1. Introduction.  
   a. Objective  
The objective of this report is setting a precedent on the current situation of Galveston City. Taking a broad overview of its population, economy, and build environment. Focusing on the challenges Galveston City faces in the future and the opportunities presented by its unique nature.

   b. Galveston City Profile  
Galveston city sits in a barrier island facing of the Gulf of Mexico along the Texas Gulf coast. Fifty miles south of Houston, Texas’ biggest city, the island measures 27 miles long by 3 miles wide on its widest point. Given its location and barrier island status, Galveston Island is critical in the protection of the estuary system behind it, Galveston Bay. (Islam & Merrell)

   c. Transportation Infrastructure  
They are three main access points to the island. The main access is the Interstate 45 causeway to the north of the island. The second one a toll bridge on the western end, but it doesn’t have the capacity or traffic of the first. And lastly a ferry service at the east end that connects directly to Port Bolivar and then straight to Highway 87, but it is only available during the summer months. (Galveston.com & Company Inc.)

As for public transit the Island originally had 7 working trolley routes, but after Hurricane Ike, the infrastructure suffer even great damage but return to operations quickly. Right now the system faces problems with low ridership attributed mainly to reduced accessibility and unreliable and limited service. (Galveston Island)

In order to support the tourist industry and provide a higher quality of life, the island transit system must undergo a thorough restructuration to improve its quality.

   d. Water and Waste Management Infrastructure  
Galveston Island faces a special situation when it comes to human use water. There are no sources of potable water in the island, forcing the local government to buy their supplies from the neighboring Texas City. Said water is brought into the island for use through two lines that are attached to the railroad bridge in the northeast end of the island. Depending on this single source of water makes the
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island particularly vulnerable in a natural disaster. Also, monitoring the amount of water in the island is indispensable to warranting an appropriate and steady pressure on the network. This becomes a real challenge considering that required slopes are hard to achieve in such a low level above the sea.

Five wastewater treatment plants served 22,000 homes, which represent 88% of the population, but they show extreme propensity to damage due to surge water during hurricanes as evidenced by Ike in 2008.

All of the factors plus the natural deterioration of the infrastructure make it an important consideration when trying to achieve a better support system for the economy and a higher level of resilience.

2. Population
   a. Current population

The city of Galveston has an overall population of 47,743. It has decreased by 16.6% since 2010. In contrast, Galveston county has grown by 16.5% overall. A major contributor to the decrease in population is the island propensity to natural disasters; people will rather live in the mainland and commute into the island or they simply leave all together. (U.S. Census Bureau, 2010).

Galveston city is larger than all of its true neighbors. La Marque, its closest geographic neighbor, has only 14,509 people. The next nearest major city to Galveston, League City, has a population of 83,560 (U.S. Census Bureau, 2010).

According to 2010 U.S Census data, the total percentage of White Non Hispanic is dominant with 45% total. Followed by Hispanic population 31% of total population, which is the second biggest group in Galveston city. Notably, the total population of African-American, Asian, and other are only 24% of total population in Galveston city.

The city of Galveston’s population is more diverse than the average Texan city. Because even when the majority

Figure 1. Percentage of Population per Ethnic Group.
of the population is still White Non Hispanic, followed by White Hispanic and Black people; compared to the state the proportion of minorities is more balanced in Galveston. See Figure 1.

b. Income
The average household in the city has a median income of $37,197. The White Not Hispanic Population has $46,674 as median income, that is considerably higher than the average. White Hispanics are closer to the city average with $37,103 but still well under the White alone income. Meanwhile both Asians and Other race sections of the populations have the same median income with $27,188. It is important that we pay attention to the African American population since they have the lowest median income with $16,288. (US Census Bureau)
The percentage of households living below the poverty line presents a more detailed look into low-income households. According to ACS 2010 3 year estimates the Hispanics have the highest percentage of households under the poverty line with 14%. Six percent of White Non Hispanics are also under the poverty line, which along with their high median income can indicate a bigger disparity in wealth distribution. Other races represent a percentage so small the census doesn’t consider it relevant but both African-Americans and Asians lack information. (US Census Bureau)

