Foreword

In 1993 the Department of Landscape Architecture and Urban Planning in the College of Architecture at Texas A&M University, initiated the Texas Target Communities program (TTC) to provide technical assistance to small towns on issues related to land use planning and economic development. Today TTC, in partnership with the Texas A&M AgriLife Extension Service, also works with rural counties and marginalized communities across Texas to provide technical support in keeping with Texas A&M’s mission as a land grant university. At the same time it serves as a “real world” learning laboratory for graduate students within coursework on campus. Students gain valuable planning experience while targeted communities receive valuable assistance they could not access otherwise and results in a positive difference in the quality of life for its residents. Communities are chosen for participation in TTC based on demonstrated need and their commitment to the planning process.

[Insert how they contacted TTC, and why we decided to consult for this community.]

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1. Executive Summary

The Hitchcock State of Community Report is prepared by Texas Target Communities. Data is gathered from a wide variety of sources to gain a complete picture of the current conditions in Hitchcock, TX. By analyzing the data in this document, relationships between different components and characteristics of the city became clearer and potential opportunities come to light.

The City of Hitchcock is located on the northeast side of Galveston County—right above West Bay. It prides itself on its location, diversity, and quality of life. The growing community enjoys its close access to the Texas Gulf Coast and its year-round temperate weather with plenty of outdoor activities.

Its proximity to Houston and Galveston play an important role in the economy of the city. The educational services sectors lead the economy. Due to the presence of many school districts and nine universities, the educational services sector has added 322 new jobs from 2005 through 2015. However, 10.31% of the total population is suffering from deep poverty and the unemployment rate, estimated to be 9.40% in 2016, is considerably higher than both the state and national averages, 6.40%, and 7.40% respectively.

Since the founding of Hitchcock in 1892, the city has experienced several population booms. Currently, the population is estimated to be 7,464 and it is expected to reach approximately 11,000 in 2030. The growth of Hitchcock’s population provides the suggestion to create a stronger transportation network. Bus transit is not provided, and it is expected to be needed based on the financial and mobility constraints of many residents.

There are also dangers from hazards like flooding, tornados, hail, and storm surge due to its proximity to the West Bay, Galveston Bay and the Gulf of Mexico. As natural hazards become more common, there is a need to make communities more resilient -- especially to communities along the Texas coast.
2. Overview

2.1. Location and Geography

The City of Hitchcock is located in Galveston County in the State of Texas. It is located about 40 miles south-east of Houston. The total area is 92.1 square miles, of which about 65% is land and the rest is covered by water. The city of Hitchcock has more undeveloped land (about 90% of its total area) than the county combined.

![Figure 2-1. Location of Hitchcock City, Texas](source: Courtesy of TTC)

2.2. Cultural Context

The Galveston County Fair and Rodeo began in 1938 and was held at facilities in Runge Park located in Arcadia, Texas. In the early 1980s, the plans to move the fair to Jack Brooks Park in Hitchcock, Texas were initiated. The move to Jack Brooks Park was completed in time for the 1984 Fair, and this is where the fairgrounds are currently located\(^1\). The youth and the animal projects they exhibited are the foundation the Fair was built upon. This traditions of this fair continues even today.
http://www.cityofhitchcock.org/about-hitchcock/quality-of-life/
3. History

3.1. History of the City of Hitchcock

On May 31, 1848, Jonas Butler acquired one league of land and built a house on the Highland Bayou. Other French settlers followed Butler, who established more homes on the bayou. In the late 1840s, more settlers from German and French descent began to settle along the Highland Bayou. A market for fresh vegetables in Galveston, Texas caused the Highland settlers to build small farms, grow produce, and canoe over the bay to the marketplace in Galveston. Originally, the community was known as "Highland" for its geographic location. Travelers used the bayou to reach the City of Galveston. However, in the 1970s travelers used the newly built railways to reach Galveston. In 1873 the town name was changed after Emily Hitchcock, widow of Galveston civic leader Lent M. Hitchcock, offered a 450-foot-wide tract from Cow Gully east to the section house for a town site in exchange of renaming the community after her late husband.²

The City of Hitchcock was created as a railroad station between the City of Galveston and Houston in 1872. At the end of the 20th century, Hitchcock became a vegetable shipping center. Around 1891, Thomas King platted the town site. By 1892, the community reported a population of 275, two groceries, several fruit growers and commission merchants. In 1894, a local public school opened, and by 1907, the town had two schools. By 1914, the town grew and reported a population of 550, one bank, hotel, blacksmith, and three general stores. However, the population declined due to the end of local farming after 1920; and by 1925, the population had fallen to 350.³

An insect plague caused the economy of the community and surrounding areas to crash. The area stayed in distress until the establishment of Camp Wallace, the anti-aircraft training base, and the Hitchcock Naval Air Station craft with the mission to protect shipping facilities and marine traffic along the Texas coast from possible Axis submarine attacks. The camp and base was a discharge center after the war. Eventually, those who passed through became local residents. Postwar, the economy boomed, and the City of Hitchcock developed a chamber of commerce, sewers, improved roads, natural gas
service, a phone system, and multiple churches. In 1948, Hitchcock established an independent school district.\(^4\)

Hitchcock benefited from close proximity to the petrochemical industry centers located at Texas City, Chocolate Bayou, and Freeport. Hitchcock's population grew to 1,105 after 1954 and increased steadily after 1960 when the town incorporated. The population reached 6,954 and served 36 businesses. The number of residents fell during the 1970s, and Hitchcock became a residential suburb with development, 20 minutes away from the National Aeronautics and Space Administration's Project Apollo Space Laboratory Project at Clearwater. Hitchcock's population declined, but later grew to 6,405 residents and 67 businesses by 1988.\(^5\)

Today, the City of Hitchcock offers yacht basin and resort facilities. Additionally, each December the community gathers to celebrate a Christmas parade and a Good Ole Days Parade in August. In 2010, Hitchcock reported a total population of 6,961. Due to its location, Hitchcock is vulnerable to hurricanes. Hurricane Harvey devastated the coastal community in August 2017, which damaged an estimated 70% of homes and flooded the City Hall.\(^6\) Hitchcock became "Hitchcock Strong" after the disaster and is committed to preparing for recovery from future impacts by strategically implementing land planning, resilience, development strategies, and inclusiveness.
4. Demographics

4.1. Overview

The population of the City of Hitchcock in 2016 was about 7,464 people.7 However, the last reported statistics from the decennial census8 corresponds to the year 2010, in which the observed population was 6,961 people.

The median age for the City of Hitchcock is 33.3 years1, which is younger than the Galveston County (37.5 years) and Texas State (34.2 years).9 For the City of Hitchcock, the median age2 for females (35.8 years) is much higher than that of males (31.8 years).10 From 200011 until 201012, the absolute population change was 575 people, indicating that on an average 57 people were added each year.

4.2. Population density

The City of Hitchcock has rural characteristics. As of 2016, the population density of the City of Hitchcock was 123.37 people per square mile, which was a 7.23% increment from the population density of 115.05 in 2010. The City of Hitchcock has a significantly low density in comparison to the county3, however it is comparable to the state4. Galveston County is denser than the Houston-Galveston region as a whole, with second highest density after Harris County within the region.

The high population density of Galveston County is due to the larger cities such as the City of Galveston, the City of Dickinson, the City of Friendswood, and the City of League City, which have a much higher density (almost 8 to 10 times as much) as that of the city of Hitchcock.

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1 When studying smaller communities, it should be noted that while the data is comparable across geographies, the margins of error are much higher for smaller geographies or populations than larger populations.
2 Has a high margin of error (5.2 years as against 2.6 years) which presents a limitation in making definite inferences from this data.
3 831.97 people per mile squared in 2016 as against 770.65 people per mile squared in 2010.
4 102.93 people per mile squared as against 96 people per mile squared in 2010.
4.3. Population Growth

Historically, the population of the City of Hitchcock has been comparatively much smaller than the County’s Population. The historical growth rate for the city has been peculiarly irregular, and the city has experienced several busts and booms since 1892. The city saw two drastic decreases, one between 1914 and 1925 and another between 1980’s and 1990’s (Refer Table 4-1). The most recent population decline can be attributed to the oil busts that occurred across the state in mid-1980, and hit the local economy acutely.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>% Change</th>
<th>% Annual Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1892</td>
<td>275</td>
<td>(x)</td>
<td>(x)</td>
</tr>
<tr>
<td>1914</td>
<td>550</td>
<td>100.00%</td>
<td>4.55%</td>
</tr>
<tr>
<td>1925</td>
<td>350</td>
<td>-36.36%</td>
<td>-3.31%</td>
</tr>
<tr>
<td>1950</td>
<td>1,105</td>
<td>215.71%</td>
<td>8.63%</td>
</tr>
<tr>
<td>1960</td>
<td>5,216</td>
<td>372.04%</td>
<td>37.20%</td>
</tr>
<tr>
<td>1970</td>
<td>5,556</td>
<td>6.69%</td>
<td>0.67%</td>
</tr>
<tr>
<td>1980</td>
<td>6,655</td>
<td>19.59%</td>
<td>1.96%</td>
</tr>
<tr>
<td>1990</td>
<td>5,868</td>
<td>-11.83%</td>
<td>-1.18%</td>
</tr>
<tr>
<td>2000</td>
<td>6,386</td>
<td>8.83%</td>
<td>0.88%</td>
</tr>
<tr>
<td>2010</td>
<td>6,961</td>
<td>9.00%</td>
<td>0.90%</td>
</tr>
<tr>
<td>2016</td>
<td>7,464</td>
<td>7.23%</td>
<td>0.72%</td>
</tr>
</tbody>
</table>

Source: Texas Almanac, City Population History from 1850-2000

The Population Growth rate in comparison to the county and the state is illustrated in Figure 4-1. As a general trend, the average annual population growth rate for the City of Hitchcock has been lower than that of the state as well as the county, except between 1950’s and 1970’s, when the city saw a sudden increase in its population.
4.4. Age distribution

The male to female ratio has been stable through recent past, and the trend is expected to continue. The female population was 52.11% of the total population of the city as per the 2010 Census, which implies that there were 91.9 males per 100 females in the City of Hitchcock.

Some characteristic indicators of the population are also the dependency ratios. The overall age dependency ratio for the City of Hitchcock was 78.2, with old-age dependency ratio at 24.3 and child dependency ratio at 53.9.

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5 A measure defined by dividing the combined under 18 years and 65 years (the dependents, typically not considered in the labor force) and over by the 18-64 years population (the productive, typically in the labor force) and multiplying by 100. (American Community Survey and Population Estimates Program).
6 A measure derived by dividing the population 65 years and over by the 18 to 64 years population (working age population) and multiplying by 100. (American Community Survey).
7 A measure derived by dividing the population under 18 years by the 18 to 64 years population (working age population) and multiplying by 100. (American Community Survey)
The age distribution of the City of Hitchcock in 2010 reflects the patterns followed by the county. However, the population distribution for 2016 seems to have a concentration of either adolescent population or middle-aged population.

Observing the male population, it can be inferred from the estimates data that the following cohorts have significantly lesser population in 2016 as compared to 2010 (Refer Figure 4-2 and Figure 4-3).

- students or entry level workers, i.e. 20 to 24 years of age and;
- mid to senior-level working class, i.e. 35 to 44 years of age;
Figure 4-3. Age-Sex Pyramid (2010 Census Reported Data) for the City of Hitchcock, TX

Source: U.S Census Bureau, Table QT-P1

4.5. Race distribution

The race distribution in a city is essential to understand its culture and roots. It also helps in ensuring representation, equitable access, and distribution of the resources within the community. The racial composition of the city in 2000’s indicates that the population was comprised majorly of White alone population (52%). The second largest racial group was Blacks or African Americans (33%) followed by the Hispanic or Latino population of any race (14%). Other racial groups were present in relatively very small shares of total population and collectively constitute minorities, when considered in absolute numbers (Refer Figure 4-4).

Since 2010, the pattern of population change has been continuing through the recent years. Whereas, the shares of White population and the Black or African American population decreased, the Hispanic population increased. The changes in other minority groups however, are not so drastic.
At present, though the White population still makes up the majority with 46% of the population share, the Hispanic population has considerably grown to match the share of Black or African American population in the total population share (Refer Figure 4-4). The recent shifts suggest that the community needs to look into the needs and requirements of its growing Hispanic population and the minority population, and to actively involve them as stakeholders for future planning processes.

**Figure 4-4. Race Distribution Comparison**

Source: U.S. Census Bureau, Table P004, Table P9, and Table B03002.
4.6. Projections

The forecasts for the regional growth of the Houston- Galveston metropolitan area are predicted to be strong, and the city of Hitchcock is expected to follow similar trends as the county. The HGAC and the Texas State Water Plan have published official population predictions to project the growth (Refer Table 4-2).

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Population</th>
<th>HGAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>8,604</td>
<td>10,494</td>
</tr>
<tr>
<td>2030</td>
<td>10,217</td>
<td>11,382</td>
</tr>
<tr>
<td>2040</td>
<td>11,248</td>
<td>12,365</td>
</tr>
<tr>
<td>2050</td>
<td>12,053</td>
<td>Not published</td>
</tr>
<tr>
<td>2060</td>
<td>12,692</td>
<td>Not published</td>
</tr>
<tr>
<td>2070</td>
<td>13,205</td>
<td>Not published</td>
</tr>
</tbody>
</table>

Source: Texas State Water Plan22 and HGAC Population Growth Forecasts23

The 2016 population of the City of Hitchcock was an estimated 7,464 people; hence, the forecasts by the Water Board seem more realistic and plausible. For the purpose of all the following sections dealing with projections, 2016 estimated population is taken as base. The following sub-sections attempt to inform how the projections appear across age, gender, race and geography.

4.6.1. Age

The population projections by age inform the community for the need of planning efforts regarding certain age groups. It can be helpful as it may present an estimate if the community will see a large dependent population and hence, prepare in advance for it.

These projections are done by assuming the Census population of 2010 as the base population. The projections take into account the annual births rates by women in fertility cohorts, the survival rates or death rates of each cohort as it advances into the next, and the net migration for the State of Texas.

As per Figure 4-5, it is observed that although the overall population is expected to grow for the next few decades, the age cohorts corresponding to young children, people over 65
years of age, and peak-career professionals gets the most increase. Hence, these age cohorts may require more consideration in future planning efforts.

![Population Projections by Age](image)

**Figure 4-5. Population Projections by Age**

*Source: Courtesy of TTC*

The above analysis only presents an estimate and shall not be considered an official forecast or age distribution.
4.6.2. Gender

Considering the past trends in the gender ratio, it can be estimated that the female population would continue to be larger than the male population (Refer Figure 4-6). Even though the past trends indicate that the female to male ratio is continually increasing, it is estimated that the ratio will become stable in future.

![Population Projection by Gender](image)

Figure 4-6. Population Projections by Gender
Source: Courtesy of TTC

4.6.3. Spatial

The spatial projections give a good estimate of where the future growth is expected. The Highland Bayou project has published a future population growth forecast map for 2035 in collaboration with HGAC.

The map (Refer Map 4-1) shows intensified development to the north and northeastern extents of the City of Hitchcock. The development is concentrated along the major Highways and is not expected to infiltrate in wetland-rich areas.
4.7. Education

The total student population of the City of Hitchcock is about 2,235 people, which is 29.94% of the total population (Refer Table 4-3). The following section details out the educational attainment for the city.

Table 4-3. School Enrollment (2016 Estimates) for the City of Hitchcock, TX.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population 3 years and over, enrolled</td>
<td>2,235</td>
<td>x</td>
</tr>
<tr>
<td>Nursery School, Preschool</td>
<td>216</td>
<td>9.70%</td>
</tr>
<tr>
<td>Kindergarten to 12th grade</td>
<td>1,572</td>
<td>70.30%</td>
</tr>
<tr>
<td>College, Undergraduate</td>
<td>409</td>
<td>18.30%</td>
</tr>
<tr>
<td>Graduate, Professional School</td>
<td>38</td>
<td>1.70%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Table S1401
4.7.1. Educational Attainment

The largest share of the population aged between 18 and 24 for the City of Hitchcock has attained some level of College or Associate Degree, but none in this age cohort have acquired any Bachelor’s Degree. (Refer Figure 4-7).

![Educational Attainment, 18 to 24 Years](image)

Figure 4-7. Educational Attainment (2016 Estimates) age 18 to 24 years, for the City of Hitchcock, TX. Source: U.S. Census Bureau, Table S150126

When reviewing the statistics for age 25 and older, additional details, such as population that did not complete the 9th grade are also added (Refer Figure 4-8). This extent of detail enables the community to assess areas that demand attention for improvement of the overall state of the community.

