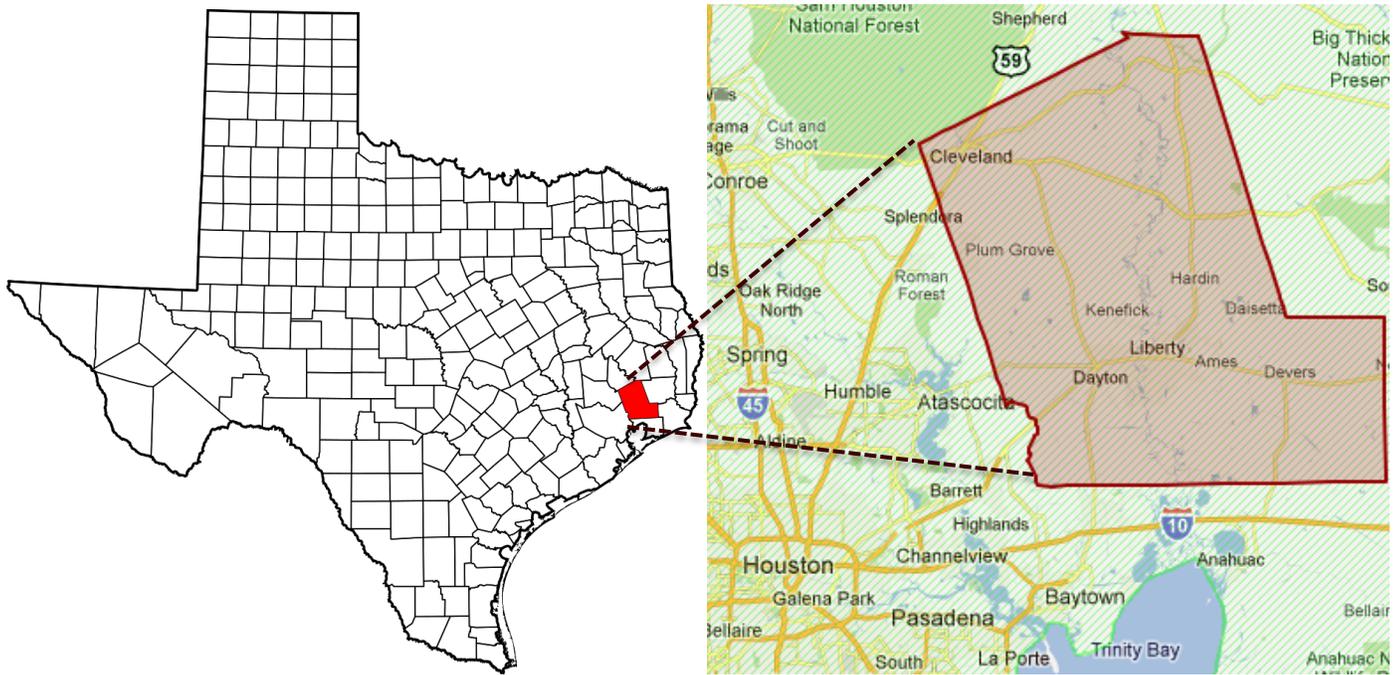


Liberty County, Texas



State of The Community Report

Texas A&M University, Spring 2015

PLAN 613 Planning Methods II

Dr. Wei Li

Scott Perkes, Sitong Deng, Ricardo J. Maga Rojas

Table of Contents

Brief History	3
Demographics	4
Population	4
Population Projection	4
Race Distribution	5
Educational Attainment	5
Poverty Rate	6
Income.....	6
Unemployment Rate	7
Housing Vacancy Rate	8
Economy	9
Industry Employment Distribution	9
Location Quotient Analysis	10
Environment	11
Elevation	11
Climate	11
Soil	11
Water	12
Natural Resources	12
Vegetation	12
Wild Life	12
National Protected Areas	13
Natural Hazards	13
Existing Infrastructure	16
Airports	16
Public Transit	16
Highways	16
The Grand Parkway Highway Project	17
Schools	18
Governmental Infrastructure	19
Other Infrastructure	19
Land use	19
References	21

Brief History:



Source: Google Images

Liberty County, Texas was founded in 1836 prior to the United States Civil War in what was then the Republic of Texas. Shortly thereafter, Liberty City was officially incorporated as a city and the county seat of Liberty County in 1837. The county consists of 1,176 square miles of land directly east of bordering Harris County (which contains the entirety of the City of Houston).

Even before its official incorporation as a county within the Republic of Texas, the land within current-day Liberty County has flourished as a rural agricultural county. As a matter of fact, approximately 88% of the county's land is currently used for agricultural purposes. Central to the area's agricultural production was the Trinity River that runs the entire length of the County from North to South. The river provided farmers and traders a way to connect to external markets by floating their goods down the river into the Trinity and Galveston Bays for export.

Demographics:

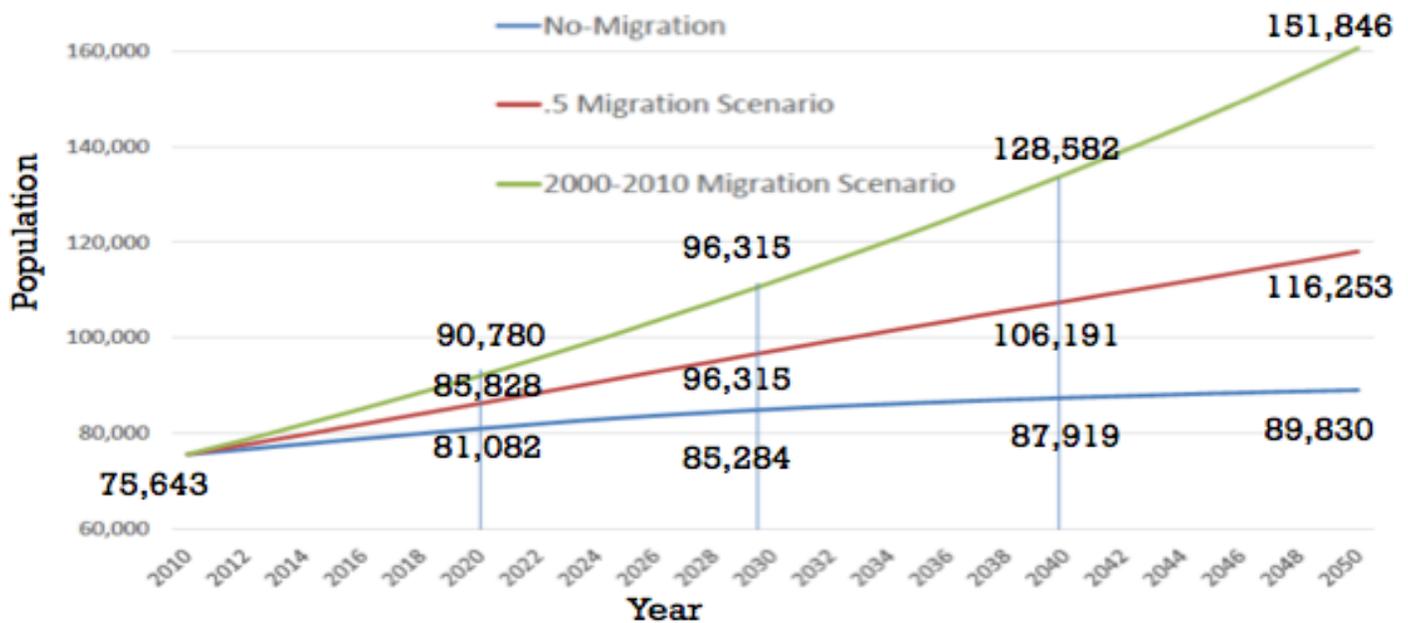
Population:

Liberty County, as of 2013, has a total population of 76,013. To put that figure into perspective, the State of Texas in 2013 had a population of 25,639,373. That equates to Liberty County making up a whopping 0.002% of the State of Texas' total population. As stated above, with 88% of the county's land being used for agricultural purposes, it is no surprise that the county is sparsely populated and is very rural. Population density according to the 2010 census was only 65 people per square mile.

The three largest cities in the county are Liberty City (population: 8,586), Cleveland City (population: 7,671), and Dayton City (population: 7,355). Total the three largest cities in the county account for 23,612 of the county's total population of 76,013. Or in other words, only 31% of the total county's population is located within the county's three largest cities. This information helps one to understand that the county is sparsely populated, with the majority (69%) of the population thinly spread across the rest of the land.

