

WEDA CONFERENCE GULF COAST CHAPTER

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GALVESTON DISTRICT – NAVIGATION FACTS



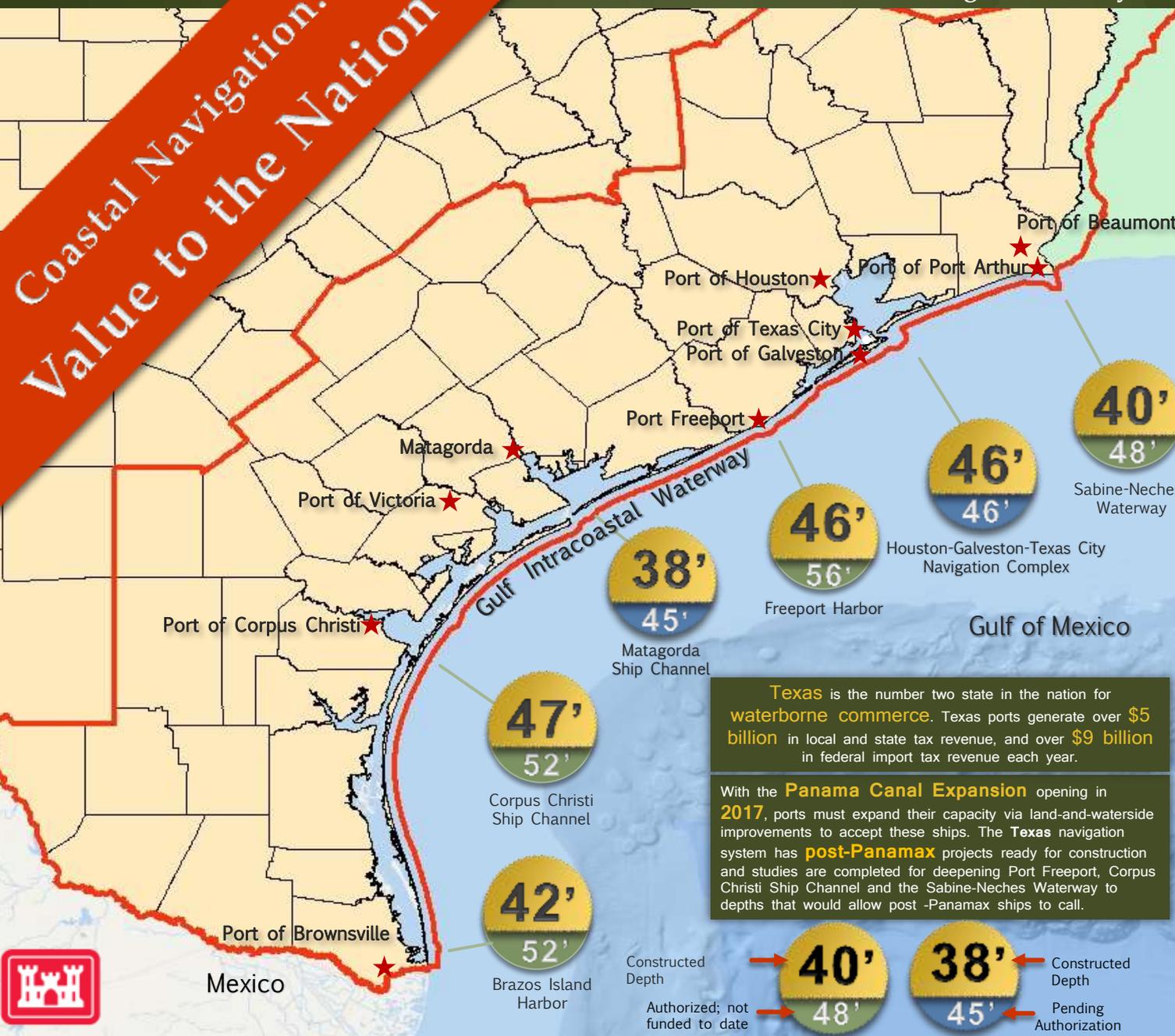
- Monitor and maintain over 1,000 miles of navigation channels and waterways
- Dredge ~25 million cubic yards per year
- 10 Major Texas maritime Ports
- Gulf Intracoastal Waterway connects Ports
- 3 Strategic Ports
- Texas Ports and Waterways moved >600M tons of Commercial Cargo during 2015
- 21.8% of Nation's Tonnage through Texas Ports
- 25.4% of Nation's Imports through Texas Ports
- 9.5% of Nation's Tonnage through Port Houston



