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A wide-angle photograph of the Houston skyline, including the Reliance Tower and other skyscrapers, viewed from a park with a river and green trees in the foreground. The sky is blue with scattered white clouds.

# **GUIDE TO HOUSTON'S INFRASTRUCTURE**

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# INTRODUCTION

Are you looking forward to owning a commercial building in Houston, Texas? Houston has a massive infrastructure that has been meticulously planned, implemented, and maintained. It is the fourth largest city in the country and Texas' biggest city spanning over 655 square miles. Therefore, there is an optimum need for a well-functioning infrastructure, transportation network, airports, ports, and commercial real estate. Houston also embraces the dynamic events globally, such as technological advancements, migration, and the city population's natural growth.

Owning commercial real estate, getting your office space, industrial, retail, multifamily, hospitality, healthcare, or warehouse in Houston demands several investments to be put in place and having reliable infrastructure in the city and surrounding areas.



## HOUSTON'S AIR TRANSPORT

As with any major city, air transportation is an important part of Houston. The city's airports contribute over \$36 billion to the local economy and provide 190,000 jobs. There are two major airports in Houston, the George Bush Intercontinental Airport (IAH) and William P. Hobby Airport (HOU).

The George Bush Airport is under Class B airspace and is located 23 miles North of Downtown Houston. It is the 14th busiest airport in the United States and ranked 47th busiest in the world. The airport features 27 passenger airlines to 187 direct destinations and had over 45 million passengers in 2019. In addition, the airport handles more than 1.5 billion pounds of cargo goods and mail annually. The airport's primary shipments include computers, field equipment, medical goods, auto parts, and perishables. The city of Houston has approved a 5 year capital improvement plan to expand the airport terminals by over 100,000 square feet. This expansion is designed to increase interaction with the international community that can now visit Texas more seamlessly and often.

William P. Hobby Airport (HOU), also known as Houston Hobby is the second largest airport in the city and provides domestic airline service and private aviation services. Located 7 miles South of Downtown Houston. The airport is an operating base for Southwest Airlines and features 4 runways covering 1,300 acres. There were an estimated 14 million passengers that flew through Houston Hobby in 2019. It continues to expand and recently opened a five-gate terminal for international travel.

Another notable Houston airport is Ellington Airport (EFD) which is located 15 miles South of Downtown. The airport supports a variety of general aviation including commercial flights, U.S. military, NASA and is home to the Houston Spaceport.



## RAILROAD INFRASTRUCTURE

While rail is less important to some industries, railroads are still an important part of infrastructure for any city. Houston's freight by train is expected to double by 2025 making it an integral part of the economy. There are over 2,000 trains that travel through the Houston rail network on tracks owned and operated by BNSF Railway, Union Pacific Railroad and the Port Terminal Railroad Association. The rail network includes 800 miles of tracks in the area, 3 class 1 railways and 21 miles of railroad bridges. The freight on these trains is mostly for local operations carrying chemicals, coal, rock and grain between Houston, Baytown, Dayton, Bayport, and Beaumont industrial locations.

## FLOOD CONTROL PLANNING

Houston, Texas and the surrounding Harris County areas have received significant torrential rains in the past few years along with significant hurricanes affecting the area. The showers that the city receives can cause deadly flooding and significant property damage. The Harris County Flood Control District is responsible for managing the 22 watersheds and maintaining the flood control systems consisting of 1,500 channels which are in total 2,500 miles long. This entity completes emergency repairs to public infrastructure as well as residential and commercial areas.

There have been substantial repairs done to maintain the flood control systems and increase the city's safety against flooding. Urban sprawl is also a contributing factor that has led to many of the city's flooding issues as new flood control systems can take longer to implement in newly developed areas. The local authorities and regional leaders work closely to fix the problems and retain the city's high standards for flood control.



## HOUSTON WATER SUPPLY AND SEWER SYSTEM

The collection, treatment and reclamation of wastewater is an important function for the safety and sanitation any major metropolitan city. Houston has an excellent sewer system which is one of the largest in the US and has even received praise from the American Society of Civil Engineers. The sewer system consists of 6,100 miles of sewer lines, 125,000 manholes, 39 wastewater treatment plants and nearly 400 lift stations. Wastewater management must have continuous funding to meet current and future needs. There is also the need to reduce water bills that may lead to the reduction of sewer overflows. These overflows contaminate the swampy areas of the city.

Having clean drinking water from sustainable sources is important for any large metropolitan city. The city of Houston provides clean water to all of Harris County and the surrounding areas. The Houston Public Works and drinking water operations estimate that it has sufficient water supplies through the year 2050. There are over 200 million gallons per day available through available groundwater in addition to 1.2 billion gallons per day of surface water rights. The Texas Commission on Environmental Quality rates Houston's drinking water as a superior system which is the highest rating available.