Observing both the cohorts for educational attainment it can be said that the community is invested in getting the basic education (Refer Figure 4-7 and Figure 4-8).

---

8 The population of the city, for certain measurements is too small to predict a near-to-accurate estimate. Hence, these estimates are indicative of a general trend and should not be taken as highly reliable estimates. Similarly, the statistics for the educational attainment of the female population with the male population cannot be compared due to such high margins of error that deem the comparisons unreliable.
Figure 4-8. Educational Attainment (2016 Estimates) 25 years and over, for the City of Hitchcock, TX.

Source: U.S. Census Bureau, Table S1501

The student population with a Bachelor Degree or higher, for the City of Hitchcock (13%), is significantly low in comparison to the county (29%) or the state (28%) statistics. Educational attainment is directly related to the employment opportunities, the demand of the industry, and the incomes for highly specialized individuals.

4.8. Youth disconnection

Disconnected Youth is the young population between the ages of 16 and 24, who neither are enrolled in school nor are part of the working population. Young people in this cohort who are working or are in school part-time or are in the military are not considered disconnected.

Youth disconnection is an issue to be considered. A long-term plan (Comprehensive Strategy Development Project) has been implemented nationally to reduce the number of youths involved with crime and increase healthier youth development across the nation.
The following five youth programs help in providing data at the local level:

- after school programs
- early childhood
- juvenile assessment center
- safe communities program, and
- mentor network

Map 4-3 indicates Galveston County has a 12.9% disconnected youth population, which is concerning for youth aged 16 to 24. Another report suggests the population of working-age teens who are both unemployed and out of school is about 7%.\(^{29}\) However, this report only includes youth aged between 17-19 years of age.
4.9. Linguistically isolated population

A household is linguistically isolated if all adults present speak a language other than English and no one speaks English “very well.” Linguistic isolation acts as a barrier for people to receive basic services and governmental assistance, especially, medical and social services. An entire household’s inability to communicate in English can be even more of a barrier than an individual’s inability.

For the city of Hitchcock, the percent of population which identifies themselves as speaking English less than “very well” has decreased considerably from 52.50% in 2010 to 16.90% in 2016. (Refer Table 4-4).
Table 4-4. Linguistically Isolated Population in the City of Hitchcock, TX.

<table>
<thead>
<tr>
<th></th>
<th>Population 5 years and over</th>
<th>Speak only English</th>
<th>Speak a language other than English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Count</td>
<td>6,059</td>
<td>5,350</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>100.00%</td>
<td>88.30%</td>
</tr>
<tr>
<td></td>
<td>Speak English only or</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>speak English &quot;very well&quot;</td>
<td>Percent</td>
<td>93.90%</td>
</tr>
<tr>
<td></td>
<td>Speak English less than</td>
<td>Percent</td>
<td>6.10%</td>
</tr>
<tr>
<td></td>
<td>&quot;very well&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Count</td>
<td>6,623</td>
<td>5,460</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>100.00%</td>
<td>82.40%</td>
</tr>
<tr>
<td></td>
<td>Speak English only or</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>speak English &quot;very well&quot;</td>
<td>Percent</td>
<td>96.60%</td>
</tr>
<tr>
<td></td>
<td>Speak English less than</td>
<td>Percent</td>
<td>3.40%</td>
</tr>
<tr>
<td></td>
<td>&quot;very well&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Count</td>
<td>6,769</td>
<td>5,629</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>100.00%</td>
<td>83.20%</td>
</tr>
<tr>
<td></td>
<td>Speak English only or</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>speak English &quot;very well&quot;</td>
<td>Percent</td>
<td>97.10%</td>
</tr>
<tr>
<td></td>
<td>Speak English less than</td>
<td>Percent</td>
<td>2.90%</td>
</tr>
<tr>
<td></td>
<td>&quot;very well&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Table S160130

Often, linguistically isolated households are geographically concentrated which would justify targeting communications in those areas in other languages familiar to the residents.31

4.10. Causes of death

Galveston County (898.3 deaths per 100,000 people)32 observes a higher overall death rate when compared to the State of Texas (688 deaths per 100,000 people)33. The following table (Refer Table 4-5) indicates the most probable causes of death, for the State of Texas.
Table 4-5. Leading Causes of Deaths in Texas.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Leading Cause of Deaths</th>
<th>2015 Count</th>
<th>Death Rate (per 100,000 population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diseases of the Heart</td>
<td>43,133</td>
<td>157.0</td>
</tr>
<tr>
<td>2</td>
<td>Malignant Neoplasms</td>
<td>39,018</td>
<td>142.0</td>
</tr>
<tr>
<td>3</td>
<td>Cerebrovascular Diseases</td>
<td>10,470</td>
<td>38.1</td>
</tr>
<tr>
<td>4</td>
<td>Chronic Lower Respiratory Diseases</td>
<td>10,216</td>
<td>37.2</td>
</tr>
<tr>
<td>5</td>
<td>Accidents</td>
<td>9,941</td>
<td>36.2</td>
</tr>
<tr>
<td>6</td>
<td>Alzheimer's Disease</td>
<td>8,892</td>
<td>32.4</td>
</tr>
<tr>
<td>7</td>
<td>Diabetes</td>
<td>5,503</td>
<td>20.0</td>
</tr>
<tr>
<td>8</td>
<td>Septicemia</td>
<td>4,370</td>
<td>15.9</td>
</tr>
<tr>
<td>9</td>
<td>Nephritis, Nephrotic Syndrome and Nephrosis</td>
<td>4,048</td>
<td>14.7</td>
</tr>
<tr>
<td>10</td>
<td>Chronic Liver Diseases and Cirrhosis</td>
<td>3,841</td>
<td>14.0</td>
</tr>
</tbody>
</table>

Source: Texas Department of State and Health Services

### 4.11. Economics and poverty

Poverty among other subjects of economy helps increase understanding of the socio-economic standing of a community. There is about 24% of the population identified to be living in conditions of poverty in the City of Hitchcock.

The Census Bureau also provides data using ratios that compare the income levels of people or families with their poverty threshold:

- A household income above 100% of their poverty threshold is considered “above the poverty level.”
- Income above 100% but below 125% of poverty is considered “near poverty.”
- Households with incomes at or below 100% are considered “in poverty.”
- Household incomes below 50% of their poverty threshold are considered to be in “severe” or “deep poverty”.
770 people (10.31% of total population) are suffering from deep poverty in Hitchcock. In the following sections, poverty rate, poverty across races, genders, geography along with gender wage-gap, and unemployment rate are discussed.

### 4.11.1. Poverty rate

Of all the total population of the City of Hitchcock in 2016, about 1,780 people are estimated to be below the poverty level, which amounts to about 24% of the population as against the national average of 15.1%. This estimate indicated poverty is quite high and needs addressing while planning for the community. The breakdown of poverty level by race is illustrated in the following table (Refer Table 4-6).

<table>
<thead>
<tr>
<th>Race</th>
<th>Total (Estimate)</th>
<th>Percent Below Poverty Level (Estimate)</th>
<th>Margin of Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>White alone</td>
<td>5,064 +/-516</td>
<td>13.50%</td>
<td>+/-6.2</td>
</tr>
<tr>
<td>Black or African American alone</td>
<td>2,089 +/-500</td>
<td>48.30%</td>
<td>+/-15.4</td>
</tr>
<tr>
<td>American Indian and Alaska Native alone</td>
<td>55 +/-72</td>
<td>0.00%</td>
<td>+/-43.0</td>
</tr>
<tr>
<td>Asian alone</td>
<td>43 +/-68</td>
<td>0.00%</td>
<td>+/-48.6</td>
</tr>
<tr>
<td>Native Hawaiian and Other Pacific Islander alone</td>
<td>0 +/-18</td>
<td>-</td>
<td>**</td>
</tr>
<tr>
<td>Some other race alone</td>
<td>118 +/-136</td>
<td>74.60%</td>
<td>+/-39.8</td>
</tr>
<tr>
<td>Two or more races</td>
<td>55 +/-59</td>
<td>0.00%</td>
<td>+/-43.0</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Table S1701

### 4.11.2. Gender-wage gap

The Gender-wage gap is the average difference between the remunerations for men and women who are working. Working-women are typically paid lower than their male counterparts. This issue is however, highly nuanced and exceedingly complex. According to the U.S. Census Bureau data for 2016, the gender-wage gap is much higher (Refer Figure 4-9) for jobs paying more than the median income.
4.11.3. Unemployment rate

The Unemployment rate for the City of Hitchcock is estimated to be 9.40% in 2016\textsuperscript{39}, which is considerably higher than both the state (6.40%) and the national (7.40%) averages. The unemployment rate for the community is explained both, by race, and by the age of the residents.

As indicated in Figure 4-10, it can be observed that the unemployment rate is more than 4 times as high amongst the Black or African American community as the White population, which also are the only two races for which the Census Bureau has released these estimates\textsuperscript{9}.

\textsuperscript{9} The estimates are not published for Native Hawaiian and Other Pacific Islanders and population belonging to Two or more Races, as there were too few or none observations to compute any estimate.
The total population of age 16 and over in the City of Hitchcock is about 5,339 people, with an overall 9.4% unemployment rate. People are classified as unemployed if they do not have a job, have actively looked for work in the prior 4 weeks, and are currently available for work. The unemployment rate distribution by age indicates that it is highest for the youngest age cohort, i.e. those between 16 to 19 years of age (Refer Figure 4-11). This is not a very alarming statistic since that age cohort has the highest student population share. It would only be alarming if this population was neither enrolled in school nor employed, i.e., falling under the categorization of disconnected youth.

It is interesting to note the population in age cohort 55 to 59 years of age is estimated to have an unemployment rate of 0.00%, indicating that all individuals in this age cohort are included in the workforce (Refer Figure 4-11). The estimates are not published for the population 75 years and over, as there were too few or no observations to compute an estimate.

Figure 4-10. Unemployment Rate by Race (2016 Estimates) for the city of Hitchcock, TX.
Source: U.S. Census Bureau, Table S2301
Figure 4-11. Unemployment Rate by Age (2016 Estimates) for the City of Hitchcock, TX.

Source: U.S. Census Bureau, Table S230141


11 United States Census Bureau, *Decennial Census*, 2000, Table P001, Total Population, SF1 100% Data, https://factfinder.census.gov/bkmk/table/1.0/en/DEC/00_SF1/P001/1600000US4834220

12 United States Census Bureau, *Decennial Census*, 2010, Table P1, Total Population, SF1 100% Data, https://factfinder.census.gov/bkmk/table/1.0/en/DEC/10_SF1/P1/1600000US4834220


19 United States Census Bureau, *Decennial Census*, 2010, Table P004, Hispanic or Latino, or not Hispanic or Latino by Race, https://factfinder.census.gov/bkmk/table/1.0/en/DEC/00_SF1/P004/1600000US4834220

20 United States Census Bureau, *Decennial Census*, 2010, Table P9, Hispanic or Latino, or not Hispanic or Latino by Race, https://factfinder.census.gov/bkmk/table/1.0/en/DEC/00_SF1/P9/1600000US4834220


29 2017 Profile Galveston County, Prepared by Houston- Galveston Area Council, retrieved on June 1, 2018, http://www.ourregion.org/Profiles/County%20Profile%20Galveston.pdf


33 Texas Health and Human Services, Texas Department of State Health Services, Table 1 Resident Births and Death, https://www.dshs.texas.gov/chs/vstat/vs14/t01.aspx


35 Center for Poverty Research, What is “deep poverty”? University of California, Davis, https://poverty.ucdavis.edu/faq/how-poverty-measured-united-states

36 United States Census Bureau, ACS 5-Year Estimates, 2016, Table S17002, Ratio of Income to Poverty Level in the Past 12 Months https://factfinder.census.gov/bkmk/table/1.0/en/ACS/16_5YR/C17002/1600000US4834220


38 United States Census Bureau, ACS 5-Year Estimates, 2016, Table B19325, Sex by Work Experience in the past 12 months by Income in the past 12 months (in 2016 Inflation Adjusted Dollars) for the population 15 years and over, https://factfinder.census.gov/bkmk/table/1.0/en/ACS/16_5YR/B19325/1600000US4834220


5. Housing

5.1. Overview

In this section, the current housing market for the City of Hitchcock in comparison to Galveston County and the State of Texas is discussed. While the construction rate and housing occupancy rate has decreased since 2000 until 2016, the housing value has increased over these 2 consecutive decades, currently estimated to be $91,000 in 2016. However, more affordable houses are required for low income people of the city. In addition, the homeownership rate is higher than rental rate. It shall be noted that small number of housing units impose some difficulty and limitations on any exact conclusion as a small change in housing patterns will make major shifts in statistics.

5.2. Housing Stock Growth

The following graph shows the historic trends of the housing stock growth beginning from 1920’s. Construction of houses peaked during 1950 to 1959 as 17.10% of current houses were built in this interval. From 1960 to 1989, construction of houses declined to a rate of 10.90 in 1989. Another increase in housing stock happened from 1990 to 2009 as more than 30% of homes were built in this period of 20 years. U.S. Census Bureau shows 25.60% of houses in the city of Hitchcock are built after 2000. In comparison, this statistic for Galveston County and Texas are 28.40% and 26.10% respectively. At present, around 34% of housing units are 50 years or older and they are more prone to damage and destruction by natural hazards.
5.3. Housing Unit Density

As estimated by U.S Census Bureau in 2016, the total number of housing units in the City of Hitchcock was 3,234 as against 2,846 units in 2010, and the housing unit density per square mile is 47.31. Compared with population growth, it seems that there is a balance in housing market between the population and housing market since for the additional 503 people to the city 378 housing units are structured.\(^{44}\)

5.4. Housing Types

The 2016 U.S Census Bureau data shows that around 70% of homes in Hitchcock are detached 1-unit dwellings.\(^{45}\) When compared to Texas and Galveston County, Hitchcock has more mobile homes and fewer multi-family units (Refer Figure 5-2). In comparison with income and housing affordability, the City of Hitchcock needs more affordable types which are well protected against natural hazards and Hurricane more specifically.
5.5. Households

The total number of households estimated by the Census Bureau in 2016 is 2,768 for Hitchcock, out of which 1,244 are married couple households contributing to 44.94% of total household which is lower than the county and the state. As Compared to Texas and Galveston County, the rate of female householders (Refer Figure 5-3) living independently is higher in Hitchcock by 6.72% from Galveston and 5.87% from Texas.

Figure 5-2. Unit in Structure
Source: U.S Census Bureau, 2016. Table DP04
5.6. Housing Prices

As published by the U.S Census Bureau in 2016, the median housing value of Hitchcock in 2016 was $91,000 which is $13,800 higher than the 2010 value, this statistic is significantly lower than that of Texas and Galveston in 2016 (Refer Figure 5-4). The residents of Hitchcock have accessibility to houses in lower prices than majority of places in Texas and Galveston County.
Affordable Housing

To determine housing affordability, monthly housing cost and fee are compared to household income. According to the U.S Department of Housing and Urban Development (HUD), when a household pays 30% or more of its income for housing costs, the housing cost is a burden for the household and the residents are living in an unaffordable house relative to their income. In the U.S renter occupied housing units cost commonly 30% or more of the total income of the household. A large number of low-income households (earning less than $20,000 annually) spend 30% or more of their income on housing and are considered housing cost burdened (100 % for owners and 87.13 % for renters).\footnote{51}

In addition, around 41% of renter households belonging in $20,000 to $34,999 income bracket spend more 30% or more of their income on their housing. For owner households, around 85% of people with the income range of $35,000 to $49,999 paying 30% or more of their income on their housing (Refer Figure 5-5 and Figure 5-6). The records and information shows the necessity of offering affordable housing for the low income class in city of Hitchcock, Texas.\footnote{52}
Figure 5-5. Owner-occupied monthly housing costs by percentage of income
Source: U.S Census Bureau, 2016, Table: B25106

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Less than 20%</th>
<th>20 to 29%</th>
<th>30 percent or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $20,000</td>
<td>0.00%</td>
<td>0.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>$20,000 to $34,999</td>
<td>0.00%</td>
<td>74.29%</td>
<td>25.71%</td>
</tr>
<tr>
<td>$35,000 to $49,999</td>
<td>0.00%</td>
<td>16.67%</td>
<td>85.42%</td>
</tr>
<tr>
<td>$50,000 to $74,999</td>
<td>35.14%</td>
<td>47.57%</td>
<td>17.30%</td>
</tr>
<tr>
<td>$75,000 or more</td>
<td>84.48%</td>
<td>4.93%</td>
<td>10.59%</td>
</tr>
</tbody>
</table>

Figure 5-6. Renter-occupied monthly housing costs by percentage of income
Source: U.S Census Bureau, 2016, Table: B25106

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Less than 20%</th>
<th>20 to 29%</th>
<th>30 percent or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $20,000</td>
<td>4.49%</td>
<td>8.38%</td>
<td>87.13%</td>
</tr>
<tr>
<td>$20,000 to $34,999</td>
<td>17.52%</td>
<td>35.05%</td>
<td>41.39%</td>
</tr>
<tr>
<td>$35,000 to $49,999</td>
<td>59.26%</td>
<td>24.69%</td>
<td>16.05%</td>
</tr>
<tr>
<td>$50,000 to $74,999</td>
<td>63.16%</td>
<td>36.84%</td>
<td>0.00%</td>
</tr>
<tr>
<td>$75,000 or more</td>
<td>100.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>
5.8. **Vacancy Status**

The vacancy status as published by the U.S. Census Bureau is deceptive as it includes homes which are not on the housing market. For example, 31.33% of vacant homes are seasonal homes (146 out of 466 vacant units). To calculate the actual vacancy rate (Refer Figure 5-8), aggregated rent and sale only units are divided by the total housing units. The calculated rate of vacancy in the City of Hitchcock is lower than that Galveston. There are 124 units that are vacant which contributes to 3.83 percent of total housing units in Hitchcock.55

![Vacancy Status Diagram](image)

**Figure 5-7. Vacancy Status**

Source: U.S. Census Bureau, 2016, Table B2500456
5.9. **Occupancy vs Vacancy Rate**

Vacancy rate of housing units in Hitchcock, TX is 14.40% which is 3% lower than Galveston County rate and 3.4% higher than that of Texas (466 out of 3,234 of housing units in City of Hitchcock are vacant). This record in 2010 has been published as 16.80% (478 out of 2,846). The vacancy rate for renter-occupied houses is 9.1% and 1.4% for owner-occupied ones.

