

2020-2024

Comprehensive Economic Development Strategy

Gulf Coast Economic
Development District



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Introduction

The Gulf Coast Economic Development District (GCEDD), administered by the Houston-Galveston Area Council (H-GAC), received a Planning and Technical Assistance grant in 2018 from the Economic Development Administration (EDA) to create a strategy-driven regional plan for economic development: the Comprehensive Economic Development Strategy (CEDS). The CEDS analyzes the regional economy, establishes regional economic goals and strategies, outlines a plan of action, and creates a framework for evaluation. The CEDS also highlights principles and strategies intended to enhance the regions economic resilience: the regions ability to rapidly recover from a disruption to the economy, such as a natural disaster, downturn in a key industry, or loss of a major employer. The primary focus is to provide a regional economic development framework and provide a vehicle through which federal agencies namely the EDA can evaluate requests for grant assistance. Updated every three to five years, the CEDS utilizes an iterative planning process that assures the document will continue to evolve and adapt to the regions needs.

The CEDS consists of:

- Summary Background: An in-depth analysis of the current demographic and socioeconomic conditions and future trends that will affect the regional economy.
- SWOT Analysis: An analysis of the regional economy's Strengths, Weaknesses, Opportunities, and Threats
- Strategic Direction: Identifies the GCEDD's priority goals and objectives for 2020-2024.
- Action Plan: The CEDS Action Plan identifies targeted specific objectives that the GCEDD will undertake during the CEDS performance period
- Evaluation Framework: Performance measures used to evaluate the GCEDD's progress towards goals identified in the Action Plan and the CEDS impact on the regional economy

Gulf Coast Economic Development District

The Gulf Coast Economic Development District (GCEDD or the District) is the federally designated economic development planning body for the 13-county Gulf Coast Planning Region. The region consists of Austin, Brazoria, Chambers, Colorado, Fort Bend, Galveston, Harris, Liberty, Matagorda, Montgomery, Walker, Waller, and Wharton counties and the jurisdictions contained within. The District's primary functions are to (1) coordinate the economic development activities of the planning region, (2) provide technical assistance to economic development organizations of the region, and (3) maintain the regions eligibility to apply for economic development grants and assistance from the Economic Development Administration.



Houston-Galveston Area Council

The Houston-Galveston Area Council (H-GAC) provides administrative and operational staff support for the GCEDD. H-GAC is a voluntary association of local governments and local elected officials in the 13-county Gulf Coast Planning Region of Texas. H-GAC was organized in 1966 by local elected officials after the passage of state enabling legislation. Currently, H-GAC has 131-member counties, cities, and school districts.

Economic Development Administration

As the only federal government agency focused exclusively on economic development, the U.S. Department of Commerce's Economic Development Administration (EDA) plays a critical role in facilitating regional economic development efforts in communities across the nation. Guided by the basic principle that sustainable economic development should be locally driven, EDA provides grant funding to build capacity for economic development based on local business conditions and needs. EDAs grant investments in planning, technical assistance, and infrastructure construction are designed to leverage existing regional assets to support the implementation of economic development strategies that make it easier for businesses to start and grow.

CEDS Approach

The CEDS utilizes a collaborative and data driven approach in identifying regional needs and resources, outlining regional economic development goals, and establishing guidelines for applying for EDA grant opportunities. All Economic Development Administration grant applications must demonstrate alignment with the goals and strategies identified in the CEDS. The GCEDD formed the 2018-2022 CEDS Committee in October of 2017. The CEDS Committee is composed of major economic interests within the region, representing for-profit companies, non-profit organizations, institutions of higher learning, and local governments. The CEDS Committee members provide leadership, facilitate communication with the larger GCEDD Board, and engage other agencies and groups as needed. The committee was essential in identifying regional needs and resources, as well as identifying how the District can approach CEDS objectives. Feedback from the CEDS Committee incorporated by the GCEDD allows the CEDS to be a tailored document that addresses the unique challenges of the Houston-Galveston region.

The CEDS Committee first convened in January 2018 and conducted a SWOT analysis of the regions Strengths, Weaknesses, Opportunities, and Threats. After the initial meeting, the CEDS Committee responded to a survey on the regions economy and conducted a review of the 2014-2018 CEDS. The CEDS Committee provided feedback and insight into what they would like to see in the 2018-2022 CEDS. The GCEDD conducted interviews and obtained data from economic development professionals and local officials throughout the region to gain insights on the state of the regions economy while developing the CEDS. The CEDS committee reviewed the draft document in March of 2018. The draft was adopted at the April 6, 2018 GCEDD board meeting.

Due to Hurricane Harvey, the Economic Development Administration did not adopt the CEDS, as the office prioritized Harvey recovery efforts. This allowed GCEDD to incorporate new opportunity zone guidance from the EDA into the CEDS. The revised draft was presented to the CEDS committee at the April 2020 board meeting and subsequently adopted.

Economic Resilience

The GCEDD's CEDS was informed by the planning process for the Houston-Galveston Regional Economic Resilience Plan, among other regional and local planning efforts. The EDA invested in the creation of a regional plan for economic resilience after the 2015 Memorial Day floods (DR-4223) caused economic disruptions throughout the region. The Regional Economic Resilience Plan was created through a review of the economic resilience literature, a survey of planning in the region, research on the regions economy, and economic resilience workshops conducted in each of the 13 counties in the region. From these workshops, county-specific economic vulnerabilities and solutions emerged that formed the basis of the Regional Economic Resilience Plan. Economic resilience planning is an integral part of the GCEDD's CEDS, and economic resilience principals and strategies are incorporated throughout the document.

Summary Background

The Summary Background provides an overview to the regions economic conditions. It presents an analysis of the local economic situation supported by relevant data, illustrating the story of the regions population, environment, infrastructure, industry sectors, workforce, and other factors critical to the regions economic performance. The GCEDDs CEDS is a vehicle for promoting integration between economic development and other regional plans, including the Regional Plan Transportation Plan, the Local Workforce Development Plan, the Regional Economic Resilience Plan, and Our Great Region 2040- the regional plan for sustainable development.

Population

The GCEDD region boasts a robust economy, diverse population, and natural and man-made assets across distinctive rural, suburban, urban, and coastal communities. This section analyzes the regions population in terms of growth, ethnicity, age, employment, economically distressed areas, and poverty.

Growth

With a population of 7.1 million people, the region is home to the nations fourth largest city (Houston) and the third largest county (Harris). Texas as a whole and the Houston-Galveston region in particular has experienced a significant amount of population growth in recent years; the region grew by 12% or an estimated 856,762 residents between 2000 and 2016, approximately equivalent to the population of the City of San Francisco. The regions population is expected to reach 10.8 million by 2045, with 4.8 million jobs. Harris County will continue to have the greatest proportion of the regions population, which is expected grow by 46% from an estimated 4.47 million in 2015 to 6.54 million in 2045.

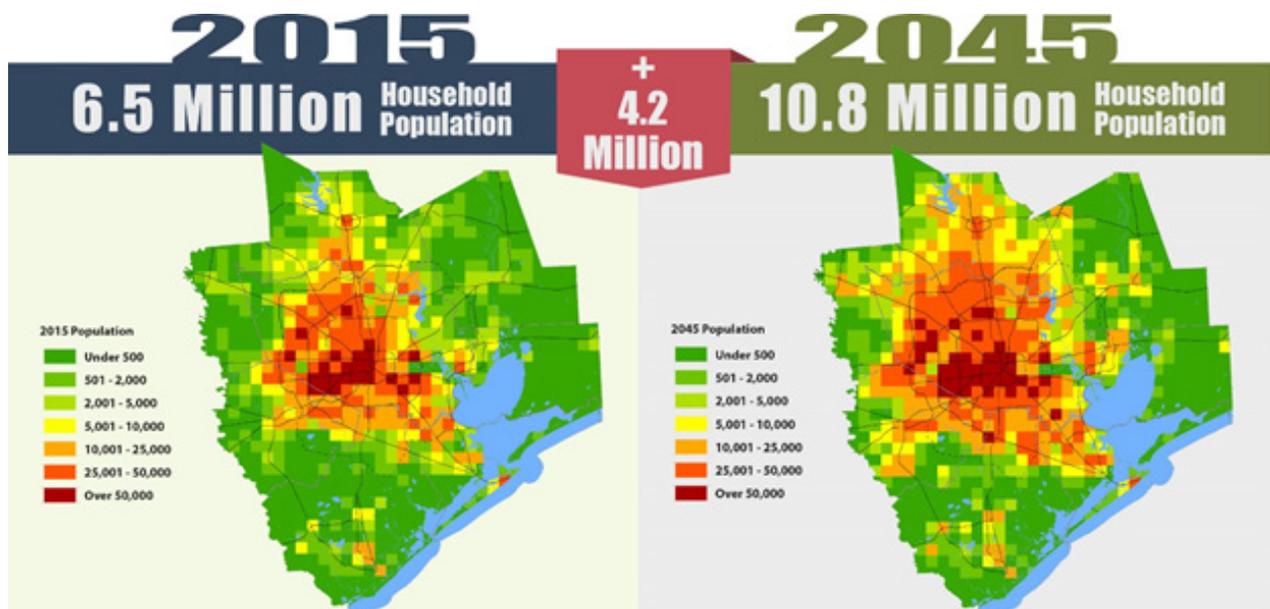


Figure 1: The regional population is expected to be at 10.8 million by 2045.

