



Industry Focus. Powerful Results.™

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Houston Construction Overview

Statistics & Trends

About FMI

For over 65 years, FMI has been the leading **management consulting and investment banking** firm dedicated exclusively to **engineering and construction, infrastructure and the built environment**.

FMI serves all sectors of the industry as a trusted advisor. More than six decades of context, connections and insights lead to transformational outcomes for clients and the industry.

Sector Expertise

- A/E and Environmental
- Building Products
- Construction Materials
- General Contractors/CM
- Energy Service & Equipment
- Energy Solutions & Cleantech
- Heavy Civil
- Industrial
- Owners
- Private Equity
- Specialty Trades
- Utility T&D

Geography Is Destiny

Texas-The Secret is in the Dirt

- Cattle
- Cotton
- Crude

Greater Houston Area

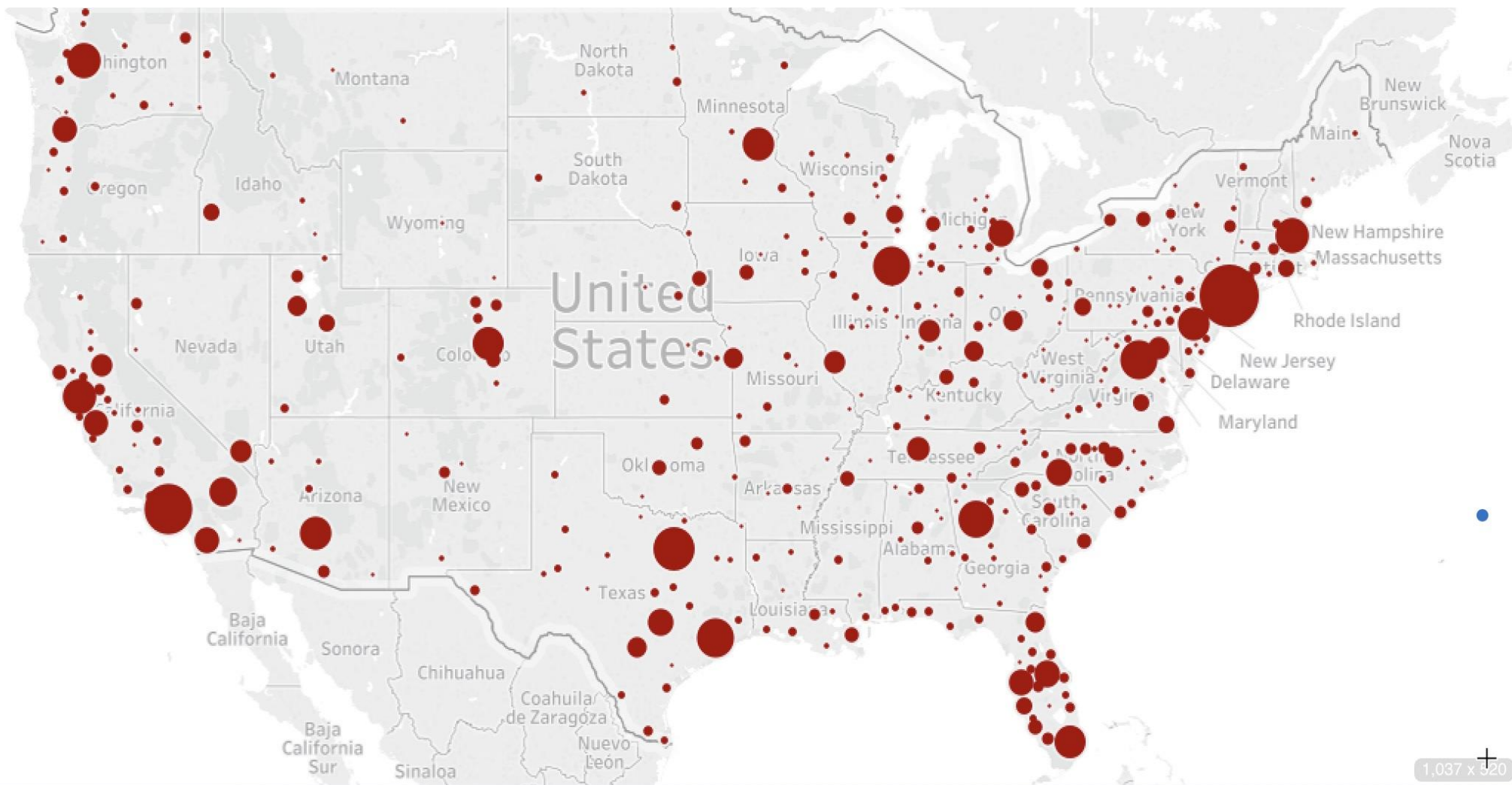
- 9 Counties
- 10,000 square miles
- 6.8 million people
- 4 Economic Pillars
 - Oil & Gas
 - Texas Medical Center
 - Port of Houston
 - NASA
- International Capital of the Energy Business
 - A true cluster





“You might give serious thought to thanking your lucky stars, you live in Texas.”

