



SABINE • NECHES

NAVIGATION DISTRICT

Our commitment runs deep

Sabine-Neches Waterway Overview



- The Sabine-Neches Navigation District (SNND) is the local non-federal sponsor the Sabine-Neches Waterway (SNWW)
- The SNWW is the longest deep draft ship channel on the Texas coast
 - The second longest deep-draft ship channel on the Gulf Coast
- 57 miles of deep draft channel
- Features 2 public seaports
 - Port of Beaumont
 - Port of Port Arthur
- More than 50 USCG regulated waterfront facilities

Sabine-Neches Waterway Channel Improvement Project

- Sabine-Neches Waterway last improved in 1962
- SNND was authorized to deepen the waterway from 40 ft. to 48 ft. in WRRDA 2014
- Channel Improvement Project is estimated to cost \$1.2 billion
- Construction of the project is estimated to take 7-10 years
- The Channel Improvement Project is shovel-ready
- The SNND is currently working the pre-construction, engineering, and design (PED) phase



Developable Property

North of Highway 73 Bridge: 6,840 acres
 Industry: 3,440 acres
 Private: 3,190 acres
 SNND: 210 acres

South of Highway 73 Bridge: 4,500 acres
 Industry: 3,430 acres
 Private: 1,070 acres

Total Developable Land: 11,340 acres

Placement Areas

North of Highway 73 Bridge
 Capacity: 145 million cubic yards
 Area: 3,800 acres

South of Highway 73 Bridge
 Capacity: 273 million cubic yards
 Area: 7,838 acres

Total Capacity: 417 million cubic yards
Total Area: 11,718 acres

Developable Property Placement Areas

- | | |
|---|--|
|  Industry |  Active |
|  Private |  Inactive |
|  SNND | |

0 2 4 Miles

N

Growth Potential

- 90 miles of shoreline along the deep draft channel
- More than 11,000 acres of land available for commercial and industrial development
- More than 11,000 acres of dredge placement areas (417 million cubic yard capacity)
- Abundance of resources
 - Fresh water, oil & gas, qualified workforce, etc.
- Existing transportation infrastructure
 - Second largest pipeline access in the nation
 - I-10 highway and major railway access
- Public support — Southeast Texans overwhelmingly support new industrial projects and expansions*

87%

**Trust local refining
and petrochemical
industries**

80%

**Support industrial
expansions and new
projects**

79%

**Believe that industry
makes the quality of
life better**

New Industrial Projects and Expansions on the Sabine-Neches Waterway (2011 - Present)

Completed	Date	Investment	Under Construction	Investment	Proposed	Investment
Motiva Refinery Expansion	2012	\$10 Billion	Sabine Pass LNG (Export)	\$18 Billion	Motiva Refinery Expansion	\$12 Billion
Total Petrochemicals	2011	\$2.2 Billion	ExxonMobil Expansion	\$2 Billion	Golden Pass LNG (Export)	\$10 Billion
Golden Pass LNG (Import)	2011	\$2 Billion	Natgasoline LLC (G2X)	\$1.2 Billion	Port Arthur LNG (Export)	\$8 Billion
Valero Refinery Expansion	2012	\$1.5 Billion	Phillips 66	\$400 Million	ExxonMobil Expansion	\$2 Billion
Jefferson Energy	2014	\$450 Million	Beaumont Marine Terminal	\$340 Million	Total Petrochemicals	\$1.7 Billion
Air Products	2013	\$400 Million	Sunoco Logistics	\$300 Million	Howard Energy Partners	\$650 Million
Praxair	2013	\$222 Million	Invista Sabine River Works	\$250 Million	Valero Refinery Expansion	\$522 Million
German Pellets	2013	\$178 Million	Air Liquide	\$117 Million	Arkema	\$400 Million
Huntsman Corporation	2016	\$150 Million	DuPont Orange	\$100 Million	Colonial Pipeline Expansion	\$300 Million
GT OmniPort	2012	\$90 Million			BASF Corporation	\$250 Million
Valero Refinery Dock	2015	\$75 Million			BASFTotal (JV)	\$130 Million
Lucite International	2013	\$65 Million				
Pandora Methanol (OCI)	2012	\$58 Million				
\$17.4 Billion			\$22.7 Billion		\$36.0 Billion	

Completed	+	Under Construction	=	\$40.1 Billion		
Completed	+	Under Construction	+	Proposed	=	\$76.1 Billion



ENERGY



TRADE



**NATIONAL
SECURITY**

Energy Export Frontier

#1
LNG

#2
CRUDE OIL

U.S. Liquid Bulk Petroleum Ports*

1st Quarter 2017

- Port Complex Combined Import/Export Tonnage

1. Houston Ship Channel	29,173,181 metric tons
2. Sabine Neches Waterway	18,801,890 metric tons
3. Mississippi River - NOLA/BRLA	14,052,415 metric tons
4. Corpus Christi Ship Channel	10,784,582 metric tons

