GALVESTON DISTRICT - FY22 NAVIGATION PROGRAM

Navigation Operations Managers:

Belynda Kinman Scott Sherman Aron Edwards Andrew Cook Seth Jones Lisa Finn

USACE Galveston District Operations Division, Navigation Branch October 21, 2021





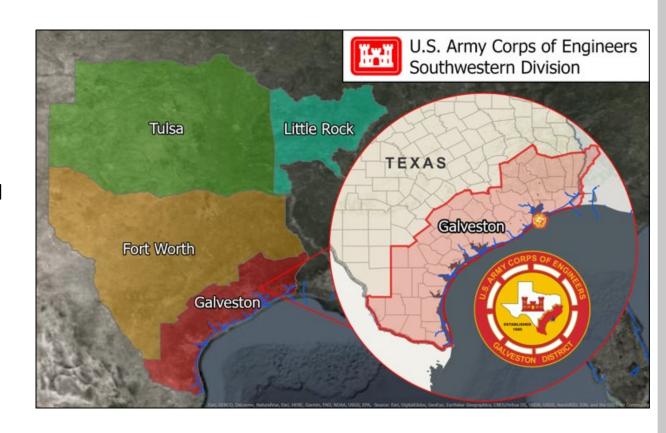


OVERVIEW OF GALVESTON DISTRICT PORTFOLIO



GALVESTON DISTRICT NAVIGATION PROJECTS

- 6 Deep-draft Navigation Complexes
- 1,000+ Miles of Deep- and shallow-draft channels
- 379-miles of GIWW
- 8 Jetty Systems
- 2 Sets of Nav Structures
- 3 Strategic Ports



LEADING U.S. PORTS

(2019 tonnage - MT Denotes millions of short tons)

Houston #1 - 284.9 MT

#1 Foreign Tonnage & #1 Total Tonnage

Corpus Christi #4 - 111.2 MT

America's Energy Gateway

Beaumont #5 - 101.1 MT

Key Strategic Military Port

Gulf Intracoastal Waterway - 110 MT

Texas Portion - 76.9 MT

#3 Inland Waterway - Texas to Florida

Texas City #16 - 41.3 MT

Services Largest Petrochemical Complex

Port Arthur #19 – 33.9 MT

Vital Break-Bulk Port

Freeport #23 - 29.8 MT

Connecting Global Services Via Caribbean Relay Port

Galveston #47 - 11 MT

Leading Cruise Ship Port in Gulf

Brownsville #68 - 6.6 MT

Largest Land-Owning Public Port Authority in the Nation

Calhoun County Port #76 - 5.2 MT

Provides Direct Deep-Draft Access Through Matagorda Ship Channel

Victoria #102 - 2.7 MT

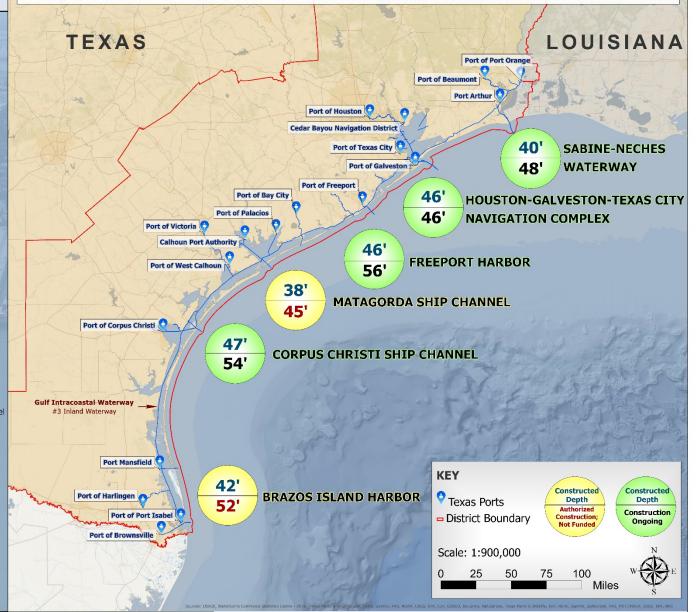
Leading Shallow-Draft Port for Domestic Crude Petroleum

Data Sources: USACE, Waterborne Commerce Statistics Center - 2019, Texas Ports Association



Texas is the number one state in the nation for waterborne commerce.

A total of \$80.0 billion of federal, state, and local tax revenue in the U.S. was supported by maritime activity at the public and private terminals in the state of Texas. Of the \$80.0 billion of federal, state and local tax revenue supported in the U.S., about \$7.8 billion of state and local taxes was supported in the state of Texas.









LEADING U.S. PORTS

(2019 tonnage - MT Denotes millions of short tons)

Houston #1 - 284.9 MT

#1 Foreign Tonnage & #1 Total Tonnage

Corpus Christi #4 - 111.2 MT

America's Energy Gateway

Beaumont #5 - 101.1 MT

Key Strategic Military Port

Gulf Intracoastal Waterway - 110 MT

Texas Portion - 76.9 MT

#3 Inland Waterway - Texas to Florida

Texas City #16 - 41.3 MT

Services Largest Petrochemical Complex

Port Arthur #19 - 33.9 MT

Vital Break-Bulk Port

Freeport #23 - 29.8 MT

Connecting Global Services Via Caribbean Relay Port

Galveston #47 - 11 MT

Leading Cruise Ship Port in Gulf

Brownsville #68 – 6.6 MT

Largest Land-Owning Public Port Authority in the Nation

Calhoun County Port #76 - 5.2 MT

Provides Direct Deep-Draft Access Through Matagorda Ship Channel

Victoria #102 – 2.7 MT

Leading Shallow-Draft Port for Domestic Crude Petroleum

Data Sources: USACE, Waterborne Commerce Statistics Center - 2019, Texas Ports Association









