



**Harris County  
Appraisal District**



**2021**

**Market Trends Report**

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# Residential Property

## 2020 Residential Real Estate Market Overview

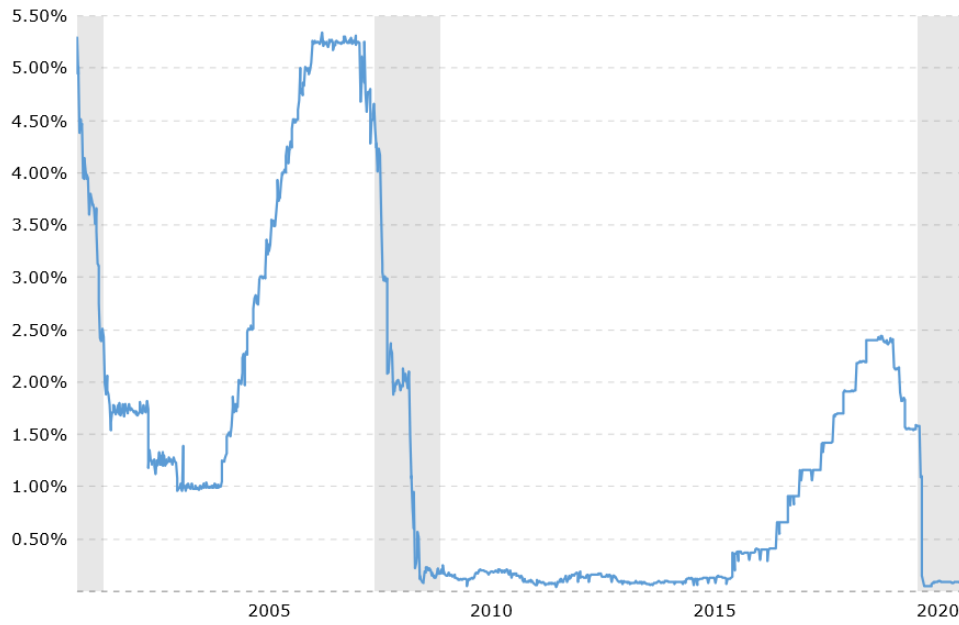
Despite the numerous issues and challenges the greater Houston Metro area has faced including those brought about by unprecedented Covid-19 pandemic, Houston's residential single family market is doing well. The stability in Houston's housing market can be best evidenced by several key metrics that are indicative of a healthy market: oil prices, interest rates, home inventory levels, and sales price and sales volume levels.

**OIL PRICES** - The spot price for West Texas Intermediate oil (WTI) after falling to negative prices in mid-April when demand all but disappeared, recovered to \$40 in late June, broke \$50 the second week of January, and as of today is \$64.

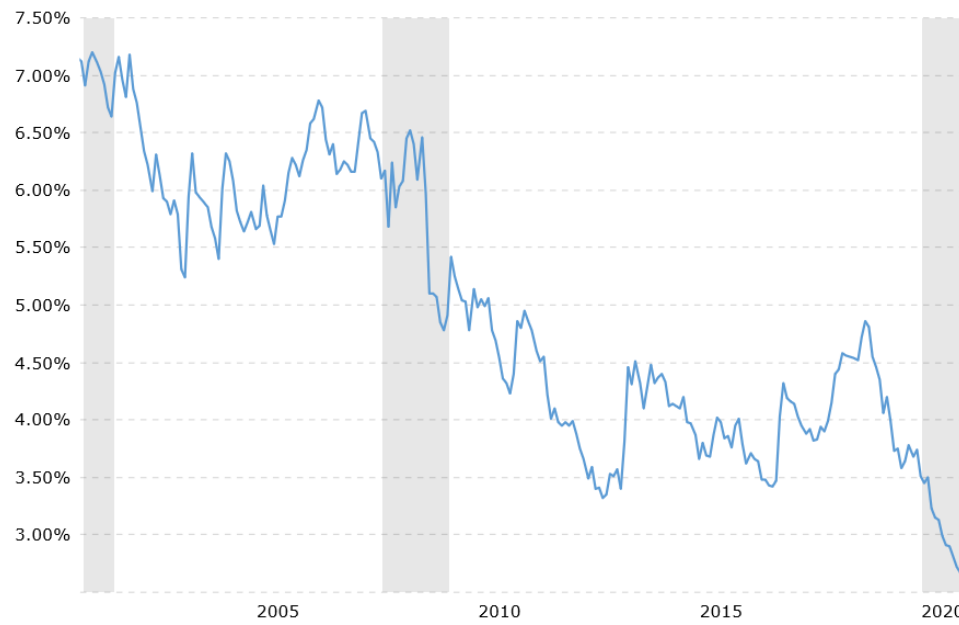


**INTEREST RATES** – The Federal Funds rate, which is established by the FOMC which meets 8 times a year, is the rate banks charge each other to borrow and lend their excess reserves over night. This rate indirectly affects the prime lending rate and many other lending rates including mortgage rates. Since the great recession which started '06-'07 this rate has been less than 0.5% for 11 of 15 years as depicted in the first chart below. Mortgage rates, depicted in the chart at the bottom have fallen consistently for more than 30 years and currently sit at historic lows. While Mortgage rates remain at these levels the demand for homes will continue to be high which will keep the inventory level low while putting upward pressure on prices.

Federal Funds Rate (2000-2020)



Avg. 30 year Mortgage Rate (2000-2020)



<https://www.macrotrends.net/2015/fed-funds-rate-historical-chart>

<https://www.macrotrends.net/2604/30-year-fixed-mortgage-rate-chart>

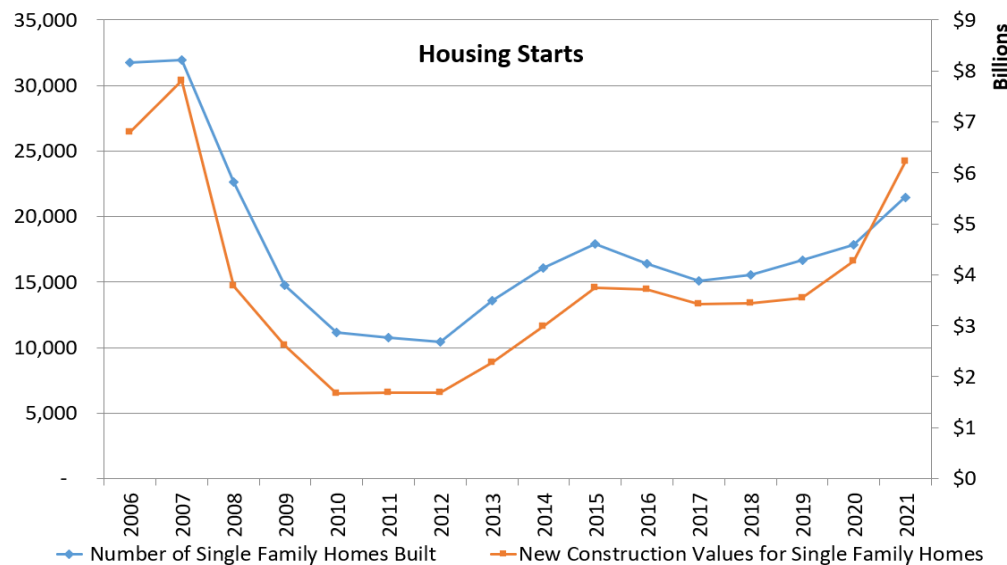
**HOME INVENTORY** - According to the Houston Association of Realtors (HAR), the inventory of available homes which was at 37,574 listing (3.2 months) in December 2019 fell to 26,821 (1.9 months) as of December 2020. The 1.9 months inventory is an all time low for the greater housotn vicinity. Typically, 6 months of inventory is considered equilibrium. Accordingly, inventory levels below 6 months indicate a seller’s market which is generally accompanied by an increase in sales prices and in turn appraisal values. Until the supply of homes moves closer to equilibrium we are likely to continue experiencing a seller’s market and the corresponding increases in sales prices. The number of days it took a home to sell (a.k.a. Days on Market) fell sharply from 63 to 46 days.

Houston’s housing market has been a sellers’ market since 2012-2013 which is depicted in the Houston association of Realtor’s chart below:

Home Inventory (Texas vs. U.S.)



**NEW STARTS** - The number of new starts for 2021 will likely surpass 21,500 homes which will be the most in thirteen years. The new construction value associated with the new starts will approach \$6 billion which will be the most since 2007.



## Sales Volume Update

**SALES VOLUME** - According to HAR, sales volume for single family residential properties for the full year 2020 totaled 96,151 units which is a 10.5 percent increase versus the 86,996 units sold in 2019.

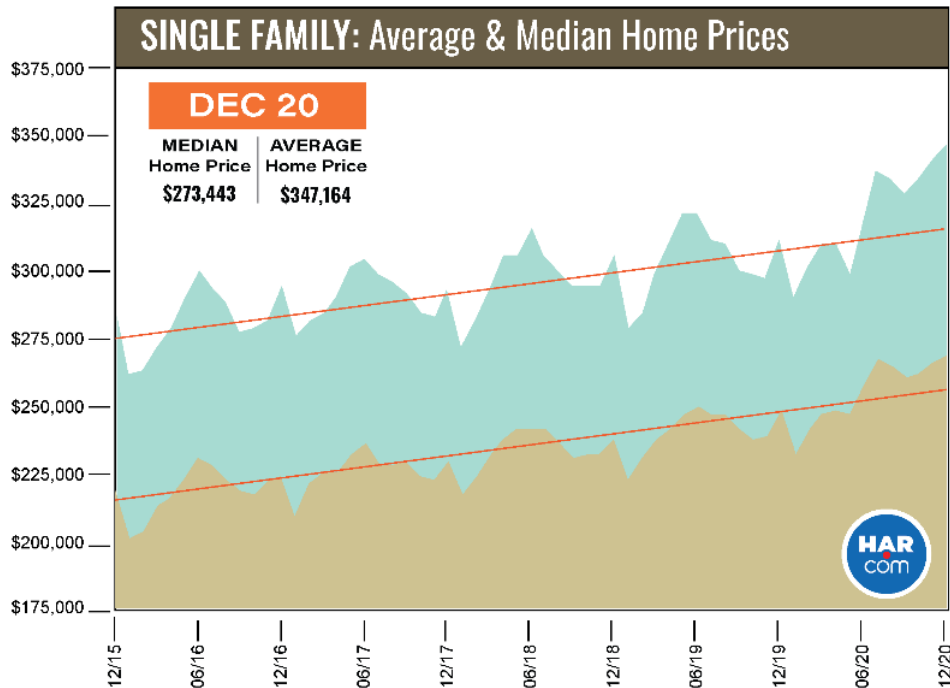
CATEGORIES	FULL-YEAR 2019	FULL-YEAR 2020	CHANGE
SINGLE-FAMILY HOME SALES	86,996	96,151	10.5%
TOTAL PROPERTY SALES	103,513	115,523	11.6%
TOTAL DOLLAR VALUE	\$29,901,458,214	\$35,303,946,677	18.1%
SINGLE-FAMILY AVERAGE SALES PRICE	\$305,959	\$324,069	5.9%
SINGLE-FAMILY MEDIAN SALES PRICE	\$245,000	\$260,000	6.1%

Courtesy HAR January 8, 2020

## Sales Price Update

In a full year's comparison, the median price for a home increased to its highest level ever rising 6.1 percent from \$245,000 to \$260,000. In a full year's comparison, the average price increased 5.1% from \$305,959 to \$324,069.

The chart below shows a five-year trend line for both the average home sale price and the median home sale price of single-family homes. Over the last five years the average price of homes increased from \$280,000 in December 2015 to \$347,164 in December of 2020. This represents a 23.98 percent increase over the 5-year period. Over the last five years the median price of a home increased from \$220,000 in December 2015 to \$251,000 in December of 2020. This represents a 14.09 percent increase over the 5-year period.



Courtesy HAR January 13, 2016

## ***2021 Outlook and Insights***

Although it is difficult to say what will happen with the housing market in 2021, given the 2020 results and all of the corresponding market indicators, it appears that the housing market is on solid ground. Below is a list of factors that will be important indicators as to how the housing market will fair in 2021.

- Corona Virus – Have we “turned the corner”, will the vaccines be effective?
- Oil price – will demand increase as businesses open and get back to normal?
- Interest rates – Will interest rate increase as the broader market recovers?
- Job Growth – Metro Houston lost an estimated 141,000 jobs in 2020, based on historical data it will likely take more than two years to recover these jobs. (Greater Houston Partnership – Dec’20)
- Will inventory recover from the historic lows? Will new starts continue to increase?
- Is there a large “shadow-foreclosure” backlog that is being hidden by various forbearance periods and moratoriums on the foreclosure of single family homes. (i.e. FHFA announced on February 25<sup>th</sup> that they are extening their moratorium on Fannie Mae and Freddie Mac evictions until June 30, 2021)
  - <https://www.fhfa.gov/Media/PublicAffairs/Pages/FHFA-Extends-COVID-19-Forbearance-Period-and-Foreclosure-and-REO-Eviction-Moratoriums.aspx>

# Commercial Property

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## *2020 Houston Commercial Real Estate Market Overview*

In the last market trends report the United States was 127 months into the longest economic expansion in history. Surpassing the 120 month “Tech Boom” expansion of the 1990’s, the current expansion abruptly came to an end in February of 2020 after 128 months. The 2020 recession began when the economy contracted 5%. It was caused by government-ordered shutdowns to slow the spread of the COVID-19 pandemic.