*Current U.S. Customs data for only liquid petroleum products categories 2709, 2710, 2711, 2712

U.S. Exports of Petroleum Products*

2016

Products	U.S. Total (\$B)	Sabine-Neches Total (\$B)	% of Total
LNG	0.94	0.94	99.9%
Butane	1.00	0.23	26.0%
Petroleum Coke	2.6	0.36	17.5%
Crude Oil	5.2	0.89	16.8%
Propane	7.0	0.98	16.4%
Refined Petroleum	53.4	6.2	11.2%
Total	\$70.14B	\$9.60B	13.7%

*2016 U.S. Census Bureau Statistics



LNG Exports

- The SNWW is the largest and only LNG exporter in the U.S.
- Accounts for 99.9% of U.S. LNG exports
- 3 LNG export projects located on the waterway



Sabine Pass LNG

An aerial photograph of the Sabine Pass LNG terminal. The facility is a large industrial complex with several large white storage tanks, processing equipment, and a pier extending into the water. The surrounding area is a mix of green fields and industrial infrastructure.

- Owned and operated by Cheniere Energy
- Currently the only U.S. terminal exporting LNG cargoes
- Exported more than 200 LNG cargoes through May 2017
- Up to 6 liquefaction trains with a total export capacity of 27 million tons per year

Golden Pass LNG



- Qatar Petroleum and ExxonMobil joint-venture
- Export project received DOE NFTA authorization in April 2017
- Construction expected to begin in 2018
- Up to 3 liquefaction trains with a total export capacity of 15.6 million tons per year

Port Arthur LNG

An aerial photograph of the Port Arthur LNG facility. The image shows a large, dark blue body of water, likely a bay or inlet, with a road running along its edge. The surrounding area is a mix of green fields and some industrial structures. In the far distance, a city is visible on the right side of the frame. The sky is clear and blue.

- Sempra Energy LNG & Midstream and Woodside joint-venture
- Port Arthur LNG Export Project currently seeking FERC authorization (filed in November 2016)
- Up to 2 liquefaction trains with a total export capacity of 13.5 million tons per year

#3 Crude Refining Complex

- SNWW crude refining complex is one of the *largest* in US
- Four major refineries
 - Motiva Port Arthur Refinery
 - ExxonMobil Beaumont
 - Valero Port Arthur Refinery
 - Total Port Arthur Refinery
- Expansions proposed by ExxonMobil and Motiva increase refining capacity by more than 400k bpd
- Largest refiner of aviation and military fuels

Top 10 Refiners in the United States

	Refinery	City	Capacity (k/bpd)
1	Motiva Refinery	Port Arthur, TX	603
2	ExxonMobil	Baytown, TX	584
3	Marathon	Garyville, LA	543
4	ExxonMobil	Baton Rouge	503
5	Marathon	Galveston, TX	451
6	Citgo	Lake Charles, LA	425
7	BP	Whiting, IN	415
8	ExxonMobil	Beaumont, TX	365
9	Valero	Port Arthur, TX	335
10	PES	Philadelphia, PA	335

#33 Total SA Port Arthur ranked 33rd in the nation at 225 k/bpd

Projected Energy Export Growth

- SNWW became a net-exporter in 2016
 - In 2016, 3rd largest energy export waterway in the U.S. by tonnage with **\$11.6 billion** in exports
- Projected export growth by 2026 to **\$51.6 billion**:
 - LNG exports: 300 ships in 2017 to 1,217 in 2026
 - Crude oil exports: up to 300 ships in 2026
 - LPG/Butane exports: 120 in 2016 to 216 in 2026
- Energy exports from the SNWW led to \$2.4 billion trade surplus in 2016

Unprecedented Growth

Total 2015 USACE Waterborne Commerce Data
123 million shorts tons

Total 2026 Projected Waterborne Commerce
Greater than **210 million shorts tons**

*EXPORTS - Increased tonnage driving job creation,
economic growth, and trade balance*

Strengthening Trade Surplus

- 2016: \$2.4 billion trade surplus
- 2026: projected **\$40 billion** trade surplus
 - Channel improvements
 - Improve efficiency & reduce cost
 - Leverage Panama Canal expansion
 - Load deeper drafts & reduce vessel calls
 - Reduce U.S. transportation costs of energy exports
 - Increase competitiveness of US exports
 - Reduce U.S. trade deficit



Strategic Importance

#1

Commercial
Military Outload
Port in the U.S.