FY22 Sabine-Neches Waterway - Outer Bar & Bank



LOCATION: Sabine-Neches Waterway

DREDGE TYPE: Hopper

PLACEMENT: ODMDS

QUANTITY: 2,000,000 cy

DEPTH: 44-ft + 2-ft

BUSINESS TYPE: Unrestricted

ADVERTISE: 02/22/22

BID OPENING: 03/22/22

COMMENCE DREDGING: 05/21/22

DREDGE COMPLETE: 10/19/22

WORK RESTRICTIONS/WINDOW:

Contingent on Deepening contracts





FY22 Sabine-Neches Waterway - SNWW Maintenance Dredging



LOCATION: Sabine-Neches Waterway

DREDGE TYPE: Pipeline

PLACEMENT: Upland Confined

QUANTITY: 3,000,000 cy

DEPTH: 42-ft + 2-ft

BUSINESS TYPE: TBD

ADVERTISE: 06/08/22

BID OPENING: 07/08/22

COMMENCE DREDGING: 09/05/22

DREDGE COMPLETE: 03/05/23





FY22 Sabine-Neches Waterway - PA8 & PA11



LOCATION: Sabine-Neches Waterway

DREDGE TYPE: N/A

PLACEMENT: Upland Confined

QUANTITY: N/A

DEPTH: N/A

BUSINESS TYPE: TBD

ADVERTISE: 05/31/22

BID OPENING: 06/30/22

COMMENCE WORK: 08/26/22

COMPLETE WORK: 03/26/23





LEADING U.S. PORTS

(2019 tonnage - MT Denotes millions of short tons)

Houston #1 - 284.9 MT

#1 Foreign Tonnage & #1 Total Tonnage

Corpus Christi #4 - 111.2 MT

America's Energy Gateway

Beaumont #5 - 101.1 MT

Key Strategic Military Port

Gulf Intracoastal Waterway - 110 MT

Texas Portion - 76.9 MT

#3 Inland Waterway - Texas to Florida

Texas City #16 - 41.3 MT

Services Largest Petrochemical Complex

Port Arthur #19 - 33.9 MT

Vital Break-Bulk Port

Freeport #23 - 29.8 MT

Connecting Global Services Via Caribbean Relay Port

Galveston #47 - 11 MT

Leading Cruise Ship Port in Gulf

Brownsville #68 – 6.6 MT

Largest Land-Owning Public Port Authority in the Nation

Calhoun County Port #76 - 5.2 MT

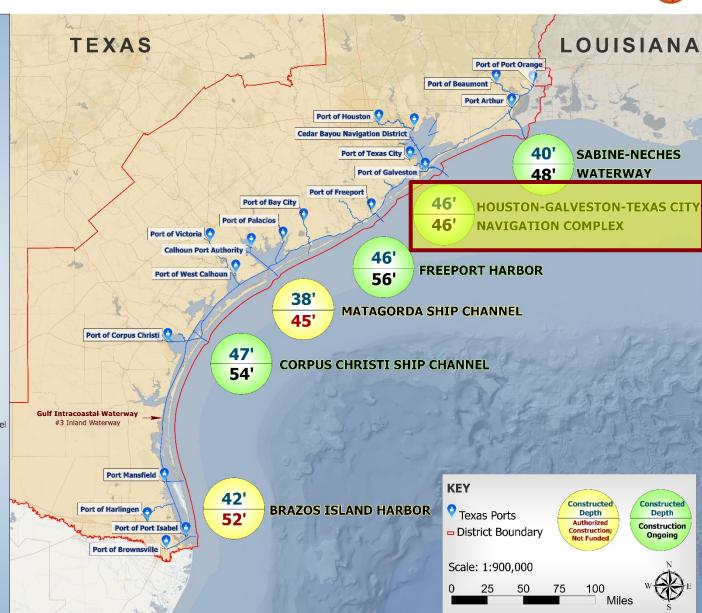
Provides Direct Deep-Draft Access Through Matagorda Ship Channel

Victoria #102 - 2.7 MT

Leading Shallow-Draft Port for Domestic Crude Petroleum

Data Sources: USACE, Waterborne Commerce Statistics Center - 2019, Texas Ports Association









