION



Key features of the program will explore innovative ways of executing dredging in a logical, sequenced manner, unconstrained by more traditional project-specific, account-specific, or single-year practices and seek efficiencies and cost savings by evaluating the region as a system to determine when combining work across multiple deep draft commercial navigation projects, across years, or across Construction and Operation and Maintenance accounts is appropriate. By including the Mississippi River Baton Rouge to the Gulf of Mexico (Southwest Pass) and other nearby Gulf Coast commercial navigation projects, the goals of the program are to include being more responsive to dredging demands within the region, while minimizing disruption to critical construction and maintenance dredging requirements enterprise-wide.

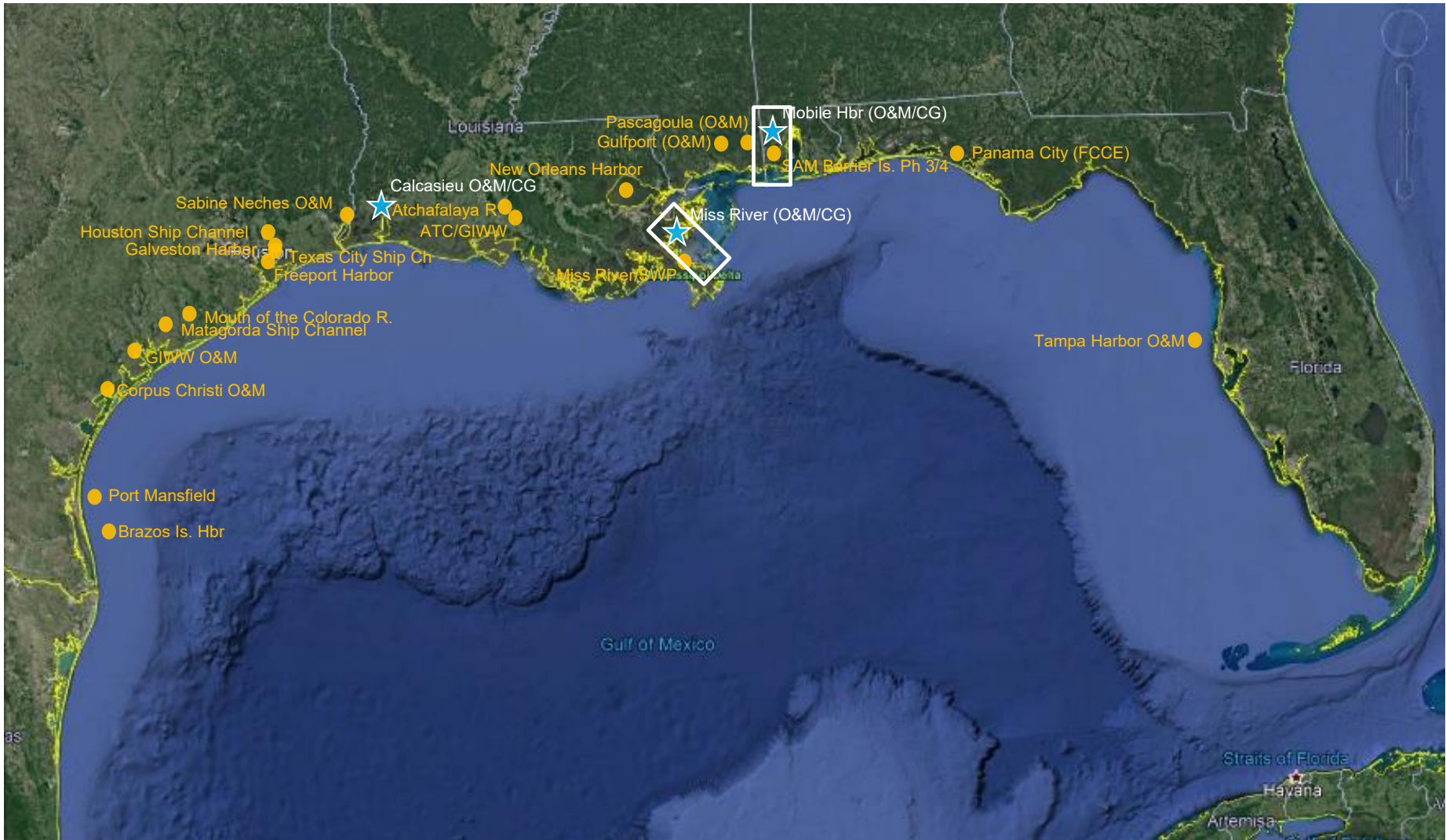


CONCEPTUAL FRAMEWORK FOR SCALING AND SEQUENCING REQUIREMENTS





REGIONAL DREDGE DEMONSTRATION PROGRAM





WRDA 2016 SECTION 1122 BENEFICIAL USE PROJECT LIST



State	MSC	Project Name	RSM Funds for Planning	Estimated 1122 Federal Cost (over base plan)	Estimated Schedule	FY20 Estimated Funds
Proposed for Recommendation						
CA	SPD	Restoring San Francisco Bay's Natural Infrastructure with Dredged Sediment: Strategic Placement	TBD	\$3,250,000	FY21-22	
HI	POD	Haleiwa Small Boat Harbor Maintenance Dredging and Beach Restoration	\$446,000	\$4,500,000	FY22	
IL	LRD	Public Beach Protection Pilot in Four Illinois Coastal Communities	\$270,000	\$1,100,000	FY21Q3	
MS	SAD	Deer Island Lagoon Project – COMPLETED AS SUPPLEMENTAL	\$32,000	\$1,500,000	FY19	
NJ	NAD	Beneficial Use Placement Opportunities in the State of New Jersey Using Navigation Channel Sediments: Barnegat Inlet	\$350,000	\$1,500,000	FY20-FY21	\$1,500,000
PR	SAD	Condado Lagoon	\$246,000	\$2,400,000	FY21	\$100,000
SC	SAD	Crab Bank Seabird Sanctuary – CONTINUING AS CAP 204 PROJECT	CAP	\$232,000	FY20Q1	
TX	SWD	Hickory Cove Marsh Restoration and Living Shoreline	\$408,000	\$9,700,000	FY21/22	
WA	NWD	Grays Harbor South Jetty Sand Placement Pilot Project	\$388,000	\$3,700,000	FY22	
WI	MVD	Mississippi River Upper Pool 4, Pierce County Islands and Head of Lake Pepin Backwater Complex - Beneficial Use of Dredged Material	CAP	\$14,000,000	FY21	\$200,000
Total Estimated Federal Cost			\$2,140,000*	\$40,150,000**		\$1,800,000



Selected Navigation Activities

- ✓ Dredge Scheduling/Optimization/ Dredge Data Pilot
- Regional Dredge Contracting*
 - ✓ SWP 2020
 - ✓ Demonstration Program
- USACE Reserve Fleet:
 - ✓ Dredge McFarland Recapitalization
 - ✓ Management and Operations Review
- ✓ Beneficial Use of Dredge Material
- Federal Standard
- ✓ Capital Investment Strategy
- Subchapter M Implementation

*USACE has regional contracts for dredging in several regions, this item refers to expanded approaches



THANK YOU