On March 13, 2020, the President of the United States declared a national emergency in response to the COVID-19 pandemic. People in the U.S. were told to shelter in place. Schools were shut down and non-essential businesses were closed. This was done to keep people from spreading the virus and overwhelming hospitals.

The closest parallel in history to 2020’s health crisis is the 1918 flu pandemic. It lasted from the spring of 1918 through the spring of 1919. One out of three people got sick and, of those, 10% died. Ironically, many U.S. communities experienced higher wage growth following the 1918 pandemic. The high mortality rates, along with World War I casualties, reduced the number of healthy workers. Employers paid higher wages to attract the workers who were left.

The National Bureau of Economic Research announced in June of 2020, “the unprecedented magnitude of the decline in employment and production, and its broad reach across the entire economy, warrants the designation of this episode as a recession, even if it turns out to be briefer than earlier contractions.”

The U.S. economy contracted 5% in the first quarter of 2020. It contracted a record 31.7% in the second quarter.

That’s worse than the 26% drop during the [Great Depression](#). The economy contracted from \$1.1 trillion in 1929 to \$817 billion in 1933. The current decline happened in just three months instead of the four years it took during the Depression.

The Conference Board, a not-for-profit research organization which distributes vital economic information to its peer-to-peer business members, expects a U-shaped recovery. It expects the economy to contract by 7.2% for 2020 overall.

The Congressional Budget Office (CBO) predicted the economy would improve by the third quarter, but not enough to make up for earlier losses. Effects will linger until the fourth quarter of 2021, with slightly lower economic output and higher unemployment.

While healthcare workers are at the greatest risk of contracting coronavirus, workers in other industries may be more at-risk of losing their jobs or having their paycheck impacted. According to research, workers in the following five Census-designated industries are the most at risk in terms of job security during a COVID-19 recession:

- Mining, oil & gas
- Transportation & warehousing
- Administrative services & waste management

- Arts, entertainment & recreation
- Accommodation & food services

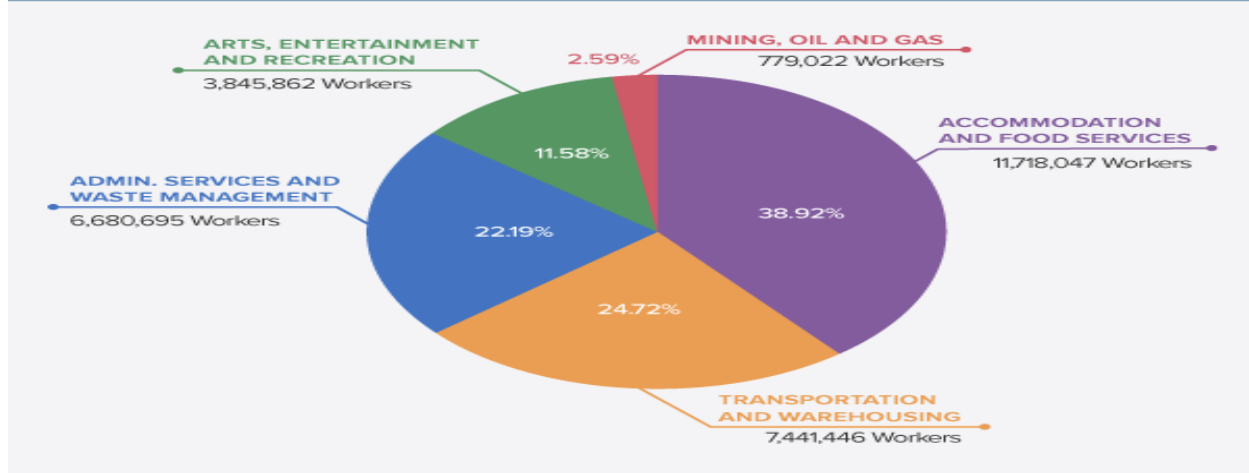
The mining, oil & gas and transportation & warehousing industries rely heavily on global supply chains, which have been disrupted due to the rapid spread of coronavirus. According to [one source](#), the mining, oil & gas industry is expected to be the hardest-hit sector in the U.S. economy. Highly dependent on global commodity prices, the industry has already [seen significant declines](#). Similarly, the transportation & warehousing industry is expected to see declines in demand from commercial and consumer markets.

The [administrative services & waste management industry](#) includes service workers who are involved in personnel administration, clerical activities and cleaning activities along with individuals who collect, treat and dispose of waste materials. Administrative service workers, such as office clerks and security guards, work face-to-face with others and cannot perform their jobs because of the necessary proximity to people. Waste management has also slowed. According to [Politico](#), there has been significantly less commercial waste to be collected in the second half of March in New York City as a result of restaurant and bar closures. In the Department of Labor's unemployment report for the week ending on March 14, 2020, five of the 11 states with an increase of more than 1,000 in initial jobless claims cited layoffs in the administrative services & waste management industry as a key contributor.

Companies within leisure and hospitality industries – arts, entertainment & recreation and accommodation & food services – have seen the largest number of [initial layoffs](#) due to coronavirus. The closing of shows, concerts and sports games along with sweeping closures of restaurants and bars throughout the U.S. have impacted staffing and payroll. Though both small and large companies have announced one-time changes to paid sick leave policies and the [Families First Coronavirus Response Act](#) includes short-term paid sick leave benefits and longer-term paid family leave for some workers, employment in those industries is largely supported by consumer spending. As the pocketbooks of many Americans tighten, many economists expect there to be more layoffs.

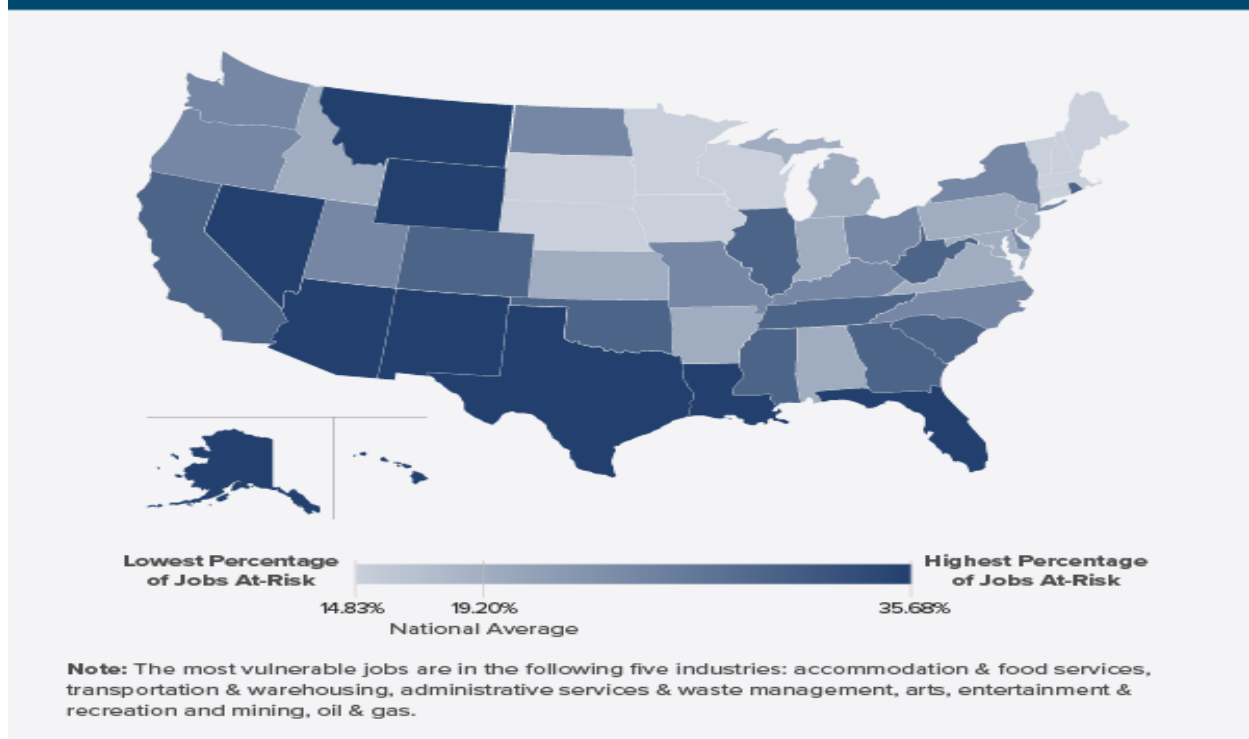
The five industries most likely to be affected vary in size. According to 2018 Census Bureau estimates, there are about 11.72 million accommodation & food service workers in the U.S. compared to fewer than 800,000 mining, oil & gas workers. The chart below shows the breakdown of vulnerable industries, according to total numbers employed nationally in 2018.

# Industries Most Vulnerable to a COVID-19 Recession



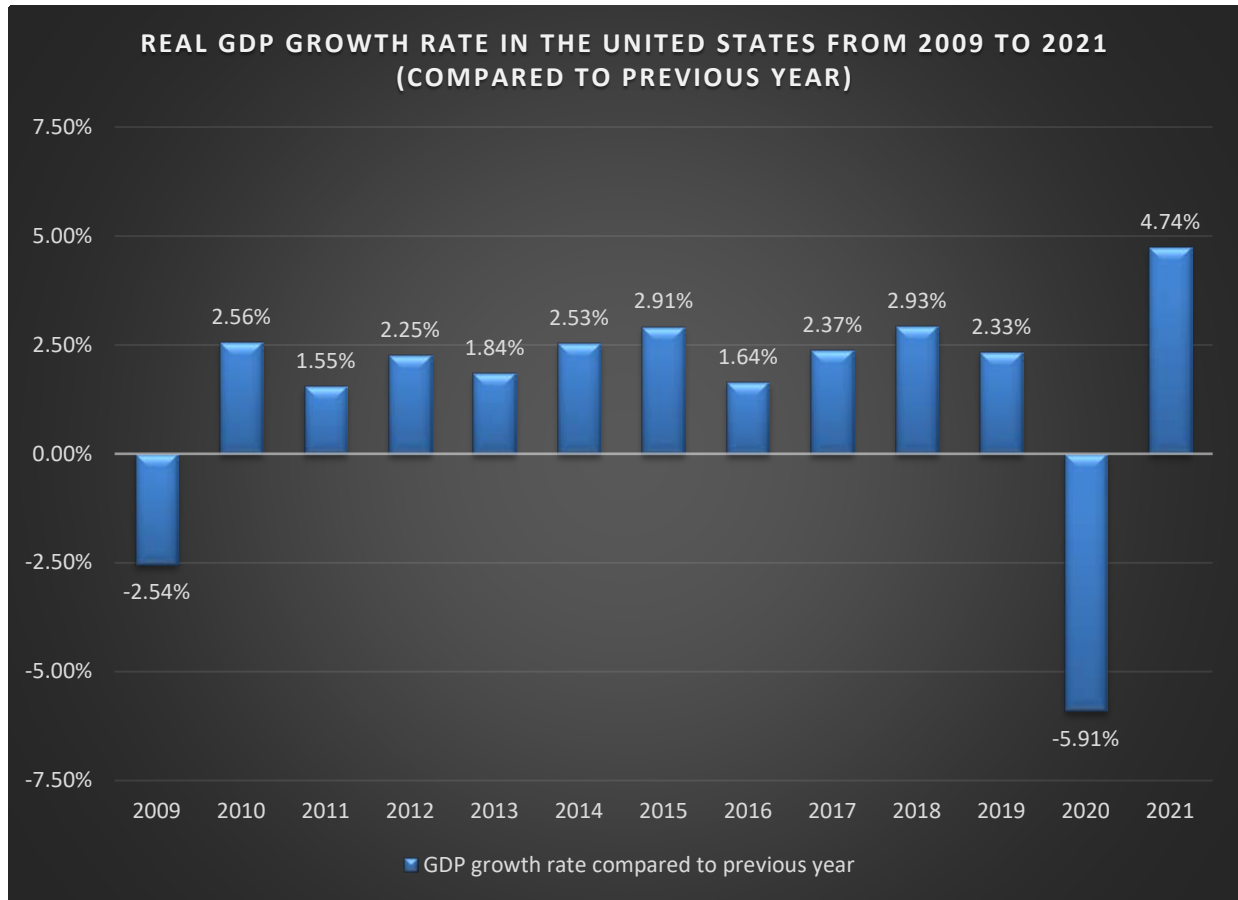
State responses to coronavirus and differences in policies may mitigate or exacerbate how much residents are affected health-wise and economically. But the degree to which state economies rely on the five most vulnerable industries will also influence economic outcomes. Census Bureau data has determined which state economies depend the most on at-risk industries. The heat map below highlights those most and least likely to be affected by a COVID-19 recession.