Going back to year 2010, the Rental Vacancy Rate is 5.2 and homeowner vacancy rate is 2.1. While these numbers and records could show us a low rate of housing vacancy in this city, the small number of housing units that are available in this city makes it hard to make any exact conclusions.
For a better understanding of housing occupancy rate, owner occupied housing units and rental-occupied housing units are to be compared. Owner occupied housing units in 2016 is estimated as 1,782 which contributes to 64.40 and as compared to 2010, the rate of owner occupancy is 3.30 percent higher in 2016, while it is 4.40 percent lower than the record in 2000. In comparison with Galveston County and Texas, the city of Hitchcock has higher owner occupancy rate from that of Texas by 2.50 percent but is lower than that of Galveston County by 1.80 percent.
5.11. **Renter Occupied Housing**

About 35.60% of total occupied housing units are occupied by the renters in the City of Hitchcock. The same record for Galveston County and Texas is 33.80% and 38.10% which shows that the rental occupancy rate is higher in Hitchcock than in Galveston but is lower than that of Texas.\(^59\)

![Graph showing Owner Occupied Housing](image)

*Figure 5-10. Owner-Occupied Occupancy rate*
*Source: U.S Census Bureau, 2016, Table DP04\(^58\)*

![Graph showing Renter Occupied Housing](image)

*Figure 5-11. Renter-Occupied Occupancy rate*
*Source: U.S Census Bureau, 2016, Table DP04\(^60\)*


6. Transportation

6.1. Overview

Hitchcock, TX is located on the south side of Interstate Highway 45. The main mode of travel within the city is by car. There is a good amount of commuting that goes on through the city of Hitchcock. The outflow of people who commute is almost three times that of people who are considered inflow commuters, meaning that many people who live in the city actually work outside of city limits.

6.2. Mode Networks

Map 6-1. Transportation Map of the City of Hitchcock, Texas
Source: Texas Department of Transportation
6.2.1. Highways

The city of Hitchcock transportation network is comprised of a state highway, an interstate highway and arterials. Map 6-1 shows the transportation network. State Highway 6, located near the north boundary, is the main collector of traffic and is the main road that takes visitors in and out of Hitchcock (Refer Map 6-6). Interstate Highway 5, runs above the north boundary, connects the city of Dallas and Houston and continues to Galveston over the Galveston causeway to the Gulf of Mexico.

6.2.2. Railroads

There are 2 railroads that run through and operate inside the boundary of Hitchcock, BNSF Railway Company and Texas City Terminal Railway. The Union Pacific Railroad Company run right above Hitchcock’s north boundary. The BNSF Railway Company is the largest freight railroad network in the nation, so there is no surprise that it cuts through the city to connect with the Galveston port.\textsuperscript{62} The Union Pacific Railroad Company owns the Galveston Railroad (Refer Map 6-1) and operates 32 miles of yard track at Galveston.\textsuperscript{63} The Texas City Terminal Railway operates out of Texas City (Refer Map 6-1) and it is used as a terminal switch road at the Port of Texas City, with a 32 miles of track and connections with BNSF and UP.\textsuperscript{64}

6.2.3. Airports

The City of Hitchcock does not have any airports available to its citizens. The followings airports are available to Hitchcock.

- **William P. Hobby Airport**: commercial and general aviation airport. Approximately 35 minutes away.
- **Pearland Regional Airport**: public-use general aviation airport. Approximately 30 minutes away.
- **Ellington Airport**: public and military use airport. Approximately 27 minutes away.
- **Baytown Airport**: public-use airport. Approximately 50 minutes away.
- **Houston Southwest Airport**: public-use airport. Approximately 40 minutes away.
- **Scholes International Airport**: city-owned public-use airport. Approximately 20 minutes away.
- **George Bush Intercontinental Airport**: international and Houston’s largest airport. Approximately 1 hour away.
- **La Porter Municipal**: city-owned public-use airport. Approximately 42 minutes away.
6.2.4. Sea Ports

Hitchcock’s geographic location gives the city easy access to four deep water ports. The Port of Galveston (Refer Map 6-3) is located within 15 miles of Hitchcock. It began as a trading post in 1825. It now one of the oldest ports in the Gulf of Mexico and was called the best natural harbor that Texas had to offer.66

The Port of Houston (Refer Map 6-3), 30 miles from away from Hitchcock, is a 25-miles long complex that is consistently ranked the 1st in the nation in foreign waterborne tonnage; first in imports nationwide; 1st in national export tonnage and 2nd in national total tonnage.67 It is the world’s busiest port. The Port of Texas City (Refer Map 6-3),
located 9 miles from Hitchcock, is the 9\textsuperscript{th} largest deep water port in the nation. The Port of Freeport (Refer Map 6-3), is located 40 miles from Hitchcock, is one of the fastest growing ports on the Gulf Coast, and ranked 26\textsuperscript{th} largest port in the nation.\textsuperscript{68}

Map 6-3. Distance from Hitchcock to the nearby Sea Ports
Source: Courtesy of TTC, 2018
6.3. Mode of Commute

Figure 6-1 shows that Hitchcock is an auto-dependent community. Most of the commutes made by the resident of the City of Hitchcock are by vehicles with 85.2% of commuters driving by car, truck, or van. Also notable is that this is a higher percentage of people driving alone by a car, truck or van than in the State of Texas, with 80.03% (Refer Figure 6-1). In Hitchcock, the drive alone average commute time is 26.6 minutes, which is higher than the normal US worker’s 25 minutes.69

![Means of Transportation, 2016 Estimates](image)

Figure 6-1. Means of Transportation (5-year estimates)
Source: U.S. Census Bureau, Table B08101

6.4. Public Transit

6.4.1. Transit Plan

The city of Hitchcock does not possess a public transit program. The city does not have a public transit relationship with neighboring cities. The closest public transit system to Hitchcock is the Mainland Transit System, with a bus stop located approximately 8 minutes north of the city. It is important to note that the City of Hitchcock is located
inside the focus area of the Houston-Galveston Area Council Transportation Plan. However, minor and major transportation projects are not located within the Hitchcock’s boundaries.

6.4.2. 2040 The Houston-Galveston Regional Transportation Plan (2040 RTP)

The 2040 RTP is a document that provides a responsible guide for maintaining and improving the current transportation systems within the Houston-Galveston area. The document involves 8 of the 13 counties of the Houston-Galveston Area Council (H-GAC) Region. The plan’s vision is to have a multimodal transportation system through coordinate investments that support a desirable quality of life, enhanced economic vitality and increased safety, access, and mobility. In order to work towards the plan’s vision, the region will invest in the following goals: safety improvement, manage and mitigate congestion, ensure strong asset management and operations, strengthen regional economic competitiveness, and conserve and protect natural and cultural resources.

6.4.3. 2040 Regional Bicycle and Pedestrian Plan

The 2040 Regional Pedestrian and Bicycle Plan was adopted by the Transportation Policy Council on January 22, 2015. The document plans long-range planning for the region’s vision to enhancing pedestrian and bicycle infrastructure. The plan is a long-range, multi-modal transportation plan that guides investment in all types of transportation infrastructure within the participating counties. As shown on only 0.05% people used a form of bicycles and 2.1% walked to commute.
Galveston County has a flat topography, which people of all ages and abilities can enjoy. The plan stated that many coastal cities provide cyclist with scenic views. Hitchcock does not have any existing bike lanes. Bikeways along the coast could attract tourists, especially those interested in scenic coastal settings. Hitchcock has mountain bike trails available in Jack Brooks Park.  

6.5. Transportation for Health Services

6.5.1. Medical Transportation Plan

The Medical Transportation Program (MTP) is a supported program developed in Texas to support its vulnerable citizens that are in need of transportation services. Overall, the program "is responsible for arranging and administering cost effective, non-emergency medical transportation NEMT services to eligible Medicaid clients, Children with Special
Health Care Needs (CSHCN) Services Program clients and Transportation for Indigent Cancer Patients (TICP) who have no other means of transportation”.77 The City of Hitchcock is located within the program boundaries of the Gulf Coaster Center, also known as Connect Transit. The Connect Transit, "Connect Transit provides demand response, fixed routes, and ADA paratransit services in Galveston and Brazoria counties. Connect Transit in partnership with the City of Galveston/Island Transit operates two park and rides known as Island Connect from the mainland in Galveston County to Galveston Island”.78

6.5.2. Special Needs Population

There is a special needs population who have transit needs. According to the 2012 – 2016 American Community Survey, 18.8% of the population report a hearing, vision, cognitive impairment, ambulatory difficulty, independent living, or self-care disability;79 13.60% of Hitchcock citizens are over the age of 65 and may have driving limitations.80 Transportation for special needs population is necessary for daily essential errands such as employment, attending college classes, grocery shopping, medical appointments or job training.

6.5.3. Traffic

It is crucial to identify the transportation issues to satisfy the needs of the growing community of Hitchcock. To understand the volume of traffic, data from TxDOT was used to measure the annual average daily traffic (AADT). AADT is traditionally the count number of vehicles passing over the count stations throughout 365 days for 24 hours. There are numerous techniques to obtain accurate AADT data. There are 8 TxDOT counting stations within city boundaries.
According to 2016 TxDOT data, HWY—6 experiences from 9876 – 13072 vehicles, FM2004 gets 8221, and Main Street receives 4884 (Refer Map 6-5). TxDOT calculates the future AADT for some roads within Hitchcock. The future AADT is calculated at a 2% growth rate per year over 20 years.\textsuperscript{82} Map 6-6 displays the future AADT for year 2035. HWY-6 is expected to average from 18140 – 25300 vehicles, Main Street 7550, and FM-2004 from 12230 – 21110. (Refer Map 6-6)
Map 6-6. Future Traffic Prediction for the City of Hitchcock, Texas
Source: Texas Department of Transportation83


79 U.S. Census Bureau, 2010-2016 American Community Survey 5-Year Estimates, 2016, Table S1810 https://factfinder.census.gov/bkmk/table/1.0/en/ACS/16_5YR/S1810/1600000US4834220


81 Texas Department of Transportation. *TxDOT Future Traffic*. Retrieved from https://hub.arcgis.com/datasets/68c59ca1246e43cccb51ca806ae20f8_0

82 Texas Department of Transportation. *TxDOT Future Traffic*. Retrieved from https://hub.arcgis.com/datasets/68c59ca1246e43cccb51ca806ae20f8_0

83 Texas Department of Transportation. *TxDOT Future Traffic*. Retrieved from https://hub.arcgis.com/datasets/68c59ca1246e43cccb51ca806ae20f8_0
7. Economy

7.1. Overview

In 2015, 1,392 people were employed in the City of Hitchcock. The industry sectors with the largest absolute number of employees are:

- Educational Services with 336 employees and 24.1% share of total jobs,
- Construction with 213 employees and 15.3% share of total jobs, and
- Manufacturing with 139 employees and 14.1% share of total jobs.\(^{84}\)

Of the total number of workers in the City of Hitchcock in 2015, 55% are male and 45% are female. The ratio of male to female workers in Hitchcock is slightly higher than the state with 51.3% male and 48.7% female workers and national ratio of 50.1% male to 49.9% female workers. Figure 7-1 shows the breakdown of jobs by worker gender in Hitchcock.

A breakdown of jobs by race in 2015 shows:

- Whites alone hold the majority of jobs with 76.9% of the total share,
- African Americans alone with 18.8% of jobs come in second, and
- Asians alone with only 2.6% are third.

Figure 7-2 shows jobs by worker race for Hitchcock in 2015.

When comparing the job breakdown and the population in Hitchcock, white residents are overrepresented in the job market, with 68% of the population and 77% of jobs. The same conclusion is applicable to Asian residents, with 0.4% of the population and 2.6% of jobs.\(^{85}\)

On the other hand, African Americans as the second major racial group in Hitchcock with 30% of total population, hold less than 20% of jobs.
In 2015, the median household income in Hitchcock was $49,872 per year a 20.5% increase from $41,392 per year in 2010.

The median household income in Hitchcock is lower than Galveston County ($62,313), Texas ($53,207), and U.S. ($53,889) statistics (U.S. Census Bureau, 2010, Table DP03; 2015; Table DP03). Although, Galveston County has a higher median household income than expected.

Table 7-1 compares family, household, and per capita incomes for the City of Hitchcock with Galveston County, State of Texas, and the United States.

Table 7-1. Income Overview, City of Hitchcock, Galveston County, Texas State, and United States, 2015

<table>
<thead>
<tr>
<th></th>
<th>City of Hitchcock</th>
<th>Galveston County</th>
<th>Texas State</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Median Family Income</strong></td>
<td>51,614</td>
<td>77,702</td>
<td>62,717</td>
<td>66,011</td>
</tr>
<tr>
<td><strong>Median Household Income</strong></td>
<td>49,872</td>
<td>62,313</td>
<td>53,207</td>
<td>53,889</td>
</tr>
<tr>
<td><strong>Per Capita Income</strong></td>
<td>22,052</td>
<td>31,585</td>
<td>26,999</td>
<td>28,930</td>
</tr>
</tbody>
</table>

* 2015 Inflated-Adjusted Dollars

Source: U.S. Census Bureau, 2015, Table DP03
In 2015, 5,219 residents were at least 16 years old in Hitchcock, of which 39.51% (2,062) were not in labor force. This is slightly higher than the same percentage for county (35.06%), state (35.27%), and country (36.35%). Figure 7-3 shows the employment status for residents 16 years and older for the City of Hitchcock in 2015.

Figure 7-3. Employment Status for Population 16 years or Older in City of Hitchcock, 2015
Source: U.S. Census Bureau, 2015, Table DP03.

Unemployment rate is defined as the share of the population 16 and over in civilian labor force who are jobless. In 2015, the total civilian labor force in Hitchcock was 3,157, 284 individuals were unemployed, with an unemployment rate of 9%. This is slightly higher compared to 7.5% for Galveston County, 7% for the State of Texas and the national unemployment rate of 8.3% (U.S. Census Bureau, 2015, Table DP03). Table 7-2 compares employment statistics of individuals over 16 in the civilian labor force for the City of Hitchcock, Galveston County, Texas State, and the United States.