Population Projection:

Figure 1: Population Projections 2010 through 2050



Source: Office of the State Demographer

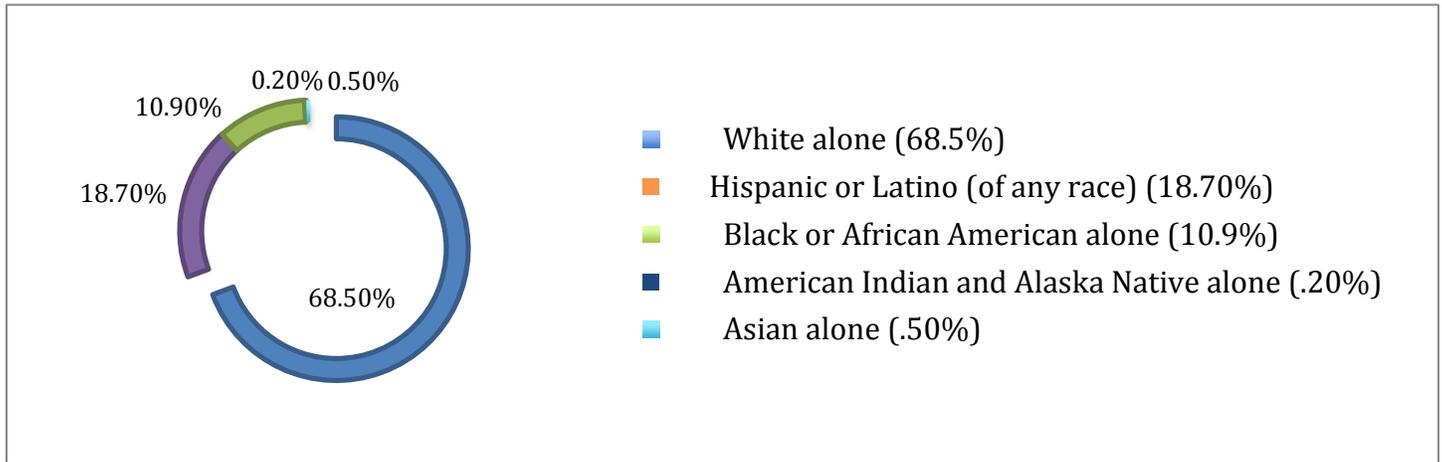
Looking at the population projections through the year 2050, we find some interesting trends. In Figure 1 above, you'll see that the population would only increase an estimated 14,187 if theoretically no migration were to occur within the county. Of course this is not likely to happen. Therefore it is more realistic to look at the other two projections that depict either migration projections at 50% of the 2000-2010 years migration trend, or 100% of the 2000-2010 migration trend. This would lead us to believe that the population would be anywhere from 116,253 to 151,846 people by the year 2050.

It is important to understand that with the estimated population projections, Liberty County will still be considered a rural county by the year 2050. However, the data doesn't describe exactly where this population will be concentrated. Therefore it is unknown if the population will mainly grow within the

county's cities, or if the population will continue to be spread thinly throughout the county as it currently is dispersed.

Race Distribution:

Figure 2: Race Distribution within the population of Liberty County, Texas 2013

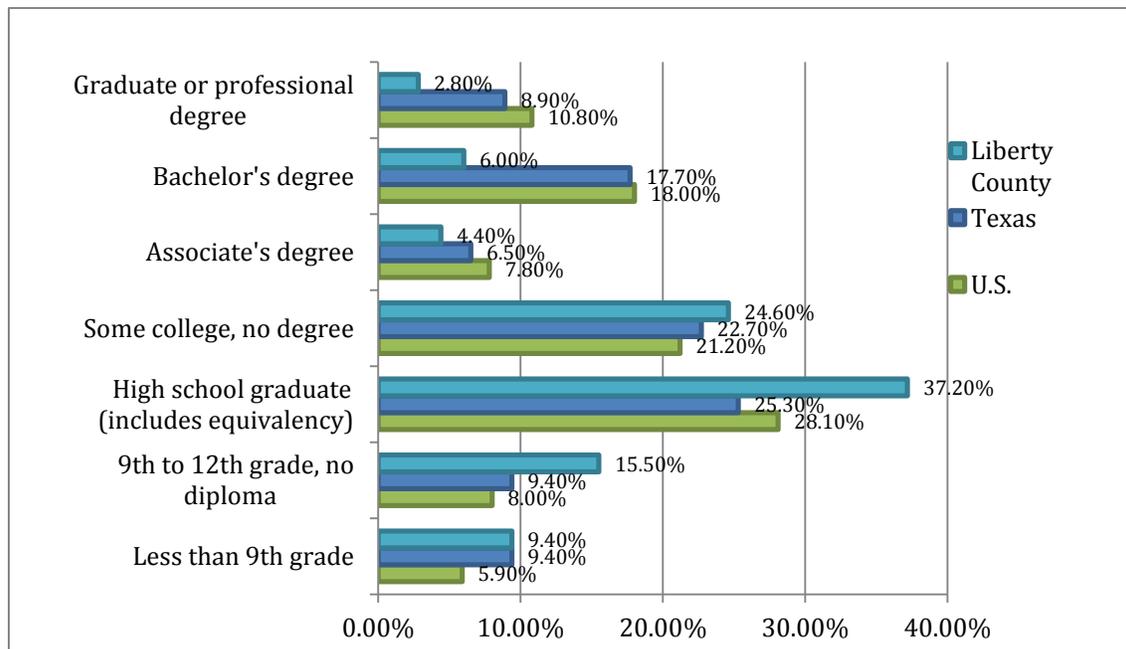


Source: American Fact Finder 2013

As of 2013, the race distribution amongst the population in Liberty County comprised of 68.5% White, 18.7% Hispanic, 10.9% Black or African American, .5% Asian, and .2% American Indian. This distribution depicts the amount of diversity within the county. Although few races are represented within the county, it is important to note the amount of Hispanics and Blacks within the county that drive the majority of the diversity.

Educational Attainment:

Figure 3: Educational Attainment within Liberty County Texas 2013

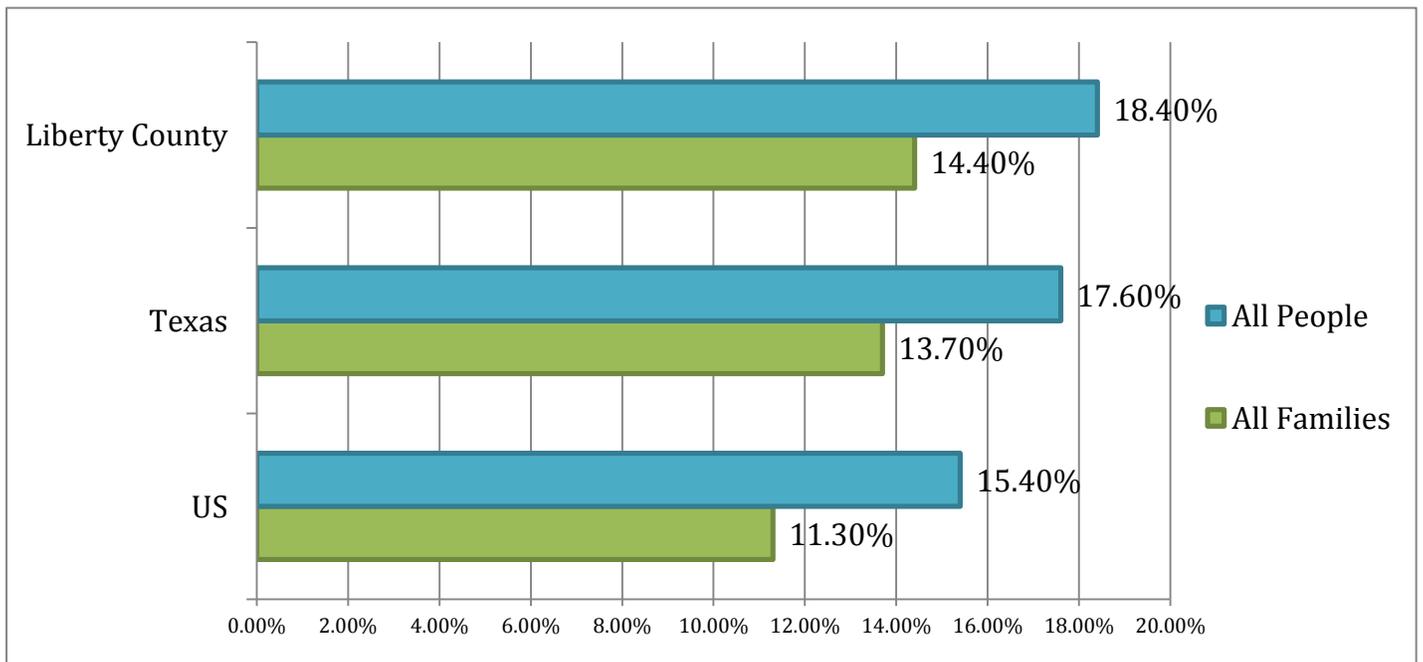


Source: American Fact Finder 2013

Figure 3 depicts the relatively low amount of educational attainment within the population of Liberty County. As a whole Liberty County does quite poorly at higher education levels as compared to the State of Texas and the U.S. Strangely enough, Liberty County actually has higher than average high school graduates, but then begins to loose ground with regards to levels above high school. This information helps us to understand the next few demographic topics.