## How COVID-19 Affects Job Vulnerability in Each State



The United Nations predicts in a worst-case scenario that the pandemic could slow the world's growth rates to 0.5% in 2020, narrowly avoiding a global recession. That percentage would cost the global economy \$2 trillion. In 2018, world economic output was \$86 trillion.

Real gross domestic product (GDP) increased at an annual rate of 33.1 percent in the third quarter of 2020, as efforts continued to reopen businesses and resume activities that were postponed or restricted due to COVID-19. In the second quarter of 2020, real GDP decreased 31.7 percent.



Source: Statista 2020

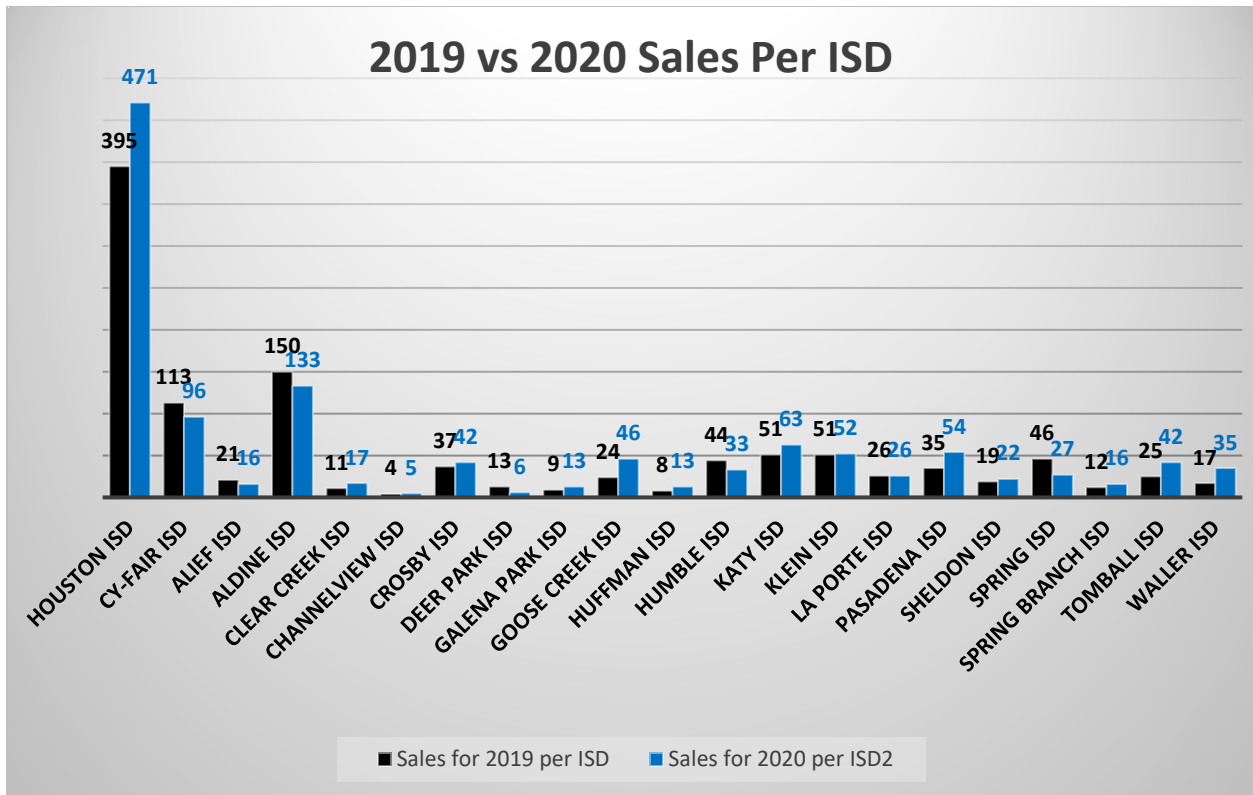
The third-quarter increase in real GDP reflected increases in consumer spending, inventory investment, exports, business investment, and housing investment that were partially offset by a decrease in government spending. Imports, a subtraction in the calculation of GDP, increased.

The increase in consumer spending reflected increases in services (led by health care) and goods (led by motor vehicles and parts). The increase in inventory investment reflected an increase in retail trade inventories (led by motor vehicle dealers). The decrease in government spending was in federal as well as state and local government.

### ***Commercial Land***

Despite the effects COVID-19 has had on the economy, land in Harris County is still being bought and sold. In some areas, the volume of land sales for 2020 have outperformed the activity that took place in the previous year.

The chart below shows the volume of land sales from 2020 in comparison to the volume of land sales in 2019 per ISD.



Source: Harris County Appraisal District Sales Ratio Analysis

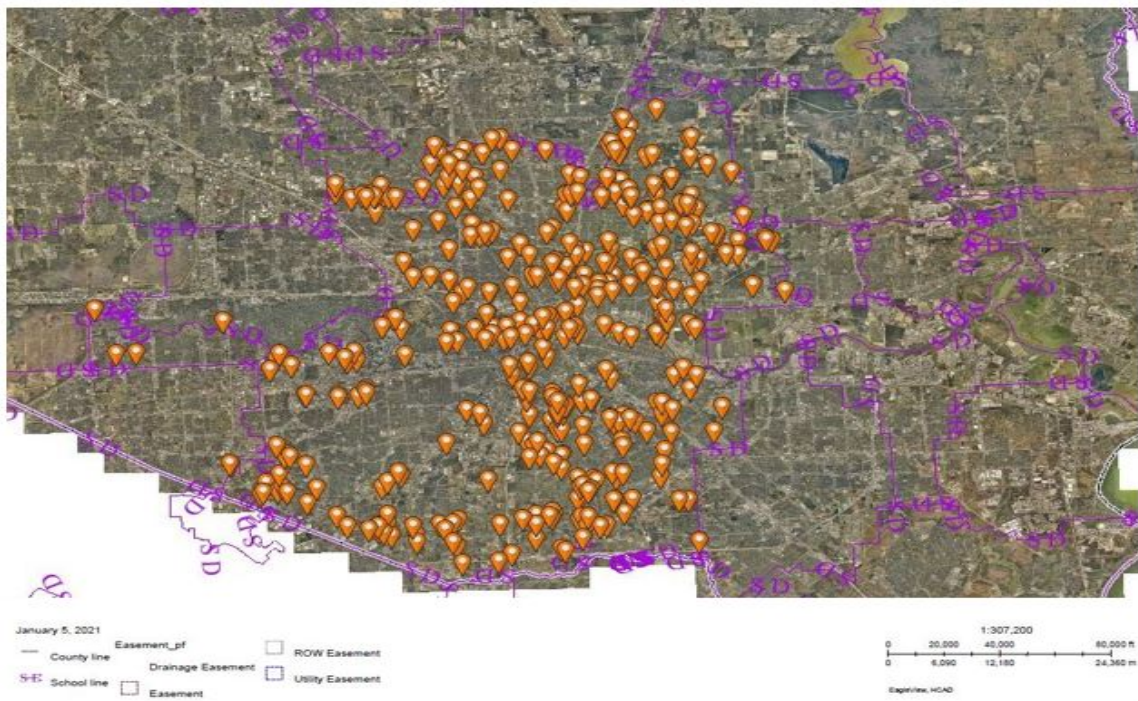
HISD has always been the most active district for land sales year to year. Surprisingly The amount of sales in that district have far surpassed the 2019 total of 395 sales at a total of 471 sales. This increase shows investors are still able to find viable tracts for development or future investment opportunities.

The sales activity in HISD traditionally is centered within the 610 Loop, along major freeways and the most desirable parts of town. This year the sales have migrated in a southern direction as well as an easterly direction.

These areas have recently gained the interest of developers and investors alike. The interest is due to revitalization of these areas as well as still being able to find quality tracts of land at a decent price. Also, the western side of HISD is lacking viable tracts for development and or investment.

The map below shows the vacant land sales in HISD for 2020.

## HISD Land Sales



For the second year straight, Aldine ISD has outperformed Cy-Fair ISD in sales volume per year for vacant land. In the past, Cy-Fair ISD had previously been the second best in sales volume to HISD. Cy-Fair was once considered the fastest growing school district in Harris County. Cy-Fair ISD also still has a lot of room for development.

The land sales activity in Aldine ISD could be linked to the location in the county and proximity to a transportation hub like George Bush Intercontinental Airport. The school district also has two major interstate highways running through it creating easy access routes to properties in the area. Much of the land development in the area has been for warehouses and business parks.

Areas like Katy ISD, Waller ISD, Tomball ISD and Klein ISD have seen significant increases in land sales over the past years. This could be linked to the Grand Parkway. The Grand Parkway has connected many areas that were once not accessible. The Parkway has also created location for growth development at or near major intersections.

The other school districts in Harris county have either remained flat or slightly increased over previous years. Those districts typically don't have an abundance of development activity.

The Harris County land market has done surprisingly well during the pandemic. This shows the market for land is unbothered unlike other commercial property types.

### ***The Office Market***

The Houston office market was having a hard time prior to the COVID-19 pandemic due to an overabundance of available office space. Since the outbreak, office vacancy has hit its highest position since the 1980's. Almost 51 million square feet of office space is currently vacant in Houston. That number is expected to increase in 2021.

The pandemic has made companies rethink office space in terms of social distancing and maintaining healthy environments for office workers. The social distancing trend of working from home has been the best method of battling the lingering deadly COVID pandemic for many companies. Limiting the number of employees in offices provide a safer environment for those who must be in the office to perform their duties.

The decline of the Houston office market in 2020 came as the local economy suffered massive job losses, including boundless layoffs at energy firms. Corporate mergers and acquisitions resulted in huge blocks of office space going vacant, a trend that could continue to plague Houston in 2021.

In the fourth quarter of 2020, the Houston office market saw a 60% decrease in the amount of space that tenants were moving out of compared to the third quarter of 2020, which tallied an aggregate of negative 1,639,286 sq. ft. of net absorption. The aggregate effect of the total net absorption for the entire year of 2020 was negative 4.2 million sq. ft., raising the overall Houston office vacancy rate to 23.3%. The amount of total office inventory that is being marketed for lease also increased quarter-over-quarter, lifting the availability rate to 28.0%. The difference between this figure and the vacancy rate reflects expected future move-outs. Space being marketed for sublease represents 7.2 million sq. ft., or 10.4% of the 68.8 million-sq.-ft. total availability figure. The Central Business District vacancy rate is at 27.2%, up 60 basis points from this time last quarter at 26.6%, while the Energy Corridor vacancy rate is at 27.4%, up 60 basis points from 26.8% in Q3 2020.

Office construction is at 4.2 million sq. ft across 20 buildings, with 2.3 million sq. ft. (54.0%) available for lease. The Central Business District, Medical Center and Katy Freeway East account for 1.8 million sq. ft., or 77.6% of the total space available. The Medical Center market has an overall vacancy rate of 8.9%, while the Katy Freeway East market has a vacancy rate of 12.3% compared to the metro's overall average of 23.3%.

The volume of signed lease transactions during the fourth quarter of 2020 was 2.3 million square feet. This total is down slightly by about 150,000 square feet from the previous quarter, although down more than 50% from one year ago at 5.1 million square feet.

The Houston overall full-service average rates are at \$29.91 per sq. ft., up from last quarter at \$29.35, and from one year ago at \$29.80 per square foot. Asking rates for overall Class A space are \$35.04 and Class B are \$23.12 per square foot. Rent growth has varied across Houston's submarkets. Asking rents in the Midtown submarket averaged \$37.89 per square foot, which is 27% higher than the metro average as a whole and ranked number two among Houston submarkets as of the end of 2020.

Market Activity	Current Q4 2020	Prior Quarter Q3 2020	Year Ago Q4 2019
Vacant Total	23.3%	23.0%	↑ 21.1%
Vacant Direct	22.1%	21.8%	↑ 19.8%
Available Total	28.0%	27.3%	↑ 25.4%
Available Direct	25.2%	24.9%	↑ 22.9%
Net Absorption (SF)	(670,941)	(1,639,286)	↑ 730,281
Leasing Activity (SF)	2,334,871	2,489,797	↓ 6,050,561

Construction (SF)	4,223,633	4,121,836	↑	3,722,493	↑
Deliveries (SF)	28,800	656,872	↓	73,000	↓
Avg Asking Rent (Gross)	\$29.91	\$29.35	↑	\$29.80	↑
Inventory (SF)	241,262,697	241,233,897	↑	239,794,487	↑

Source: NAI Partners

## **Highlighted Office Market Activity**

Although there is an excess of office space, several projects were in the works prior to the pandemic.

The epicenter of Houston’s Innovation District and ecosystem will be The Ion. The former Sears on Main Street in Midtown is being transformed into 288,000 square feet of rentable coworking space for startups, as well as office space for corporate partners and more advanced startups. The major tenant listing will include Chevron Technology Ventures, Common Desk and Microsoft. Ground level retail is also part of the plan from developer Rice Management Co. The Ion will anchor a 16-acre innovation district that will, in time, include additional office space, residential, retail, and other components.



[Skanska](#) has announced plans to build a 28-story, 375K SF Class-A office building at 1550 Lamar St., the first phase in developing a mixed-use district adjacent to [Discovery Green](#) in [Downtown Houston](#).

