# • ANCHORNING PROSPERING THE VITAL ROLE OF THE TEXAS MARITIME SYSTEM

# FAST FACTS

ANNUAL IMPACT OF THE TEXAS MARITIME SYSTEM<sup>1,2</sup>

### **\$713.9 BILLION**

in Economic Value (↑59% since 2018)

746.4 MILLION

(**†**21% since 2018)

#### **28%** of Texas GDP (**†** 12% since 2018)

**2,518,000** Total Jobs

(**†**41% since 2018)

### **\$17.1 BILLION**

Total Taxes (↑119% since 2018)

### \$77.0 BILLION

in Economic Activity Added by the Texas Gulf Intracoastal Waterway<sup>3</sup>



### **TEXAS MARITIME SYSTEM: STATEWIDE SIGNIFICANCE**

The Texas maritime system, with its 23 seaports and network of waterways, plays a crucial role in resource availability, job security, economic prosperity, and technological advancements across the state of Texas. Interconnected by the Texas reach of the Gulf Intracoastal Waterway (GIWW-T), Texas's 1,020 miles of navigation channels support a thriving maritime industry along the Texas coast. The GIWW-T, spanning 379 miles in Texas, also connects Texas to the four other Gulf Coast states—Louisiana, Mississippi, Alabama, and Florida. By carrying energy products, consumer goods, and commercial products worldwide, the Texas maritime system delivers the future across Texas and contributes significantly to economic growth in the state and the nation.

Ranking first in the nation in total waterborne tonnage, the Texas maritime system handles 746.4 million tons of foreign and domestic cargo<sup>1</sup>, which is expected to increase to 1.1 billion tons by 2050<sup>6</sup> to supply a rapidly growing population across the state<sup>7</sup>. In addition to carrying consumer goods to all of Texas through highway and rail networks stretching as far as the Texas Panhandle, the maritime system generates hundreds of thousands of direct and indirect jobs and contributes billions of dollars in economic output, all factors that affect each Texan on a day-to-day basis. In fact, it is estimated that around 80% of containerized cargo that passes through Texas seaports is either produced or consumed by Texans<sup>1</sup>. To continue to support the state, the Texas maritime system needs to be readily equipped to address market demand through consistent port improvement projects.



Maritime System ▲▲▲ **147%** PROJECTED GROWTH 746.4 Million Tons (2023)<sup>1</sup> → 1.1 Billion Tons (2050)<sup>6</sup>

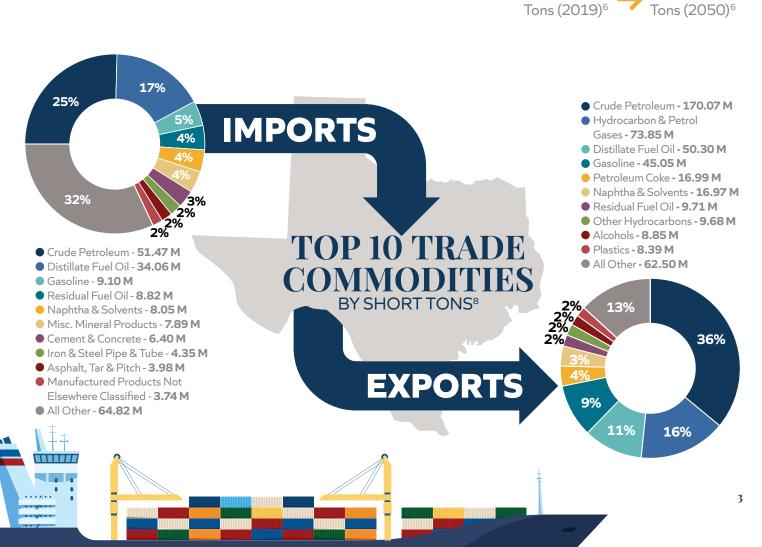
Population MMA ↑35% PROJECTED GROWTH 30.0 Million (2020)<sup>7</sup> → 40.6 Million (2050)<sup>7</sup> Truck & Rail