– Jim Goode, Restaurateur





CONSTRUCTION

CONSTRUCTION SNAPSHOT

CONTRIBUTION TO GDP

Industry Rank | 7th

\$30.8 Billion

Share of Total
6.3%

NUMBER OF FIRMS

Industry Rank | 5th

10,804

Share of Total
8.3%

CURRENT EMPLOYMENT

Industry Rank | 7th

231,300

Share of Total
7.2%

INDUSTRY WAGES

Industry Rank | 4th

\$17.4 Billion

Share of Total
8.5%

10-YEAR JOB GAINS

Industry Rank | 5th

52,300

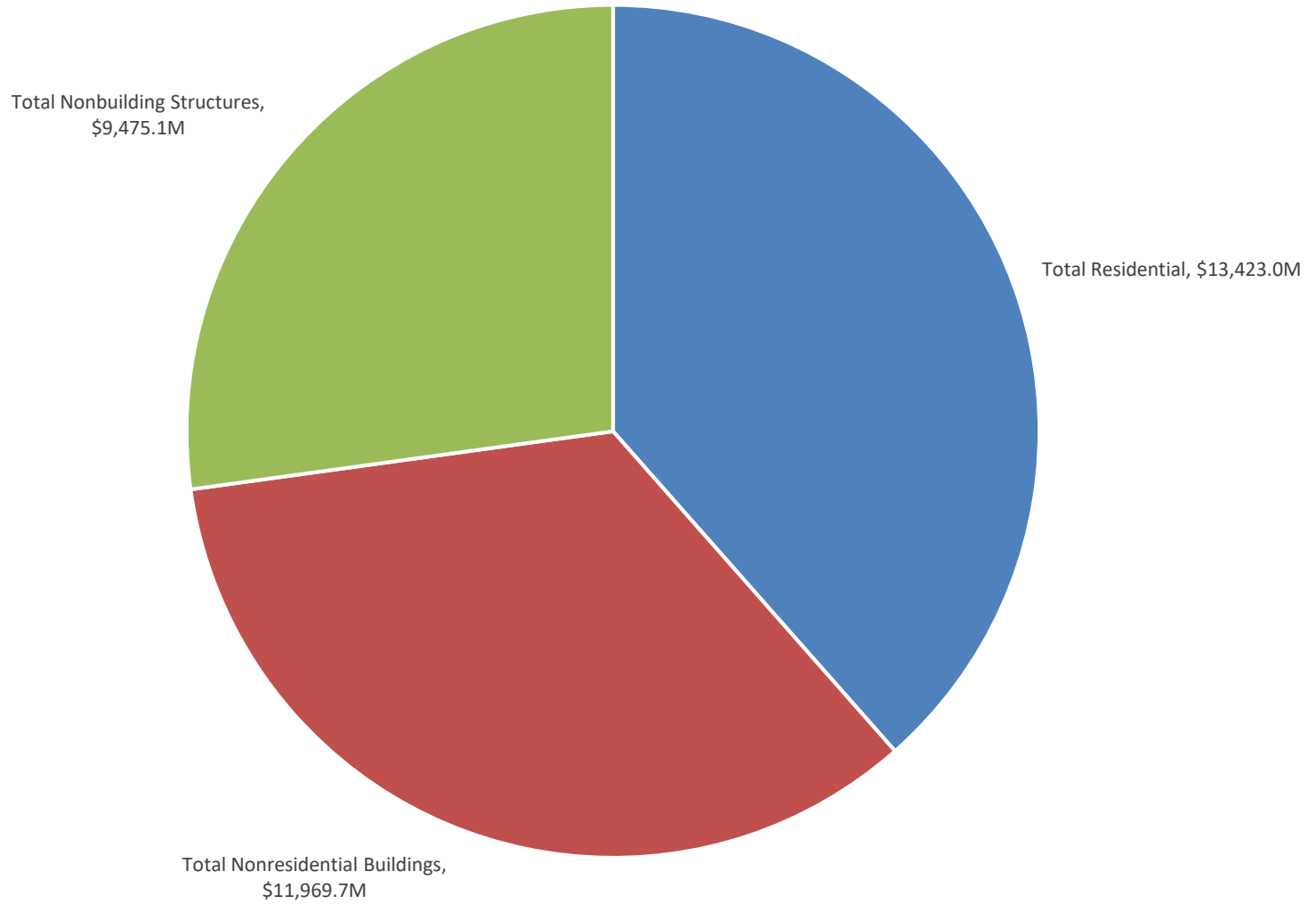
Share of Total
8.0%

AVERAGE ANNUAL WAGE

Industry Rank | 8th

\$73,684

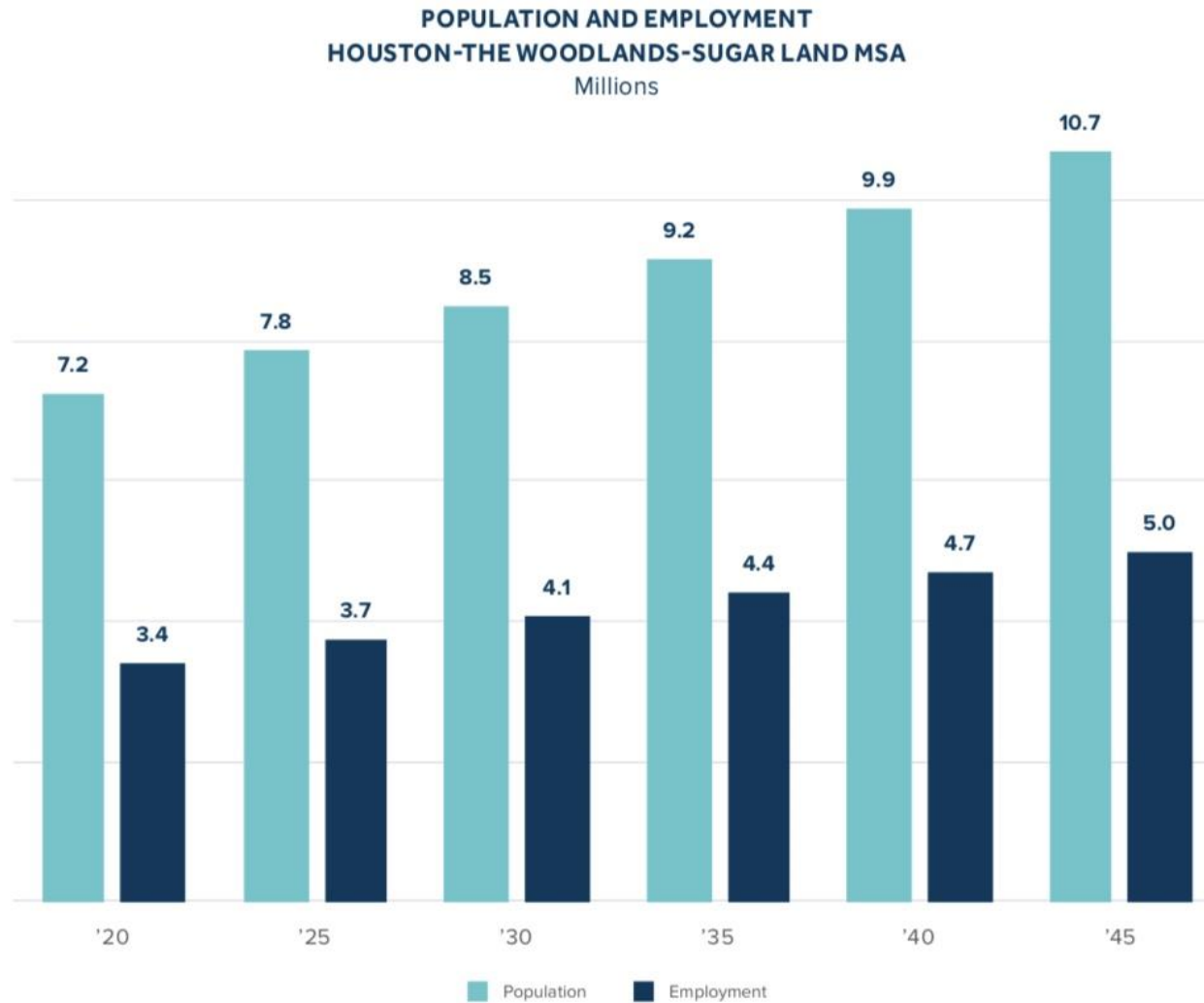
2020 Houston-The Woodlands-Sugar Land Spend



