

HOUSTON, TEXAS | MSA

ECONOMIC AND DEMOGRAPHIC OVERVIEW

NOVEMBER 2019



DEMOGRAPHICS

35.3

MEDIAN AGE
OF METRO HOUSTON
RESIDENTS

63% OF WORKERS ARE IN
WHITE-COLLAR
POSITIONS METROWIDE

56.5k

NET MIGRATION
IN 2019
(PROJECTED)



7.5m

Greater Houston's **population** is forecast to grow **8.1%** over the next five years, exceeding 7.5 million residents



1.4m

32% of metro residents age 25 years and older hold a **bachelor's degree or higher**



788.9k

Approximately **33%** of Greater Houston households **earn \$100,000 or more annually**, compared to 25% nationally



899.5k

Approximately **34%** of housing units in Metro Houston are **renter-occupied**



\$70.2k

Metro Houston's **median household income** is projected to reach \$70,245 by 2024, up **5.4%** from 2019

HOUSTON, TEXAS | MSA

METRO EMPLOYMENT TRENDS

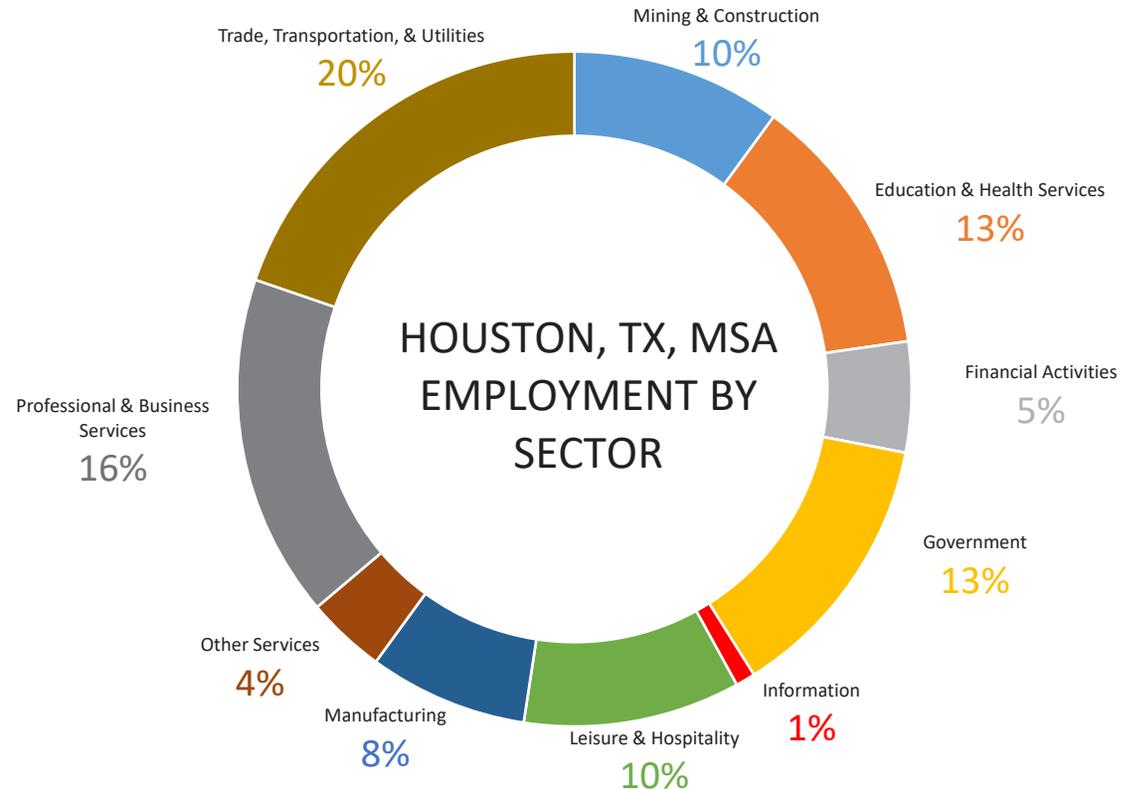
AVERAGE ANNUAL WAGE BY OCCUPATION

	Management	\$133.4 _k
	Business & Finance	\$84.7 _k
	Health Care Practitioners	\$82.5 _k
	Education	\$56.7 _k
	Construction & Mining	\$47.9 _k
	Sales	\$44.3 _k
	Manufacturing	\$43.8 _k
	Transportation & Material Moving	\$40.9 _k
	Office & Administrative Support	\$39.4 _k
	Food Preparation & Service	\$24.9 _k

Source: BLS Occupational Employment Statistics Survey

Houston is the U.S. energy headquarters and a world center for virtually every segment of the oil and gas industry. The Houston region offers a dynamic infrastructure that supports the health care, life sciences, manufacturing, and aerospace industries.

