Priority Midland by the Numbers

An Initial Overview of the Economic Impact of Anticipated Increases in Regional Energy Activity in the Midland Area

The Perryman Group

Overview

Recent advances and developments in the petroleum sector have led major analysts and energy companies to broadly anticipate enormous increases in Permian Basin production over the next few years. It is also widely expected that new market realities will lead to much more stable and less erratic production patterns than in the past. This emerging and ongoing phenomenon has significant global implications.

Much of this activity will be centered in the Midland area, the headquarters for the Permian Basin petroleum sector as well as a location for substantial drilling and extraction activity.

The resulting growth brings enormous potential benefits, but also has profound implications for workforce needs, housing, education, job training, infrastructure, health care capacity, and other aspects of the local socioeconomic complex.

Proactive efforts to deal with issues and prepare for the coming growth can position the area to emerge stronger and more prosperous in the future.
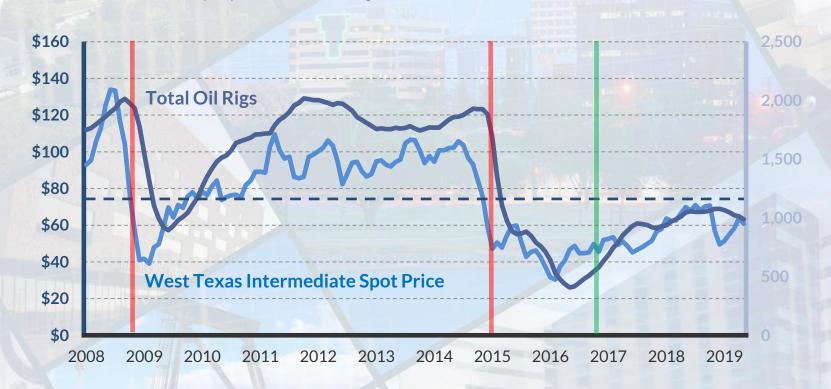
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How did this happen?

Hydraulic Fracturing, Horizontal Drilling, and Discoveries

Exports and Global Demand

Infrastructure Advances and Cost Reductions

The Cost Revolution - A "simple" graph

Oil in the United States

West Texas Intermediate spot price versus total rig count

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What Does it Mean?

Less volatility

Larger scale drilling programs and increased cycle times

Larger permanent workforce with high earnings

Larger permanent population

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Overview

Priority Midland

- Serve as a catalyst for proactive efforts to accommodate anticipated growth
- Marshal community commitment and resources
- Help maintain and enhance quality of place and livability
- Position Midland to fully capitalize on the emerging opportunities

The Perryman Group's Analysis

- Quantify magnitude of expected expansion
- Provide detailed economic, demographic, and fiscal information to
  - support current and future efforts to leverage the globally significant transformation of the petroleum sector into long-term, sustainable, and desirable growth in Midland
  - facilitate strategic planning for dealing with likely future challenges for Midland and the surrounding region

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Priority Midland Data Analysis

Petroleum Sector Impact Analysis

- **Baseline Energy Price** Impact by **NAICS Sector**
  - Impact on **Permian Basin** (2019, 2025, 2030)
  - Impact on **Midland MSA** (2019, 2025, 2030)
- **Low Energy Price** Impact by **NAICS Sector**
  - Impact on **Permian Basin** (2019, 2025, 2030)
  - Impact on **Midland MSA** (2019, 2025, 2030)
- **High Energy Price** Impact by **NAICS Sector**
  - Impact on **Permian Basin** (2019, 2025, 2030)
  - Impact on **Midland MSA** (2019, 2025, 2030)

Note: **NAICS** refers to the North American Industry Classification System, comprised of 20 **Sectors** that are broken down into 88 **Subsectors** and 295 **Industry Groups**. Occupations are classified by the **Standard Occupational Classification System**, comprised of 934 occupations.

Economic Forecast Analysis

- Covers both **Permian Basin** and **Midland MSA**
- Separate forecasts for **three energy price scenarios**
- Annually from **2001-2030**
  - **Key Indicators**
  - **Population** by age group for regions and ISDs
  - **Housing demand** by housing type
  - **Gross Product**
    - Nominal (US$) by NAICS Subsector
    - Real (2019$) by NAICS Subsector
  - **Employment**
    - By NAICS Subsector
    - By Detailed Occupational Group
- Special focus on **2019**, **2025**, and **2030**
  - Occupational growth, replacement, demand
  - Instructional program demands
  - 400 industry focus by NAICS Industry Group

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Population Growth

Midland County is the most populated county in the Permian Basin Region.

From 2010 to 2018, the City of Midland greatly outpaced state and national population growth:

- City of Midland: +**3.12%**
- Texas: +**1.62%**
- United States: +**0.70%**

This expansion is expected to continue and intensify as the area adjusts to a "new normal."

Note: Population growth given as the compound annual growth rate from 2010 to 2018.
Source: US Census Bureau

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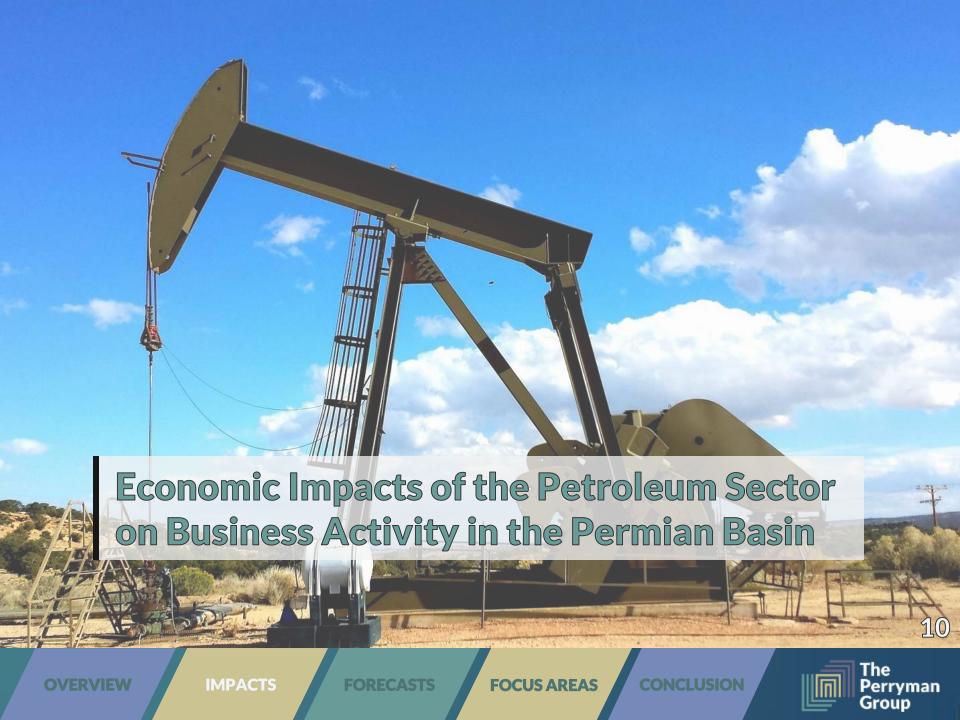
Overview

Oil and Gas Production Growth

Texas oil production has risen dramatically in recent years, up about **500%** since 2010 after decades of falling production and talk of "peak oil" and the effective end of the industry.

Permian Basin production levels:

- 0.7 million barrels per day (bpd) at the trough in 2008
- 2.0 million bpd in July 2016 (topping the prior record from 1973)
- 3.0 million bpd in February 2018
- 4.1 million in May 2019

Production levels are projected to continue to rise rapidly over the next decade.

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Economic Impacts of the Petroleum Sector on Business Activity in the Permian Basin

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Measuring Economic Benefits

Investment in the petroleum sector and ongoing outlays for payroll, operations, and associated spending enter the Permian Basin economy.

Local spending by firms supplying goods and services throughout the supply chain provides additional stimulus.

Local spending by employees in the petroleum sector and other workers throughout the supply chain provides further economic gains.

