

PORT OF PORT MANSFIELD

Willacy County Navigation District
Port Mansfield Public Utility District
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Port Development Analysis and Strategic Action Plan July 20, 2021

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Maritime and Port Executives



Table of Contents

1. INTRODUCTION.....	3
2. BACKGROUND.....	3
3. BOARD AND STAFF VISION	5
4. ASSETS AND PROPERTY.....	6
5. PORT CAPABILITIES	7
6. GOVERNANCE AND OPERATIONAL STRUCTURE.....	10
7. MARKET ANALYSIS	12
8. SWOT ANALYSIS.....	26
9. CONCLUSIONS AND RECOMMENDATIONS.....	29
10. STRATEGIC ACTION PLAN	30
11. REFERENCES.....	33
12. APPENDIX 1 - Port Mansfield Port Properties Map	35

1. INTRODUCTION

The International Association of Maritime and Port Executives (IAMPE) was engaged by the Willacy County Navigation District to undertake a Strategic Action Plan planning process for the Port Mansfield Public Utility District. Port Mansfield is a member of the IAMPE, which offers management advisory services to its membership. The IAMPE is a not-for-profit industry association that provides professional certification to port managers and executives, conducts ongoing research regarding port management and development issues, and provides services to its membership. The Association has over 2,500 alumni, among which is the current Port Mansfield Port Director.

2. BACKGROUND

Port Mansfield ("The Port") is a popular fishing community with primarily a 6-month recreational season. The Willacy County Navigation District ("The District") owns 1,700 acres in The Port and the surrounding region, of which 1,400 acres can be developed for commercial, industrial and residential properties. The Port has residential and public fishing areas along its waterfront with several parcels that may be developed for commercial marine activity. In addition to its substantial land holdings, The District has a general aviation airport and oversight over some residential areas - all of which are managed by the same personnel that manage the Port.

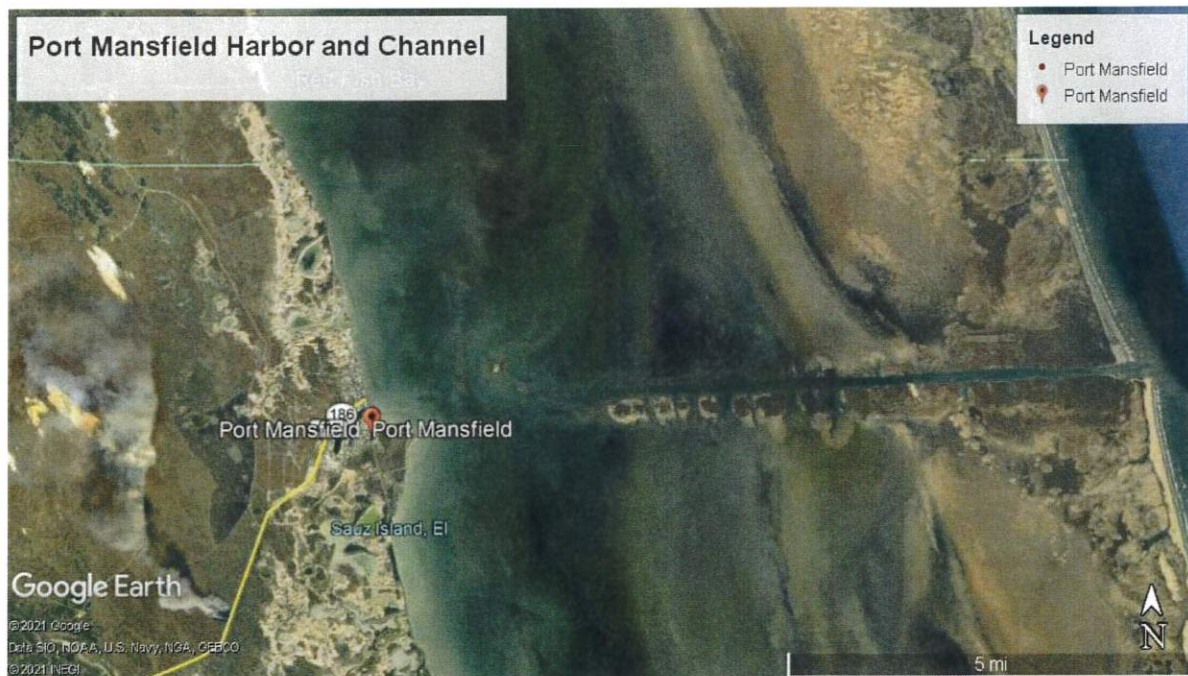


Figure 1 Port Mansfield and Channel to Gulf of Mexico and GIWW

The Port has a 17-foot authorized depth in the federal channel which is 9 miles to the Gulf of Mexico. The channel is 700 feet wide, and the Port is protected by barrier islands on the Gulf of Mexico. The Port is 1 mile to the Gulf Intracoastal Water Way (GIWW), which runs from Texas, around Florida, and extends up the U.S. East Coast to New York. The semi-diurnal tidal range is under 2.5 feet.

The US Army Corps of Engineers (USACE) dredges approximately every 2 years and recently completed an extensive channel maintenance project.



Figure 2 Harbor Area

The city nearest to The Port is Raymondville, which is 25 miles west of the Port on State Road 186. State Road 186 has a posted speed limit of 75 MPH with 50 ft setbacks and connects to Route 77 and Interstate 69E which run north to Corpus Christi and south to Brownsville. There is no direct rail access to the Port, however, the Union Pacific Railroad main line runs through Raymondville. The rail line through Raymondville is being maintained: as recently as 2018, Union Pacific invested \$14 million to replace 116,091 railroad ties and install 72,346 tons of rock ballast in the rail line between Raymondville and Robstown. However, Raymondville's rail facilities for the handling of general and agricultural cargo have declined in recent years¹.

¹ Union Pacific Railroad

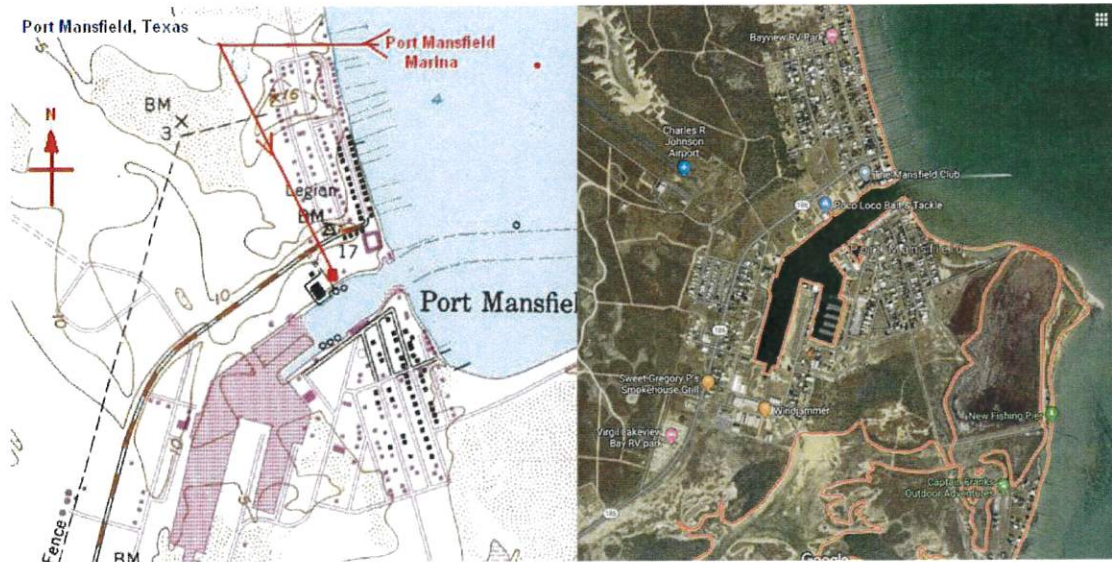


Figure 3 Port Mansfield Municipal Area and General Boundaries

As of the 2010 census, Willacy County had approximately 22,000 residents, of which 11,000 lived in Raymondville. The County has a 12.7% unemployment and is one of the poorest counties in Texas. Port Mansfield is an important residential and recreational community, and it is also a designated commercial port by the State.