Concept	2018	2019	2020	2021	2022	2023
Single Family	\$7,043.7M	\$7,103.4M	\$7,335.9M	\$7,932.5M	\$8,318.5M	\$8,565.8M
		0.85%	3.27%	8.13%	4.87%	2.97%
Multifamily	\$1,571.9M	\$1,602.1M	\$1,587.9M	\$1,682.4M	\$1,770.5M	\$1,837.9M
		1.92%	-0.88%	5.95%	5.23%	3.81%
Improvements*	\$4,481.3M	\$4,441.6M	\$4,499.1M	\$4,816.1M	\$5,017.6M	\$5,126.9M
		-0.89%	1.30%	7.05%	4.18%	2.18%
Total Residential	\$13,096.9M	\$13,147.1M	\$13,423.0M	\$14,431.0M	\$15,106.5M	\$15,530.6M
		0.38%	2.10%	7.51%	4.68%	2.81%
Amusement and Recreation	\$615.1M	\$629.6M	\$623.1M	\$627.0M	\$609.4M	\$613.6M
		2.36%	-1.04%	0.64%	-2.81%	0.68%
Commercial	\$2,064.1M	\$1,992.1M	\$1,966.8M	\$1,939.6M	\$1,997.6M	\$2,104.0M
		-3.49%	-1.27%	-1.38%	2.99%	5.33%
Communication	\$556.7M	\$570.3M	\$588.5M	\$610.5M	\$629.7M	\$656.8M
		2.45%	3.19%	3.75%	3.13%	4.31%
Educational	\$2,137.8M	\$2,163.8M	\$2,184.3M	\$2,259.2M	\$2,342.4M	\$2,441.3M
		1.22%	0.95%	3.43%	3.68%	4.22%
Health Care	\$926.2M	\$944.9M	\$964.1M	\$946.6M	\$939.7M	\$966.5M
		2.01%	2.04%	-1.82%	-0.73%	2.85%
Lodging	\$680.0M	\$726.4M	\$740.9M	\$726.5M	\$727.5M	\$755.5M
		6.82%	2.00%	-1.95%	0.14%	3.85%
Manufacturing	\$1,558.1M	\$1,595.3M	\$1,635.4M	\$1,700.8M	\$1,768.6M	\$1,785.9M
		2.39%	2.51%	4.00%	3.99%	0.98%
Office	\$1,678.3M	\$1,739.1M	\$1,763.3M	\$1,728.0M	\$1,751.6M	\$1,846.2M
		3.62%	1.39%	-2.00%	1.36%	5.40%
Public Safety	\$203.2M	\$222.9M	\$241.5M	\$248.9M	\$235.9M	\$231.0M
		9.69%	8.35%	3.03%	-5.22%	-2.08%
Religious	\$72.4M	\$67.8M	\$63.1M	\$60.6M	\$62.2M	\$65.8M
		-6.41%	-6.91%	-3.95%	2.59%	5.89%
Transportation	\$1,077.1M	\$1,136.9M	\$1,198.7M	\$1,325.7M	\$1,475.6M	\$1,563.2M
		5.55%	5.44%	10.59%	11.31%	5.94%
Total Nonresidential Buildings	\$11,569.1M	\$11,789.0M	\$11,969.7M	\$12,173.4M	\$12,539.9M	\$13,029.7M
		1.90%	1.53%	1.70%	3.01%	3.91%
Conservation and Development	\$297.6M	\$344.0M	\$382.4M	\$414.3M	\$441.7M	\$472.9M
		15.59%	11.16%	8.35%	6.61%	7.07%
Highway and Street	\$2,955.4M	\$3,085.4M	\$3,368.9M	\$3,621.3M	\$3,829.8M	\$3,896.2M
		4.40%	9.19%	7.49%	5.76%	1.73%
Power	\$3,445.3M	\$3,693.2M	\$4,090.4M	\$4,240.9M	\$4,408.8M	\$4,657.5M
		7.20%	10.75%	3.68%	3.96%	5.64%
Sewage and Waste Disposal	\$789.0M	\$879.1M	\$949.8M	\$1,016.1M	\$1,066.7M	\$1,115.6M
		11.41%	8.05%	6.98%	4.97%	4.59%
Water Supply	\$538.0M	\$601.8M	\$683.7M	\$756.1M	\$825.1M	\$883.5M
		11.86%	13.60%	10.59%	9.13%	7.08%
Total Nonbuilding Structures	\$8,025.4M	\$8,603.5M	\$9,475.1M	\$10,048.7M	\$10,572.2M	\$11,025.7M
		7.20%	10.13%	6.05%	5.21%	4.29%
Total Put in Place	\$32,691.4M	\$33,539.6M	\$34,867.9M	\$36,653.1M	\$38,218.6M	\$39,586.0M
		2.59%	3.96%	5.12%	4.27%	3.58%

POPULATION AND EMPLOYMENT FORECAST

The Perryman Group forecasts Houston's population to reach 10.7 million and employment to grow to 5.0 million by '45.

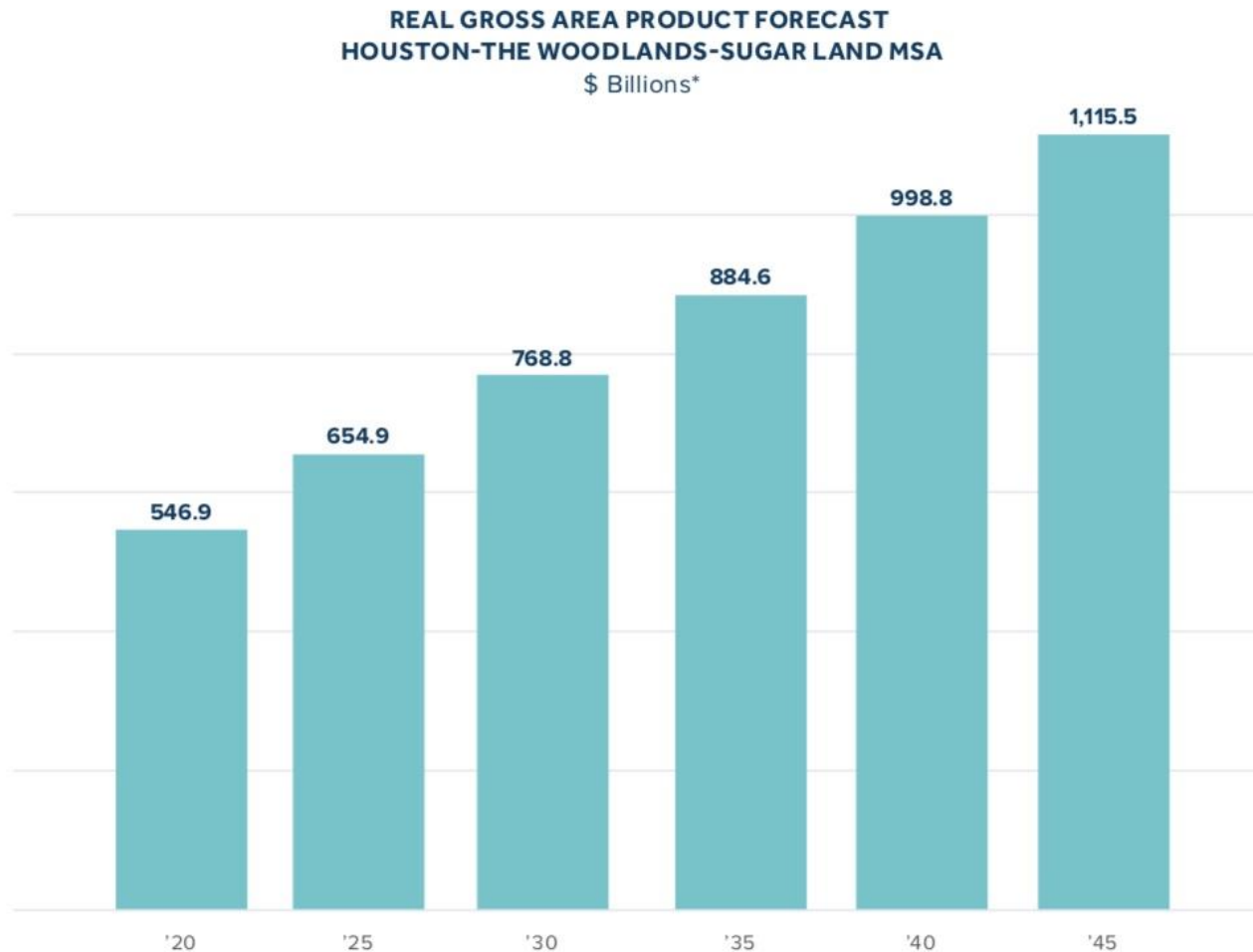


Source: The Perryman Group

- From '20 to '45, The Perryman Group sees population growth averaging 1.6 percent annually in the Houston region. Over the same period, the Texas-based economic forecasting firm expects wage and salary employment to rise at the same rate of 1.6 percent annually.
- The Houston–The Woodlands–Sugar Land Metro Area will add 3.4 million residents between '20 and '45. Perryman also forecasts that Houston will add an additional 1.6 million jobs and account for one-fourth of Texas job growth during that time frame.