c. Housing and Home Ownership
The total occupied housing units in Galveston city are 19,943, from a total of 32,386 existing units. Against this 61.6% occupied, there is a reported 38.4% accounted as vacant. The race/ethnicity group with the biggest share in the occupied units (owned and rented) is White non Hispanic with 53.3% (10,617 units).Secondly, there is the White Hispanic with 23.6% (4,703 units) of the occupied households, followed by the African American group with 18.1% (3,611 units) and the Asians with 3.2%. The rest of the population classified as Other represents only a 1.7% (372 units).

When we look at the ownership of the households, we found that White Non-Hispanic usually own rather than rent. Hispanics are more balanced but they still have more rented units. In contrast for every own Africa-American household there are two that are rented. This rental majority phenomenon repeats itself with other minorities. See figure 4. (US Census Bureau)

Across all ethnicities middle age population cohorts (35-59 years old) have higher ownership rates, while population from 18 to 35 have the highest percentages of renters. This event is possibly due to the presence of
important education facilities.

It is important to notice the high percent of vacant household units, considering that more than 60% of are either for rent or seasonal housing units. This high incidence of vacant units and second homes are another indicator of a large seasonal population and indicate idle infrastructure for prolonged periods of time. See figure 5. (US Census Bureau)

d. Population Growth

In order to assess Galveston’s population we conducted a shift-share projection of the city’s population for the next 20 years based on State Demographers’ data by comparing it to the total population of the Galveston County. Unfortunately data available doesn’t properly account for recent years, which lefts out the Post-Ike population flee, rendering the results less than useful. Based on this we conducted a second analysis; a linear projection built from population totals for the last fifty years, broken down to single year estimates for the last decade. The results show the declining tendency mention before according to ten years estimate from the US Census Bureau Data and ACS. See figure 6.
A declining population has strong consequences like a diminishing tax base, underutilized infrastructure and idle resources. Thus it must be most a priority issue when planning for Galveston future.

3. Land Use Policy

The Land Use Policy currently being implemented comes from the revision efforts made in the Land Development Regulations during the previous year and to be completed in October 2012. The purpose is to bring them up to speed with the goals of the new Comprehensive Plan. Their main objective is to preserve the original development pattern of the city, provide sufficient open space and civic services for everyone. It states that land use intensity is completely dependent on the regulations set by every zoning district on the zoning map and can not be change by city council. The basic unit of Galveston’s development must be the city block. Connected by multimodal paths, they must continue the traditional grid pattern of development. These regulations also emphasize the necessity to strengthen the “Urban Core Neighborhoods” and further concentration of activity along the Strand and the City Center. (Progress Galveston: Galveston City Planning Department)

4. Economy

Galveston City is proud of its abundant natural resources and geographic advantages. Despite geographic proximity to Houston, Galveston City is economically independent from it with its own economy based mainly in tourism, service, education, and health care. The City is also paving the way to become a premier site for eco-tourism industry. Also it continues to see growth among home-based businesses and independent start-ups.

For Galveston City we identified the five industries that currently contributed more jobs and employees for the area according to the 2010 data. The results are as follows: Office and Administrative Support Occupation, Education, Training and Library Occupations, Food Preparation and Serving Related Occupations, Production Occupations, and Sales and Related Occupations.