The counties directly surrounding Harris County will see a greater change in population. Fort Bend County, to the southwest of Harris County, is expected to grow from over 700,000 in 2015 to over 1.2 million in 2045, an increase of 78%. The population in Chambers County is expected to increase by 206%; from 36,000 to 110,000, the highest percentage in the region.¹ Natural increase (a birth rate greater than the death rate) throughout the region is the largest driver, accounting for 49% of population growth in the region.

Ethnicity

The region is the most diverse region in the nation. The regions Hispanic population is expected to equal the White population by 2020, and be over 40% Hispanic by 2040. The regions population is analyzed in terms of the four ethnic categorizations identified by the U.S. Census: White, Black, Hispanic, and Non-Hispanic other. The percentage of the Black population has stayed and is expected to stay around 17% of the regions population from 1980 to 2050, the percentage of Non-Hispanic other steadily increases (from 3% to 13%), and the percentage of the Hispanic population significantly increases during this same period (from 15% to over 40%). In comparison, the White population in the region is projected to steadily decline, from about 58% of the population in 1980 to less than 30% by 2050.

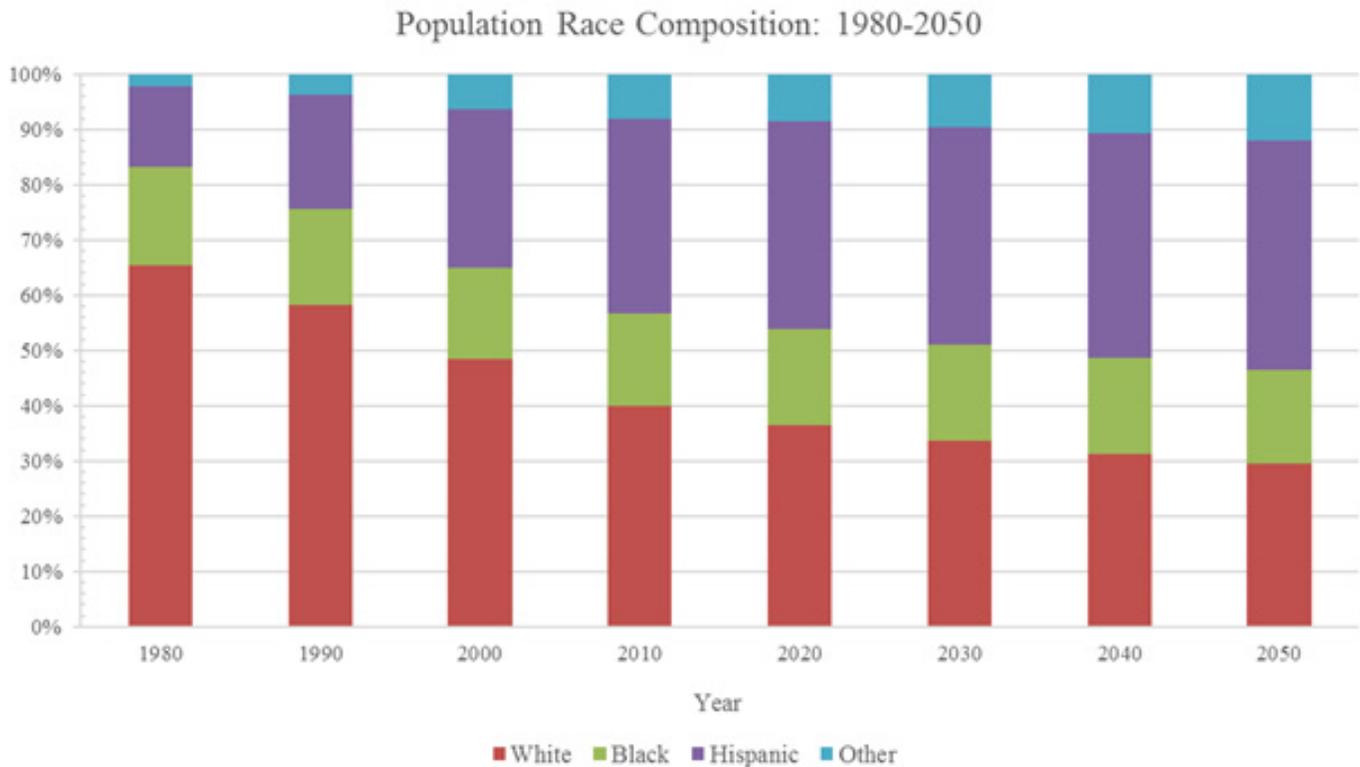


Figure 2: By 2050, the Hispanic population will significantly increase to over 40% of the regional population, while the Black population will remain constant at 17% and the White population is projected to decline to less than 30%.

Note: Population counts in the eight-county H-GAC Transportation Management Area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller counties) are household population, which excludes people living in group quarters. Population counts in the remaining five counties (Austin, Colorado, Matagorda, Walker and Wharton counties) are total population.

Sources: US Census Bureau, Decennial Census (historical data), H-GAC 2017 Regional Growth Forecast (forecast data for Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller counties), Texas State Data Center 2014 Projections (forecast data for Austin, Colorado, Matagorda, Walker and Wharton counties)

Age

The Houston-Galveston region has the highest proportion of youth in the population compared to other regions throughout the United States. In 1980, the median age of the population throughout the region was 27. By 2050, the median age is projected to increase to 38. Youth (individuals 18 years and younger) currently make up the largest proportion of the regions population (27%) and are projected to continue to be a large proportion of the regions population to 2050. The Houston-Galveston region has a slightly lower proportion of seniors (residents over the age of 65) than the State of Texas as a whole, at 10%. The number of Texans aged 60 or older, already burgeoning, is expected to more than triple by 2050. Colorado County has the oldest population in the region with a senior population of 20%, while Harris and Fort Bend counties have a senior population of 9%.

Ages in the Region

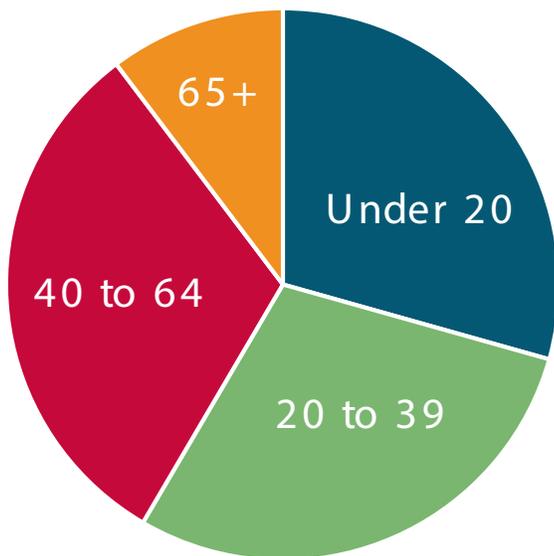


Figure 3: Youth make up the largest proportion of the region's population. The median age in the region is 36.

Fair Housing Equity Assessment

The Fair Housing Equity Assessment (FHEA) provides an in-depth look at the regions conditions for fair housing, equity, and opportunity across the Houston-Galveston region. In 2014, as part of the creation of Our Great Region 2040, the regional plan for sustainable development, H-GAC created the FHEA. The key findings from the FHEA include the following:

The majority of census tracts in the Houston-Galveston area gained racial and ethnic diversity in the past 10 years, with the strongest gains occurring within suburban areas.

While the region increased in racial and ethnic diversity, there is still a moderate to high level of segregation, which can be attributed to several factors including housing preferences, availability, and cost.

Analysis suggests that the availability of affordable rental properties influences ethnic concentrations, with the locations of affordable multifamily rentals almost entirely contained within areas of racial and ethnic concentration.

The residents of the regions highest poverty census tracts are mostly racial and ethnic minorities and are disproportionately impacted by limited access to job training centers, homeownership opportunities, areas free from environmental hazards, and affordable housing.

Education

While the region currently has the highest proportion of youth compared to peer regions, the region has one of the lowest graduation rates from high school compared to its peers. Graduating from high school is a requirement for many entry-level positions, or the pursuit of post-secondary education at a community college, trade school, or traditional four-year university. The high school graduation rate in the region is 73%, which is slightly lower than the State of Texas high school student graduation rate.