Direct Impact

Indirect Impact

Induced Impact

Total Economic Benefits

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Oil Price Scenarios

Projected Daily Oil Production in the Permian Basin
Millions of barrels per day

■ Low Oil Prices ■ Baseline ■ High Oil Prices

2025
- 5.6 m
- 6.1 m
- 6.9 m

2030
- 6.8 m
- 7.4 m
- 8.0 m

Low Oil Prices

- Trade wars and other concerns create a notable slowing of world economic growth
- OPEC nations opt to increase production to monetize reserves
- Prices fall: **$40-$48 per barrel**

Baseline Oil Prices

- Technological advances continue
- OPEC remains relatively disciplined to maintain economic stabilities
- Trade wars are resolved w/o major disruptions
- Global growth stabilizes: 3.5-4.9% range
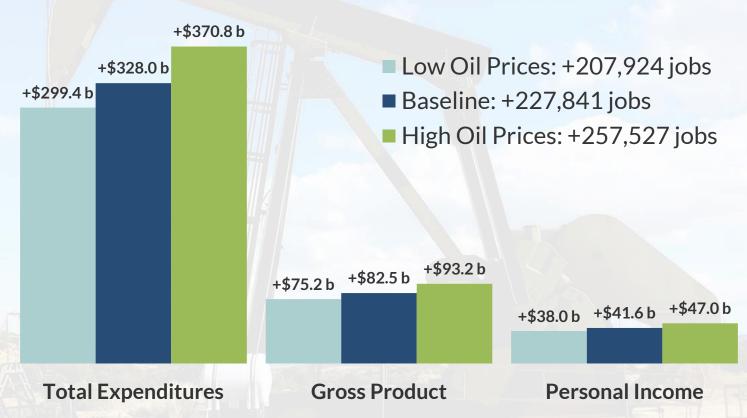- Prices stabilize: **$63-$70 per barrel**

High Oil Prices

- Turmoil in the Middle East, Russia or other producing regions creates global supply concerns and market speculation
- Global growth accelerates: +4% per year
- Prices rise: **approx. $80 per barrel**

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The Annual Impact of the Petroleum Sector on Business Activity in the Permian Basin

Results as of 2025 under varying price assumptions

Legend:
- Low Oil Prices: +207,924 jobs
- Baseline: +227,841 jobs
- High Oil Prices: +257,527 jobs

Total Expenditures
- +$299.4 b
- +$328.0 b
- +$370.8 b

Gross Product
- +$75.2 b
- +$82.5 b
- +$93.2 b

Personal Income
- +$38.0 b
- +$41.6 b
- +$47.0 b

Note: Monetary values in billions of 2019 US dollars per year
Source: US Multi-Regional Impact Assessment System, The Perryman Group

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The Annual Impact of the Petroleum Sector on Business Activity in the Permian Basin

Real gross product as of **2025** and 2030 under varying price assumptions

+$107.4 b / yr

+$116.5 b / yr

+$127.3 b / yr

+$75.2 b / yr

+$82.5 b / yr

+$93.2 b / yr

Low Oil Prices   **Baseline**   **High Oil Prices**

Note: Monetary values in billions of 2019 US dollars per year
Source: US Multi-Regional Impact Assessment System, The Perryman Group

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Midland is a magnet for the benefits of the surging Permian Basin petroleum sector.

Over 85% of the regional gross product (value-added) in the Permian Basin oil and gas sector flows to the Midland MSA.

Flows from the Permian Basin to Midland

Slightly more than 10% of Permian Basin oil production occurs in Midland County, with the most significant growth occurring in the Southern Delaware Basin (especially Reeves County). Nonetheless, **more than 60% of the oil and gas workers** in the region are employed by firms in Midland County.

The percentage of regional gross product (value-added) in the Permian Basin oil and gas sector that flows to Midland MSA is expected to **increase in the future under all of the oil price scenarios.**

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Economic Forecasts for Midland MSA

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Overview

Economic Forecasts

The Perryman Group performed detailed economic forecasts for the Midland MSA and the Permian Basin Region. These projections include results for approximately **400 industrial sectors**.

Analyses are performed for each of the **three oil price scenarios**.

These projections are "aspirational" in the sense that they assume that effective initiatives are implemented which result in the area overcoming current shortages and constraints by 2030.

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Key Economic Indicator Growth for Midland MSA

Results by varying oil price assumptions
Annual growth rates

Economic Indicator	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
Real Gross Product	+3.26%	+4.19%	+1.86%	+3.51%	+5.19%	+4.95%
Real Personal Income	+3.27%	+4.39%	+1.87%	+3.70%	+5.21%	+5.16%
Real Retail Sales	+3.15%	+4.27%	+1.74%	+3.57%	+5.08%	+5.03%
Population	+3.92%	+3.73%	+2.74%	+3.17%	+5.56%	+4.35%
Employment	+4.18%	+4.64%	+3.00%	+4.08%	+5.82%	+5.27%

Source: US Multi-Regional Econometric Model, The Perryman Group

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Key Economic Indicator Growth for Midland MSA

Results by varying oil price assumptions
Absolute growth

Economic Indicator	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
Real Gross Product	+$11.6 b	+$31.1 b	+$6.4 b	+$25.1 b	+$19.3 b	+$38.2 b
Real Personal Income	+$4.6 b	+$12.9 b	+$2.5 b	+$10.5 b	+$7.6 b	+$15.8 b
Real Retail Sales	+$0.9 b	+$2.5 b	+$0.5 b	+$2.0 b	+$1.5 b	+$3.1 b
Population	+48,726	+93,013	+33,085	+76,860	+72,036	+112,169
Employment	+32,064	+74,515	+22,326	+63,610	+46,572	+87,460

Source: US Multi-Regional Econometric Model, The Perryman Group

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Projected Midland MSA Output Growth
Results by industry under varying oil price assumptions
Annual growth rates

Industry Sector	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
Agriculture	+2.89%	+3.57%	+1.72%	+2.94%	+4.53%	+4.22%
Mining	+2.68%	+3.62%	+1.13%	+2.85%	+4.79%	+4.45%
Utilities	+2.94%	+3.91%	+1.46%	+3.22%	+4.96%	+4.65%
Construction	+3.92%	+4.81%	+3.58%	+4.59%	+4.43%	+5.06%
Manufacturing	+8.74%	+10.39%	+7.27%	+9.64%	+10.78%	+11.21%
Wholesale & Retail Trade	+4.78%	+4.50%	+3.88%	+4.10%	+6.05%	+4.95%
Transportation & Warehousing	+3.37%	+5.14%	+1.80%	+4.37%	+5.50%	+5.99%
Information	+4.57%	+5.11%	+3.11%	+4.51%	+6.58%	+5.76%
Finance, Insurance, Real Estate	+3.08%	+3.90%	+2.42%	+3.58%	+4.02%	+4.26%
Other Services	+4.05%	+4.33%	+3.05%	+3.92%	+5.44%	+4.78%
Government	+2.71%	+2.28%	+2.09%	+1.94%	+3.60%	+2.76%
Total, All Industries	**+3.26%**	**+4.19%**	**+1.86%**	**+3.51%**	**+5.19%**	**+4.95%**

Source: US Multi-Regional Econometric Model, The Perryman Group

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Projected Midland MSA Employment Growth

Results by industry under varying oil price assumptions
Annual growth rates

Industry Sector	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
Agriculture	+2.15%	+2.85%	+0.97%	+2.23%	+3.74%	+3.51%
Mining	+3.75%	+3.87%	+2.18%	+3.11%	+5.89%	+4.71%
Utilities	+2.34%	+3.35%	+0.87%	+2.67%	+4.36%	+4.09%
Construction	+4.25%	+5.39%	+3.90%	+5.17%	+4.76%	+5.64%
Manufacturing	+4.30%	+5.40%	+3.37%	+4.92%	+5.60%	+5.94%
Wholesale & Retail Trade	+4.83%	+4.55%	+3.64%	+4.00%	+6.48%	+5.17%
Transportation & Warehousing	+3.12%	+5.31%	+1.56%	+4.54%	+5.25%	+6.16%
Information	+2.71%	+3.63%	+1.30%	+3.03%	+4.69%	+4.27%
Finance, Insurance, Real Estate	+2.92%	+3.65%	+2.25%	+3.34%	+3.89%	+4.01%
Other Services	+5.16%	+5.87%	+3.96%	+5.34%	+6.82%	+6.46%
Government	+2.27%	+2.02%	+1.66%	+1.68%	+3.16%	+2.50%
Total, All Industries	**+4.18%**	**+4.64%**	**+3.00%**	**+4.08%**	**+5.82%**	**+5.27%**

Source: US Multi-Regional Econometric Model, The Perryman Group

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Projected Midland MSA Employment Demand
Results for 2019-25 by major occupation group
Baseline oil price assumptions

Occupation	Job Growth	Replacements	Demand
Management	+1,609	294	1,903
Business and Financial Operations	+1,451	344	1,795
Computer and Mathematical	+739	120	859
Architecture and Engineering	+766	151	917
Life, Physical, and Social Science	+367	94	461
Community and Social Services	+333	72	405
Legal	+228	40	268
Education, Training, and Library	+774	163	937
Arts, Design, Entertainment, Sports, and Media	+367	72	439
Healthcare Practitioners and Technical	+748	110	858
Healthcare Support	+442	137	579