Table 7-2. Population 16 and Over- In Civilian Labor Force in City of Hitchcock, Galveston County, Texas State, and United States, 2015

<table>
<thead>
<tr>
<th></th>
<th>City of Hitchcock</th>
<th>Galveston County</th>
<th>Texas State</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>2,873</td>
<td>92.5%</td>
<td>93.0%</td>
<td>91.7%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>284</td>
<td>7.5%</td>
<td>7.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Civilian labor Force</td>
<td>3,157</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2015, Table DP03.
7.2. Industry Specialization by Employment Share

Employment share by industry is an efficient way to identify local economy drivers. It provides insight into the region’s workforce, strengths and weaknesses of the local economy and potential job opportunities that may be available. Employment data by NAICS\textsuperscript{10} industry sector in Hitchcock is compared to Galveston County and the State of Texas as benchmark regions.\textsuperscript{11}

The City of Hitchcock has a higher share of workers than both Galveston County and the State of Texas in the following industries: (OnTheMap Application, 2015)\textsuperscript{94}

- Educational Services,
- Construction,
- Manufacturing,
- Public Administration, and
- Real Estate and Rental and leasing

On the other hand, Hitchcock has less employment share compared to Galveston County and the State of Texas in the following industries:

- Retail Trade,
- Professional, Scientific, and Technical Services,
- Construction,
- Mining, Quarrying, and Oil and Gas Extraction,
- Health Care and Social Assistance,
- Finance and Insurance,
- Administration & Support, Waste Management and Remediation, and
- Accommodation and Food Services

Figure 7-4 shows the employment share of NAICS industry sectors in Hitchcock, Galveston County, and the State of Texas in 2015 (OnTheMap Application, 2015).\textsuperscript{95}

\textsuperscript{10} The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. (https://www.census.gov/eos/www/naics/)

\textsuperscript{11} It is very helpful to compare region’s economic key indicators to that of a larger benchmark economy of which the region is a part. The benchmark region, for instance, may be a metropolitan statistical area (MSA), a state, or even the nation.
Figure 7-4. NAICS Industry Sectors by Employment Share in Hitchcock, Galveston, and Texas, 2015
Source: OnTheMap Application, 2015

Hitchcock  Galveston County  Texas
7.2.1. Ocean Economy

Galveston County is among the National Oceanic and Atmospheric Administration (NOAA) list of coastal counties. NOAA releases economic reports for coastal counties throughout the United States. According to NOAA, ocean economy is the combination of six economic sectors that depend on the oceans. These economic sectors include: living resources, marine construction, ship and boat building, marine transportation, offshore mineral extraction, and tourism and recreation.

In 2015, ocean economy comprised 14% of total economy in Galveston County. There were 14,840 individuals employed in ocean-related businesses, earning $406 million per year in total which is $27,400 per employee. Annual income from ocean economy for State of Texas was $21.4 billion in total and $108,200 per employee. There also 943 people were self-employed in ocean-related sectors. Goods and services from these industries brought $1 billion to the county’s economy in 2015. This is about 8.2% of the GDP for total economy and is $68,600 per employee.

From 2005 to 2015, number of jobs in ocean-related businesses in Galveston County grew from 10,473 to 14,840 which shows 41.7% increase which is much higher than Texas with 27.5% increase in number of jobs. Figure 7-5 shows changes in ocean economy’s employment from 2005 to 2015 in Galveston County.

Although while Texas has been experiencing a boom in ocean-related employment in 2008, the number of employments in Galveston County was growing at much lower rate than state and in some cases was even declining, changes in ocean economy employment in Galveston County was almost following the state’s trend. However, from 2013 to 2015, while number of ocean-related jobs was declining in Texas, Galveston County kept gaining more jobs. Figure 7-6 shows changes in ocean economy’s employment from 2005 to 2015 in Texas.
Figure 7-5. Employment of Ocean Economy in Galveston County, 2005-2015
Source: NOAA, 2015\textsuperscript{97}

Figure 7-6. Employment of Ocean Economy in Texas, 2005-2015
Source: NOAA, 2015\textsuperscript{98}
Tourism and recreation with 77.3% share and Marine Transportation with 8.7% are two largest industry sectors in Galveston County’s ocean economy. Offshore Mineral Extraction with 3.7%, Living Resources with 1.8, and Marine Construction with 1.4% are in next ranks. The data for other industries are protected under “suppressed data” category in order to maintain the privacy of individuals and businesses. These form less 7.1% of total ocean economy in Galveston County. Figure 7-7 compares ocean-related businesses by share in ocean economy between Galveston County, Texas, and Nation.

Figure 7-7. Business Sectors by Share in Ocean Economy, Galveston County, Texas, and United States, 2015
Source: NOAA, 2015

Business Sectors by Share in Ocean Economy, 2015

- **Tourism and Recreation**
- **Offshore Mineral Extraction**
- **Marine Transportation**
- **Marine Construction**
- **Living Resources**
- **Ship and Boat Building**
- **Suppressed**
7.3. Location Quotient Analysis

In order to understand regional industrial specialization in comparison to the city, we use Location Quotient (LQ\textsuperscript{12}). LQ is calculated by dividing the local employment share (City of Hitchcock) by the benchmark employment share (HGAC Region\textsuperscript{13}). An LQ of greater than 1 shows that the study area has a higher share of employment compared to the region and thus has a specialization in that specific industry. This gives the city a better image of different industry sectors and help them with their plans. City can encourage investment and development in specialized industries. On the other hand, city may choose to help diversifying the local economy by investing in other industries with high potential. Having defined their goal, cities can plan their economic future, prioritize industries and recruit businesses based on their specialization.

For location quotient analysis, cities are usually compared to county. Due to the proximity of Hitchcock to Houston and considering the high population and the predominant role of Houston in the economy of region in this section City of Hitchcock is compared to HGAC region to develop more relevant understanding. Table 7-3 shows the LQ for industry sectors in the City of Hitchcock and HGAC region as a benchmark region in 2015. Basic industries are highlighted in the table.

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\textsuperscript{12} The Location Quotient takes into account several assumptions. Cross Hauling refers to the simultaneous import and export of specific goods from a locality. The calculation of the location quotient assumes that the products, goods, and services generated locally have been completely consumed locally. This assumes that each industry will have a comparable consumption in an ideal scenario in comparison to the benchmark region. In case the consumption is lower, it does not capture the geographical, sociological or behavioral differences that could have led to these patterns, but rather assumes that the region is not self-sufficient. It also arguably assumes that the demand for each sector is same in the study region as in the benchmark region.

\textsuperscript{13} Houston-Galveston Area Council
Table 7-3. Location Quotient for Industries in City of Hitchcock, 2015

<table>
<thead>
<tr>
<th>NAIC Industry Sectors</th>
<th>Hitchcock, TX</th>
<th>HGAC Region</th>
<th>Location Quotient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Share</td>
<td>Count</td>
</tr>
<tr>
<td>Public Administration</td>
<td>110</td>
<td>7.90%</td>
<td>80488</td>
</tr>
<tr>
<td>Educational Services</td>
<td>336</td>
<td>24.14%</td>
<td>293936</td>
</tr>
<tr>
<td>Construction</td>
<td>213</td>
<td>15.30%</td>
<td>230670</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>44</td>
<td>3.16%</td>
<td>58432</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>196</td>
<td>14.08%</td>
<td>261354</td>
</tr>
<tr>
<td>Other Services (excluding Public Administration)*</td>
<td>105</td>
<td>7.54%</td>
<td>83468</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>113</td>
<td>8.12%</td>
<td>265477</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>52</td>
<td>3.74%</td>
<td>129433</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>38</td>
<td>2.73%</td>
<td>96616</td>
</tr>
<tr>
<td>Arts, Entertainment, and Recreation</td>
<td>11</td>
<td>0.79%</td>
<td>34083</td>
</tr>
<tr>
<td>Utilities</td>
<td>6</td>
<td>0.43%</td>
<td>20812</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>45</td>
<td>3.23%</td>
<td>179522</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>45</td>
<td>3.23%</td>
<td>314744</td>
</tr>
<tr>
<td>Administration &amp; Support, Waste Management ...</td>
<td>29</td>
<td>2.08%</td>
<td>219553</td>
</tr>
<tr>
<td>Information</td>
<td>3</td>
<td>0.22%</td>
<td>35462</td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>17</td>
<td>1.22%</td>
<td>228481</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>26</td>
<td>1.87%</td>
<td>350380</td>
</tr>
<tr>
<td>Mining, Quarrying, and Oil and Gas Extraction</td>
<td>3</td>
<td>0.22%</td>
<td>116739</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>0</td>
<td>0.00%</td>
<td>5949</td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>0</td>
<td>0.00%</td>
<td>40897</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,392</strong></td>
<td><strong>100%</strong></td>
<td><strong>100,872</strong></td>
</tr>
</tbody>
</table>

* Other Services include all industry sectors that are not categorized in the list, hence it is not considered as a single industry. Although it has an LQ of 2.8, it cannot be considered as a basic industry.

Source: OnTheMap Application, 2015

Public administration has the highest LQ of 3 among all industry sectors. Educational Services with 2.5, and Construction with 2 are in the next ranks (OnTheMap Application, 2015).

An industry sector with a high employment share in local industry will not necessarily have a high location quotient. For example, Real Estate and Rental and Leasing with 3.16% of total employments and Manufacturing with 14.08%, but both hold LQ of 1.6.
7.4. Economic Base Model

Economic Base Analysis is a tool used to identify industries that are key to the local economy. The defining assumption of Economic Base Model is that all economic activities can either be classified as Basic or Non-Basic. Basic industries are responsible for export into the region and bring the economy to the region, while non-basic industries are mostly supporting industries or activities for the basic industries. A negative basic employment indicates that those goods or services are being imported to fulfill the needs of the community, hence it is considered to have no contribution towards the base economic multiplier, in other words is not included in the calculation of base multiplier.

7.4.1. Basic Industries

Basic industries export their products or services to the consumers outside the local market. They help bring money into the economy and stimulate the growth by providing goods and services. Basic industries generally help in establishing of new non-basic industries or activities. Industries with LQ of higher than 1 are categorized as basic industries. Changes in basic industries will have widespread effect on the entire local economy.

Location Quotient Analysis of industries in City of Hitchcock indicates that Public Administration (LQ 3), Educational Services (LQ 2.5), Construction (LQ 2), Real Estate and Rental and Leasing (LQ 1.6), and Manufacturing (LQ 1.6) are basic industries.

7.4.2. Non-Basic Industries

Non-basic industries are sectors that provide goods and services to local consumers. Although they don’t have as huge an effect on local economy as basic industries, they are vital elements in local economy. These industries help diversify the economy and often support the larger basic industries in the region. They are not responsible for the generation of basic industries. Non-basic industries induce spending locally and hence are responsible for recirculation of capital, as opposed to Basic industries that induce income and spending across the nation and hence attract money to the locality.

Table 7-4 shows non-basic industries in City of Hitchcock by their employment count, share and their location quotient.
Table 7-4. Non-basic Industries in City of Hitchcock, 2015

<table>
<thead>
<tr>
<th>Industry Sector</th>
<th>Employment Count</th>
<th>Share</th>
<th>LQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation and Food Services</td>
<td>113</td>
<td>8.1%</td>
<td>0.93</td>
</tr>
<tr>
<td>Administration &amp; Support, Waste Management and Remediation</td>
<td>29</td>
<td>2.1%</td>
<td>0.29</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>0</td>
<td>0.0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Arts, Entertainment, and Recreation</td>
<td>11</td>
<td>0.8%</td>
<td>0.71</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>38</td>
<td>2.7%</td>
<td>0.86</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>26</td>
<td>1.9%</td>
<td>0.16</td>
</tr>
<tr>
<td>Information</td>
<td>3</td>
<td>0.2%</td>
<td>0.19</td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>0</td>
<td>0.0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Mining, Quarrying, and Oil and Gas Extraction</td>
<td>3</td>
<td>0.2%</td>
<td>0.06</td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>17</td>
<td>1.2%</td>
<td>0.16</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>45</td>
<td>3.2%</td>
<td>0.31</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>52</td>
<td>3.7%</td>
<td>0.88</td>
</tr>
<tr>
<td>Utilities</td>
<td>6</td>
<td>0.4%</td>
<td>0.63</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>45</td>
<td>3.2%</td>
<td>0.55</td>
</tr>
</tbody>
</table>

Source: OnTheMap Application, 2015

7.5. Economic Base Multiplier Analysis

Economic Base Multiplier can be simply defined as the ratio of total number of jobs created to the number of basic jobs created and is calculated from dividing the total number of employment by number of basic employment for all industry sectors. Economic Base Multiplier indicates the total number of new jobs that will be created by every added job to a basic industry sector. Table 7-5 shows basic employment for basic industries in City of Hitchcock. Basic industries are driving force of the local economy, so increases in these sectors will lead to increases in non-basic sectors and consequently will cause an overall increase in local economic activities.

The economic base multiplier for City of Hitchcock for 2015 was 2.92. This indicates adding 100 jobs in a basic industry will create 292 additional employment opportunities to the whole local economy.

14 \( EM \) (economic base multiplier) = \( \frac{\text{total employment}}{\text{basic employment}} \)
Table 7-5. Basic Employment for Industries in City of Hitchcock, 2015

<table>
<thead>
<tr>
<th>Industry</th>
<th>Total Employments</th>
<th>Basic Employments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>213</td>
<td>108</td>
</tr>
<tr>
<td>Educational Services</td>
<td>336</td>
<td>202</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>196</td>
<td>77</td>
</tr>
<tr>
<td>Public Administration</td>
<td>110</td>
<td>73</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>44</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>899</td>
<td>477</td>
</tr>
</tbody>
</table>

Source: OnTheMap Application, 2015

7.6. Economic Growth

Over a 10 year period from 2005 to 2015, the number of jobs in City of Hitchcock has increased by 878 jobs from 514 to 1,392 (OnTheMap Application, 2005, 2015). This indicates a 170.82% growth in number of jobs which is considerably higher than the growth rate for both Galveston County (21.10%) HGAC Region (32.42%), and Texas State (25.62%). Figure 7-8 shows employment growth rate from 2005 to 2015 for City of Hitchcock, Galveston County, and State of Texas.

It must be noted that this increase in number of jobs cannot exclusively be attributed to the economic growth in the City of Hitchcock. Part of it is due to the changes in definitions and methodology of LEHD Origin-Destination Employment Statistics. According to...
LEHD Origin-Destination Employment Statistics (LODES) Dataset Structure report, “Datasets for 2010 and later contain additional Job Types that cover Federal employment as supplied by the Office of Personnel Management (OPM)”.

As a result, the job increase statistic is artificially inflated.

From 2005 to 2015, the fastest growing industries by number of jobs are Educational Services by 322 added jobs and 21.4% growth in employment share, Manufacturing by 189 added jobs and 12.7% growth in employment share, and Construction by 148 added jobs and 2.7% growth in employment share. Meanwhile, City of Hitchcock has lost 41 jobs in Retail Trade with a 13.5% decrease in employment share, and lost 28 jobs in Transportation and Warehousing with 11.8% decrease in employment share (OnTheMap Application, 2005, 2015).

Table 7-6 shows changes in the total number of jobs in Hitchcock from 2005 to 2010.

<table>
<thead>
<tr>
<th>NAIC Industry Sectors</th>
<th>2015</th>
<th>2005</th>
<th>Absolute Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Services</td>
<td>336</td>
<td>14</td>
<td>322</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>196</td>
<td>7</td>
<td>189</td>
</tr>
<tr>
<td>Construction</td>
<td>213</td>
<td>65</td>
<td>148</td>
</tr>
<tr>
<td>Public Administration</td>
<td>110</td>
<td>49</td>
<td>61</td>
</tr>
<tr>
<td>Other Services (excluding Public Administration)</td>
<td>105</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>44</td>
<td>2</td>
<td>42</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>113</td>
<td>75</td>
<td>38</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>45</td>
<td>12</td>
<td>33</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>38</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>26</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>17</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Administration &amp; Support, Waste Management ...</td>
<td>29</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Arts, Entertainment, and Recreation</td>
<td>11</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Information</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Utilities</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mining, Quarrying, and Oil and Gas Extraction</td>
<td>3</td>
<td>28</td>
<td>-25</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>52</td>
<td>80</td>
<td>-28</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>45</td>
<td>86</td>
<td>-41</td>
</tr>
<tr>
<td>Total</td>
<td>1392</td>
<td>514</td>
<td>878</td>
</tr>
</tbody>
</table>

7.6.1. Shift Share analysis

Shift-share analysis is a tool which complements LQ and economic base analysis. It indicates the relative economic growth rate of the local industries in comparison to national/regional trends and determines local comparative advantages. It determines how much of local job growth can be attributed to national/regional trends compared to local economic conditions. Shift-share analysis breaks down changes in a local industry sectors into three components:

- **National/Regional Growth Share**: Compares local economic growth in an industry to the general economic growth of the benchmark region. It is assumed that overall economic growth in a benchmark region will be reflected in local economic growth. For example, Hitchcock had 38 more jobs in Accommodation and Food Services in 2015 as compared to 2005. Shift share analysis shows that from this 38, 24 jobs (about 64%) can be attributed to the overall economic growth in HGAC region. On the other hand, from the total 322 added employments in Educational Services, 320 jobs could be attributed solely to the economic growth in this industry in Hitchcock.

- **Industry Mix Share**: Demonstrates economic changes that could be attributed directly to the local industry mix. This determines whether or not a local industry grew faster or slower compared to overall national/regional growth of the benchmark region. The goal is to identify whether or not the local economy specializes in industries that experience faster or slower than average national/regional growth. The City of Hitchcock is specialized in industries with positive “local industry mix”. These are industries that are growing at a faster rate than overall economic growth in the HGAC region.