Metro Houston employers **added approximately 82,800 jobs** during the 12-month period ending in September 2019, **26,300 of which were in the Professional and Business Services sector.**

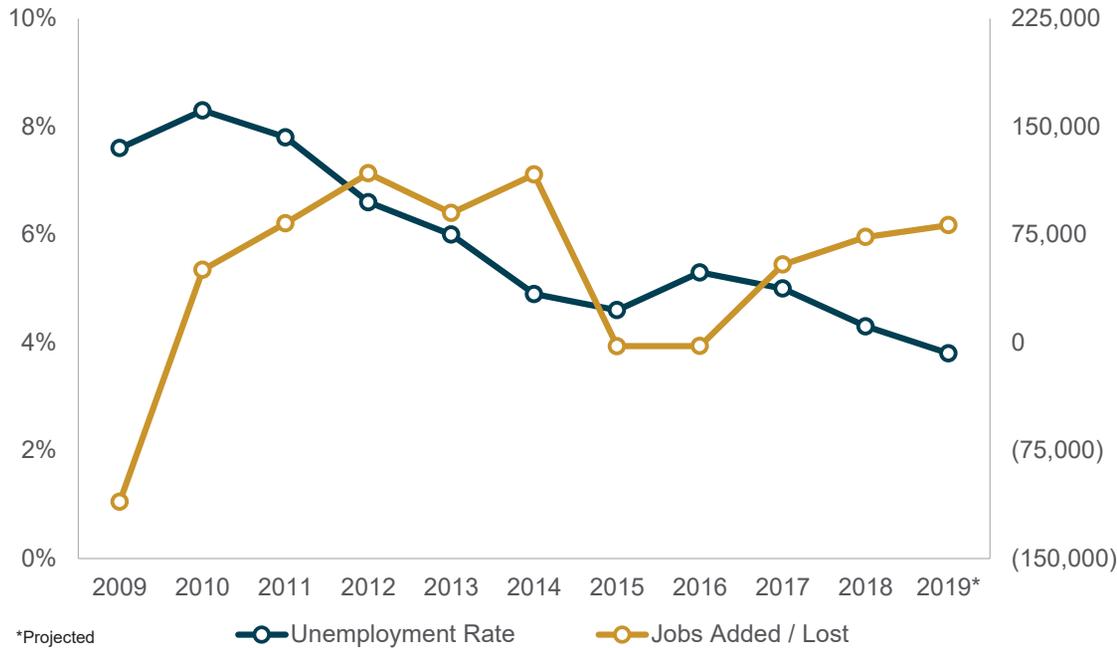


Source: BLS Current Employment Statistics Survey

METRO EMPLOYMENT TRENDS

AUGUST 2019 3.9%

the metro's monthly unemployment rate was down 50 bps annually



HOUSTON, TX, MSA

LARGEST EMPLOYERS

Walmart	38,900
University of Texas System	34,000
Memorial Hermann	26,500
Houston Methodist	23,800
H-E-B	23,700
McDonald's Corporation	20,900
Kroger Company	16,000
United Airlines	14,900
Schlumberger	13,800
Shell Oil Company	11,500

Source: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller counties CAFR

SEPTEMBER 2019 82,800 jobs

were created metrowide, a 2.7% Y-o-Y increase



HEALTH CARE

TEXAS MEDICAL CENTER



106,000+
Jobs Supported at TMC



\$25 billion
TMC Annual GDP
Generated



Largest
Medical Complex
in the World



\$3 billion
Worth of Construction
Projects Underway

Texas Medical Center (TMC), the largest medical complex in the world, encompasses more than 55 institutions ranging from renowned hospitals, support organizations, academic and research institutions, and public health organizations. Comprising 1,345 acres, TMC is the eighth-largest business district in the United States and is home to the world's largest cancer hospital and children's hospital. TMC's campus currently contains 50 million square feet of developed space with an additional **\$3 billion worth of construction projects underway**.

TRANSPORTATION / LOGISTICS

PORT OF HOUSTON



Two
International
Airports



Largest
Export Market in the
United States



4,600
Warehousing
Establishments



131,000+
Logistics Industry
Workforce

Equidistant from both U.S. coasts, the **Port of Houston** and the **Houston Airport System (HAS)** play vital roles in the nation's distribution and trade networks. The Port of Houston is the No. 1 foreign trading port in the nation by total tonnage, while HAS is among the busiest airports in the nation in terms of total annual passengers (58.2 million in 2018) and foreign air cargo handled (205,652 metric tons in 2018). A leading logistics provider, Houston supports the **fifth-largest distribution inventory in the nation** and over 4,600 warehousing establishments.