Poverty Rate:

Figure 4: Poverty Rate in Liberty County 2013

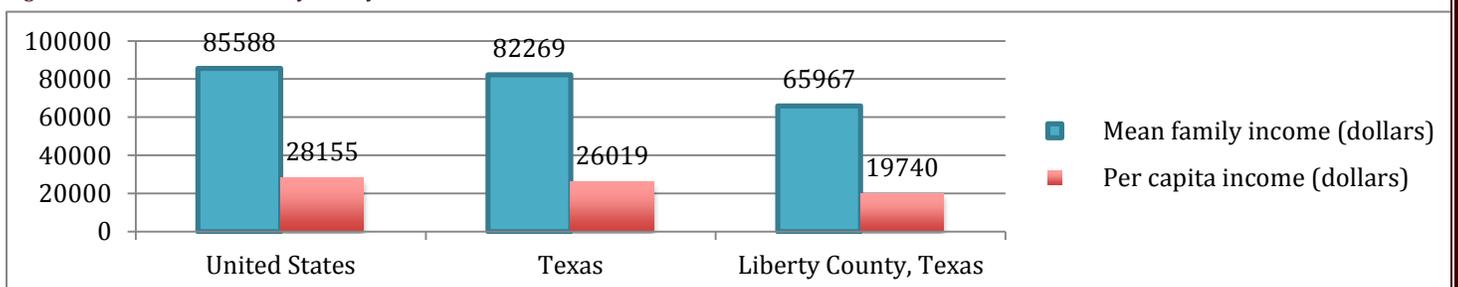


Source: American Fact Finder 2013

The poverty rate in Liberty County as compared to the State of Texas and the U.S. as a whole is on average higher for both categories of total population and all families. This trend could be associated with the average educational attainment levels depicted in Figure 3, as well as the unemployment rates and income levels which we will cover in Figures 5 and 6 below.

Income:

Figure 5: Income levels in Liberty County Texas 2013



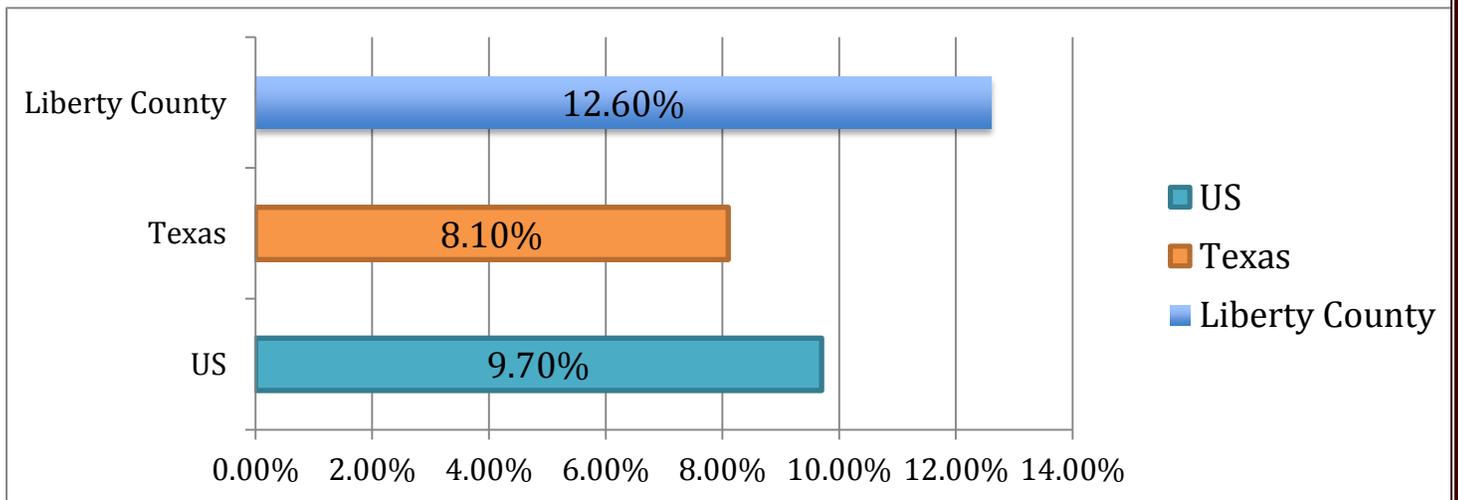
Source: American Fact Finder 2013

Depicted in Figure 5 is the mean family income and per capita income levels for Liberty County in

2013 as compared to the State of Texas and the U.S. as a whole. With a quick glance at Figure 5, it is easy to see that Liberty County on average has a lower than average mean family income and per capita income that the benchmark regions of the State of Texas and the U.S.

Unemployment Rate:

Figure 6: Unemployment Rate in Liberty County Texas 2013

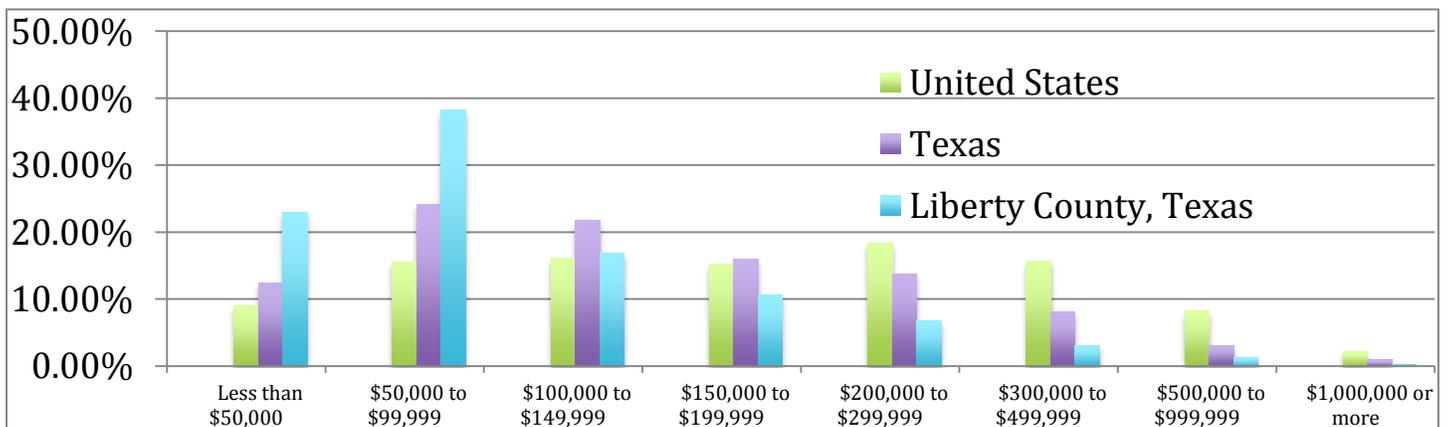


Source: American Fact Finder 2013

As seems to be the trend, the Unemployment Rate is also higher than the benchmark regions of the State of Texas and U.S. as a whole. Again, this statistic could be driven by a number of factors. Above we covered the lower than average income levels in Figure 5, and higher than average poverty rate in Figure 4, and lower than average educational attainment rates in Figure 3. Below we analyze the economic drivers in Liberty County in Figure 9, as well as provide a location quotient analysis in Figure 10 to help depict the economy in the region and more understanding for the above provided information.

