Permian Basin Freight and Energy Sector Transportation Plan

Regional Economic Analysis

November 9, 2020

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Acronyms

AAR	Association of American Railroads
BBL	Barrel of Oil
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
CAGR	Compound Annual Growth Rate
GRP	Gross Regional Product
IMPLAN	North American Industry Classification System
ISD	Independent School District
MCF	Thousand Cubic Feet
NACIS	North American Industry Classification System
PBPA	Permian Basin Petroleum Association
QCEW	Quarterly Census of Employment and Wages
STCC	Standard Transportation Commodity Code
TREDIS	Transportation Economic Development Impact System
TTARA	Texas Taxpayers and Research Association

1.0 Introduction

The purpose of the Texas Permian Basin Freight and Energy Sector Transportation Plan (Freight Plan) is to develop a multimodal regional freight plan to improve safety and mobility throughout the Permian Basin by identifying local and regional freight challenges and opportunities, and identifying and prioritizing improvements, including strategies for policy and programmatic solutions. The Permian Basin has experienced unprecedented growth over the last decade due to growth in the energy sector. In 2019, Texas produced over 1.75 billion barrels of oil while the U.S. produced over 4.46 billion barrels in total. The Texas portion of the Permian Basin produced over 2.8 million barrels of oil per day in 2019, indicating that the Texas portion of the region accounted for nearly 60 percent of Texas' total production. The New Mexico portion of the region produced over 1.53 billion barrels of oil in 2019, indicating that as a whole the Permian Basin accounted for over 30 percent of the national total. Though the 2020 global coronavirus pandemic has forced nations to restrict non-essential travel, thereby drastically reducing the demand for crude oil and the production of oil and gas in the Permian Basin, the lasting impact of the pandemic to the energy sector generally and the Permian Basin specifically is unknown. There still exists a critical need for investment in the region.

A key objective of the Freight Plan was to raise awareness about the economic importance of the Permian Basin and the freight moving on its transportation network. To accomplish this objective, the current technical memorandum identifies, quantifies, and documents the importance of the Permian Basin region's freight and economic activity to the state and the nation including:

- describing and analyzing population, employment, wages, and value-added trends in the Permian Basin;
- describing and analyzing freight movements today and in the future in the Permian Basin;
- identifying and quantifying employment in the freight-intensive sectors in the Permian Basin;
- identifying and quantifying employment in the freight transportation sectors in the Permian Basin;
- estimating the economic importance of freight-intensive sectors and freight transportation sectors in terms of contributions to jobs, labor income, value-added or Gross Regional Product (GRP), and tax revenue;

The economic importance of the Permian Basin is reported using quantitative metrics that capture the direct economic impacts and economic models for the Permian Basin and the state to estimate the total (combined direct, indirect and induced) economic impacts from freight related activities in the region. The impacts are evaluated at the regional and state levels.

2.0 Permian Basin Growth Trends

This section provides context for the regional economic analysis by describing and analyzing population, employment, wages, and value-added trends in the Permian Basin.

2.1 Population and Employment in the Permian Basin

Population is the primary socioeconomic variable indicating the health of a geography, as almost all other socioeconomic variables are a function, to a degree, of population. Employment, which in turn produce goods and services, are a function of population, and the corresponding domestic demand for that production is a function of population as well.

The population in the Permian Basin reached 537,344 residents in 2019, an increase of 25.2 percent since 2008 (**Exhibit 1**). Comparatively, the population in Texas increased at a slower pace or 19.2 percent over the last eleven years. The 2008-2019 compound annual growth rate (CAGR) for the Permian Basin population was 2.1 percent while the compound CAGR for Texas population was 1.6 percent.

Between 2008 and 2019 the total number of employees in the Permian Basin increased by nearly 39 percent as compared to a 15 percent increase in the total number of employees in the state (**Exhibit 2**). The more rapid growth in employment coincides with the significant increase in oil production in the region. Over the last ten years, the population of west Texas has climbed as its oil fields were revived by hydraulic fracturing. The population figures in the Permian Basin do not include the transient workforce. The transient workforce includes people who travel from across the state and from other states to work in the Permian Basin. Some of these people commute daily, some stay in recreational vehicles, and others stay at camps or hotels for extended periods of time.

Exhibit 1: Population in the Permian Basin and Texas, 2008 and 2019

	Population, 2008	Population, 2019	Change Population 2008-2019	CAGR Population 2008-2019
Permian Basin	429,071	537,344	25.2%	2.1%
Texas	24,326,974	28,995,881	19.2%	1.6%

Source: U.S. Census Bureau

Exhibit 2: Employment in the Permian Basin and Texas, 2008 and 2019

	Employment, 2008	Employment, 2019	Change Employment 2008-2019	CAGR Employment 2008-2019
Permian Basin	366,198	508,108	38.8%	3.0%
Texas	21,010,730	24,175,556	15.1%	1.3%

Source: Texas Labor Market Information, Quarterly Census of Employment and Wages (QCEW).

2.2 Wages in the Permian Basin

Total wages in the Permian Basin increased from $17.9 billion in 2008 to $36.0 billion in 2019, a two-fold increase over the last eleven years (**Exhibit 3**). Comparatively, total wages in Texas raised at a much slower pace or nearly 48 percent over the same period. From 2008 to 2019, the average wage per worker in Texas increased by close to 29 percent while the average wage per worker in the Permian Basin increased by 45 percent (**Exhibit 4**).

Exhibit 3: Wages in the Permian Basin and Texas, 2008 and 2019

	2008 (Billions of Dollars)	2019 (Billions of Dollars)	Change Wages 2008-2018	CAGR 2008-2018
Permian Basin	$17.9	$36.0	101.5%	6.6%
Texas	$1,019	$1,508	47.9%	3.6%

Data Source: Texas Labor Market Information, Quarterly Census of Employment and Wages (QCEW).

Exhibit 4: Average Wage per Worker in the Permian Basin and Texas, 2008 and 2019

	Average Wage Per Worker, 2008	Average Wage Per Worker, 2019	Change 2008-2018	CAGR 2008-2018
Permian Basin	$48,278	$69,312	43.6%	3.3%
Texas	$54,584	$70,337	28.9%	2.3%

Note: Average wage per worker estimated based on employment and average wages by industry provided by the Texas Labor Market Information, Quarterly Census of Employment and Wages (QCEW).