ENERGY

HOUSTON ENERGY CORRIDOR



4,600+
Energy Related
Companies



\$3.7 billion
Clean Energy Venture
Capital Investments

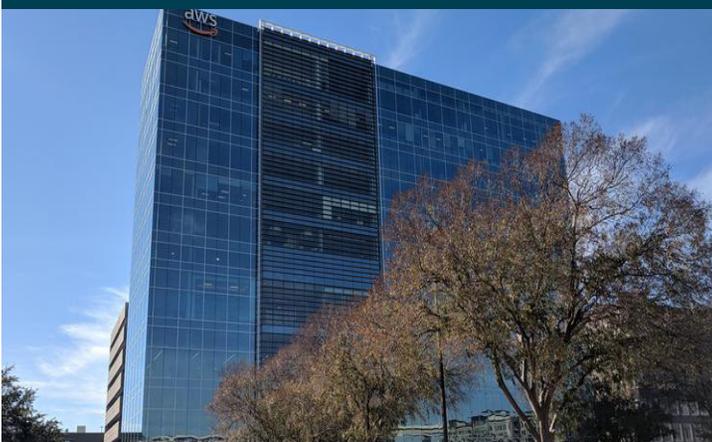


237,000+
Combined Total
Workforce

Dubbed the **"Energy Capital of the World,"** Houston has more energy industry employees than any other U.S. metro, employing nearly a third of the nation's gas and oil workforce. Houston is home to **4,600 energy-related firms** and is in the midst of a petrochemical construction boom with \$50 billion in projects either underway or recently completed. The high concentration of energy expertise offers the region a competitive advantage for the future of **renewable energy**, in which over **\$3.7 billion in venture capital** has been invested into area companies since 2010.

DIGITAL TECHNOLOGY

AMAZON WEB SERVICES



8,200+
Companies in
Tech Industries



\$26.6 billion
Economic Impact



500+
Digital Tech
Companies



167,000
Jobs Supported

What began during the Space Race in support of NASA's Gemini and Apollo missions, Houston has grown into one of the top digital technology hubs in the nation with a **workforce of over 167,000** working among over **8,200 companies in tech-related industries**. While much of Houston's tech talent is embedded within the energy, health care, and aerospace industries, subsectors such as database management and software development are on the rise. By 2022, Houston aims to add over 10,000 new tech jobs and raise over \$2 billion in venture capital annually.

HOUSTON, TEXAS | MSA

AEROSPACE

JOHNSON SPACE CENTER



150+
Local Aerospace
Companies



\$7.9 billion
Annual Economic
Impact Statewide



52,350
Direct & Indirect Jobs
Supported in Texas

NASA's primary training base for its 38 active astronauts and 11 alternates and lead control center for International Space Station (ISS) operations, **Johnson Space Center's (JSC)** economic impact reaches far outside the Houston metro area. The over **150 local aerospace companies** supported by JSC are just the tip of the iceberg in terms of the over **52,350 direct and indirect jobs** in Texas supported by JSC including 11,000 direct NASA employees. JSC contributes over \$4.7 billion to the Texas GDP and generates a \$7.9 billion economic impact annually.

CORPORATE HEADQUARTERS

CONOCOPHILLIPS CENTER



50 million
SF of Class A
Office Space



23
Forbes Global 2000
Companies

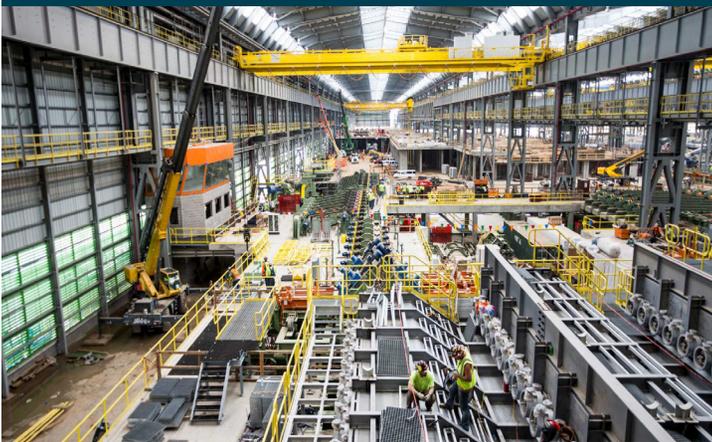


65
Fortune 500 & 1000
Companies

One of the best business climates in the nation has helped the Houston area become a top destination for corporate offices. Boasting over **50 million square feet of Class A office space**, Houston ranks among the top five metros nationally for ranked corporate headquarters with **23 Global 2000** and **44 Fortune 1000** companies in addition to **21 Fortune 500 companies**. Of the 128 publicly traded oil and gas companies, 44 have offices located in the Houston area.

ADVANCED MANUFACTURING

TANARIS MANUFACTURING



6,400+
Manufacturing Firms



\$82 billion
Goods Produced
Annually



No. 2
Manufacturing GDP
Created Nationally

With one of the largest industrial workforces in the country, roughly one in three manufacturing firms located in the State of Texas call greater Houston home. More than **6,400 manufacturing establishments** are located in the region producing everything from petroleum based plastics to medical devices. Houston ranks second in the nation in terms of manufacturing GDP created, with companies **producing over \$82 billion in goods annually**. The sector is one of the fastest-growing in the region, adding over 10,000 new jobs through the third quarter of 2019.