Source: US Multi-Regional Industry-Occupation System, The Perryman Group

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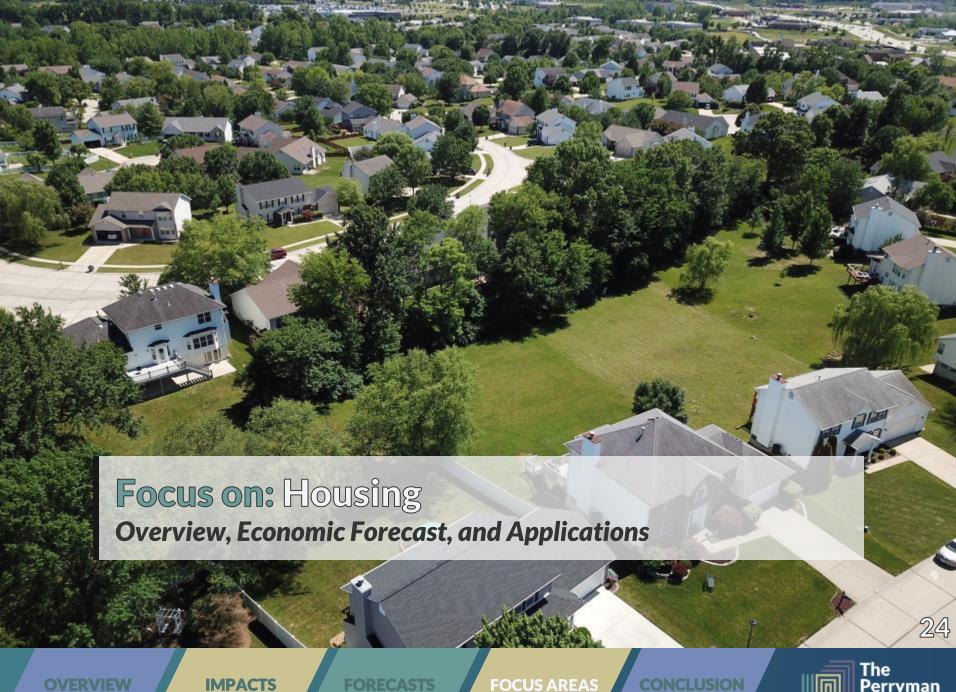
Projected Midland MSA Employment Demand (cont.)
Results for 2019-25 by major occupation group
Baseline oil price assumptions

Occupation	Job Growth	Replacements	Demand
Protective Service	+388	120	508
Food Preparation and Serving Related	**+3,729**	**927**	**4,656**
Building /Grounds Cleaning and Maintenance	+1,040	215	1,255
Personal Care and Service	+1,207	297	1,504
Sales and Related	**+3,515**	**892**	**4,407**
Office and Administrative Support	**+2,967**	**988**	**3,955**
Farming, Fishing, and Forestry	+58	33	91
Construction and Extraction	**+6,019**	**1,534**	**7,553**
Installation, Maintenance, and Repair	+1,431	312	1,743
Production	+1,282	367	1,649
Transportation and Material Moving	**+2,604**	**758**	**3,362**

Note: Highlights indicate occupations with the top five largest demands from 2019-25 under baseline oil price assumptions.
Source: US Multi-Regional Industry-Occupation System, The Perryman Group

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Focus on: Housing
Overview, Economic Forecast, and Applications

Overview

Availability of Housing

Over the past few years, growth in the petroleum sector has contributed to rapid growth in population and, therefore, housing demand.

The tight market has contributed to higher prices and difficulty finding houses, particularly in lower price ranges.

According to the Midland Reporter-Telegram, over **3,400 apartment units have been approved since 2018**, with **800 more currently being reviewed**. These additional units will help ease the pressure presently seen in Midland's multi-family housing market.

The single-family market is likely to remain tight for the next few years.

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Overview

Cost of Housing

Home values in the Midland area have recently been increasing as indicated by median home value data. While the table below shows estimated median values covering all homes in the area, in June 2019 the median price of homes sold was $311,000.

One-third of residents live in renter-occupied housing units; in February 2019 the median rent for a typical two-bedroom apartment was **48.14% higher than Texas**.

	City of Midland	State of Texas
Median Home Value Index	$262,000	$196,900
Percent Change Over Past Year	+15.1%	+5.7%

Source: Midland and Texas Home Prices & Values, Data through June 30, 2019, Zillow.com.

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Applications

Projected Housing Demand

The need for housing is driven primarily by population growth. The Perryman Group projects that the Midland population will expand to nearly **236,500** by **2025** and close to **280,800** by **2030** under **baseline oil price assumptions**, with significant economic growth.

This rate of population and economic expansion leads to the need for an estimated:

+16,207 single-family residences,
+9,938 multi-family residences
in the MSA by 2030.

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Applications

Single-Family Housing Needs

In order to meet the housing demand for the Midland MSA approximately **1,473 new single-family residences** per year through 2030 would be required under the baseline scenario.

Over the past year ending in May 2019, the Midland MSA has issued **1,288 single-family housing permits**, according to the Texas A&M Real Estate Center. Thus the area **needs to increase the rate at which it is producing new single-family units**.

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Projected Midland MSA Housing Demand
Demand from 2019 to 2030 by varying oil price assumptions

Region	Baseline		Low Oil Prices		High Oil Prices	
	Single-Family	Multi-Family	Single-Family	Multi-Family	Single-Family	Multi-Family
City of Midland	14,127	7,451	13,314	7,022	15,090	7,959
Midland County	15,683	9,616	14,781	9,063	16,753	10,272
Midland MSA	16,207	9,938	15,275	9,366	17,313	10,616

Source: US Multi-Regional Econometric Model, The Perryman Group

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Applications

Construction Availability

Midland's ability to provide for the increased housing demand will be largely dependent on the availability of construction workers in the area.

Under the baseline oil price scenario, the demand for building and specialty construction workers is expected to top 6,000 over the 2019-30 time period. Attracting workers to provide for the increased housing demand could be a challenge considering the competition existing with the oil and gas industry for workers.
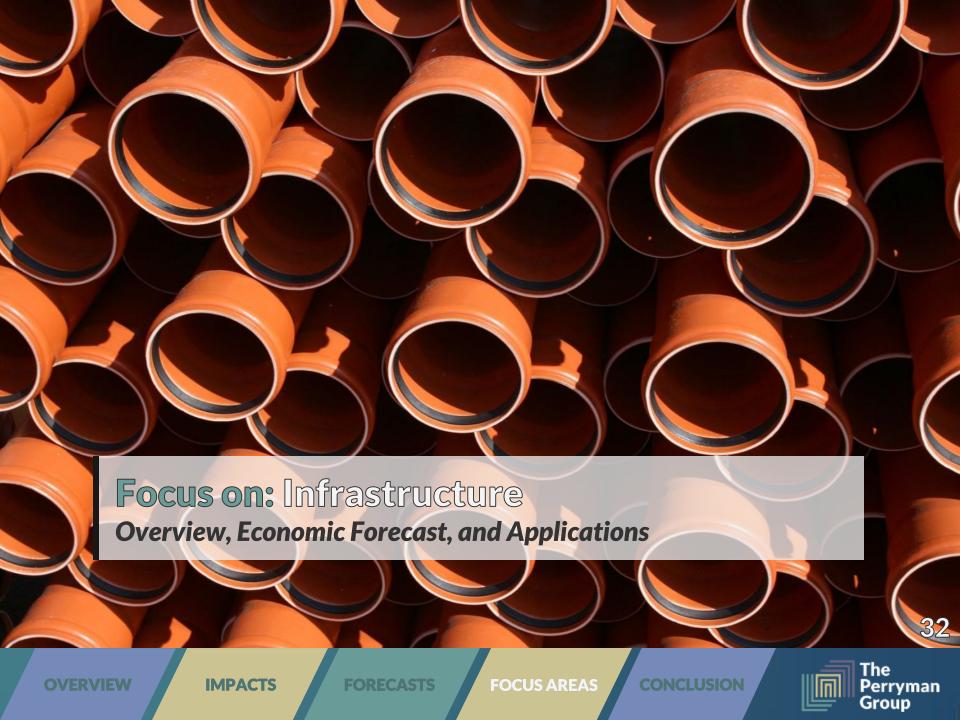
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Projected Midland MSA Building & Specialty Construction Industry Employment Demand

Results by occupation under varying oil price assumptions

Occupation	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
Construction Supervisors	116	297	108	283	128	312
Construction Trades Workers	1,020	2,669	947	2,545	1,130	2,808
Construction Helpers	77	197	73	190	84	209
Other Construction Workers	24	63	24	58	26	65
Total, All Construction Workers	**1,237**	**3,226**	**1,152**	**3,076**	**1,368**	**3,394**

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Focus on: Infrastructure
Overview, Economic Forecast, and Applications

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Overview

Water and Sewage

The City of Midland has slowly been building up its water infrastructure over the past decade. The city has increased the **miles of storm sewer by 36.2%** and **miles of sanitary sewer by 13.4%** since FY2010 and expanded system capacity **from 51 million gallons to 55 million gallons** in FY2015.