2.3 Gross Regional Product in the Permian Basin

In recent years, the Permian Basin has become the most important oil and gas producing area in the U.S. and is currently the nation's largest petroleum-producing basin. By 2018,

the Permian Basin reported a current-dollar GRP of $97.6 million. The Permian Basin GRP increased by 78 percent between 2008 and 2018 (**Exhibit 5**). The 2008-2018 CAGR for Permian Basin GRP was approximately 6 percent while the CAGR for Texas GRP was 3.8 percent. The more rapid growth in GRP in the Permian Basin coincides with the boom in the oil industry in the region. Oil production in the Permian Basin has more than quadrupled, from 1 million barrels per day in 2011 to nearly 5 million barrels per day in 2020.[1] In addition, a growing renewable energy sector has added to the region's abundant energy resource reserves.

Value added per worker, a measure of labor productivity, for the Permian Basin and the state is shown in **Exhibit 6**. The value added per worker in the Permian Basin is more than twice that for the state, which reflects the high degree of automation and technology of the oil and energy industries in the region that have made the U.S. the world leader in energy production.

Exhibit 5: Gross Regional Product in the Permian Basin and Texas, 2008 and 2018

	2008 (Millions of Current Dollars)	2018 (Millions of Current Dollars)	Change 2008-2018	CAGR 2008-2018
Permian Basin	$54,926	$97,613	77.7%	5.9%
Texas	$1,237,395	$1,802,511	45.7%	3.8%

Data Source: Bureau of Economic Analysis (BEA).

Exhibit 6: Average Gross Regional Product per Worker in the Permian Basin and Texas, 2008 and 2018

	Average GRP Per Worker, 2008	Average GRP Per Worker, 2018	Change 2008-2018	CAGR 2008-2018
Permian Basin	$149,991	$191,827	27.9%	2.5%
Texas	$58,893	$72,130	22.5%	2.0%

Note: Average GRP ~~wage~~ per worker estimated based on total employment and total wages provided by the Texas Labor Market Information, Quarterly Census of Employment and Wages (QCEW).

In 2018, the largest industry in the Permian Basin in terms of GRP was mining, quarrying, and oil and gas extraction (**Exhibit 7**). This industry accounted for 75 percent of Permian Basin GRP and had 75 percent growth between 2008 and 2018. The second largest industry was real estate and rental and leasing, which accounted for 4.5 percent of Permian Basin GRP and had 132 percent growth from 2008 to 2018. The third largest industry was

[1] Accessed at: https://www.eia.gov/petroleum/drilling/pdf/permian.pdf

wholesale trade, which accounted for 3.6 percent of Permian Basin GRP and had 93 percent growth from 2008 to 2018. The two sectors that had the greatest increase in GRP over the 2008-2018 period were utilities (209 percent) and transportation and warehousing (188 percent).

Exhibit 7: Gross Regional Product by Industry Sector in the Permian Basin, 2008 and 2018

NAICS Code & Description	GRP 2008 (Millions of Dollars)	GRP 2018 (Millions of Dollars)	GRP Share, 2018	Change, 2008-2018	CAGR, 2008-2018
21 Mining, Quarrying, and Oil and Gas Extraction	$41,889	$73,236	75.0%	74.8%	5.7%
53 Real Estate and Rental and Leasing	$1,879	$4,365	4.5%	132.3%	8.8%
42 Wholesale Trade	$1,821	$3,516	3.6%	93.1%	6.8%
23 Construction	$1,126	$2,405	2.5%	113.6%	7.9%
31-33 Manufacturing	$1,727	$2,136	2.2%	23.7%	2.1%
44-45 Retail	$1,128	$1,973	2.0%	74.9%	5.8%
22 Utilities	$490	$1,514	1.6%	209.1%	11.9%
48-49 Transportation and Warehousing	$478	$1,377	1.4%	187.9%	11.2%
54 Professional, Scientific, and Technical Services	$799	$1,165	1.2%	45.9%	3.8%
52 Finance and Insurance	$529	$1,093	1.1%	106.4%	7.5%
Top 10 Sectors	**$51,866**	**$92,780**	**95.0%**	**78.9%**	**6.0%**
All Sectors	**$54,926**	**$97,613**	**100%**	**77.7%**	**5.9%**

Data Source: Bureau of Economic Analysis (BEA).

3.0 National and Regional Significance of the Permian Basin

The State of Texas has a long history of discovering and producing crude oil to support the nation's energy needs. The Permian Basin is of critical importance in achieving U.S. energy independence. Covering approximately 75,000 square miles with more than 7,000 oil and gas fields, the Permian Basin is the 2nd largest oil and gas producer in the world.

Sustained investment in the Permian Basin is expected to continue despite recent volatility in the oil market. A price war between Saudi Arabia and Russia that began in March 2020, exacerbated by lower demand due to the new coronavirus (COVID-19) pandemic, has resulted in oil prices dropping to record low levels.[2] Though lower prices have led to a recent slowdown in the Permian Basin, substantial activity is expected to continue in the long-term.

Historically, production capacity in the Permian Basin has been limited by the region's ability to transport oil and gas products to market. Producers had to rely on trucks as opposed to pipelines, which are more efficient and cost-effective. More recently, private investment in and public prioritization of pipeline infrastructure has increased the capacity of the region to deliver products to market. Two presidential executive orders issues in April 2019 are expected to advance the construction of pipelines and other projects which will lead to greater production and transport of oil and natural gas within the U.S. and internationally.[6] Specific to the Permian Basin, this has coincided with the opening of the new Gray Oak pipeline that transports crude oil to Corpus Christi.[7] This national focus on energy independence will mean increased traffic in the region due to the sand, water, and equipment, personnel, and other transportation requirements for oil and gas production, even as more oil and gas products can be moved off the roadway network.

The Permian Basin is also a growth area for renewable energy. Texas has led the nation in renewable energy thanks to continued and growing investment in wind energy and solar energy in the Permian Basin.[3] Solar energy also is seeing a surge of investment in the Permian Basin as a renewable energy source.[4] Texas is expected to continue leading the U.S. in installed wind capacity.

4.0 Freight and the Permian Basin Economy

The movement of goods is a major contributor to the Permian Basin economy. The Permian Basin freight transportation system enables the movement of billions of tons of freight and employs thousands of Texans in freight-related sectors and industries each year. In 2018, freight movements (inbound, outbound, and within) in the Permian Basin totaled over 1 billion tons and $38 billion in value. By 2050, freight movements are expected to total 1.6 billion tons and $76.9 billion in value. Over the 2018-2050 period, freght tonnage is

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[2] Accessed at: https://www.nytimes.com/2020/03/31/business/energy-environment/crude-oil-companies-coronavirus.html

[3] Accessed at: https://news.ihsmarkit.com/press-release/energy/new-ihs-markit-outlook-%E2%80%93-stunning-permian-basin-oil-production-more-double-2017

[4] Accessed at: http://puc.texas.gov/industry/maps/Electricity.aspx

anticipated to grow at an annual rate of 1.3 percent while freight value is expected to grow at an annual rate of 2.2 percent (see **Exhibit 8**). It is estimated that in 2019, over 290,000 people were employed directly in freight-related sectors in the Permian Basin and that these employees earned over $24 billion (**Exhibit 9**). Jobs in freight-related sectors generated nearly $85 billion of GSP in 2018.[5] These direct jobs and income give rise to indirect and induced economic activity in the Permian Region, the state, and the nation.