Housing Prices:

Figure 7: Percentage of Housing Prices in Liberty County Texas 2013



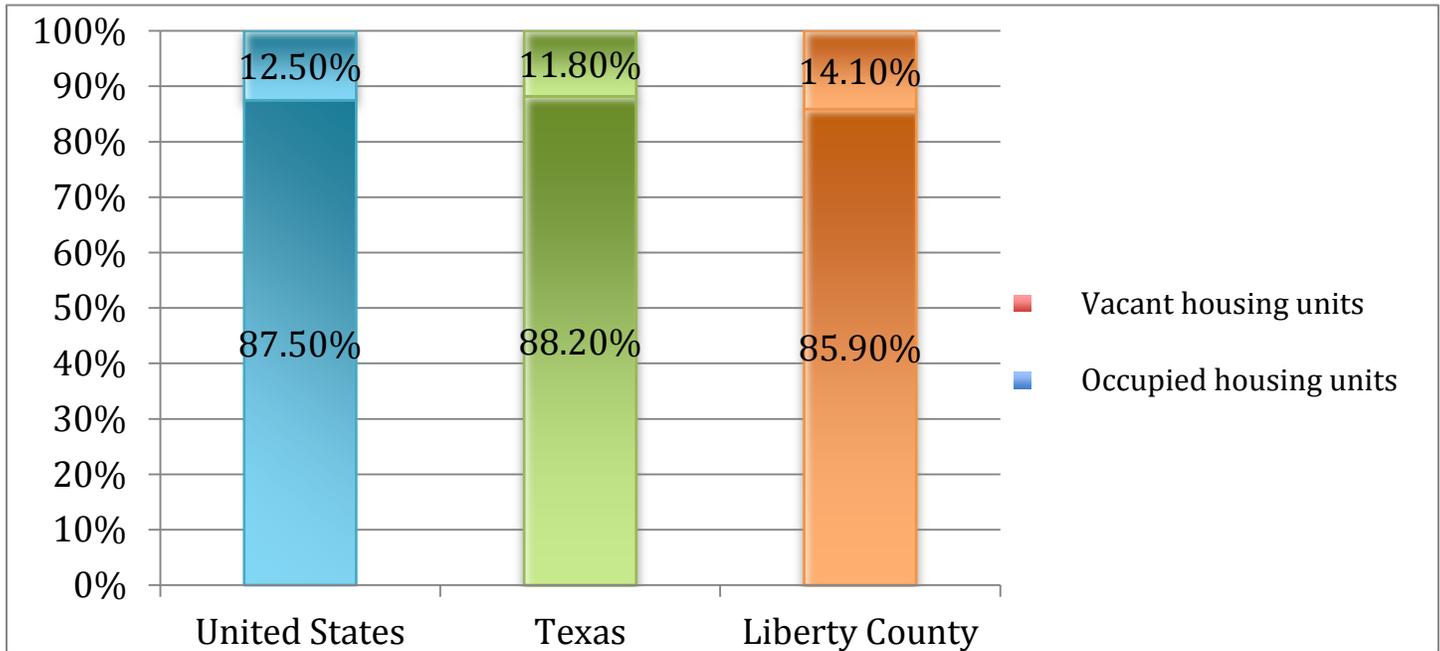
Source: American Fact Finder 2013

Housing prices in Liberty County closely depicts the area's income levels. Figure 7 depicts the

average housing price percentages for Liberty County as compared to the State of Texas and the U.S. as a whole. On the left of the graph, you'll notice that majority of Liberty County's housing stock lies within the "less than \$50,000" and "\$50,000 to \$99,999" price categories. This statistic is considerably higher than the benchmark regions of the State of Texas and the U.S.

Housing Vacancy Rate:

Figure 8: Housing Vacancy Rate in Liberty County Texas 2013



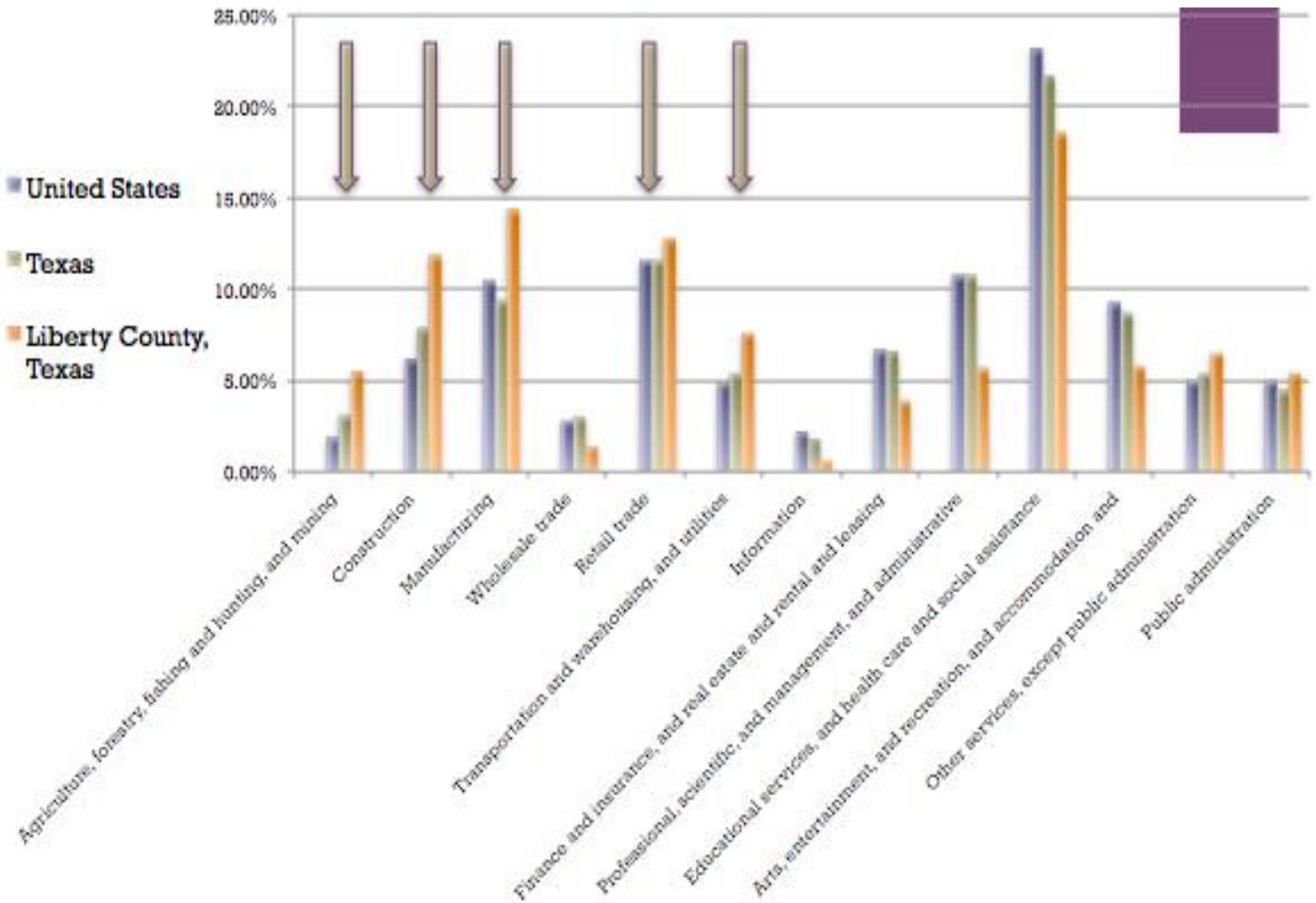
Source: American Fact Finder 2013

Again following the trend, the housing vacancy rate in Liberty County is higher than the benchmark regions of the State of Texas and the U.S. as a whole. However, it is important to understand that the housing vacancy rate depicted in Figure 8 is for the entire county. Housing vacancy rates within Liberty City, Cleveland City, and Dayton City, are considerably lower than the county average of 14.10%.

Economy:

Industry Employment Distribution:

Figure 9: Industry Employment Distribution in Liberty County Texas 2013

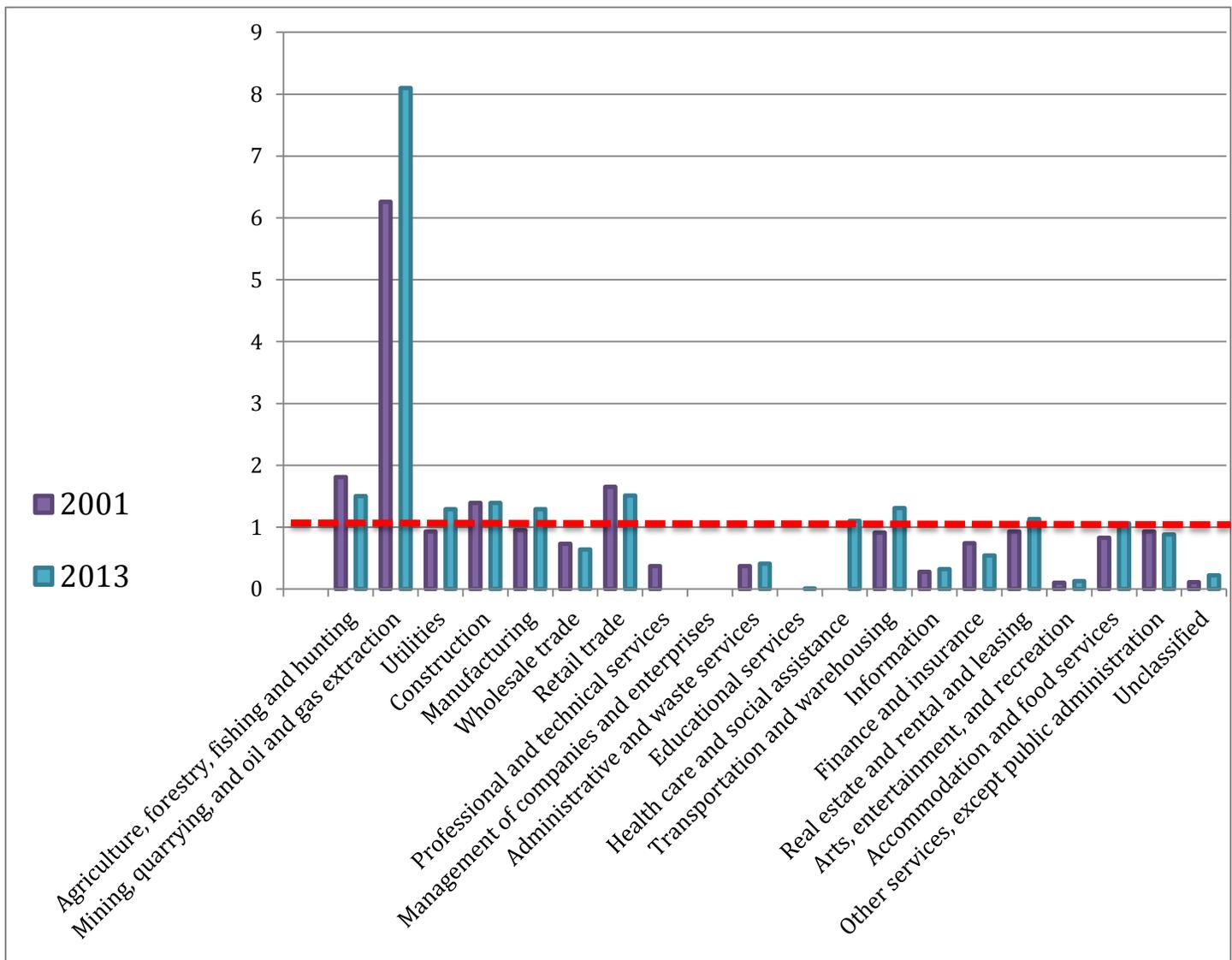


Source: American Fact Finder 2013

Figure 9 depicts the distribution of employment through the NAICS industry classifications for Liberty County. Industries with arrows above them depict industries in which Liberty County experiences higher than average employment as compared to the State of Texas and the U.S. as benchmark regions. These industries are agriculture, construction, manufacturing, and transportation. These industries typically do not require higher levels of education and therefore yield lower income levels. This closely resembles the county's lower than average education levels and income levels.

Location Quotient Analysis:

Figure 10: Location Quotient Analysis for Liberty County Texas 2001, and 2013



Source: Bureau of Labor Statistics 2015

Looking at the Location Quotients for 2001 and 2013 helps understand the direction and strength of the economy. Figure 10 depicts the location quotient analysis for Liberty County for both 2001 and 2013 as compared to the U.S. as the benchmark region. Not surprisingly the two largest economic drivers for the region are agriculture and natural resource extraction. Both of these industries are considered basic economic industries due to their location quotients being larger than 1. Two important topics should be taken from this information. First is the drop in agricultural activities between 2001 and 2013. Second is the overwhelmingly large contrast that natural resource extraction has over all the rest of the industries. This causes concern that the county is losing footing in agricultural activities that have been one of their long time economic drivers. Additionally there is concern that the county is placing all their economic eggs into the same basket which such a large share in the natural resource extraction business. Should there be any drop in demand for oil and gas resources, Liberty County doesn't have a diversified enough economy to be sustainable.

Environment:

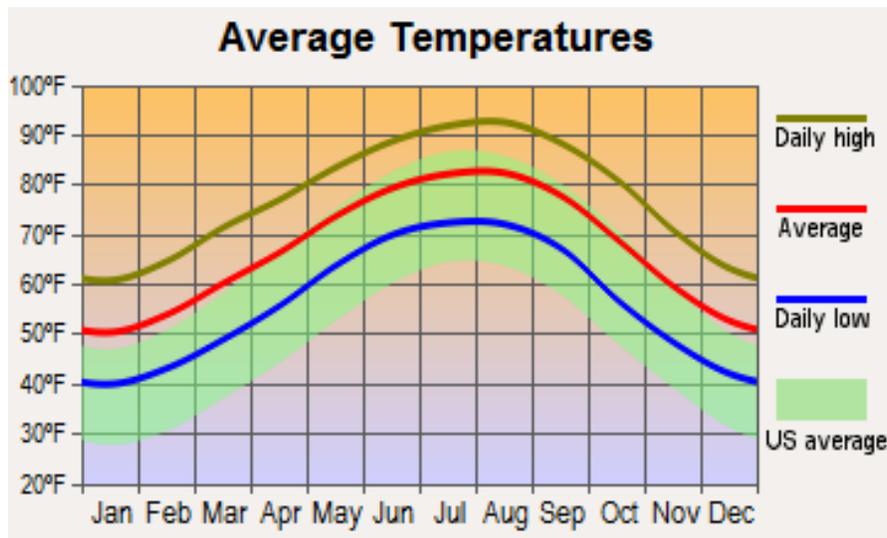
Elevation:

The elevation in Liberty County ranges from 20 to 200 feet above sea level. Some concerns for natural disaster resiliency exists do to the county's low-lying and close proximity to the gulf coast.

Climate:

The climate of Liberty County is subtropical and humid. Annual rainfall averages 51.15 inches, and the average temperature ranges from a minimum of 40° F in January to a maximum of 94° F in July.

Figure 11: Average annual temperature in Liberty County Texas



Source: Liberty County Climate Station

The lowest temperature on record in winter, which occurred at Liberty City on December 24, 1989, was 7°F. The highest temperature in summer, which occurred at Liberty City on July 20, 1913, is 108°.

Temperatures are moderated by the influence of the Gulf of Mexico that results in mild winters. The average number of days below freezing is 19, and these usually last only a few hours since they are usually accompanied by clear skies. Another effect of the Gulf is abundant rainfall, which is evenly distributed throughout the year. Annual precipitation totals range between 30 and 60 inches about 75% of the time, with thunderstorms being the major contributor.

Snow rarely occurs, but on December 22, 1989 Liberty County received 1.7 inches of snow and experienced the current record low of 7°. Since 1985, Liberty County has only experienced 11 snowfalls of 1" or greater.

Soil:

There are several types of soil found in Liberty County, they are sandy, sandy loam, black sandy, and black waxy. Between 41 and 50 percent of the county's land is considered to be prime farmland.

Water:

The main water feature in Liberty County is the Trinity River. The Trinity River flows from North to South through Liberty County and is an important part of the county's agricultural activities. The county has enough surface water with the Trinity River, various lakes, and other water types including Long Island Cove to provide for its water needs.

Natural Resources:

Liberty County is rich in many different natural resources. They include deposits of lignite, iron ore, sulfur, brick clay, salt, lime, and glass sand, as well as oil and gas. As we covered above in the economic section, oil and gas extraction is the largest economic driver for the county.

It will be important going into the future to protect and plan for the environmental impact that such activities will cause on the environment. Diversifying Liberty County's economic reach will be an important factor in ensuring that the county will be able to remain economically sustainable while also protecting their environment for over utilization and extraction of natural resources.

Vegetation:

Liberty County contains many different kinds of vegetation. Trees found in the county include Pines, Bluejack, Post Oaks, Eastern Redbud, Southern Sugar Maple, American Elm, American Wisteria, Yaupon Holly, Dogwood, Black Tupelo, Sweetgum, Sweetbay Magnolia, Hickories, Bald cypress, Spanish moss, Water lilies, Purple bladderwort, Prickly pear cactus, Yucca, Texas trailing phlox and etc.

The Sam Houston National Forest (near Huntsville) is also located in Liberty County and contains many kinds of vegetation. Unfortunately, as the city has developed, the vegetation has come under threat. Urban development and wild fires are the main causes of vegetation and forest loss currently in Liberty County.

Wildlife:

Liberty County has many native species of wildlife. Mammals such as Eastern Cottontail rabbits, Eastern Gray Squirrels, Virginia Opossums, Nine-banded Armadillos, White-tailed deer, North American Cougars, Gray Foxes, Bobcats, Ring-tailed Cats, Rafinesque's Big-eared Bats, and the Seminole Bat are just a few examples. Examples of reptiles include Cottonmouth Water Moccasins, Prairie Kingsnakes, Slender glass lizards, and Squirrel Treefrogs. Birds are represented with Sandhill Cranes, Black and Turkey Vultures, Northern Mockingbirds, and the vulnerable Red-cockaded Woodpecker. American Alligators are not as common as they once were, but their population has rebounded since the 1960s. Louisiana Black Bears are also rare today, but a few still live in remote thickets. Recently, there has been significant talk of reintroducing the Black Bear into many parts of Eastern Texas. The most common fish is Catfish, which are a native species but also stocked in local reservoirs. Crayfish are common along the rivers and creek banks.