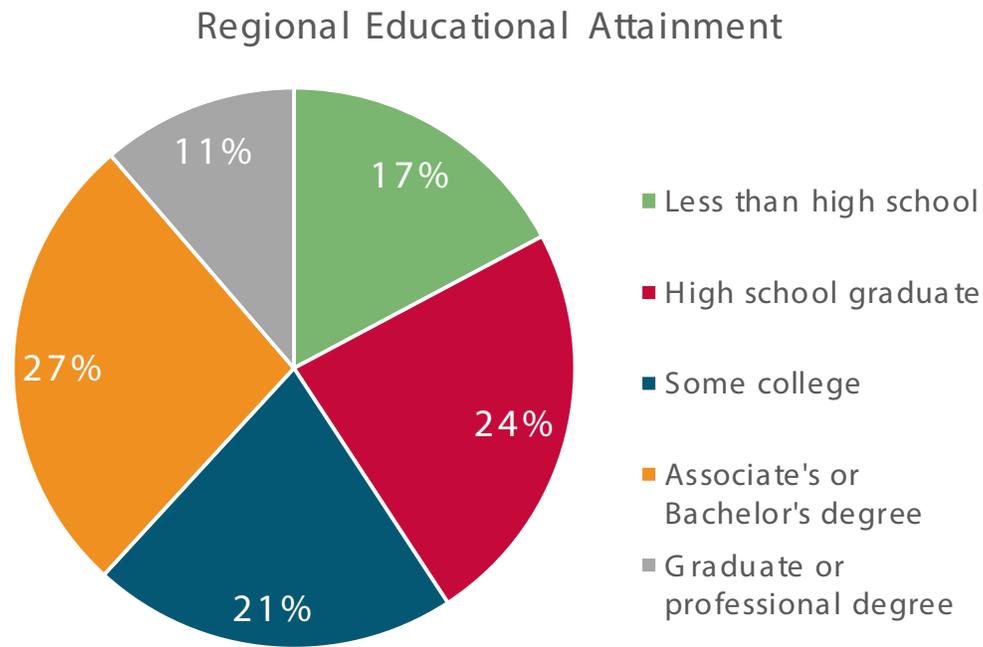


Figure 4: 17% of the adult population in the region did not graduate from high school. 38% of the adult population has an associate's, bachelor's, graduate, or professional degree.

There is a significant difference in the proportion of Hispanic students graduating from high school and pursuing a secondary education in comparison to white students. The Hispanic student high school graduation rate is 68%, while the white student graduation rate is 81%. Similarly, 63% of Hispanic high school graduates enroll in college opposed to 82% of white high school graduates. Only 31% of Hispanic students enrolled in college graduate college, in comparison to 51% of white college students who graduate. As the Hispanic population continues to grow, this achievement gap will negatively impact the competitiveness of the regions workforce.

Employment

Over the next 10 years, 700,000 new jobs are projected in the region, a 22% growth rate. These employment opportunities are attracting new residents to the region. Professional and business services, manufacturing, and education and health services accounted for 66% of jobs added in 2017.

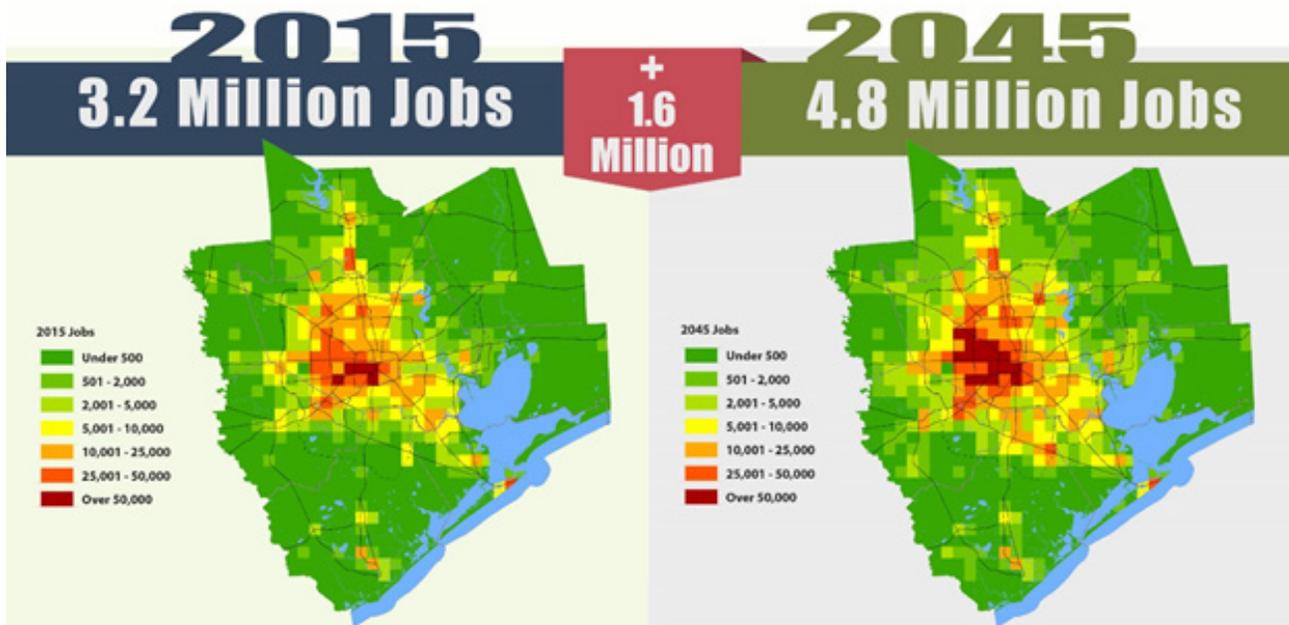


Figure 5: In the 30 years between 2015 and 2045, 1.6 million new jobs are projected in the metropolitan region.

There are about 3.2 million nonfarm jobs throughout the region. The three primary sectors increasing the number of jobs include: professional and business services, trade, transportation, and utilities, and education and health services. These three sectors accounted for 55% of jobs added between 2018 and 2019. Between November 2018 and November 2019, the professional and business services sector grew by 5.3%; the trade, transportation, and utilities sector grew by 1.2%, and the educational and health services sector grew by 3.3%. One sector in the region has seen a decrease in the number of jobs: information. Between November 2018 and November 2019, the information sector declined by 6%.

- About a third of all current jobs in the region are directly or indirectly related to oil and gas
- The engineering and architecture industry in the region is currently the largest concentration of engineering and architecture jobs within a region in the US (87,000 jobs); the majority of these jobs are connected to oil and gas
- Employment services (a typical indicator for overall job growth) lost 800 jobs in 2019, a 1% decrease

The Texas Gulf Coast provides many advantages to the local economies of the region (e.g. fisheries, access to sea transportation, and recreational opportunities), but it is also the source of some of its greatest vulnerabilities. The GCEDD region is vulnerable to hurricanes, floods, and droughts among other natural and manmade disasters, and continued population growth has the potential to increase the region's vulnerability to additional damages as more land is developed.

Hurricane Harvey illustrated the region's unique vulnerability to natural disasters. Damage estimates vary from \$70 billion to \$200 billion, and \$5 billion to \$10 billion is estimated to be the cost of rebuilding infrastructure. Regionally, an estimated 43,000 single family homes were significantly damaged, and 3,739 commercial buildings were significantly damaged. Petrochemical facilities located along the region's coasts face the threat of flooding, storm surge, and wind damage from hurricanes. These threats combined could lead to a worst-case scenario domino