Exhibit 8: Total Freight Tonnage and Value in the Permian Basin, 2018 and 2050

	2018 Freight Tons (Millions)	2050 Freight Tons (Millions)	Freight Tonnage Change, 2018-2050	CAGR, 2018-2050
Permian Basin	1,077	1,627	51.1%	1.3%
Texas Counties	970	1,467	51.2%	1.3%
New Mexico Counties	107	160	49.5%	1.3%

	2018 Freight Value (Millions)	2018 Freight Value (Millions)	Freight Value Change, 2018-2050	CAGR, 2018-2050
Permian Basin	$38,343	$76,894	100.5%	2.2%
Texas Counties	$35,178	$72,673	106.6%	2.3%
New Mexico Counties	$3,165	$4,221	33.4%	0.9%

Data Source: 2015 IHS Markit Transearch and analysis by Cambridge Systematics and WSP.

Note: The original Transearch freight data covered years 2015 to 2045 in 10 year intervals. Freight data for base year 2018 were estimated from the 2015 and 2025 values and supplemented with sand and water tonnage estimates. Forecasts for 2050 were estimated by projecting the 2045 levels based on the long-term trends.

Exhibit 9: Establishment, Employment, and Wages in Freight-Related Sectors in the Permian Basin, 2019

	Number of Establishments	Average Employment	Total Wages (Millions of Dollars)
Freight-Intensive Sectors	15,140	290,358	$24,283
Freight Transportation Sectors	1,912	25,050	$1,938

Data Source: Texas Labor Market Information, Quarterly Census of Employment and Wages (QCEW).

Note: The freight transportation sectors are part of the good-intensive sectors.

[5] Bureau of Economic Analysis (BEA). Year 2018 is the latest year the GRP data at the county level by industry sector are available.

Exhibit 10 displays volume of freight in the Permian Basin by mode for 2018 and 2050. The majority of that volume is directly linked to the oil and gas activity in the region. Each new well in the Permian Basin generates between 4,000 to 7,000 truck trips during development and fracing, and each existing well generates about 30-50 truck trips every month.[6] This increased energy output puts an even more intense strain on the regional infrastructure as the rest of the world increasingly depends on the Permian Basin. In addition, the development of renewable energy production fields in the Permian Basin similarly strains the highway network due to transport of oversize and overweight components for renewable energy installations in Texas and adjacent areas in New Mexico.

Exhibit 10: Freight Tonnage by Mode in the Permian Basin, 2018 and 2050

	2018 Truck Tons (Millions)	2018 Rail Tons (Millions)	2018 Air Tons (Millions)	2018 Pipeline Tons (Millions)	2018 Mixed Modes Tons (Millions)	2018 Total Tons (Millions)
Permian Basin	993.2	8.7	0.005	74.9	0.063	1,076.9
Texas Counties	886.3	8.7	0.005	74.9	0.063	970.0
New Mexico Counties	106.9	0.0	0.000	0.0	0.000	106.9

	2050 Truck Tons (Millions)	2050 Rail Tons (Millions)	2050 Air Tons (Millions)	2050 Pipeline Tons (Millions)	2050 Mixed Modes Tons (Millions)	2050 Total Tons (Millions)
Permian Basin	1,499.0	14.8	0.011	113.2	0.107	1,627.1
Texas Counties	1,339.1	14.8	0.011	113.2	0.107	1,467.2
New Mexico Counties	159.9	0.0	0.000	0.0	0.000	159.9

	Truck Tons	Rail Tons	Air Tons	Pipeline Tons	Mixed Modes Tons	Total Tons
Permian Basin, Share in 2018	92.2%	0.8%	> 0.01%	7.0%	0.01%	100.0%
Permian Basin, Share in 2050	92.1%	0.9%	> 0.01%	7.0%	0.01%	100.0%

Data Source: 2015 IHS Markit Transearch and analysis conducted by Cambridge Systematics and WSP..
Note: The original Transearch freight data covered years 2015 to 2045 in 10 year intervals. Freight data for base year 2018 were estimated from the 2015 and 2025 values and supplemented with sand and water tonnage estimates. Forecasts for 2050 were estimated by projecting the 2045 levels based on the long-term trends. Pipeline tonnage in 2018 and 2050 only includes fresh water and produced water and does not include crude oil and gas.

[6] Cambridge Systematics analysis.

The scale and complexity of Permian Basin industries require a reliable multimodal freight transportation system. Key industries, such as mining and oil and gas production, depend on this system for exploration, production, and export. Freight tonnage and freight value moved by the Permina Basin's key industries in the base year 2018 and forecast year 2050 are shown in **Exhibit 11**. Freight tonnage moved by mining, quarrying, and oil and gas extraction represented 98.1 percent of the total freight tonnage moved in 2018. Other key industries that rely heavily on the Permian Basin freight transportation system include manufacturing, wholesale and retail trade, and agriculture. The value of freight moved by these sectors represented 50 percent (manufacturing), almost 3 percent (wholesale and retail trade), and over 7 percent (agriculture, forestry, fishing and hunting) of the total freight value moved in the Permian Basin in 2018. From 2018 to 2050, the wholesale and retail trade is anticipated to experience the highest growth in freight tonnage (166 percent) while the manufacturing sector will grow 143 percent in freight value.