At the same time, **daily average consumption has decreased** due to conservation efforts such as watering schedules, rate increases, and behavioral change. **The city is currently using 32.7% of its daily water infrastructure capacity on average.**

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Overview

Commercial Transportation

The expansion of the oil and gas industry has also put a major strain on roadways and traffic, especially with intensified commercial traffic.

Hydraulic fracturing (fracking) can utilize up to **1,200** loaded trucks per new well and **350** loaded trucks **each year per existing well**.

Traffic counts on many of the roads in the Permian Basin increased by 65% to 150% between 2016 and 2017.

Source: Texas Department of Transportation

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Overview

Personal Transportation

According to the latest Census data, the most prevalent means of transportation to work for employed individuals in the Midland area was driving by themselves (85.4% of the City of Midland), while less than 10% carpooled.

A greater proportion of the population drove themselves to work compared to the state (80.6%) and nation (76.4%), while a much lower percentage took advantage of public transportation.

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Applications

Water Supply

Recent city estimates of water supply for the City of Midland have base water supply of **45,924 acre-feet per year** starting in **2020** and **28,002 acre-feet per year** starting in **2030**.

Options for future water resources:

- contract with the **West Texas Partnership** for 15,000 acre-feet per year (13.4 million gallons daily, or MGD)
- a new contract with the **Colorado River Municipal Water District** for 11,201 acre-feet per year (10 MGD)
- Some combination of both

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Applications

Water Supply

Projected demand values were initially based on population estimates from the Texas Water Development Board.

Perryman Group population projections yield substantially higher demand values but are still within the potential supply from a contract with the West Texas Water Partnership through 2030 (except for the 2030 drought year demand under the high oil price scenario).

Even with both supply options fully implemented, reserve levels would be very limited with high oil prices and drought conditions.

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Projected City of Midland Water Supply and Demand
In acre-feet (approx. 325,851 gallons) of water per year

Projected Supply		
	2020	**2030**
Base Projected Supply	45,924	28,002
West Texas Water Partnership	0	15,000
New CRMWD Contract	0	11,201
Total Potential Supply	**45,924**	**54,203**

Projected Demand		

Texas Water Development Board	**2020**	**2030**
Population	141,690	164,437
Drought year (168-176 GPCD)	27,972	31,803
Normal year (153 GPCD)	24,285	28,185

The Perryman Group	Baseline		Low Oil Prices		High Oil Prices	
	2020	**2030**	**2020**	**2030**	**2020**	**2030**
Population	155,073	234,103	152,752	220,635	158,484	250,075
Drought year (168-176 GPCD)	30,614	45,277	30,156	42,672	31,287	48,366
Normal year (153 GPCD)	26,579	40,126	26,181	37,818	27,163	42,864

Notes: The base projected supply has potential water from Ivie (10 MGD), the No. 66 Contract with CRMWD through 2029 (16 MGD), T-Bar (10 MGD), and Paul Davis (5 MGD). CRMWD stands for the Colorado River Municipal Water District and GPCD stands for gallons per capita daily.
Source: Midland Utility Report (Midland Utilities) and The Perryman Group

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Applications

Recent Capital Improvement Assumptions

A recent impact study relied on historical housing permit data for 10-year growth assumptions underlying recommendations for roadway, water, and wastewater capital improvement plans.

These projections assume an average of **759 single-family** and **450 multi-family building permits** will be issued per year (2018-2028).

The Perryman Group's forecasted housing demand shows a need **for 1,284 single-family units** and **677 multi-family units** on average annually (2019-2030).

Applications

Additional Real Estate Needs

Growth in Midland's economy will lead to the need for additional real estate, both in terms of housing as well as industrial, warehouse, retail, and office space.

The Perryman Group used detailed economic forecasts, the associated additional workers, and estimates of typical additional square feet of space required per employee by type to estimate incremental space needed.

This additional occupied real estate will require further improvements to roadways and water/wastewater infrastructure.

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Additional Real Estate Demands 2019-2030

Demand for real estate square footage by building type

Building Type	Baseline	Low Oil Prices	High Oil Prices
Industry	1,969,718	1,748,913	2,228,038
Warehouse	1,871,346	1,729,559	2,030,610
Retail	5,040,385	4,150,599	6,096,634
Office	1,619,755	1,465,911	1,802,099
Total	10,501,205	9,094,981	12,157,382

Infrastructure Land Use

Given the high demand for available land in the Midland area, governmental entities, in cooperation with surface owners and energy companies, must actively preserve right of way corridors for future infrastructure development (such as roads, sewer lines, water lines, and drainage) and other community needs (such as parks and schools). Failure to do so will further escalate the cost of future infrastructure development as well as potentially limit expansion.

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Applications

Demand for Infrastructure Workers

The structure of the Midland economy and, in particular, its role as a center for oilfield activity requires a higher level of workers in heavy and civil engineering occupations.

As noted on the following slide, the current level of employment in these sectors is significantly higher than for similarly sized cities or the state as a whole.

Future demand is expected to remain strong for these occupations.

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Current Heavy and Civil Engineering Construction Industry Employment per Capita

Employment per 100,000 people in 2019 by region

Occupation	Midland MSA	Abilene MSA	Sherman-Denison MSA	State of Texas
Civil Engineers	119.3	73.7	49.1	106.1
Construction Supervisors	65.5	21.1	58.1	39.8
Construction Trades Workers	411.2	133.1	367.7	250.0
Construction Helpers	7.5	2.3	7.4	4.7
Other Construction Workers	13.8	5.1	11.2	8.0

Projected Midland MSA Heavy and Civil Engineering Construction Industry Employment Demand

Results by occupation under varying oil price assumptions

Occupation	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
Civil Engineers	4	11	3	10	4	11
Construction Supervisors	37	99	34	95	42	105
Construction Trades Workers	235	627	215	595	264	663
Construction Helpers	5	13	5	13	6	14
Other Construction Workers	8	20	7	20	8	22
Total, All Workers	**285**	**759**	**261**	**723**	**320**	**804**

Focus on: Education
Overview, Economic Forecast, and Applications

The Perryman Group

Overview

Public School Enrollment

2017-2018 enrollment:
- Midland ISD: **25,663**
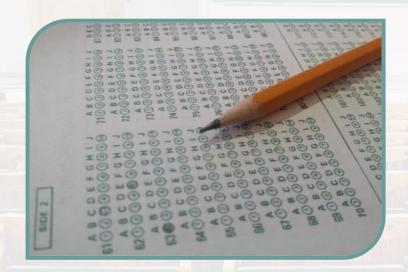- Greenwood ISD: **2,679**

While Greenwood ISD has a similar distribution across schools as the state in the 2017-2018 school year (though slightly younger), Midland ISD has a larger proportion at the elementary school level.

	Midland	Greenwood	Texas
Elementary	52.4%	49.6%	49.0%
Middle School	21.5%	23.5%	22.3%
High School	26.1%	26.9%	28.7%

Notes: Elementary includes Early Childhood Education, Pre-K, Kindergarten, and Grades 1-5; Middle School includes Grades 6-8, and High School includes Grades 9-12.
Source: Texas Education Agency

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Overview

College Preparedness

There is room for improvement in **college preparedness**. Both school districts lag the state in college-ready reading levels and Midland ISD also scored below the state in math preparedness. However, for those that took the SAT or ACT, the average score was above the state level.

	Midland	Greenwood	Texas
College Readiness			
Reading	42.3%	52.7%	53.2%
Math	34.1%	45.0%	42.0%
Reading + Math	30.1%	36.4%	37.8%
Average SAT	1065	1049	1019
Average ACT	21.8	22.6	20.3

Note: Student has met or exceeded the college-ready criteria on the Texas Success Initiative Assessment (TSIA) test, the SAT, or the ACT. The maximum score for the SAT is 2400 and ACT is 36.
Source: Texas Education Agency

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Overview

Educational Attainment

The percentage of the population which has completed high school is higher in the Midland area than for the state but is somewhat below the US.

A slightly higher proportion of people in the area have attained a Bachelor's degree than the statewide rate, but the percentage lags the nation.