BIOTECHNOLOGY AND LIFE SCIENCES

BAYLOR COLLEGE OF MEDICINE



5,700
Top Medical Researchers



47%
of Degrees Awarded in
Science / Engineering



190+
Life Sciences and
Biosciences Companies

The Houston-area life and biosciences industry thrives from a highly educated workforce and outstanding health care systems. Considered the birthplace of nanotechnology, Houston boasts over **190 life sciences and biosciences firms** and more than **130 state-of-the-art hospitals and health clinics**. This area is home to **5,700 of the world's top medical researchers**, with roughly 47% of the region's higher education degrees stemming from science- and engineering-related fields, and 49,000 annual graduates with degrees in medicine and health care.

CONSTRUCTION AND DEVELOPMENT

SPRINGWOODS VILLAGE



\$6.9 billion
Gross Domestic Product



50,000
Jobs Supported

Springwoods Village is a 2,000-acre, master-planned, live-work-play community seemingly growing larger and larger by the day. Several thousand employees are already at work at the sprawling **ExxonMobil, Southwestern Energy, and CHI St. Luke's Health campuses**, with more to come at pending campus developments for HP Inc. and American Bureau of Shipping (ABS). Within the larger Springwoods Village project is CityPlace, a 60-acre, mixed-use development, which began construction in early 2015 and will eventually house four million square feet of office space and 400,000 square feet of retail space. As construction continues over the next 15 to 20 years, **Springwoods Village is expected to serve a workforce of 35,000 to 50,000 employees**, creating roughly 80,000 construction jobs and \$6.9 billion in gross domestic product.

GENERATION PARK



\$1 billion+
Invested Since 2014



4,000-acre
Master-Planned
Development

Generation Park, the 4,000-acre, master-planned development in Lake Houston has seen more than \$1 billion of investment since 2014. **TechnipFMC** was the first to anchor the development with **2,000 employees at their 1 million-square-foot campus**, which will eventually grow to 8,000 employees and 3 million square feet. **Redemption Square**, a 52-acre, mixed-use district in the development, opened its first office building in 2017, housing the headquarters of Generation Park developer **McCord Development** and **Apache Industrial Services**. **Stolt-Nielsen**, a leader in chemical transportation services, plans to construct two office towers totaling 200,000 square feet to house 600 staff for their North American headquarters.

CONSTRUCTION AND DEVELOPMENT

EXXONMOBIL BAYTOWN COMPLEX



7,000

On-Site Jobs Supported



\$870 million

Regional Economic Impact

ExxonMobil's **3,400-acre Baytown Refinery** is one of the largest and most technologically advanced refining and petrochemical complexes in the world, currently employing 7,000 workers on site. Since 2013, the refinery has been undergoing billions of dollars' worth of construction to increase its refining capacity. Construction will continue through 2022 in various phases at multiple sites, **creating 45,000 jobs** along the Gulf Coast. The plant is expected to **increase its regional economic activity by roughly \$870 million** and generate more than \$90 million per year in additional tax revenues for local communities.

BAYPORT TERMINAL



32,000

Employees



\$1.6 billion

Wages / Tax Revenues

Operating for more than a decade, the **\$1.4 billion Bayport Terminal** averages eight vessel calls and 25,000 gate moves a week and has generated **32,000 jobs** and **\$1.6 billion in wages and tax revenues**. Ongoing construction at the deepwater port and container facility at the Port of Houston consists of increasing container yard security and the construction of approximately 6,500 feet of rail, which will cross SH-146 and connect the existing rail from the Strang Rail line. There is still much work to be done at the terminal, with full build-out anticipated by 2030.

CONSTRUCTION AND DEVELOPMENT

GEORGE BUSH INTERCONTINENTAL AIRPORT



\$1.2 billion
Investment



Six
New Airport Gates

In October, construction crews began work on a **\$1.2 billion** project at George Bush Intercontinental Airport (IAH). **Renovation of the Mickey Leland International Terminal**, includes the removal of the old Terminal C North building allowing for the addition of **six new wide-body aircraft gates**, bringing the total number of gates designed specifically for wide-body aircraft to 13. With the ability to add five more in the future, expansion at IAH will not only improve the passenger experience but enable IAH to add flights to destinations in Europe and Asia. Construction on the project is forecast to take three years with additional projects at the airport, such as the renovations of Terminals D and E, expected to run through 2024.