Major Sectors and Employment in the Region

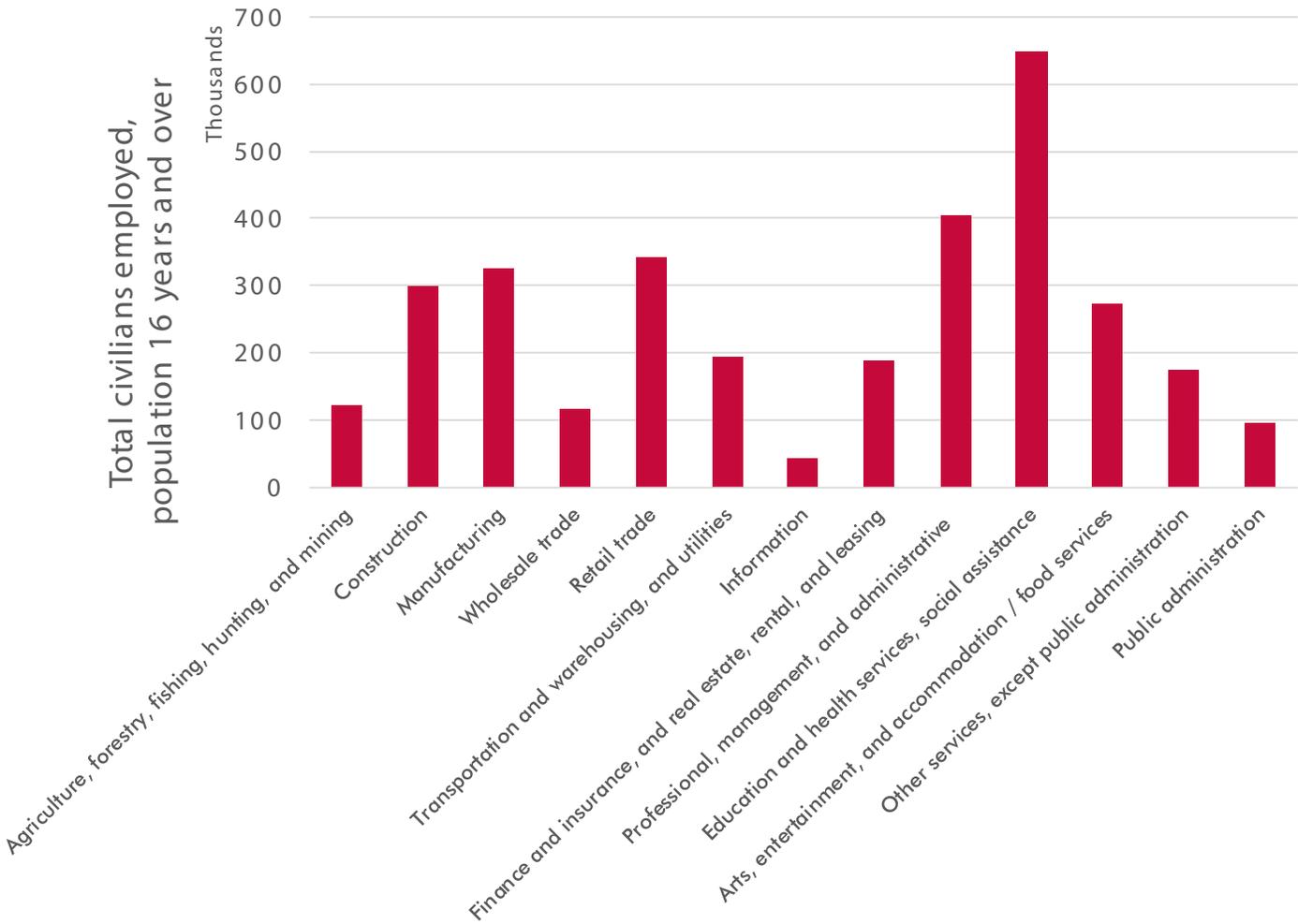


Figure 6: The education and health services, professional, management, and business services, and trade sectors employ the most civilians in the region.

effect of chemical releases, which would have impacts on national and international economic productivity.

The substantial population growth accompanied by land development of single-family housing throughout the region and the increasing unpredictability of climate may have contributed to the scope of damage from Hurricane Harvey. The continuing growth in population and the increase in development projected to occur throughout the next 30 years may have a significant impact on storm water infrastructure throughout the region, potentially leading to the region sustaining greater damage from natural hazards in the future. The connection between development in vulnerable areas and potential impacts of natural disasters is an important policy matter for the region.

Single-family vs Multi-family households in the region

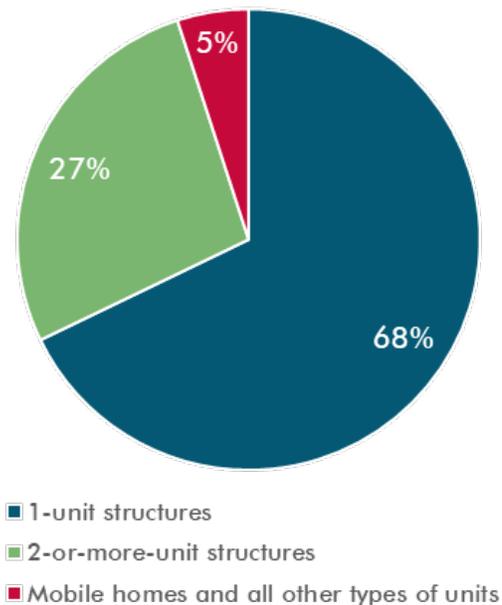


Figure 7: The majority of households in the region are 1-unit structures, or single-family homes.

Economically Distressed Areas

Of the 13 counties in the District, 6 counties Chambers, Liberty, Matagorda, Walker, Waller, and Wharton are Economically Distressed. Many EDA grant programs require proposed projects to meet at least one of the following economic distress criteria described in EDA Federal Regulations:

The project area has an unemployment rate that is, for the most recent 24-month period for which the data are available, at least one percentage point greater than the national average unemployment rate;

The project area has per capita income that is for the most recent period for which data are available 80% or less than the national per capita income; or

The project area is determined to be a Special Need by the EDA.



Figure 8: Six counties in the GCEDD meet one or more of the distress criteria, and are eligible for many EDA grant programs.

Source: [StatsAmerica Measuring Distress Tool](#)

Economic Distress Criteria (February 2019)

County	24 Month Unemployment Rate	Per Capita Personal Income
Austin	3.91	\$50,702
Brazoria	4.81	\$47,239
Chambers	5.79	\$53,673
Colorado	3.56	\$46,821
Fort Bend	4.2\$	57,540
Galveston	4.83	\$51,785
Harris	4.6\$	56,474
Liberty	6.28	\$37,237
Matagorda	6.54	\$40,596
Montgomery	3.96	\$63,605
Walker	4.34	\$28,016
Waller	4.49	\$39,995
Wharton	3.99	\$41,473

Source: StatsAmerica

Poverty

In 2017, 9 out of the 13 counties in the GCEDD region had a higher poverty rate in comparison to the State of Texas at 16%. Fort Bend County had the lowest poverty rate in the region at 8.2%. Walker County had the highest poverty rate in the region at 24%, this is influenced by its high proportion of the population of the county being university students. Throughout the GCEDD region, approximately 23% of children are living below the poverty-level. While the Black population has a 20% poverty rate throughout the region, the Hispanic population throughout the region has the highest poverty rate at 23%. In comparison, the White population had the lowest poverty-level at 14% in the GCEDD region.

Introduction to Opportunity Zones

The Opportunity Zone tax incentive, enacted as a part of the 2017 Tax Cuts and Jobs Act, aims to promote economic development in qualifying low-income census tracts through private investment. Taxpayers can defer, reduce, and even cancel capital gains taxes through long-term investments in Qualified Opportunity Funds (QOFs), which invest in Qualified Opportunity Zone (QOZ) businesses and properties.

Many opportunity zones in the region are in jurisdictions actively seeking investment as the region grows and the workforce expands. Regional stakeholders, including economic development corporations and community development corporations, are the local and sub-regional champions of Opportunity Zones and serve as a useful point-of-contact for potential investors.

Opportunity zones have vast potential to direct uncapped capital into historically under resourced communities. The GCEDD will work to increase access to information on opportunity zones and facilitate informed decisions on investments that are in alignment with the CEDS strategic direction. Managed responsibly, opportunity zone incentives have the potential to spur economic development that benefits community residents, businesses, and investors alike.

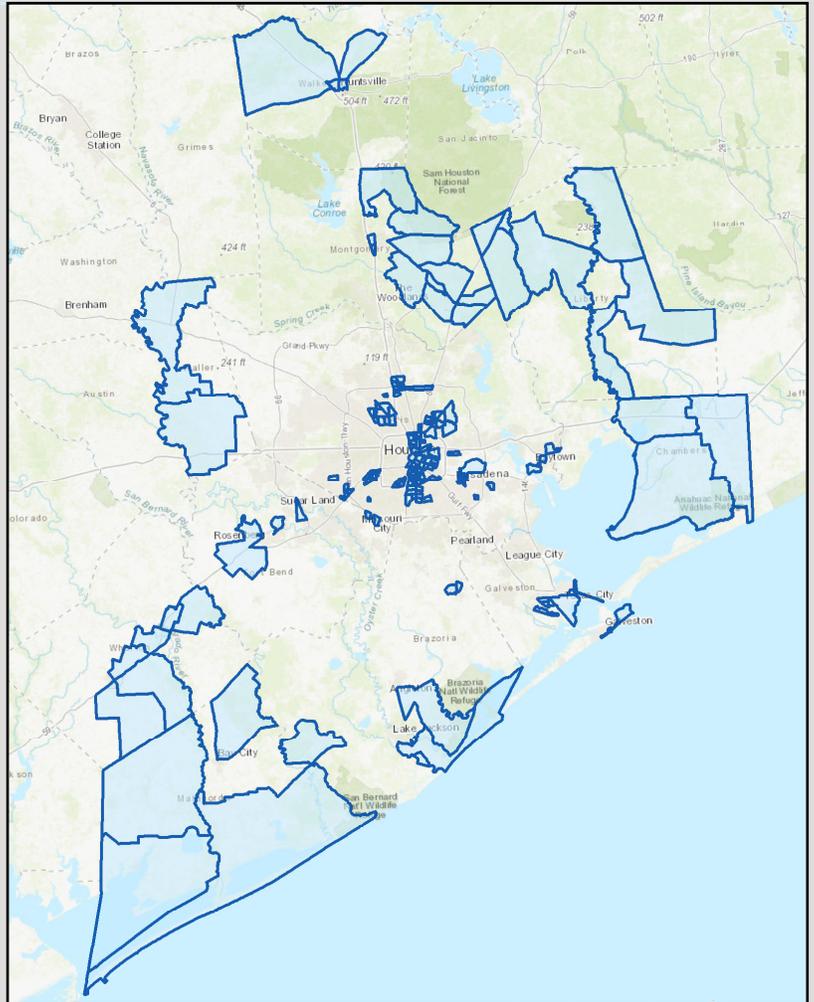


Figure 9: In the GCEDD, there are 161 census tracts designated as opportunity zones across 11 counties; 777,741 people in the region live in opportunity zones, which cover a land area of 3,459 square miles. For specific locations and socioeconomic data for each zone please refer to the Opportunity Zones tab on [H-GACs online map](#).

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Environment

The region is comprised of a diverse range of ecoregions including coastal prairie, bottomland forest, upland forest, and tidal wetlands and boasts an array of environmental resources, including over 10,000 miles of rivers, lakes, streams, and bayous. This confluence of waterways, marshes, swamps, ocean, prairies, and forests makes the region home to an abundance and diversity of plant and animal life. These resources provide vital flood protection, improve air and water quality, wildlife habitat and migration routes, ecotourism opportunities, and recreational functions to the region. These natural resources are under pressure from development and human activity.