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**Coastal Navigation:
Value to the Nation**



LEADING U.S. PORTS (2015 Tonnage)	
Houston #2 - 240.9 million tons	#1 Foreign Tonnage & #2 Total Tonnage
Beaumont #5 - 87.2 m.tons	#1 Military Port in World
Gulf Intracoastal Waterway (79 million tons - Texas portion)	#3 Inland Waterway
Corpus Christi #6 - 85.7 m.tons	America's Energy Gateway
Texas City #15 - 42.9 m.tons	Services Largest Petrochemical Complex
Port Arthur #19 - 35.8 m.tons	Vital Break-Bulk Port
Freeport #32 - 21.1 m.tons	Connecting Global Services Via Caribbean Relay Port
Matagorda to include Port of Port Lavaca and Port of Point Comfort #46 - 11.8 m. tons	Generates Annual Business Revenues of Nearly \$2 Billion
Galveston #51 - 10.4 m.tons	#4 Cruise Ship Port
Brownsville #66 - 7.7 m.tons	#1 Ship Recycling Port
Victoria (#70) - 6.7 m.tons	#2 Shallow-Draft Port for Domestic Crude Petroleum

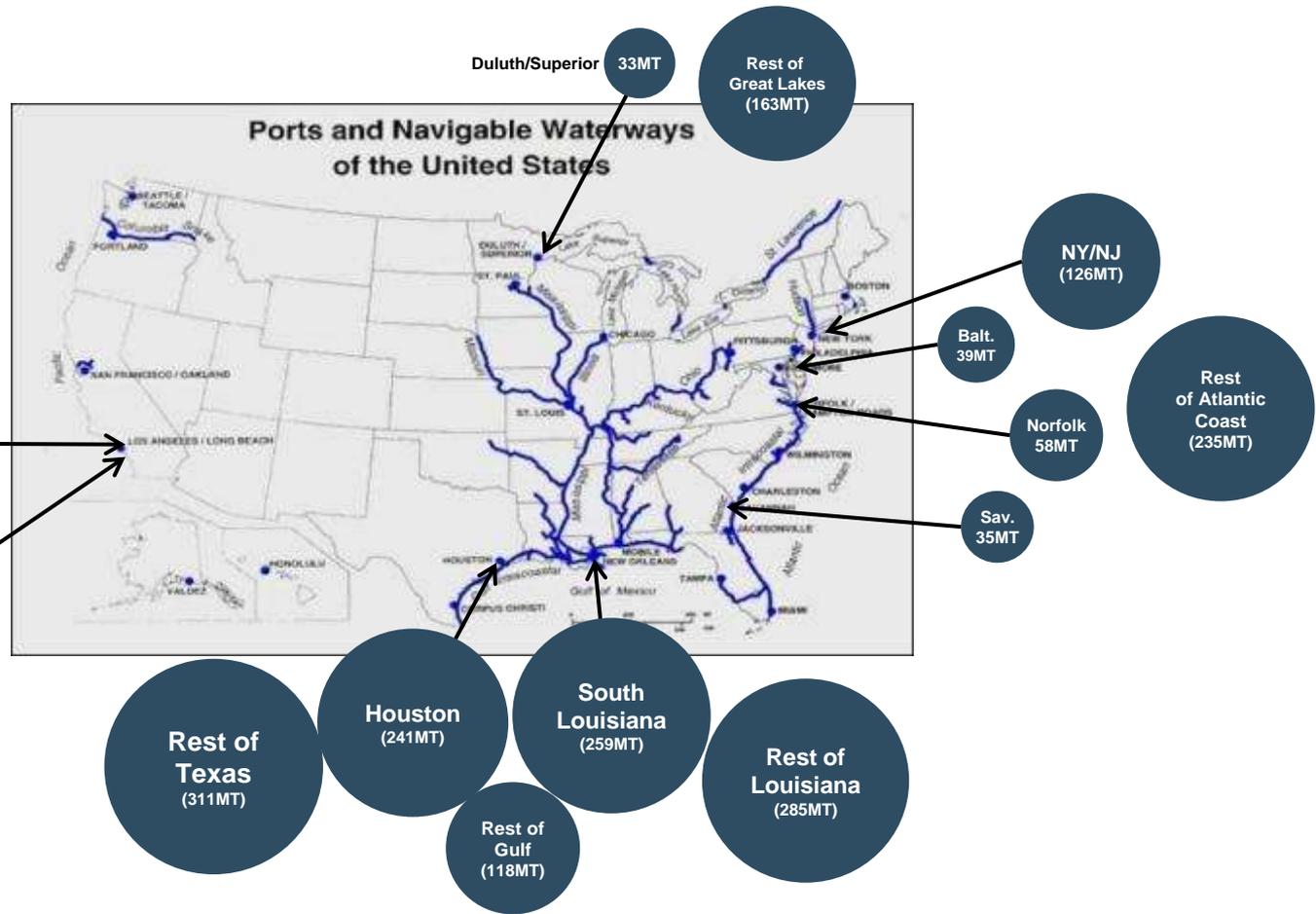
Texas is the number two state in the nation for waterborne commerce. Texas ports generate over \$5 billion in local and state tax revenue, and over \$9 billion in federal import tax revenue each year.