LYONDELLBASELL



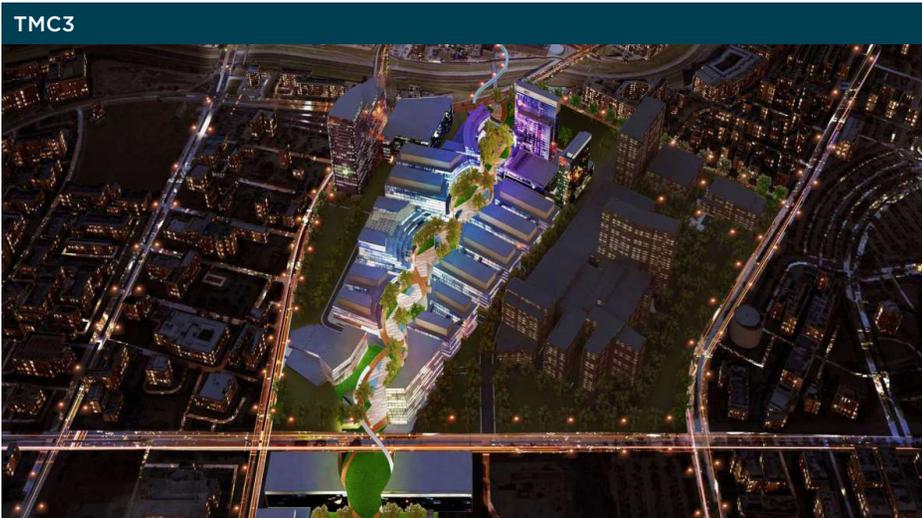
\$2.4 billion
Investment



2,500
Construction Jobs

LyondellBasell is developing the **world's largest propylene oxide and tertiary butyl alcohol plant** in Channelview. The **\$2.4 billion investment** represents the company's single largest capital investment in its history. The company will also build an ethers unit at their Bayport Choate site near Pasadena. LyondellBasell plans to spend up to \$4 billion in capital along the U.S. Gulf Coast, mostly in Texas, over the next five years. This project is expected to **sustain up to 2,500 construction jobs and 160 permanent positions** upon completion in mid-2021.

CONSTRUCTION AND DEVELOPMENT



1.5 million
SF Campus



37
Acre Development



26,000
Jobs Created



\$5.2 billion
Economic Impact

A new research campus collaboration between Texas Medical Center (TMC), Baylor College of Medicine, Texas A&M University Health Science Center, The University of Texas Health Science Center at Houston (UTHealth), and The University of Texas MD Anderson Cancer Center, dubbed **TMC3**, is expected to **break ground in the first quarter of 2020**. The 37-acre campus will extend from Braeswood Boulevard on the north to just south of Old Spanish Trail, between Bertner Avenue and Cambridge Street. Overall, TMC3 will boast **1.5 million square feet space**, including a 250,000-square-foot, \$246 million structure called **TMC3 Collaborative**, which will feature 138,000 square feet of retail space and 112,000 square feet of shared research facilities.

Texas Medical Center will construct a 300,000- to 400,000-square-foot building at the campus, dedicated to private health care companies who are looking to relocate closer to the research institutions. The campus will also be home to a 410-room TMC Hotel and Conference Center with 50,000 square feet of meeting space. The project will contribute an estimated **\$5.2 billion to Houston's economy** and is projected to create **26,000 jobs**, according to a recent third-party economic impact study. The updated campus design features a walkable and drivable green space promenade, known as the DNA necklace, which will provide easy access throughout the campus. The project is slated for completion in 2022.

DELIVERIES / ABSORPTION



NEW DELIVERIES 11,595 units
through September 2019

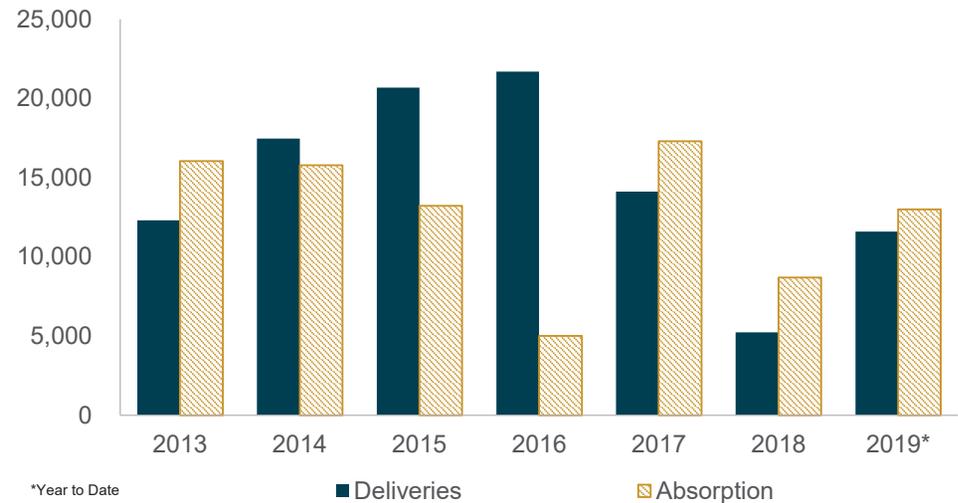


NET ABSORPTION 12,989 units
through 3Q19

Development is back in Houston after a pause in new construction following the oil downturn and Hurricane Harvey. As of the end of the third quarter of 2019, there were roughly 22,000 units under construction in metro Houston, with delivery dates running through 2022. The **11,595 units added through the first nine months of 2019 were nearly one and a half times** the number of units added over the same time period one year prior. Location determines the style of construction in Houston. In the dense urban core between Downtown and Uptown, development is centered around high-rise properties. Mid-rise development is primarily located within the 610 Loop, while low-rise and garden-style properties are being developed beyond Beltway 8 and in the southern and west submarkets.