Tidal wetlands, located along the region's coast, are transition zones between the coastal prairies and the region's bays, and are excellent nurseries for fish, crabs, and other shellfish, which in turn support commercial and recreational fishing industries. Shorebirds and other neo-tropical migratory bird species are especially prevalent in the tidal wetlands, which provides opportunities for bird watchers and other eco-tourists. Tidal wetlands improve water quality in Galveston Bay and the Gulf of Mexico by filtering many of the pollutants out of surface waters before they reach the coast, while reducing shoreline erosion and acting as buffers against flooding, including hurricane storm surges.

Coastal prairies are the largest ecosystem in the region, providing habitat for native animal and plant species including the endangered Houston toad and Attwaters prairie chicken, and Texas Prairie Dawn-Flower. Coastal prairies reduce flooding by allowing infiltration, the process by which water enters soil. The plant life of the coastal prairies also removes pollutants from the air, soil, and water by absorbing certain metals and minerals via root systems. The prairie system also contains freshwater wetlands containing a variety of plant and animal species. Coastal prairies, which once covered much of the region, are now highly fragmented and developed.

Upland forests have a thick upper canopy of pine trees which provides shade for the understory growth of ferns, lichens, shrubs, and mosses. Upland forests are found throughout Liberty, Montgomery, Waller, and Walker counties. The upland forests supply water to Lake Houston, regionally a major source of drinking water, by retaining and slowly releasing rainwater into the water table. Upland forests prevent downstream flooding through their ability to percolate stormwater. Loss of the upland forests, like loss of wetlands, could contribute to increased flooding. Upland forests are at an extremely high risk of urbanization, conversion to agriculture or loblolly pine plantations, and over-harvesting.

Bottomlands forests are low-lying, alluvial areas along a river. Two major bottomland areas exist in the region: the Columbia Bottomlands and the Trinity Bottomlands, which follow the Brazos and Trinity rivers, respectively. The bottomlands act as natural floodplains, contributing to flood abatement and erosion prevention through the filtering, infiltration, and retention of stormwater runoff. Approximately 75% of the bottomlands in the region have already been lost, with approximately 170,000 acres left undeveloped.

Infrastructure

Mobility

The region's transportation and goods movement network is extensive and encompasses sea, air, and land transportation. The region's transportation assets include:

- More than 24,000 lane-miles of roadways carrying more than 465 million tons of goods annually. This includes 21 federally-designated intermodal connectors and 38 designated hazardous material routes that carry more than 150 million tons of hazardous materials each year.
- Three Class I railroads: Union Pacific (UP), BNSF Railway (BNSF), and Kansas City Southern (KCS) operating nearly 1,000 miles of track in the region, with 829 miles of main track, 123 miles of siding track, and 47 miles of yard track, and carrying more than 150 million tons of local freight annually.
- Four deepwater ports, including the Port of Houston, Port Freeport, the Port of Galveston, and the Port of Texas City, the Gulf Intracoastal Waterway system (GIWW), and the Houston Ship Channel. Taken together, these facilities handle more than 312 million tons of freight each year.
- Two major air cargo facilities at George Bush Intercontinental Airport (IAH) that handle more than 400,000 tons of air freight annually.
- Approximately 21,500 miles of pipelines that carry more than 445 million tons of oil and gas per year.
- Intermodal connectors that connect important freight facilities with mainline transportation networks. These not only include roadway connectors, like Jacintoport Boulevard, but also the Port Terminal Railway Association (PTRA), which connects rail industries along the Houston Ship Channel with the national freight rail system.

Since 2009, miles traveled on regional roadways have grown 5% ahead of population growth. The region is anticipating a 60% increase in vehicular travel and that the movement of freight will double over the next 25 years. The region's roadway system was traveled more than 170 million miles daily in 2015. Freeways, interstates, and other limited-access roads compose approximately 10% of the roadway system but handle more than 40% of daily traffic. The region is making ongoing investments to improve system management and operations, enhancing the state of good repair, expanding the multimodal network, and coordinating development.

Transportation systems in the GCEDD are predominantly auto-oriented, with over 91% of commuters driving an average of 29 minutes to work. The percentages of commuters walking/biking (2%), and/or taking public transit (3%) to work are below the national averages. Vehicle Miles Traveled per person vary across the region, with rural residents driving far more than those living closer to the employment centers in Harris County. For example, the average Vehicle Miles Traveled per person in Fort Bend County is 6,000 miles per year while it exceeds 34,000 miles in Colorado County. This may change as high-growth suburban areas are forecast to experience significant population, employment, and traffic increases.

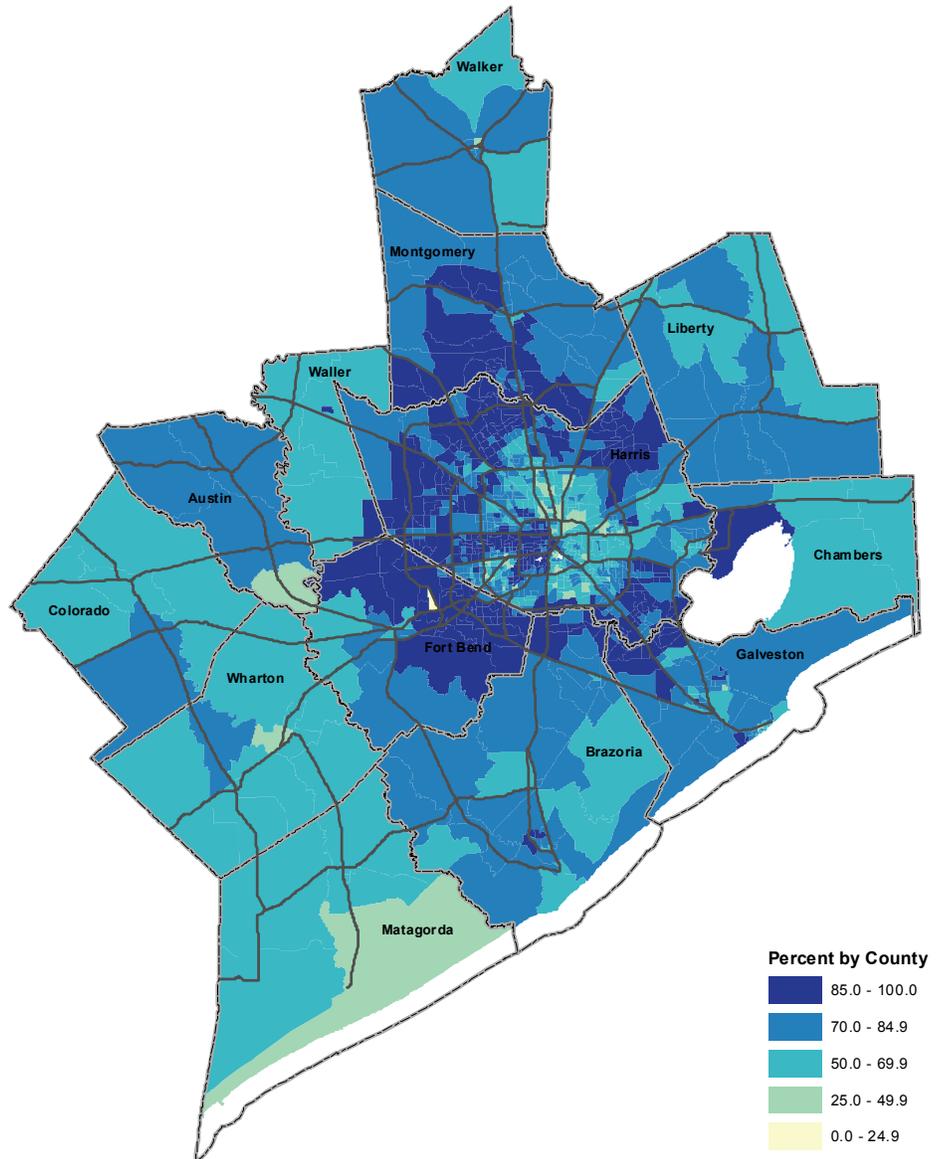
High-Speed Internet

The region has gaps in its high-speed internet service. In the State of Texas, 87% of the population has access to high-speed internet. Only 5 out of the 13 counties in the Houston-Galveston region met or exceeded this percentage. Fort Bend County has the highest percentage in the region (93% of the population) with access to high-speed internet service. Waller County has the lowest percentage of access to high-speed internet, with only 12% of the population having access.

Not having access to basic internet service, particularly in the more rural areas, has the potential for negative impact on the economic prospects of the region. For instance, internet access is key to completing homework and limited access to information inherently limits the quality and breadth of education that students receive. Along with the impact of gaps in broadband access on students, the lack of highspeed internet throughout the region impacts the ability for businesses to locate and expand in the region.