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Midland Area Educational Attainment in 2017
Results for population 25 years and over

	City of Midland	Midland County	Midland MSA	State of Texas	United States
Less than 9th Grade	6.4%	5.8%	5.9%	8.1%	5.1%
9th to 12th Grade, no diploma	8.4%	9.2%	9.6%	8.2%	6.9%
High school graduate or higher	**85.2%**	**85.0%**	**84.5%**	**83.6%**	**88.0%**
High school graduate	27.6%	28.7%	28.6%	25.1%	27.1%
Some college, no degree	20.5%	20.4%	20.1%	21.7%	20.4%
Associate's degree	7.4%	8.2%	8.1%	7.3%	8.5%
Bachelor's degree or higher	**29.7%**	**27.7%**	**27.6%**	**29.6%**	**32.0%**
Bachelor's degree	21.8%	20.4%	20.1%	19.3%	19.7%
Graduate or professional degree	7.9%	7.3%	7.5%	10.3%	12.3%

Source: US Census Bureau, American Community Survey, 1-Year Estimates, DP02, 2017

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Overview

UT Permian Basin

Fall 2018 enrollment totaled **5,834**, including **4,744** undergraduate students and **1,090** graduate students.

There were 698 students accepted for the fall semester out of 846 undergraduate applicants, for an acceptance rate of 82.5% (which is higher than the state average acceptance rate for four-year institutions of 70.8%).

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Overview

Midland College

Midland College is the primary two-year institution in the Midland area and offers Bachelor's and Associate's degrees as well as certificates. The college had a total enrollment of **5,259** in the Fall of 2018.

The college awarded **863** degrees and certificates in fiscal year 2018. Based on graduates from fiscal year 2017, **89.9% of graduates from academic programs and 91.6% from technical programs were either employed** by the fourth quarter of the calendar year following graduation or enrolled in another two- or four-year institution by the following fall.

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Current Higher Education Graduation Rates for the Midland Area

Results by institution

Institution	4-Year		6-Year		8-Year	
	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Four-Year Public						
UT Permian Basin	25.1%	16.7%	50.1%	33.3%	50.6%	55.6%
Statewide	38.6%	26.4%	61.6%	43.5%	68.1%	46.5%
Two-Year Public						
Midland College	23.8%	9.4%	29.8%	16.7%	38.8%	19.8%
Odessa College	28.5%	15.7%	45.5%	36.7%	35.7%	22.1%
Howard College	30.9%	14.9%	28.5%	23.2%	32.4%	20.3%
Statewide	23.3%	11.7%	30.5%	18.5%	36.9%	22.6%

Source: Texas Higher Education Coordinating Board, 2019 Texas Public Higher Education Almanac

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Applications

Student Population Growth

In the Midland and Greenwood ISDs, the school-aged population is projected to grow by a total of over **11,000 through 2025** and nearly **24,800 through 2030** under the baseline scenario. The **majority of growth will occur at the Elementary school level** (55.9% of growth through 2025 and 55.3% of growth through 2030).

Since The Perryman Group's estimates are based on expected economic growth and the resulting rates of in-migration, they are higher than those prepared by Davis Demographics in their "Ten Year Student Population Projections" report prepared for Midland ISD.

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Projected Midland ISD Population Growth
Results by school level and varying oil price assumptions

	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	**2019-30**	**2019-25**	**2019-30**	**2019-25**	**2019-30**
Annual Growth Rates						
Elementary	+4.04%	+4.35%	+2.86%	+3.79%	+5.69%	+4.98%
Junior High	+3.90%	+4.65%	+2.72%	+4.09%	+5.54%	+5.28%
High School	+4.73%	+4.88%	+3.54%	+4.32%	+6.38%	+5.51%
Total	**+4.20%**	**+4.53%**	**+3.02%**	**+3.97%**	**+5.85%**	**+5.16%**
Absolute Growth						
Elementary	+5,611	+12,483	+3,858	+10,563	+8,224	+14,761
Junior High	+1,255	+3,156	+851	+2,695	+1,859	+3,703
High School	+2,920	+6,299	+2,123	+5,410	+4,110	+7,353
Total	**+9,786**	**+21,939**	**+6,832**	**+18,667**	**+14,193**	**+25,817**

Notes: Elementary contains Pre-Kindergarten, Kindergarten, and Grades 1-6; Junior High contains grades 7-8. Projections are with respect to school-aged population, not enrollment.
Source: US Multi-Regional Econometric Model, The Perryman Group

The Perryman Group

Projected Greenwood ISD Population Growth
Results by school level and varying oil price assumptions

	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	**2019-30**	**2019-25**	**2019-30**	**2019-25**	**2019-30**
Annual Growth Rates						
Elementary	+5.01%	+5.17%	+3.82%	+4.61%	+6.67%	+5.80%
Middle School	+4.60%	+5.32%	+3.41%	+4.75%	+6.25%	+5.95%
High School	+5.57%	+5.71%	+4.37%	+5.14%	+7.24%	+6.34%
Total	**+5.04%**	**+5.36%**	**+3.85%**	**+4.79%**	**+6.70%**	**+5.99%**
Absolute Growth						
Elementary	+564	+1,227	+417	+1,061	+783	+1,424
Middle School	+327	+812	+236	+704	+463	+939
High School	+370	+810	+282	+707	+501	+930
Total	**+1,261**	**+2,848**	**+935**	**+2,473**	**+1,747**	**+3,293**

Notes: Elementary contains Pre-Kindergarten, Kindergarten, and Grades 1-4; Middle School contains grades 5-8. Projections are with respect to school-aged population, not enrollment.
Source: US Multi-Regional Econometric Model, The Perryman Group

Applications

Need for Additional Educators

The Perryman Group's detailed forecast of demand for additional workers also indicates significant needs within the education system.

When growth and replacement needs are considered, an estimated **990 additional workers in all education occupations** will be needed by 2025 and **2,360** by 2030 under baseline oil price assumptions, with even more needed if prices are higher.

Particularly large numbers of **postsecondary teachers**, **teacher assistants**, and **elementary teachers** will be needed.

The Perryman Group

Current Education Employment per Capita
Employment per 100,000 people in 2019 by region

Occupation	Midland MSA	Abilene MSA	Sherman-Denison MSA	State of Texas
Education Administrators	83.2	141.7	98.3	110.3
Preschool & Childcare Center/Program	10.7	12.6	11.9	13.2
Elementary and Secondary School	38.9	70.3	46.9	51.2
Postsecondary	27.2	49.7	33.5	35.9
All Other	6.4	9.1	6.0	10.0
Preschool, Primary, Secondary Teachers	655.0	1,141.5	792.7	858.9
Preschool Teachers	84.1	104.0	97.5	106.5
Kindergarten Teachers	24.0	42.9	29.0	31.4
Elementary Teachers	218.4	396.6	265.0	287.1
Middle School Teachers	96.9	177.1	118.3	127.8
Secondary Teachers	157.1	286.8	191.3	207.5
Special Education Teachers	74.5	134.1	91.6	98.6
Postsecondary Teachers	288.7	533.7	358.0	384.2
Other Teachers and Instructors	222.6	351.4	242.6	286.4
Librarians, Curators, and Archivists	66.0	83.4	67.7	77.2
Other Education, Training, and Library	256.7	435.4	304.4	339.9
Instructional Coordinators	26.6	45.1	29.0	36.3
Teacher Assistants	208.8	354.3	251.6	273.5

Source: US Multi-Regional Econometric Model, The Perryman Group

The Perryman Group

Projected Demand for Education Occupations
Results by varying oil price assumptions

Occupation	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
Education Administrators	**53**	**126**	**42**	**111**	**70**	**147**
Preschool & Childcare Center/Program	9	26	7	23	12	30
Elementary and Secondary School	23	53	18	46	30	62
Postsecondary	16	37	13	33	22	44
All Other	5	10	4	9	6	11
Preschool, Primary, Secondary Teachers	**400**	**987**	**305**	**862**	**539**	**1,154**
Preschool Teachers	72	211	54	185	98	244
Kindergarten Teachers	15	35	12	31	20	40
Elementary Teachers	123	292	94	254	165	343
Middle School Teachers	54	126	41	110	72	149
Secondary Teachers	88	209	68	182	119	245
Special Education Teachers	41	97	30	85	55	113
Postsecondary Teachers	**178**	**401**	**139**	**348**	**233**	**465**
Other Teachers and Instructors	**159**	**373**	**128**	**331**	**206**	**427**
Librarians, Curators, and Archivists	**35**	**69**	**28**	**62**	**44**	**80**
Other Education, Training, and Library	**165**	**404**	**129**	**355**	**219**	**469**
Instructional Coordinators	17	39	14	35	22	45
Teacher Assistants	136	337	106	296	181	392
Total, All Education Occupations	**990**	**2,360**	**771**	**2,069**	**1,311**	**2,742**

Source: US Multi-Regional Econometric Model, The Perryman Group

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Applications

Education Gap Analysis

The Perryman Group's detailed occupational forecasts were compared to degrees and certificates awarded by regional universities and colleges.