Despite ranking second to only Dallas-Fort Worth in terms of the number of new home starts in 2018, demand for multifamily units in the market remains elevated. **Net absorption** in the Houston metro area totaled **12,989 units through the first nine months of 2019**, 36% higher than the number recorded one year prior. Demand is being fueled by the rapid job growth in Houston through the first three quarters of 2019 and the fact that the single-family home market is still playing catch-up to demand after many homes were lost to Hurricane Harvey. Net absorption has exceeded net deliveries every year in both 2017 and 2018, a trend that is forecast to continue for 2019.

HOUSTON METRO APARTMENT MARKET



RENT / OCCUPANCY



AVERAGE RENT \$1,050

in 3Q19, up 1.8% annually



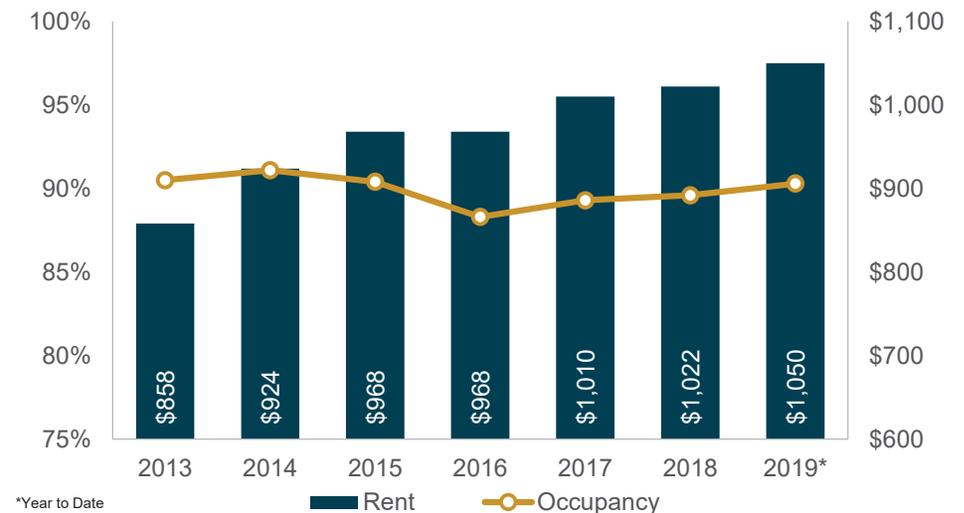
OCCUPANCY RATE 90.3%

through September 2019, up 50 bps annually

Houston's economic growth and brief slowdown in the construction pipeline are enabling the average occupancy rate in the metro to rebound past the five-year average after a four-year trend of steadily declining between 2013 and 2016. The metro added over 94,410 new residents in 2018, placing it among the top three metros in the nation. With a tight single-family home market, those moving to Houston are often looking to the multifamily market for housing as they wait for new housing to materialize. The **average occupancy rate jumped 50 basis points annually to 90.3% through the first nine months of 2019** and is expected to finish the year at the same number, as net absorption and new supply are expected to be relatively equal by the end of the year.

Average rent growth has remained sluggish, as many of those who entered the rental market after Hurricane Harvey returned to their homes. This trend essentially began in mid-2018 and has continued through September of 2019, during which **average rent has appreciated roughly 1.8% to \$1,050 per month**. As this wave of renters who signed short-term leases at higher rates move out, landlords are reverting back to signing longer-term leases at lower rates to keep occupancy rates elevated. Houston offers a significant discount when compared to other major U.S. metro areas making it an appealing destination for transplants. This appeal should help demand keep up with elevated, new supply that is forecast through 2022 and keep landlords from having to offer substantial concessions for new product, which result in stagnant rent growth.

HOUSTON METRO APARTMENT MARKET



EDUCATION



HIGHER EDUCATION 318.2k
students metrowide



DEGREE PROGRAMS 280+
at the University of Houston

As the largest institution of higher education in the Houston area, **Lone Star College System** enrolls **89,150 students** across the Houston metro area and boasts an **economic impact of \$3.1 billion** on the Houston economy.

The **University of Houston (UH)** is a public research university that houses 40 research centers and has over 300 partnerships with various corporate, civic, and government organizations. In fall 2018, UH had **46,360 students** enrolled, and awarded over 8,600 undergraduate and graduate degrees. The third-largest university in Texas, UH generates an annual **economic impact of more than \$3 billion**, supporting approximately 24,000 jobs statewide.

In 2018, U.S. News & World Report ranked **Rice University** No. 14 among U.S. institutions of higher education based on undergraduate academic retention, student admissions, quality of faculty, and graduation rates.