Exhibit 11: Freight Tonnage and Freight Value by Freight-intensive Sectors in the Permian Basin and Texas, 2018

NAICS Code & Description	2018 Freight Tons (Millions)	2018 Freight Value (Millions)	Share Freight Tonnage, 2018	Share Freight Value, 2018
21 - Mining, Quarrying, and Oil and Gas Extraction	1,055.9	$13,646	98.1%	35.6%
31-33 Manufacturing	12.7	$19,088	1.2%	49.8%
42, 44-45 Wholesale and Retail Trade	3.2	$1,075	0.3%	2.8%
11 - Agriculture, Forestry, Fishing and Hunting	3.7	$2,740	0.3%	7.1%
48-49 Transportation and Warehousing	1.4	$1,795	0.1%	4.7%
Total =	**1,076.9**	**$38,343**	**100.0%**	**100.0%**
NAICS Code & Description	**2050 Freight Tons (Millions)**	**2050 Freight Value (Millions)**	**Share Freight Tonnage, 2050**	**Share Freight Value, 2050**
21 - Mining, Quarrying, and Oil and Gas Extraction	1,584.4	$20,389	97.4%	26.5%
31-33 Manufacturing	26.6	$46,344	1.6%	60.3%
42, 44-45 Wholesale and Retail Trade	8.5	$2,532	0.5%	3.3%
11 - Agriculture, Forestry, Fishing and Hunting	5.1	$4,392	0.3%	5.7%
48-49 Transportation and Warehousing	2.5	$3,237	0.2%	4.2%

Total =	1,627.1	$76,894	100.0%	100.0%
NAICS Code & Description	Freight Tonnage Change, 2018-2050	Freight Tonnage CAGR, 2018-2050	Freight Value Change, 2018-2050	Freight Value CAGR, 2018-2050
21 - Mining, Quarrying, and Oil and Gas Extraction	50.1%	1.3%	49.4%	1.3%
31-33 Manufacturing	109.2%	2.8%	142.8%	2.8%
42, 44-45 Wholesale and Retail Trade	165.5%	2.7%	135.6%	2.7%
11 - Agriculture, Forestry, Fishing and Hunting	37.7%	1.5%	60.3%	1.5%
48-49 Transportation and Warehousing	79.5%	1.9%	80.4%	1.9%
Total =	51.1%	2.2%	100.5%	2.2%

Source: Cambridge Systematic analysis of Transearch data

Freight tonnage and freight value per capita in the Permian Basin represented 1,620 tons and almost $457,700 in 2018. By 2050, freight tonnage and freight value per capita in the Permian Basin are expected to represent over 1,800 tons and $87,000. These freight statistics are shown in **Exhibit 12.**

Exhibit 12: Average Freight Tonnage and Freight Value Per Capita in the Permian Basin, 2018 and 2050

	2018 Population	Average Freight Tonnage per Capita, 2018	Estimated 2050 Population	Average Freight Tonnage per Capita, 2050
Permian Basin	600,212	1,620	883,737	1,841
Texas Counties	537,344	1,805	736,001	1,993
New Mexico Counties	127,272	840	147,736	1,082

	2018 Population	Average Freight Value per Capita, 2018	Estimated 2050 Population	Average freight Value per Capita, 2050
Permian Basin	600,212	$57,692	883,737	$87,010
Texas Counties	537,344	$65,467	736,001	$98,741
New Mexico Counties	127,272	$24,868	147,736	$28,568

Source: Cambridge Systematics analysis of Transearch and U.S. Census data

In 2018, the average number of tonnage per capita in the Permian Basin was about twenty times higher than in Texas (**Exhibit 13**). Water is a key component of hydraulic fracturing, which has helped release a flood of oil and natural gas from shale deposits across the State. The large volume of sand, fresh water and produced water associated with oil and gas extraction in the region (**Exhibit 14**) helps to explain the magnitude of this measure in the Permian Basin realtive to the state.

Exhibit 13: Average Freight Tonnage and Freight Value Per Capita in the Permian Basin and Texas, 2018

	Freight Tonnage (Millions), 2018	Average Freight Tonnage per Capita, 2018	Freight Value (Millions 2018	Average Freight Value per Capita, 2018
Permian Basin	1,077	**2,051**	$24,764	**$47,162**
Texas	2,965	**104**	$1,973,515	**$68,935**

Source: Cambridge Systematics analysis using Transearch an U.S. Census data

Exhibit 14: Commodity Tonnage in the Permian Basin, 2018

Commodity Group	2018, Freight Tons (Millions)	2050, Freight Tons (Millions)	Share, 2018	Share, 2050
Brine (Produced Water)	642.5	971.3	59.7%	59.7%
Water (Fresh Water)	242.7	366.8	22.5%	22.5%
Crude Oil	75.0	113.4	7.0%	7.0%
Nonmetallic Minerals	58.8	77.2	5.5%	4.6%
Sand	36.8	55.6	3.4%	3.4%
Petroleum or Coal Products	4.4	7.3	0.4%	0.4%
Clay, Concrete, Glass, Stone	3.7	9.1	0.3%	0.6%
Waste or Scrap Materials	3.2	8.4	0.3%	0.5%
Farm Products	2.9	3.6	0.3%	0.2%
Chemicals	2.1	4.7	0.2%	0.3%
Top 10 Commodities	**1072.1**	**1,617.4**	**99.6%**	**99.4%**
All Commodities	**1,076.9**	**1,627.1**	**100.0%**	**100.0%**

Data Source: 2015 IHS Markit Transearch and analysis by Cambridge Systematics and WSP.

Note: The original Transearch freight data covered years 2015 to 2045 in 10 year intervals. Freight data for base year 2018 were estimated from the 2015 and 2025 values and supplemented with sand and water volume estimates. Forecasts for 2050 were estimated by projecting the 2045 levels based on the long-term trends.

5.0 Economic Impacts

The economic contribution of freight transportation in the Permian Basin is estimated by assessing freight transportation jobs, labor income, value added (or GRP), and tax revenue, which can be supported directly or indirectly, and can generate an induced effect from consumption of employee income. Freight transportation has a multiplier effect resulting from the expenditures on goods and services from suppliers and from the expenditure of disposable income of freight transportation employees. Economic impacts include:

- **Direct Impact:** Employment, income, value added, and tax revenue generated by the direct operations of the freight transportation sector.
- **Indirect Impact:** Employment, income, value added, and tax revenue generated as part of the intermediate consumption of the freight transportation sectors, for example, spending on vehicles, fuel, supplies, maintenance parts, and real estate costs.
- **Induced Impact:** Impact measured in terms of additional jobs, income, value added, and tax revenue as a result of the consumption patterns of freight transportation employees (due to their labor income), for example, spending on education and health, entertainment, groceries, and real estate.

This analysis relies on the 2018 TREDIS model for the Permian Basin and the 2018 IMPLAN model for Texas to estimate the economic multiplier of the freight transportation sectors at the regional and state levels, as well as their *direct*, *indirect,* and *induced* economic impacts. Economic impacts are measured in terms of the following categories:

- **Employment (Jobs)** – This is the estimate of the number of jobs (full and part time) by place of work generated by an investment. Full-time and part-time jobs were given equal weight in this analysis.
- **Labor Income** – This is a measure of wages and benefits associated with the additional employment generated.
- **Gross State Product (GSP)** – This captures the additional value created in the production process which includes employee compensation (labor income), proprietor income (i.e., payments received by self-employed individuals as income), other income types, and indirect business taxes.
- **Tax Revenue** – This is the increase in property and sales tax revenue to the local government, as well as changes in income tax revenues and taxes on production and

imports for the federal and state government, that are realized when local resident and business activity changes.