GROSS AREA PRODUCT FORECAST

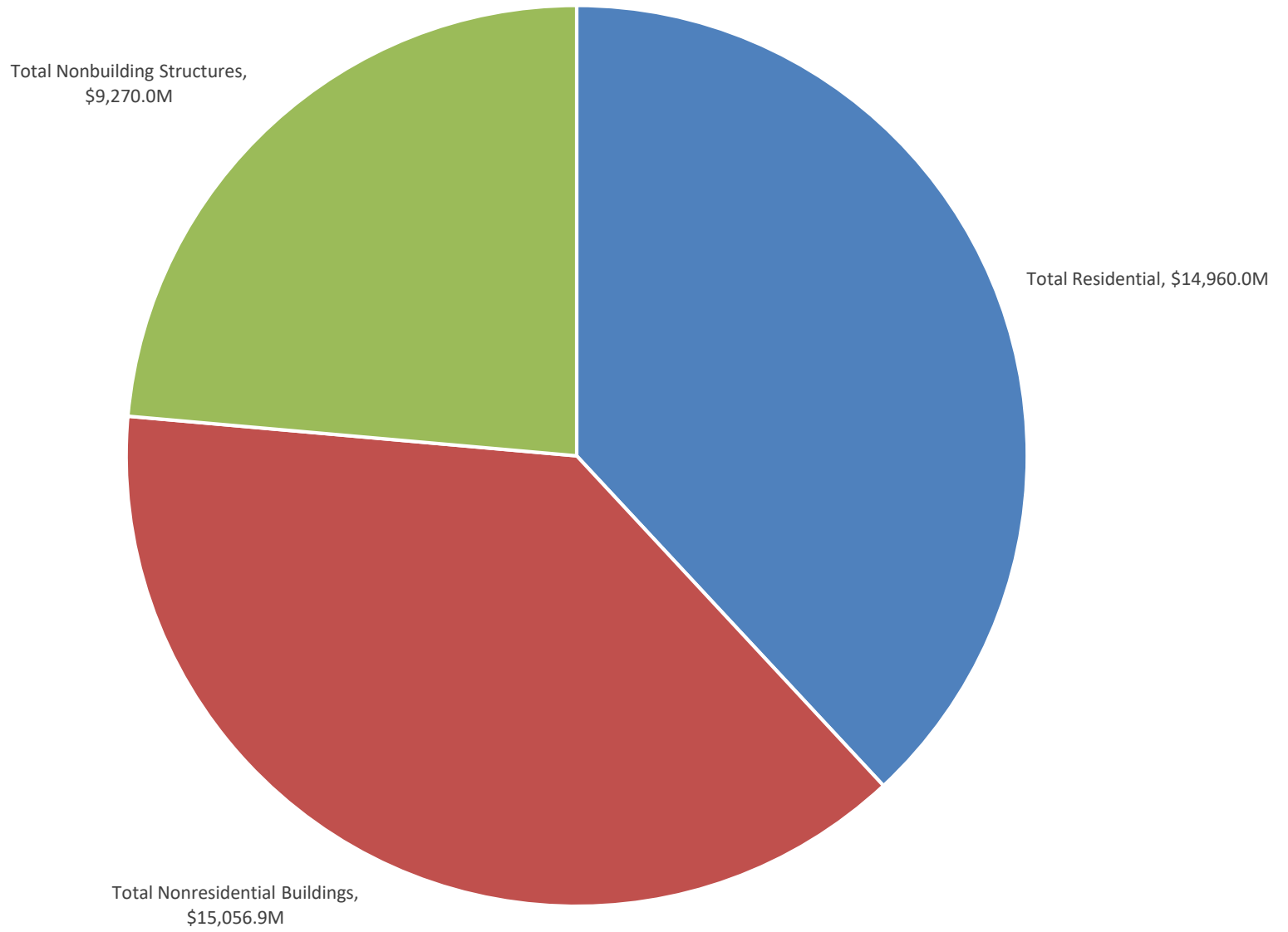
The Perryman Group forecasts sustained economic growth for the Houston metro over the next quarter century.



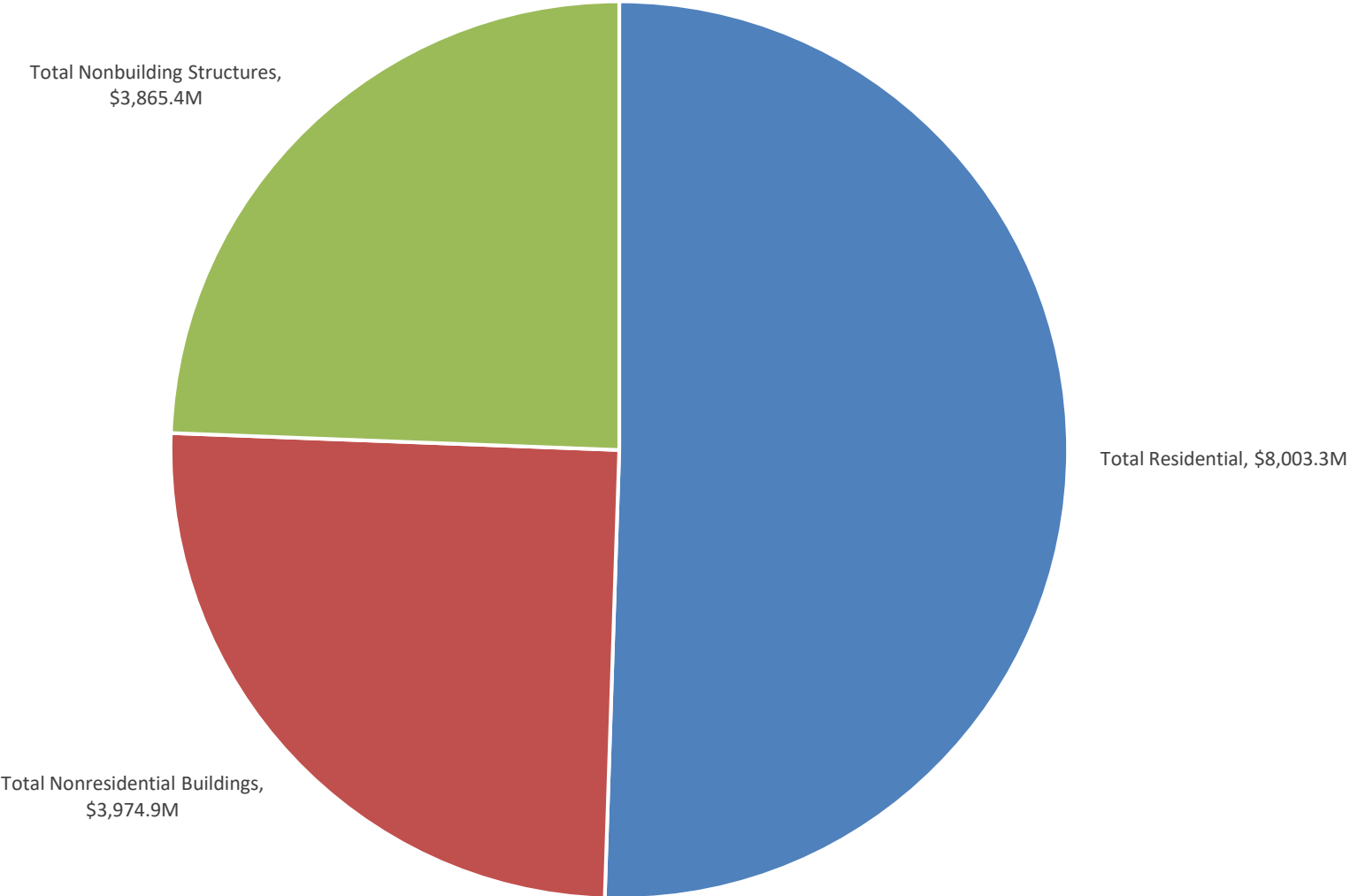
Source: The Perryman Group
*'09 Constant Dollars

- Real (*i.e.*, net of inflation) Gross Area Product (GAP) in the Houston region is expected to grow at an average annual rate of 2.9 percent from '20 to '45 in The Perryman Group's forecast.
- The Houston MSA's real GAP is projected to more than double between '20 and '45.
- Compound annual growth rates of real gross area product from '20 to '45 are highest in manufacturing (3.8 percent), information (3.7 percent) and professional and business services (3.6 percent).