1550 on the Green will occupy one of the three land parcels that is slated to be transformed into a master-planned district called Discovery West. The three parcels will total 3.5 acres of mixed-use development with restaurants, retail and green space. Skanska purchased the land parcel in October 2019.



Texas Tower is a 47-story, 1.14M SF office tower on the 800 block of Texas Avenue in [Downtown Houston](#), the former site of the Houston Chronicle. The building will feature multiple restaurants, networking spaces, a full-service conference facility, public gardens on level 12, a high-performance fitness center and an internal 11-level parking garage to accommodate more than 1,500 cars. Hines broke ground in July 2018, and the project is expected to reach completion in late 2021.

Texas Tower is 40% leased. Hines is relocating its global headquarters to the property, with a 15-year lease for 180K SF across six floors. Law firm Vinson & Elkins signed a 16-year lease for 212K SF to occupy the top seven floors, and law firm DLA Piper signed a 14-year lease for 31K SF on one floor of the building.



Marathon Oil Corp. is building [its new headquarters](#), One MRO, at 990 Town and Country Way near Midway's [CityCentre](#) mixed-use development. The 15-story, 440K SF office building will replace the firm's existing offices at [Marathon Oil Tower](#) at 5555 San Felipe St., near the [Houston Galleria](#). Company employees will move to the new office workspace in the second half of 2021.



## ***Medical Office***

Among the improved commercial properties, the one market that has been flourishing has been the Houston Medical Office Market. The pandemic has been the biggest driver of this activity.

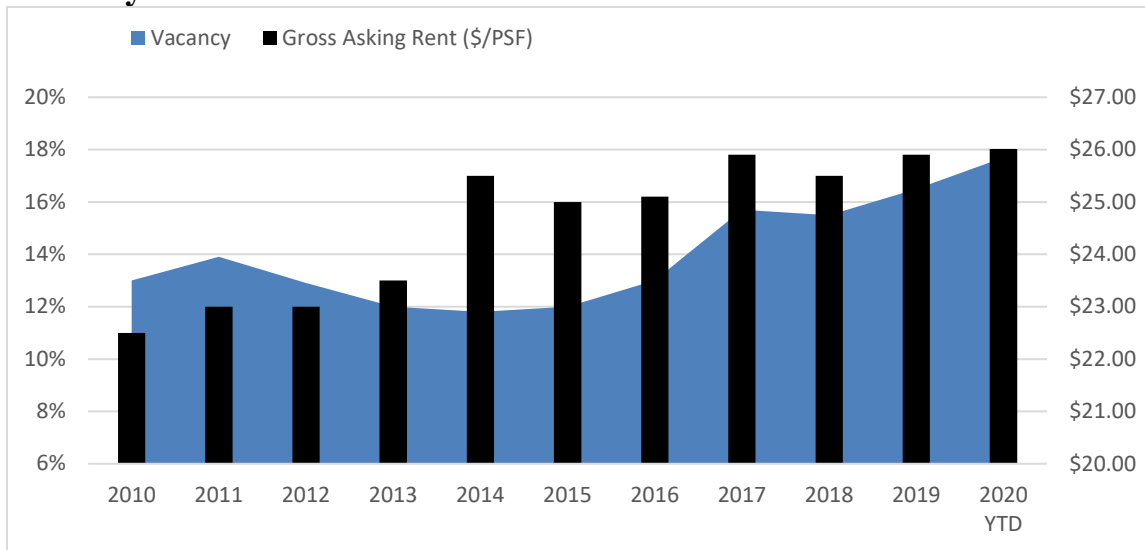
Overall vacancy for medical office space in the Houston market is at 17.7%, up 130 basis points from 16.4% this time last year. In 2020, there was a recorded 1.3 million sq. ft. of leasing activity for medical office space. The activity is comprised of both new leases and renewals. Net absorption (move-ins minus move-outs), for medical office space, is at negative 149,000 sq. ft. So far this year, developments under construction stand at 1.3 million sq. ft., and deliveries are at 321,000 sq. ft. The average asking full-service rent is at \$26.01 per sq. ft., up \$0.20 from last year, while Class A medical office space is averaging \$31.12 per sq. ft., down from the prior period at \$32.08 per sq. ft.

<b>Market Activity</b>	<b>October 2020</b>		<b>October 2019</b>
	<b>Year-To-Date</b>		<b>Year-To-Date</b>
Vacancy	17.7%	↑	16.4%
Availability	20.0%	↑	19.3%
Net Absorption (SF)	-149,282	↓	-75,694
Leasing Activity (SF)	1,318,257	↑	1,227,950
Deliveries (SF)	320,857	↑	235,497
Under Construction (SF)	1,314,260	↑	235,497
Gross Avg Asking Rent (SF)	\$26.01	↑	\$25.81

## Vacancy

&

## Rent



Source: NAI Partners

## Highlighted Medical Office Activity

A groundbreaking for the Texas Medical Center 3 (TMC3) is expected in 2021. There will be a world-class life science complex that will bring together the best minds in medicine across several institutions. The 37-acre project will include shared and proprietary research centers, multidisciplinary laboratories, health care institutions, a hotel and conference center, retail, and a unique double-helix green space – totaling almost 3.7 million square feet of developed property. TMC officials say the complex slated to open in 2023 will add an estimated 17,000 jobs and \$5.4 billion to the Houston economy.



Arch-Con Corp has begun construction on North Cypress Physician Office Building III. This is a four-story, 110,374 square foot medical office building located on the seven-acre HCA Houston Healthcare North Cypress campus. NexCore Group, a national healthcare real estate developer based in Denver, is developing the building located on the northwest corner of Hwy 290 and Huffmeister Road at 10425 Huffmeister Rd. in Cypress, Texas.

The development is conceptually programmed to be a multi-functional, multi-use medical office building which will include an ambulatory surgery center, a primary care center, cardiology, pulmonary, physical therapy and a potential endoscopy suite.

A new medical office building will rise on the Woman's Hospital of Texas campus.

California-based Healthpeak Properties Inc. (NYSE: PEAK) is developing the five-story, 116,500-square-foot medical office building at 7500 Fannin St. Construction began in late May 2020, according to a June 22 news release from Houston-based Transwestern, which is providing leasing services for the building. Transwestern also handles leasing for the building next door, 7400 Fannin, which is currently 94% occupied.

The future medical office building is 36% preleased, with Houston Women's Care Associates representing the largest commitment to date. The development, which is being constructed alongside a new parking garage, is expected to deliver in December 2021.

It will be the first new medical office on the Woman's Hospital of Texas campus in 17 years.

Generation Park revealed plans for the construction of a 101,000 square-foot, Class-A medical office space within its mixed-use lifestyle district Redemption Square. The medical offices join a growing number of curated restaurants, hotels, boutiques, and luxury apartment residences within Redemption Square. Located at 100 N Redemption Square Road, the medical offices are now available for pre-leasing.

Designed by Kirksey Architecture to be the signature architectural centerpiece of Redemption Square, the five-story building will feature a glass façade with picturesque views of the adjacent West Lake Park. The building, which overlooks recreational amenities designed to cultivate healthy lifestyles, will provide a central location for the greater Lake Houston community to take care of themselves from the inside out.

Ground floor locker rooms with showers and bicycle storage will ensure practitioners can take advantage of the exceptional greenery and growing trail network at Generation Park. While adjacent local restaurants and outdoor fitness classes in Redemption Square will further promote practitioner and patient wellness, creating an experience unparalleled in Houston.

Texas A&M University [announced in February](#) that it planned to build a \$546M campus in the [Texas Medical Center](#), one of several major projects underway in the area. Texas A&M Innovation Plaza will consist of two new towers, as well as the purchase and renovation of 1020 Holcombe Blvd., an 18-story building. One of the new towers is a student housing project, while the other is a mixed-use development for medical offices and retail.

The mixed-use building, known as Horizon Tower, is an integrated medical plaza of 17 stories sitting atop a 13-story parking garage and will cater to life sciences, clinical, biomedical, technology and office uses. Medistar Corp. held a [virtual groundbreaking ceremony for the campus](#) on Oct. 1, and Horizon Tower is slated for completion in January 2024.



Testa Rossa Properties broke ground on its 10-story, 364K SF medical office tower at 5115 Fannin St. in the [Museum District](#) in January. The building represents Phase 1 of Museo, a mixed-use development touted as a gateway to the district.

Mann Eye Institute founder Paul Michael Mann and his son, Paul Mann, are the driving force behind the building. Their clinic will anchor the project, occupying 37K SF on the top floor and an additional 10K SF surgery center. The building will feature five parking garage levels above the ground-floor lobby, which will include 16K SF of event space.



## *Apartments*

Multi-family rents had been steadily on the incline until the COVID-19 pandemic hit the Houston area in March of 2020. Once the pandemic occurred, the rates started to decline. The combination of job losses and the multitude of new units opening across the metro has stifled rent growth and led to losses. The daily apartment asking rents began falling almost immediately when the virus was declared a pandemic on March 11. Rents in Greater Houston have dropped by 1.7% since the end of March.

The decline is more pronounced for 4 & 5 star properties. Rents for these properties, many of which are in lease-up, are down more than 8% from the March peak.

The same cannot be said for most surrounding suburbs, where rent growth has been flat. Since the outbreak, the shift in demand away from the city has only been amplified.

According to Bruce McClenny, president of the Houston based ApartmentData.com, many areas, including Sugar Land, Richmond and Pasadena, are actually seeing positive growth. That's in part because renters have less of a reason to be in the urban area.

"They can work from home now, so they can move out and be in a different area and still work and not have to commute," he said.

Add to that the closure of many bars and places of entertainment in the urban core, he said, which may have attracted people to live there before the pandemic.

Average monthly rent at downtown apartments, for instance, has fallen by more than 14% in the past six months.

Another factor is new apartment construction.

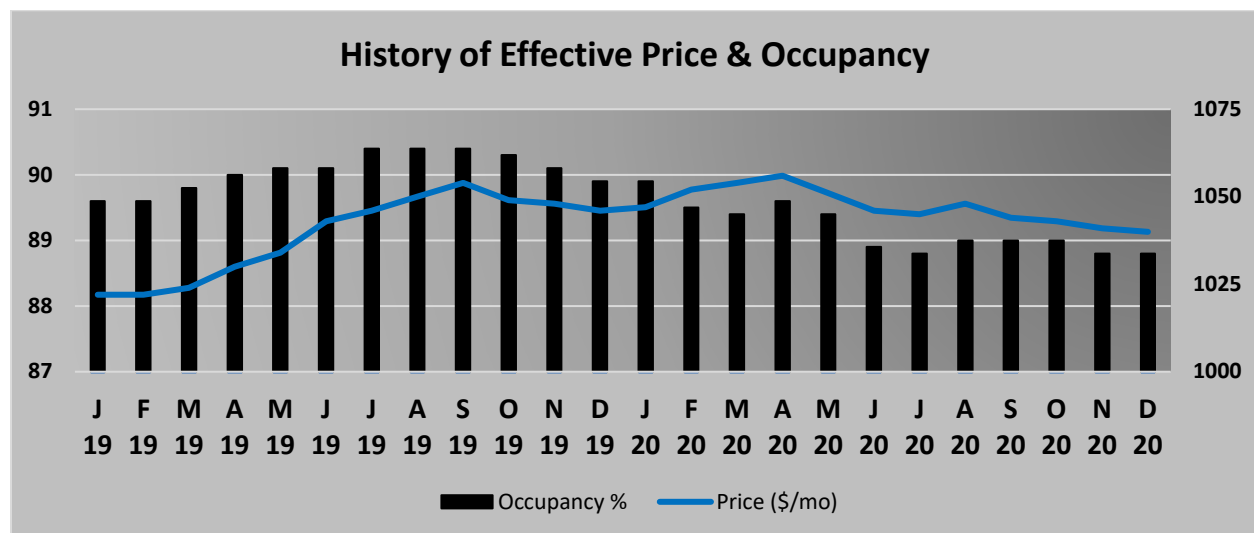
"Construction in the Inner Loop, it's just a double whammy," McClenny said. "You've got a lot of construction, very little absorption."

Some suburbs, such as the Katy area, have also seen a lot of apartment construction, but it generally hasn't caused rents to go down this year.

Apartment Data Services has reported occupancies have slightly dropped throughout the year from 89.9% to 88.8%. Rental rates on average have been at \$1.18 per square foot. These rental rate averages are the same as 2019. The rent per square foot is based on an average rental rate of \$1,040 per month with an average square footage of 885 square feet.

In the past twelve months the rental rate growth has fallen to -1.4% and only absorbing 11,288 units. The operating supply consist of 2,895 communities. Those communities total approximately 683,057 units. Of those 2,899 communities, 81 communities were added in the past twelve month consisting of 23,171 units. There are 60 communities under construction that will add 16,888 units. Also there are 97 communities proposed that would possibly add 28,331 units in the future.