With the Panama Canal Expansion opening in 2017, ports must expand their capacity via land-and-waterside improvements to accept these ships. The Texas navigation system has post-Panamax projects ready for construction and studies are completed for deepening Port Freeport, Corpus Christi Ship Channel and the Sabine-Neches Waterway to depths that would allow post -Panamax ships to call.



TEXAS PORTS AND NAVIGATION CHANNELS

Where do decisions on infrastructure have the greatest impact?



TEXAS PORTS AND NAVIGATION CHANNELS

TEXAS PORTS [Federal Navigation Project]	NATIONAL RANKING	2015 TONNAGE			AUTHORIZED DEPTH	STUDY DEPTH	STATUS OF CHANNEL IMPROVEMENT STUDY
		DOMESTIC	FOREIGN	TOTAL			
COASTAL PORTS		(million tons)			(ft)	(ft)	
Port Houston [Houston Ship Channel, Texas]	2	77.5	163.4	240.9	46	46	- Mega Study to extend 46-ft chl, bend easing, channel improvements - Chief's Report in 2019
Port of Beaumont [Sabine-Neches Waterway, Texas]	5	35.3	51.8	87.2	40	48	- WRRDA 2014 authorized deepening to 48-ft - Awaiting Appropriation
Port of Corpus Christi Authority [Corpus Christi Ship Channel, Texas]	6	40.4	45.3	85.7	47	52	- WRRDA 2014 authorized deepening to 52-ft - Awaiting Appropriation
Port of Texas City [Texas City Channel, Texas]	15	15.3	27.6	42.9	46	46	- Deepening completed in 2011 - Project close-out 2017
Port of Port Arthur [Sabine-Neches Waterway, Texas]	19	9.7	26.1	35.8	40	48	- WRRDA 2014 authorized deepening to 48-ft - Awaiting Appropriation
Port Freeport [Freeport Harbor, Texas]	32	5.4	15.7	21.1	46	50-55	- WRRDA 2014 authorized deepening to 50-55-ft - USACE & Port Freeport conducting GRR to revise widths and depths - Director's Report in 2018
Calhoun County Port Authority [Matagorda Ship Channel, Texas]	46	3.6	8.2	11.8	38	38	- Feasibility Study ongoing to deepen and widen channel - Chief's Report in 2019
Port of Galveston [Galveston Harbor, Texas]	51	4.3	6.1	10.4	46	46	- Feasibility Study ongoing to extend 2,400-ft of channel to 46-ft - Chief's Report in 2017
Port of Brownsville [Brazos Island Harbor, Texas]	66	2.8	5.0	7.8	42	52	- WRDA 2016 Authorized deepening to 52-ft - Awaiting Appropriation
Port of Victoria [Channel to Victoria, Texas]	70	6.7	0	6.7	14	14	- No channel improvements forecasted
INLAND WATERWAY							
Gulf Intracoastal Waterway (GIWW)	3	86.0	0	86.0	12-14	12-14	- Feasibility Study ongoing to evaluate alternatives for nav. structures - Chief's Report scheduled in 2021
TEXAS IS THE NATION'S #2 MARITIME STATE WITH RESPECT TO WATERBORNE COMMERCE TEXAS PORTS >500 MILLION TONS CARGO VALUED >\$350B (SOURCE: U.S. ARMY CORPS OF ENGINEERS - INSTITUTE FOR WATER RESOURCES, 2015)							