3. BOARD AND STAFF VISION

The IAMPE conducted a Commissioners Seminar and facilitated a visioning meeting for The District's Board of Commissioners ("The Board"). During the visioning meeting, there were several key issues that were identified that needed to be addressed, some of which are within the Port's control and a fair amount of which are not. It was strongly voiced that the Port needed to address its commercial potential but not at the expense of the quality of life and attractiveness of the community. It was recognized that the Port and the District needed to develop a master plan for the community that also included a business development plan for the Port.

There were several concerns that were identified which included the continued need for dredging, the need for funding, the creation of good paying jobs, the provision of enhanced municipal services for the community (safety and medical services), impacts on the permanent and seasonal residents, and the future use of the Port's commercial properties and airport.

It was recognized that the commercial Port would eventually fall into disuse and stagnation if business opportunities were not identified and captured. Paramount was the concern that if

commercial activities were not forthcoming, the US Army Corps of Engineers would no longer fund and undertake dredging the Port. This would shift future dredging costs to the citizens of the district since the dynamic environment creates silting of the Port and approach channel. If minimum depths are not maintained, both the commercial potential of the Port and recreational businesses of the community would be adversely affected.

The Port's recreational character is essential to the health of the community, so it is critical that any commercial development does not compromise the image or character of the Port community. Such commercial development must not create adverse impacts on permanent and seasonal residents, nor reduce the attractiveness of the area for recreational visitors. Commercial development at The Port could lead to increased traffic through the community; the perception expressed by the Board indicated that as surrounding communities become more congested, development growth toward Raymondville may create residential and commercial migration. However, it is more realistic to anticipate migration will most likely occur with the development of good-paying jobs through commercial and industrial development, including effective transportation services at the Port.

Board members noted that Willacy county is one of the poorest in the state of Texas and has high unemployment. A lack of ready capital for infrastructure and skilled laborers may make development of the Port challenging.

There exist several potential opportunities for the commercial port properties including warehousing, trucking services, handling of project cargoes, handling of agricultural cargoes, container-on-barge, gas and oil handling, wind farm components, marine highway and short sea shipping opportunities, construction materials, marine services connecting to Mexican and domestic Gulf ports, and yet-to-be-discovered opportunities. Providing an alternative to over-the-road trucking between major Texas port hubs is also a potential opportunity.

4. ASSETS AND PROPERTY

The parcels of the Port's property that are available for industrial development consist of multiple tracts surrounding and near the harbor. The tracts have road access or areas where roads can be developed and built. Most of the property is approximately 9 feet above sea level.

The Port also manages the Charles R. Johnson Airport, a general aviation facility which is open from sunrise to sunset. The airport has a 3200-foot-long x 50-foot-wide asphalt runway (designated 12/30) in good condition with medium-intensity edge lights².

The primary harbor tracts consist of three areas which include Tract 1, with 4.16 acres located on the waterfront; Tract 2 consisting of 30.76 Acres, of which approximately 4 acres are located on

² FAA Airport Database

the waterfront; and Tract 3 consisting of 7.04 acres, all of which is located on the waterfront. A map showing the location of the Port's waterfront properties is attached as Appendix 1. Each of the three tracts has a bulkhead alongside the water with basic mooring equipment.



Figure 4 Commercial Dock Areas

The waterfront lots consist of lengths of 500 feet (Tract 1), 790 feet (Tract 2), and 980 feet (Tract 3) with 17 feet draft alongside Tracts 1 and 2, and 15 feet draft alongside at Tract 3. The waterfront portions of all three tracts require improvements including pavement and seawall repairs. An effort to complete such repairs is underway for Tract 1, with an approved and funded fill and pavement project in place, and a commitment by The District to fund the bulkhead repairs. No such effort is underway for Tracts 2 or 3.

5. PORT CAPABILITIES

Port Mansfield has the capability to handle a variety of small vessels and most barges. The 17-foot depth and channel width will accommodate most typical hopper barges, flat deck barges and fuel barges. Hopper barges are used for a wide variety of cargo including dry bulk, break bulk, neo-bulk, project cargo, and containers. A standard hopper barge can handle 48 empty containers or 36 loaded containers. Coastal barges can handle larger quantities stacked on a flat deck surface.

TYPE	SIZE-feet LxWxDpth	CARGO SPACE DIMENSIONS	STOWAGE CAPACITY	AVERAGE NET TONNAGE-ST
Rake Hopper	195x35x16	160x28x14	60,000 cuft	1,500
Box Hopper	200x35x16	188x28x14	80,000 cuft	1,650
Deck	120x30x7	Same as Size	365 ST	365
Deck	250x54x11	Same as Size	2,985 ST	2,985
Tank	297x54x12	30,000 bbls	1.2 mil gallons	1,619
Tank	200x35x12	10,000 bbls	420,000 gallons	735
Gas	391x56x26	52,169 bbls	2,191,028 gal	7,787

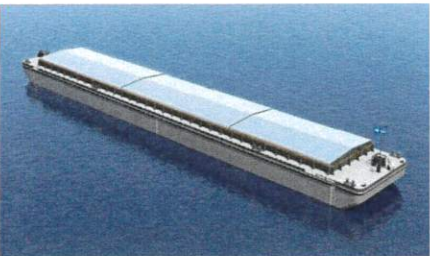


Figure 5 Barge Types/Sizes and Typical Hopper Barge

There are also a wide variety of small feeder and multi-purpose vessels that can handle general cargo and containers that have loaded drafts under twenty feet. These vessels (known as “sub-Panamax” ships), move cargo between a multitude of small ports and could be accommodated in Port Mansfield. They are widely used in Caribbean, Central and South American Ports. Many are also equipped with “ship’s gear” (onboard handling equipment, typically cranes) and their crew compliment includes operators for such equipment.



Figure 6 Sub-Panamax Multi-Purpose/Combo and Container Feeder Ships and Coastal Container Barge

The greatest impediment to port growth besides waterway and landside access is property. The Port has the advantage of having a significant amount of land in the commercial district along with adequate land for barge and small ship operations at two berths with substantial waterside access. While the vast amount of property is across a public road, this is not anticipated to be an issue given the volumes that might be handled at the Port and the small residential and public area that utilizes the public road. Cargo to be loaded or unloaded can cross the road in designated and signed crossings, particularly containers which can be handled directly onto or off a chassis. Yard storage would be set up on the off-waterfront upland property allowing the waterside property to be kept open for different marine operations.

There is a safety plan and will need to put a security plan as required by 33CFR Part 105 before any potential international cargo handling takes place. It will also need to arrange for US Customs clearance capability for international shipment. The Port has a tariff with basic rules and regulations as well as a fee schedule.



Figure 7 Typical Barge Port Operation

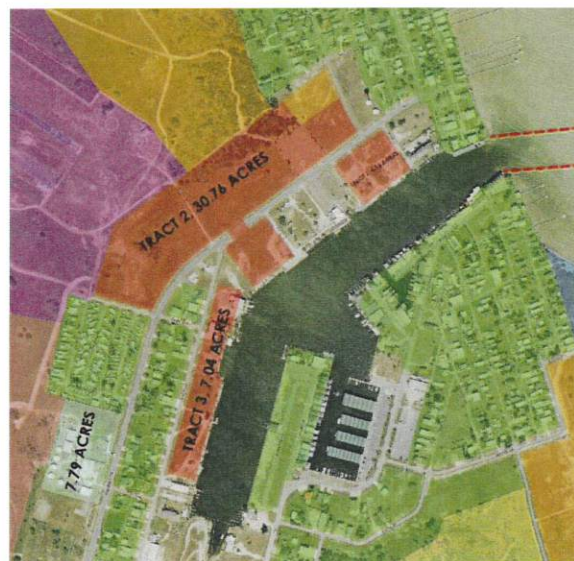


Figure 8 Waterside and Upland Areas for Marine Operations (Tracts 1,2,3)

At present, The Port's capabilities are limited by a lack of equipment. Most ports provide - at a minimum - a shoreside crane or other piece of cargo handling equipment (e.g. a materials handler). Small ports may use leased equipment in a pinch or to get business started, such as construction cranes with sufficient lift capacity to handle containers (30 tons) or bulk cargo lift buckets rated at 25 tons. To cover the cost of such equipment, leased or owned, ports typically assess a use fee and/or fuel surcharge that covers the purchase or rental cost including annual certification and insurance. Stevedores may also directly provide loading and unloading equipment.