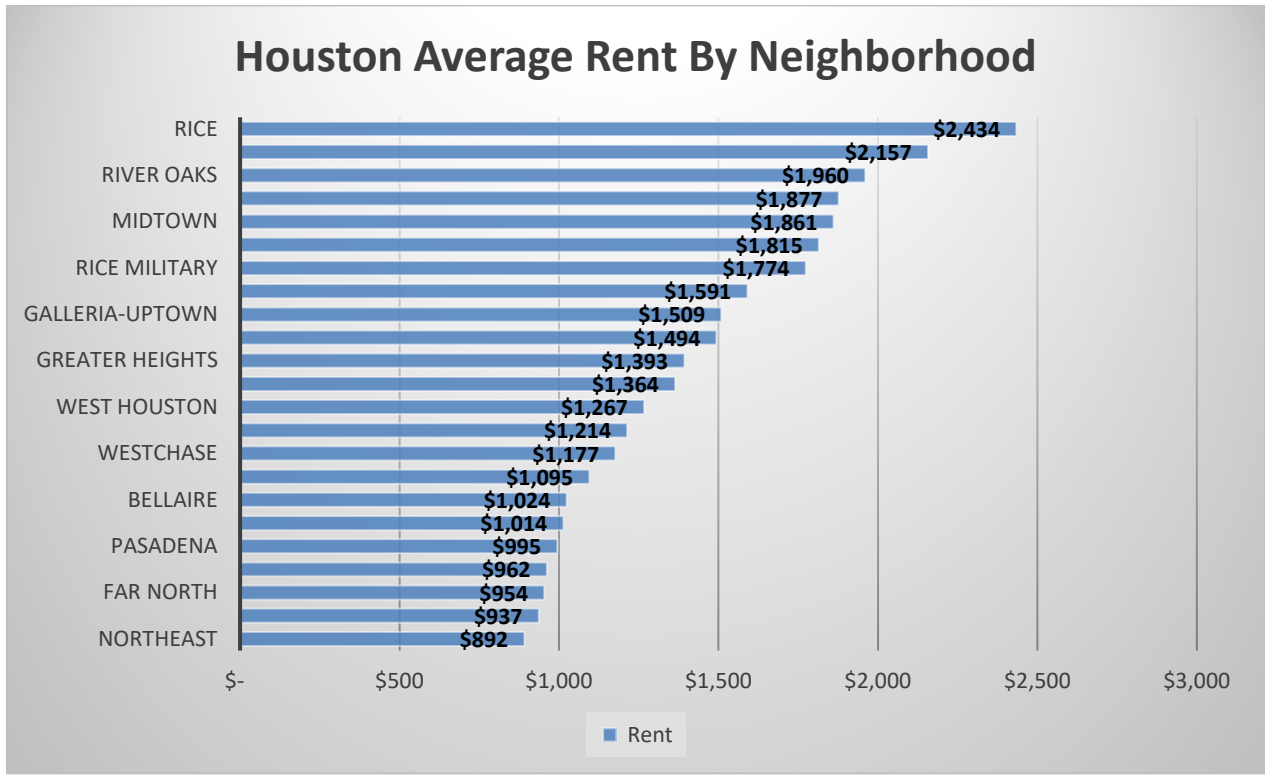
The graph below displays the overall **occupancy** and effective **rental prices** over the past 24 months. These statistics are derived from a continuous survey of all apartment communities. Effective rental prices are calculated net of concessions and utility adjustments.



Source: Apartment Data Services

The most expensive Houston neighborhoods to rent apartments in are Rice, Downtown, and River Oaks.

The cheapest Houston neighborhoods to rent apartments in are Northeast, North, and Far North.



Source: Rentjungle.com

### **Highlighted Apartment Activity**

The flood of new supply will affect Houston's submarkets differently. Neartown/River Oaks has the most space under construction, and the majority are luxury high-rise and mid-rise apartments. Once the space currently underway is completed, the submarket's inventory will grow by more than 11%. Developers are also active in the Lake Houston Area and Bear Creek/Copperfield Submarket. Strong demand for affordable suburban living will result in stronger lease-ups than in pricier supply-heavy areas like Downtown, Neartown/River Oaks, and the Heights—at least in the near term.

Some of the largest apartment projects under construction include GID Development Group's Regent Square. The project is a mixed-use development near Buffalo Bayou Park between River Oaks and Montrose. The property is reaching a key milestone in its Phase 2 buildout, which includes 600 multifamily units and 50,000 feet of retail space around a pedestrian-friendly plaza. The project is scheduled for completion in the first quarter of 2021.



Another notable project is Landmark at Auburn Lakes. Construction has completed on a 408-unit apartment complex. The complex offers a variety of one-, two-, and three-bedroom options in floorplans up to 1,312 square feet. The complex offers numerous amenities such as covered parking, pool, dog park, and clubhouse. The project is open and leasing to new residents.



Lennar Homes' 4 Star, 403-unit high-rise Bowen River Oaks is also under construction and scheduled for a fourth quarter 2021 delivery. The high-rise complex will offer studio units, as well as one- and two-bedroom units. The property is located at 2020 Westcreek Ln. The street address may be a familiar one with the amount of redevelopment that has taken place on that street.



Rising above the south side of Buffalo Bayou along Allen Parkway, Hanover Company’s [Autry Park](#) promises to be an “urban village” complete with 1,450 residential units, 350,000 square feet of office space, 100,000 square feet of high-end retail, and a hospitality component—all positioned around a central green space the project is named after. The 14-acre development is set to open in three phases, with the first phase slated for completion in Q4 2021. It’s one of several high-density developments materializing west of downtown along Buffalo Bayou that aim to take advantage of the waterway and its linear park.



## ***Retail***

The coronavirus pandemic continues to cause notable economic disruption across the Houston market. While job growth and economic activity has picked up, most of the job losses remain in the leisure and hospitality sector, which speaks to the losses across the retail property type.

Retailers have had to rethink methods of providing services. For many retailers, ecommerce has replaced in person shopping. Placing orders online for retail goods has increased during the pandemic. This method seems to be working for some retail stores, some restaurants and larger online retailers like Amazon.

The downside of this is these retailers need less employees for traditional roles such as salespersons, waiters and waitresses, and other deemed non-essential personnel.

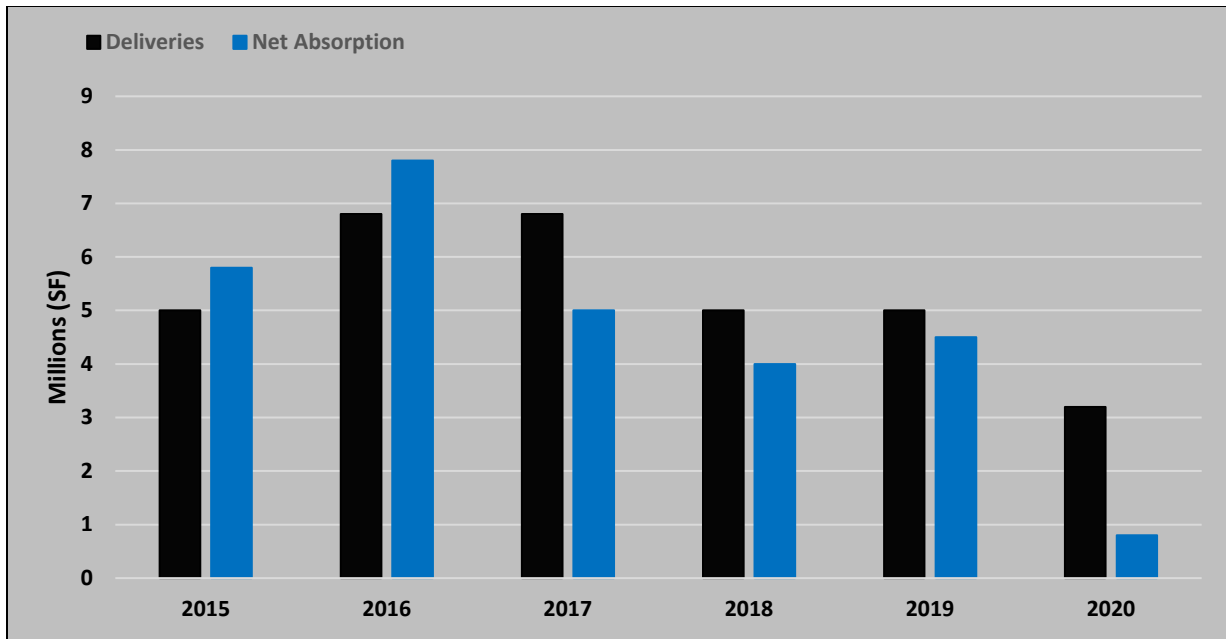
The average vacancy rate has been rising and is now the highest it's been in seven years. The market is likely to continue seeing loosening retail fundamentals due to the waning absorption and vacancy hits looming on the horizon from announced retail closures. The short-term outlook is bleak. The reduction in unessential retail spending, especially for service, entertainment, and apparel retailers has distressed retailer earnings undoubtedly. Long-term, Houston's vigorous demographic outlook should continue to bolster strong demand for retail across the metro, but it could take a few years for retailers to recover and adapt to a new retail environment.

Occupancy in the Houston retail market is at 93.7%, down 70 basis points from this time last year. Earlier in the year during Q2 2020 marked the first time Houston retail occupancy registered below 94.0% since 2014. The net amount of square feet absorbed (move-ins minus move-outs) for the year is down significantly at positive 856,000 sq. ft. In addition, 3.9 million sq. ft. of new supply has been delivered to the market so far in 2020, of which 72.8% is occupied. Year-to-date through November, the Houston retail market has recorded 6.1 million sq. ft. of leasing activity—which is comprised of both new leases and renewals—up about 6% from one year ago.

Market Activity	2020		2019
Occupancy Rate (%)	93.7%	↓	94.4%
Net Absorption (SF)	856,083	↓	4,296,386
Leasing Activity (SF)	6,060,412	↑	5,722,373
Deliveries (SF)	3,916,290	↓	4,371,876
Under Construction (SF)	2,188,096	↓	3,121,706
Avg Asking NNN Rent (PSF)	\$18.37	↑	\$18.67

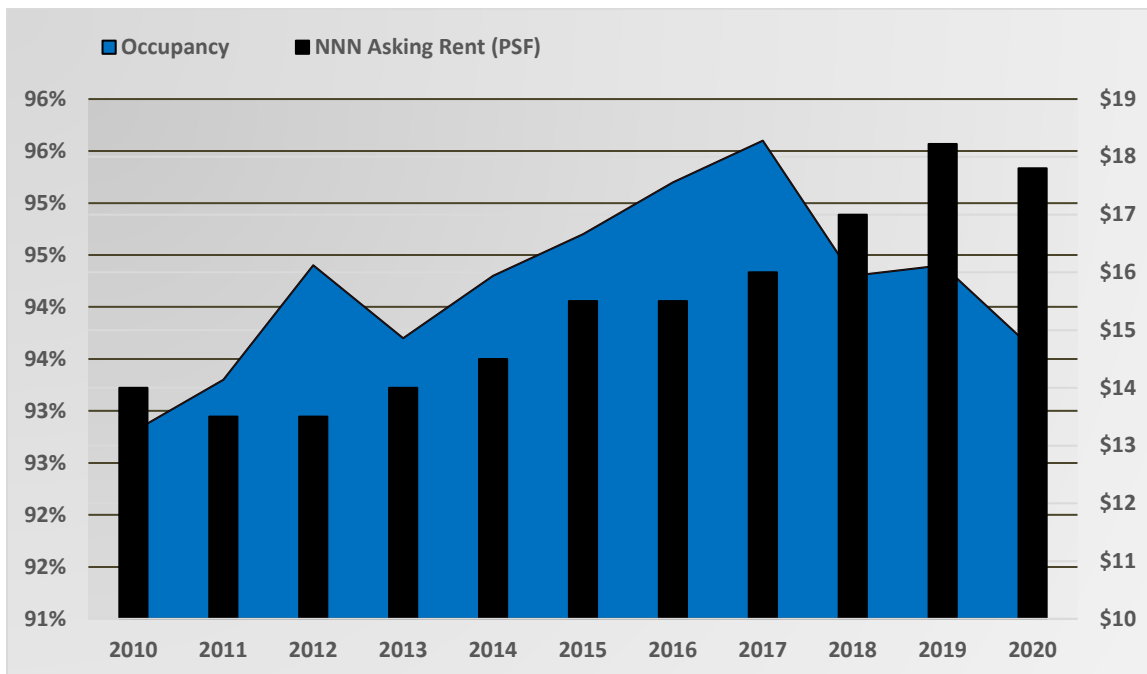
Source: NAI Partners

## Supply & Demand



Source: NAI Partners

## Occupancy & Rent



Source: NAI Partners

## Retail Highlighted Activity

Retail shops in a popular Montrose-area strip center are starting to close, paving the way for Skanska USA to redevelop the property into a mixed-use project at one of the busiest intersections in the area. The southwest corner of Montrose and Westheimer has been home to Half Priced Books, 369Oriental Bistro, Spec’s Liquor & Wine, Mattress Firm and SignatureCare Emergency Center.

Skanska USA plans to redevelop the site into a project with an undetermined use but including multifamily, retail and possibly a hospitality component.