Taking a closer look at these current top fives biggest industries in 2010, we intent to determine their role in Galveston City. (Bureau of Labor Statistics)

a. Office Industry is Un-Local Based Economy

Despite the growth of the number of employees in this industry on a state level, the percentage of Galveston residents employed in the Office and Administrative Support Occupations industry has decreased. Signaling a shift in the economic composition of the city.

b. Education Industry is An Economic Base

The Education related industry is a potential export base industry in Galveston with a number of 5,210 jobs grown from 2000 to 2010. This industry has a competitive advantage and is a current strength economy base in Galveston.
c. Production Industry Is Competitive

Surprisingly, the city added more jobs (4,860) than the state did (290) between 2000 and 2010. The production industry performed better than the state average. In the other words, the protection industry in Galveston is more competitive than it in the state.

d. Food Industry Is a Lagging Performer

Food Preparation and Serving Related industry meets local demand but is not a potential exporter; but it does classify as an economic base of the community. Although it has grown over the past 10 years, the Galveston food industry is a lagging performer in the local economy because it doesn’t shown the same amount of change in local employment as other industries that are not among the main employers in the city.

e. Sales Industry Has Interesting Potential

The populations demand a constant flow of goods to survive; therefore the availability of sales should theoretically remain constant, and remain an important industry no matter the location of the community. Because of the reason that Galveston City experience high levels of tourism, the Sales related industry is much higher when compare to other cities.

Basically, compared the percentage of employment with the industry in Texas economy, protecting service and farming, fishing and forestry occupation were considered as a basic economic in Galveston City.

f. High Potential Industry—Tourism

The economic projection for the next 20 years assumes that the industry continues to increase at a moderate steady rate. However, when considering the decrease in the total population for the City, the growth at this rate doesn’t seem accurate. Nevertheless, there is industry actually have grown in the past 10 years and will keep growing in the future.

Due to the natural advantage of geography in Galveston City, Tourism related industry has the most competitive strength. Based on the location quotient analysis, there are 12 basic industries, most of which associated with tourism. These are Life, physical, and social science occupations; community and social services occupations; education, training and library occupations; protective service occupations; personal care and service occupations; and farming, fishing, and forestry occupations.

g. Impediments for the Local Industry

After the Hurricane Ike hit Galveston City in 2008, the loss of residents and tourists had a negative impact on the City’s local business. With a fragile ecosystem that is crucial to the region and a seasonal population; it is possible for the tourism industry to experience bigger challenges taking off due to fluctuating populations.

Another specific problem with Galveston Island is how seasonal its economy can be. Since a lot of it is tourism-based, much of the revenue is derived from pleasant weather months and holidays causing large economic flows. The island has to be ready to support a transient
population that is much larger than its resident population for specific periods of time.

5. Environment
   a. Land Suitability Analysis
Since Galveston Island has a limited amount of available land, we conducted a GIS based land suitability analysis to help us identify our areas of risk or opportunity. The study revealed the following.

Housing: The Northeast end of the island is more suitable for both single family and multifamily housing which is consistent with the location of the older neighborhoods. The coast is also highly suitable for multifamily housing. New development should be placed on the north coast as is it more protected in case of a natural disaster. See figures 7 and 8.

This same suitability applies to commercial uses, suggesting a mix use land use pattern to take advantage of the most advantageous locations. A narrow strip of land along the Gulf Coast is also good for commercial uses because of its relationship to the water and possible tourist traffic. See figure 9.

Industry on the other hand should be located towards the north and along the gulf and the bay to further the geographical advantages of the port adjacent to the bay and the gulf. See figure 10.

Delicate areas concerning all types of activities are the...
back of the island towards the bay area and the west end. The presence of wetlands and other environmentally sensitive areas with bigger erosion problems, would mean greater ecological problems if development keeps encroaching on them.

a. Environmental Preservation
Galveston is one of the top locations for birding in the United States. The Island is a central location for novice and expert birders, offering a wide variety of species. Water and shore birds are common on the Island throughout the year while rare species are spotted during fall and spring migrations. Three-fourths of all North American bird species travel through Galveston during fall and spring migrations (City of Galveston).