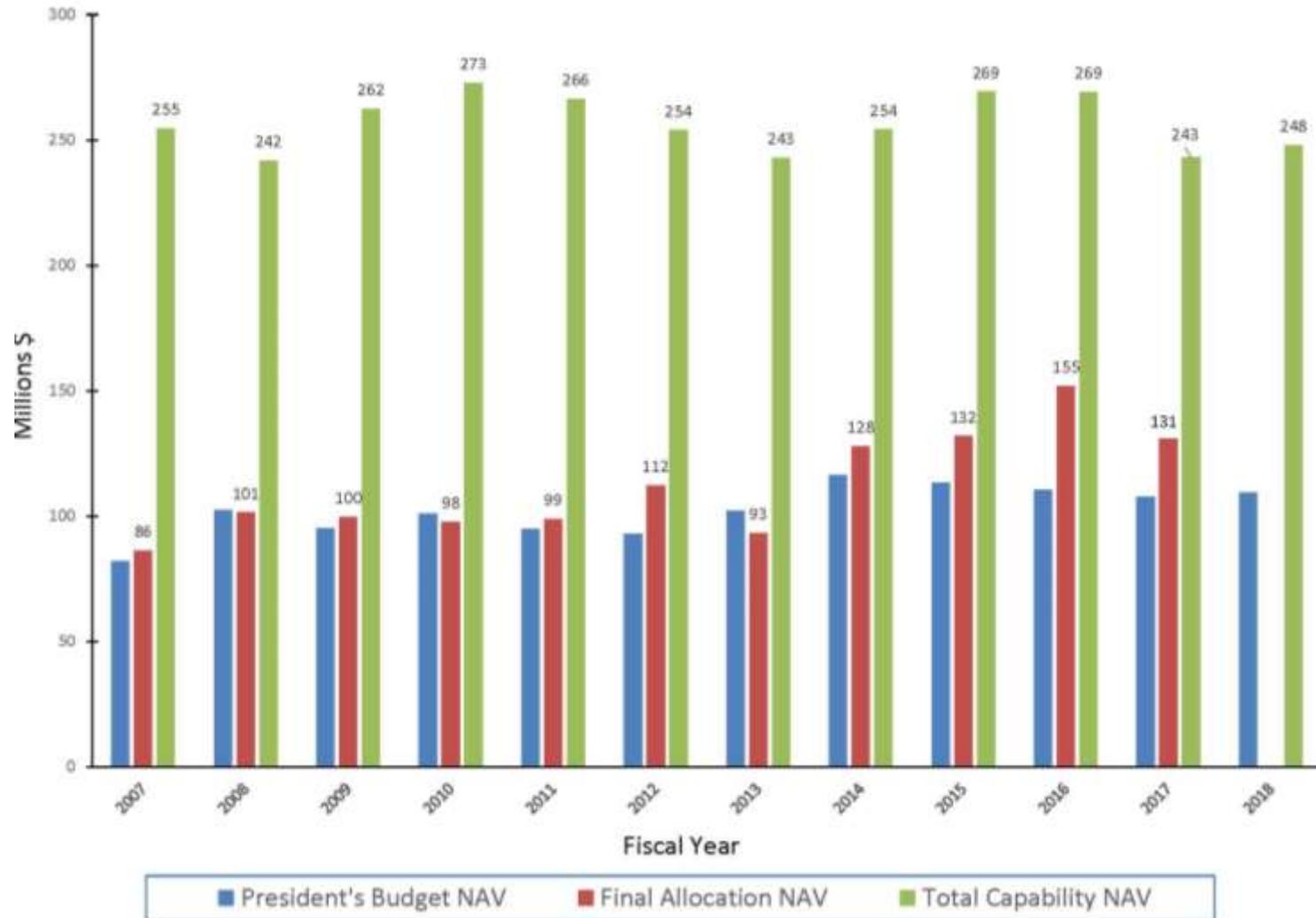


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O&M FUNDING 2007 THROUGH PRESENT