- **Local Growth Share**: Measures the difference in growth between the local and national/regional economy that can be attributed solely to local factors. It demonstrates local economic strengths or weaknesses. The local growth share evaluates competitive situation of local industries within the larger economy of the reference region due to regional comparative advantages such as industrial clustering, infrastructure and resource availability, or non-unionized labor markets. It can be inferred from the results that most growing local industries in Hitchcock are growing at a higher rate than those industries in HGAC region. Educational Services, Manufacturing, Real Estate and Rental and Leasing, Finance and Insurance, and
Wholesale Trade are the top 5 industries growing in Hitchcock faster than those industries in the HGAC region from 2005 to 2015.

Shift-share analysis has been done on employment data of 2005 and 2015 for City of Hitchcock and the HGAC Region as the benchmark region. Table 7-7 shows the results of shift-share analysis for City of Hitchcock vs. HGAC region.

Table 7-7. Shift Share Analysis, City of Hitchcock vs. HGAC Region, 2015

<table>
<thead>
<tr>
<th>Industry</th>
<th>Local Jobs 2005</th>
<th>Regional Growth Share</th>
<th>Local Industry Mix Share</th>
<th>Local Growth Share</th>
<th>Absolute Change</th>
<th>Local Jobs 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation and Food Services</td>
<td>75</td>
<td>24</td>
<td>12</td>
<td>2</td>
<td>38</td>
<td>113</td>
</tr>
<tr>
<td>Administration &amp; Support, Waste Management ...</td>
<td>18</td>
<td>6</td>
<td>1</td>
<td>4</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Arts, Entertainment, and Recreation</td>
<td>0</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Construction</td>
<td>65</td>
<td>21</td>
<td>2</td>
<td>125</td>
<td>148</td>
<td>213</td>
</tr>
<tr>
<td>Educational Services</td>
<td>14</td>
<td>5</td>
<td>-3</td>
<td>320</td>
<td>322</td>
<td>336</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>11</td>
<td>4</td>
<td>-3</td>
<td>26</td>
<td>27</td>
<td>38</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>13</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>Information</td>
<td>0</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>7</td>
<td>2</td>
<td>-1</td>
<td>187</td>
<td>189</td>
<td>196</td>
</tr>
<tr>
<td>Mining, Quarrying, and Oil and Gas Extraction</td>
<td>28</td>
<td>9</td>
<td>7</td>
<td>-41</td>
<td>-25</td>
<td>3</td>
</tr>
<tr>
<td>Other Services (excluding Public Administration)</td>
<td>45</td>
<td>15</td>
<td>-4</td>
<td>49</td>
<td>60</td>
<td>105</td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>10</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Public Administration</td>
<td>49</td>
<td>16</td>
<td>2</td>
<td>43</td>
<td>61</td>
<td>110</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>42</td>
<td>42</td>
<td>44</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>86</td>
<td>28</td>
<td>-6</td>
<td>-63</td>
<td>-41</td>
<td>45</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>80</td>
<td>26</td>
<td>-6</td>
<td>-48</td>
<td>-28</td>
<td>52</td>
</tr>
<tr>
<td>Utilities</td>
<td>4</td>
<td>1</td>
<td>-1</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>12</td>
<td>4</td>
<td>1</td>
<td>29</td>
<td>33</td>
<td>45</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>514</strong></td>
<td><strong>167</strong></td>
<td><strong>0</strong></td>
<td><strong>711</strong></td>
<td><strong>878</strong></td>
<td><strong>1392</strong></td>
</tr>
</tbody>
</table>


15 The term “Local” in shift-share analysis section refers to the City of Hitchcock.
16 The term “Regional” in shift-share analysis section refers to HGAC region.
7.7. **Job Density & Inflow/Outflow**

The inflow-outflow analysis measures the inter-regional commute for jobs within the geography. It should be noted that the total employment count used for this analysis is incomplete and hence, has its limitations. For the purpose of this report, the observations and comparisons have been carried out across a decade, on data from 2015 and 2005.

In 2015, from the total number of 1,392 jobs in City of Hitchcock, only 174 workers (12.5%) live and are employed in Hitchcock. This number is an increase from 58 (11.3%) in 2005. The other 1,218 jobs are occupied by workers who live outside but work in Hitchcock. The number of people who are commuting to work from outside city boundaries was only 456 in 2005. Commuters’ share in total jobs decreased from 88.7% in 2005 to 87.5% in 2015 (OnTheMap Application, 2015). This is mainly due to the economic growth and creation of new job opportunities in City of Hitchcock which has attracted more workers from other cities.

It must also be noted there are 3,326 people who live in City of Hitchcock but work out of town. Figure 7-9 and Figure 7-10 show the inflow/outflow of jobs in City of Hitchcock in 2005 and 2015, respectively. The high number of workers who travel to/from Hitchcock for work is mainly due to the proximity of neighboring cities.

![Figure 7-9. Inflow/Outflow of Jobs in City of Hitchcock, 2005](image1)

*Source: OnTheMap Application, 2005*

![Figure 7-10. Inflow/Outflow of Jobs in City of Hitchcock, 2015](image2)

*Source: OnTheMap Application, 2015*
Texas City holds the highest share of people who are employed in City of Hitchcock but live out of town. Table 7-8 shows the top 5 locations where people who are employed in City of Hitchcock commute from.

Table 7-8. Top 5 locations of residence for workforces employed in City of Hitchcock, 2015

<table>
<thead>
<tr>
<th>Count</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total All Jobs</td>
<td>1,392</td>
</tr>
<tr>
<td>Hitchcock city, TX</td>
<td>174</td>
</tr>
<tr>
<td>Texas City, TX</td>
<td>156</td>
</tr>
<tr>
<td>Houston city, TX</td>
<td>107</td>
</tr>
<tr>
<td>La Marque city, TX</td>
<td>101</td>
</tr>
<tr>
<td>League City, TX</td>
<td>101</td>
</tr>
<tr>
<td>Galveston city, TX</td>
<td>74</td>
</tr>
<tr>
<td>All other Location</td>
<td>679</td>
</tr>
</tbody>
</table>

Source: OnTheMap Application, 2015"
In 2015, 45.6% of commuters are travelling less than 10 miles to go to work. This number shows 6.9% decrease comparing to 2005. Of total number of workers in City of Hitchcock 25.1% are traveling 10 to 24 miles and 14.2% are commuting for 25 to 50 miles. Workers who travel more than 50 miles form 15.1% of total workers. Table 7-9 shows distance from home to work in City of Hitchcock in 2005 and 2015.

![Map 7-1. Distribution/Density of Jobs in City of Hitchcock, 2005](image1.png)

![Map 7-2. Distribution/Density of Jobs in City of Hitchcock, 2015](image2.png)

Table 7-9. Distance to Work in City of Hitchcock 2005, 2015

<table>
<thead>
<tr>
<th></th>
<th>2015 Count</th>
<th>2015 Share</th>
<th>2005 Count</th>
<th>2005 Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total All Jobs</td>
<td>1,392</td>
<td>100.0%</td>
<td>514</td>
<td>100.0%</td>
</tr>
<tr>
<td>Less than 10 miles</td>
<td>635</td>
<td>45.6%</td>
<td>270</td>
<td>52.5%</td>
</tr>
<tr>
<td>10 to 24 miles</td>
<td>350</td>
<td>25.1%</td>
<td>105</td>
<td>20.4%</td>
</tr>
<tr>
<td>25 to 50 miles</td>
<td>197</td>
<td>14.2%</td>
<td>73</td>
<td>14.2%</td>
</tr>
<tr>
<td>Greater than 50 miles</td>
<td>210</td>
<td>15.1%</td>
<td>66</td>
<td>12.8%</td>
</tr>
</tbody>
</table>


7.7.2. Spatial Representation for Employment Densities

Spatial distribution and density of jobs in Hitchcock in 2015 (Refer Map 7-2), suggests most jobs are located in the northern part of the city which has the highest concentration of different land uses. There are no jobs in the southern part area which is covered by open natural undeveloped lands.

![Map 7-1. Distribution/Density of Jobs in City of Hitchcock, 2005](image1.png)

![Map 7-2. Distribution/Density of Jobs in City of Hitchcock, 2015](image2.png)
Comparing the distribution of jobs in Hitchcock in 2005 to 2015, jobs are more concentrated and clustered in the central business district of the city. New jobs also appeared on the edges of the city center and along Farm to Market Road 2004.

These jobs are mostly in Construction and Manufacturing industries and could be attributed to industries and businesses developed along Farm to Market Road 2004 during the 10 year period from 2005 to 2015. These include Republic Helicopters Inc., Burks Concrete, Custom Chemical Services, Grandsport Speedway, FSI Field Specialties Inc., and couple of other industries shaped around Industrial park Boulevard in northern Hitchcock City. New developments and expansion of Blimp Base Storage has also contributed to the growth in jobs. Comparing satellite images in 2015 (Refer Figure 7-13) with 2005 (Refer Figure 7-14) shows new businesses have developed in the northern part of Hitchcock. Location of some of these new businesses and industries are highlighted in image the below.

Figure 7-13. Satellite Image, City of Hitchcock, 2005
Source: Google Earth, 2005

Figure 7-14. Satellite Image, City of Hitchcock, 2015
Source: Google Earth, 2015
7.8. Leakage/Surplus Factor

Leakage and surplus factor measures the balance between the volume of supply generated by retail businesses and the potential demand produced by household spending on retail goods. Leakage represents demand exceeding supply, “leaking” outside of the area. This provides opportunity for new retailers in the area or for existing retailers to extend outside of the area. Some areas where there is opportunity to expand includes furniture, electronics and appliance, sporting goods, and clothing stores. Surplus represents supply exceeding demand. A surplus brings in shoppers from outside of the area.123

Figure 7-15 and Figure 7-16 show leakage/surplus factor by industry sector and group for City of Hitchcock in 2017.

Figure 7-15. Leakage/Surplus Factor by Industry Subsector, City of Hitchcock, 2017
Source: Esri and Infogroup, Retail MarketPlace, 2017124
Figure 7-16. Leakage/Surplus Factor by Industry Group, City of Hitchcock, 2017
Source: Esri and Infogroup, Retail MarketPlace, 2017

Source: Esri and Infogroup, Retail MarketPlace, 2017
84 U.S. Census Bureau, OnTheMap Application, Work Area Profile, 2015, Retrieved from https://onthemap.ces.census.gov/


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120 U.S. Census Bureau, OnTheMap Application, Distance/Direction Analysis, 2005, 2015, Retrieved from https://onthemap.ces.census.gov/


122 U.S. Census Bureau, OnTheMap Application, Work Area Profile, 2015, Retrieved from https://onthemap.ces.census.gov/

123 Esri, Retail MarketPlace Data Note, Leakage/Surplus Factor

124 Esri Business Analyst, Esri and Infogroup, Retail MarketPlace 2017

125 Esri Business Analyst, Esri and Infogroup, Retail MarketPlace 2017
8. Community Facilities

8.1. Overview

The City of Hitchcock benefits from different types of community facilities. There are five public schools, one private school, two Doctor Offices, and four parks. Governmental facilities in Hitchcock include city hall, public library, fire station, police department, and the Good Ole Days fairground. Most of the facilities in Hitchcock are concentrated around the city center. Map 8-1 shows community facilities in Hitchcock.

For some facilities such as parks and health care services, Hitchcock relies on the services from neighboring communities like La Marque, Galveston, and League City.

Map 8-1. Community Facilities in Hitchcock
Source: Courtesy of Texas Target Communities, 2018
8.2. Schools

The City of Hitchcock is mainly served by the Hitchcock Independent School District, except a small part in the northwest which is covered by Santa Fe ISD. Map 8-2 shows Independent School Districts in Hitchcock. Hitchcock ISD is comprised of five schools with 1717 students and met the standards of Texas Education Agency for Accountability Rating in 2017. Map 8-3 shows public schools in City of Hitchcock.

All schools in Hitchcock, except Crosby Middle School met the standards of Texas Education Agency for Accountability Rating in 2017. Table 8-1 shows Hitchcock public schools by student enrollment and Accountability Rating in 2017. Figure 8-1 to Figure 8-6 show Hitchcock ISD main building and schools.

<table>
<thead>
<tr>
<th>School Name</th>
<th>Grade Span</th>
<th>Students</th>
<th>Accountability Rating 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitchcock Kids First Head Start</td>
<td>EE-PK</td>
<td>219</td>
<td>Met Standard</td>
</tr>
<tr>
<td>Hitchcock Primary School</td>
<td>PK-2</td>
<td>467</td>
<td>Met Standard</td>
</tr>
<tr>
<td>Stewart Elementary School</td>
<td>3-5</td>
<td>344</td>
<td>Met Standard</td>
</tr>
<tr>
<td>Crosby Middle School</td>
<td>6-8</td>
<td>316</td>
<td>Improvement Required</td>
</tr>
<tr>
<td>Hitchcock High School</td>
<td>9-12</td>
<td>371</td>
<td>Met Standard</td>
</tr>
</tbody>
</table>

Source: Texas Education Agency, Accountability Rating, 2017
Head Start is a federal program that promotes schools which provide children up to age five from low-income families with the tools that empower them to enhance their social, emotional, language, and literacy development. Hitchcock “Kids First” Head Start serves low-income disadvantage, pre-school children and their families. 

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In addition to these public schools, there is one private school in City of Hitchcock. Map 8-4 shows location of the private school in City of Hitchcock.

- Our Lady of Lourdes School offers Pre-K 3, Pre-K 4, Kindergarten, and First through Sixth Grades. The school has 65 Students is and is affiliated to Our Lady of Lourdes Catholic Church.

Map 8-4. Our Lady of Lourdes School, Hitchcock
Source: Our Lady of Lourdes Catholic School, 2018

8.3. Health Care Services

There are no local hospitals or medical centers in the City of Hitchcock. Residents rely on health care service centers in neighboring cities. Citizens of Hitchcock get their medical services from Texas Medical Center, Houston Methodist St. John Hospital, and Clear Lake Regional Medical Center in Houston, UTMB (University of Texas Medical Branch) Health Hospitals in Galveston and League City, and Mainland Medical Center in Texas City.

Texas Medical Center (TMC) is the world’s largest medical complex with about 10 million patient encounters per year. It established in 1945, TMC has been pioneering patient care,
research, education, and prevention. Today, TMC comprises: 21 renowned hospitals, 13 support organizations, eight academic and research institutions, six nursing programs, three public health organizations, three medical schools, two universities, two pharmacy schools, and a dental school.  

Figure 8-7. Texas Medical Center, Houston  
Source: www.medicalworldamericas.com, 2018

Houston Methodist St. John Hospital brings all the expertise and compassionate care of the world-renowned Houston Methodist Hospital in The Texas Medical Center to the Bay area. Located in Nassau Bay, across from the NASA Johnson Space Center, St. John offers innovative, high-quality, patient-centered care in a welcoming, healing environment.  

Figure 8-8. Houston Methodist St. John Hospital  
Source: www.glassdoor.com, 2018
Clear Lake Regional Medical Center (CLRMC) is a 595-bed tertiary regional referral center offering a comprehensive array of medical services for the region’s growing population. The Heart and Vascular Hospital provides nationally recognized cardiac care close to home. The Women’s Center at CLRMC incorporates facilities and expertise designed to provide comprehensive health care for women of all ages. \(^{134}\)

![Figure 8-9. Clear Lake Regional Medical Center](Image)
Source: www.csphoto.net, 2018

UTMB League City Campus Hospital provides various health care services including: \(^{135}\)

- Urgent Care
- Emergency Care
- Labor and Delivery
- Radiology and Imaging
- Inpatient Medical and Surgical Care
- Pharmacy
- Outpatient Surgical Services

![Figure 8-10. League City Campus Hospital](Image)
Source: www.utmbhealth.com, 2018
UTMB Galveston Campus is a complex of medical school, clinics, and hospitals.

- John Sealy Hospital was first built in 1978, and is a 12-story building with single patient rooms and specialized care units. \(^{136}\)
- Jennie Sealy Hospital opened in April 2016 and features 310 patient rooms and, dome medical services relocated from John Sealy Hospital. \(^{137}\)
- UTMB Children's Hospital was reopened as a part of John Sealy Hospital in 2012. \(^{138}\)

![UTMB Jennie Sealy Hospital, Galveston](source)

Mainland Medical Center is a 223-bed health care facility with more than 725 medical staff and over 200 physicians that was founded in 1952 and has been serving Galveston County ever since.\(^{140}\)

![Mainland Medical Center, Texas City](source)

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\(^{136}\) Source: www.utmb.edu, 2018

\(^{137}\) Source: www.utmb.edu, 2018

\(^{138}\) Source: www.practicelink.com, 2018

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Besides hospitals and medical centers serving people on the regional scale, City of Hitchcock is served by local health services as well. Dr. Warren Longmire is a family medicine specialist and has been practicing for 55 years. Hitchcock Dental managed by Dr. Richard Seume provides dental care services for citizens in Hitchcock.
8.4. Governmental Infrastructure

Governmental facilities in City of Hitchcock include the city hall and public library. In 2015, the Genevieve Miller Hitchcock Public Library was established in the City of Hitchcock.