FY22 Texas City Ship Channel - Main Channel & Turning Basin



LOCATION: Texas City Ship Channel

DREDGE TYPE: Pipeline

PLACEMENT: BU Confined

QUANTITY: 1,500,000 cy

DEPTH: 48-ft + 2-ft

BUSINESS TYPE: TBD

ADVERTISE: 02/03/22

BID OPENING: 03/03/22

COMMENCE DREDGING: 05/07/22

DREDGE COMPLETE: 10/07/22











FY22 Galveston Harbor and Channel - San Jacinto PA Improvements



LOCATION: Galveston Harbor and Channel

DREDGE TYPE: N/A

PLACEMENT: Upland Confined

QUANTITY: N/A

DEPTH: N/A

BUSINESS TYPE: Unrestricted

ADVERTISE: 02/14/22

BID OPENING: 03/16/22

COMMENCE WORK: 05/31/22

COMPLETE WORK: 05/31/23





FY22 Galveston Harbor and Channel - Pelican Island PA Improvements



LOCATION: Galveston Harbor and Channel

DREDGE TYPE: N/A

PLACEMENT: Upland Confined

QUANTITY: N/A

DEPTH: N/A

BUSINESS TYPE: TBD

ADVERTISE: 05/02/22

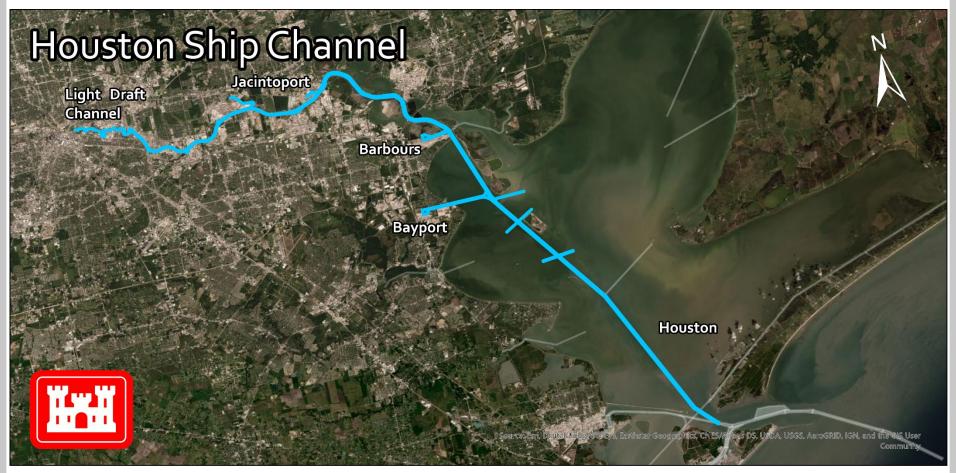
BID OPENING: 06/01/22

COMMENCE WORK: 08/16/22

COMPLETE WORK: 08/16/23











FY22 Houston/Texas City/Galveston Complex - Hopper MATOC TO



LOCATION: HSC & Galveston Harbor and Channel

DREDGE TYPE: H

PLACEMENT: ODMDS

QUANTITY: 1,200,000

DEPTH: 53-ft + 2'OD / 51-ft + 2'OD / 46-ft+

BUSINESS TYPE: MATOC

ADVERTISE: 02/15/22

BID OPENING: 03/15/22

COMMENCE DREDGING: 04/15/22

DREDGE COMPLETE: 08/15/22





FY22 Houston Ship Channel - Morgan's to Exxon and Barbours Cut



LOCATION: Houston Ship Channel

DREDGE TYPE: Pipeline

PLACEMENT: Upland Confined

QUANTITY: 2,000,000

DEPTH: 48.5-ft + 2-ft

BUSINESS TYPE: TBD

ADVERTISE: 04/15/22

BID OPENING: 05/13/22

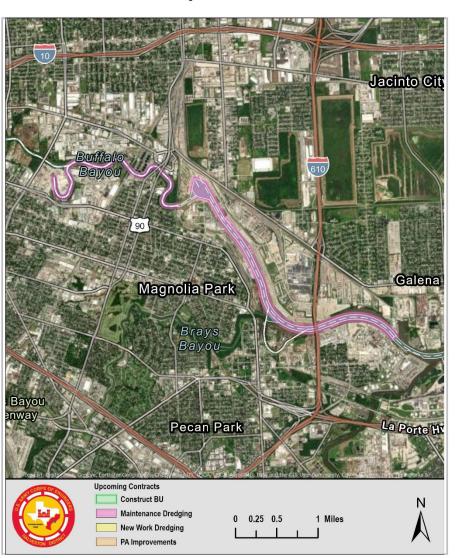
COMMENCE DREDGING: 07/25/22

DREDGE COMPLETE: 01/21/23





FY22 Houston Ship Channel - Sims to Turning Basin Dredging with Light Draft Channel



LOCATION: Houston Ship Channel

DREDGE TYPE: Mechanical / Pipeline

PLACEMENT: Upland Confined

QUANTITY: 800,000

DEPTH: 39.5-ft + 1-ft / 13-ft +1-ft

BUSINESS TYPE: TBD

ADVERTISE: 06/07/22

BID OPENING: 07/08/22

COMMENCE DREDGING: 09/27/22

DREDGE COMPLETE: 04/28/23





FY22 Houston Ship Channel - Placement Area 14 Dewatering



LOCATION: Houston Ship Channel

DREDGE TYPE: N/A

PLACEMENT: Upland Confined

QUANTITY: N/A

DEPTH: N/A

BUSINESS TYPE: TBD

ADVERTISE: 07/11/22

BID OPENING: 08/09/22

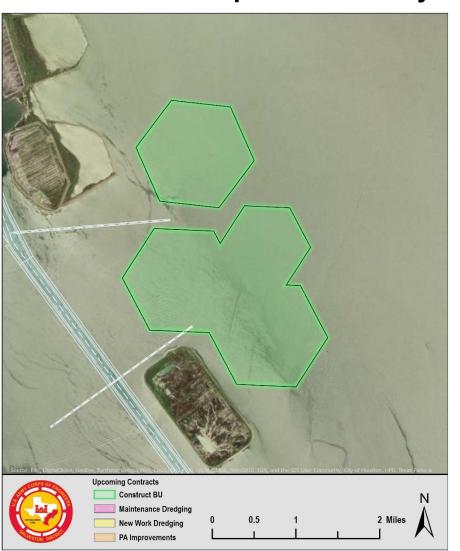
COMMENCE WORK: 10/26/22

COMPLETE WORK: 04/27/23





FY22 Houston Ship Channel - Bay Area Beneficial Use Sites (BABUS)