In addition to equipment on the pier, ground equipment such as bucket or front-end loaders, folk lifts, top loaders, spreaders, and similar equipment is generally provided by the licensed stevedoring firm. Chassis (needed for overland movement of containers) are generally provided by the shipper or the trucking company that handles the transport moves.

Warehousing and other storage infrastructure such as sheds are normally built on upland areas and are typically operated by a separate warehouse operator. It is not unusual, however, for a single operator to provide stevedoring, warehousing, transport, and value-added services depending on arrangements with the shipper(s). Tract 2 has adequate space for future open storage, covered storage, and warehouse facilities.

6. GOVERNANCE AND OPERATIONAL STRUCTURE

Port governance is often a significant hinderance to port development: ports frequently have governance structures that are inefficient and/or insufficient staff. Staffing is a critical function of any port development, particularly for small ports like Port Mansfield. Port Commissions often retain a small staff for small ports due to financial constraints, which creates a heavier dependance on outside studies when funds are available (such as government grants). Ironically, many of these studies and analysis come with recommendations that are unattainable without an increase in personnel resources. Likewise, a small staff is generally forced into a constant state of reactivity: critical requirements are only addressed when they become problems or when a violation of regulations occurs. This is anathema to healthy business development, which requires proactive action and a view to future growth.

In many cases, governing bodies such as boards and councils fail to recognize all the requirements that port managers need to address on a regular basis. These include not just everyday management and business development but also compliance with overarching federal and state regulations. In the case of Port Mansfield, there are significant responsibilities related to the residents of the community and basic municipal services. If efforts to develop the Port become a priority for the District, the needs of residents and community services will need to be balanced with port development. Since Port Mansfield is a designated commercial port in the State of Texas, efforts focused in both areas will eventually tax the existing staff to meet all obligations of both activities.

Regardless of the size of a port, a typical port director encounters myriad issues on a day-to-day basis which may include, but is certainly not limited to, the following issues:

- Vessel and Port Security
- Endangered Species
- Air Quality & Emissions
- Invasive Species
- Oil Pollution
- Trash from Vessels
- Cybersecurity
- Terrorism

- Cargo Screening
- Fueling Regulations
- Vessel Sewage
- Port and Vessel Safety
- Pandemic
- Stowaways
- Cabotage Requirements
- Harmonization of Regulations
- Port Fees
- Business Development
- Maintenance
- Capital Improvements
- Tariff and Terminal Rules and Regulations Provisions
- Infrastructure Funding
- Permitting Processes
- Labor and Personnel Issues
- Vessel Flag State Control
- Crew Services
- Harbor Safety-ATONS
- Wetlands management
- Truck Weights
- Pipeline Requirements
- Hazmat-Hazcom
- Cargo Handling Service Agreements
- FMC Administrative Rulings
- Trade Agreement Impacts
- Legislation Affecting Ports
- Legal Issues
- Personnel Policies

Port Mansfield is under the control of The Willacy County Navigation District which, in addition to managing The Port, manages the General Aviation airport as well as discharging municipal responsibilities for the community. This creates a natural synergy between the governance of the Port's facilities as well as the municipal responsibilities within the district: staff functions include not only the Port but also the municipality and the district. The District has a suitable governance structure for promoting the growth of The Port and managing The District's myriad responsibilities.

The Port has a small operational staff on site which handles maintenance on all public land including the marina, the docks, and the airport. As Port activities expand, the Board will need to consider additional personnel, particularly in business development and property management (including the airport).

If Port Mansfield is going to thrive, a financial and staffing commitment must be made to ensure that the Port is able to keep up with the business and regulatory requirements. Many ports fail to grow and be prosperous because they do not follow a methodical process of governance and business development. It is critical to understand that proper planning, and using planning as a management tool, provides the best chance of success. Building new assets does not necessarily lead to new business; however, having such assets in place is critical when business opportunities become apparent and must be accommodated.

In addition to port governance and staffing, port operations must be structured intentionally to maximize the ability of the port to capture opportunities and operate efficiently. Public Port Operations are based on three essential models, each of which has different financial and

staffing implications: landlord ports, operating ports, and hybrid ports. Characteristics of each can be summarized as follows:

- a. Landlord Port
 - i. Most common management model in North America
 - ii. Terminals & relevant infrastructure are leased to private operating companies
 - iii. The Port retains ownership of the property
 - iv. Public-private arrangement is based on a long-term lease agreement
 - v. Private operator responsible to provide equipment and handle operations
 - vi. Capital expenditures are shared by the operators and the landlord
- b. Operating Port
 - i. The Port takes on the responsibility of the port's full range of services
 - ii. The Port owns and manages all land, real estate, and infrastructure
 - iii. The Port supplies labor
 - iv. The Port is solely responsible for all capital expenditures, and captures all revenue
- c. Hybrid Port
 - i. The Port provides the docks and wharves for non-exclusive use
 - ii. Cargo operations on the docks are handled by private entity(s)
 - iii. The Port may provide part of the operational services, alongside/in addition to the private operators
 - iv. Terminal equipment and infrastructure maintenance is provided by Port
 - v. The Port may license multiple operators to use the port's facilities

For most smaller ports, the hybrid model is typically the most effective model. It allows multiple operators to use the port and to be licensed to do business on the port's facilities, which allows the port to optimize its business potential. As more control is given to an operator, the operator must make a larger financial commitment to the landlord, particularly with leasehold operators.

7. MARKET ANALYSIS

The IAMPE undertook a basic market analysis for business development related to the Strategic Plan for Port Mansfield. The data used is based on secondary sources and audited reports available in the public domain. Other academic sources and studies were used to support the analysis and framing of the business case in strategic management. This report is organized into two parts:

1. Overview of Ports in Texas (including some comparative criteria).
2. Basic marketing mix description and SWOT analysis (product, price, place, and promotion, including social media presence)

A. Overview of Ports

The State of Texas is ranked #2 in the U.S. in waterborne commerce. Its ports handle 616.2 million tons of foreign and domestic cargo and generate \$449.6 billion of total economic value for the State of Texas, representing 25% of the state's gross domestic product (GDP)³. Texas ports have a clear economic impact on the state's jobs, tax generation, and income. In addition, the State of Texas is among the largest movers of export volumes, primarily due to its ports. Considering the tonnage moved, Texas is the home of 3 of the top 5 ports in the U.S.: Port Houston (2nd), the Port of Beaumont (4th), and the Port of Corpus Christi (5th).

Texas is also the home of one of the busiest cruise ports in the nation (Galveston, ranked 4th), with over 2.2 million passengers handled in 2019. Three Texas ports are designated by the Department of Defense as Strategic Military Ports, providing surface deployment and distribution for strategic military cargo worldwide: The Port of Beaumont, Port of Port Arthur, and the Port of Corpus Christi. These ports are likewise part of the U.S. Maritime Administration's National Port Readiness Network, and support deployment of United States military forces during defense emergencies (The Coastal Texas Study, 2021). The figures below show the distribution of ports alongside the coast of Texas with the respective navigation districts. Texas has a robust maritime and port focus, which contributes to its economic strength as noted below in the summary of main supply chain and cargo flows.