![Hitchcock City Hall](image1)

Figure 8-16. Hitchcock City Hall
Source: Google Street View, 2017

![Genevieve Miller Hitchcock Public Library](image2)

Figure 8-17. Genevieve Miller Hitchcock Public Library
Source: hitchcockpubliclibrary.org, 2018

The Hitchcock City Police Department is located at a central part of the city, and is committed to protecting the community and maintaining their sense of security, safety, and well-being.

![City of Hitchcock Police Department](image3)

Figure 8-18. City of Hitchcock Police Department
Source: Google Street View, 2018
Hitchcock Chamber of Commerce maintains the Home of Good Ole Days fairground which gathers Hitchcock citizens every year to celebrate this day. The green space that used to be an orchard has a great potential for being used over the year for community gathering, recreational activities, and fairs and ceremonies.

![Figure 8-19. House of Good Ole Days](source: Google Street View, 2017)

### 8.5. Fire Services

The City of Hitchcock is served by Hitchcock Volunteer Fire Department with one station and 41 volunteer firefighters. Figure 8-20 shows the City of Hitchcock fire station.

![Figure 8-20. City of Hitchcock Fire Station](source: Galveston Firefighters Association, 2018)
8.6. Parks and Wildlife Refuge

There are four parks with a total area of about 700 acres in City of Hitchcock. This includes:

- Publicly-owned local, state, and national parks,
- School parks with a joint-use agreement with the local government, and
- Privately-owned parks managed for full public use.

In 2017, 19% of the population of City of Hitchcock\textsuperscript{17} were living within a 10-minute walk of a park which is much lower than the national average of 54%.\textsuperscript{147} Map 8-5 shows the location of parks that serve City of Hitchcock.

Map 8-5. Parks in City of Hitchcock
Source: ParkServe.com, 2017\textsuperscript{48}

\textsuperscript{17} Population statistics are based on 2017 US Census Block Group estimates provided by Esri.
The City of Hitchcock maintains several city parks, school parks, and sport fields. Figure 8-21 to Figure 8-23 show the aerial image of parks in City of Hitchcock.

Bulldog Stadium and athletic field is part of Hitchcock High School. This complex features a baseball court and a football stadium. Hitchcock City Park is located along the southern bank of Highland Diversion Channel and includes two baseball fields.

The unknown park, pictured below, has a large grass covered open field in south and a basketball field in northern corner.
Jack Brooks Park located in northern edges of Hitchcock, is managed by Galveston County Parks and Cultural Services Department. With 678 acres area, it is located by Highland Bayou Diversion Channel and just off Highway 6 in northern part of Hitchcock. It has different amenities like playgrounds, picnic area, sport fields, horseback riding trails, mountain bike trails and also features a historic site. Figure 8-24 to Figure 8-27 show views of Jack Brooks Park in City of Hitchcock.

Parts of Hitchcock fall in the service area of Carbide Park and Mahan Park that are within La Marque city limits but are located along Hitchcock’s boundary.

Carbide Park is one of Galveston County’s parks with an area of 67 acres. It features a Motion Wellness System Playground which aims to help older adults to improve and maintain their mobility, flexibility, and balance skills by using park’s various facilities and components. Figure 8-28 shows aerial image of Carbide Park in La Marque City.
The City of La Marque also maintains several parks within the city. Mahan Park is located north east of Hitchcock and features bayou access, boat launch, bank fishing, and softball facilities in 35 acres area.

Mac McGaffey Highland Bayou Park has an area of 230 acres and features baseball fields, playground, canoeing, hiking/nature trail, bird sanctuary, bird watching, observation deck, tennis/basketball court, horseshoe pit, and shelters with bar-b-que facilities. Figure 8-29 and Figure 8-30 shows aerial image of Mahan Park and Mac McGaffey Highland Bayou Park in La Marque City.


Our Lady of Lourdes Catholic School, Retrieved from http://ololcs.org/about/what-we-offer/


Our Lady of Lourdes Catholic School, Retrieved from http://ololcs.org


Houston Methodist, Retrieved from https://www.houstonmethodist.org/locations/st-john/


UTMB Health, The University of Texas Medical Branch, Retrieved from https://www.utmb.edu/utmbhealth/locations/hospitals-campuses/galveston-campus/hospitals-services/john-sealy-hospital/history

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151 All Trails, Outdoor Guides, Retrieved from https://www.alltrails.com/trail/us/texas/jack-brooks-park-trail

9. Environment

9.1. Overview

The City of Hitchcock is part of the Highland Bayou Coastal Basin on the Gulf Coast of Texas. The region is rich in biodiversity and is a habitat for several wildlife and vegetation species. The area is situated in the ‘Gulf Coast Prairies and Marshes’ sub-ecoregion as identified by the Environmental Protection Agency.

9.2. Ecoregions

The Highland Coastal Basin is a 120 square mile drainage basin located on the mainland of Galveston County. The land is a mix of development and undeveloped lands, agricultural lands, prairies, wetlands, and estuaries. The Galveston Bay estuary system is one of the largest estuaries along the American coast of the Gulf of Mexico. The area includes marshlands, wetlands, prairies, and woodlands. In recent years, a large part of the estuary has been altered by human activities owing to development resulting in the loss of significant areas of the habitat.

The region containing the City of Hitchcock has the following habitats:

- **Coastal Prairie and Grassland:** The coastal prairie ecosystem is one of the most critically threatened in the world. Remaining coastal prairie parcels are highly fragmented and severely threatened by encroaching development and invasive, non-native species. Today, there are several areas of prime coastal prairie habitat in the area, including points south of Hitchcock and the Texas City Prairie Preserve, north of Moses Lake (U.S. Fish and Wildlife Service, U.S. Geological Survey, 1999). Another area of native grassland is the former Camp Wallace military base, now managed by the University of Houston system, and is located west of FM2004 between Hitchcock and US I-45.

- **Estuarine and Tidal Fringe Wetlands:** These wetlands can be vegetated wetlands or open tidal flats. Thickets of marsh grasses allow small marine life to shelter from predators, and spawn and grow in the marshes before migrating to
open waters. Natural openings in the grasses also allow for colonies of birdlife to forage the marshes for food. Tidal marshes line Highland Bayou from Pierce Marsh (west side of Jones Bay) and Virginia Point up to Mahon Park in La Marque. Significant tidal marshes also exist around Moses Lake.

- **Riparian forests, forested wetlands, and Coastal Flatwoods:** Woodlands occur naturally in the area. Riparian forests are situated along the banks and floodways of Highland Bayou. Trees and vegetation overhanging the banks of the bayou stabilize these banks, and provide shade and habitat for species which live near the bayou. Forested conditions are known to enhance the flood capacity of watersheds, absorbing and holding rainfall before releasing it slowly over days and weeks back into watershed drainages.
Map 9-1. Ecoregions of Texas
Source: United States Environmental Protection Agency
9.3.  Land Cover Map- Factual Basis

The City of Hitchcock is a combination of ecoregions 34a (Northern Humid Gulf Coastal Prairies) and 34h (Mid Coast Barrier Islands and Coastal Marshes). The Land Use- Land Cover Map (Refer Map 9-2) provides inventories of standardized type and extent of land coverage through remote sensing program.

The data can be used to assess the changes in land cover over time. These analyses indicate that land development consumes more land as people move into the area.

The Land Use- Land Cover is characterized with cropland with rice, soybeans, grain sorghum, cotton, corn; hay and pastureland, urban and industrial, rangeland, oil and gas production, and waterfowl hunting in regions corresponding to Northern Humid Gulf Coastal Prairies ecoregion. Whereas, in the regions corresponding to Mid-Coastal Barrier...
Islands and Coastal Marshes ecoregions the Land Use-Land Cover is characteristically marshland, wildlife habitat, recreation, commercial and sport fishing, oil and gas production, and some urban and residential areas.

9.4. Water Demand

The county is mainly served by the water from Gulf Coast Water Authority (GCWA) Reservoir. The current water demand of the City of Hitchcock is met by combined supplies from GCWA and Municipal Conservation by the city.

The Texas State Water Plan has projected the demand and supply logistics as per Figure 9-1. Based on the projections it is expected there will be no potential shortages for several decades in the future. The city intends to make efforts towards water loss reduction to be more efficient.

9.5. Natural Resources

The Highland Bayou project is a multi-year effort to work with cities, businesses, and residents to identify steps for improving the quality and safety of the bayous. The project area is about 120 square miles in size. The Moses-Karankawa Bayous Alliance covers several communities in Galveston County, including Texas City, La Marque, Hitchcock, Santa Fe, Bayou Vista, and Tiki Island.
The defined watersheds in the Highland Coastal Basin are namely; Highland and Marchand Bayou, Moses Bayou and Lake, the Texas City Ship Channel, the Diversionary Canal, and the estuarial bayous of the Campbell, Basford, Greens Lake, and Karankawa. Of these, the Highland (partially covering the city of Hitchcock) and Marchand Bayous are the priority study areas. The larger undeveloped parts within the city limits are part of Basford Bayou, and, a small portion is included within Diversionary Canal Region.

The bayou originates as a freshwater bayou, highly dependent on the precipitation-driven overland flows, before merging into the estuarine systems. During periods of little to no precipitation, the bayou is found to be either stagnant or have tidal influences. Overland flows drain areas of development and the areas of natural cover. They are likely to carry more non-point source pollutants and have ‘heavier’ flow rates in an event of precipitation as compared to natural terrain. 457

The sea-level elevation and the flat topography of the coastal basin makes the entire area vulnerable to flooding from the urban runoff. The City of Hitchcock, including the developed areas, is largely covered by 100 year floodplain except a small portion in the north that falls within the 500 year floodplains.
9.6. Wetlands and Forests

Map 9-3: USPWS Wetland Inventory

Wetlands are a pivotal part of the natural system, supplying tremendous benefits for coastal communities. Coastal wetlands provide habitat for many aquatic species that contribute to local food supplies and fishing-related industries. Wetlands located in coastal and riverine floodplains can protect people and their property, community infrastructure, and agricultural investments from floods. Wetlands act as natural sponges, holding floodwaters and lowering flood heights. 158
9.7. Critical Habitats and Disturbances

9.7.1. Disturbance due to waste disposal - Superfund Sites

A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the EPA as a candidate for cleanup because it poses a risk to human health and/or the environment. These sites are placed on the National Priorities List (NPL). Superfunds can be sub-classified as:

- **Active**: A non-archived Superfund site at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted under the Superfund/CERCLIS program.

- **Archived**: A Superfund site that has no further interest under the Federal Superfund Program based on available information and is no longer part of the CERCLIS inventory.

There are 7 archived superfund sites in or near Hitchcock, namely;

- Browning Ferris Ind Galveston Co Ldfl
- Naval Air Station, Hitchcock
- Browning Ferris Industries
- Highway 6 Dump Site
- Mcginnes Industrial Maintenance Co
- Longmeyer And Assoc Property
- Galveston County Landfill

9.8. Vegetation

60-mile narrow band alongside the Texas coast stretched from Louisiana border to Brownsville is considered as Gulf Coast Prairies and marshes. Wind, rain, confrontation to sea are some of the characters of this area. City of Hitchcock in Galveston County is one of the cities of this area which means have the same environmental setting and features of the whole. Based on Texas Parks and Wildlife, this area is covered with marshes and bushes with some specific vegetation and plants. Being close to open water, majority of
these plants are short rooted ones and, thus, are believed to be shortened ones. The list of plants that shapes the environment of the whole Gulf Coast Prairies and the city of Hitchcock is as the following table (Texas Parks and Wildlife, 2018).

Table 9-1. types of plants in Coastal Gulf Prairies

<table>
<thead>
<tr>
<th>Trees</th>
<th>Succulents</th>
<th>Vines</th>
<th>Grasses</th>
<th>Wildflowers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugarberry</td>
<td>Prickly-pear cactus</td>
<td>Pipevine</td>
<td>Big blue stem</td>
<td>Lance-leaf coreopsis</td>
</tr>
<tr>
<td>Water oak</td>
<td>Spanish dagger</td>
<td>Cross-vine</td>
<td>Bushy bluestem</td>
<td>Coral bean</td>
</tr>
<tr>
<td>Willow oak</td>
<td>Trumpet creeper</td>
<td>Inland sea-oats</td>
<td>Sugarcane plume grass</td>
<td>Spider lily</td>
</tr>
<tr>
<td>Shumard red oak</td>
<td>Carolina Jessamine</td>
<td>Gulf cordgrass</td>
<td></td>
<td>Gulf Coast penstemon</td>
</tr>
<tr>
<td>Southern live oak</td>
<td>Coral honeysuckle</td>
<td></td>
<td></td>
<td>Turk’s cap</td>
</tr>
<tr>
<td>American elm</td>
<td>May-pop</td>
<td>Eastern gamma grass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yaupon</td>
<td>Muscadine grape</td>
<td></td>
<td></td>
<td>Scarlet sage</td>
</tr>
<tr>
<td>Red mulberry</td>
<td></td>
<td></td>
<td></td>
<td>Indian paintbrush</td>
</tr>
<tr>
<td>Wax myrtle</td>
<td></td>
<td></td>
<td></td>
<td>Beach evening primrose</td>
</tr>
<tr>
<td>Flameleaf sumac</td>
<td></td>
<td></td>
<td></td>
<td>Showy evening primrose</td>
</tr>
<tr>
<td>Red buckeye</td>
<td></td>
<td></td>
<td></td>
<td>Meadow pink</td>
</tr>
<tr>
<td>Eastern red cedar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-leaf pine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loblolly pine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shrubs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American beautyberry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buttonbush</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lantana</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dwarf Palmetto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Texas Parks and Wildlife, 2018
9.9. **Sustainability**

Coastal Gulf Prairies, formerly known as the habitat of tallgrass prairie, has been significantly disturbed that the less than one tenth of this environment has been reported not being harmed as of today. These vast prairies stretched from Louisiana to Corpus Christy, Texas are now being majorly functioning as a pasture site for cattle, planting rice and sugar canes. Due to pasturing and grazing, the life of wild flowers and grasses are threatened. Rainfall, soil type, fire, and herbivory are maintenance factors of this area. Drought and fire are causes that impose threats on this environment and to control these pernicious occurrences, different methods are needed to be employed as geographical areas and restorationist may vary. Preparation by herbicide, solarization, planting by haying, seeding, sodding, or transplanting, management by mowing, irrigation, grazing, and fire are technics that are mostly considered and are to be applied by experts in restoration (Coastal Prairie Management and Conservation, 2018).

9.10. **Wildlife**

Wetlands and sea shores are habitats of more diverse animals than others geographical regions (Texas Parks and Wildlife, 2018). The city of Hitchcock which is located within the boundary of Gulf Coast Prairies, is habitable by Millions of migrating birds such as geese, ducks, and songbirds during winter along with alligators, fiddler crabs, spoonbills, and sea turtles that can be found on these areas. Spoonbills is another animal which like to build shelters in this area so that to take benefit from accessibility to shallow water in which can hunt on fish. The lightning whelk, which only is to be seen on Gulf Coast Prairies, is a large sea snail with a heavy shell that are carnivores and historically they were very important to Native Americans as they were very useful for creating tools due to their hard shells (Texas Parks and Wildlife, 2018).
9.11. Threatened and Endangered Species

The stretched coastal boundary bordering the Gulf of Mexico is a very rich environment which has been affected and changed by the regional ecology a lot. Once was covered with tall grass prairies, changes in ecology and climate have lowered the number of some of the plants historically been grown on this area. Therefore, animals and wildlife has been damaged by these changes and there are some endangered and threatened species that are to be considered for any future plan and development that is to occur within the boundary of City of Hitchcock as it is a part of Coastal Gulf Prairies (Texas Parks and Wildlife, 2013).