## HOUSTON ENERGY INFRASTRUCTURE

As home to one of the largest oil and gas areas in the world one would expect that the power and energy infrastructure to be exceptional. The city ranks number 1 in the US for renewable energy use with 92% coming from wind and solar energy. With over 7 million residents and a fast growing population, reliable and cheap electricity is important to the city. Texas has a deregulated energy industry that allows consumers and businesses to choose their electricity provider. CenterPoint Energy is headquartered in Houston and is the largest provider in the area providing electric and natural gas to customers.

Houston has 4,600 energy related companies here and employs 237,000 people in the energy industry. Some of the notable employers are household names such as BP, Chevron, Exxon Mobil, Halliburton, ConocoPhillips and more. There are 2.6 million barrels of crude oil processed here and deep-water offshore and hydraulic fracturing is based here too. There are also significant renewable energy companies based here with over 100 solar power companies, 30 wind power companies with nearly \$4 billion invested in "cleantech" venture capital funding.

## HOUSTON PORT ENTRY

Ports of Entry are an important part of Houston's economy. These are specifically designated areas at seaports and borders that accept cargo and inspect merchandise prior to entry into the United States. The Port of Houston is the world's busiest port, handling over 8,000 vessels yearly with 200,000 barge movements. The ship channel contributes to the city's employment hugely and employs over a million people. It generates about \$180 billion in Texas revenue and around \$4.5 billion in state and local revenues.

Houston port is 25 miles long with over 150 diversified facilities. The port has nine public terminals, which are under the port of Houston authority. The authority also manages the private industrial facilities that are found on the Houston Ship Channel. The jobs the port provides are divided into indirect and direct. Direct jobs resulting from port operations are about 509,000 people, which contributes \$73 billion to the states' GDP. The container business has been enhanced over the years and trade with the Middle East and Asia has increased as well. The Houston Ship Channel also invests over \$50 billion in the petrochemical industry which is an important sector in revenue collection and employment.



## HOUSTON HIGHWAYS

The city of Houston has much to show to those who have never been in this very big city. The city is so large and sprawling that the top 10 busiest roads in Texas are located here. Houston is located at the crossroads of interstates 10, 45 and 69. I-69 is a superhighway that will connect Canada, the US and Mexico to facilitate international trade. To those who are new to the Houston area, highway travels can seem confusing, at first. This is because many locals have nicknames, for some of highways. If you are on the receiving end of someone giving you directions, a list of the commonly used nicknames will be helpful to know. A newcomer would want to be informed about the nicknames to avoid getting completely turned around in this city. Newcomers tend to be surprised at the way Houston is spread out. Keep in mind, Houston is the fourth largest city in all of America. The entire city is spread out and many locals tend to travel by car. There are some public transportation options available, for those who do not want to drive on the highways. If you are new to Houston and would like to travel on the highways, you may want to be informed about the rush hour traffic and the very busy periods too.

### A Sample of Highway Nicknames

Many people use technology for their driving directions in this modern day. However, if your GPS happens to break, you may need to ask for directions to get to your destination. This is the reason to be familiar with some commonly used nicknames for the Houston highways. If you are unclear about directions and nicknames, be sure to ask for added clarification from a local or a business. There are other nicknames used so be sure to ask the locals about the highways and various roads around the city. A sample of highway nicknames include the following:

- I-610: Many people will refer to this as the "610 Loop." It is known as the "Inner Loop" by others. This highway tends to be broken up by stretches of the road. It will be dependent on the location. "North Loop" is part of Highway 610.
- State Highway Beltway 8: This may be called "Sam Houston Parkway" or "Sam Houston Tollway" or also referred to as the "Outer Loop".
- Part of I-10, West of I-45: This is often referred to as "Katy Freeway." It is also called "Baytown East Highway" by some residents too.
- US 59 south of I-45: You may hear this called "Southwest Freeway" or "Eastex Freeway".

### The Busy Hours and Rush Hour Traffic

Many people avoid driving in any rush hour traffic. If you are uncomfortable driving in heavy traffic, you ought to be informed about the times when traffic is very heavy. In a Houston rush hour, it is not uncommon for all traffic to come to a halt for periods of time. The rush hour will start at seven in the morning and tends to clear up by nine in the morning. At four, in the afternoon, the rush hour starts up again. It tends to clear away by seven in the evening.

### Roadway Improvements

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## HOUSTON BRIDGES

With the extensive network of interstates, highways and local roads, Houston has a large number of bridges. The largest bridge in the city (and one of the biggest in the US) is the Fred Harman Bridge which spans 2.6 miles over the Houston Ship Channel on State Highway 146 between Baytown and La Porte. Other notable bridges located in Harris County include the Airline Drive Overpass, Dunlavy Street bridge, Elysian Viaduct bridge, Franklin Street bridge, Graustark Street bridge and the Hazard Street bridge.

Most of the city bridges are still in good condition, while about 25% have been repaired to reinforce and improve them. The city has a rapid growth of transportation network that needs to be addressed to meet the demand. The city's infrastructure funding is pushed to the limits of inflation, population growth, and aging structures that require constant repair.