#1. Port of Corpus Christi Authority (\$5.47 billion in growth) • Petroleum exports grew by 22%, an increase in value equal to \$4.5 billion. • Purification exports grew by 1,000%, an increase in value of \$250 million from 2018 to 2019 with completion of the Voestalpine Facility.
#3. Port Houston (\$3.43 billion in growth) • Petroleum exports grew by 7%, an increase in value equal to \$3 billion. • Containerized plastics exports grew by 10%, an increase in value equal to \$1.4 billion.
#4. Port of Beaumont (\$3.16 billion in growth) • Petroleum exports grew by 24%, an increase in value equal to \$3.4 billion.
Other noteworthy news: • Port of Brownsville is facilitating the construction and use of a SpaceX launch facility in Boca Chica, Texas. • Port Freeport saw a \$400 million increase in automobiles imported and has been exporting close to \$1.5 billion in autos assembled in Texas annually from 2016 to 2019 with the completion of a new Pia/Pia facility. • Port of Galveston saw a \$400 million increase in automobiles imported and processed from 2016 to 2019 with the completion of a new Pia/Pia facility.

Figure 9 Texas Major Ports Source: TEXAS DoT Maritime Division (2020)

³ Texas Ports Association, 2021



Figure 10 Texas Portion of the GIWW-Source Texas DOT

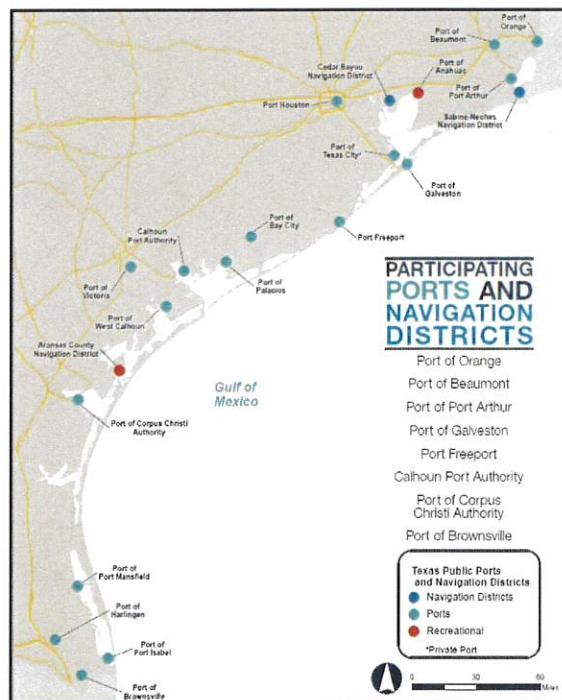


Figure 11 Texas Navigation Districts-Source Texas DOT

Texas ports count on two major collaborative sources for port infrastructure investment. First, as part of the Texas Department of Transportation, there is the Port Authority Advisory Committee (PAAC). Second, there is Texas Ports Association, whose mission is to advocate for freight mobility and funding for infrastructure. Their priorities and policies are geared towards supporting ports and navigation districts: *“Texas ports and navigation districts are government entities that are authorized by and operate under state law; however, ports are also enterprise entities that must also function like businesses. It is essential that ports and navigation districts have the authorities necessary to respond to market demands and develop their facilities to support the growing Texas economy.”*⁴

The Port Authority Advisory Committee (PAAC), established under Chapter 55 of the Texas Transportation Code, is a nine-member body that “provides a forum for the exchange of information between the Commission, TxDOT, and representatives of the port industry in Texas. The PAAC’s advice and recommendations provide the Commission and TxDOT with a broad perspective regarding ports and maritime transportation-related matters to be considered in formulating TxDOT policies concerning the Texas port system”. The PAAC mission is to *“Elevate port issues as vital components of the Texas Transportation System and advise the Texas Transportation Commission and TxDOT on matters relating to maritime transportation.”*⁵

⁴ Texas Ports Association 2021

⁵ PAAC 2021

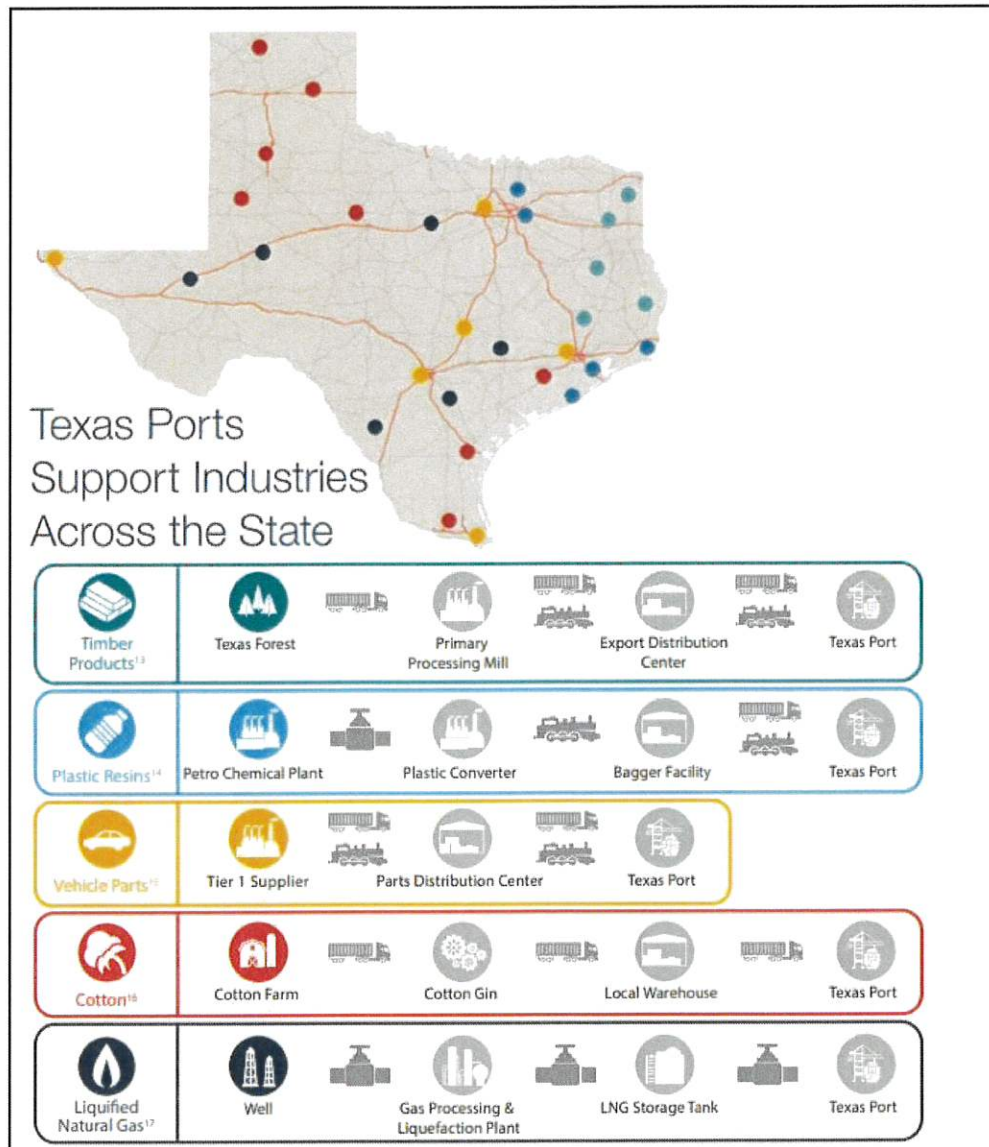


Figure 124 Texas Port Impacts on the Supply Chain-Source Texas DOT

Port Mansfield's geographic and competitive position is between Port Brownsville and the Port of Corpus Christi. Although port competition is not exclusively defined by location, the geographical condition exerts a major influence on the business possibilities that a port can develop. Competition implies comparable "offering": which means the potential customers can access and compare the value proposition or benefit offered by an organization against those of its competitors. The competition conditions depend not only on the product/service attribute but also on market structures (like pure competition, monopoly, oligopoly, etc.). In the case of ports and marine terminals, the competition analysis is complex, as it must consider also major infrastructure elements (such as access to roads, bridges, rail) in addition to the fact that ports

operate by and large on a derived-demand mode (meaning the demand for port services is a function of trade/commerce).