Only seven out of the thirteen counties have access to gigabit broadband service, and access is limited even within those seven counties. Walker County has the highest percentage of population with access to 1 gigabit at 52% of the population, Fort Bend County has the second highest percentage at 34%, Montgomery County has the third highest percentage at 30% of the population. Surprisingly, Harris County ranks fourth in the region for gigabit access at only 10.1% of the county's population having access to gigabit. Furthermore, most of the region relies on ethernet rather than fiber optics. Other Texas cities, including Dallas, Austin, and San Antonio, are in the process of obtaining optical fiber networks. Optical fiber network is more expensive in comparison to ethernet, but it provides faster service. Tech and healthcare companies often need these high speeds in conducting their work.

Percentage of Households With Subscription to Any Broadband Service



Source: U.S. Census Bureau 2013-2017 American Community Survey 5-Year Estimates

Figure 10: The region has significant gaps in access to high-speed internet, with only 5 counties meeting or exceeding the State of Texas percent coverage: 87%.

Utilities

The region's water supply has gradually shifted from groundwater to surface water sources. This is especially true for the urbanized areas in and around the City of Houston, which have experienced major land subsidence in the past. An excessive groundwater withdrawal is the major cause of subsidence throughout the greater Houston area.

By the late 1970s, subsidence had surpassed nine feet along the Houston Ship Channel and as much as five feet in the Texas City area, with a large part of Harris County experiencing at least one foot of subsidence. Land subsidence resulted in the destruction of housing subdivisions along the waterfront of Galveston Bay, damage to roads and drainage infrastructure, altered discharge rates and flow patterns at the mouths of major bayous and massive loss of fringing wetlands.

Most of the region affected by subsidence has converted to surface water as a primary supply. Major surface water reservoirs in the region include Lake Conroe, Lake Livingston, and Lake Houston, with another reservoir under construction in Wharton County. The State's regional water planning efforts analyze current and future water demands by municipal, agriculture, industry, and environmental flow needs. Water restrictions and drought have had significant impacts on the agricultural industry in many of the rural communities. The Texas Water Development Board plans for the state water needs through both the 2017 State Water Plan and regional water plans. The 2016 Region H plan includes the GCEDD counties of Austin, Brazoria, Chambers, Galveston, Fort Bend, Harris, Liberty, and Walker. The 2016 Region K Water Development Plan includes GCEDD counties of Colorado, Matagorda, and part of Wharton; the southwestern portion of Wharton County part of the 2016 Region P Water Plan.

Waste water in the region is treated at facilities ranging from single residence on-site septic systems to small package treatment plants for neighborhoods and businesses to large municipal waste water treatment plants serving thousands of homes and businesses. Many communities rely upon centralized collection systems, on-site septic tanks, or both. Numerous small communities have inadequate systems and pursue funding opportunities to upgrade facilities via the Texas Department of Agriculture and U.S. Housing and Urban Development Community Development Block Grants.

The electricity that powers the homes, businesses and industrial facilities of the region primarily comes from a network of fossil-based and nuclear-powered generation facilities. Natural gas fueled power plants are located throughout the region, and there is interest in expansion because of the region's proximity to shale gas. Major providers in the region include Centerpoint Energy, Entergy, Texas New Mexico Power, and the San Bernard Electrical Coop.

The region experienced significant damage from the 2015 Memorial Day Floods, the 2016 Tax Day Floods, and the flooding from Hurricane Harvey. Governments and organizations throughout the region are seeking to reduce the region's vulnerability to flooding events through policies and strategies to enhance the region's storm water infrastructure, also known as drainage. Enhancing the region's ability to prevent flooding is crucial to enhancing the region's economic resilience. Strategies can include strengthening building code, constructing additional detention and retention facilities, or adopting Low-Impact Development (LID) practices. LID encompasses land planning and engineering design approach to manage stormwater runoff using techniques that mimic natural processes; LID emphasizes conservation and use of on-site natural features to protect water quality.

Industry Sectors

In general, this analysis focuses on the traded sectors of the regions economy; local sectors, such as real estate, retail, and education, are driven by the strength of the goods and services exported from the region.

Energy

The GCEDD region is the international nucleus of the energy industry, the foundation of the regions economy. About a third of jobs throughout the region are tied directly or indirectly to the energy industry; this is down from 50 percent of all jobs in the region tied to oil and gas in 2000. , The energy industry provides an opportunity for the region to offer higher wages and skilled workforce in direct and indirect jobs. For example, the region is home to the largest portion of engineers and architects in the nation per capita, and these jobs are largely concentrated in the energy industry. The energy industry also provides high-paying jobs for blue-collar workers with technical degrees. The regions ports are primarily driven by the energy industry, which accounts for an estimate 57% of total freight flows. While the energy industry accounts for approximately 10% of the regions jobs, it accounts for 20% of the wages and 30% of the regional domestic products.

The energy industry, being based on commodity pricing, is subject to market volatility; and the region has experienced several economic downturns when the price for oil and gas collapsed. The region has worked to diversify its employment base, and as well as undertaking steps to make the energy industry more resilient to downturns through diversifying product lines, export markets, and developing new technologies. While the energy sector offers many advantages to the regions economy, the high wages it offers make it difficult for rival sectors to compete for talent when oil and gas prices are up. For example, while the median wage for a mechanical engineer in the U.S is 85,000 dollars, the median wage for a mechanical engineer in oil and gas is 95,000 dollars. Companies outside of the energy industry can struggle to find highly qualified, skilled labor for open positions even in higher skilled or higher salaried positions, particularly in recruiting for start-ups.

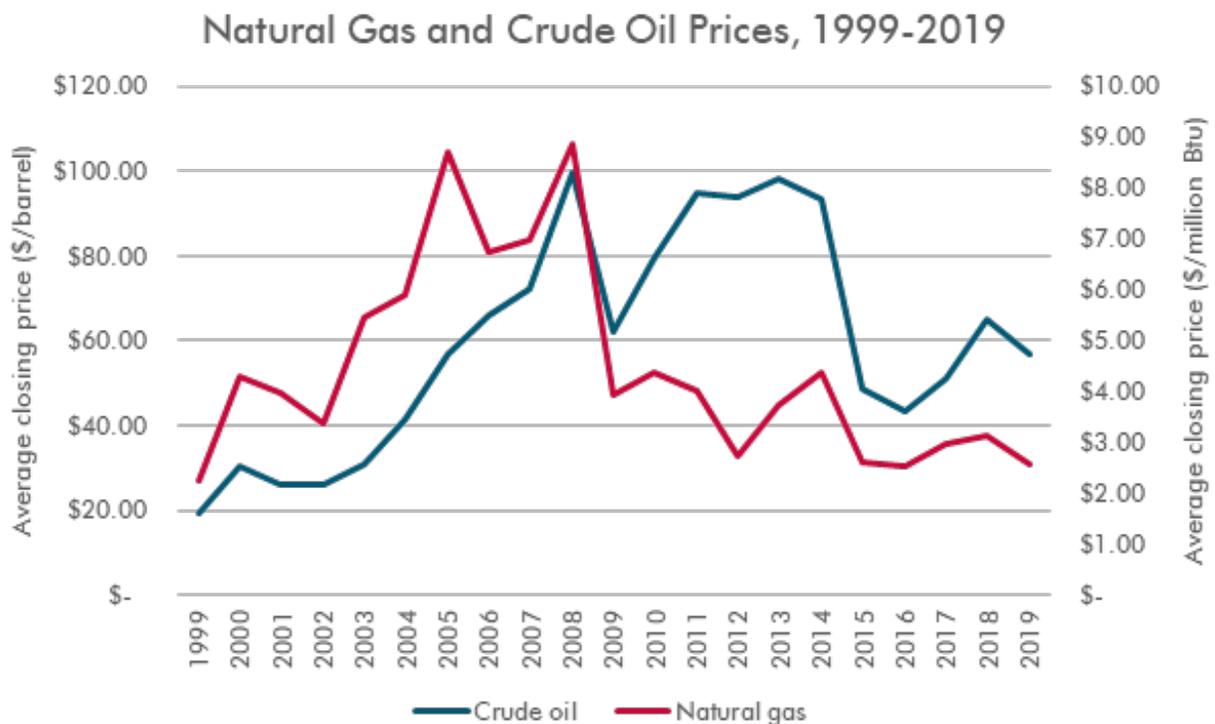


Figure 11: Natural gas and crude oil price fluctuations over the past 20 years influence the dominant energy industry in the region.

Medical

The GCEDD region has an internationally significant medical hub, the Texas Medical Center, which is the world's largest medical campus with 45-member institutions, including 13 hospitals and two medical schools. The Texas Medical Center serves 10 million patients a year, and 180,000 annual surgeries; and 106,000 employees. In addition to the Texas Medical Center, the region is seeing new hospitals constructed in Katy, the Woodlands, and Pearland. Regional employment in healthcare increased by a percentage point between 2005 and 2015, employing an estimate of 290,000 across the region. The region's economic development community is working to leverage the healthcare sector to develop a life sciences industry in the region, and are actively recruiting pharmaceuticals and bio-technology companies.

Manufacturing

The region has seen billions of dollars in investment in petrochemical related industrial facilities since the development of fracking technologies. These complexes provide raw materials to manufacturers, particularly the plastics industry. The region's extensive surface and marine transportation infrastructure coupled with strong local demand for goods make the region an attractive location for manufacturers. Historically, much of the region's manufacturing has been closely tied to the oil and gas industry (petrochemicals, fabricated metal products, machinery). Economic development professionals are recruiting manufacturers attracted by the region's location advantages, while simultaneously collaborating with existing manufacturers to identify new technologies, markets, and product lines to expand their operations.