HOUSTON, TX, MSA

LARGEST HIGHER EDUCATION

Lone Star College System	89,150
Houston Community College	68,390
University of Houston	46,360
San Jacinto Community College	32,140
University of Houston-Downtown	14,270
Texas Southern University	9,730
Prairie View A&M University	9,220
University of Houston-Clear Lake	9,040
Lee College	8,230
Rice University	7,120

Sources: University Websites; National Center for Education Statistics



LIFESTYLE AND ENTERTAINMENT



HOUSTON GALLERIA 2.4m

SF of retail space and over 375 shops



NRG PARK 350-acre

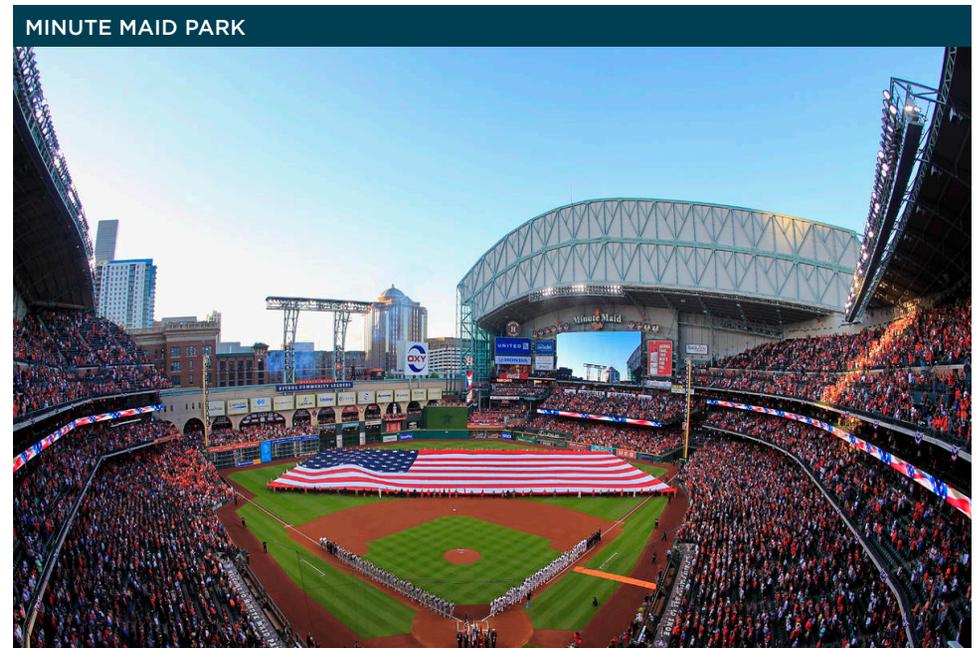
entertainment district

Residents of the Bayou City have no shortage of recreation and entertainment options. Houston's downtown is home to a number of clubs, musical entertainment venues, and three of Houston's four professional sports franchises: **Major League Baseball's Houston Astros**, who play at Minute Maid Park; **Major League Soccer's Houston Dynamo**, who play at BBVA Compass Stadium; and **National Basketball Association's Houston Rockets**, who play 41 regular-season home games per year at the Toyota Center.

South Houston is home to **NRG Park**, a 350-acre entertainment complex comprising the **Houston Texans'** 67,925-seat NRG Stadium; the Astrodome, which is currently undergoing a \$105 million renovation; NRG Arena; and the NRG Center. NRG Park serves as the primary entertainment center for a number of Houston's large events, including the **Houston Livestock and Rodeo Show** and two Super Bowls.

Situated between Downtown Houston and NRG park, adjacent to the Texas Medical Center, **Houston's Museum District** is one of the most walkable areas in Houston. The 19 museums, galleries, cultural centers, and community organizations in the district help showcase art, history, and culture from around the world.

One of the 10 largest malls in the country, **The Galleria** is a mixed-use shopping center featuring **2.4 million square feet of retail space and over 375 retail establishments**. The Galleria is ranked as one of the world's best shopping malls by Forbes and is the most visited attraction in metro Houston with over 35 million annual visitors.