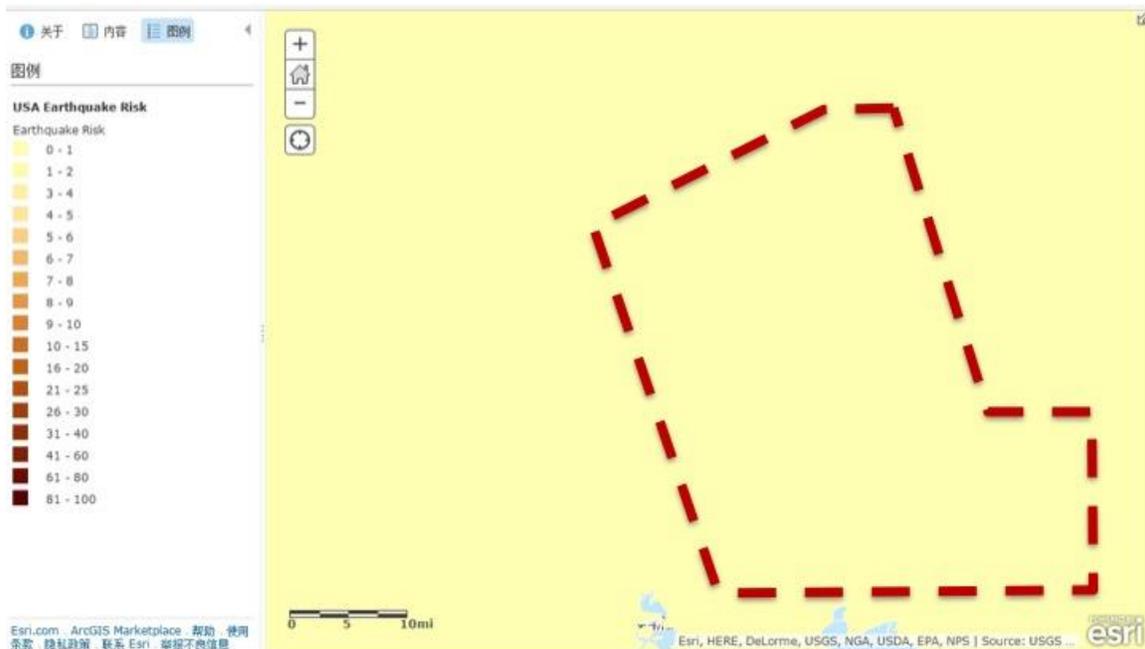
National Protected Areas:

Liberty County is home to the Trinity River Wildlife Refuge. In addition, northern parts of the county are part of the Big Thicket National Preserve. These protected areas represent an important effort to protect sensitive areas of habitat and the environment from possible destruction and encroachment from human developments.

Natural Hazards:

There are various natural hazards in Liberty County. Hurricanes and tornadoes are the most common hazards both in Liberty County and the State of Texas. Liberty County's historical tornado and hurricane activity is slightly above the Texas State average, and it is 82% greater than the overall U.S. average. Other hazards such as earthquakes and soil erosion have a low percentage of happening while fires and floods have a relatively high percentage of happening. Figures 12-16 provide a brief look at the various natural hazards associated with Liberty County. (Liberty County is depicted by the red dotted line).

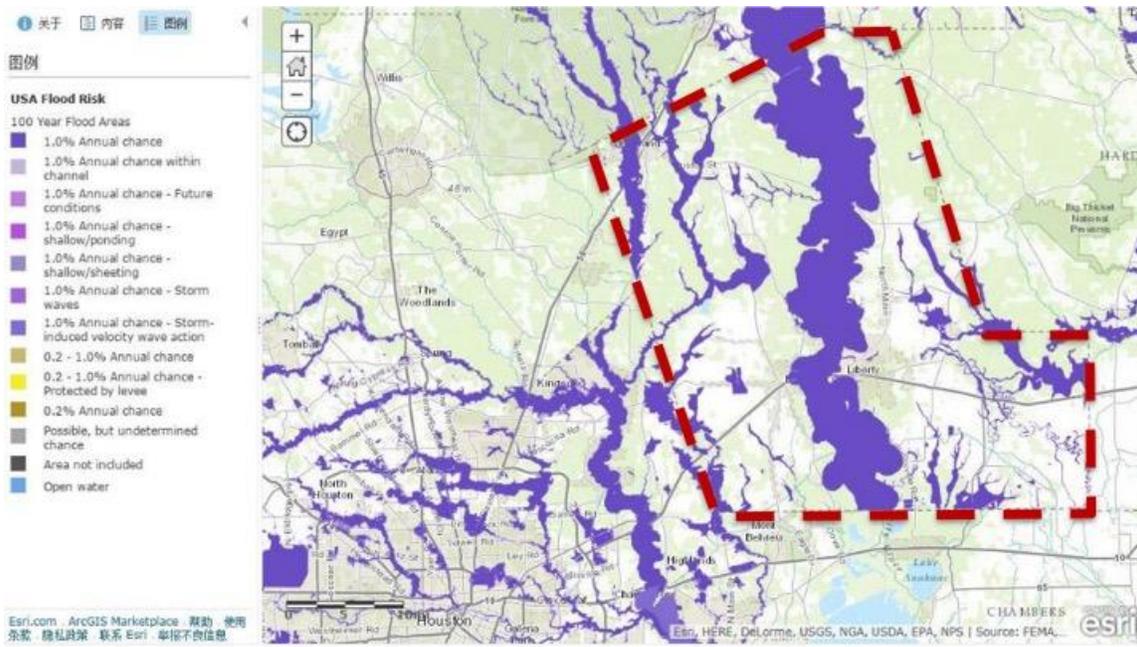
Figure 12: Earthquake Risk in Liberty County Texas



Source: Esri.com

As we can see from Figure 12, the risk of an earthquake in Liberty County is very low. Considering other natural hazards that are associated with Liberty County, Earthquakes are not considered to be a large risk for the area. However, Liberty history has shown that there have been several minor earthquakes in the past.

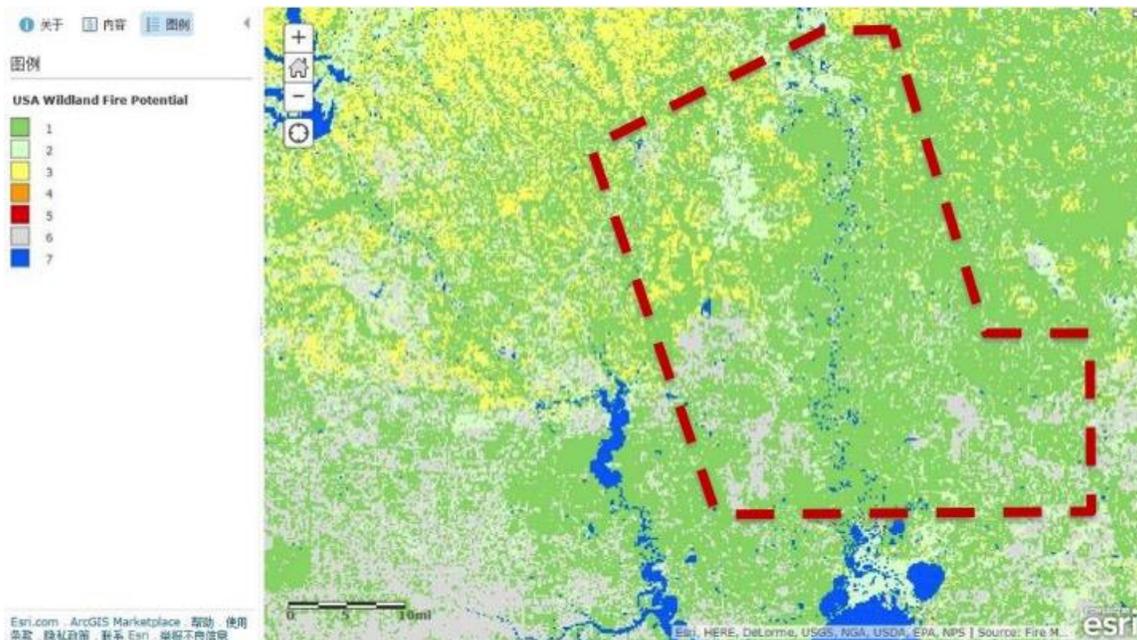
Figure 13: Flood risk in Liberty County Texas



Source: Esri.com

Figure 13 above depicts Liberty County's Flood Risk. Nearly one third of Liberty County is located in the 100 Year Flood Plane with the highest risk of 1.0% Annual change. Because of the affluent surface water and rainfall, Liberty County should take large precautions to avoid its large flood hazard.