Innovation and Entrepreneurship

Entrepreneurs and small business owners play an important role in both economic recovery and sustained economic growth. Creating a strong support network for these businesses will allow for further innovation and diversification. There is a strong entrepreneurial culture in the region, ranking first in the nation in the share of earnings coming from self-employment. The region is working to strengthen support networks for small businesses and entrepreneurs. In addition to the large manufacturing and business services firms throughout the region who are exploring and supporting start-ups and innovation projects, there are a variety of entrepreneurs, small and medium business owners in the region. Small businesses account for 93% of all firms in the region; medium businesses account for 6% and large businesses account for less than 1% of all establishments within the region. There are about 7,000 entrepreneurs throughout the region; average annual payroll for entrepreneurs is 63,000 dollars. The region has a number of high skilled occupations, established universities and technical schools, and assets such as the medical center and transportation infrastructure which are necessary factors for driving innovation. In fact, the region ranks 12 out of 384 economic development districts in the country in terms of potential for innovation in a region.

Agriculture, Fisheries, and Tourism

The region began its economic development with cotton, timber, and cattle production and trading. Agriculture remains a crucial part of the region's economy. The District's agricultural producers contributed \$872,411,000 in commodity agricultural sales to the economy in 2017, the year of the last agricultural census. Locally important commodities include rice, sugar, and cattle. Agriculture is an important sector throughout the region, not just in the rural counties. Harris County contributed \$50,612,000 in agricultural commodity sales in 2017, while Fort Bend contributed \$85,013,000. In coastal Brazoria, Chambers, Galveston, and Matagorda counties fisheries, aquaculture (fish-farming), and recreational fishing contribute to local economies. The majority of tourists travel from within the region and state, but the cruise terminals at the Port of Galveston attract out-of-state visitors from a large portion of the center of the country. The International Economic Development Council released a report on coastal tourism as an economic driver in four coastal counties: Brazoria, Chambers, Galveston, and Matagorda. They recommended mapping tourism assets in the region and investing in new tourism infrastructure to accommodate more visitors from outside the GCEDD. By maximizing currently underutilized natural assets coastal counties can attract tourists and diversify their traditional economic bases. The GCEDD continues to explore options for enhancing ecotourism in the region.

Workforce

The Gulf Coast Workforce Board and its operating affiliate Workforce Solutions have identified key high-skill and high-growth occupations. The organizations are actively working to connect students with the resources they need to attend technical or traditional colleges and enter these professions. The regions independent school districts and community colleges are active in this effort, and many of these institutions work closely with industry to train their employees. Workforce Solutions and its partners operate employment centers throughout the region to connect Texans to employment opportunities. Organized labor has a long history of apprenticeships and training programs in the region. Texas A&M Engineering Extension Service (TEEX) provides employers training opportunities for their workforce and other business services. Texas A&M Agrilife provides extension service, technical assistance, and other resources to the agricultural sector along with the Texas Department Agriculture and the USDA.

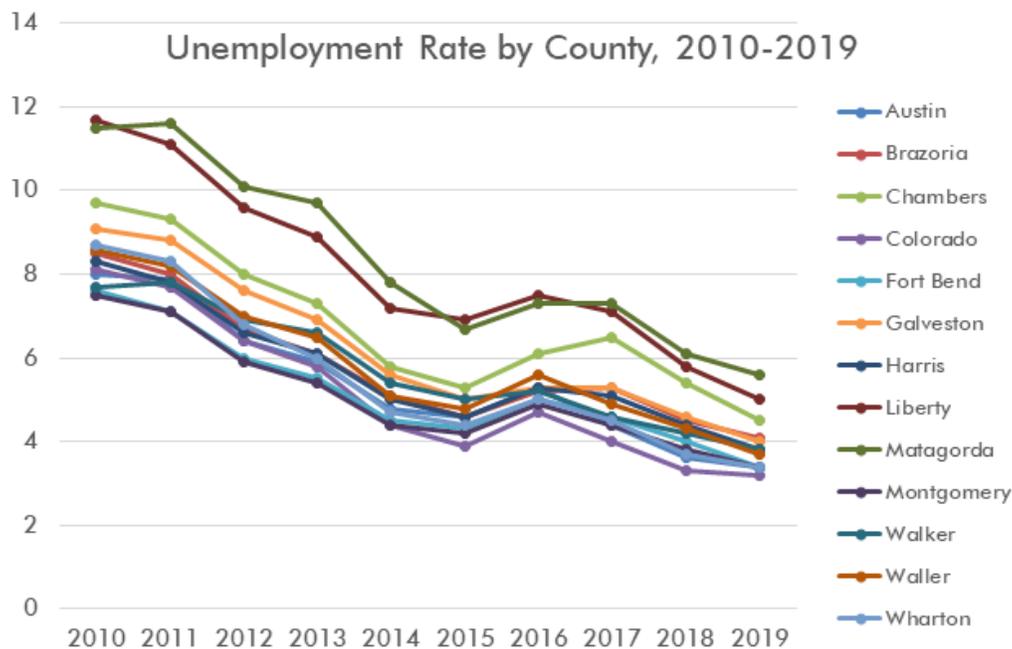


Figure 12: Unemployment rates generally trended downward between 2010 and 2019 across counties. Chambers County, Liberty County, and Matagorda County consistently had the highest unemployment rates.

In December 2017, the regions unemployment rate was 4.3%, higher than the States unemployment rate of 3.7%. The highest unemployment rate was in Matagorda County (6.7%) and the lowest unemployment rate in the region is in Colorado County (3.4%). The downturn on the price of a barrel of oil that began in 2014 had a negative impact on regional employment as companies shed workers to remain viable. The top three industries adding the most jobs in the region include restaurants, elementary education, employment services.

The regions scientific research and development services jobs are projected to decline by 14.2% between 2012 and 2022, which is concerning to a region seeking to enhance its innovation infrastructure.

Economic Resilience

Economic resilience is the ability to prevent, withstand, and quickly recover from disruptions to the economy. The Houston-Galveston Regional Economic Resilience Plan identifies county-specific vulnerabilities and solutions to potential economic disruptions caused by downturns in the economy or a key industry, the closure or exit of a major employer, and natural or manmade disasters. The Gulf Coast Regions history of flooding events, including Hurricane Harvey, make this economic resilience framework especially relevant.

The Regional Economic Resilience Plan makes three central recommendations that apply to all areas of the region: keep water where it belongs, defend great places, and future proof. On a county by county basis, the Regional Economic Resilience Plan offers analysis and specific recommendations.

SWOT Analysis

The SWOT (Strength-Weakness-Opportunity-Threat) is a strategic planning tool to ensure that economic development goals are informed by a comprehensive understanding of a regions capabilities and capacity. A SWOT analysis identifies the regions competitive advantages those assets that make the region special or competitive in the national and global economies juxtaposed against those internal or external factors that can keep a region from realizing its potential. Determining and analyzing regional assets that could be leveraged better to build the capacity for growth is critical to developing the strategic direction and implementation plan to promote regional economic vitality. Leveraging assets refers to using the activities and engagement of business, government leaders, and other stakeholders to maximize the economic potential of a region.

SWOT analysis elements are commonly understood in the following terms:

- Strengths are a regions relative competitive advantages (e.g., industry supply chains and clusters, port, rail, and broadband assets, specialized workforce skills, higher education levels, collaboration among stakeholders) and often are internal in nature;
- Weaknesses are a regions relative competitive disadvantages (e.g., a risk-averse or change-resistant regional culture), also often internal in nature;
- Opportunities are chances or occasions for regional improvement or progress (e.g., expansion of a biosciences research lab in the region), often external in nature; and
- Threats are chances or occasions for negative impacts on the region or regional decline (e.g., several companies in the region considering moving to lower-cost areas of the state), also often are external in nature.

Strengths

1. Growing Economy
2. Goods and Movement Infrastructure
3. Favorable Business Climate
4. Cost of Living
5. Location and proximity to assets
6. Diverse population

Weaknesses

1. Unskilled labor force
2. Low High School Graduation Rates
3. Broadband Access
4. Lack of public transit, active transportation, and recreation options
5. Aging water and sewer structure
6. Workforce housing availability

Opportunities

1. Leveraging existing assets in the energy, medical, and aerospace industries
2. Export possibilities, port expansion
2. Available affordable land
3. Entrepreneurship culture
4. Growing population
5. Proximity to natural gas and shale
6. Foreign Direct Investment

Threats

1. Vulnerability to disaster events
2. Insufficient drainage and water supply infrastructure
3. Aging population

Strategic Direction

Vision

The Gulf Coast Economic Development District Comprehensive Economic Development Strategy plays a key role in ensuring the region is a great place to live and work, with a high quality of life for all.

Mission

Our mission is to provide the region with a Comprehensive Economic Development Strategy that identifies key priorities, strategies, and initiatives that foster a vibrant and diverse regional economy.

Goals and Strategies

In support of the vision and mission, the District adopted the following eight goals which are strongly aligned with the goals and strategies of the regional plan for sustainable development Our Great Region 2040.