Ports may compete to capture the flow of goods, for investment in additional infrastructure, or to service a common hinterland, particularly in those areas where the “spheres of influence” of two or more ports overlap. Ultimately, Ports compete for users, which include shippers, forwarders, shipping companies (carriers & steamship lines), and terminal operators/stevedores. The table below lists the main that tend to attract (or dissuade) these users. While cost and location are at the top of the list, other indicators on performance (efficiency, congestion, and information system) have equal importance.

	Owner/Shipper of Goods	Forwarder	Shipping Company	Terminal Operators
Cost	XX	X	XX	XX
Location	XX	X	XX	XX
Port operations quality and reputation	XX	XX	XX	XX
Speed/time	X	X	X	XX
Infrastructure and facilities availability	X		XX	XX
Efficiency	X	XX	X	XX
Frequency of sailings	X	X	X	
Port information system	X	X	X	XX
Hinterland	X	X	X	XX
Congestion	X	X	X	XX

xx: very important
x: important

Table 1 Decision Variables in Choosing a Port-Source Meersman

Without necessary infrastructure and established freight flows, Port Mansfield is currently not well-situated on the criteria outlined in the table above. However, Port Mansfield’s location represents an advantage on account of the population of the surrounding area (both in South Texas and Mexico). Additionally, The Port has substantial undeveloped land: a major constraint for many ports.

Intermodal access to The Port is critical to its success: Waterway access, road access, and rail access are of vital importance to any commercial development of The Port. The Port has a limited channel depth, which constrains the types of vessels that can call on it: at current depths, the channel and berths are primarily suitable for tug/barge units and small feeder vessels including multi-purpose combination ships. As both domestic and international trade increase, the Port can position itself to take advantage of trade with major population centers in Texas - including key distribution and retail centers - as well as ports in Mexico. One key advantage for the Port is its potential to undertake cross border trade directly to and from Mexico, which may be an attractive alternative to expensive truck operations through congested highway border crossings. The critical elements to bring any of this about would include willing operators, the ability to

develop infrastructure to support marine activities, balanced flow of commodities, and cost-effective operations.

Ports*								
Orange								
Beaumont								
Port Arthur								
Sabine-Neches								
Anahuac								
Cedar Bayou								
Houston								
Texas City								
Galveston								
Freeport								
Bay City								
Palacios								
Calhoun								
Aransas Co.								
Victoria								
West Calhoun								
Corpus Christi								
Port Mansfield								
Harlingen								
Port Isabel								
Brownsville								
* Ports listed from Upper to Lower Coast								
 Indicates emerging								

Table 2 Cargo Types Handled in Selected Texas Ports-Source Texas DOT



Figure 53 Key International Texas Trading Partners-Source Texas DOT

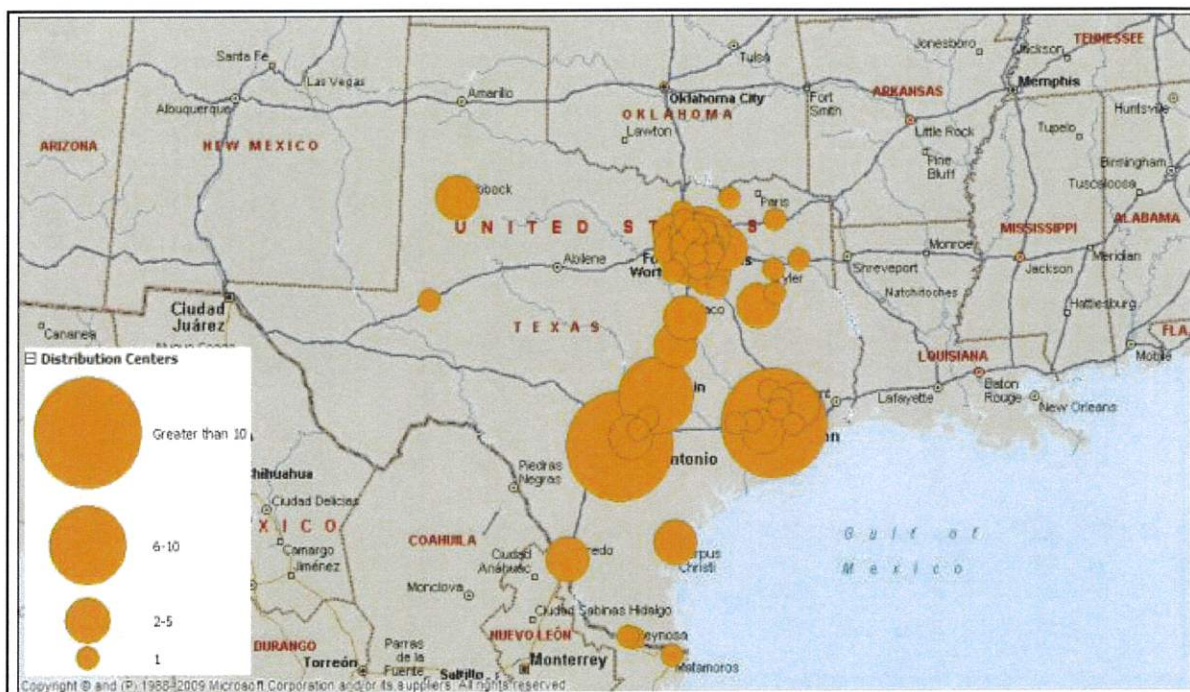


Figure 64 Location of Key Retail Distribution Centers in Texas-Source Texas PAAC

B. The Marketing Mix

The elements of marketing management are a mix of variables that are within the ability of a port to control. The marketing mix is composed of what is popularly known as the 4P's which stands for Product (tangible or intangible), Price, Place (or distribution), and Promotion. This does not include variables largely outside of The Port's control, such as economic, social, cultural elements. In the case of Port Mansfield, the 4P's can be summarized as follows:

Product: Port Mansfield can be described as a reactional and residential-based multipurpose fishing and marina Port. The port has extensive land holdings that includes both commercial and residential areas, both still under development and expansion, as well as a General Aviation airport. The port has no cargo handling equipment nor freight services. However, the Port is a designated Commercial Port by the State of Texas. At present, The Port can support small vessel and barge operations with few shoreside requirements (e.g., lay berthing, some project cargoes).

Place: As previously noted, The Port relies on its natural position on the GIWW and proximity to the Gulf of Mexico. It has a naturally protected harbor due to its location inside the barrier islands with its federally maintained channel. From the land side, it has a single roadway corridor which is utilized mostly by the residents and visitors to the Port area. Due to the amount of land available, there is the potential for development of additional residential as well as cargo warehousing facilities or logistics distribution center within the Port district boundaries. Of significance is that there are limited incumbrances to the simultaneous development of residential and industrial activities as planning moving forward for the Port and the community.

Price: as a public port, Port Mansfield operates with a public tariff and fees. The tariff essentially covers the cost of operation and maintenance of the equipment and facilities. The tariff does address the current business activities of the Port and needs to be expanded if marine industrial activities are added later.

Promotion: Port Mansfield's promotion mix is essentially composed of the advertisement done through their own web domain (<https://portofportmansfield.com/>). The port does not have a page on any social media platforms. The commercial responsibilities (sales representative and public relation duties) are carried out as cumulative responsibilities of the Port Director; there are no dedicated sales or marketing staff. No specific branding or slogan campaigns have been deployed by The Port in recent years.