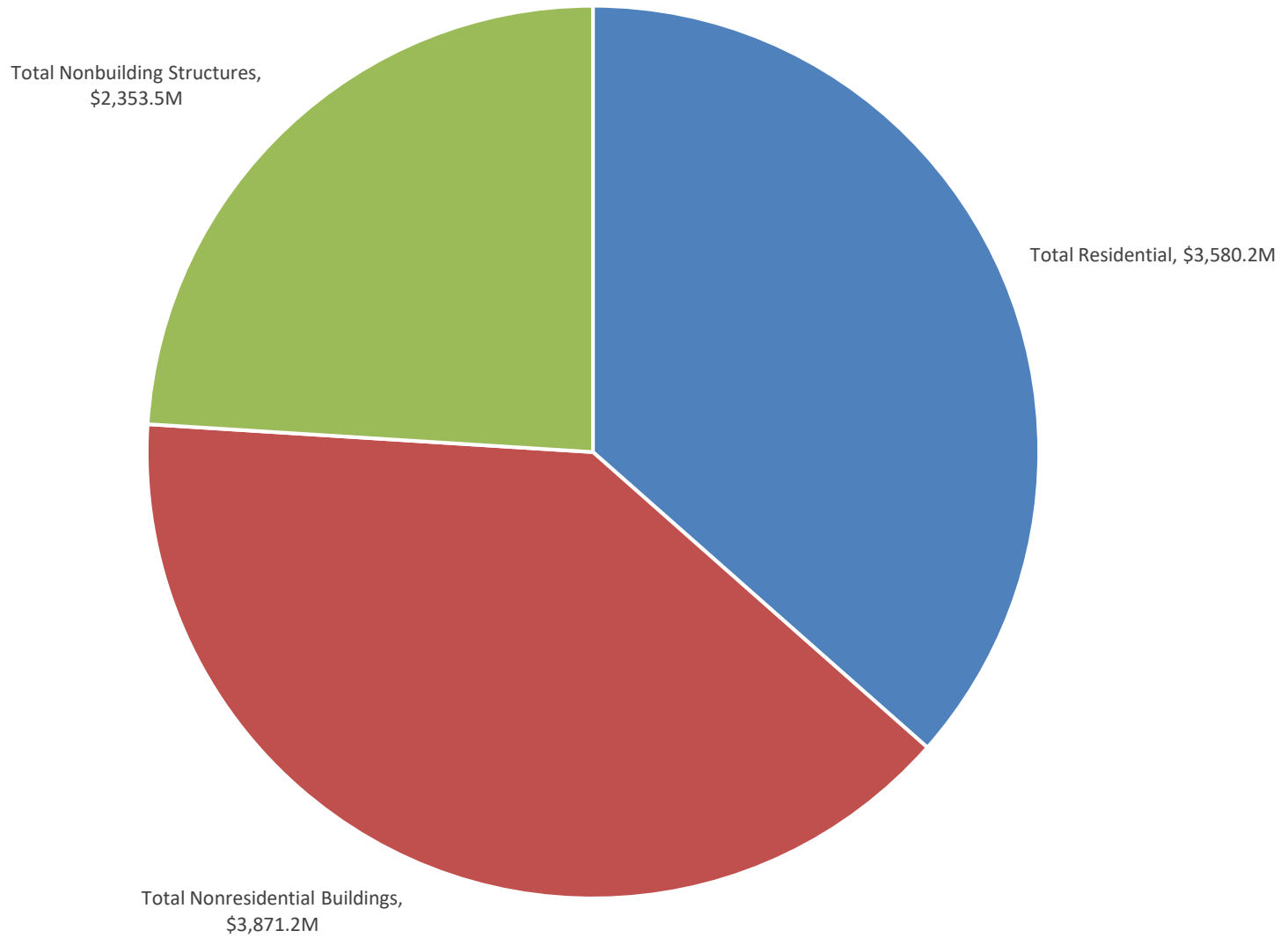
2020 Dallas-Fort Worth-Arlington Spend



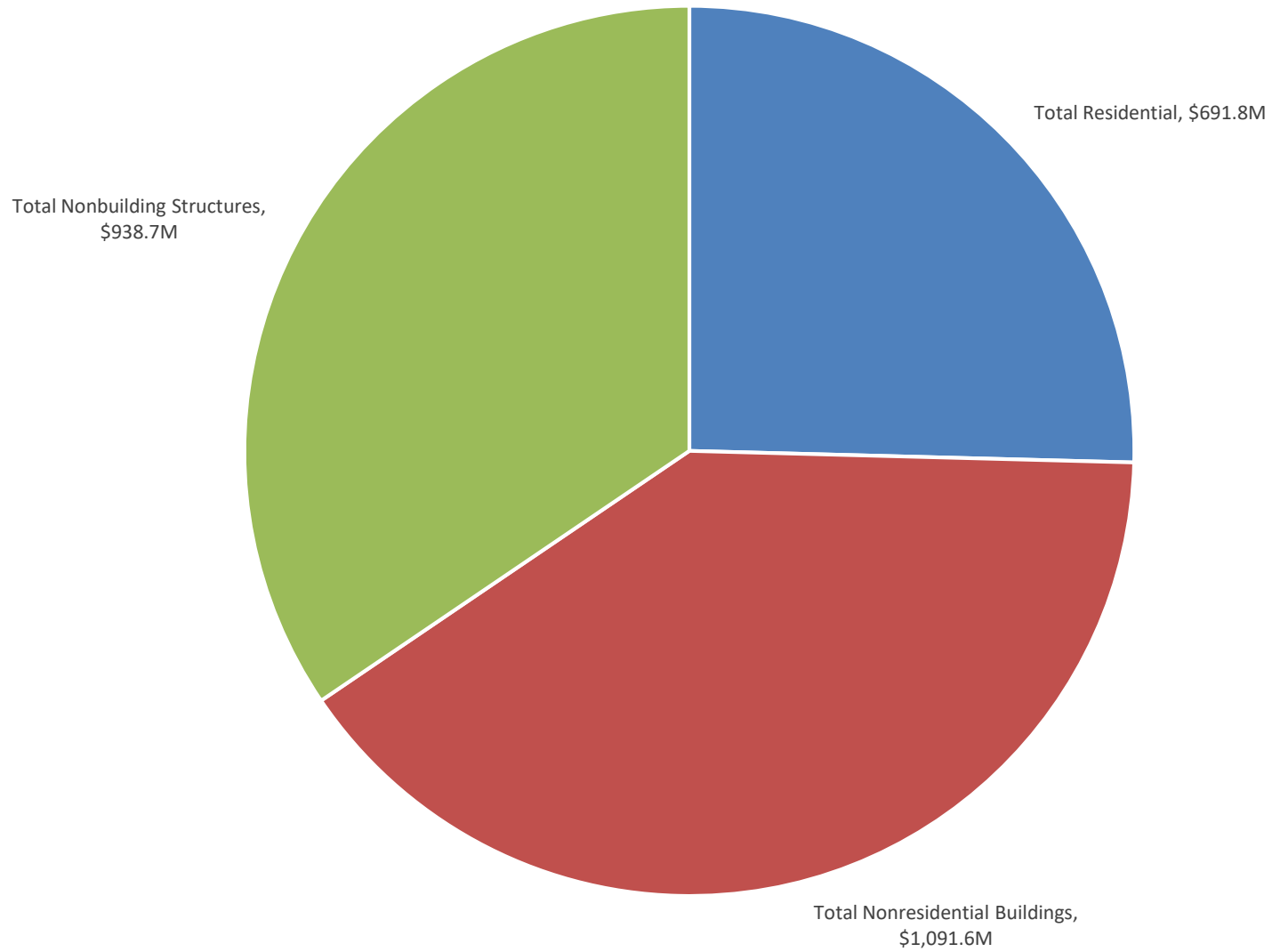
2020 Austin-Round Rock Spend



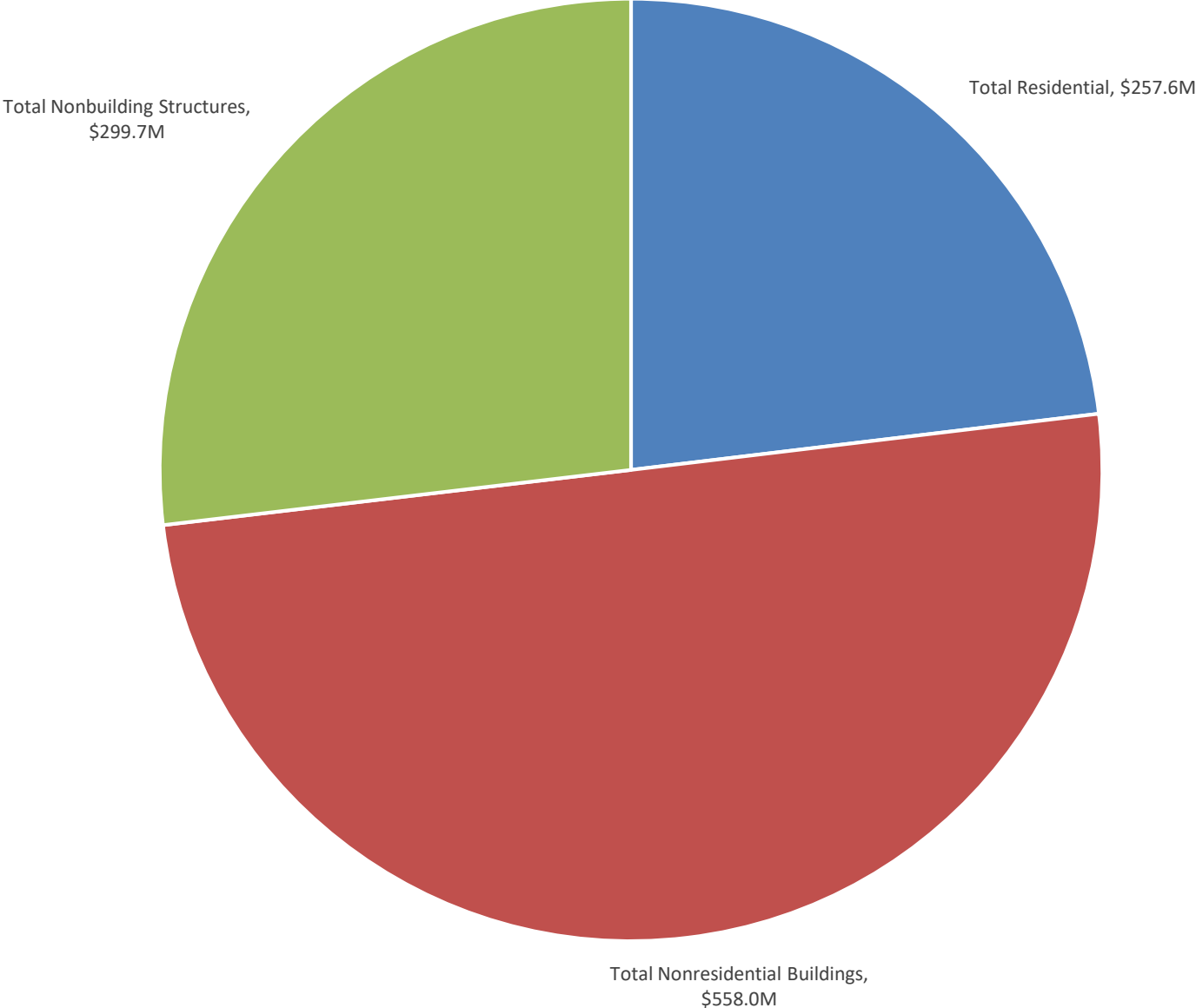
2020 San Antonio-New Braunfels Spend



2020 McAllen-Edinburg-Mission Spend



2020 Brownsville-Harlingen Spend



Markets 2020

Strong:

- Medical \$3 Billion + \$2 Billion
- K-12 Bond Inventory Strong
- Hospitality 5500 Rooms
- Mixed Use development

Steady:

Religious
Higher ED
Single Family 28,000 – 30,000

Slowing:

Light Industrial 21 MSF under construction
Apartments 23,000 units under construction

Very Strong

Non-Building Structures, roads, highways,
flood control



The Current Global Energy Picture

Perryman 2045 Metropolitan Statistical Area

MSA	Number of Jobs	Annual Growth Rate
Austin – Round Rock	665,100	1.78%
Dallas – Plano – Irving	1.67 Million	1.78%
Ft. Worth – Arlington	587,200	1.58%
Houston – Woodlands - Sugarland	1.8 Million	1.64%
San Antonio – New Braunfels	637,800	1.66%