Across from Skanska USA's property, the store Kroger grocery store dubbed as "Disco Kroger" announced it was closing in January 2021. Kroger owns the property at 3300 Montrose Blvd. The company has yet to announce what they will do with the property.

Also, in the Montrose area, Random Capital is developing the Montrose Collective. The mixed-use property, at 800 Westheimer Rd., will have 100,000 square feet of Office space, more than 50,000 square feet of retail space and a new location for the Freed-Montrose Neighborhood Library. A parking structure will be located behind the development as well.

The retail space will support six restaurants and up to fifteen other tenants.



A three-year effort from developers MLB Capital Partners and acclaimed Houston Chef Chris Shepherd aims to reinvent the Houston Farmers Market on Airline Drive. The first phase of redevelopment of the 18-acre site, including new buildings and public spaces, is now complete. A butcher shop, fast casual and sit-down restaurants are among the concepts set to open first, alongside existing produce tenants and other longstanding vendors. Phase two of the project, which includes an open-air pavilion, one-acre greenspace and retail is also set to come online in 2021. The Houston Farmers Market aims to become a destination for locals and visitors wanting to experience a wide array of flavors and culinary-focused shopping in one place.



The Post Houston, the former Barbara Jordan Post Office on the northern edge of downtown, is planned to open later this year with an international market, restaurants, creative workspaces, and a 210,000-square-foot rooftop park and garden. Lovett Commercial says future additions to the 550,000-square-foot project will likely include a concert venue and a hotel. It will also create a new destination on the northern end of the city's Innovation Corridor.



## *Hotels*

The Texas hotel industry endured its worst decline on record in the second quarter as business and leisure travel screeched to a grinding halt in the early months of the pandemic and very little has returned.

Before 2020, no one who worked in the hospitality industry could predict what was about to hit. Statewide hotel revenue plunged 64 percent compared with the year earlier to \$1.2 billion. Demand, measured by number of room nights sold, fell by half as COVID-19 decimated the state's and country's lodging industry.

Since March of 2020, in the City of Houston 196 meetings, conferences and conventions have been cancelled or rescheduled. Citywide hotel occupancy has fallen to 44% and in the central business district the occupancy has fallen to 17% occupancy. With 539,372 hotel rooms in Houston, there was an estimated economic loss of \$332 million.

Hotels across Houston that thrive on corporate travel and big conventions are in a pandemic-induced tailspin. Nine months into COVID-19, owners are faced with an overwhelming financial strain. Some are on the verge of losing their properties to foreclosure, an expected turn for an industry that's affably been the hardest hit.

Due to the pandemic, thousands of Houstonians who make their livings cleaning guest rooms, preparing and serving food and working behind the front desks of local hotels are out of work. The sector lost 9,100 jobs in March and April. That figure makes up about a third of all hotel jobs in the region. Some 5,900 people are still out of work, according to the Greater Houston Partnership.

In proportion to the size of its hotel market, Houston stands out as one of the most hard-hit cities with 76 percent of hotel CMBS(Commercial Mortgage-Backed Securities) loans facing delinquency, due to the pandemic's impact on the oil industry. Trepp's report notes that the cancellation of "large revenue-driving energy conferences" has had a big impact on the city's hotels. Nationally, the delinquency rate is 19 percent.

As with most markets, The Lodging Industry hopes to come back, soon, with the invent and administering of a viable COVID vaccine. Demand for hotel lodging is expected to return to pre-Covid-19 levels by the third quarter of 2022. However, lower rates per room are expected to stall the recovery of revenue per available room, or RevPAR, the industry standard metric for gauging success, until at least 2023.

The recovery is expected to take even longer in Houston because of the city's ties to the energy industry, which has also suffered in recent months.

Jeff Binford, a managing director with CBRE Hotels Advisory, warns of a modest recovery in with Texas reopening. Houston is expected to lag the other major markets in Texas, with occupancy not recovering until Q3 2024.

Average daily rates are not expected to exceed 2019 levels until 2024 due to rate pressures created in large part by the sharing economy. Accordingly, RevPAR is not projected to return to pre-pandemic levels by 2024.

Higher-cost hotels might not see 2019-level occupancy rates or RevPAR for the next five years.

Lower-priced hotels will fare better, exceeding 2019 occupancy levels by 2023. Average daily rate and RevPAR for lower-priced hotels are expected to take another year before reaching 2019 levels.

The good news for both segments is that the downturn is expected to reduce the number of new rooms being built.

The report found that hotels that are currently under construction have a "very high probability" of being completed. But those that are still in the planning phase might be reevaluated before being financed and built.

## **Highlighted Hotel Activity**

One of the first casualties of the COVID-19 pandemic is Hotel Alessandra. The 21-story, 223 room downtown luxury hotel has permanently closed. The property was operated by Houston-based Valencia Hotel Group and developed by local real estate company Midway.

Located at 1070 Dallas St., the property was an integral part of the GREENSTREET complex downtown. GREENSTREET is home to The House of Blues/Foundation Room, Three Forks Steakhouse, Andalucía Tapas Restaurant, Mia Bella Trattoria and several other restaurants, retail spaces and office space. Most of these businesses have been temporarily closed due to the pandemic.

Hotel Alessandra closed its doors on January 6, 2021.



On the brighter side, Houston-based American Liberty Hospitality will open the company's second dual brand hotel in February 2021. The combined Holiday Inn Express Houston – Galleria Area and Staybridge Suites Houston – Galleria Area will offer a total of 319 rooms and will be the first new hospitality offering in Houston's Galleria area in several years. Both brands are franchises of InterContinental Hotels Group. The 14-story property is located at 2351 West Loop South. Staybridge Suites will provide 150 units, while Holiday Inn Express will provide 169 rooms.

Hangzhou, China-based Blossom Holding Group will open its newest hotel project, The Blossom Hotel Houston, in April 2021. The 16-story, 267-room hotel is located at 7118 Bertner Ave. in the Texas Medical Center and will have over 400K SF of amenities, including three restaurants, retail shopping, a lobby library, outdoor pool deck, fitness center, karaoke room, and meeting and events spaces.



### ***Warehouse (Industrial) Market***

The warehouse (industrial) market has been one of the strongest real estate sectors throughout the COVID-19 pandemic. The sector has been kept afloat by increasing e-commerce demands. Along with E-Commerce growth, freezer/cooler requirements have increased. More people working from home and the economic slowdown have created an increase in home food consumption. This trend is occurring nationwide, which is a catalyst for enhanced activity within Port Houston.

The remarkable performance during the pandemic and long-term trends for the warehouse market have expanded and heightened investors and developers demand. Limited availability and increased demand have caused middle-market asset CAP rates to compress. This trend is expected to continue well into 2021 as interest rates remain low and the economy continues to recover from the shutdowns.

Warehouse demand has been eclipsed by Supply over the past three years in the Houston industrial market. 30.3 million square feet of warehouse space was delivered to the market in 2020. This was more than double the total of net absorption at 14.5 million square feet. This full-year absorption of 14.5 million square feet is tied for the second-highest single-year total. Q4 2020 also marked the 46th consecutive quarters the Houston Industrial market has documented positive absorption. Net absorption is the measure of total square feet occupied minus the total space vacated over a given period for existing buildings.

Houston warehouse vacancy increased 30 basis points quarter-over-quarter to 8.8%, which also represented an increase of 220 basis points year-over-year. At the end of the fourth quarter of 2020, Houston had 54.3 million square feet of vacant warehouse space for direct lease and an additional 1.4 million square feet of vacant sublease space. The rise in the Houston warehouse vacancy rate is due in part to the record levels of new construction, as previously mentioned a record-breaking 30.3 million square feet was delivered to the market in 2020. Of that total, 13.6 million square feet, or 44.7% is available for lease. The vacancy rate for Class A properties is at 18.6%, up from 12.5% this time last year. Total inventory for Class A space represents 117 million square feet, up from

94.1 million square feet at the end of 2019, a 25.0% increase. Fourth quarter overall net absorption was at 6.2 million square feet, with 8.7 million square feet delivered during the same time period.

Monthly rental rates for the entire market on average was \$0.64 per square feet, as of the end of 2020, down slightly quarter-over-quarter from \$0.65 per square feet, although up year-over-year from \$0.61. The monthly average rate for Flex space is currently at \$0.88 per square feet; Manufacturing rates are at \$0.56; and Warehouse/Distribution space sits at \$0.60. The Southwest (\$0.77 PSF) and North (\$0.70 PSF) submarkets currently have the highest monthly overall average rate, followed by the Northwest (\$0.63). Rental rates may remain elevated, as developers experience rising costs associated with bringing high-quality new projects to the market.

Market Indicators	Current	Prior Quarter	Year Ago
	Q4 2020	Q3 202	Q4 2019
Vacant Total	8.8%	8.5% ↑	6.6% ↑
Vacant Direct	8.6%	8.3% ↑	6.3% ↑
Available Total	13.0%	12.5% ↑	9.0% ↑
Available Direct	12.1%	11.6% ↑	8.3% ↑
Net Absorption (SF)	6,248,078	1,133,339 ↑	3,152,197 ↑
Leasing Activity (SF)	7,590,594	6,188,048 ↑	7,055,591 ↑
Construction (SF)	8,014,433	15,839,665 ↓	23,333,519 ↓
Deliveries (SF)	8,671,448	4,536,615 ↑	4,069,519 ↑
Avg Asking Rent (NNN/Mo)	\$0.64	\$0.65 ↓	\$0.61 ↑
Inventory (SF)	633,189,690	624,518,242 ↑	602,601,441 ↑

### **Highlighted Warehouse (Industrial) Activity**

Dunavant Distribution Group announced plans to expand into a new 784K SF industrial building in the Bay Area Business Park in Pasadena.

The expansion brings the logistics and supply chain company's presence to more than 1M SF within the business park at 10629 Red Bluff Road. The 784K SF industrial space is one of three buildings in Phase 3 of the park expansion, and the completion of that phase makes Bay Area Business Park the largest single-owner industrial business park in Houston, according to Colliers International.

Bay Area Business Park is in the East-Southeast Far industrial submarket, Houston's largest industrial submarket, with close to 79M SF of industrial inventory. The submarket is located near Port Houston and Houston's Ship Channel, making the submarket logistically desirable for distribution space.



Stream Realty Partners has completed construction on Benchmark Northwest Distribution Center, a 157.9K SF industrial building in northwest Houston.

The Class-A distribution space at 5215 Campbell Road has a front-load configuration, 32-foot clear height, fenced truck court with 33 trailer parking spaces, 33 dock-high doors and 125 auto parking spaces.



The effort to deepen and widen the Houston Ship Channel recently reached a new milestone. In late December, Congress passed the Water Resources Development Act of 2020 as part of the year-end omnibus and Covid-19 relief package. The federal legislation authorizes the Expansion Channel Improvement Project, the multiyear, multimillion-dollar effort to deepen and widen the Houston Ship Channel, a federal waterway.

The project, priced at \$1 billion, would widen the ship channel by 170 feet along its Galveston Bay reach to 700 feet. It would also deepen upstream segments of the channel to 45 feet. The deepening improvements would facilitate larger vessels to enter the channel, and a wider channel would allow for ships to more safely pass one another.

Around half of the cost for the deepening and widening project, dubbed Project 11, will be funded by the federal government. Industry stakeholders along the Houston Ship Channel previously committed to financing the other half of the expansion project over several years. There are more than 200 private facilities along the ship channel as well as eight public terminals.

The Houston Ship Channel is one of the Houston region's most significant economic drivers. The channel supports 3.2 million jobs nationwide and some 1.35 million jobs in Texas. The Houston Ship Channel has a nationwide economic impact of \$802 billion annually

The Houston Ship Channel port complex ranks No. 1 in the nation in total waterborne tonnage, foreign waterborne tonnage and number of vessel transits.

On the east side, the first of three phases making up the new East End Maker Hub will soon be complete. The 300,000-square-foot project being steered by TX/RX labs and Urban Partnerships Community Development Corp. is going up on Navigation Blvd. in the East End. The expansive makerspace will have dedicated areas for companies operating in 3D printing, fabrication, hardware innovation and more. While the first phase focuses on suites up to 20,000 square feet geared toward an array of uses, phases two and three slated for completion later this year will include dedicated spaces for both light and heavy fabrication as well as crafting suites. The East End Maker Hub will make it easier for local manufacturing startups to secure the space and resources they need for success.



## *Summary*

This report may seem like doom and gloom for some commercial real estate sectors in the county but like most economic cycles everything is temporary. The pandemic has caused many issues. Political discord has caused issues as well. The good news is with several vaccines being administered some type of normalcy may return soon.

The pandemic has taught us how to adapt to market changes as well as lifestyle changes. Some of the sectors of commercial real estate may not return to past operating procedures but the ones who adapt will be successful.

Investors and developers are always looking to the future. They have taken advantage of the downturn in the market to acquire new land, propose new projects and bring those new projects to fruition.