LOCATION: Houston Ship Channel

DREDGE TYPE: Pipeline

PLACEMENT: BU

QUANTITY: 40,000,000

DEPTH: 70-ft + 2-ft

BUSINESS TYPE: TBD

ADVERTISE: 7/16/22

BID OPENING: 8/26/22

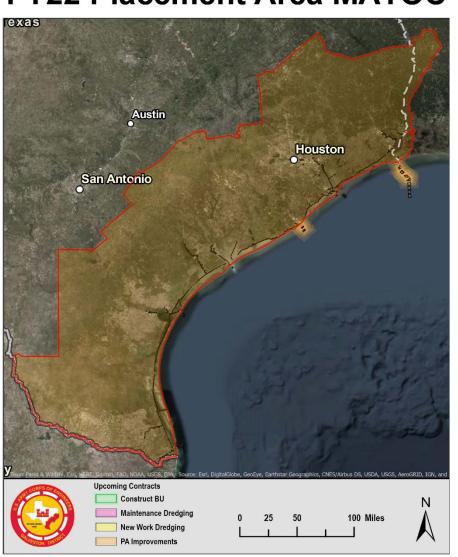
COMMENCE DREDGING: 11/10/22

DREDGE COMPLETE: 11/10/25





FY22 Placement Area MATOC



LOCATION: Galveston District

DREDGE TYPE: N/A

PLACEMENT: TBD

QUANTITY: N/A

DEPTH: N/A

BUSINESS TYPE: Small Business

ADVERTISE: 11/10/21

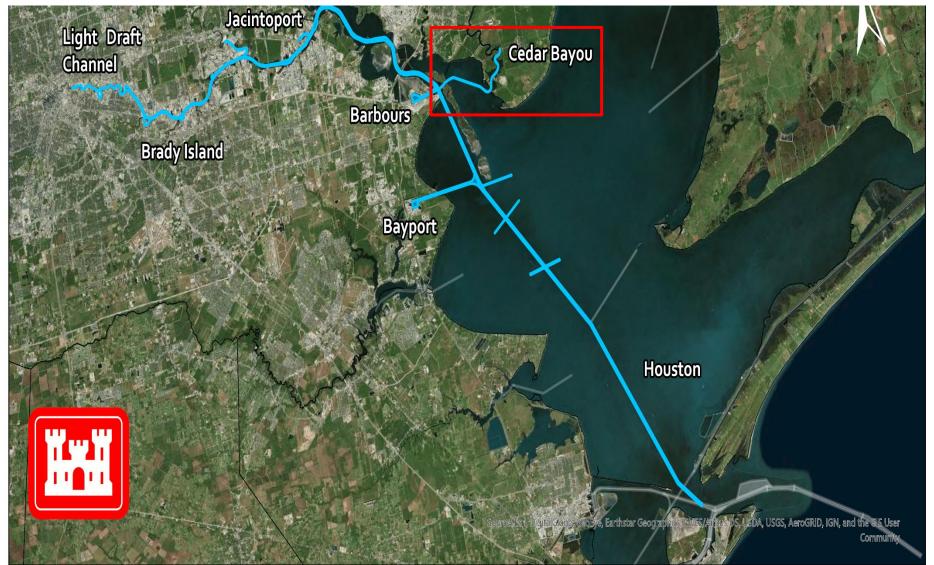
BID OPENING: 12/13/21

COMMENCE WORK:

COMPLETE WORK:











FY22 Cedar Bayou PA 6 Dike Raise



LOCATION: Cedar Bayou

DREDGE TYPE: N/A

PLACEMENT: N/A

QUANTITY: N/A

DEPTH: N/A

BUSINESS TYPE: TBD

ADVERTISE: 02/23/22

BID OPENING: 03/24/22

COMMENCE WORK: 06/08/22

COMPLETE WORK: 04/24/23







LEADING U.S. PORTS

(2019 tonnage - MT Denotes millions of short tons)

Houston #1 - 284.9 MT

#1 Foreign Tonnage & #1 Total Tonnage

Corpus Christi #4 - 111.2 MT

America's Energy Gateway

Beaumont #5 - 101.1 MT

Key Strategic Military Port

Gulf Intracoastal Waterway - 110 MT

Texas Portion - 76.9 MT

#3 Inland Waterway - Texas to Florida

Texas City #16 - 41.3 MT

Services Largest Petrochemical Complex

Port Arthur #19 - 33.9 MT

Vital Break-Bulk Port

Freeport #23 - 29.8 MT

Connecting Global Services Via Caribbean Relay Port

Galveston #47 - 11 MT

Leading Cruise Ship Port in Gulf

Brownsville #68 - 6.6 MT

Largest Land-Owning Public Port Authority in the Nation

Calhoun County Port #76 - 5.2 M

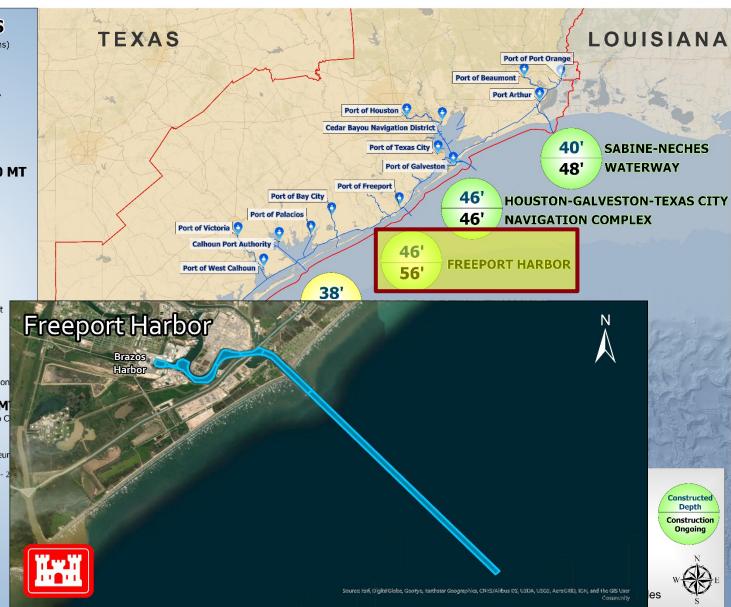
Provides Direct Deep-Draft Access Through Matagorda Ship C