2015-2019 E&P SECURED AND UNSECURED DEBT BY FILING LOCATION

ALABAMA
\$212,726

ALASKA
\$217,158,133

ARIZONA
\$3,699,213

CALIFORNIA
\$71,772,722

CANADA
\$1,710,380,228

COLORADO
\$472,109,287

KENTUCKY
\$15,381,247

LOUISIANA
\$592,922,110

MASSACHUSETTS
\$3,578,276

MICHIGAN
\$1,558,932

MINNESOTA
\$1,233,733

MONTANA
\$83,726,167

NEVADA
\$1,042,675

NEW MEXICO
\$1,286,649

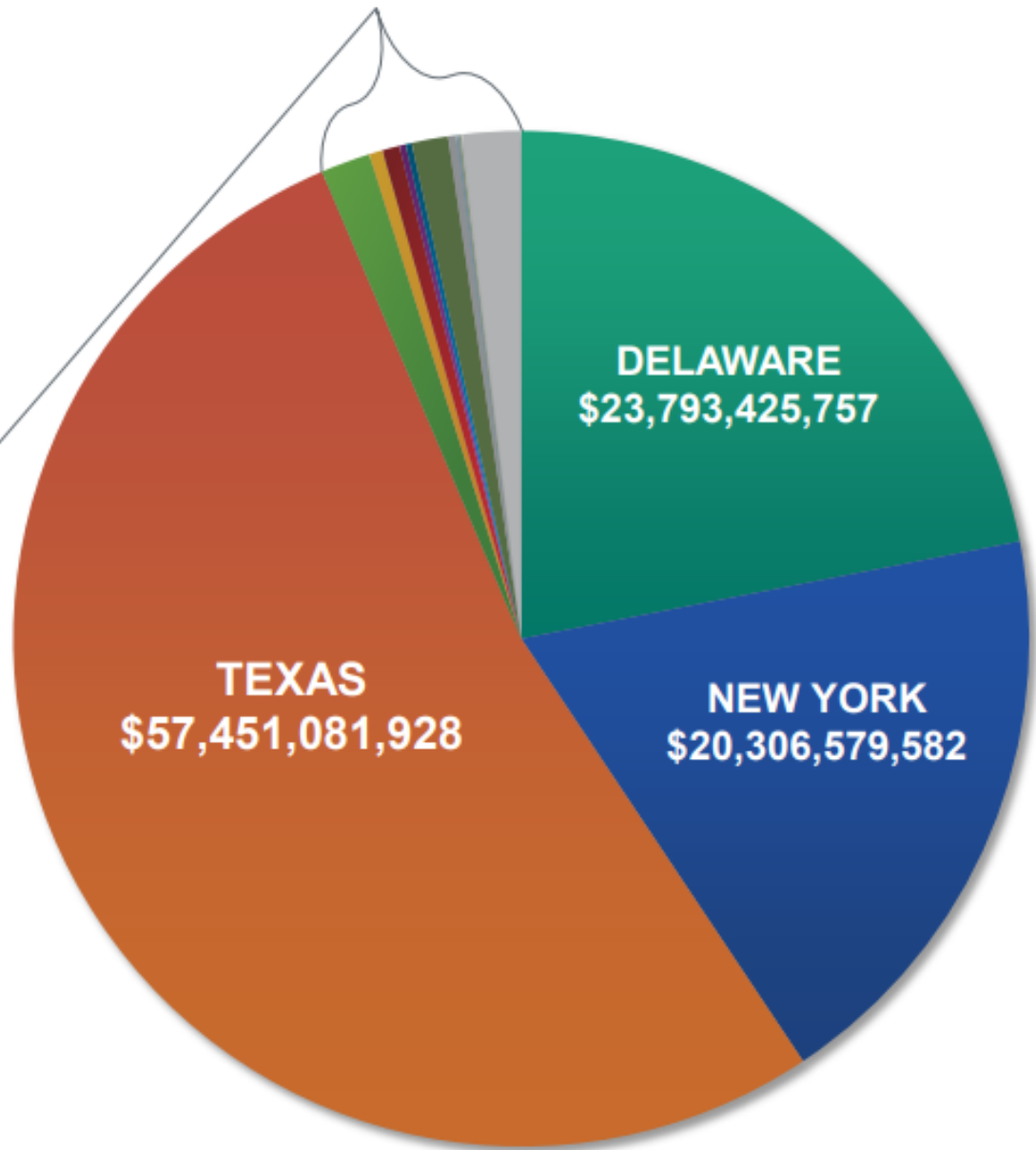
OKLAHOMA
\$553,310,479

PENNSYLVANIA
\$2,009,791,901

UTAH
\$274,640,449

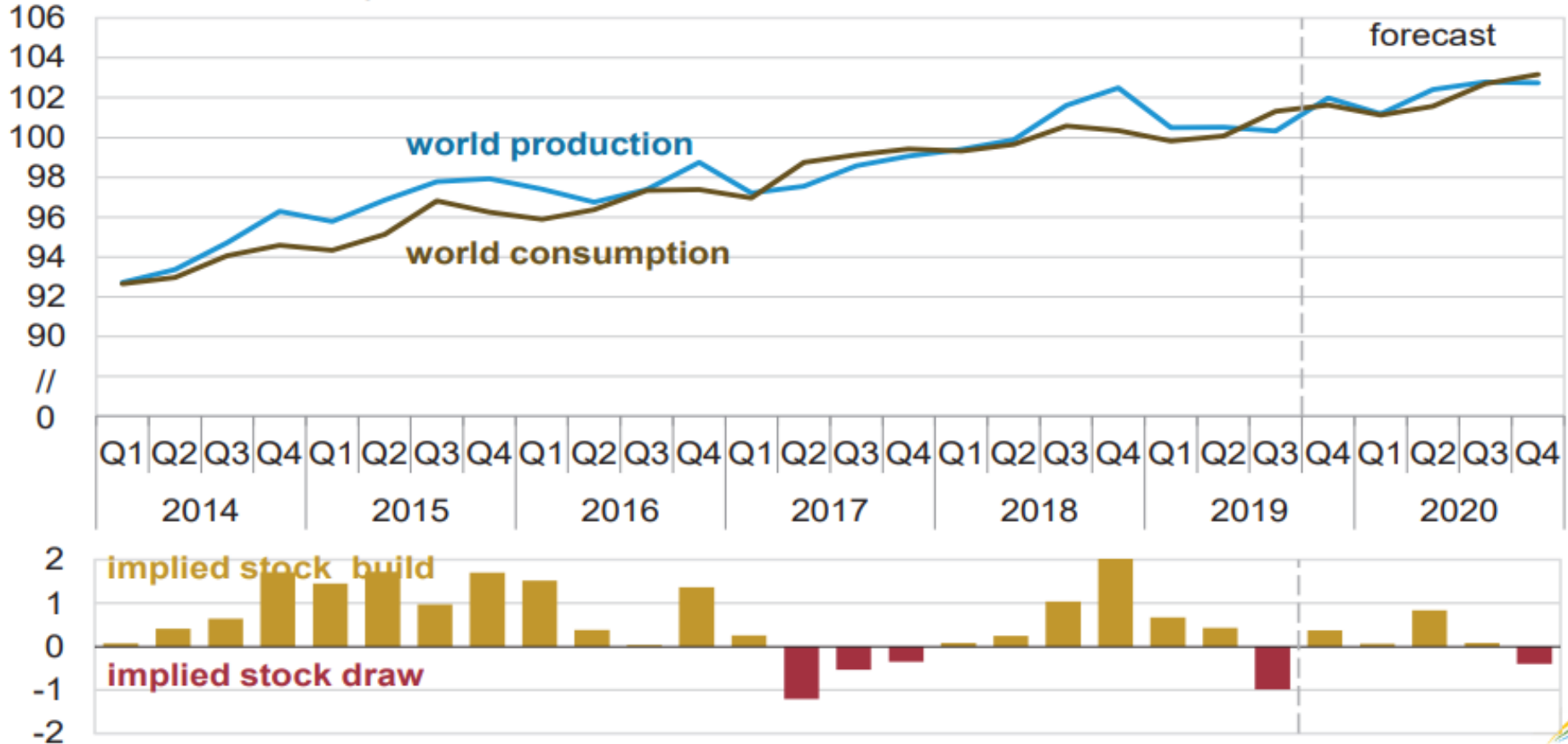
VIRGINIA
\$1,250,928,395

WEST VIRGINIA
\$40,865,611



World liquid fuels production and consumption balance

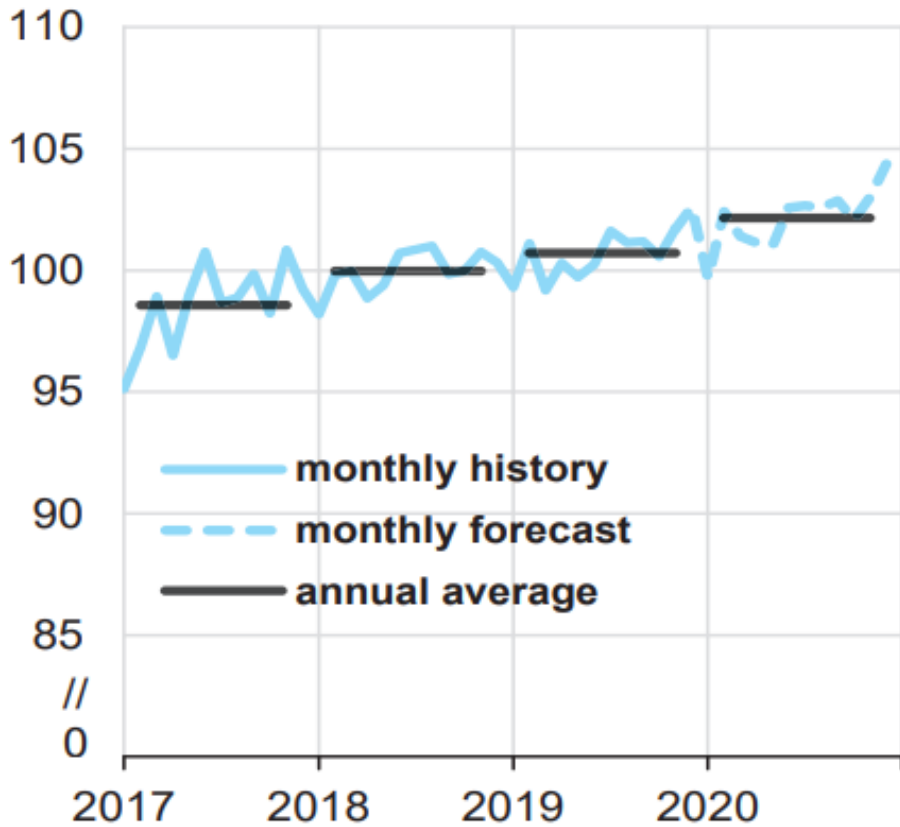
million barrels per day



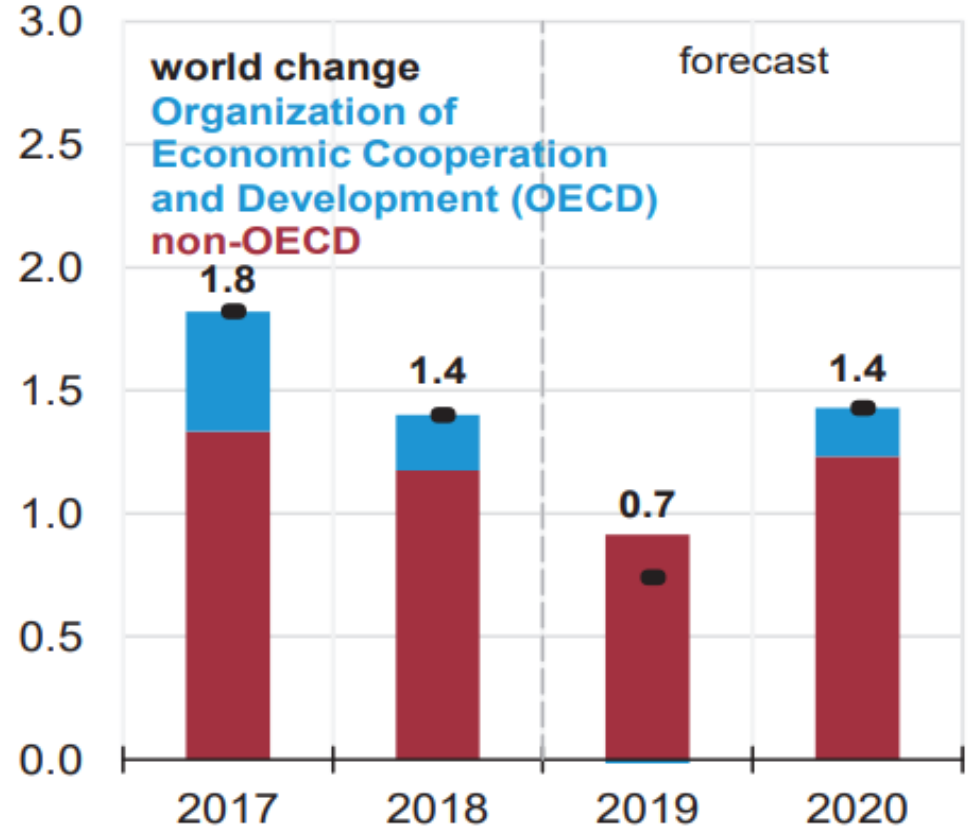
Source: Short-Term Energy Outlook, December 2019



World liquid fuels consumption million barrels per day



Components of annual change million barrels per day



Source: Short-Term Energy Outlook, December 2019



Other Key Projections

Global GDP

3%

OECD

US GDP

1.7 – 2.2%

Various Economists

Houston

2.2%

Oil Prices (WWII)

54.60/BBL

EIA

Daily VS. Production

13.3 Million BPD

Jobs

Energy

-4,000

Retail

-2,000

Construction

+5,400

Health Care

+7,500

The Texas Picture

Current Unemployment Rate (Nov 19)

Austin	2.5%
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Dallas	3.0%
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Houston	3.6%
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San Antonio	2.9%
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Texas	3.4%
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Longer Term Concerns

- A Decarbonized Future
 - Lacking A Real Clear Tech Base
- Aging Population/Slowing Birth Rate
 - Workers
 - Consumers
- Anti-Microbial Resistance