2.2 Billion

PROJECTED

4.8 Billion

GROWTH



### **OUTLOOKS, TRENDS, AND AVENUES FOR SUCCESS**

### Cruise Outlook

As the fourth most popular cruise port in the nation, the Port of Galveston served nearly 1.5 million cruise passengers in 2023 and anticipates a 14% increase, or 1.6 million passengers, in 2024<sup>9</sup>. To continue to support increasing embarkations, the Port of Galveston has several major expansion projects planned. In addition to renovations to Terminal 25 that will allow for larger cruise vessels, the Port is planning for the construction of a fourth cruise ship terminal at Pier 16, which is expected to open in November 2025. This new terminal will include a terminal building, parking garage, passenger boarding bridge, and other marine and civil infrastructure improvements. Following the completion of the fourth terminal, the Port of Galveston is projecting

2 million cruise passengers in 2026. These projects are part of the port's 20-Year Strategic Master Plan aimed at supporting its growing cruise business<sup>10</sup>.

### **TEXAS CRUISE IMPACTS** in 2022<sup>11,12</sup>



### **Energy Commodities Outlook**

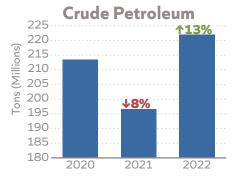
Energy commodities are consistently the top cargo types shipped through the Texas maritime system. Petroleum and petroleum products make up some of Texas's key energy commodities and are anticipated to remain strong, while liquefied natural gas (LNG) and transitional energy products are growing.

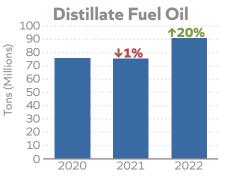
### **Petroleum and Petroleum Products Outlook**

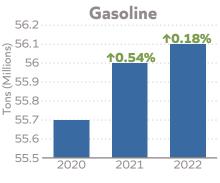
Texas has played a pivotal role in stabilizing global oil prices in recent years. The U.S., being one of the world's largest oil producers, has been able to leverage its vast reserves and advanced extraction technologies to increase or decrease production in response to global market conditions. This ability has been instrumental in preventing drastic fluctuations in oil prices—which has become more critical in recent years given geopolitical conflicts in Europe and the Middle East—ensuring a strong and stable demand for Texas oil and gas products. Texas seaports are essential for transporting petroleum and petroleum products to the global market.

Because of the role the seaports play, crude petroleum, distillate fuel oil, and gasoline consistently rank in the top five import and export commodities in Texas. These commodities are essential to various industrial, transportation, and energy sectors. The relative stability of petroleum and petroleum products imports and exports reflect high economic activity and energy consumption and robust demand from personal and commercial usage, both within Texas and from export partners.

### **TOP 3 COMMODITY TRENDS** (2020-2022)<sup>8</sup>







2024 TxDOT MRD Brochure

#### **GROWTH** of LNG & **TRANSITIONAL ENERGY** FACILITIES ACROSS THE TEXAS COAST<sup>13</sup>

**Green Hydrogen International,** *Hydrogen City* Expected to produce 323 million ft<sup>3</sup>/day green hydrogen



**Golden Pass, Sabine Pass** LNG facility under construction that will produce 2.57 billion ft<sup>3</sup>/day

**ExxonMobil**, *Baytown* Expected to produce 1 billion ft<sup>3</sup>/day low-carbon hydrogen and 1 million tons ammonia/year

Avina Clean Hydrogen, Nueces County Expected to produce 800,000 tons ammonia/year

#### Chenier Energy Stage III, Corpus Christi Expansion of LNG facility that currently produces 1.58 billion ft<sup>3</sup>/day

Enbridge Ingleside Energy Center, Corpus Christi Expected to produce up to 1.4 million tons ammonia/year

> **Rio Grande LNG,** *Brownsville* Planned LNG facility that will produce 3.73 million ft<sup>3</sup>/day

### Planned Transitional Energy Facilities Planned LNG Facilities

### PUTTING IT IN PERSPECTIVE

Considering existing facilities only, Texas ports handle enough LNG to power...