Texas Channels and Waterways

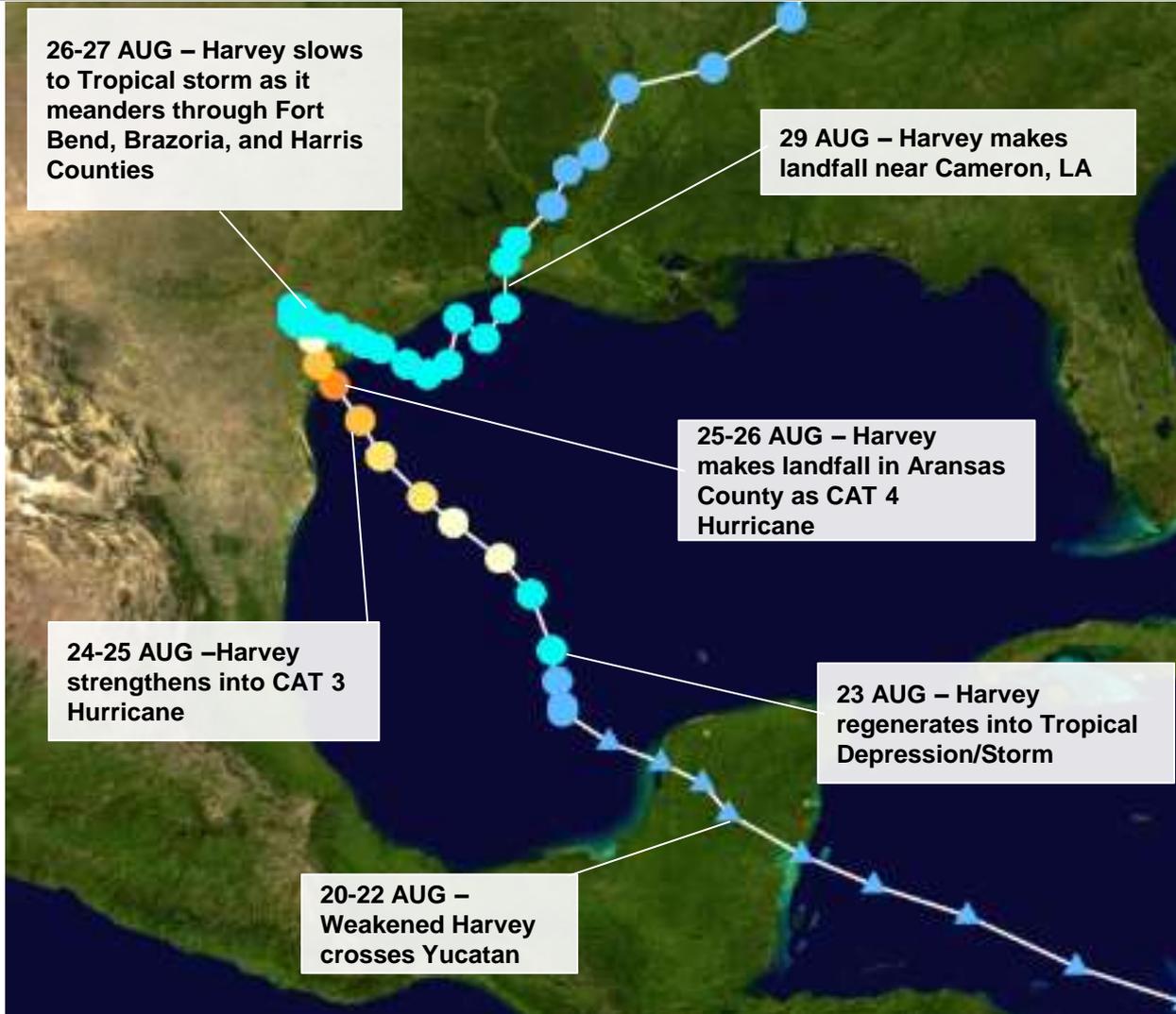


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Hurricane Harvey and the Texas Coast