 - Access to Health Care
- Inequality and it's Consequences
 - More CEO's talking
 - Scenario planning for Houston

Major Strategic Trends & issues



Impacting All
Construction
Companies

Industry Thought Leaders

“There will be more change in the construction process in the next 5 years than there has been in the past 50 years”



Workforce

Shortage of skilled workers continues / exacerbates

Efforts to make construction work an attractive career





C-3

The Construction Career Collaborative

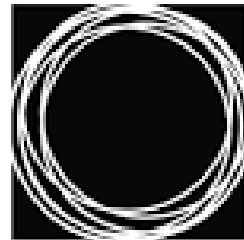
Safety Training

Pay Legally

Craft Training

Immigration Reform

- National Effort
- Baker Institute
- The Rational Middle Video Series:
 - 10, 20 minute fact-filled videos to prompt discussion



RATIONAL MIDDLE.
I M M I G R A T I O N

The March of the Millennials

50 % of work force by 2020

75% by 2025

Critical for Leadership
Succession

Gen. Z (The Generation
Close Behind)

Digital Natives

Powerful Pairings





Technology's March

- Paperless
- Mobile including full sets of plans
- Drones/Sensors/Cameras /GPS
- Everything gathers data
- 3D Printing
- Driverless Machinery
- Robotics/A.I. /A.R. / Machine Learning



Offsite Build / Onsite Install

Real Savings

- Time / Cost

Productivity

Taking Many Forms

- Traditional Specialty Contractors Building Additional Facilities

Tech. Based & Funded Start Ups

- Katerra– 3.7 Billion Back log;
Prescient – Full-Stack Modular

Modular Applications

- Apartments/ Hotels/ Hospitals

“Constructing” A new term

- Leadership Challenges
 - Succession
 - Building a diverse, data driven C-suite team
 - Creating a talent magnetizing, value-based culture with a clear “true north”
 - Building a highly adaptable learning organization
 - Seeking outside guidance
 - Coaches, peer groups, boards