Victoria #102 – 2.7 MT

Leading Shallow-Draft Port for Domestic Crude Petroleur

Data Sources: USACE, Waterborne Commerce Statistics Center - 2
Texas Ports Association

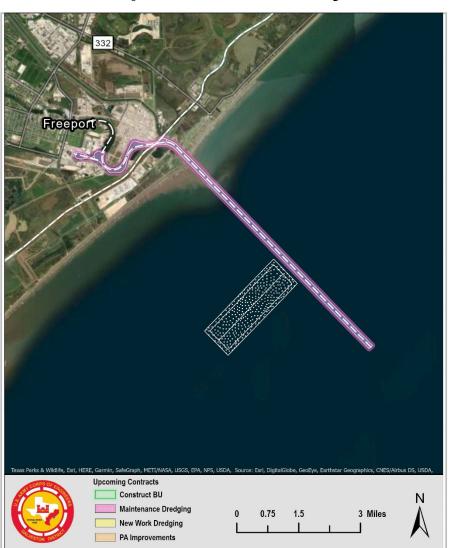








FY22 Freeport Harbor - Jetty Channel and Inside Channel (TASK ORDER)



LOCATION: Freeport Harbor

DREDGE TYPE: Hopper

PLACEMENT: ODMDS

QUANTITY: 2,000,000

DEPTH: 46-ft + 2-ft

BUSINESS TYPE: SATOC

ADVERTISE: 08/08/22

BID OPENING: 08/18/22

COMMENCE DREDGING: 10/14/22

DREDGE COMPLETE: 12/30/22





FY22 Mechanical Dredge SATOC



LOCATION: Galveston District

DREDGE TYPE: Mechanical

PLACEMENT: Upland Confined

QUANTITY: 170,00 cy

DEPTH: Varies

BUSINESS TYPE: Unrestricted

ADVERTISE: 02/07/22

BID OPENING: 03/08/22

COMMENCE DREDGING: 05/02/22

DREDGE COMPLETE: 07/08/22







LEADING U.S. PORTS

(2019 tonnage - MT Denotes millions of short tons)

Houston #1 - 284.9 MT

#1 Foreign Tonnage & #1 Total Tonnage

Corpus Christi #4 - 111.2 MT

America's Energy Gateway

Beaumont #5 - 101.1 MT

Key Strategic Military Port

Gulf Intracoastal Waterway - 110 MT

Texas Portion - 76.9 MT

#3 Inland Waterway - Texas to Florida

Texas City #16 - 41.3 MT

Services Largest Petrochemical Complex

Port Arthur #19 - 33.9 MT

Vital Break-Bulk Port

Freeport #23 - 29.8 MT

Connecting Global Services Via Caribbean Relay Port

Galveston #47 - 11 MT

Leading Cruise Ship Port in Gulf

Brownsville #68 – 6.6 MT

Largest Land-Owning Public Port Authority in the Nation

Calhoun County Port #76 - 5.2 MT

Provides Direct Deep-Draft Access Through Matagorda Ship Channel

Victoria #102 - 2.7 MT

Leading Shallow-Draft Port for Domestic Crude Petroleum

Data Sources: USACE, Waterborne Commerce Statistics Center - 2019, Texas Ports Association

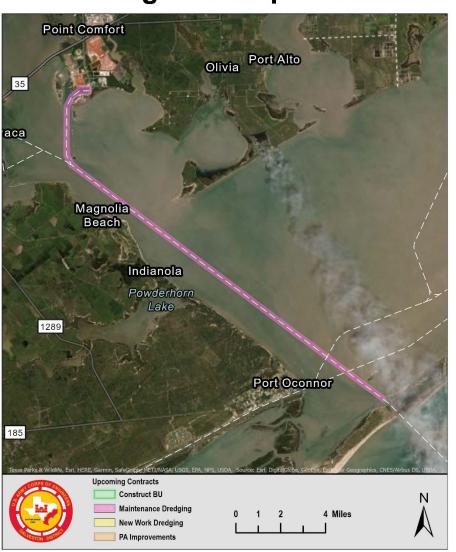








FY22 Matagorda Ship Channel - Matagorda Pen. To Point Comfort



5-Year SATOC

LOCATION: Matagorda Ship Channel

DREDGE TYPE: Pipeline

PLACEMENT: Open Water

QUANTITY: 3,500,000 cy

DEPTH: 38-ft + 2-ft

BUSINESS TYPE: Unrestricted

ADVERTISE: 01/15/22

BID OPENING: 02/15/22

COMMENCE DREDGING: 04/18/22

DREDGE COMPLETE: 09/23/22





LEADING U.S. PORTS

(2019 tonnage - MT Denotes millions of short tons)