5.1 Economic Contribution from Direct Employment in the Freight-intensive Sectors

5.1.1 Jobs in the Freight-intensive Sectors

Exhibit 15 shows employment for six economic sectors that are major producers and/or consumers of freight in the Permian Basin. These freight-intensive sectors in the Permian Basin totaled 290,358 jobs in 2019, representing 57 percent of all jobs in the Permian Basin. The mining, quarrying, and oil and gas sector is the largest employer among the freight-intensive sectors in the region with a total of 113,716 jobs (39.2 percent). The retail sector provides the second largest number of jobs at 52,909 (18.2 percent), while the construction sector is the third largest employer with a total of 42,954 jobs (14.8 percent).

Exhibit 15: Employment in the Freight-Intensive Sectors in the Permian Basin, 2019

NAICS Code – Sector Name	Number of Establishments	Average Employment	Total Wages (Millions)
21 Mining, Quarrying, and Oil and Gas Extraction	4,134	113,716	$12,105
44-45 Retail	3,081	52,909	$2,092
23 Construction	2,591	42,954	$3,405
42 Wholesale Trade	2,132	30,856	$2,883
48-49 Transportation and Warehousing	2,074	27,541	$2,093
31-33 Manufacturing	1,128	22,382	$1,705
Total in Freight-Intensive Sectors	**15,140**	**290,358**	**$24,283**
Total in All Sectors	32,521	508,108	$36,049
Total in Freight-intensive Sectors (%)	**47%**	**57%**	**67%**

Data Sources: Texas Labor Market Information, Quarterly Census of Employment and Wages (QCEW). https://texaslmi.com/LMIbyCategory/QCEW.

5.1.2 Total Economic Contribution

Exhibit 16 presents the economic contribution from direct employment in the freight-intensive sectors in the Permian Basin to the economies of the region and the state. The results indicate that the freight-intensive sectors in the Permian Basin support 694,270 jobs, which adds close to $45.1 billion in labor income and generates $82.5 billion in GRP.

This yields $18 billion in tax revenues which include $9.4 billion in federal taxes and $8.6 billion in state/local taxes.

Exhibit 16: Economic Contribution from Employment in the Freight-intensive Sectors in the Permian Basin to the Economies of the Region and the State, 2019

Economic Contribution to:	Employment Jobs	Labor Income (Millions of $2019)	GSP (Millions of $2019)
Permian Basin	354,520 (51%)	$27,587 (61%)	$44,373 (54%)
Rest of the State	339,750 (49%)	$17,495 (39%)	$38,094 (46%)
Texas	694,270 (100%)	$45,082 (100%)	$82,467 (100%)

Economic Contribution to:	Federal Taxes (Millions of $2019)	State /Local Taxes (Millions of $2019)	Total (Millions of $2019)
Permian Basin	$4,281 (45%)	$5,193 (60%)	$9,474 (53%)
Rest of the State	$5,149 (55%)	$3,416 (40%)	$8,566 (47%)
Texas	$9,430 (100%)	$8,609 (100%)	$18,040 (100%)

Data Source: 2018 TREDIS model for the Permian Basin and 2018 IMPLAN model for Texas.

Note: To perform the analysis, the total number of direct jobs generate d by the freight transportation sectors were used as the reference for the calculation of other economic impacts (labor income, GSP, and taxes), as well as the multiplier effects.

Of the 694,270 jobs stemming from the freight-intensive sectors in the Permian Basin, 290,358 are direct job impacts (42 percent of total employment impact) from the industries that are major producers and/or consumers of freight in the region. These direct jobs in the freight-intensive sectors created 403,911 *indirect* and *induced* jobs which represent 58 percent of the total employment impacts.

5.2 Economic Contribution from Direct Employment in the Freight Transportation Sectors

To estimate the economic contribution of transportation and logistics in the Permian Basin, a broad definition of the freight transportation sectors is utilized. In addition to activities generated by freight truck, rail, air, and pipeline transportation, other activities included in freight transportation are in-house truck transportation carried out by businesses in which transportation is not the main economic activity (such as grocery stores or waste collection), self-employed individuals in the trucking and couriers activities, United States Postal Service (USPS), for-hire warehousing and storage, and other cargo handling activities. The economic impact analysis for freight transportation in the Permian Basin uses detailed employment data for each economic activity as input into the 2018 TREDIS and IMPLAN models. Total

employment as an input helps identify the exact magnitude of each freight transportation activity.

5.2.1 Jobs in the Freight Transportation Sectors

The freight transportation sectors in the Permian Basin totaled 25,050 jobs in 2019. **Exhibit 17** shows the number of jobs by transportation mode or associated activity, and reveals that trucking is the largest employer in the freight transportation sector for Permian Basin, with a total of 18,112 jobs (72.3 percent). The pipeline transportation sector provides the second largest number of jobs at 3,024 (12.1 percent). Support activities to transportation, which include freight transportation arrangement and packing & crating, is the third largest employer with a total of 1,110 jobs (4.4 percent). The couriers and messengers' sector, providing intercity and/or local delivery of parcels and documents, is the fourth largest employer with a total of 1,036 jobs (4.1 percent). In addition, warehousing and storage is responsible for a total of 875 jobs (3.5 percent), and U.S. Postal Service is responsible for a total of 633 jobs (2.5 percent). It should be noted that rail employment is not captured in the data used as much of direct rail employment in the region would be reported at the business headquarter location as opposed to the location of field operations. Employment in water transportation in the region is not actual freight movement but professional service related functions.

Exhibit 17: Employment in the Freight Transportation Sectors in the Permian Basin, 2019

NAICS Code – Sector Name	Number of Establishments	Average Employment	Total Wages (Millions)
484 – Truck Transportation	1,478	18,112	$1,332.3
486 - Pipeline Transportation	206	3,024	$353.8
488 – Support Activities for Transportation	107	1,110	$89.2
492 - Courier and Messengers	28	1,036	$47.0
493 – Warehousing and Storage	19	875	$49.5
491 - Postal Services	54	633	$44.1
481 – Air Transportation	14	250	$22.1
483 – Water Transportation	6	10	$0.6
Total	**1,912**	**25,050**	**$1,937.8**

Data Source: Texas Labor Market Information, Quarterly Census of Employment and Wages (QCEW). https://texaslmi.com/LMIbyCategory/QCEW.