In summary, Port Mansfield is currently perceived as a fishing and recreational destination: it is not well-known as a commercial port. In order to attract commercial port activity, Port Mansfield will need to endeavor a marketing effort that communicates to potential port users that there are commercial port and transportation opportunities available at The Port.

C. Market Opportunities

Multiple market opportunities exist for The Port, as outlined below. To capitalize on any opportunities for commercial port development, The Port will need to address:

1. **A Lack of Shoreside Cargo-Handling Equipment:** the fact that the port has virtually no cargo handling equipment represents a major disadvantage in absolute and relative terms to other nearby ports (such as Brownsville). Investments in equipment should focus on flexible and adaptable equipment (for example, materials handler, mobile harbor crane, etc.)
2. **A Lack of Facilities:** the area for real estate development is generous, so and considering that Port Mansfield is a public port, that it is worth considering developing some type of adaptable and flexible warehousing structure that would facilitate and attract freight movement.

The market opportunities for Port Mansfield, as a shallow-draft small port, include:

1. **Short-Sea Connections with Mexico:** considering that Mexico is part of the top 5 waterborne trade partners for Texas (for both imports and exports), this represents probably the best market opportunity for international and regional cargo flows. There is a potential for Port Mansfield to be developed as a subregional hub port serving Mexican destinations with fast transit time in a hub-and-spoke system.
2. **Address the Potential for Reducing Texas Highway Traffic:** There is a significant amount of truck traffic that moves through the region, with commodities like agri-products flowing out of South Texas and commodities like fertilizer flowing into it. The State of Texas has noted its desire to reduce highway traffic and congestion in multiple key metropolitan areas.⁶ With state support, and federal funding through grant and incentive programs (e.g. the Marine Highway Program, BUILD Grants, etc.) Commodity tonnage data indicates growth in most areas.

COMMODITIES	2018 TONS (1,000)	2015 TONS (1,000)	CHANGE (1,000)
Containers	30,893	29,533	1,359
Autos	533	586	-54
Steel Products	12,006	14,488	-2,482
Bagged Cargoes	260	217	43
Forest Products	776	772	4
Miscellaneous Break Bulk	3,212	2,972	239
Bulk Grain	8,844	15,289	-6,445
Other Dry Bulk	44,491	34,637	9,854
Petroleum	429,659	383,939	45,720
Other Liquid Bulk	85,514	80,380	5,135
TOTAL	616,188	562,814	53,374

Table 3 Change in Tonnage by Commodity 2015-2018-Source Texas Ports Council

⁶ Texas DOT Strategic Transportation Plan

3. **Aggregate and minerals transport** – With large swaths of undeveloped land, The Port is well-suited to handle cargoes that require large open spaces for cargo staging and or storage (for example aggregate, minerals, and construction materials). Companies such as Vulcan Materials Company, located in the region, move such cargoes through South Texas by port.

The revenue potential to the Port is indicated in the following table:

COMMODITY TYPE	REVENUE/TON
Containers	\$108.96
Autos/RoRo	\$572.12
Steel Products	\$69.73
Bagged Cargoes	\$95.42
Forest Products	\$76.35
Miscellaneous Break Bulk	\$292.43
Bulk Grain	\$25.47
Other Dry Bulk	\$70.70
Petroleum	\$46.83
Other Liquid Bulk	\$247.32

Table 4 Estimated Business Revenue per Ton for Various Cargoes-Source Texas Ports Association

4. **Offshore Wind:** Offshore wind energy might be the next and best opportunity outside the typical maritime trade scope, considering the port location and other natural conditions. However, while the State of Texas is one of the leading states in wind energy generation (AWEA, 2020), offshore wind energy is not likely to happen before 2028, as per the estimation of the Texas Renewables Energy Industry Alliance, when the power prices are going to justify the investments.⁷ A more recent study by the U.S. Department of the Interior, Bureau of Ocean Energy Management identified that offshore wind in the Gulf of Mexico could be economical without subsidies by the early 2030s, considering the levelized cost of energy (LCOE) as low as \$70/MWh.⁸

Additional research is being done in Texas about offshore wind energy. A recent project lead by Dr. Moo-Hyun Kim, Bauer Professor II in the Department of Ocean Engineering and director of the Ocean System Simulation and Control Lab at Texas A&M University presented that *“the next generation of offshore energy lies in the development of a synergistic combination of several renewable energy production methods, set atop a floating offshore platform... Now, the United States Department of Energy is the largest funding source for ocean renewable energy and the wind energy industry is growing fast...Major oil/gas companies are also gradually shifting their business emphasis toward*

⁷ Michael J. Osborne, 2019.

⁸ BOEM 2020

ocean clean energy."⁹ Finally, the current federal administration has announced a national offshore wind energy goal including a roadmap for the future of this innovative industry¹⁰. This is the first of its kind effort made by the federal government, which certainly deserves attention and market players follow up.

Port Mansfield has the potential to play a role in offshore wind development. It is unlikely, due to drafts, that Port Mansfield would be capable of playing a direct role in offshore wind component transport or delivery. However, any such installations will have robust support needs, many of which would likely be suitable for Port Mansfield. Additionally, there would likely be a long-term potential for ongoing support services once the installations are complete.

Offshore wind energy might be a distant reality now however, the maritime sector is going through a major effort in becoming more sustainable (economic, social, and environmental), with the introduction of new environmentally sustainable practices. This represents a twofold opportunity, first to reorient port services and facilities to be more 'eco-friendly' and pursue the corresponding certification (some cargo owners are required to give a preference to do business with ports and terminals that have a clear environmental policy that demonstrated/certified and audited); and, second to attract companies/beneficial cargo owners that are looking for serve the lower carbon footprint markets (for example, LNG).

⁹ Texas A&M Engineering

¹⁰ Maritime Executive 2021.

Investment Type	Amount	Company(s)	Location	Year Announced
Manufacturing: Steel	\$76,000,000	US Wind & Ørsted	Maryland	2017
Manufacturing: Foundations	Not specified	Ørsted & EEW	Paulsboro, New Jersey	2019
Manufacturing: Foundations	Not specified	Equinor	Port of Coeymans, New York	2019
Manufacturing: Towers & Foundations	Not specified	Marmen & Welcon	Northeast US	2019
Manufacturing: Blades	\$200,000,000	Siemens Gamesa	Virginia	2020
Manufacturing: Cables	\$4,000,000	Marmon Utility	Seymour, Connecticut	2019
Manufacturing: Cables	Not specified	Nexans	Not specified	2019
Ports, Transmission infrastructure	\$650,000,000	Anbaric	Brayton Point, Somerset, Massachusetts	2019
Ports	\$157,000,000	Ørsted & Eversource, CT Port Authority	New London, Connecticut	2020
Ports	Not specified	Vineyard Wind	Bridgeport, Connecticut	2019
Ports	\$13,200,000	Ørsted	Tradepoint Atlantic, Maryland	2019
Ports	\$26,400,000	US Wind	Tradepoint Atlantic, Maryland	2017
Ports	\$50,000	Vineyard Wind	New Bedford, Massachusetts	2019
Ports	Not specified	Ørsted	Atlantic City, New Jersey	2019
Ports	\$60,000,000	Equinor	New York (Multiple Ports)	2019
Ports	\$10,000,000	Ørsted & Eversource	New York (Multiple Ports)	2019
Ports	Not specified	Ørsted & Eversource	Port Jefferson, New York	2019
Ports	\$40,000,000	Ørsted & Eversource	Port of Providence and North Kingstown, Rhode Island	2018
Supply chain	\$15,000,000	Ørsted	New Jersey	2019
Supply chain	\$1,500,000	Ørsted & Eversource	Rhode Island	2019
Supply chain	\$10,000,000	Vineyard Wind	Massachusetts	2018
Turbine testing facility	\$35,000,000	MHI Vestas	Clemson University, South Carolina	2017
Vessel construction: Crew transfer vessel	Not specified	Ørsted & WindServe Marine	North Kingstown, Rhode Island	2019
Vessel construction: Crew transfer vessel	Not specified	Ørsted & WindServe Marine	North Kingstown, Rhode Island	2019
Vessel construction: Crew transfer vessel	Not specified	Atlantic Wind Transfers & Blount Boats	Warren, Rhode Island	2019
Vessel construction: Crew transfer vessel	Not specified	Atlantic Wind Transfers & Blount Boats	Warren, Rhode Island	2019

*Announcements as of February 20, 2020. This list may not capture all announcements.