Houston #1 - 284.9 MT

#1 Foreign Tonnage & #1 Total Tonnage

Corpus Christi #4 - 111.2 MT

America's Energy Gateway

Beaumont #5 - 101.1 MT

Key Strategic Military Port

Gulf Intracoastal Waterway - 110 MT

Texas Portion - 76.9 MT

#3 Inland Waterway - Texas to Florida

Texas City #16 - 41.3 MT

Services Largest Petrochemical Complex

Port Arthur #19 - 33.9 MT

Vital Break-Bulk Port

Freeport #23 - 29.8 MT

Connecting Global Services Via Caribbean Relay Port

Galveston #47 - 11 MT

Leading Cruise Ship Port in Gulf

Brownsville #68 – 6.6 MT

Largest Land-Owning Public Port Authority in the Nation

Calhoun County Port #76 - 5.2 MT

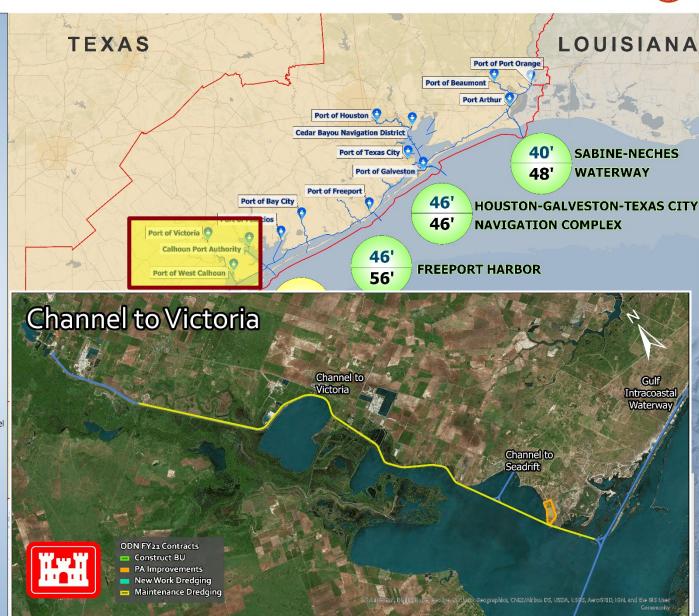
Provides Direct Deep-Draft Access Through Matagorda Ship Channel

Victoria #102 - 2.7 MT

Leading Shallow-Draft Port for Domestic Crude Petroleum

Data Sources: USACE, Waterborne Commerce Statistics Center - 2019, Texas Ports Association









FY22 Channel to Victoria - Maintenance Dredging



LOCATION: Channel to Victoria

DREDGE TYPE: Pipeline

PLACEMENT: Upland Confined / BU

QUANTITY: 800,000 cy

DEPTH: 14-ft + 2-ft

BUSINESS TYPE: TBD

ADVERTISE: 06/13/22

BID OPENING: 07/13/22

COMMENCE DREDGING: 09/05/22

DREDGE COMPLETE: 03/06/23

WORK RESTRICTIONS/WINDOW:

Whooping Crane: 15-Oct to 15-Apr





FY22 Channel to Victoria - Placement Area #1 Improvements



LOCATION: Channel to Victoria

DREDGE TYPE: N/A

PLACEMENT: N/A

QUANTITY: N/A

DEPTH: N/A

BUSINESS TYPE: TBD

ADVERTISE: 06/20/22

BID OPENING: 07/20/22

COMMENCE WORK: 09/19/22

COMPLETE WORK: 03/20/23

WORK RESTRICTIONS/WINDOW:

Whooping Crane: 15-Oct to 15-Apr







LEADING U.S. PORTS

(2019 tonnage - MT Denotes millions of short tons)

Houston #1 - 284.9 MT

#1 Foreign Tonnage & #1 Total Tonnage

Corpus Christi #4 - 111.2 MT

America's Energy Gateway

Beaumont #5 - 101.1 MT

Key Strategic Military Port

Gulf Intracoastal Waterway - 110 MT

Texas Portion - 76.9 MT

#3 Inland Waterway - Texas to Florida

Texas City #16 - 41.3 MT

Services Largest Petrochemical Complex

Port Arthur #19 - 33.9 MT

Vital Break-Bulk Port

Freeport #23 - 29.8 MT

Connecting Global Services Via Caribbean Relay Port

Galveston #47 - 11 MT

Leading Cruise Ship Port in Gulf

Brownsville #68 – 6.6 MT

Largest Land-Owning Public Port Authority in the Nation

Calhoun County Port #76 - 5.2 MT

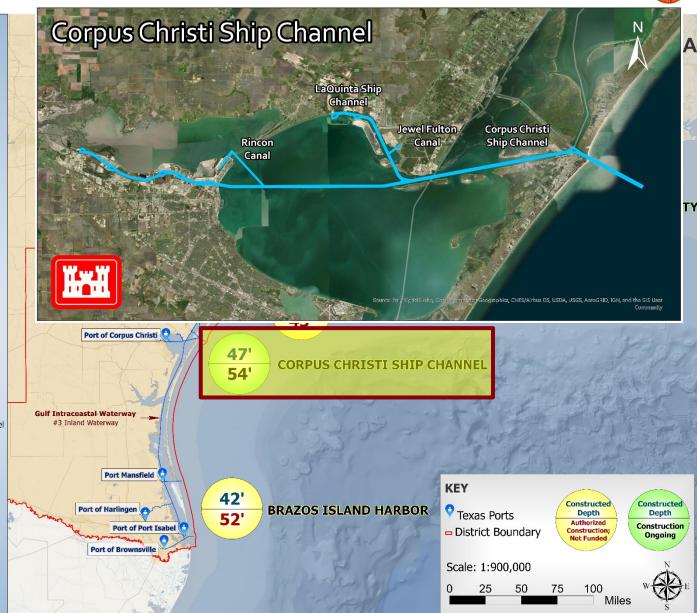
Provides Direct Deep-Draft Access Through Matagorda Ship Channel