- Corpus Christi: 10 Million Homes/Day<sup>20</sup>
- Freeport: 11 Million Homes/Day<sup>21</sup>
- Sabine Pass: 20 Million Homes/Day<sup>22</sup>

#### LNG Outlook

An extensive network of crude oil pipelines relay \$39.1 billion worth of LNG and liquefied petroleum gas throughout Texas and beyond<sup>6</sup>. Texas is leading the way to meet global LNG demand, with four new LNG facilities under construction: Rio Grande LNG in Brownsville, Corpus Christi Stage III in Corpus Christi, Golden Pass LNG in Sabine Pass, and Port Arthur LNG Phase I in Port Arthur<sup>12</sup>. Globally, the LNG market has seen significant growth over the past decade, driven by rising energy demand, the transition to cleaner energy sources, and the need for more flexible energy supplies. The U.S. is one of the leading producers of natural gas and, according to the U.S. Energy Information Administration, is projected to remain a dominant LNG exporter due to its competitive pricing and significant investments in export infrastructure. By 2050, U.S. LNG exports are projected to rise to approximately 10 trillion cubic feet, a 152% increase from 2022 levels<sup>14</sup>. Texas is the single largest producer of LNG in the nation and the 2nd largest exporter: in 2022, Texas ports accounted for 46% of all U.S. LNG exports<sup>8,13</sup>.

#### **Transitional Energy Outlook**

Texas seaports are becoming central to state, national, and global efforts to reduce greenhouse gas emissions through their exports of green hydrogen and ammonia, which can be used as low carbon fuels for maritime shipping. In terms of hydrogen production, Texas is quickly becoming an industry leader. There are several low carbon hydrogen production facilities planned in Texas, indicated on the map on this page, that will route their products through Texas seaports. Collectively, the hydrogen production facilities planned in Baytown and Hydrogen City will account for more than 1.3 billion cubic feet per day of low carbon hydrogen<sup>15,16</sup>. Similarly, Texas is making strides in ammonia production, which also has the potential to be used as a zero-carbon fuel. With facilities planned in Nueces County, Baytown, and Corpus Christi and an operational facility in Beaumont, the expected production of ammonia in Texas is anticipated to reach approximately 4.3 million tons per year by 2028<sup>15,17-19</sup>.





### **PROVIDING ADEQUATE FUNDING TO TEXAS SEAPORTS**

### Making Way for Future Development

In the 2024-2025 biennium, the 88th Texas Legislature awarded \$640 million in funding to the Texas maritime system, including \$200 million of first-ever funding for the Maritime Infrastructure Program, as well as \$400 million of first-ever funding for the Ship Channel Improvement Revolving Fund. All of this funding was successfully awarded to ports and navigation districts within the biennium. Looking toward the 89th Texas Legislative Session, TxDOT and the Port Authority Advisory Committee identified \$9.16 billion in continuing needs for the Texas maritime system in their biennial Texas Port Mission Plan.

# State Administered Funding Programs for the Texas Maritime System

#### Maritime Infrastructure Program (MIP)

Maritime infrastructure projects address port facility and capital improvement needs. Investment in maritime infrastructure allows ports to maintain efficient business operations, support the continued growth of existing businesses, attract new clients, and adapt to ever-changing domestic and global conditions, all while remaining competitive in global markets.

#### Seaport Connectivity Program (SCP)

Seaport connectivity projects address the intermodal transportation system to facilitate the movement of materials, goods, and personnel. Investment in seaport connectivity contributes to safer highways, safer roads near port facilities, growing job opportunities, and the development of port connections across Texas.