5.2.2 Total Economic Contribution

Exhibit 18 presents the economic contribution from direct employment in the freight transportation sectors in the Permian Basin to the economies of the region and the rest of

the state. The results indicate that the freight transportation sectors in the Permian Basin support 71,465 jobs, which adds close to $7.0 billion in labor income and generates $7.6 billion in GRP. This yields $1.9 billion in tax revenues which include $1.2 billion in federal taxes and $660 million in state/local taxes. These figures are conservatives because they do not include the transient workforce and their significant economic contribution from increased demand for goods and services in the region.

Exhibit 18: Economic Contribution from Employment in the Freight Transportation Sectors in the Permian Basin to the Economies of the Region and the State, 2019

Economic Contribution to:	Employment Jobs	Labor Income (Millions of $2019)	GSP (Millions of $2019)
Permian Basin	43,235 (60%)	$3,604 (52%)	$3,181 (42%)
Rest of the State	28,230 (40%)	$3,386 (48%)	$4,465 (58%)
Total Contribution	71,465 (100%)	$6,990 (100%)	$7,646 (100%)

	Federal Taxes (Millions of $2019)	State /Local Taxes (Millions of $2019)	Total (Millions of $2019)
Permian Basin	$465	$425	$890
Rest of the State	$754	$234	$988
Total Contribution	$1,219	$660	$1,879

Data Source: 2018 TREDIS model for the Permian Basin and 2018 IMPLAN model for Texas.

Note: To perform the analysis, the total number of direct jobs generate d by the freight transportation sectors were used as the reference for the calculation of other economic impacts (labor income, GSP, and taxes), as well as the multiplier effects (indirect and induced impacts).

Of the 71,465 jobs stemming from the freight transportation sectors in the Permian Basin, 25,050 are direct job impacts (35 percent of total employment impact) from the firms and industries that provide transport services, use transportation to ship and receive goods, or support activities to transportation and warehousing in the Permian Basin. The multiplier impacts associated with the suppliers providing intermediate goods and services to the directly impacted industries, as well as the induced impacts associated with the re-spending of earned income, created nearly 46,415 additional jobs (65 percent of total employment impacts). Therefore, the 25,050 direct jobs in the freight transportation sectors support 71,465 jobs, including *direct*, *indirect*, and *induced* jobs.

The larger share of multiplier-related freight job impacts demonstrates how freight activity benefits other non-freight users. For every 100 jobs in the freight transportation sectors in

the Permian Basin, another 185 jobs are created by suppliers and by the consumption of goods and services by freight transportation employees.

6.0 Financial Contributions of the Permian Basin Oil and Gas Industry to the Texas State Treasury in the form of Taxes and Royalties

The oil and natural gas industry provides an important source of public revenue. This section estimates the financial contribution of the Permian Basin oil and gas industry to the Texas State Treasury in the form of state severance taxes on oil and gas and royalties.

According to the Permian Basin Petroleum Association, in fiscal year 2018, total state and local taxes and state royalties paid by the oil and gas industry in Texas represented $11.8 billion.[7] These contributions totaled $13.4 billion in fiscal year 2019[8], an increase of 14 percent in just one year. State and local taxes include state severance taxes on oil and gas, property taxes, sales taxes, and other special industry taxes such as the oil well serving tax and the oil and gas field cleanup regulatory fee. These funds directly support public education, universities, healthcare and infrastructure through the State Highway Fund, the Economic Stabilization Fund (commonly known as the Rainy Day Fund), the Permanent School Fund (PSF), and the Permanent University Fund (PUF). As a result, the quality of life in Texas benefits from a robust oil and natural gas industry.

6.1 State Severance Taxes on Oil and Gas

This analysis collects oil and gas production data in fiscal year 2019 for the 22 Texas counties in the Permian Basin from the Railroad Commission of Texas (**Exhibit 19**). The dollar value of oil and gas production in the Permian Basin is estimated by multiplying the production figures by the average annual spot price of each product in 2019. This analysis estimates that oil and gas production in the Permian Basin totaled $75.5 billion in fiscal year 2019 (**Exhibit 20**).

The baseline Texas severance taxes on oil and gas are as follows[9]:

- Gas severance tax is 7.5 percent of market value of gas produced and saved.
- Oil severance tax is 4.6 percent of market value of oil produced.
- Condensate tax is 4.6 percent of market value.

[7] Permian Basin Petroleum Association (PBPA). *The Permian Basin Enriching Texas*, (Spring 2020). PBPA Report Developed with the Texas Taxpayers and Research Association (TTARA) Research Foundation.

[8] Ibid.

[9] Railroad Commission of Texas. Texas Severance Taxhttps://www.rrc.texas.gov/oil-gas/publications-and-notices/texas-severance-tax-incentives-past-and-present/

This analysis estimates that oil and gas producers in the Permian Basin contributed nearly $3.6 billion to the state Treasury in 2019 (**Exhibit 21**) or 65 percent of the total severance taxes on oil and gas paid by the industry statewide (**Exhibit 22**).

Exhibit 19: Permian Basin Oil and Gas Production, FY 2019

County	Oil (BBL)	Casinghead (MCF)	GW Gas (MCF)	Condensate (BBL)
Andrews	37,291,304	63,211,863	4,007,896	363,401
Borden	7,863,872	6,626,129	0	0
Crane	7,604,491	33,431,426	7,238,250	63,293
Crockett	6,244,697	61,430,512	39,965,721	118,413
Culberson	921,770	4,147,700	367,680,303	33,657,241
Dawson	3,273,609	1,303,372	0	0
Ector	20,011,491	47,917,846	2,924,668	7,232
Gaines	22,158,426	19,141,216	2,336,355	6,201
Glasscock	49,178,478	175,051,285	528,780	10,383
Howard	84,205,253	132,117,236	189,426	1,704
Irion	13,046,685	132,169,097	1,131,882	13,239
Loving	87,503,770	207,531,632	202,687,795	34,717,122
Martin	124,254,767	215,786,099	8,028	114
Midland	185,436,175	431,354,433	4,177,306	89,504
Pecos	33,822,251	71,369,642	40,042,702	46,914
Reagan	52,080,398	270,722,279	977,180	12,437
Reeves	114,619,387	318,011,644	774,801,547	80,589,897
Scurry	15,277,814	40,425,763	0	0
Upton	73,090,346	234,906,689	0	0
Ward	48,585,058	103,521,293	28,153,069	2,814,915
Winkler	21,554,770	37,995,453	0	0
Yoakum	26,816,046	37,751,721	141,407	0
Permian Basin	**1,034,840,858**	**2,645,924,330**	**1,476,992,315**	**152,512,010**
Texas	**1,555,456,654**	**3,721,313,086**	**6,595,063,169**	**254,596,988**
Permian Basin as % of State	**67%**	**71%**	**22%**	**60%**