Table 5 Domestic Infrastructure Investment to Support Offshore Wind Industry-Source AWEA

5. **Additional research and discussion:** the benefits of a business development marketing plan for ports are largely related to its ability to be and maintain competitiveness in the market in the long term. In any case, because of its existing limited infrastructure and vast open/greenfield area, Port Mansfield will require some additional investments to be equipped to serve the typical maritime trade business. In this sense, two types of

marketing efforts can be done. First, to attract private investors that set up the terminal operation or second to bring the BCO (beneficial cargo owners) to establish their own terminals. The direct investment by BCO might not be a suitable option considering the scope and scale of these operations (types of vessels, volume, need to rail access, etc). Therefore, the marketing intelligence efforts should be concentrated in niche markets that can benefit from the combination of waterborne access (limited draft/shallow water) and proximity to markets that are in the port hinterland. Once these niche markets are identified, the private investment types can be matched (directly in the operation or indirectly via funding). The recreational/fishing activities can be (and should be) kept and further developed in, as part of the Port community outreach and stakeholder management plan. This outreach can also be used to give the port more publicity and visibility. The economic impact of port activities in Texas is well documented as are the revenue by sector and category in support of job creation and economic impact.

IMPACTS	STATE OF TEXAS 2018	STATE OF TEXAS 2015	CHANGE
JOBS			
Direct	128,848	116,175	12,673
Induced	193,060	143,169	49,891
Indirect	112,112	94,807	17,306
Related Users	<u>1,355,392</u>	<u>1,207,720</u>	<u>147,672</u>
TOTAL JOBS	1,789,412	1,561,870	227,542
PERSONAL INCOME (\$ Millions)			
Direct	\$8,712	\$7,016	\$1,695
Re-Spending/Local Consumption	\$23,621	\$18,582	\$5,040
Indirect	\$5,117	\$4,329	\$788
Related User Income	<u>\$65,370</u>	<u>\$62,229</u>	<u>\$3,142</u>
TOTAL PERSONAL INCOME	\$102,821	\$92,156	\$10,665
ECONOMIC REVENUE/OUTPUT (\$ Millions)			
Direct Business Revenue	\$53,635	\$46,669	\$6,967
Related Users Output	<u>\$372,306</u>	<u>\$303,469</u>	<u>\$68,837</u>
TOTAL ECONOMIC REVENUE/OUTPUT	\$425,942	\$350,138	\$75,804
LOCAL PURCHASES (\$ Millions)	\$11,318	\$9,728	\$1,590
STATE AND LOCAL TAXES (\$ Millions)			
Direct	\$662	\$526	\$136
Re-Spending/Local Consumption	\$1,795	\$1,394	\$402
Indirect	\$389	\$325	\$64
Related User Taxes	<u>\$4,968</u>	<u>\$4,667</u>	<u>\$301</u>
TOTAL TAXES	\$7,814	\$6,912	\$903
TOTAL ECONOMIC VALUE (\$ MILLIONS)			
Direct Business Revenue	\$53,635	\$46,669	\$6,967
Re-Spending and Local Consumption	\$23,621	\$18,582	\$5,040
Related Users Output	<u>\$372,306</u>	<u>\$303,469</u>	<u>\$68,837</u>
TOTAL ECONOMIC VALUE	\$449,563	\$368,719	\$80,844

Totals may not add due to rounding

Table 6 Economic Impacts of Ports 2015-2018-Source Texas Ports Association

Revenue by Sector and Category

IMPACT CATEGORY	REVENUE (\$1,000)
SURFACE TRANSPORTATION	
Rail	\$4,203,990
Truck	\$2,667,305
Pipeline	\$3,715,896
MARITIME SERVICES	
Terminal	\$20,877,858
Tug Assist	\$219,738
Pilots	\$259,465
Agents	\$66,976
Maritime Services/Construction	\$2,961,905
Freight Forwarders	\$416,089
Warehouse	\$596,625
Container Repair/Storage	\$189,290
Barge/Bunkers	\$1,273,450
Chandler/Surveyors	\$487,628
TENANTS	\$19,302,292
PORT AUTHORITY	\$400,833
TOTAL	\$53,635,301

Totals may not add due to rounding

Table 7 Revenue by Sector and Category

Additional discussions need take place with the parties interested in opportunities not directly related to commercial port development for example a desalination plant or electrical grid distribution if offshore wind develops.

Critical to this effort will be the commitment on the part of the Board to expand its investment in the personnel necessary to undertake market research and outreach, which the Port can use to take advantage of emerging opportunities. Continual research and tracking of data to identify potential business opportunities and harvest “low-hanging fruit” (immediate realistic potential opportunities) is essential.

8. SWOT ANALYSIS

The study began with undertaking a SWOT analysis of The Port and its property. “SWOT” is an abbreviation that stands for Strengths, Weakness, Opportunities, and Threats, and provides a useful framework for categorizing the factors that influence strategy and planning. “Strengths” and “Weaknesses” are analyzed from an internal perspective, while the “Opportunities” and “Threats” are external factors, typically based on the business environment and competition analysis. The SWOT analysis is a tool largely employed to assist the decision process of strategic resources allocation and setting priorities in a typical budget cycle (12 months) as well as strategic planning (5 to 10 years). Ideally, the SWOT analysis is based on data (not just perception of management), and facilitates:

- matching market opportunities to strengths.
- compensating and balancing weaknesses; and,

- identifying the market threats that are most harmful to the business, in order to be better prepared to overcome them by directing future investments and formulating action plans.

The below diagrams reflect the dynamics of the SWOT analysis.



Figure 15 SWOT Analysis Matrix Applied to Ports

After preliminary analysis of available data and site review, the SWOT analysis for Port Mansfield is as follows:

a. Strengths

- i. Proximity to the consumer markets in south Texas and Mexico.
- ii. Established revenue stream from recreational activities
- iii. A large area of available, undeveloped upland under the control of The District, which could be developed into an industrial park or warehousing.
- iv. Ability to develop greenfield projects related to new construction.
- v. Good representation on the State's two main port advocate organizations (the Texas Port Authority Advisory Committee (PAAC) and Texas Ports Association), which can help attract both public funding for infrastructure and private investors for development projects.
- vi. Long potential berthing area
- vii. Protected harbor
- viii. Reasonable water depth for small ships and barges
- ix. Roadway capacity can be expanded
- x. Good short-sea connections to the Mexican Ports of Tampico, Altamira, & Vera Cruz

- xi. Marine highway potential to other Gulf Ports
- xii. Short seas shipping highway alternative
- xiii. Strong agricultural region
- xiv. Strong leasehold income
- xv. Planned improvement of existing industrial waterfront property
- xvi. History of handling construction supply and project cargoes
- xvii. General Aviation airport to service commercial and residential interests
- xviii. Port Mansfield is the only port in its district (Willacy County Navigation District), which represents an advantage in terms of public resources allocation.