Where the need for workers with certain skills is larger than the numbers of awards, other actions may be worth considering including:

- **expanding** programs
- **recruiting** efforts
- **partnering** with other institutions

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Applications

Education Gap Analysis

This analysis is based on "crosswalks" maintained by the Bureau of Labor Statistics which link occupation codes to specific instructional programs. Although based on empirical evidence, the crosswalk process is imperfect and should be viewed as a tool for high-level assessment.

In some cases, degrees in one field can be useful across a variety of occupations. Students may receive training at regional institutions, but leave the area. Individuals trained elsewhere move in to fill jobs. In addition, not only program capacity but also student choices affect the numbers of awards.

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Projected Education Gaps in the Permian Basin
Degree programs offered by Midland College

Instructional Program Group	Average Awards		Average Demand	Average Gap	
	Midland College	Nearby Schools		Midland College	All Schools
Business, Management, Marketing, Related	53.4	149.8	2,000.9	1,947.5	1,797.7
Transportation and Materials Moving	0.2	0.0	805.6	805.4	805.4
Mechanics and Repairers	40.4	99.6	525.4	485.0	385.4
Work and Family Studies	11.4	26.8	293.6	282.2	255.4
Precision Production Trades	24.0	35.8	217.8	193.8	158.0
Engineering Technology	45.4	89.8	227.5	182.1	92.3
Health Services and Sciences	159.8	314.2	561.6	401.8	87.6
Personal and Culinary Services	20.6	123.4	220.7	200.1	76.7
Education	16.8	46.6	119.2	102.4	55.8
Legal Studies	6.4	30.8	50.7	44.3	13.5

Note: Average awards cover Fall 2014-2018, "nearby schools" include Odessa College and Howard County Junior College District. Demand consists of projected average annual demand (2019-2030) for jobs in the Permian Basin which require a postsecondary non-degree award (certificate) or Associate's degree.
Source: US Multi-Regional Econometric Model, The Perryman Group

OVERVIEW   IMPACTS   FORECASTS   FOCUS AREAS   CONCLUSION

The Perryman Group

Projected Education Gaps in the Permian Basin
Bachelor's degree programs offered by UT Permian Basin

Instructional Program Group	Average Awards	Average Demand	Average Gap
Business, Management, Marketing, Related	168.4	1,036.8	868.4
Engineering	60.4	326.2	265.8
Computer, Information Sciences, Support	25.8	194.5	168.7
Human Services	10.2	79.3	69.1
Engineering Technology	12.4	53.8	41.4
Visual and Performing Arts	12.4	50.8	38.4
Physical Sciences	21.0	45.2	24.2
Health Services and Sciences	36.0	60.0	24.0
Communication, Journalism, and Related Programs	32.4	54.7	22.3
Homeland Security and Protective Services	5.4	15.4	10.0
Work and Family Studies	28.6	37.0	8.4
Mathematics and Statistics	9.4	17.5	8.1
Multi-/Interdisciplinary Studies	59.6	65.0	5.4

Note: Average awards cover Fall 2014-2018. Demand consists of projected average annual demand (2019-2030) for jobs in the Permian Basin which require a Bachelor's degree.
Source: US Multi-Regional Econometric Model, The Perryman Group

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Focus on: Health and Wellness
Overview, Economic Forecast, and Applications

The Perryman Group

Overview

Access to Health Care

The health and well-being of a community is driven by factors such as access to health care and the supply of health care professionals. Shortages among physicians and other health care workers are widespread, and in a rapidly growing community such as Midland, it can be difficult to avoid issues.

Midland leaders and the health care community are working to deal with current shortages and likely future needs for additional health care providers in the area. The Perryman Group's analysis indicates these efforts are worthy of significant support given anticipated future population growth and demographic patterns.

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Overview

Access to Health Care

A major indicator of access to affordable health care is health insurance, whether from a private insurance company or through a public insurance program. The Midland area has lower rates of health insurance coverage than the state and the nation.

Percent of Population with Health Insurance	
City of Midland	81.6%
Midland County	80.4%
Midland MSA	80.6%
Texas	82.7%
United States	91.3%

Source: US Census Bureau, American Community Survey, 1-Year Estimates, S2701, 2017.

The Perryman Group

Overview

Poverty Levels in Midland Area

A significant body of empirical research links income level to health. In general, lower income is correlated with shorter life expectancies, reduced access to medical care, and higher rates of chronic disease.

	Individuals Below Poverty Line	Percent of Population
City of Midland	12,191	9.1%
Midland County	17,398	10.7%
Midland MSA	17,695	10.6%
Texas	4,076,905	14.7%
United States	42,583,651	13.4%

Source: US Census Bureau, American Community Survey, 1-Year Estimates, S2701, 2017.

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Overview

Supply of Physicians and Health Care Workers

Midland County is experiencing a shortage of medical professionals, including primary care physicians, dentists, and mental health professionals, compared to the rest of the state and nation.

The county has experienced 28% growth in physicians over the past ten years, falling behind the 39% growth experienced in the state as a whole.

Applications

Impact of Population Growth Estimates by Age

The two population groups that are primary consumers of health services will also be expanding rapidly, thus putting pressure on local resources.

+11,521 (+3.91%)
Under 15

+4,248 (+3.50%)
Over 65

Note: Values reflect the absolute growth amount and the annual growth rate from 2019-2025 under the baseline oil price scenario.

The Perryman Group

Projected Midland MSA Population Growth
Results by varying oil price assumptions

Age Group	Baseline		Low Oil Prices		High Oil Prices		Statewide	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
Annual Growth Rates								
Under 15	+3.91%	+3.55%	+2.73%	+2.99%	+5.55%	+4.17%	**+0.89%**	**+1.04%**
15 to 64	+3.99%	+3.91%	+2.81%	+3.35%	+5.63%	+4.54%	**+1.12%**	**+1.12%**
65 and Over	+3.50%	+2.85%	+2.33%	+2.29%	+5.14%	+3.46%	**+3.82%**	**+3.47%**
Absolute Growth								
Under 15	+11,521	+20,830	+7,811	+17,067	+17,050	+25,293		
15 to 64	+32,956	+65,491	+22,531	+54,551	+48,494	+78,465		
65 and Over	+4,248	+6,692	+2,743	+5,242	+6,492	+8,411		

Source: US Multi-Regional Econometric Model, The Perryman Group

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Applications

Need for Additional Health Care Providers

The Perryman Group's detailed forecast of demand for additional workers indicates strong growth in demand for health care occupations.

An estimated **922 additional workers across all health care fields will be needed by 2025** and **1,304** by 2030 under baseline oil price assumptions when growth and replacement needs are considered, with even more demand if prices are higher.

Particularly large numbers of **registered nurses** and **licensed vocational nurses** will be needed.

The Perryman Group

Current Physician Employment per Capita
Employment per 100,000 people in 2019 by region

Occupation	Midland MSA	Abilene MSA	Sherman-Denison MSA	State of Texas
Anesthesiologists	8.5	10.9	14.1	10.7
Family & General Practitioners	33.0	46.3	56.6	42.5
Internists, General	12.2	17.1	21.6	15.6
Obstetricians/Gynecologists	5.3	7.4	9.7	7.0
Pediatricians, General	7.5	10.3	12.7	9.4
Psychiatrists	5.9	9.7	10.4	8.3
Surgeons	11.2	14.9	19.4	14.2
Physician Assistants	28.8	40.6	49.1	37.8
All Other Physicians/Surgeons	82.0	118.3	138.4	118.2

Source: US Multi-Regional Econometric Model, The Perryman Group

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Projected Midland MSA Physician Demand
Results by varying oil price assumptions

Occupation	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
Anesthesiologists	2	8	1	7	4	9
Family & General Practitioners	10	31	5	27	18	36
Internists, General	3	10	1	9	6	12
Obstetricians/Gynecologists	2	5	1	4	3	6
Pediatricians, General	2	7	1	6	4	8
Psychiatrists	2	5	1	4	3	6
Surgeons	3	10	1	9	6	12
Physician Assistants	17	39	12	35	24	44
All Other Physicians/Surgeons	24	71	13	61	41	82
Total, All Physicians	**65**	**186**	**36**	**162**	**109**	**215**

Source: US Multi-Regional Econometric Model, The Perryman Group

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Current Nursing Employment per Capita
Employment per 100,000 people in 2019 by region

Occupation	Midland MSA	Abilene MSA	Sherman-Denison MSA	State of Texas
Registered Nurses	578.4	1,166.3	1,215.5	881.1
Nurse Anesthetists	10.1	14.9	17.9	13.6
Nurse Midwives	1.6	2.3	3.0	2.2
Nurse Practitioners	40.5	60.6	71.5	53.2
Licensed Vocational Nurses	161.4	259.4	266.5	205.4