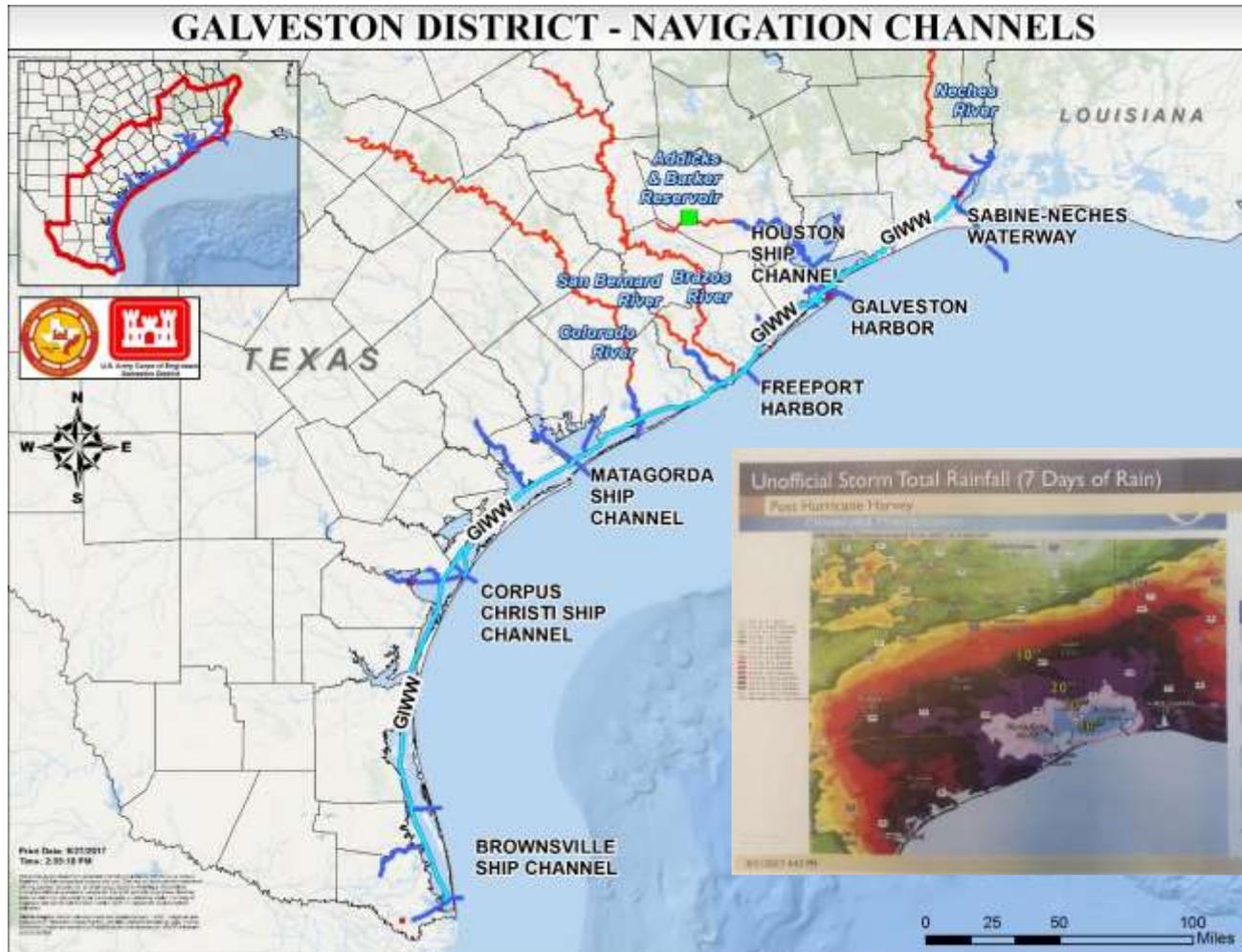
Flooding in Port Arthur, Jefferson County on 31 August



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Historic Rainfall – Sediment Load



Historic Rainfall – Sediment Load



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Hydrographic Survey Assets as of Sept 3, 2017