b. Weaknesses

- i. Needed repair of waterfront berthing areas
- ii. Lack of cargo equipment
- iii. Lack of structured cargo storage
- iv. Informal site plan for development
- v. Lack of a comprehensive and universal leasing policy
- vi. Limited personnel resources (staff)
- vii. No policy manual for employees
- viii. Commercial tariff needs to be reviewed and revised
- ix. Lack of established business through The Port
- x. Border migration issues
- xi. Lack of 33 CFR 105-designated area
- xii. The Port is perceived primarily as a recreational destination; there is limited public awareness of commercial opportunity at The Port
- xiii. Lack of updated strategic and master planning
- xiv. Indirect rail access and no direct rail connection to The Port
- xv. Shallow waters with some major draft restrictions for large size vessels.
- xvi. Lack of consistent commercial cargo flow
- xvii. Limited financial resources for promotion (sales, social media presence)
- xviii. Not certified (ISO certificates for Quality, Security, or Sustainability)

c. Opportunities

- i. Strong agricultural region
- ii. Potential for State investment and/or support into the Port in order to shift cargo off of congested Texas highways
- iii. Potential for offshore wind support
- iv. Potential for desalination plant
- v. Potential industrial property development

- vi. Warehousing potential
- vii. Marine highway connections to Mexico
- viii. Short-sea shipping connections through GIWW
- ix. Ability to handle barges and small feeder/sub-Panamax vessels
- x. Texas has a well-developed understanding of the economic impact of ports, and there is a favorable environment for port development in the state

d. Threats

- i. Nearby Ports handling established agri-cargo i.e. Harlingen, Brownsville, Corpus Christi.
- ii. Insufficient skilled labor force.
- iii. Potential resistance to industrial development from residential interests.
- iv. Direct competition from a large regional port (Brownsville) that already has more robust infrastructure and established freight flows.
- v. Local political disputes (generated by the governance structure and lack of independent port administration) inhibiting the use of existing State resources to improve infrastructure and attract private investors.
- vi. Regional and federal political disputes inhibiting access to new sources of funding for a large project (for example, rail infrastructure connectivity).

9. CONCLUSIONS AND RECOMMENDATIONS

Port Mansfield has significant potential for growth in niche maritime areas, though any such growth must be balanced with the interests of the community within the Port district. The Port's proximity to Mexico and Texas metropolitan areas, the opportunity to shift trucking to marine highway movements, its waterway access and proximity to the Gulf of Mexico and GIWW, increasing congestion in other regional ports, roadway corridor, large amount of undeveloped land, and committed staff represent areas of strength and opportunity for The Port. Essential for Port growth will be dedicated and expanded staff who can focus on Port planning and business development that will be essential to the Port's growth.

The following recommendations are presented as the basis for the Strategic Action Plan:

- A. Maintain existing revenue streams related to recreational activities by balancing commercial port development with the needs of the community.

- B. Undertake specific zoning for the Port Mansfield property with clear boundaries for residential, commercial, and industrial development. Include expanded roadway corridors and access points in anticipation of increased vehicle traffic if development occurs.
- C. Complete the dock refurbishment for the entire length of the harbor parcels designated for future barge and small vessel handling.
- D. Create planning documents with parcels for industrial development on the north side of the main roadway including airport property. Create roadway access corridors, industrial parcels, utility corridors, access corridor to the waterfront port operations parcels, protections for residential areas and adjoining commercial parcels.
- E. Apply for a US DOT grant (e.g., BUILD grant) for the purchase of a crane and ground equipment when a realistic opportunity arises.
- F. Apply for a FAA discretionary grant for expansion of the airport runway, lighting improvements, and taxi/ramp area improvements. Seek a General Aviation operator for the airport.
- G. Apply for Port Security Grant Program funding to create a 33 CFR 105 area in compliance with the Marine Transportation Security Act (MTSA) to handle international freight traffic.
- H. Continue to work with marine transportation interests, warehousing interests, operators, and cross-border shippers to explore the development of opportunities for the port, including a short-sea connection with one or more Mexican ports, warehouse development, and other opportunities for commercial revenue.
- I. Explore supplemental revenue streams unrelated to commercial port development that do not interfere with such development (e.g., a desalination plant)
- J. Begin discussions with US Customs regarding Port of Entry status and future FTZ.
- K. Develop and execute a Business Development Plan that includes data collection, asset promotion, expanded internet and social media presence, press, business targeting, and tracking.
- L. Expand the staff to include a Port Manager and a Municipal Manager and have each focus on their designated areas and report to the Director.
- M. Plan for third party operation of the Marine Terminal.
- N. Conduct regular public meetings keeping stakeholders and the community informed.

10. STRATEGIC ACTION PLAN

By December 2021

- a) Board approval of the Strategic Action Plan.
- b) Expand the staff as appropriate with updated job descriptions.
- c) Review existing tariff and policy manuals for updates.
- d) Begin public meetings on Port area zoning.

- e) Designate the Marine Terminal area and boundaries under an initial Port Master Plan.
- f) Continue discussions with warehousing, cross border marine service and desalination interests. Develop relationships with Mexican and US based shippers.
- g) Commence/complete planned waterfront bulkhead repairs in Tract 1.
- h) Develop the initial Business Development Plan.
- i) Expand the Policing, Fire, and Rescue capabilities of the Port community to address increased industrial and/or commercial activity at the Port.

By July 2022

- a) Complete a revised zoning and parcel map for the Port's properties and, specifically, the industrial areas north of the main roadway.
- b) Develop and undertake a wide range public relations effort to indicate that the Port is "Open for Business" – available for commercial opportunities.
- c) Develop, for approval by the Board, a Leasing and Development Policy Plan.
- d) Undertake revisions of the Port Tariff, Rules and Regulations, and Personnel Policies.
- e) Connect with commercial recreational interests for development of commercial parcels.
- f) Revise the Port's Natural Disaster Plan.
- g) Hold a public event with elected officials on Port Development plans.
- h) Undertake and complete engineering studies/cost estimates to complete wharf repairs.
- i) Commence the segmenting and designation of the wharf areas as Security Zones under 33 CFR Part 105 regulations as administered by the US Coast Guard.
- j) Schedule Facility Security Officer (FSO) training for key Port personnel.

By December 2022

- a) Review staff requirements and expand as appropriate.
- b) Make applications for FAA, PSGP, MARAD/DOT, and any other necessary grants for 2023 awards.
- c) Review the Port's dredging requirements for USACE funding and project work.
- d) Institute a Facility Security Plan (FSP) and designate a Facility Security officer (FSO).
- e) Complete, for Board approval, the revised Tariff, Rules and Regulations, and Personnel Policies.
- f) Appropriate necessary funds (as identified in engineering studies) to continue wharf repairs.
- g) Identify and contact offshore wind, trucking, warehouse, and barge operator interests.
- h) Issue a Request for Qualifications (RFQ) for a Marine Terminal Operator.

By July 2023

- a) Commence repairs on bulkheads and wharf areas in Tracts 2 and 3.
- b) Commence airport improvement projects.
- c) Issue Request for Proposals (RFP) for DOT-funded cargo handling equipment.
- d) Select a Marine Terminal Operator.
- e) Hold a cross-border shipping interests event for Mexican and US logistics service providers and shippers.
- f) Apply for FTZ designation
- g) Continue public meetings and forums on Port development.
- h) Undertake airport improvements.
- i) Hold a legislative briefing tour at the Port.

By December 2023

- a) Review and revise as necessary the Port Master Plan.
- b) Commence review and application for 2024 dredging by USACE.
- c) Review and revise the Port Business Development Plan.
- d) Review and revise as necessary the Port Tariff.
- e) Review and adjust staffing requirements.
- f) Review and revise the Port Strategic Action Plan.
- g) Complete airport improvements.
- h) Issue a Request for Qualifications (RFQ) for the airport General Aviation operator.
- i) Host a Texas DOT and Texas Port Council meeting at the Port.

By December 2024

- a) Commence USACE channel and Port-sponsored berth dredging as needed.
- b) Review and revise the Port Business Development Plan, Tariff, and Strategic Action Plan.
- c) Review and adjust staffing requirements.
- d) Select an airport General Aviation operator.

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12. APPENDIX 1 - Port Mansfield Port Properties Map