Source: US Multi-Regional Econometric Model, The Perryman Group

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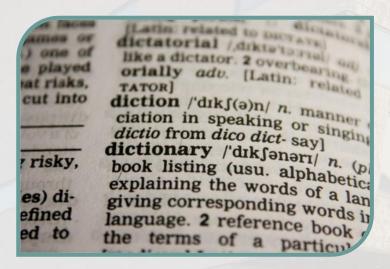# Projected Midland MSA Nursing Demand
Results by varying oil price assumptions

Occupation	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
Registered Nurses	223	542	152	475	329	622
Nurse Anesthetists	4	10	2	8	6	12
Nurse Midwives	1	2	0	1	1	2
Nurse Practitioners	22	54	15	47	32	61
Licensed Vocational Nurses	68	186	43	163	106	212
Total, All Nurses	**318**	**794**	**212**	**694**	**474**	**909**

Source: US Multi-Regional Econometric Model, The Perryman Group

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Focus on: Quality of Place
Overview, Economic Forecast, and Applications

The Perryman Group

Overview

Definition

Quality of place has been defined as "the physical characteristics of a community, the way it is planned, designed, developed, and maintained that affect the quality of life of people living and working in it and those visiting it both now and in the future."

• Quality of public goods (health care and schools)
• Cultural amenities (libraries, art, entertainment)
• Restaurants and bars
• Crime rates
• Housing costs
• Diversity and inclusivity
• University enrollment
• Parks and green space
• Public transit
• Walkability

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Overview

Community Density and Dynamics

The age demographic with the largest rate of population growth since 2010 has been 25 to 34 year olds, followed by 35 to 44 year olds.

The population aged 25 to 34 years that had at least a Bachelor's degree grew by **188.4% in the City of Midland** and **190.0% in Midland County** from 2010 to 2017, greatly outpacing state and national growth.

	2010-2018	2017-2018
Natural Growth	**13,550**	**1,741**
Births	22,260	2,847
Deaths	8,710	1,106
Net Migration	**21,718**	**5,425**
International	3,065	461
Domestic	18,653	4,964
Total	**35,706**	**7,192**

Source: US Census Bureau, Population Estimates Program

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Overview

Community Density and Dynamics

Employed in Midland: 66,895

Lived in Midland: 48.6%

Lived Outside: 51.4%
- Lived in Odessa: 7,369 (11.0%)
- Lived in West Odessa CDP: 1,212 (1.8%)
- Lived in Big Spring: 1,023 (1.5%)
- Lived in Lubbock: 890 (1.3%)
- Lived in El Paso: 832 (1.2%)

Lived in Midland: 57,088

Employed in Midland: 56.9%

Employed Outside: 43.1%
- Employed in Odessa: 5,229 (9.2%)
- Employed in Lubbock: 1,158 (2.0%)
- Employed in Houston: 664 (1.2%)

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Overview

Entertainment

Current entertainment options according to the City of Midland Annual Budget

• 2 Movie Theatres (25 screens)
• 1 Drive-in movie (3 screens)
• Midland Community Theatre
• Midland/Odessa Symphony and Chorale
• Commemorative Air Force Museum
• Petroleum Museum
• Museum of the Southwest
• George W. Bush Childhood Home
• Midland Rockhounds
• Wagner Noel Performing Arts Center
• Marion Blackwell Planetarium
• I-20 Wildlife Preserve
• Skate Park
• BMX Park
• Dog Park

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Overview

Public Safety

The crime rate in the City of Midland has generally fallen since 2010, though there have been fluctuations year to year. In general, Midland has less violent crime per 100,000 than Texas, though the area reported more property crime in 2017, mostly in the increased incidence of larceny and/or theft (table below).

	City of Midland	Texas
Total Violent Crime	**377**	**439**
Homicide	2	5
Rape	37	51
Robbery	59	114
Aggravated assault	279	269
Total Property Crime	**2677**	**2563**
Burglary	431	474
Larceny/theft	2026	1849
Motor vehicle theft	220	240
Arson	**5**	**12**

Source: Crime Data Explorer, Federal Bureau of Investigation

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Overview

Public Safety

At the same time, employment in the police and fire department has increased since 2010, though year-to-year fluctuations have also occurred. In FY2019, there were 199 police officers and 52 civilian employees (251 total personnel). That same year, there were 231 total employees in the fire department, 225 firefighters and 6 civilian employees.

	2014	2015	2016	2017
Police Department				
Police officers	179	179	167	199
Civilian employees	46	47	47	52
Fire Department				
Firefighters	176	173	193	214
Civilian employees	5	5	5	6

Note: Data listed by end year of fiscal year.
Sources: City of Midland 2010-2019 Annual Budgets

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Application

Public Safety

Compared to similarly sized metropolitan areas or the state as a whole, Midland currently employs fewer persons in protective services occupations.

Employment of firefighters, detectives, and police officers is significantly lower in Midland (per 100,000 residents) than the state average.

The need for additional workers is projected to be lead by **police and sheriff's patrol officers.**

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Current Protective Service Employment per Capita

Employment per 100,000 people in 2019 by region

Occupation	Midland MSA	Abilene MSA	Sherman-Denison MSA	State of Texas
First-Line Supervisors				
Police and Detectives	37.3	43.4	37.2	43.1
Fire Fighting and Prevention Workers	23.4	24.0	23.8	24.3
Firefighters	129.4	132.6	132.5	134.5
Detectives and Criminal Investigators	28.2	32.6	20.1	48.8
Police and Sheriff's Patrol Officers	256.2	292.0	262.7	279.2

Source: US Multi-Regional Econometric Model, The Perryman Group

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Projected Midland MSA Protective Service Demand
Demand by varying oil price assumptions

Occupation	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
First-Line Supervisors						
Police and Detectives	13	22	10	18	17	27
Fire Fighting and Prevention Workers	10	17	8	15	13	20
Firefighters	52	92	42	79	68	109
Detectives and Criminal Investigators	10	17	8	15	13	20
Police and Sheriff's Patrol Officers	103	178	81	154	135	215

Source: US Multi-Regional Econometric Model, The Perryman Group

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Application

Demand for Knowledge Workers

Over 25% of new jobs demanded through 2025 and 2030 require at least some form of postsecondary award or degree.

In particular, it is projected that the area will **need 14,820 workers with a bachelor's degree through 2030**. Meeting this need will necessarily involve attracting new workers from other areas of the state and nation.

Nearly 70% of new jobs demanded will involve short-term to moderate on-the-job training.

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Projected Midland MSA Employment Demand
Demand by educational requirements under varying oil price assumptions

Educational Requirement	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
No formal educational credential	15,233	31,825	11,660	27,533	20,551	36,996
High school diploma or equivalent	14,043	33,206	10,725	29,262	18,982	37,945
Postsecondary nondegree award	2,150	5,597	1,510	4,834	3,111	6,505
Associate's degree	947	2,293	675	1,999	1,358	2,643
Some college, no degree	665	1,651	496	1,452	916	1,894
Bachelor's degree	6,286	14,820	4,726	13,028	8,609	16,955
Master's degree	306	723	232	641	417	831
Doctoral or professional degree	474	1,120	342	985	668	1,286
Total, All Occupations	**40,104**	**91,235**	**30,366**	**79,734**	**54,612**	**105,055**

Note: Demand includes workers needed due to economic growth as well as replacement needs.
Source: US Multi-Regional Econometric Model, The Perryman Group

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Application

Food Service

As a center for regional business activity, the Midland economy currently employs more food service workers per 100,000 residents than many areas.

Over the next few years, thousands more food preparation workers will be required. The level of difficulty in finding these workers is likely to increase from what is already a challenging situation.

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Current Food Service Employment per Capita

Employment per 100,000 people in 2019 by region

Occupation	Midland MSA	Abilene MSA	Sherman-Denison MSA	State of Texas
Food Preparation and Serving Related	4,612.7	4,574.2	3,743.9	4,227.4
Supervisors of Food Preparation/Serving	366.9	365.1	297.0	338.0
Cooks and Food Preparation Workers	1,097.6	1,110.3	908.8	1,015.7
Food and Beverage Serving Workers	2,650.1	2,614.8	2,138.4	2,421.0
Other Related Workers	498.0	484.0	399.7	452.8

Source: US Multi-Regional Econometric Model, The Perryman Group

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Projected Midland MSA Food Service Demand
Demand by varying oil price assumptions

Occupation	Baseline		Low Oil Prices		High Oil Prices	
	2019-25	2019-30	2019-25	2019-30	2019-25	2019-30
Food Preparation and Serving Related	4,656	9,695	3,631	8,410	6,188	11,249
Supervisors of Food Preparation/Serving	357	741	275	641	478	862
Cooks and Food Preparation Workers	1,013	2,135	776	1,841	1,369	2,492
Food and Beverage Serving Workers	2,802	5,796	2,203	5,038	3,698	6,713
Other Related Workers	484	1,023	377	890	643	1,182

Source: US Multi-Regional Econometric Model, The Perryman Group

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Conclusion
The Importance of Proactive Efforts

Conclusion

A unique combination of events has created an enormous opportunity for the Midland area. Midland stands at the epicenter of an economic phenomenon of global importance.