#1

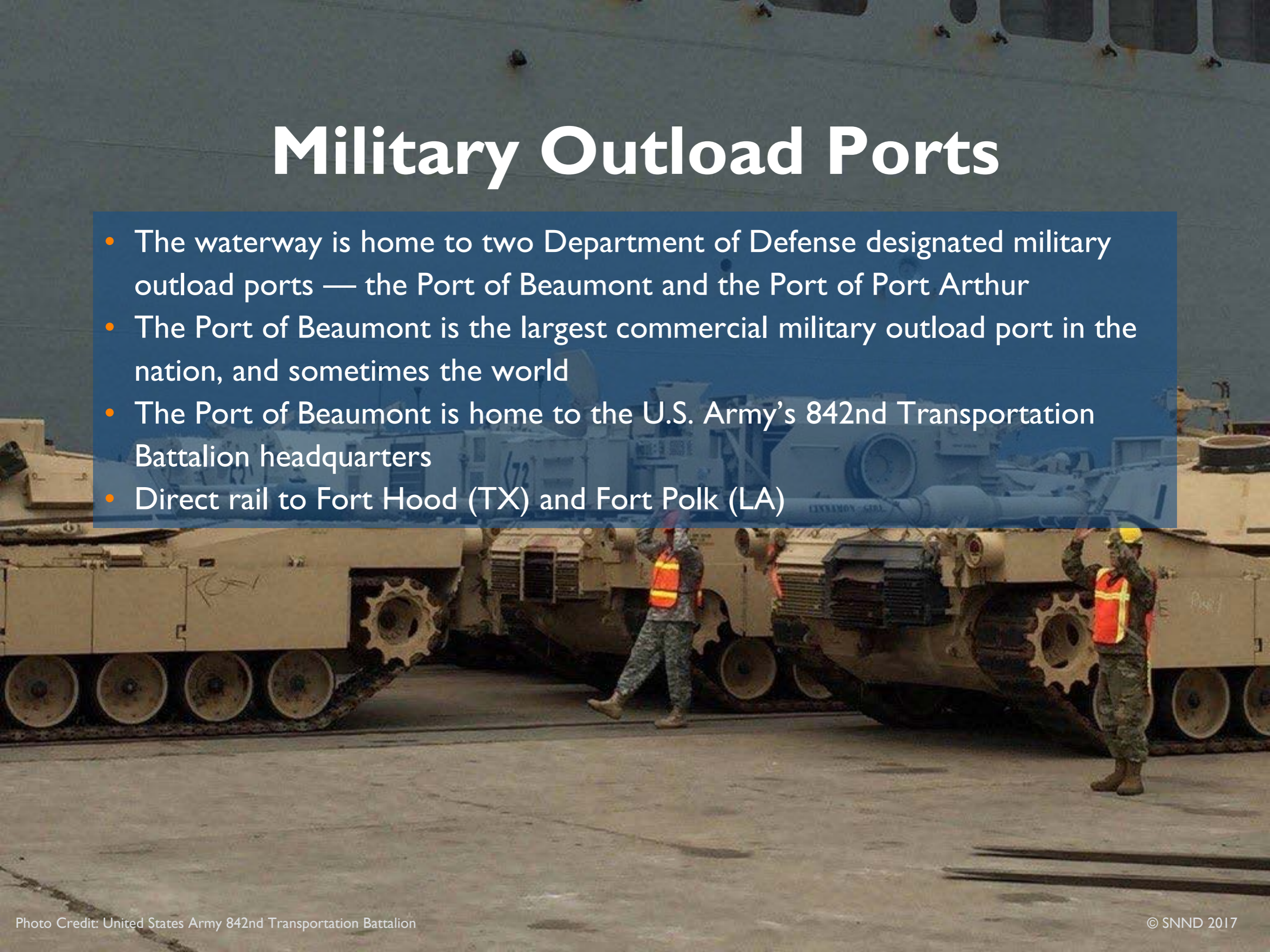
Largest Ready
Reserve Fleet in
the U.S.

#1

Access point to
57% of Strategic
Petroleum
Reserves

Military Outload Ports

- The waterway is home to two Department of Defense designated military outload ports — the Port of Beaumont and the Port of Port Arthur
- The Port of Beaumont is the largest commercial military outload port in the nation, and sometimes the world
- The Port of Beaumont is home to the U.S. Army's 842nd Transportation Battalion headquarters
- Direct rail to Fort Hood (TX) and Fort Polk (LA)



Ready Reserve Fleet

- Maritime Administration (MARAD) Ready Reserve Fleet located south of the Port of Beaumont
- \$32 million investment to upgrade dock infrastructure to accommodate new vessels
- Accommodates up to 11 of the largest class naval cargo vessels



Strategic Petroleum Reserves

- SNWW is the primary access point to two Strategic Petroleum Reserves, totaling 57% of the nation's crude oil reserve capacity (or nearly 400 million barrels)
 - Big Hill (pictured) = 170 million barrels capacity
 - West Hackberry = 227 million barrels capacity



Observations

- Ports and waterways have been vital to the nation's economic growth in recent years, yet remain critically underfunded
 - Why?
 - What are the barriers?
- Energy exports have resulted in dramatic increases in demand on waterways, yet system improvements are slow to be implemented
 - Are approval processes (regulatory, funding, implementation) flexible enough to support market changes?
- Balancing the increasing strategic and economic importance of ports and waterways is critical
 - Are we taking full advantage of opportunities created by the importance of the contribution?