## SOLID WASTE

Houston's collection and disposal capabilities have adequate landfill volume for the city's current needs. However, with the significant population growth and the fact that the Houston metro area generates 20% more waste than the national average could be a potential issue in future operations. The city could also do a better job in implementing recycling awareness and practices.



## HOUSTON HOUSING

With an estimated 6.9 million people in the metro area, housing availability is an important factor. The average home price is \$175,000 which is below the national average and is more affordable than other markets. The current inventory of single-family homes is down to a 2.5 month supply and the high-end of the market experienced the highest increase in sales volume this year.

Since 2010, the population of Houston has grown 18% which demonstrates the need for available residential housing. Houston has an inventory total of 676,700 units with an average effective rent of \$1,045 and an occupancy rate of 88.8%. For 2020 the multifamily market experienced a net absorption of 2,000 units with a total of 14,000 new units constructed during first half of the year. Houston's multifamily properties are affordable and offer something for everyone. The abundance of livable places and plans concentrate on enhancing accessibility, affordability, and equity. Houston's housing is more affordable and provides substantial opportunities for investors.



## REASONS FOR INVESTING IN HOUSTON REAL ESTATE MARKET

Houston is a beautiful place to work, live, and start a family. It has a fascinating history and is considered one of the best locations to invest in commercial real estate. The city has a booming housing market that is attractive for almost any kind of investor. The real estate market is healthy and secure for both domestic and foreign businesses. The city also has a lot to offer with a very diverse culture with various communities of people, a good business climate, world-renowned oil & gas, medicine, space, and other industries. Why should you invest in Houston? The following are the top reasons you should consider Houston, Texas, as your commercial real estate destination.

### High City Population

The city of Houston has a vast population with millions of people. It remains the state's biggest city with the number of people continuing to increase. Houston is also thriving with business, culture, sports, advancing technology, education, and fashion. It currently has the tallest skyline in the United States that gives it a significant advantage over other cities in the region. The town accommodates millions of visitors like tourists and sports enthusiasts, making the city's economy boom.

### Numerous Investment Properties

There are a variety of investment properties in Houston, Texas with every range available for all sizes of investors. The business climate and infrastructure are favorable and provide low residential housing costs that reduce ongoing operating costs to investors, employers and their workers. The city still has plenty of available acres of land that can be claimed and made into new commercial real estate grounds.

It is easy for investors to find any opportunity they are looking for in Houston. The commercial real estate market is varied with new home buildings for multifamily, industrial, and retail. The existing commercial buildings have also been renovated to cater to market needs. You can choose to invest in new buildings or old buildings with a fair market price.

### Developing Real Estate

The city still has room to expand and grow seamlessly. It has a low-density urban sprawl that creates a favorable environment for real estate and enough space in the town for continued expansion. The inner-city neighborhoods still have areas with buildings that are vacant or abandoned that can be easily renovated to enhance the surrounding area. You can use places to invest in new buildings or create a new structure for your business. The market is growing, and soon, there will be a scramble for spaces due to the city's potential high demand.

### Booming Trade

Houston's trading environment is booming and expanding due to high migration rate into the city, resulting from the increased international trade, low regulation and ease of business. The port of Houston is huge and is one of the busiest ports in the world interacting with import and export trading partners. There is an increased number of visitors through the ports and airlines for those interested in international trade in the city. Houston is an easier location to lease or sell a property to foreigner investors who come here for business.

### Economy

Houston is ranked as one of the best industrial regions globally and at number two for manufacturing GDP in the U.S. In addition, it has the largest medical complex in the world and there are over 1760 life sciences and biotech companies in the city. Houston is the world's best energy production and exploration city. It is home to over 6,400 manufacturers with 240,000 skilled laborers who continually produce over \$80 billion in goods. It is an incredible city that provides an incredible experience and access to one of the best economies in the US and the world.

Last, but not least is the city's infrastructure which is an excellent foundation for any sized business looking to expand their operations.

## CONCLUSION

Houston is the best city in the US for commercial real estate investments. The favorable market climate with affordable housing is the primary factor you need to consider putting your business in Houston. The town has an ever-growing market base with increasing international ties. The extensive and thoughtfully planned infrastructure coupled with a strong economy, makes Houston the perfect location for your business.

## ABOUT CIVE®

CIVE® is an upscale Design-Build firm, specializing in top-down build process driven by value engineering – from state-of-the-art design, leading-edge engineering, high-quality construction, and elite project management.

Our strengths lie in a rich mix of talent, experience and ingenuity. Our clients can depend on us to anticipate industry changes and plan for the future, while providing most practical and cost-effective solutions. CIVE® devotes customized, individual service to all its clients, whether large or small.

Specialties: Residential, commercial & industrial design, civil engineering, structural engineering, MEP design (mechanical, electrical and plumbing), construction management & project management.





Corporate Headquarters  
5444 Westheimer Rd, Suite 1440  
Houston, Texas 77056  
Phone : 281-870-8727  
Fax : 281-870-8728  
Toll Free : 1-800-979-4442