Vessel Name	Office/Contractor	Survey Type(s)	Status	Survey Operations
NAO-1	USACE - Galveston District Office	Singlebeam	Operational	Colorado River to Brazos River 9/4; working hotspots in GIWW
CC-01	USACE - Corpus Christi Resident Office	Singlebeam	Operational	Colorado River to Brazos River 9/4; working hotspots in GIWW
CC-03	USACE - Corpus Christi Resident Office	Sidescan Sonar	Operational	BUS B Inspection
Vannoy	USACE - Corpus Christi Resident Office	Singlebeam	Operational	CCSC Entrance
DeLaHunt	USACE - Houston Resident Office	Singlebeam	Operational	Barbours Terminal tomorrow; Upper Houston 30-60 days
Turner 2	USACE - Houston Resident Office	Singlebeam/Multibeam	Operational	CS at Freeport
Turpin	USACE - Port Arthur Resident Office	Singlebeam/Multibeam	Not Operational	Neches River
PAO-4	USACE - Port Arthur Resident Office	Singlebeam	Operational	Neches River
RGV-01	USACE - Rio Grande Valley Resident Office	Singlebeam	Operational	In route to Corpus Christi
OB-189 (MVN)	USACE - New Orleans District - USACE	Singlebeam	Operational	Colorado River to Brazos River 9/4; working hotspots in GIWW
OB-160	USACE - New Orleans District - USACE	Singlebeam	Operational	High Island to PA 9/4
OB-168	USACE - New Orleans District - USACE	Singlebeam	Operational	High Island to PA 9/4
NRT-4	NOAA	Multibeam/Sidescan	Operational	Complete upper Houston with Obstructions; Upper Houston 30-60 days
Manta	NOAA	Singlebeam/Sidescan	Operational	Cross Section upper; Demob this week
Miss Brook	Contractor	Singlebeam/Sidescan	Operational	Matagorda Ship Channel
Orion	Contractor	Singlebeam/Sidescan	Operational	Surveying Freeport
Blake	Contractor	Multibeam/Sidescan	Operational	Lower HSC Side Scan 9/4; Neches River
Brooks McCall	Contractor	Singlebeam/Sidescan	Operational	Galveston Entrance 9/2; San Jac Park North 9/4; CS on Redfish
Gerry Boardeleon	Contractor	Singlebeam/Sidescan	Operational	SNWW Entrance 9/2; Sabine-Neches River 9/3; Neches 9/4