6. Hazard Recovery and Management Policy
Due to its location and past experiences the need for disaster preparedness has become a priority to the resilience and economic development of the island. Previous evacuation plans presented problems at the implementation stage causing gridlocks and complicating the evacuation efforts. Evacuation plans need to be revised and reinforced placing emphasis in the requirement of flood insurance and using zoning to limit development in high risks areas and reducing the amount of people in harms way. For this the new Comprehensive Plan contemplates the creation of a Disaster Recovery plan to be release in the near future. (Progress Galveston: Galveston City Planning Department)

7. Community Identity
a. Historical Heritage and Public Participation
Galveston Island has an important population of historic buildings and landmarks. Because of this is the home of one of largest local preservation organizations in the country: The Galveston Historical Foundation. (Galveston Historical Foundation)
Right now these historic places are bound by the Progress through Preservation 2005 Plan, which also provides a user guide facilitating owners with information and conservation guidelines. (Progress Galveston: City of Galveston Planning Department)
These historical sites give Galveston much of its turn of the century coastal town and so provide for a unique identity. As such protecting them from both deterioration and hazards must come as a priority to the community.
The city of Galveston has a comprehensive plan that was updated recently. It was adopted on October 27th, 2011 and constituted an example of community participation stretch over a 10-month period. The comprehensive plan, Progress Galveston, can be viewed at http://www.progressgalveston.com/. This was the first time the plan had been updated in nearly 10 years. Inside of it there are specialized plans for specific elements including, Historic Preservation, Disaster Response, Parks, Recreation and Open Space Master Plan and Community Sustainability Plan, among others. The plans are being developed right now and will be implemented in future years. (Progress Galveston: City of Galveston Planning Department)
**STRENGTHS**

- Very diversity population. Although the majority of the population is White Non Hispanic, the sum of the percentage of Hispanic, Africa-American, Asian, and other are more than White Non Hispanic.

- Rich supply of natural resources. The island on which Galveston is located is 27 miles long and only 3 miles wide at its widest point. Galveston Bay, a major estuary system lies behind the island.

- High number of occupation of education, production, and sales industry. These three industries is an economic based industry in Galveston with a potential growing number in the future.

- Strong and growing industry. With a growing economic in Texas, the overall industry market in Galveston will keep growing. Our economic projection shows that the total number of industry in 2030 will up to 264,131 occupations.

**WEAKNESSES**

- Weak transportation links to mainland. If the amount of jobs continues to increase in Galveston, transit infrastructure improvements will need to be made to the I-45 causeway as well as 61st street, Broadway, Seawall, and Harborside.

- Aging and shifting population. The City faces an issue of declining population, especially the age from 0 to 19 years old.

- Lack of suitable land for development. There are no adequate land to meet the rapidly increase demand of industries and populations; we need to intensify land uses.

- Lack of housing diversity and large number of vacant units. After the Hurricane Ike, most of lands in Galveston is under redevelopment and is vacant since people evacuating to a safer place. While the City has a very diversity population, our housing market is monotonous.

**OPPORTUNITIES**

- The increase of population interest in eco-tourism. Due to the natural advantage of geography in Galveston City, tourism related industry has the most competitive strength. The tourism related industry such as life, physical, and social science occupations; community and social services occupations have a large potential to develop.

- Economy in Texas is growing. Although the national economy faces downturn, the economy in Texas is growing comparison to other State in the United States.

- Geographic advantages. The city is located about 50 miles south of Houston along Texas’ Gulf coast. It gives both advantage and disadvantage to Galveston. Closing to the mainland, Galveston can easy attract people from Houston for the purpose of tourism. At the same time, Galveston can share the economy benefit due to the growth of economy in Houston area.

- The increase of transient population. The tourism is a growing industry in Galveston which brings many transient populations in a specific period. It can be a opportunity for the tourism in Galveston.

**THREATS**

- Natural disaster. The city of Galveston is extremely vulnerable to hurricanes. Galveston have experienced many lesser storm events and also has issues with flooding and erosion.

- Economic competition from Houston MSA. Close to the Houston MSA, Galveston suffers a competitive influence from them. Houston MSA just like a huge magnet to attract residents and jobs from Galveston.

- Economic downturn. The national economy faces the problem of downturn from 2008. After that period, the overall economy is not in a good situation. It has a huge influence on all around the country.
Bibliography