## Industrial Property

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### *Refineries*

The SARS-CoV-2 (COVID) pandemic has touched practically every economic sector worldwide, and for most, not in a good way. The energy/refining sector was not spared. Lockdowns, work-from-home orders, and travel restrictions have cut transportation fuel demand significantly. And unless one follows no news at all, it was difficult not to learn from some source that the price of crude oil went negative for the first time on record in April of 2020. This was in the futures market, meaning that if you had a May contract for WTI you would have to pay a buyer to “sell” it. This was due to an oversupply of oil worldwide, a lack of available storage, a demand shock due to country lockdowns, and the Russia-Saudi Arabia price war. On the first trading day of 2021 the price of West Texas Intermediate (WTI) was about \$47.47 per barrel compared to last year at \$61.17 (NYMEX; first trading day 2020).

The Texas Gulf Coast refinery average annual capacity utilization, as defined by the Department of Energy, for 2020 (through November) was 82.4 percent compared to 90.1 percent in 2019. May was the worst month at 74.7 percent. This was the lowest monthly utilization since the effects of Hurricanes Rita and Katrina in the Fall of 2005 when it was 65.1 percent that October.

For 2020, Baker & O’Brien Inc.’s PRISM<sup>®</sup> cash margins for refining on the Gulf Coast (PADD 3) are more than \$10 per barrel lower than the same period for the prior year (through Q3) which puts them as negative on the year. Another third-party subscription service reflects a 38% decrease in U.S. composite refiner earnings from ’19 to ’20 and then forecasts earnings increase of almost 15% from the 2020 level through 2021. Houston Refining reported a year-over-year decrease of about \$224 million in EBITDA on lower crude runs and lower margins for products. In absolute terms they reported yearend earnings of -\$289 million for 2020 versus -\$65 million in 2019. Refiner margins will be site specific depending on configuration, crude diet, and utilization, but in general, it was a very bad year for the segment. 2021 could prove to be better, but much of that depends on vaccine rollouts and the speed at which economies return to a level of normalcy, or perhaps, a new normal.

The price of D6, or ethanol-based, RINs (Renewable Identification Numbers; the renewable fuels trading/compliance mechanism) rose sharply over the course of 2020 and their average cost was about two-and-a-half times that of the 2019 average. Diesel RINs (D4) were only up about 34% in 2020 compared to 2019. There are concerns that a higher 2021 RVO (renewable volume obligation) will exceed the available ethanol volume and that small refiner exemptions will no longer be granted.

ExxonMobil is expanding its chemical plant operations adjacent the refinery in Baytown with a performance polymer unit and a specialty additives unit. Construction for both units began in 2020 but has been put on a “slow-paced” status as the company tries to conserve cash from operations during the pandemic.

There were no sales or offers for sale of Texas-based refineries in 2020, however there were announcements of closures, sales (offered for sale), and conversions elsewhere in the U.S. Reportedly, 10 refineries are being offered for sale at the following locations: Point Breeze & Girard Point, PA; Trainer, PA; Coffeyville, KS; Wynnewood, OK; Billings, MT; Salt Lake City, UT; Kenai, AK; Anacortes, WA; and, Convent, LA. In 2020 Shell idled their Convent, LA refinery, Marathon their Gallup, NM and Martinez, CA refineries.

## ***Chemicals***

The biggest recent impact to the chemicals industry is COVID. This outbreak has impacted the markets significantly. Oil prices have plummeted because demand has dropped due to travel reductions and chemicals pricing has been affected with shipping and transportation of international bound goods either not making it to or from China.

The chemicals industry is heavily dependent on auto manufacturing and home building and, as the economy goes, so goes the chemical industry. GDP is up around 3% for the 2020 year as a whole and expectations are that it could be around 4%+ for 2021. However, there were huge changes during the year due to COVID, where GDP dropped 31% in the second quarter and rebounded 33% in the third quarter. So even though there was an overall increase, there was also a lot of turbulence in the market. Housing starts are up for single-family homes, surged almost 12%, and vehicle sales rebounded by 4%. Vehicle inventories are down around the country due to manufacturing interruptions which will lead to a reduction for many automotive products including tires, plastics, urethanes and other products used in vehicles, but most of this is expected to rebound in 2021 as the economy recovers from COVID.

Texas has been blessed with oil and natural gas fields that continue to be discovered, or through newer technologies, have been newly developed. West Texas has been the most recent boom area, but with the reduction in consumption across the nation, little is being done for new discovery and production in the market. The glut of natural gas that has been in place since 2005 has caused a tremendous amount of new construction to process the gas.

Many companies have begun exporting natural gas through LNG liquefaction terminal. Expansion of existing facilities and construction of new projects is on the horizon and with natural gas going out to the world market, natural gas prices may not be as cheap or as stable as they have been for the past 10 years. Only time will tell, but natural gas feedstocks have already caused a squeeze in margins for producers who depend on natural gas or natural gas components like ethane & propane. Recently natural gas prices have been creeping upward which will lead to reduced margins on products that result from natural gas derivatives.

Crude oil prices declined significantly in 2020. The price per barrel of WTI peaked near \$65 in January and then plunged to nearly negative \$40 per barrel. The market quickly recovered to positive pricing but remained near \$40 per barrel for most of the rest of the year. Toward the end March 31, 2021

of the year and early in 2021, the price drop came up to just under \$50 per barrel. All of this has negatively impacted markets causing some production to curtail or stop, in hopes that the price will bounce back. While oil has dropped significantly from being over \$100 per barrel, natural gas will continue as the preferred feed product for chemical manufacturing.

Economics of the large commodities chemical units built in the Gulf Coast have become very ugly, especially if foreign countries decide that they don't want our plastics, or that they can get them cheaper from the Middle East or Asia.

Operation rates for olefin units have increased to be in the lower 90% percent range for the year, though this industry had the same rocky road that most industries had due to COVID. Oil prices appear to not have significantly affected olefin unit run rates at this point, but oil is impacting the overall economy of Texas and the US which does affect profitability. All together this industry appears to have peaked in 2015 for the current 5-15 year cycle; values will likely decline over the next few years especially with the impact of the massive new plants in place. There is still one more facility planning to be built in the Houston area, but it has done little but break ground to this point.

Chemical-related inventory volumes are likely to be down as many plants curtailed production early in the second quarter and then struggle to keep up with demand later in the year. Value changes for most chemical facilities look to be down for commodity chemicals going into 2021 but may be up or down more for specialty chemicals.

## ***Utilities***

### **Natural Gas Distribution**

Natural Gas Distribution utility companies are always requesting that regulators allow them higher returns (through the rates they are allowed to charge their customers) in order to pay for the cost of expansion when needed, repair storm damage at times, and maintain reliable service overall. However, the main goal of regulators is to make sure gas distribution companies remain operational while keeping service costs as low as possible, in return for the monopoly power given to these companies over designated service areas. Because both revenues and expenses tend to be held in line with this process, the values of property owned by these natural gas distribution businesses tend to be rather stable. Other factors that augur well for continued healthy future demand for utility services are: a) the nation's population appears to be on a steady upward growth course; b) limited practical alternatives exist for consumers seeking a steady supply of natural gas; and c) natural gas supplies in this country are abundant thanks to proficient drilling and extraction technologies. Unseasonably warm or cold weather can always cause substantial volatility in quarterly operating results; however, companies strive to counteract this exposure through long-term oriented temperature-adjusted rate mechanisms.

For 2021, the market values of the companies in this sector should remain stable if not improve slightly, due to a continued increase in customer base in their operational areas, higher rate cases being approved in certain service areas, and possible regulatory relief to offset bad-debt and other

March 31, 2021

operating expenses incurred due to the pandemic. These are considered essential businesses and have remained open throughout the pandemic. While there might be a slight drop in income for some companies this previous year brought on by the effects of parts of the economy being shut-down, the overall outlook is up or stable once the economy is fully back online. The market is optimistic, in general, about the sector's operating performance over the long term. Natural gas ought to remain an abundant resource in the United States, brought about partially by new technologies, so a shortage does not seem probable anytime soon. Too, there are limited alternatives for the services the companies in this category offer. Furthermore, it's a challenge for new entrants in the market, given such factors as the size of existing competitors and the substantial initial capital outlays that are required. Finally, the country's population ought to remain on a steady, upward course, which augurs well for future demand for utility services.

## **Telecommunications**

Merger and acquisition (M&A) activity remains robust within the Telecommunications Services Industry. The total M&A value for the industry has now surpassed the \$1 trillion mark. Forty-five percent of M&As are completed to expand the company's geographical service area and twenty percent are done to enlarge the company's portfolio, according to Consultancy.eu. Deals continued over the past year, including T-Mobile and Sprint Corp, who finally finalized their merger after seven years and three failed attempts. Meanwhile, smaller service providers are also merging to expand their service areas and better compete with the large telecommunications companies.

Telecommunications companies experiencing growth and income have mature wireline businesses and other expanding operations. The remaining Baby Bells, after consolidating several times, have the most prominent growth prospects. These small telecommunications companies have concentrated wired assets around metropolitan areas, while they continue to divest outlying networks. Managements are shifting the mix in favor of wireless, broadband, data, video, and business services. In these expansion markets, peer competition is significant. Cable companies also pose a threat to market share. Integrated service providers have large capital budgets to construct and maintain networks. Strong cash flow from wireline operations helps to fund expansion and manage debt burdens. Aggressive lobbying efforts have enabled the telecommunications companies to limit regulatory constraints, especially in the video service venue.

For the traditional portion of Telephone Utilities, the number of phone lines in the United States continues to decrease. Competition from alternative technologies, namely wireless, instant messaging, and Voice over Internet Protocol, has caused residential and business customers to continue to cancel their wireline service. Most wireline carriers are rural; thus, peer competition is scarce. Access lines continue to be in decline. Margins remain under pressure across the Telecommunications Services Industry. Data usage continues to grow exponentially as technological innovation has led to faster networks and more powerful cell phones. Thus, price competition has become more intense. The continuing build-out of 5G technology has the potential to increase network speeds markedly and allow a plethora of new uses and services, but they may come with added costs to reimburse some of the expense of the network upgrades. Traditional

telephone property across the state is expected to continue declining over the next few years. It should be noted that all telephone calls, including cell calls are currently still directed through the traditional telephone switching system.

## **Cable TV**

After years of a near monopolistic rein of certain providers, the competitive market continues to heat up. More and more content providers, including traditional TV networks, are offering TV shows and movies directly to consumers through the internet, like the Peacock streaming service, Disney+, HBO Max, and the list goes on. Netflix subscriptions really tell the story. Per statista.com, Netflix subscribers steadily increased from 27.91 million subscribers in 2013 to 61.04 million in the 4th quarter of 2019. Then the Covid-19 pandemic caused a sudden increase to 69.97 million subscribers in the first quarter of 2020. Finally, Netflix concluded 2020 with 73.94 million subscribers in the 4th quarter. Many new streaming services are starting, which will increase competition in the streaming service industry. The lack of broadband internet service would be the only deterrent, in my opinion, to a subscriber not choosing on demand service.

## **Electric Power**

Covid-19 did not appear to reduce power consumption according to the ERCOT 2020 to 2019 comparison in the ERCOT 2020 Demand and Energy Report. However, the huge price spikes from the emergency alerts of 2019 did not appear in 2020, because new generation resources, including a significant amount of utility-scale solar, continue to be added to the ERCOT system at a rapid pace. This resulted in an increased reserve margin of 10.6% in 2020 from 8.6% in 2019. ERCOT is expecting a summer-rated capacity of 5,620 MW of power to be added by the summer of 2021, which includes 816 MW of gas-fired resources, 1,765 MW of wind resources, and 3,039 MW of utility-scale solar resources. Furthermore, ERCOT is planning to add an additional 9,273 MW of summer-rated solar capacity by the summer of 2022. ERCOT is currently expecting a summer capacity of 64,026 MW of installed thermal capacity from gas, coal, and nuclear plants for the summer of 2021, with an additional 588 MW of mothballed capacity. Texas Gulf Sulphur CTG 1, a gas turbine in Wharton County, was retired on 11/30/2020.

The Competitive Renewable Energy Zones (CREZ) initiative was adopted by the Public Utility Commission of Texas (PUCT) in April 2008, with a \$5 billion plan to add transmission infrastructure to move electricity from wind farms in West Texas to markets in the North, South, and Houston zones. Wind energy has zero fuel cost and is a clean alternative to burning hydrocarbons. Wind generation can receive federal tax incentives allowing them to sell power at negative prices (loss of ~20+ dollars per Megawatt) and the federal government makes up that difference. When the government incentives go away, wind power producers will have to bid in at positive pricing increasing the average price for electricity. Phase-out of the incentives began in 2017 for projects that started construction after 1/1/2017. Under the current law, a 60% incentive will be available for projects that start construction in 2021. A new 30% offshore wind ITC was created for projects that begin construction by Dec. 31, 2025. Finally, the solar ITC will continue March 31, 2021

to apply at 26% for any project that begins construction by 2022. In addition to new wind farm construction, there has been a trend of taking existing wind farms that have lost their incentives and replacing the turbines, which allows the windfarm to qualify for the ITC incentives all over again. These “re-powered” windfarms are getting another 10 years of production tax credits in addition to any local abatements on property taxes.