Source: Railroad Commission of Texas. Oil & Gas Production Data Query.

http://webapps.rrc.texas.gov/PDQ/changePageViewAction.do?pagesize=500

Exhibit 20: Value of Oil and Gas Production in the Permian Basin, FY 2019

	Oil	Casinghead (Oil Well)	GW Gas	Condensate (Natural Gas Liquids)
Production (Millions)	1,035 BBL	2,646 MCF	1,477 MCF	153 BBL
Average Annual Spot Price	$56.99/BBL	$2.89/MCF	$2.89/MCF	$30.48/BBL
Value of Production (Millions of Dollars)	$58,976	$7,647	$4,269	$4,648
Total Value of Production (Millions of Dollars)			**$75,539**	

Source: Production values come from the Railroad Commission of Texas. Average spot prices come from the U.S. Energy Information Administration. (EIA).

Exhibit 21: State Severance Taxes Paid by Permian Basin Oil and Gas Industry, FY 2019

	Oil	Casinghead (Oil Well)	GW Gas	Condensate (Natural Gas Liquids)
Value of Production (Millions of Dollars)	$58,976	$7,647	$4,269	$4,648
State Severance Tax	4.6%	4.6%	7.5%	4.6%
State Severance Taxes Paid (Millions of Dollars)	$2,713	$352	$320	$214
Total State Severance Taxes Paid (Millions of Dollars			**$3,599**	

Source: Production values coe from the Railroad Commission of Texas. Average spot prices come from the U.S. Energy Information Administration. (EIA).

Exhibit 22: State Severance Taxes Paid by Permian Basin Oil and Gas Industry as Percent of State, FY 2019

	Texas Statewide	Permian Basin	Permian Basin as Percent of State
Oil Production Taxes Paid	$3,887	$3,065	79%
Natural Gas Production Tax Paid	$1,686	$534	32%
Total State Severance Taxes Paid (Millions of Dollars)	$5,573	**$3,599**	**65%**

Source: Total severance taxes paid by the oil and natural gas industry statewide correspond to fiscal year 2019. This value comes from *The Permian Basin Enriching Texas*, Permian Basin Petroleum Association (Spring 2020).

6.2 Oil and Gas Property Taxes

In fiscal year 2019, Texas counties received $398.7 million in oil and natural gas mineral property taxes.[10] Of that, the 22 counties in the Permian Basin received $188.3 million in oil and gas property taxes with Reeves County ranking first with $41.6 million.

Exhibit 23: Oil and Gas Property Taxes by County in the Permian Basin Oil and Gas Industry, FY 2019

County	Tax Levy, Oil & Gas (Millions of Dollars)	Share (%)
Andrews County	$14.6	7.8%
Borden County	$1.3	0.7%
Crane County	$4.2	2.2%
Crockett County	$6.9	3.7%
Culberson County	$1.8	1.0%
Dawson County	$1.5	0.8%
Ector County	$7.5	4.0%
Gaines County	$7.1	3.8%
Glasscock County	$6.8	3.6%
Howard County	$6.1	3.2%
Irion County	$4.7	2.5%
Loving County	$11.2	5.9%
Martin County	$7.9	4.2%
Midland County	$8.6	4.6%
Pecos County	$9.6	5.1%
Reagan County	$5.7	3.0%
Reeves County	$41.6	22.1%
Scurry County	$3.9	2.1%
Upton County	$12.0	6.4%
Ward County	$12.3	6.5%
Winkler County	$2.9	1.5%
Yoakum County	$10.1	5.4%
Total Permian Basin	**$188.3**	100.0%

Source: Texas Oil & Gas Association (TXOGA). http://docs.txoga.org/files/1462-fiscal-2019-county-taxes-handout.pdf

[10] Texas Oil & gas Association (TXOGA). Texas Oil & Natural Gas Industry. Annual Energy & Economic Impact Report 2019 (January 14, 2020).

6.3 Royalties

Private companies commonly lease public land and in return, they are obligated to repay the public for the use of the lands as well as the raw materials that are extracted (e.g., coal, oil, natural gas). In fiscal year 2019, the Texas oil and natural gas industry paid $2.1 billion in royalties to the state.[11] The majority of these royalties fund Texas public schools through the Permanent School Fund (PSF) and Texas public higher education through the Permanent University Fund (PUF). Using the ratio between the number of producing wells in the Permian Basin and the number of producing wells statewide, this analysis estimates the royalties paid by the oil and gas industry in the Permian Basin in fiscal year 2019. As shown in **Exhibit 24**, this yields a broad estimate of $945 million.

Exhibit 24: Estimated Royalties Paid by Permian Basin Oil and Natural Gas Industry, FY 2019

	Number of Oil Wells Regular Producing	Royalties (Millions of Dollars)
Texas Statewide	186,841	$2,122.7
Permian Basin	83,597	$945 (Broad Estimate)
Permian Basin as Percent of State	45%	

Source: Production values come from the Railroad Commission of Texas. Average spot prices come from the U.S. Energy Information Administration. (EIA).

Texas Independent school districts received $1.54 billion in property taxes from mineral properties producing oil and natural gas, pipelines, and gas utilities.[12] Independent school districts in the Permian Basin received $688.2 in oil and gas property taxes in fiscal year 2019 (**Exhibit 25**). Pecos-Barstow-Toyah Independent School District (ISD) and Midland County ISD received $109.2 million and $68.2 million, respectively, ranking number one and number two among the 47 independent school districts in the Permian Basin in terms of oil and gas property taxes.

[11] Permian Basin Petroleum Association (PBPA). *The Permian Basin Enriching Texas*, (Spring 2020). PBPA Report Developed with the Texas Taxpayers and Research Association (TTARA) Research Foundation.

[12] Texas Oil & gas Association (TXOGA). Texas Oil & Natural Gas Industry. Annual Energy & Economic Impact Report 2019 (January 14, 2020).