Victoria #102 - 2.7 MT

Leading Shallow-Draft Port for Domestic Crude Petroleum

Data Sources: USACE, Waterborne Commerce Statistics Center - 2019, Texas Ports Association









FY22 Corpus Christi Ship Channel - La Quinta Channel



LOCATION: Corpus Christi Ship Channel

DREDGE TYPE: Pipeline

PLACEMENT: Mixed

QUANTITY: 1,000,000

DEPTH: 47-ft + 2-ft

BUSINESS TYPE: Unrestricted

ADVERTISE: 07/15/22

BID OPENING: 08/15/22

COMMENCE DREDGING: 10/13/22

DREDGE COMPLETE: 02/15/23







LEADING U.S. PORTS

(2019 tonnage - MT Denotes millions of short tons)

Houston #1 - 284.9 MT

#1 Foreign Tonnage & #1 Total Tonnage

Corpus Christi #4 - 111.2 MT

America's Energy Gateway

Beaumont #5 - 101.1 MT

Key Strategic Military Port

Gulf Intracoastal Waterway - 110 MT

Texas Portion - 76.9 MT

#3 Inland Waterway - Texas to Florida

Texas City #16 - 41.3 MT

Services Largest Petrochemical Complex

Port Arthur #19 - 33.9 MT

Vital Break-Bulk Port

Freeport #23 - 29.8 MT

Connecting Global Services Via Caribbean Relay Port

Galveston #47 - 11 MT

Leading Cruise Ship Port in Gulf

Brownsville #68 – 6.6 MT

Largest Land-Owning Public Port Authority in the Nation

Calhoun County Port #76 - 5.2 MT

Provides Direct Deep-Draft Access Through Matagorda Ship Channel

Victoria #102 - 2.7 MT

Leading Shallow-Draft Port for Domestic Crude Petroleum

Data Sources: USACE, Waterborne Commerce Statistics Center - 2019, Texas Ports Association









FY22 Brazos Island Harbor - Entrance / Jetty Channels w/Optional Beach Placement



LOCATION: Brazos Island Harbor

DREDGE TYPE: Hopper

PLACEMENT: BU/Open Water

QUANTITY: 450,000 cy

DEPTH: 44-ft + 2-ft

BUSINESS TYPE: Unrestricted

ADVERTISE: 07/19/22

BID OPENING: 08/18/22

COMMENCE DREDGING: 10/15/22

DREDGE COMPLETE: 03/15/23

WORK RESTRICTIONS/WINDOW:

Closed 1 APR - 30 NOV (Swimming S. Turtles); 15 Mar - 30 Sep Nesting Sea Turtles







LEADING U.S. PORTS

(2019 tonnage - MT Denotes millions of short tons)

Houston #1 - 284.9 MT

#1 Foreign Tonnage & #1 Total Tonnage

Corpus Christi #4 – 111.2 MT

America's Energy Gateway

Beaumont #5 - 101.1 MT

Key Strategic Military Port

Gulf Intracoastal Waterway - 110 MT

Texas Portion - 76.9 MT

#3 Inland Waterway - Texas to Florida

Texas City #16 - 41.3 MT

Services Largest Petrochemical Complex

Port Arthur #19 - 33.9 MT

Vital Break-Bulk Port

Freeport #23 - 29.8 MT

Connecting Global Services Via Caribbean Relay Port

Galveston #47 - 11 MT

Leading Cruise Ship Port in Gulf

Brownsville #68 – 6.6 MT

Largest Land-Owning Public Port Authority in the Nation

Calhoun County Port #76 - 5.2 MT

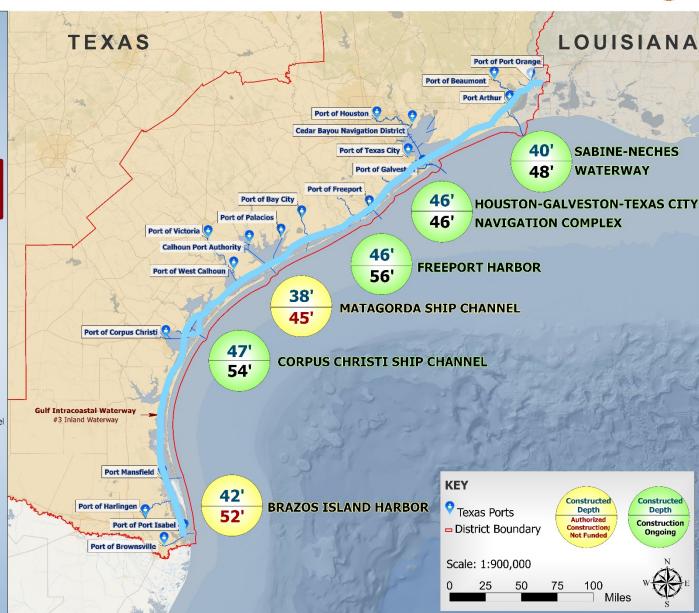
Provides Direct Deep-Draft Access Through Matagorda Ship Channel

Victoria #102 – 2.7 MT

Leading Shallow-Draft Port for Domestic Crude Petroleum

Data Sources: USACE, Waterborne Commerce Statistics Center - 2019, Texas Ports Association