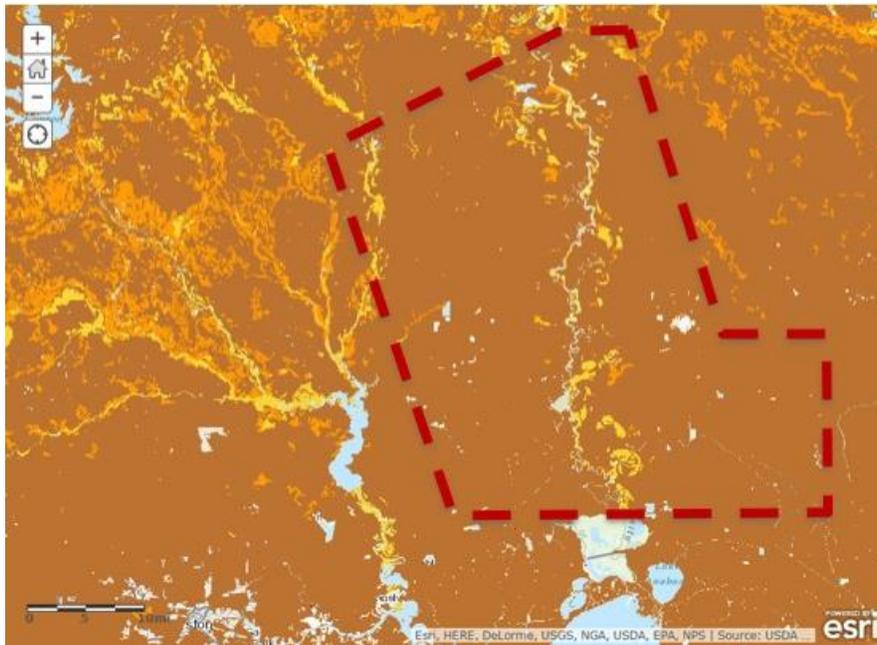
Figure 14: Wild land Fire Risk for Liberty County Texas



Source: Esri.com

Liberty County's Wild land fire potential varies throughout its geography. The lower half of the county has the lowest fire potential due to its large amount of surface water and annual rainfall. However, the further north in the county you look, the higher the fire risk becomes. Liberty County should focus on this natural hazard due to wild land fires being the main reason for loss of forests and vegetation.

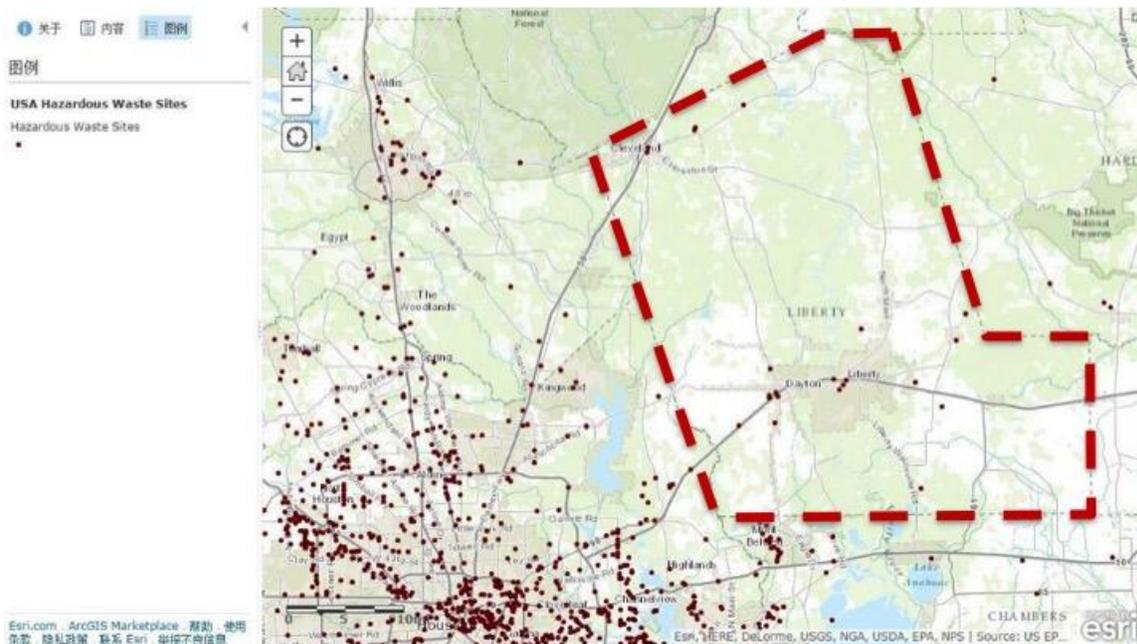
Figure 15: Soil erosion in Liberty County Texas



Source: Esri.com

Soil erosion in Liberty County is relatively low. The largest amount of erosion occurs near the banks of the Trinity River through middle of the county. Compared to neighboring counties, Liberty County actually enjoys relatively low risk of soil erosion problems.

Figure 16: Hazardous waste sites in Liberty County Texas



Source: Esri.com

Although there are so much hazards potential in Liberty County, its hazardous waste sites are much less than it's nearby county such as Houston County. The distribution of the sites shown in the below figure.

Existing Infrastructure:

Airports:

Liberty Municipal Airport and Cleveland Municipal Airport are two regional airports available to citizens in Liberty County. Many small airfields are present throughout the county, however they are used for agriculture purposes and aren't meant for public infrastructure uses.

Public Transit:

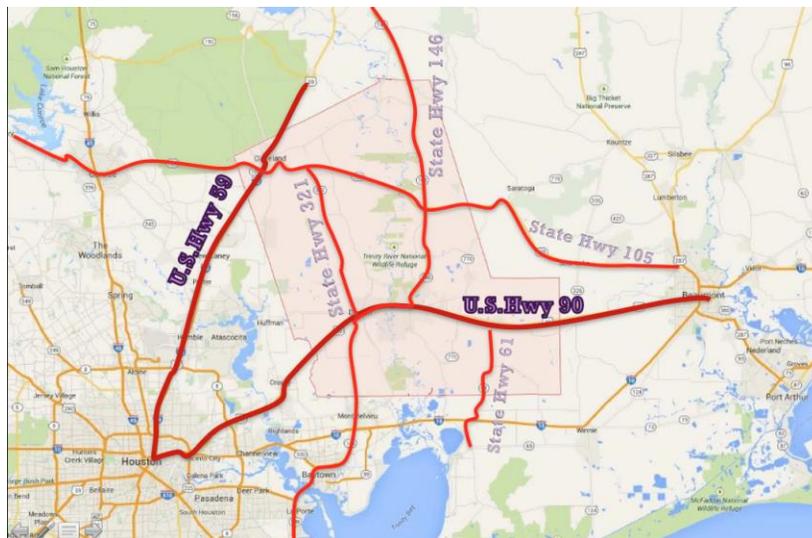
The public transit system in Liberty County is not sufficient to connect the population to surrounding areas and needs to be improved. Approximately 7.6% of the 23,242 households in Liberty County do not have automobiles (U.S. Census 2000). Therefore many of them have to walk long distances to their destinations.

Highways:

Liberty County is supported by quite the system of roads and highways. The main collector of vehicular traffic is U.S. Route 90 which runs down the bottom of Liberty County (Texas Natural Resources Information System, n.d.). The remaining roads (State Highways 321, 146, 105 & 61) intersect with each other and connect at the bottom near Dayton with the exception of U.S. Route 59 that runs at the top left near Cleveland. Figure 17 and 18 illustrate the Liberty County Transportation System accurately.

Liberty County is located northeast of Harris County, with the cities of Liberty (County seat), Ames, Dayton, and Cleveland constituting the larger population centers within the county. SH 146 and SH 321 provide north south access through the county, U.S. 90 provides access to the Houston CBD via I-10 East, and SH 105 provides east-west mobility.

Figure 17: Highway system in Liberty County Texas



Source: Google Maps

Figure 18: Highway system in Liberty County



Source: Texas Natural Resources Information System, n.d

The Grand Parkway Highway Project:

The Grand Parkway Association is a non-profit State Transportation Corporation authorized by the Texas Department of Transportation minute order number 82325 on October 25, 1984. The association was established to facilitate the efficient development of Houston's third outer highway loop to serve the regional mobility needs of the metropolitan Houston area. The association operates on funds received from various sources including TxDOT, METRO, Harris County, Fort Bend County, Chambers County, Galveston County, and Brazoria County. The association is governed by a seven member board of directors appointed by the Texas Transportation Commission and is required to make semi-annual reports to TxDOT detailing the status and financial information of the various project segments.