The efforts of Priority Midland will not determine whether or not the oil and gas in the Permian Basin will be produced – that will happen! It is driven by forces that extend well beyond the local area. In fact, these factors lie at the very heart of future international prosperity.

The efforts of Priority Midland will, however, play a major role in the future of this community and the lifestyle that will be experienced for generations to come. Enhanced educational performance, health care delivery, infrastructure availability, housing options, and amenities will enrich and invigorate the area with its own brand of energy and open up new avenues for progress. A failure to act will sacrifice the potential bounty and leave conditions deteriorating despite the explosion in oil and gas production.

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Midland Can Do It!

Tax Supported Debt Outstanding in 2018

City	Population	Debt per Capita	Income per Capita (2017)
Killeen	149,103	$1,225	$20,877
McAllen	143,433	$638	$21,538
Mesquite	142,816	$1,296	$21,105
Midland	**142,344**	**$985**	**$38,218**
Denton	138,541	$5,325	$27,358
Waco	138,183	$3,072	$21,922
Carrollton	136,879	$1,273	$34,399
Round Rock	128,739	$1,477	$32,195
Abilene	122,999	$2,554	$24,206
Pearland	122,149	$2,540	$41,282

Notes: Tax supported debt outstanding is general obligation debt and does not include revenue debt, although some portion may be self-supporting such as for part of the Midland debt.
Source: Texas Bond Review Board, US Census Bureau Population Division, American Fact Finder, and US Census Bureau, 2017 American Community Survey 1-Year Estimates.

The City of Midland's Low Debt Situation

The City of Midland's tax supported debt outstanding of $140,255,000 and tax supported debt outstanding per capita of $985 is much lower than most similarly sized cities.

With the exception of Killeen and McAllen (whose bonds are not rated) all of the comparable cities have a high investment grade rating by Moody's (either Aa1 like Midland or Aa2).

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Midland Can Do It!

Tax Supported Debt Outstanding in 2018

County	Population	Debt per Capita	Income per Capita (2017)
Ellis	179,436	$206	$29,922
Midland	**172,578**	**$90**	**$36,572**
Johnson	171,361	$158	$26,688
Guadalupe	163,694	$83	$28,584
Ector	162,124	$180	$24,264
Comal	148,373	$989	$36,833
Parker	138,371	$878	$34,311
Taylor	137,640	$350	$27,386
Randall	136,271	$339	$32,592
Grayson	133,991	$272	$27,795

Notes: Tax supported debt outstanding is general obligation debt and does not include revenue debt, although some portion may be self-supporting such as for part of the Midland debt.
Source: Texas Bond Review Board, US Census Bureau Population Division, American Fact Finder, and US Census Bureau, 2017 American Community Survey 1-Year Estimates.

Midland County's Low Debt Situation

With the exception of Guadalupe County, Midland County's tax supported debt outstanding of $15,535,000 and tax supported debt outstanding per capita of $90 is much lower than comparable counties.

Even before the expected growth in revenues in the future, Midland could currently support significantly more debt when compared to other Texas counties of similar size.

Midland Can Do It!

Tax Supported Debt Outstanding in 2018

ISD	Enrollment	Debt per Student	Income per Capita (2017)
Midland	**25,716**	**$8,077**	**$37,560**
Pflugerville	25,306	$16,509	$31,635
Carrollton-Farmers Branch	25,297	$7,067	$34,800
McKinney	24,959	$21,314	$41,631
Alvin	24,852	$26,900	$34,791
Laredo	24,069	$12,461	$11,615
Goose Creek	23,795	$18,712	$24,340
McAllen	23,721	$3,513	$22,252
Birdville	23,691	$10,703	$28,096
Hurst-Euless-Bedford	23,429	$12,792	$31,908

Midland ISD's Low Debt Situation

Midland ISD's debt per student is lower than many comparably sized districts by a substantial margin. **The debt level of $8,077 per student is less than half or even one-third of other districts with similar numbers of students.** Moreover, the area's income per capita is among the highest of the districts reviewed.

Like the City of Midland and Midland County, the Midland ISD could currently support significantly more debt, even before expected future increases.
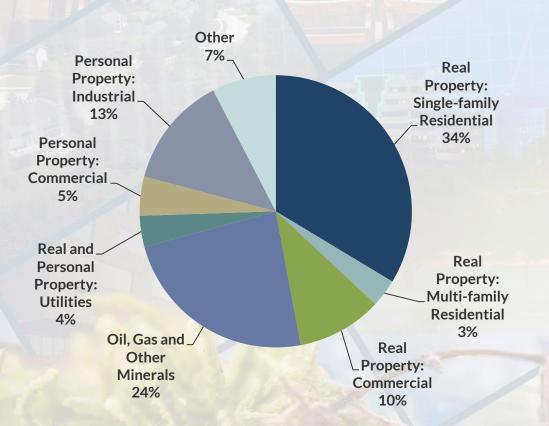
Notes: Tax supported debt outstanding is general obligation debt including voter approved and maintenance and operations tax supported debt and does not include revenue debt. Some school districts qualify to receive some funding for debt service from the state, which could make debt outstanding per student somewhat misleading to the relative school district debt service tax burden for those districts.
Source: Texas Bond Review Board, Texas Education Agency, and US Census Bureau, 2017 American Community Survey 1-Year Estimates.

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Midland Central Appraisal District Market Values
Composition of market values by classification

Pie chart segments:
- Other 7%
- Personal Property: Industrial 13%
- Personal Property: Commercial 5%
- Real and Personal Property: Utilities 4%
- Oil, Gas and Other Minerals 24%
- Real Property: Single-family Residential 34%
- Real Property: Multi-family Residential 3%
- Real Property: Commercial 10%

A much larger portion of taxes is paid by oil and gas property owners in Midland compared to Texas as a whole. For the Midland area in 2018, Single-Family Residential was 33.6% of the total market value while **Oil, Gas, and Other Minerals comprised 23.7%**. For the state as of 2017, Single Family Residential was 46.39% of total market value and **Oil, Gas, and Other Minerals was only 2.47%**.

Note: Other includes Vacant Lots and Tracts, Qualified Agricultural Land, Non-Qualified Land, Farm and Ranch Improvements, Nonbusiness Vehicles, Mobile Homes, Residential Inventory, and Special Inventory
Source: Midland Central Appraisal District

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What if...

Proactive initiatives had been undertaken five years ago?

Midland MSA

Output (gross product)
+$22.4 billion from 2014-2019
+10.9% higher

Employment
+40,300 job-years from 2014-2019
+7.9% higher

Permian Basin

Output (gross product)
+$37.4 billion from 2014-2019
+12.4% higher

Employment
+80,000 job-years from 2014-2019
+6.8% higher

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What if...

Midland does not take proactive measures to implement initiatives?

Midland MSA

Lost gross product over 2020-30
Baseline: -$22.7 billion
Low Oil Prices: -$13.2 billion
High Oil Prices: -$35.6 billion

Lost employment over 2020-30
Baseline: -180,500 job-years
Low Oil Prices: -124,900 job-years
High Oil Prices: -256,200 job-years

Permian Basin

Lost gross product over 2020-30
Baseline: -$41.2 billion
Low Oil Prices: -$22.5 billion
High Oil Prices: -$66.6 billion

Lost employment over 2020-30
Baseline: -445,400 job-years
Low Oil Prices: -308,000 job-years
High Oil Prices: -632,000 job-years

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Thinking Beyond Tomorrow

Assuming that the goals of Priority Midland are achieved and the area becomes a desirable location with the housing, infrastructure, educational opportunities, health facilities, and quality of place to attract knowledge workers, the area can become a major hub for:

Energy Technology (Petroleum and Renewable)

Water Conservation Technology

Environmental Technology

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Priority Midland is well named and well timed.

Its mission is essential and its success is imperative.

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Effective economics, accessible analysis

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We are a focused team of analysts who can answer your economic questions clearly and effectively—no matter how complex or consequential. Dr. Ray Perryman, President and CEO, has more than 40 years of experience in developing systems, analyzing complex problems, and communicating effectively with governments, judges and juries, Fortune 500 companies, small businesses, community leaders, and audiences of all types.

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