HOUSTON, TEXAS | MSA

TRANSPORTATION



HAS SYSTEM 58.2m
passengers served in 2018

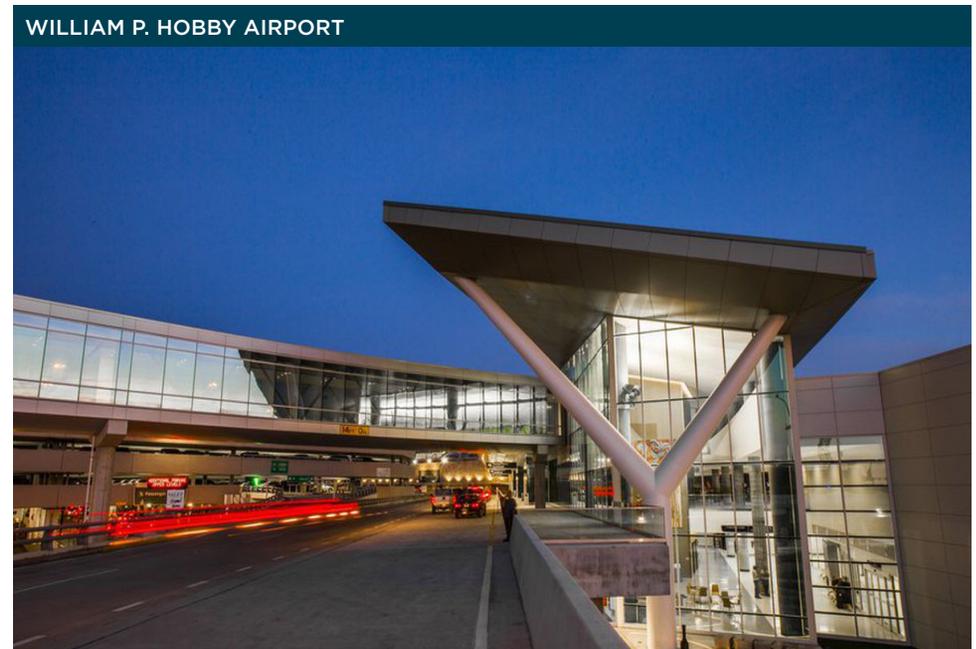


METRO PASSENGERS 85.8m
bus and light-rail ridership in 2018

Houston is situated at the intersection of Interstates 10 and 45 and is served by Loop 610 as well as several federal and state highways.

The **Houston Airport System (HAS)** supports **230,000 local jobs** and has an **annual economic impact of more than \$27 billion**. HAS served 58.2 million passengers in 2018 and ranks as the **nation's eighth-busiest international gateway**, encompassing George Bush Intercontinental Airport (IAH), William P. Hobby Airport (HOU), and Ellington Field (EFD).

The **Metropolitan Transit Authority of Harris County (METRO)** serves 1,300 square miles and **more than 85.8 million riders per year**. By 2020, METRO is projected to add 30 miles of light rail, 28 miles of commuter rail, 40 miles of new bus routes, and 10 new transit facilities.



Sources: Berkadia; Tetrad; U.S. Census Bureau; U.S. Bureau of Labor Statistics; Forbes; Moody's; Wikipedia; Houston Independent School District; Houston Business Journal; City of Houston; Greater Houston Convention & Visitors Bureau; Texas Workforce Commission; Real Estate Center at Texas A&M University; Port of Houston; Houston Chronicle; Texas Office of the Governor; Commercial Property News; Pasadena Citizen; Lone Star Times; Texas Medical Center; Houston Pavilions; M.D. Anderson Cancer Center; Energy Corridor; Houston Community Newspapers; IHS Global Insight; Texas Department of Transportation; Houston Downtown Management District; Greater Houston Partnership; Metropolitan Transportation Authority of Harris County; BioHouston; Rice University; Texas Higher Education Coordinating Board; Houston Airport System; Greater Houston Partnership Research Department.; Generation Park; Skanska; Central Houston; Springwoods Village; Bisnow; Trans-Global Solutions Inc.; KHOU; Simon Property Group; NRG Park; Lone Star College System; National Center for Education Statistics; San Jacinto College District; University of Houston College System; Texas Southern University; Harris County; Brazoria County; Chambers County; Fort Bend County; Galveston County; Montgomery County.

BY THE NUMBERS



TOTAL POPULATION

2010	5,920,416
2019*	6,990,224
2024*	7,559,695
Growth Rate (2019 - 2024)	8.1%



TOTAL HOUSEHOLDS

2010	2,062,529
2019*	2,439,394
2024*	2,639,733
Growth Rate (2019 - 2024)	8.2%



MEDIAN INCOME

2010	\$57,101
2019*	\$66,650
2024*	\$70,245
Growth Rate (2019 - 2024)	5.4%



RENT SHARE OF WALLET

National - 2019	25.3%
Houston Metro - 2019	18.8%
National - 2024*	27.1%
Houston Metro - 2024*	21.4%

*Projected
Annual Rent / Median Household Income



MEDIAN AGE

2010	33.9
2019*	35.3
2024*	35.9



MEDIAN HOME PRICE

August - 2018	\$236,000
August - 2019	\$249,000
Growth Rate Y-o-Y	5.5%



EMPLOYMENT GROWTH

September - 2018	3,089,200
September - 2019	3,172,000
Growth Rate Y-o-Y	2.7%



RENT VS. OWN

Average Mortgage Payment**	\$1,420
Effective Rent	\$1,050
Difference	\$370

*Projected

**30-yr fixed; 20% down; 4.0% interest rate; 1.86% TX property taxes; \$1,000 annual homeowner's insurance

BERKADIA[®]

A Berkshire Hathaway and Jefferies Financial Group company