TCEQ is continuing a rulemaking process that they continue to project to complete by Tax Year 2021 that addressed the exemption of Heat Recovery Steam Generators (HRSGs). Industry has been pressing to get HRSGs exempt from taxation even though they typically cost less than alternatives and produce a marketable product (electricity). For those taxpayers who have not applied for HRSG exemptions, this could result in a windfall of tax exemptions depending on the outcome of TCEQ’s rulemaking process. In 2020, TCEQ granted HRSG exemptions per the company’s request, while the official rule is pending.

## **Underground Storage**

Natural gas—a colorless, odorless, gaseous hydrocarbon— that may be stored in a number of different ways. It’s most commonly held as inventory underground under pressure in three types of facilities.

These underground facilities are:

- depleted reservoirs in oil and/or natural gas fields;
- salt cavern formations; and
- aquifers.

Natural gas is also stored in liquid or gaseous form in above-ground tanks, such as at liquid natural gas (LNG) export facilities. Each storage type has its own physical characteristics (porosity, permeability, retention capability) and economics (site preparation and maintenance costs, deliverability rates, and cycling capability) which govern its suitability for particular applications. Two important characteristics of an underground storage facility are its capacity to hold natural gas for future use and its deliverability, the rate at which gas inventory can be withdrawn.

The principal owners/operators of underground storage facilities are interstate pipeline companies, intrastate pipeline companies, local distribution companies (LDCs), and independent storage service providers. If a storage facility serves interstate commerce, it is subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC); otherwise, it is state-regulated. Most working gas held in storage facilities is held under lease with shippers, LDCs, or end users who own the gas.

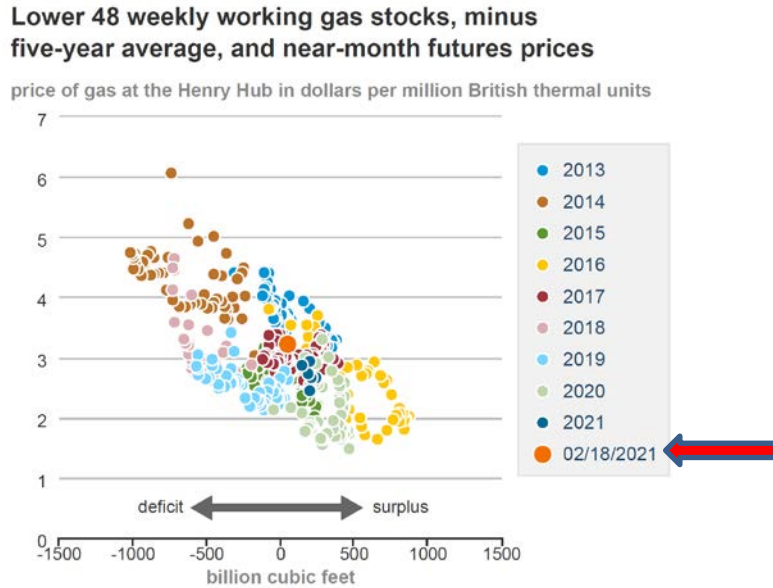
Underground gas storage serves a variety of purposes. Pipeline companies, both interstate and intrastate, rely heavily on underground storage to facilitate load balancing and system supply management on their long-haul transmission lines. Local gas distribution companies generally use underground storage exclusively to serve various customer needs directly. Independent storage service providers build and own underground storage facilities and almost exclusively serve third-party customers like marketers and electricity generators on an “open access” basis. All of these storage purposes exist because of the underlying principle that injection will/must happen during summer months when demand is relatively low (and which keeps upstream producers in business), and conversely withdrawal will/must happen in the winter months when there isn’t enough upstream gas being produced to satisfy total demand. This underlying principle has been somewhat eroding over the last ten years as available supply from upstream producers has ramped up as more or less adequate year-round now, thus diminishing the value of the underground gas storage “middleman” facilities.

The value of underground gas storage in Texas has the potential to increase again as the population here keeps growing and the associated need for electricity ramps up, especially if gas production doesn’t commensurately increase and renewable sources of energy (wind, solar, commercial battery storage, etc.) can’t fill the breach. However, at this time the U.S. Energy Information Administration (EIA) projects in their February 2021 Short-Term Energy Outlook (STEO) that the share of U.S. electric power generated with natural gas to fall from 39% in 2020 to 37% in 2021 and to 35% in 2022. They forecast natural gas share declines in response to a forecasted increase in the price of natural gas delivered to electricity generators from an average of \$2.38/MMBtu in 2020 to \$3.27/MMBtu in 2021 (a 37% increase). EIA forecasts that planned additions to U.S. wind and solar generating capacity in 2021 and 2022 will contribute to increasing electricity generation from those sources.

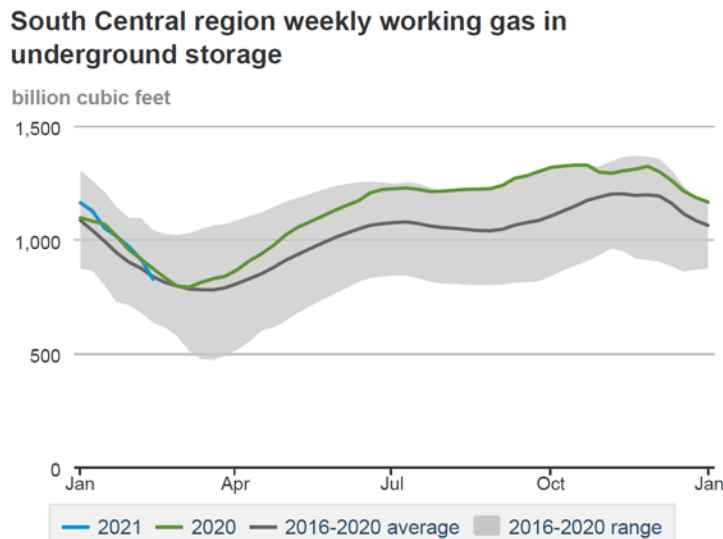
The EIA expects that total U.S. consumption of natural gas (not just for electricity generation) will average 81.7 billion cubic feet per day (Bcf/d) in 2021, down 1.9% from 2020. The decline in total U.S. consumption reflects less natural gas consumed for electric power as a result of higher natural gas prices compared with last year combined with expectations of continued strong liquefied natural gas (LNG) exports and a shrinking surplus of natural gas in storage compared with the five-year (2016–20) average.

U.S. working natural gas in storage ended October at more than 3.9 trillion cubic feet (Tcf), 5% more than the 2015–19 average and the fourth-highest end-of-October level on record. EIA estimates that inventory withdrawals were 703 billion cubic feet (Bcf) in January, compared with a five-year (2016–20) average January withdrawal of 716 Bcf. The January withdrawals occurred at a lower rate than EIA forecast in their previous month’s STEO. The lower-than-expected withdrawal is the result of warmer-than-average January temperatures that reduced natural gas use for space heating. However, EIA forecasts that declines in U.S. natural gas production this winter compared with last winter will more than offset the declines in natural gas consumption, which will contribute to natural gas storage returning to levels near the five-year average by the end of winter. Forecast natural gas inventories end March 2021 at 1.8 Tcf, which is about the same as the five-year average.

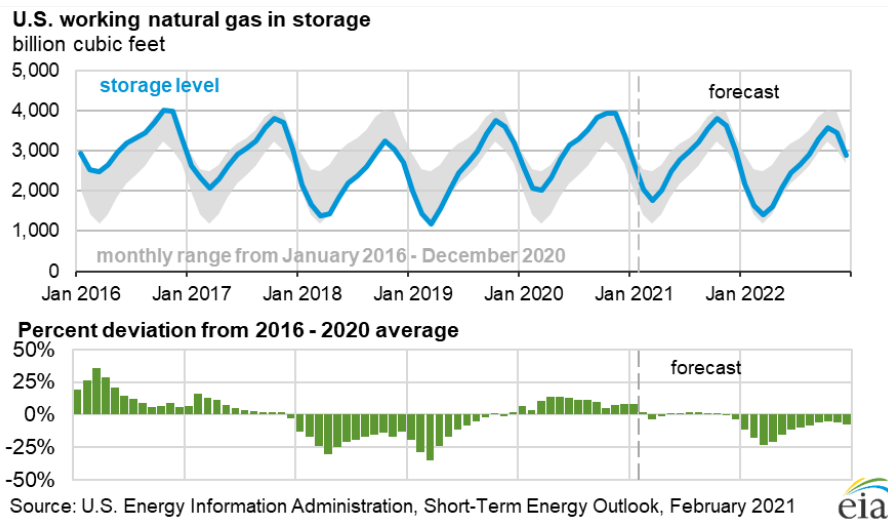
Per the EIA’s Weekly Natural Storage Report released February 18, 2021, working gas in storage for the Lower 48 states was estimated to be 2,281 Bcf as of Friday, February 12, 2021, within the five-year historical range. Stocks were 105 Bcf less than last year at this time and 57 Bcf above the five-year average of 2,224 Bcf. Per the EIA’s Natural Gas Storage Dashboard released February 18, 2021, the amount of gas currently in storage in the Lower 48 is squarely at mid-range between deficit and surplus relative to the last nine year ranges:



For the South Central Region (includes Harris County), storage was at 826 Bcf, or approximately 58% of the region’s 1.428 Tcf capacity. This is down 5.4% from this time a year ago and 1.3% below the five-year average, but within the historical five-year range. Salt dome cavern storage represents about 30% of the region’s total capacity.



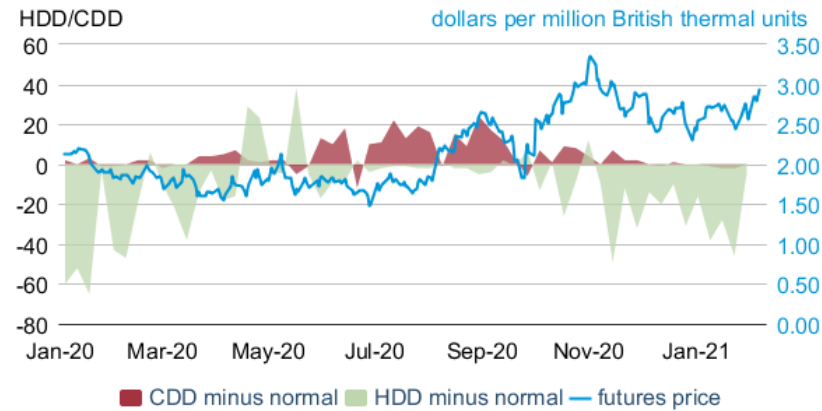
Injection and withdrawal amounts can fluctuate widely over short periods of time, particular in winter when significant cold weather events can trigger large sudden withdrawals. However, over time, storage levels have a predictable swing pattern of increasing during the summer months and depleting during the winter months:



According to the EIA in their February 2021 STEO, the amount of gas in storage is expected to be stable if not marginally decline over the next two years. The storage volumes at individual storage facilities such as Kinder Morgan Clear West Lake facility or Energy Transfer’s Bammel facility do not necessarily follow overall U.S. trends all the time. In any event, gas inventories present on the inventory owner’s chosen lien date (either January 1 or September 1) will be appraised with the prevailing price at that time.

The amount of gas placed into storage, at least on a short-term basis, has a loose correlation with the price of natural gas. A higher price portends less gas will be stored as it’s less likely a profitable “flip” can be made for short-term trading purposes. Conversely, as natural gas price at the wellhead declines, greater volumes go into storage with the hopes that the gas can be sold later for a higher price. As with any other commodity, the price of natural gas more or less is regulated by supply and demand. As of January 1, 2021, the EIA was forecasting a significant increase for the price of natural gas from CY2020 levels due mainly to expectations of reduced drilling of oil wells in the Permian Basin of Texas and other shale plays in the United States. Vast amounts of associated (casinghead) gas come from these oil wells which tend to oversupply the gas market. The Covid-19 pandemic has gutted demand for oil worldwide, paradoxically resulting in a more optimistic outlook for natural gas producers, at least for the short term.

**Figure 7. Natural gas front-month futures prices and actual minus historical average HDD and CDD**



Sources: CME Group and National Oceanic and Atmospheric Administration, as compiled by Bloomberg L.P.  
 Note: HDD=heating degree days, CDD=cooling degree days.

Longer term, the EIA projects a return of more aggressive oil well drilling in the shale plays which will once again bring forth additional volumes of natural gas which will erode the strength of natural gas price at the wellhead and keep underground storage a viable business at least for trading purposes.

## ***Manufacturing***

Manufacturing in Texas ended 2020 with a 18.3 production rate increase from November 19' to December 20'. This can be explained as expectations regarding future perceptions led to stronger growth as orders and employment rates increased. The production index is a key measure of state manufacturing conditions. 2019 ended with a production rate of 3.6. That rate rose to 25.5 in December 2020 according to business executives responding to the Texas Manufacturing Outlook Survey. The survey polls businesses on whether key indicators of activity have increased, remained the same, or decreased from the previous month. The survey is conducted monthly by the Federal Reserve Bank of Dallas and the survey responses are used to calculate an index for each indicator. The indexes of future general business activity and future company outlook grew from 6.4 and 13.9 to 47.3 and 17.6, respectively from December 2019. Most other indexes for future manufacturing remained solidly in positive territory.