Exhibit 25: Oil & Gas Property Taxes by School District in the Permian Basin, FY 2019

Independent School District	Tax Levy, Oil & Gas (Millions of Dollars)	Independent School District	Tax Levy, Oil & Gas (Millions of Dollars)
Andrews Independent School District	$36.2	Kermit Independent School District	$4.2
Balmorhea Independent School District	$0.7	Klondike Independent School District	$11.0
Big Spring Independent School District	$9.7	Klondike Independent School District	$11.0
Borden County Independent School District	$3.2	Lamesa Independent School District	$1.1
Brownfield Independent School District	$3.5	Loop Independent School District	$2.1
Buena Vista Independent School District	$1.2	McCamey Independent School District	$6.5
Coahoma Independent School District	$2.1	Midland County Independent School District	$68.2
Colorado Independent School District	$2.2	Monahans-Wickett-Pyote Independent School District	$13.5
Crane Independent School District	$7.4	O'Donnell Independent School District	$0.5
Crockett County Consolidated Common School District	$11.2	Pecos-Barstow-Toyah Independent School District	$109.2
Culberson County-Allamoore Independent School District	$22.1	Plains Independent School District	$9.4
Dawson Independent School District (Dawson County, Texas)	$0.8	Rankin Independent School District	$36.7
Denver City Independent School District	$12.3	Reagan County Independent School District	$28.8
Ector County Independent School District	$26.3	Roscoe Independent School District	$0.6
Forsan Independent School District	$4.9	Sands Consolidated Independent School District	$9.5
Fort Stockton Independent School District	$9.0	Seagraves Independent School District	$0.6
Glasscock County Independent School District	$24.5	Seagraves Independent School District	$0.6
Grady Independent School District	$15.8	Seminole Independent School District	$21.5
Grandfalls-Royalty Independent School District	$1.6	Snyder Independent School District	$9.6
Greenwood Independent School District	$8.3	Stanton Independent School District	$20.8
Hermleigh Independent School District	$0.4	Wellman-Union Consolidated Independent School District	$1.8

Independent School District	Tax Levy, Oil & Gas (Millions of Dollars)	Independent School District	Tax Levy, Oil & Gas (Millions of Dollars)
Ira Independent School District	$1.0	Wink-Loving Independent School District	$50.0
Iraan-Sheffield Independent School District	$7.3	Wink-Loving Independent School District	$50.0
Irion County Independent School District	$9.3	Total =	$688.2

Data Source: Texas Oil & Gas Association (TXOGA). http://docs.txoga.org/files/1461-fiscal-2019-isd-taxes.pdf

7.0 Key Findings

The Permian Basin is the 2nd largest oil and gas producer in the world. The region is also a growth area for renewable energy. Texas will continue to lead the U.S. in the production (and transport) of oil and natural gas and installed wind capacity thanks to continued and growing investment in the energy sector in the Permian Basin.

The Permian Basin is home to a productive economy, with many companies in the region acting as important contributors to this economic output. The large employers in the area consisting of energy companies, electricity and construction conglomerates, universities and school systems, and local and statewide government in nearby Odessa and Midland all depend on the reliability, safety, and efficiency of Texas' transportation system.

The measures of economic importance estimated in this analysis indicate the following:

- Between 2008 and 2019, the population in the Permian Basin increased at a faster rate than the population in Texas (25.2 percent compared to 19.2 percent).
- Between 2008 and 2019, employment in the Permian Basin increased at a faster pace than the employment in Texas (39 percent compared to 15 percent). The more rapid growth in employment coincides with the significant increase in oil production in the region.
- Between 2008 and 2019, total wages in the Permian Basin increased faster than total wages in the state (102 percent compared to 48 percent).
- The Permian Basin GRP increased by 78 percent between 2008 and 2018. Texas GRP increased by 46 percent over the same period.
- The value added per worker in the Permian Basin ($192,000 in 2018) is more than twice that for the state ($72,000 in 2018), which reflects the high degree of automation and technology of the oil and energy industry in the region.

- The largest industry in the Permian Basin in terms of GRP is mining, quarrying, and oil and gas extraction. In 2018, this industry contributed 75 percent to Permian Basin GRP.
- In 2018, the average number of tonnage per capita in the Permian Basin was twenty times higher than in Texas (2,051 tons per capita in the Permian Basin compared to 104 tons per capital in the state). The large volume of sand, fresh water and produced water associated with oil and gas extraction in the region helps to explain the magnitud of this measure in the Permian Basin realtive to the state.
- These freight-intensive sectors in the Permian Basin totaled 290,358 direct jobs in 2019, representing 57 percent of all jobs in the Permian Basin. The mining, quarrying, and oil and gas sector is the largest employer among the freight-intensive sectors in the region with a total of 113,716 jobs (39.2 percent). The retail sector provides the second largest number of jobs at 52,909 (18.2 percent) while the construction sector is the third largest employer with a total of 42,954 jobs (14.8 percent).
- The freight-intensive sectors in the Permian Basin support 694,270 jobs, which adds close to $45.1 billion in labor income and generates $82.5 billion in GRP. This yields $18 billion in tax revenues which include $9.4 billion in federal taxes and $8.6 billion in state/local taxes.
- The freight transportation sectors in the Permian Basin totaled 25,050 direct jobs in 2019. Trucking is the largest employer with a total of 18,112 jobs (72.3 percent). The pipeline transportation provides the second largest number of jobs at 3,024 (12.1 percent) while support activities to transportation, which include freight transportation arrangement and packing & crating, is the third largest employer with a total of 1,110 jobs (4.4 percent).
- The freight transportation sectors in the Permian Basin support 71,465 jobs, which adds close to $7.0 billion in labor income and generates $7.6 billion in GRP. This yields $1.9 billion in tax revenues which include $1.2 billion in federal taxes and $660 million in state/local taxes.
- The oil and gas industry contributes to improving life, education, infrastructure and essential services for the people of Texas. State and local taxes and state royalties paid by the oil and gas industry statewide totaled $13.4 billion in fiscal year 2019.[13]
- It is estimated that the oil and gas industry in the Permian Basin paid to the Texas State Treasury over $4.5 billion in the form of state severance taxes on oil and gas ($3.6 billion) and royalties ($945 million) in fiscal year 2019. This figure is a broad estimate because it does not include all the contributions the oil and gas industry

[13] Permian Basin Petroleum Association (PBPA). *The Permian Basin Enriching Texas*, (Spring 2020). PBPA Report Developed with the Texas Taxpayers and Research Association (TTARA) Research Foundation.

made to the state in the form of property taxes, state and local sale taxes, and other special industry taxes (oil well serving tax and oil & gas field cleanup regulatory fee) in fiscal year 2019. The financial contribution of the oil and gas industry in the Permian Basin plays a significant role in supporting Texas education, health and infrastructure, and in turn, securing the state's future economy.