Table 9-2. Endangered and Threatened Species of Coastal Gulf Prairies

<table>
<thead>
<tr>
<th>Endangered Species</th>
<th>Threatened Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas Prairie Dawn</td>
<td>White-faced Ibis</td>
</tr>
<tr>
<td>South Texas Ambrosia</td>
<td></td>
</tr>
<tr>
<td>Black Lace Cactus</td>
<td></td>
</tr>
<tr>
<td>Slender Rushpea</td>
<td></td>
</tr>
<tr>
<td>Attwater’s Prairie Chicken</td>
<td></td>
</tr>
<tr>
<td>Piping Plover</td>
<td></td>
</tr>
<tr>
<td>Whooping Crane</td>
<td></td>
</tr>
<tr>
<td>Eskimo Curlew</td>
<td></td>
</tr>
<tr>
<td>White-tailed Hawk</td>
<td></td>
</tr>
</tbody>
</table>

Source: Texas Parks and Wildlife, 2013

NOAA Office for Coastal Management, Retrieved from https://coast.noaa.gov/digitalcoast/data/ecapregional.html

Texas Water Development Board, Texas State Water Plan, Retrieved from https://2017.texasstatewaterplan.org/entity/950

Texas Community Watershed Partners, Retrieved from https://tcwp.tamu.edu/highland-bayou/


10. **Hazard Vulnerability**

10.1. **Overview**

The City of Hitchcock is a small town located in the southern part of Galveston County. It is situated on the coast of the West Bay. Its location makes the community highly prone to tornadoes, earthquakes, hurricane, and major natural disasters. Being located on a bay, it is also prone to the effects of climate change, such as sea level rise. 22 disasters have been declared in Galveston County from 1953 – 2018 by the Federal Emergency Management Agency. (Refer Table 10-1

There are two FEMA types of disaster declarations. The President authorizes both declaration types to provide federal disaster assistance. The President can declare an emergency when it is determined that federal assistance is needed. Total amounts of assistance provided in a single emergency cannot exceed $5 million. There have been 7 emergency declarations in Galveston County since 1953. Major disaster declarations are also declared by the President for any natural event. The President has to determine that the severity of the disaster created such a severity beyond the combined capabilities of state and local governments to respond. Under major disaster declarations, the following assistance is available to individuals and households: Individual and Household Program; Crisis Counseling Program; Disaster Case Management; Disaster Unemployment Assistance; Disaster Legal Services; Disaster Supplemental Nutrition Assistance Program.

<table>
<thead>
<tr>
<th>Year</th>
<th>Declaration Date</th>
<th>Disaster Type</th>
<th>Incident Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>7/11/1973</td>
<td>DR</td>
<td>Flood</td>
<td>SEVERE STORMS &amp; FLOODING</td>
</tr>
<tr>
<td>1979</td>
<td>9/25/1979</td>
<td>DR</td>
<td>Flood</td>
<td>SEVERE STORMS &amp; FLOODING</td>
</tr>
<tr>
<td>1979</td>
<td>7/28/1979</td>
<td>DR</td>
<td>Flood</td>
<td>STORMS &amp; FLASH FLOODS</td>
</tr>
<tr>
<td>1983</td>
<td>8/19/1983</td>
<td>DR</td>
<td>Hurricane</td>
<td>HURRICANE ALICIA</td>
</tr>
<tr>
<td>1994</td>
<td>10/18/1994</td>
<td>DR</td>
<td>Flood</td>
<td>SEVERE THUNDERSTORMS AND FLOODING</td>
</tr>
<tr>
<td>1998</td>
<td>10/21/1998</td>
<td>DR</td>
<td>Flood</td>
<td>TX-FLOODING 10/18/98</td>
</tr>
</tbody>
</table>
10.2. Hurricanes and Tropical Storms

According to the National Oceanic and Atmospheric Administration, tropical cyclones are low-pressure weather system that has organized thunderstorms without a front. Tropical storms are a maximum of 39 miles per hour (mph)—storm exceeding that steep are called tropical depressions. Once the storm wind reaches 74mph, it is called a hurricane. Hurricanes have five different categories. Table 10-2 below displays a detailed description from tropical storms to hurricanes.
<table>
<thead>
<tr>
<th>Category (Saffir-Simpson Hurricane Wind Scale)</th>
<th>Storm Surge (ft.)</th>
<th>Speed</th>
<th>Types of Damage Due to Hurricane Winds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tropical Depressions (not a hurricane)</td>
<td>0</td>
<td>38 mph or less</td>
<td>N/A</td>
</tr>
<tr>
<td>Tropical Storm (not a hurricane)</td>
<td>1 - 3</td>
<td>38 - 73 mph</td>
<td>N/A</td>
</tr>
<tr>
<td>Category 1</td>
<td>4 - 5</td>
<td>74 - 95 mph</td>
<td><strong>Very Dangerous wins will produce some damage:</strong> Well-constructed frame homes could have damage to the roof, shingles, and vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be topped. Extensive damage to power lines and poles likely will result in power outages that could last a few several days.</td>
</tr>
<tr>
<td>Category 2</td>
<td>6 - 8</td>
<td>96 - 111 mph</td>
<td><strong>Extremely dangerous winds will cause extensive damage:</strong> Well-constructed frame homes could sustain major roof and siding damage. Many shallow-rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected. Well-built frame homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes. Expected outages that could last from several days to weeks.</td>
</tr>
<tr>
<td>Category 3</td>
<td>9 - 12</td>
<td>111 - 129 mph</td>
<td><strong>Devastating damage will occur:</strong> well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.</td>
</tr>
<tr>
<td>Category 4</td>
<td>13 - 18</td>
<td>130 - 156 mph</td>
<td><strong>Catastrophic damage will occur:</strong> Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.</td>
</tr>
<tr>
<td>Category 5</td>
<td>19 - 26</td>
<td>more than 157 mph</td>
<td><strong>Catastrophic damage will occur:</strong> a high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks to months.</td>
</tr>
</tbody>
</table>

Source: National Oceanic and Atmospheric Administration, National Hurricane Center

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Below, Figure 10-1 displays the number of hurricanes, or and tropical storms that have come within 100 nautical miles of the City of Hitchcock. While hurricanes post a greater amount of damage, tropical storms and depressions are also devastating. Some of the past major disasters have resulted in critical damage to life and property, including Audrey 1957, Alicia 1983, Bertha 2002, Rita 2005, Ike 2008, and recently Harvey 2017.

Figure 10-1. Hurricanes and Tropical within a 100 miles radius of Hitchcock
Source: National Oceanic and Atmospheric Administration, Historical Hurricane Tracks
In the United States, a hurricane evacuation route is a designated route to direct traffic inland in case of a hurricane threat.\textsuperscript{167} The Map 10-1 below displays the evacuation routes near Hitchcock.

Map 10-1. Hurricane Evacuation Routes (Courtesy of TTC, 2018)
Source: Texas Department of Transportation\textsuperscript{168}

\subsection*{10.2.1. Hurricane Harvey Impact}

Hurricane Harvey made landfall as a Category 4 hurricane near Rockport, Texas on August 25, 2017. Meteorologist predicted a drop of 35-40 inches of rain during the week
in Coastal Texas—in some areas expectations were exceeded.\textsuperscript{169} In particular, the Houston-Galveston area experienced unprecedented flooding over the area. At the time of writing, there was no data available for a detailed impact assessment of Hitchcock. The flooding left more than 300,000 people without power, and it is suggested that 500,000 cars were damaged—completed number is still unknown.\textsuperscript{170} Additionally, toxic substances have reportedly been spreading miles from damaged chemical plants after suffering from Harvey. \textsuperscript{171} There is 1 EPA Superfund\textsuperscript{18} sites in Hitchcock and 5 in Galveston, La Marque and Texas City.\textsuperscript{172} Toxic contamination for these sites were not available at the time of writing.

Map 10-2. Locations and causes of fatalities due to Hurricane Harvey in Texas as of September 8, 2017

Source: Brief Communications: Loss of life due to Hurricane Harvey\textsuperscript{173}

\textsuperscript{18} Superfund Sites are contaminated sites due to hazardous waste being dumped, left out in the open, or otherwise improperly damaged—these sites include manufacturing facilities, processing plants, landfills and mining sites. In the 1970s, toxic waste dumps received national attention due to the risks to human health and the environment. Congress established the Comprehensive Environmental Response, Compensation and Liability Act, or informally known as Superfund. The act allowed the EPA to clean up contaminated sites and forces the parties responsible for the contamination to either perform cleanups or reimburse the government for EPA-led cleanup work.
The loss of life is one of the most critical consequences of these disastrous events. A study conducted on the loss of life caused by Harvey collected that there was 70 fatalities\textsuperscript{174}. Based on the analysis, fatalities occurred across 14 counties—including Galveston. The causes of death include drowning, –in a vehicle, swept away while exiting vehicle, from a boat, as a pedestrian, inside a building, found outside—physical trauma, lack of medical treatment, electrocution and other causes\textsuperscript{175} (Refer Map 10-2)

10.3. Floods

According to the National Oceanic and Atmospheric Administration, floods are an overflow of water onto normally dry land.\textsuperscript{176} A combination of several factors determines the severity of the flooding event, such as stream and river basin topography, urban drainage system, precipitation and weather patterns, soil moisture, and degree of vegetative.

There are different types of floods that affect the area of impact:

- **Flash Flooding**: caused by heavy or excessive rainfall in a short period of time, generally less than six hours. Flash floods are usually characterized by raging torrents after heavy rains that rip through river beds, urban streets, or mountain canyons sweeping everything before them. They can occur within minutes or a few hours of excessive rainfall. They can also occur even if no rain has fallen, for instance after a levee or dam has failed, or after a sudden release of water by a debris or ice jam.

- **Inland Flooding**: occurs when moderate precipitation accumulates over several days, intense precipitation falls over a short period, or a river overflows because of an ice or debris jam or dam or levee failure.

- **Storm Surges**: an abnormal rise in water level in coastal areas, over and above the regular astronomical tide, caused by forces generated from a severe storm's wind, waves, and low atmospheric pressure. Storm surge is extremely dangerous because it is capable of flooding large coastal areas. Extreme flooding can occur in coastal areas particularly when storm surge coincides with normal high tide, resulting in storm tides reaching up to 20 feet or more in some cases. Along the coast, storm surge is often the greatest threat to life and property from
a hurricane. In the past, large death tolls have resulted from the rise of the ocean associated with many of the major hurricanes that have made landfall.

- **Coastal flooding:** inundation of land areas along the coast, is caused by higher than average high tide and worsened by heavy rainfall and onshore wind.

### 10.3.1. Storm Surge

According to the National Hurricane Center, storm surges are often the greatest threat to life and property to communities along the coast.\(^{177}\) Storm surges is an abnormal rise of water generated by a storm. Surges travel with the storm, and can reach up to 20 feet or more.\(^ {178}\) Most of the land in Hitchcock belong to a surge category 2 with maximum sustain wind speed 110 mph.

Map 10-3. Storm Surge in Galveston County

Source: Galveston County 2016-2020 Hazard Mitigation Plan\(^ {179}\)
Flood hazard areas are depicted in different categories. Special Flood Hazard Area is identified on the Flood Insurance Rate Map. They are defined as the areas that will be inundated by a flood event having a 1-percent chance of being equaled or exceeded in any given year. Table 11-3 displays the definition of each flood zone. Each flood zone has different definitions and detailed information. 100-year floodplain in an area means, a 1-percent chance of a flood at that level in a given year. In other words, imagine a roulette with 100 slots and the ball falling into one. During a 100-year flood, there is an equal chance that a flood could happen at any time, with any frequency. Likewise, a 500-year floodplain means a 1-in-500 shot of happening in any given year. Even though the probability sounds low, it is important to note that these are based on probability and not history.

Table 10-3. Definition of FEMA Flood Zone Designations

<table>
<thead>
<tr>
<th>Zone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B and X</strong></td>
<td>Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.</td>
</tr>
<tr>
<td><strong>C and X</strong></td>
<td>Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood.</td>
</tr>
</tbody>
</table>

**High Risk Areas**

<table>
<thead>
<tr>
<th>Zone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.</td>
</tr>
<tr>
<td><strong>AE</strong></td>
<td>The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.</td>
</tr>
<tr>
<td><strong>A1-30</strong></td>
<td>These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format). Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base</td>
</tr>
</tbody>
</table>
flood elevations derived from detailed analyses are shown at selected intervals within these zones.

<table>
<thead>
<tr>
<th>Zone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AO</strong></td>
<td>River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.</td>
</tr>
<tr>
<td><strong>AR</strong></td>
<td>Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.</td>
</tr>
<tr>
<td><strong>A99</strong></td>
<td>Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.</td>
</tr>
<tr>
<td><strong>High Risk - Coastal Areas</strong></td>
<td>Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.</td>
</tr>
<tr>
<td><strong>V</strong></td>
<td>Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.</td>
</tr>
<tr>
<td><strong>VE, V1 - 30</strong></td>
<td>Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.</td>
</tr>
</tbody>
</table>

**Undetermined Risk Areas**

<table>
<thead>
<tr>
<th>Zone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>D</strong></td>
<td>Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.</td>
</tr>
</tbody>
</table>

Source: Understanding Your Risks, identifying hazards and estimating losses, FEMA pg 2-108

Map 10-4 displays flood zones and provide an indication of where there is potential for damage to property and loss of life in Hitchcock. As shown, the entire city is within a threatening flooding zone. Massive flooding can result in a big change to the topography, soil, vegetation, and physical structures—especially within the most hazardous zone. However, risks vary on many contributing factors.
As weather patterns change, it is important that to understand the current risks and prepare to protect the communities living within the flood zones. It is also important to note that if an area has not flooded does not mean that it will not flood in the future. Given historical events at Galveston County, it is highly likely that the Hitchcock will flood again.

Map 10-4. Hitchcock Flood Zones
Source: FEMA Flood Map Service Center

![Map of Hitchcock Flood Zones](image-url)
Table 10-4. Estimated Exposure of People and parcels by Jurisdiction (100-year Flood-Inland)

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Total Est. Population</th>
<th>Total Est. Number of Parcels</th>
<th>Improved Value of Parcels</th>
<th>Number of People at Risk</th>
<th>Number of Parcels at Risk</th>
<th>Value of parcels at Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitchcock</td>
<td>6,961</td>
<td>6,337</td>
<td>$460,075,283</td>
<td>6,629</td>
<td>4,632</td>
<td>$286,761,580</td>
</tr>
<tr>
<td>Santa Fe</td>
<td>12,814</td>
<td>6,457</td>
<td>$845,974,919</td>
<td>4,221</td>
<td>609</td>
<td>$96,352,756</td>
</tr>
<tr>
<td>H-GAC</td>
<td>190,740</td>
<td>109,577</td>
<td>$17,860,872,212</td>
<td>92,590</td>
<td>32,490</td>
<td>$5,119,873,352</td>
</tr>
</tbody>
</table>

Table 10-5. Estimated Exposure of People and Parcels by Jurisdiction (100-Year Flood—Coastal)

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Total Est. Population</th>
<th>Total Est. Number of Parcels</th>
<th>Improved Value of Parcels</th>
<th>Number of People at Risk</th>
<th>Number of Parcels at Risk</th>
<th>Value of parcels at Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitchcock</td>
<td>6,961</td>
<td>6,337</td>
<td>$460,075,283</td>
<td>281</td>
<td>728</td>
<td>$72,387</td>
</tr>
<tr>
<td>H-GAC</td>
<td>190,740</td>
<td>109,577</td>
<td>$17,860,872,212</td>
<td>9,378</td>
<td>17,077</td>
<td>$2,025,493,803</td>
</tr>
</tbody>
</table>

Table 10-6. Estimated Exposure of People and Parcels by Jurisdiction (500-Year Flood)

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Total Est. Population</th>
<th>Total Est. Number of Parcels</th>
<th>Improved Value of Parcels</th>
<th>Number of People at Risk</th>
<th>Number of Parcels at Risk</th>
<th>Value of parcels at Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitchcock</td>
<td>6,961</td>
<td>6,337</td>
<td>$460,075,283</td>
<td>4,705</td>
<td>1,779</td>
<td>$196,227,284</td>
</tr>
<tr>
<td>H-GAC</td>
<td>190,740</td>
<td>109,577</td>
<td>$17,860,872,212</td>
<td>108,712</td>
<td>29,792</td>
<td>$5,717,032,612</td>
</tr>
</tbody>
</table>

Source: Galveston County Multi-Jurisdictional Hazard Mitigation Plan 2016-2020
10.3.2. City of Ordinance on Floodplains

The City of Hitchcock City of ordinance is a code that constitutes the recodification of the general and permanent ordinances. Chapter 152 of the city ordinance, Flood Hazard Areas, serves as the chapter that addresses Hitchcock’s commitment to minimize the public and private losses due to flooding. Section 152.04 lists methods to ensure the reduction of flood losses. Their methods are the flowing:

- Restrict or prohibit uses that are dangerous to health, safety or property in times of flood, or cause excessive increases in flood heights or velocities;
- Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of flood waters;
- Control filling, grading, dredging and other development which may increase flood damage;
- Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.\textsuperscript{184}