#### Ship Channel Improvement Revolving Fund (SCIRF)

Ship channel projects address channel capacity requirements to maximize allowable vessels, and therefore cargo yields, through Texas ports. Investments in ship channel projects allow for continuous improvement of both shallow and deep-draft channels such that they are equipped to receive the next generation of larger vessels.

## TOTAL NEED: **\$9.16 BILLION**



TxDOT and the 12 seaports that were awarded first-ever State Maritime Infrastructure Program funding through the 88<sup>th</sup> Texas Legislature were

successfully in letting on all 12 selected projects within 12 months.

### Recently Awarded 88<sup>th</sup> Texas Legislature Funding







Learn more about the <u>Texas</u> <u>Port Mission Plan</u>



#### GIWW-T Recommendations: Total Need: \$779+ Million

To address challenges and enhance the GIWW-T's efficiency, resilience, and safety, the TxDOT Maritime Division identified six recommended improvements in the GIWW Report to the 89th Texas Legislature ranging from budgeting for increased operations and maintenance (O&M) of the GIWW-T to specific projects to enhance safety and navigation.

Learn more about the GI<u>WW Report</u>





### A Smart Investment: Texas Maritime System Project Performance

When considering the \$640 million of state investment to Texas ports in the FY 2024-2025 biennium, the state is receiving a return on investment of \$53.46 in state and local tax revenue per dollar spent. The Texas ports are also contributing by matching the state investment dollar for dollar<sup>1</sup>. Investing in continued improvements and modernization of the maritime system will be crucial for maintaining state economic growth while safeguarding logistical efficiency and a sustainable future for port operations. As just one example project made possible by this recent state funding, in 2023 the Texas Transportation Commission approved a \$36 million grant (52% of the total project cost) for Port Houston to upgrade Wharves 4, 5, and 6. The Barbours Cut Terminal Container Wharf Upgrade project is expected to provide \$61 million in benefits from reduced ship delays and an additional \$109 million in savings from decreased emissions and increased cargo throughput<sup>1</sup>.



#### **Example Project:** Port Houston Barbours Cut Wharves Construction



Construction at Port Houston Barbours Cut Wharves, a project expected to provide \$61 million in benefits from reduced ship delays.

#### Maritime Technology Projects: AIS and Digital Twin

TxDOT is partnering to develop the GIWW Automatic Identification System (AIS) application. This will serve as a resource to quantify and visualize GIWW-T traffic characteristics, including travel speed and traffic flow, to identify patterns along the waterway and preferred navigation routes. It will improve safety and reduce travel time, ultimately lowering the cost of transporting goods. The application is expected to launch in 2025. TxDOT is also exploring digital twin technology to model the waterway through channel depth data collection. This data will enable shoaling spots, areas where sediment accumulation reduces channel depth, to be identified and addressed more expediently along the GIWW-T resulting in a safer and more reliable waterway while also allowing its full value and impacts to be realized.





Barges traversing the Brazos River Flood Gates.



### **Case Study:** \$140 M Legislative Appropriations Request Approved for the Brazos River Floodgates

Each year, 20.5 million tons of cargo valued at approximately \$20 billion passes through the Brazos River Floodgates (BRFG). In August 2024, the Texas Transportation Commission approved a \$140 million Legislative Appropriations Request to be considered by the 89th Texas Legislature in order to begin Phase 1 of updating the BRFG, which includes the removal of the west gate structure and widening the channel. The outdated BRFG structures struggle to accommodate modern tow sizes and traffic demands, leading to frequent damage, increased safety hazards, and higher operational costs. Presently, the aging infrastructure causes an estimated economic loss of \$37 million per year due to delays transiting the gate structures.