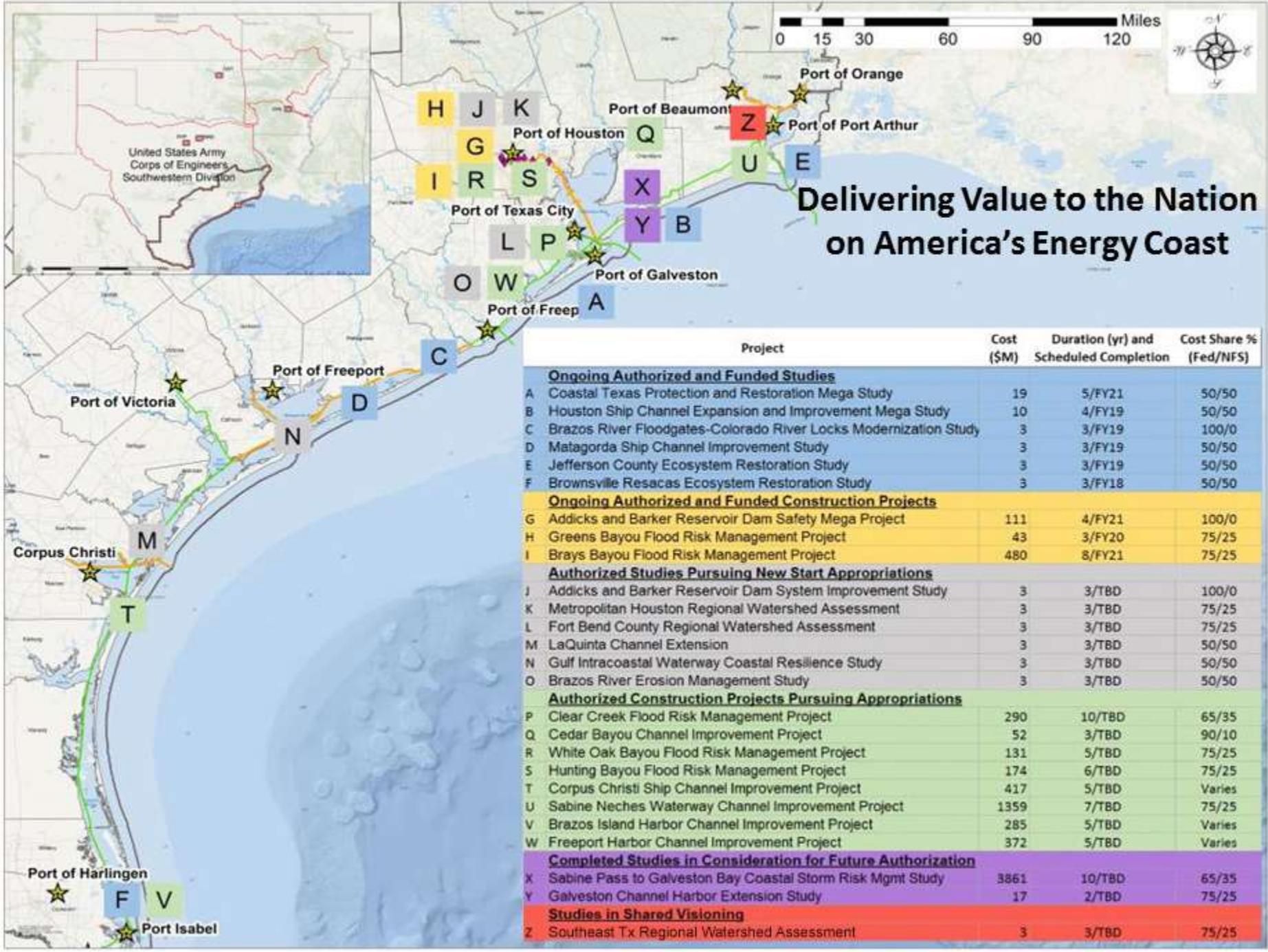


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CONTRACT DREDGES – U.S. ARMY CORPS OF ENGINEERS





Delivering Value to the Nation on America's Energy Coast

Project	Cost (\$M)	Duration (yr) and Scheduled Completion	Cost Share % (Fed/NFS)
Ongoing Authorized and Funded Studies			
A Coastal Texas Protection and Restoration Mega Study	19	5/FY21	50/50
B Houston Ship Channel Expansion and Improvement Mega Study	10	4/FY19	50/50
C Brazos River Floodgates-Colorado River Locks Modernization Study	3	3/FY19	100/0
D Matagorda Ship Channel Improvement Study	3	3/FY19	50/50
E Jefferson County Ecosystem Restoration Study	3	3/FY19	50/50
F Brownsville Resacas Ecosystem Restoration Study	3	3/FY18	50/50
Ongoing Authorized and Funded Construction Projects			
G Addicks and Barker Reservoir Dam Safety Mega Project	111	4/FY21	100/0
H Greens Bayou Flood Risk Management Project	43	3/FY20	75/25
I Brays Bayou Flood Risk Management Project	480	8/FY21	75/25
Authorized Studies Pursuing New Start Appropriations			
J Addicks and Barker Reservoir Dam System Improvement Study	3	3/TBD	100/0
K Metropolitan Houston Regional Watershed Assessment	3	3/TBD	75/25
L Fort Bend County Regional Watershed Assessment	3	3/TBD	75/25
M LaQuinta Channel Extension	3	3/TBD	50/50
N Gulf Intracoastal Waterway Coastal Resilience Study	3	3/TBD	50/50
O Brazos River Erosion Management Study	3	3/TBD	50/50
Authorized Construction Projects Pursuing Appropriations			
P Clear Creek Flood Risk Management Project	290	10/TBD	65/35
Q Cedar Bayou Channel Improvement Project	52	3/TBD	90/10
R White Oak Bayou Flood Risk Management Project	131	5/TBD	75/25
S Hunting Bayou Flood Risk Management Project	174	6/TBD	75/25
T Corpus Christi Ship Channel Improvement Project	417	5/TBD	Varies
U Sabine Neches Waterway Channel Improvement Project	1359	7/TBD	75/25
V Brazos Island Harbor Channel Improvement Project	285	5/TBD	Varies
W Freeport Harbor Channel Improvement Project	372	5/TBD	Varies
Completed Studies in Consideration for Future Authorization			
X Sabine Pass to Galveston Bay Coastal Storm Risk Mgmt Study	3861	10/TBD	65/35
Y Galveston Channel Harbor Extension Study	17	2/TBD	75/25
Studies in Shared Visioning			
Z Southeast Tx Regional Watershed Assessment	3	3/TBD	75/25

SWG FY18 UNKNOWNNS

- Work Plan
- Harvey Related O&M & PL84/99
- Harvey Supplemental
- Border Infrastructure



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