10.4. Sea Level Rise

Climate change is a significant challenge for coastal communities. The future of sea-level rise would lead to increase flooding and land loss. Additionally, it highly impacts marina-coastal environmental, societies, increased damage from flooding to built-up zones and infrastructures, and a loss of economies.\textsuperscript{185} The Map 10-5 shows a sea-level rise scenario of 0 to 6 feet, which represents a rise in water above average of the highest tides (called mean higher high water, or MHHW).\textsuperscript{186} The darkest red areas represent areas that are lower in elevation and will expect flooding from sea level rise first.
10.5. Tornado

A tornado is one of nature’s most violent storms that can cause fatalities, crush properties and devastate communities in seconds. Tornados are narrow, violently rotating column of air that extends from the base of a thunderstorm to the ground. The funnel is made up of water droplets, dust, and debris. Tornado season is referred to as the time of year the U.S. sees the most tornadoes. Occasionally, tornadoes develop rapidly, with small warnings. Damage paths can exceed from 1 to 50 miles long. Tornados are placed into categories by the Enhanced Fujita Scale, a scale that rates the intensity of tornadoes in the United States based on the damage they cause. Table 10-7 gives more detail on the EF rating and its expected damage.
## Enhanced Fujita Scale

<table>
<thead>
<tr>
<th>EF Rating</th>
<th>Wind Speeds</th>
<th>Expected Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EF-0</td>
<td>65-85 mph</td>
<td>&quot;Minor&quot; Damage: shingles blown off or parts of a roof peeled off, damage to gutters/siding, and branches broken off trees, shallow roots trees toppled.</td>
</tr>
<tr>
<td>EF-1</td>
<td>86-110 mph</td>
<td>&quot;Moderate&quot; damage: more significant roof damage, windows broke, exterior doors damaged or lost, mobile homes overturned or badly damaged.</td>
</tr>
<tr>
<td>EF-2</td>
<td>111-135 mph</td>
<td>&quot;Considerable&quot; damage: roofs torn off well-constructed homes, homes shifted off their foundations, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed.</td>
</tr>
<tr>
<td>EF-3</td>
<td>136-165 mph</td>
<td>&quot;Severe&quot; damage: entire stories of well-constructed homes destroyed, significant damage done to large buildings, homes with weak foundations can be blown away, and trees begin to lose their bark.</td>
</tr>
<tr>
<td>EF-4</td>
<td>166-200 mph</td>
<td>&quot;Extreme&quot; damage: well-constructed homes are leveled, cars are thrown significant distances, top story exterior walls of masonry buildings would likely collapse.</td>
</tr>
<tr>
<td>EF-5</td>
<td>&gt; 200 mph</td>
<td>&quot;Massive/Incredible&quot; damage: well-constructed homes are swept away, steel-reinforced concrete structures are critically-damaged, high-rise buildings sustain severe structural damage, and trees are usually completely debarked, stripped of branches and snapped.</td>
</tr>
</tbody>
</table>

Source: National Oceanic and Atmospheric Administration\(^{189}\)
The National Centers for Environmental Information database was reviewed to generated historical tornado information in the Galveston County. According to the database, Hitchcock was hit by two major tornadoes, in 2006 and 2012. Both events resulted in $72,000 in property damage. Additionally, many other high wind storms circulated within Hitchcock. Historically, from 1950 to 2015, there has been a total of 92 tornado events in the Galveston County. Even though the area is not located within tornado alley, its historical evidence indicates that the area is vulnerable to tornado hazards. Map 10-6 shows the location of historical tornado events in Galveston County.

Map 10-6. Historical Tornados in Galveston County
Source: National Centers for Environmental Information Database
Based on the Figure above, tornadoes are highly likely in this area. Some years some no recorded events, but that does not mean a hazardous event will not happen in the future. All existing facilities and communities are considered to have a high chance of potential exposure to tornadoes and can sustain minor and major property damages.

10.6. Wildfire Risk

Wildfires are a growing natural hazard in most regions of the United States—especially the west coast. A wildfire threatens people and property across the state of Texas. It becomes increasingly important to be aware of the wildfire risk, prevention, and mitigation to ensure safety. The Texas Forest Services has conducted wildfire assessments to provide necessary information and identify areas that are most prone to wildfire. Map 10-7 identifies the Wildfire Ignition Density (WID), which is the likelihood of a wildfire starting based on historical ignition patterns. Data was obtained from federal, state, and local fire department report data sources from year 2005 to 2009. The ignition rate is measured in the number of fires per year per 1000 acres and categorized into seven categories. As shown, the entire City of Hitchcock fall within the first category, low-risk.
The Texas Fire Incident Report System (TEXFIRS) database acquires fire incident reports provided by fire departments. Table 10-8 below depicts the types of fires from 2010 – 2015 in Hitchcock.

<table>
<thead>
<tr>
<th>Responder</th>
<th>Structure</th>
<th>Vehicle</th>
<th>Natural Vegetation</th>
<th>Outside Rubbish</th>
<th>Special Outside</th>
<th>Other</th>
<th>Crop</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitchcock VFD</td>
<td>81</td>
<td>31</td>
<td>42</td>
<td>59</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>218</td>
</tr>
</tbody>
</table>

Source: Texas Fires Incident Reporting System (TEXFIRS)

Map 10-7. Hitchcock Wildfire Ignition Density

Source: Texas A&M Forest Service, Texas Wildfire Risk Assessment Portal

The Texas Fire Incident Report System (TEXFIRS) database acquires fire incident reports provided by fire departments. Table 10-8 below depicts the types of fires from 2010 – 2015 in Hitchcock.

<table>
<thead>
<tr>
<th>Responder</th>
<th>Structure</th>
<th>Vehicle</th>
<th>Natural Vegetation</th>
<th>Outside Rubbish</th>
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<td>42</td>
<td>59</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>218</td>
</tr>
</tbody>
</table>

Source: Texas Fires Incident Reporting System (TEXFIRS)
10.7. Windstorm

Damaging winds are formed by different types of thunderstorms. Thunderstorms can reach up to 50 mph, and wind can cause major damages. Thunderstorms can occur year-round at any given moment. The strongest storms can threaten lives and damage property. The National Severe Storm Laboratory determine different types of damaging winds.

- **Straight-line wind** - any thunderstorm wind that is not associated with rotation, and is used mainly to differentiate from tornadic winds.
- **Downdraft** - a small-scale column of air that rapidly sinks toward the ground.
- **Macroburst** - an outward burst of strong winds at or near the surface with horizontal dimensions larger than 4 km (2.5 mi) and occurs when a strong downdraft reaches the surface.
- **Microburst** - a small concentrated downburst that produces an outward burst of strong winds at or near the surface. Microbursts are small — less than 4 km across — and short-lived, lasting only five to 10 minutes, with maximum wind speeds sometimes exceeding 100 mph.
- **Downburst** - Downburst is the general term for all localized strong wind events that are caused by a strong downdraft within a thunderstorm, while microburst simply refers to an especially small downburst that is less than 4 km across.
- **Gust Front** - a leading edge of rain-cooled air that clashes with warmer thunderstorm inflow. Gust fronts are characterized by a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm.
- **Derecho** - a widespread, long-lived wind storm that is associated with a band of rapidly moving showers or thunderstorms. A typical derecho consists of numerous microbursts, downbursts, and downburst clusters. By definition, if the wind damage swath extends more than 240 miles (about 400 kilometers) and includes wind gusts of at least 58 mph (93 km/h) or greater.
- **Haboob** - a wall of dust that is pushed out along the ground from a thunderstorm downdraft at high speeds.

The strength of thunderstorms can vary from a light less than 1 mph light breeze to an over 100 mph. The NCDC database stores severe windstorm events since 1960 through 2018. The data displays a high occurrence of windstorms in the Galveston County. Two major
windstorm events occurred in 2000 and 2012 with a maximum wind speed of 52 and 60mph, respectively. Both major events cost Hitchcock $56,000 in property damage.\textsuperscript{198} Map 10-8 below display historical wind events in the Galveston County from 1997 through 2011.

All communities, existing buildings, and facilities can potentially be impacted by a hazardous windstorm. Damages can be extensive for old buildings and mobile-homes. According to the National Weather Service, manufactures homes may be pushed off foundations or overturned when wind gusts reach 75-89mph. Other significant homes will acquired minor roof damage and will have other significant structural failures.\textsuperscript{200} Impacts of windstorms can vary from minimally impacted facilities to completely shutting down facilities.
10.8. Hailstorm

Hail is a form of precipitation that occurs when thunderstorms carry raindrops into cold areas of the atmosphere where the raindrops freeze and drop as balls of ice. Hail can severely damage property, such as homes and cars, and be deadly to people. Hail can be estimated to fall at fast rates of speed. The National Severe Storms Laboratory estimated is that a 1cm hailstone falls at 9 m/s, and an 8cm stone, weighing 0.7kg falls at 48 m/s (171 km/h). Hail can reach a remarkable big size. It can be estimated that hail can reach up to 4.5 inches. The National Severe Storms Laboratory compared hail sizes to known objects.

Figure 10-2. Hail from Hailstorm in Hitchcock
Source: April 3, 2013 hailstorm in Galveston County near Hitchcock and Santa Fe Courtesy of KHOU – Channel 11 Houston, Texas
- Pea = 1/4 inch diameter
- Marble/mothball = 1/2 inch diameter
- Dime/Penny = 3/4 inch diameter
- Nickel = 7/8 inch
- Quarter = 1 inch — hail quarter size or larger is considered severe
- Ping-Pong Ball = 1 1/2 inch Golf Ball = 1 3/4 inches
- Tennis Ball = 2 1/2 inches
- Baseball = 2 3/4 inches
- Tea cup = 3 inches
- Grapefruit = 4 inches
- Softball = 4 1/2 inches

Map 10-9. Historical Hailstorm Events
Source: National Climatic Data Center
The severity of damage by hail is based on the size of the hail—the bigger the size of hail the more damage it will cost. Hail size is mixed during a storm. Wind can also cause hail to hit objects horizontally. The NCDC database displays historical information on hailstorms by jurisdiction. Map 10-9 displays historical hailstorms in Galveston County from March 1950 – June 2014. According to the data, there have been four hail events in Hitchcock. The hail reached an average of 4.5 inches and accumulated $1,112,000 property damage. It is important to note that out of all the jurisdictions in Galveston County, Hitchcock has the highest amount of property damage—the total amount of property damage in Galveston County is $1,809,000.

Based on historical events, hailstorm events are highly likely to occur on a yearly basis. According to the database, hail events are most likely to occur during the months of March, April, May, and September. There are not a warning alerts for hailstorms. Property, facilities and people are all considered to be exposed to hail events and could be severely impacted.
10.9. Vulnerability Assessment

The social vulnerability index (SVI) is a valuable tool that identifies the level of vulnerability of a community. The SVI "refers to the resilience of communities when confronted by external stresses on human health, stresses such as natural or human-caused disasters, or disease outbreaks".²⁰⁴

Figure 10-3 shows the SVI analysis of Hitchcock. As observed, a majority portion of the city falls in the 3rd highest level of vulnerability. As stated on all of the hazards events above, minor and major events are expected in the future. We can conclude that Hitchcock’s communities are highly vulnerable to future disaster events.
A multi-jurisdictional risk assessment was conducted on Galveston County—the City of Hitchcock participated in the study. The assessment was conducted using two distinct methodologies: GIS-based analysis and statistical risk assessments. Figure 10-4 provides a hazard ranking by Galveston County jurisdiction for each hazard. Each hazard was given a rating of high (H), moderate (M), low (L), very low (VL), or not applicable (N/A). The rating was based on different combinations of factors such as annualized loss (ALRs), and population and building exposure.

The results of the study aid the emergency management department understand the risk associated with the natural hazard and better understanding of the complexities and dynamics of risk, how level of risk can be compared, and different factors that influence risk, provides a baseline for policy development, and helps approach risk management at each level of government.


182 FEMA Flood Map Service Center, Retrieved from [https://msc.fema.gov/portal/home](https://msc.fema.gov/portal/home)


108 National Centers for Environmental Information. *Storm Events Database.* Retrieved from https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Thunderstorm+Wind&beginDate_mm=02&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=02&endDate_dd=28&endDate_yyyy=2018&county=GALVESTON%3A167&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=48%2CTEXAS

109 National Centers for Environmental Information. *Storm Events Database.* Retrieved from https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Thunderstorm+Wind&beginDate_mm=02&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=02&endDate_dd=28&endDate_yyyy=2018&county=GALVESTON%3A167&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=48%2CTEXAS


201 The National Severe Storms Laboratory. *Severe Weather 101 Hail* https://www.nssl.noaa.gov/education/svrwx101/hail/


11. **Zoning**

11.1. **Overview**

The City of Hitchcock is divided into three general zoning districts: Residential Districts, Commercial Districts, and Industrial Districts. There are subcategories of the zones within each district that divide the districts into specific land use zones. The breakdown of the zoning districts is as follows:

<table>
<thead>
<tr>
<th>Residential Districts</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;AR&quot;</td>
<td>Agricultural Residential District</td>
</tr>
<tr>
<td>&quot;SFR&quot;</td>
<td>Single Family District</td>
</tr>
<tr>
<td>&quot;HR&quot;</td>
<td>High Density Residential District</td>
</tr>
<tr>
<td>&quot;MH&quot;</td>
<td>Manufactured Home District</td>
</tr>
</tbody>
</table>

Source: City Ordinances, Municode Library

<table>
<thead>
<tr>
<th>Commercial Districts</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;NC&quot;</td>
<td>Neighborhood Commercial District</td>
</tr>
<tr>
<td>&quot;GC&quot;</td>
<td>General Commercial District</td>
</tr>
</tbody>
</table>

Source: City Ordinances, Municode Library

<table>
<thead>
<tr>
<th>Industrial Districts</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;GI&quot;</td>
<td>General Industrial District</td>
</tr>
</tbody>
</table>

Source: City Ordinances, Municode Library
11.2. Mixed Use

Within the City of Hitchcock, there is no evidence of mixed-use development. The Code of Ordinances for the city is very clear on the different zoning districts and only allows certain types of land uses within each district. However, the implementation of a mixed-use zoning district is an attainable opportunity for the city. The zoning districts that could benefit from mixed-use development would be the High Density Residential District and the Neighborhood Commercial districts, as these districts are in areas that have the capacity for urban development unlike districts zoned with the designation of Agricultural Residential District.

11.3. Downtown

There is no obvious downtown center located within the City of Hitchcock. The city was originally built as a railroad stop in between Houston and Galveston, which explains the lack of a downtown center. The closest thing to that of a downtown area for the City of Hitchcock would be the areas denoted as commercial districts, as these are the areas in which the land use is mainly for business.

11.4. Floodplain

According to the Flood Insurance Rate Map or FIRM provided by FEMA, most of the area within the city is designated as Zone "B" which is "Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood." This means that most of the main areas of the city are generally designated as zones of minimal flooding. However, in the northeastern part of the city there is a good amount of land that is designated with the zone “A1-A30” which are “Areas of 100-year flood; base flood elevations and flood hazard factors determined.” This means that these have a 1% chance to flood every year to the minimum base flood elevation set by the FIRM. Furthermore, in the southern part of Hitchcock’s jurisdiction there are designations of Zone "V21" which is "Areas of 100-year
coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.\textsuperscript{211}

\section*{11.5. Residential}

The City of Hitchcock's Code of Ordinances denotes a zone for residential districts, which is respectively named "Residential Districts." This district designation is divided into four zoning categories, Agricultural Residential (AR), Single Family Residential (SFR), High Density Residential (HR), and Manufactured Home (MH). Within each category there are different permitted uses that dictate what kind of residential housing can be placed/erected into their respective areas. According to the Houston-Galveston Area Council, the City of Hitchcock is mostly zoned for residential use with commercial uses in the area around the intersection of SH-6 and Main Street.\textsuperscript{212}

\section*{11.6. Affordable Housing}

The main areas of affordable housing within the City of Hitchcock are located within the Manufactured Home District. This is the only district within the Code of Ordinances that mentions the use and construction of affordable housing within its permitted uses. However, there are limitations to this type of zone designation. This district is mainly meant for the erection of manufactured homes or mobile/modular homes, other forms of affordable housing are not permitted within this zone, such as apartment complexes.
208. https://library.municode.com/tx/hitchcock/codes/code_of_ordinances?nodeId=TXVLAUS_CH156ZORE_ARTIVZODI_S156.61ESZODIBO

209. https://library.municode.com/tx/hitchcock/codes/code_of_ordinances?nodeId=TXVLAUS_CH156ZORE_ARTIVZODI_S156.61ESZODIBO


12. **SWOT Analysis**
13. **Conclusions**