Segments H & I-1 are a proposed 37-mile, four-lane, controlled access toll road with intermittent frontage roads from US 59 (N) to IH 10 (E) through Montgomery, Harris, Liberty, and Chamber Counties. These linkages will allow for greater mobility for residents of Liberty and surrounding counties and create additional economic opportunities to all that are services by the new segment linkages. See Figure 18 for a visual depiction of these segments.

Table 1: Primary and secondary schools in Liberty County Texas

Primary and Secondary Schools in Liberty County, Texas

	Cleveland Independent School District	Dayton Independent School District	Devers Independent School District	Hardin Independent School District	Hull-Daisetta Independent School District	Liberty Independent School District	Tarkington Independent School District
Elementary School	X	X	X	X	X	X	X
Intermediate School				X			X
Middle School	X	X				X	X
Junior High School		X	X	X	X		
High School	X	X		X	X	X	X

Source for Figure 19 and Table 1: Cleveland Independent School District, Dayton Independent School District, Devers Independent School District, Hardin Independent School District, Hull-Daisetta Independent School District, Liberty Independent School District, and Tarkington Independent School District, n.d.

Governmental Infrastructure:

Within Liberty County, there are four types of correctional facilities. The Cleveland Correctional Center is a privately owned prison for men operated by the GEO Group, Inc. However, the Texas Department of Criminal Justice operates one women’s prison (L.V. Hightower Unit) and two women’s state jails (Dempsie Henley State Jail and Lucile Plane State Jail).

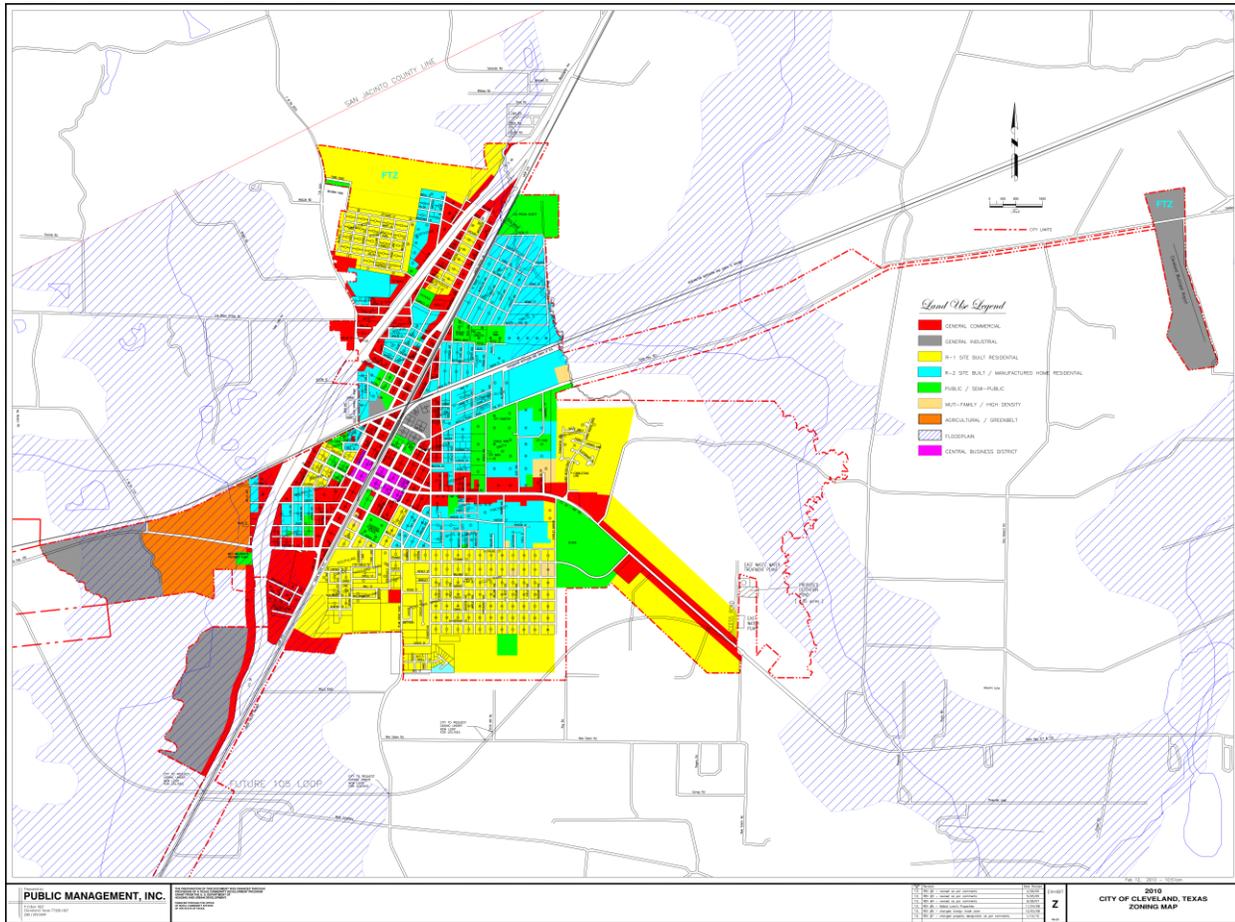
Other Infrastructure (Important Structures and Parks):

Liberty County has several pertinent structures and parks, including the Trinity River Nation Wildlife Refuge in Northern Liberty County and the Big Thicket National Preserve. The refuge protects part of the bottomland hardwood forest ecosystem along the Trinity River while serving as a habitat to a myriad of waterfowl species, plants and other vertebrates. The Big Thicket National Preserve, in the northern part of the county, provided recreation with its several lakes. The county had seven municipal parks. Historical markers in the county are placed at the La Bahía Road crossing on the Trinity, at the site of Old Atascosito three miles northeast of Liberty, and at the site of Champ d’Asile.

Land Use and Zoning (Cleveland City, Texas):

There was no zoning map available for Liberty County, therefore the existing land uses of the City of Cleveland will be analyzed. Remember that approximately 88% of the county is used for agricultural purposes. See Figure 20 for Cleveland City’s Zoning Map below.

Figure 20: Zoning map for Cleveland City Texas



Source: City of Cleveland Website

As for future land uses, there are several pockets of vacant land in the city but they seem to be too close to the floodplain and not desirable for development. I am uncertain as to whether the City of Cleveland will support future land uses. If there is future development Cleveland City can annex some of the land to the south that is unencumbered with flood plain land.

References

City of Cleveland, Texas. (2010). Official Zoning Map. Retrieved from <http://www.clevelandtexas.com/DocumentCenter/Home/View/60>.

Cleveland Independent School District. (n.d.). Home. Retrieved from <http://www.clevelandisd.org/>.

Dayton Independent School District. (n.d.). Home. Retrieved from <http://www.daytonisd.net/>.

Demographic Data retrieved from the American Fact Finder website at <http://factfinder.census.gov/>

Devers Independent School District. (n.d.). Home. Retrieved from <http://www.deversisd.net/>.

Diana J. Kleiner, "LIBERTY COUNTY," *Handbook of Texas Online*. Retrieved from <https://tshaonline.org/handbook/online/articles/hcl08>.

Grand Parkway information retrieved from <http://www.grandpky.com/about%20us/default.asp>

Various Images retrieved from <http://www.google.com/images>

Hardin Independent School District. (n.d.). Home. Retrieved from <http://www.hardinisd.net/>.

Hull-Daisetta Independent School District. (n.d.). Home. Retrieved from <http://www.hdisd.net/>.

Liberty County Community Plan 2014-2015

Liberty County History retrieved from the Texas State Historical Association at <https://tshaonline.org/handbook/online/articles/hcl08>

Liberty County School Districts – Houston Texas Online. (n.d.). Home. Retrieved from <http://www.houston-texas-online.com/libertycoschooldist.html>.

Liberty County Transit Plan Final Report June 2009

Liberty Independent School District. (n.d.). Home. Retrieved from <http://www.libertyisd.net/site/default.aspx?PageID=1>.

Location Quotient Data retrieved from the Bureau of Labor Statistics at http://data.bls.gov/location_quotient/ControllerServlet

Natural hazards data collected from <http://www.esri.com/>

Population projection data retrieved from the Office of the State Demographer at <http://osd.state.tx.us/>

Population projection graph retrieved from http://txsdc.utsa.edu/Resources/Presentations/OSD/2014/2014_02_28_Liberty_Dayton_Chamber_of_Commerce.pdf

State Parks. (n.d.). Home. Retrieved from <http://www.stateparks.com>.

Tarkington Independent School District. (n.d.). Home. Retrieved from <http://www.tarkingtonisd.net/>.

Texas Department of Criminal Justice (n.d.). Home. Retrieved from

<http://www.tnris.org/>.

Texas State Historical Association. (n.d.). Home. Retrieved from <http://www.tshaonline.org>.