10-Year Cost of No Action: \$371.5 Million | Cost of Repair: \$280 Million

That's equal to 250,000 RAIL CARS

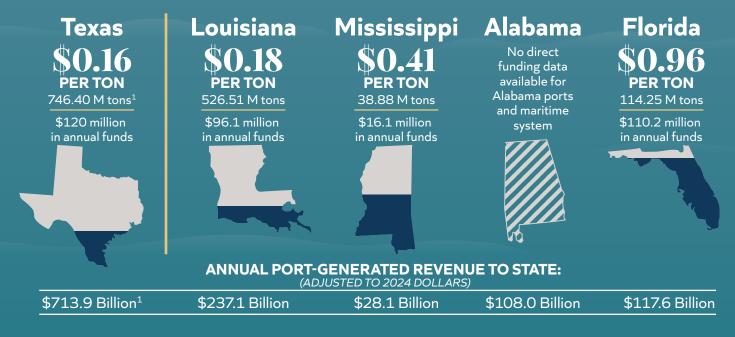


### **GULF STATE INVESTMENTS**

#### Giving Texas a Competitive Edge to Support Continued Growth

Similar to other Gulf Coast states, the Texas maritime system is supported by funding from federal and state direct allocations or grants, as well as funding raised by ports themselves or their industry partners. The State of Texas, by continuing to support seaports in repairing, modernizing, and expanding their infrastructure, plays a critical role in maintaining Texas's maritime competitiveness. Compared to other Gulf Coast ports, Texas seaports receive less direct state funding but generate the greatest total revenue, indicating that the ports' individual investments drive significant economic impact to our state, contributing 28% of Texas's GDP<sup>1</sup>.

#### Annual direct state spending on its maritime system in FY24 dollars per 2022-23 tonnage<sup>23-27</sup>



### REFERENCES

- 1. 2023 Economic Impacts of the Texas Ports on the State (texasports.org)
- 2. 2018 Economic Impacts of the Texas Ports on the State (texasports.org)
- 3. <u>89th Gulf Intracoastal Waterway Legislative Report (txdot.gov)</u>
- 4. U.S. Coastal and Inland Navigation: 2022 Fact Card (usace.army.mil)
- 5. The World Bank Indicators Database. GDP Ranking 2022 (worldbank.org)
- 6. <u>Texas Delivers 2050 (txdot.gov)</u>
- 7. <u>Texas Population Projections, 2022 data (demographics.texas.gov)</u>
- 8. Waterborne Cargo and Trips Data Files, 2022 data (usace.army.mil)
- 9. <u>Galveston Wharves 2024 Budget Forecasts Record Growth</u> (portofgalveston.com)
- 10. Port of Galveston Strategic Master Plan (portofgalveston.com)
- 11. The Economic Impact of the 2022 Cruise Activity at the Port of Galveston
- 12. Economic Contribution of Cruise Tourism to the U.S., 2022 (cruising.org)
- 13. U.S. LNG Export Terminals 2024 (ferc.gov)
- 14. <u>U.S. natural gas production and LNG exports 2050 (eia.gov)</u>

- 15. ExxonMobil World's Largest Low-Carbon Project (exxonmobil.com)
- 16. <u>Hydrogen City (ghi-corp.com)</u>
- 17. OCI N.V. breaks ground on 1.1 mtpa blue ammonia site (oci-global.com)
- 18. <u>Nueces Clean Ammonia (avinah2.com)</u>
- 19. Release Details 2023 Enbridge Ingleside Energy Center (enbridge.com)
- 20. Corpus Christi Liquefaction (cheniere.com)
- 21. Gas Liquefaction (freeportIng.com)
- 22. Sabine Pass Liquefaction (cheniere.com)
- 23. <u>2021 Survey of State Funding Practices for Coastal Port Infrastructure</u> (<u>tti.tamu.edu</u>), with additional analysis by AECOM
- 24. Louisiana Ports Deliver (portsoflouisiana.org)
- 25. Economic Impact of Mississippi's Inland Waterways (waterwayscouncil.org)
- 26. Alabama Port Authority Economic Impacts 2022 (alports.com)
- 27. 2023-2024 Seaport Mission Plan (flaports.org)