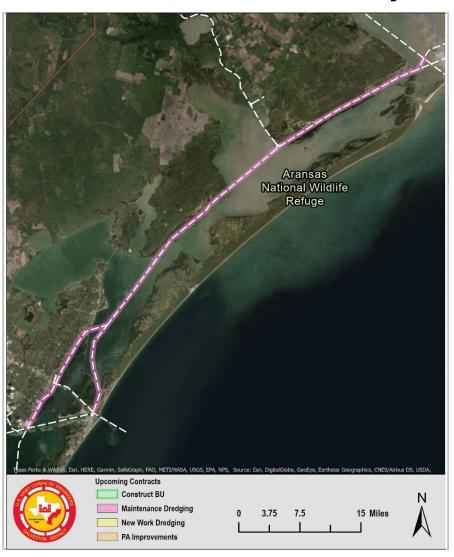








FY22 Gulf Intracoastal Waterway - Matagorda Bay to Corpus Christi Bay



LOCATION: GIWW

DREDGE TYPE: Pipeline

PLACEMENT: Upland Confined/BU/ Open Water

QUANTITY:800,000 cy

DEPTH: 16-ft + 2-ft

BUSINESS TYPE: TBD

ADVERTISE: 01/13/22

BID OPENING: 02/15/22

COMMENCE DREDGING: 04/18/22

DREDGE COMPLETE: 10/01/22

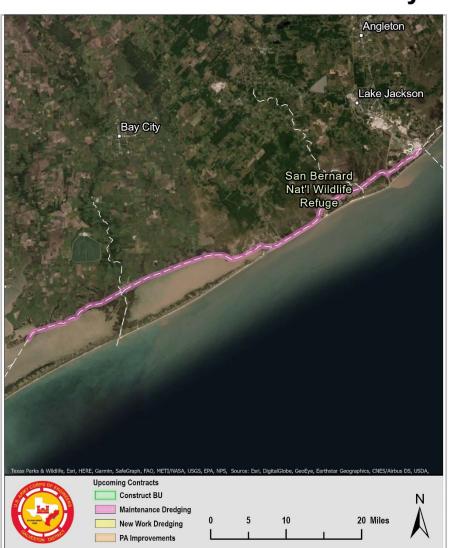
WORK RESTRICTIONS/WINDOW:

Whooping Crane NO work 15 OCT - 14 APR





FY22 Gulf Intracoastal Waterway - Freeport to Upper Matagorda Bay



LOCATION: GIWW

DREDGE TYPE: Pipeline

PLACEMENT: Upland Confined/BU/Open Water Potential beach placement

QUANTITY: 1,000,000 cy

DEPTH: 17-ft + 1-ft

BUSINESS TYPE: TBD

ADVERTISE: 07/11/22

BID OPENING: 08/10/22

COMMENCE DREDGING: 10/08/22

DREDGE COMPLETE: 03/15/23





FY22 Gulf Intracoastal Waterway - Rollover to Causeway and Channel to Port Bolivar



LOCATION: GIWW

DREDGE TYPE: Pipeline

PLACEMENT: Upland/BU/Open Water

Potential Marsh Work

QUANTITY: 800,000 cy

DEPTH: 17-ft + 1-ft

BUSINESS TYPE: TBD

ADVERTISE: 07/18/22

BID OPENING: 08/17/22

COMMENCE DREDGING:

DREDGE COMPLETE:

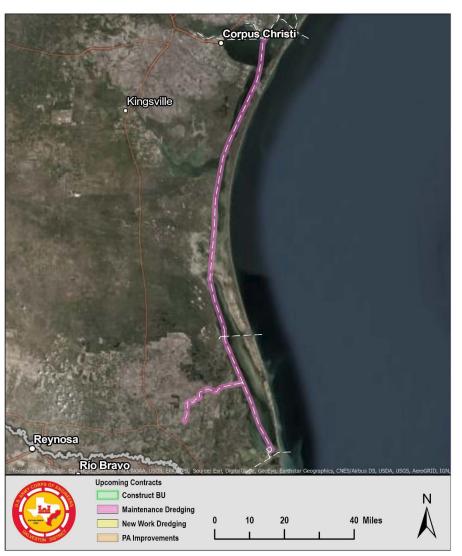
WORK RESTRICTIONS/WINDOW:

N/A if observers are used





FY22 Gulf Intracoastal Waterway - Corpus Christi Bay to Port Isabel / Channel to Harlingen



LOCATION: GIWW

DREDGE TYPE: Pipeline

PLACEMENT: Upland Confined/ BU/Open Water

QUANTITY: 1,400,000 cy

DEPTH: 14-ft + 1-ft

BUSINESS TYPE: TBD

ADVERTISE: 07/26/22

BID OPENING: 08/25/22

COMMENCE DREDGING: 10/23/22

DREDGE COMPLETE: 05/03/23

WORK RESTRICTIONS/WINDOW:

SAV - Closed Mar 01 - Oct 31





FY22 Gulf Intracoastal Waterway - PA Improvements (Freeport to Matagorda Bay)



LOCATION: GIWW

DREDGE TYPE: N/A

PLACEMENT: N/A

QUANTITY:

DEPTH: N/A

BUSINESS TYPE: TBD

ADVERTISE: 01/11/22

BID OPENING: 02/10/22

COMMENCE WORK: 04/06/22

COMPLETE WORK: 09/09/22





FY22 Gulf Intracoastal Waterway - PA Improvements (Matagorda to Corpus Christi)



LOCATION: GIWW

DREDGE TYPE: N/A

PLACEMENT: N/A

QUANTITY: N/A

DEPTH: N/A

BUSINESS TYPE: TBD

ADVERTISE: 01/11/22

BID OPENING: 02/10/22

COMMENCE WORK: 04/06/22

COMPLETE WORK: 09/09/22