1. Our Region is resilient and adaptive to economic downturns, natural disasters, and new opportunities.

The Houston-Galveston region has an established tradition of bouncing back stronger from natural and man-made disasters. The GCEDD region is vulnerable to hurricanes, flooding, drought, and wildfires, as well as impacts from national and global economic crises. Reducing our vulnerability to these events and speeding the rate of recovery will improve our safety and quality of life, as well as our ability to attract new residents and businesses. Structural solutions like dikes, flood gates and major drainage improvements are necessary to protect key assets for economic productivity, but their high cost means that this approach must be carefully targeted. Using the natural landscape to absorb floodwaters and storm surges and being wiser about how and where we build to reduce our vulnerability are less expensive approaches that can be applied more broadly. The following strategies will help the region better plan for disruptions, adapt to changing conditions, and recover after a major disruption.

- a. Support the development of long term disaster recovery, hazard mitigation, and economic resilience plans throughout region.
- b. Support locally and regionally identified economic resilience plans, projects, programs, and policies.
- c. Support local governments in conducting economic vulnerability assessments, including vulnerability to natural disasters.
- d. Coordinate economic development efforts with regional infrastructure development projects.

2. Our Region has a diverse economy and skilled workforces that support businesses, innovation, and entrepreneurship.

The GCEDD region has one of the most robust economies in the nation, and momentum continues to build with growing energy, manufacturing, and medical sectors. One of the regions major strengths is its entrepreneurial culture that supports the financing and development of small businesses. The region should leverage its highly skilled workforce, universities and technical schools, and intellectual property to create an economy enhanced by knowledge, innovation and technological advancement.

The region can offer training opportunities to promote financial self-sufficiency, including personal and family budgeting and investment strategies. While not referenced in the strategies specifically, supporting technical assistance for entrepreneurs as well as associated financing tools for those looking to start or grow a small business in the region will be a major focus for the region moving forward. The following strategies will help the region maintain a competitive economy, support thriving business, and develop a prepared workforce.

- a. Support regional efforts to enhance the regions innovation economy by leveraging existing assets in the energy, medical, and aerospace industries.
- b. Support current and future employer needs through the expansion of training and educational opportunities offered by educational and vocational institutions throughout the region.
- c. Support the expansion of educational opportunities to develop a broadly skilled workforce.
- d. Support policies that benefit local businesses and entrepreneurs

3. Our Region's residents have access to education, training, jobs, and business opportunities that support a good quality of life and financial stability.

By increasing the skill and education levels of the regional workforce, more locally sourced labor will be able to fill employer need from within ultimately, improving competitiveness and raising incomes. Deficits exist in high school graduation rates, which could lead to a widening gap between the needs of employers and the qualifications of our workforce. The current economic growth gives the region an opportunity to strategically invest in better education and training, as well as more collaborative financing measures for business owners. An educated, employable workforce will reduce unemployment and poverty in the region, lowering public costs for housing and other social programs. To improve graduation rates and academic achievement, early and late stage educational programs must be targeted for support. The District will support efforts that expand the training available to adults to enhance their job skills, ranging from basic to highly specialized. Residents employed in jobs that provide financial security will improve their quality of life and add to the regions economy.

- a. Support the development of small business, technology, manufacturing, and innovation incubators through partnerships between local governments, chambers of commerce, economic development corporations, universities, and/or other community anchor institutions to foster the development of locally owned enterprises.
- b. Support the development of high-speed internet connections and bridge gaps, particularly in rural areas.
- c. Support a regional assessment tool to increase awareness of community factors that limit educational achievement or workplace skills.
- d. Support the creation of an incentive or partnership program for communities to develop job training centers or community college and local paid apprenticeship programs where there is a demand.
- e. Support programs to increase high school graduation rates and access to college and technical education.

4. Our region's transportation and infrastructure promotes effective goods movement and is well connected to national and global destinations.

The GCEDD region is home to world class port facilities. In addition, the region contains one of the most dynamic intermodal networks in the country bringing together rail, pipeline, air, and ground transportation to serve growing international and domestic markets. The following strategies focus on building and maintaining an efficient network, increasing transportation choices, and improving planning and coordination.

- a. Support the prioritization and allocation of transportation funding to maximize intermodal capabilities and improve the efficiency of goods movement.
- b. Support campaigns that raise awareness of the importance of exports and goods movement on the regional and local economies.

5. Our region's local governments and economic development organizations have access to data, tools, and solutions that facilitate informed decisions on funding and investment decisions.

Economic development organizations need to have access to the most up-to-date information and resources, and there must be a collaborative approach to problem identification and solving.

- a. Support economic impact assessment services to support local decisions regarding business retention, expansion, and recruitment incentives.
- b. Collaborate on data access tools that support the pursuit of grants, loans, and other sources of funding.
- c. Provide local governments and economic development organizations information about potential opportunity zone investment projects
- d. Provide opportunity zone investors with actionable information required to make investment decisions

6. Our region's residents live in safe, healthy communities with transportation options and have access to services and amenities that support a high quality of life.

Due to the diverse geography of the GCEDD region, the population resides in dense urban centers, rural towns, and suburban communities. The region has some of the most affordable housing opportunities in the country especially when compared to areas of similar size and diversity. However, major deficits exist in the quality of affordable housing, as well as the number of options for rural areas. The CEDS supports coordinated approaches to disaster recovery, transportation, land use, and housing development. The following strategies will help the region support a thriving housing market, provide housing choices to meet diverse needs, and provide quality housing that is both safe and healthy.

- a. Promote strategies for matching local housing stock with economic development needs (such as employer assisted housing agreements, public/private partnerships, developer incentives, etc.).
- b. Support coordinated land use and transportation investments to support increased connectivity to activity centers.
- c. Support the development of a toolkit to improve the quality of neighborhoods without displacing existing residents.
- d. Support Main Street revitalization programs in the region.

7. Our region's water and waste-water infrastructure supports current and future demands, while promoting the growth of healthy, resilient, and economically dynamic communities.

The GCEDD region depends on a stable supply of water to meet the needs of a growing population, as well as for the needs of the industrial and agriculture sectors. In order to meet this growing need, local governments and regional entities will have to rethink how water projects are funded and they will have to focus on repairing an extensive network of aging infrastructure. The following strategies will help the region increase water supplies, improve the efficiency of water delivery, and protect water quality.

- a. Support the development of regional water plans.
- b. Support efforts to obtain federal, state, and regional funding to upgrade aging infrastructure (water, sewer, drainage facilities), while supporting the expansion of infrastructure to underserved areas.
- c. Support the creation of a regional circuit rider program for water quality issues.

8. Our region values its unique ecosystems and understands the ecological, economic and cultural benefits they provide.

The preservation of our natural resources especially along waterways serves many functions, including pollution reduction, floodwater storage, and recreation/tourism opportunities. The following strategies will help protect the quality of the environment and increase awareness of the value of ecological benefits.

- a. Support the development of a regional conservation plan for high quality natural areas.
- b. Support the development of local farm management plans to improve water quality and preserve working lands.
- c. Improve access to fresh local foods by supporting the development of a regional food infrastructure.
- d. Support the creation of a regional campaign to promote the eco-, coastal, hunting, and birding tourism options available across the region.

Action Plan

Based on community engagement and priority development, the GCEDD has created the following action plan in order to target specific objectives pulled from the goals and strategies. The action plan sets forth the major work elements of the GCEDD.

1. Support the development of the region's high capacity internet infrastructure.

- Collaborate with local governments and economic development organizations to enhance broadband access in partnership with federal agencies and the private sector

Outputs: Educational materials and technical assistance in enhancing local internet infrastructure.

2. Support efforts to obtain federal, state, and regional funding to upgrade and maintain aging infrastructure (storm protection, water, sewer, and drainage facilities), while supporting the expansion of infrastructure to underserved areas.

- Targeted support of funding applications that best serve the needs of the region
Provide up-to-date infrastructure information (data, legislation, etc.)

Outputs: GCEDD Letters of Support, investment in water infrastructure, presentations and updates

3. Collaborate on data tools that support the pursuit of funding and regional economic information.

- Utilize the GCEDD website, newsletters, and partner sites as an information clearinghouse
Provide technical assistance and reports - economic impact analysis, EDA statistical tools

Outputs: GCEDD Letters of Support, updated list of funding streams, workshops/demonstrations of data tools, technical assistance to interested parties

4. Support the increased economic resiliency of our region.

- Support regional and local analyses to determine vulnerabilities and opportunities to enhance local economic resilience
- Support regional and local economic resilience plans, projects, and policies
- Collaborate with local governments and economic development organization on targeted business expansion and retention efforts
- Work towards implementation of the Regional Economic Resilience Plan and continuously revise the plan as conditions change

Outputs: GCEDD Letters of Support, participation in workshops and taskforces, technical assistance

5. Support workforce development that aligns with high growth areas.

- Support the expansion of training and educational opportunities offered by educational and vocational institutions throughout the region
- Support workplace and soft skills development
- Support small business and innovation incubators through partnerships between community anchor institutions to foster the development of locally owned enterprises

Outputs: Coordination with local colleges and Workforce Solutions, technical assistance for grants

Evaluation Framework

The evaluation plan is a crucial element in the CEDS. It allows the District to review the activities of the year, determine the effectiveness of the activities and revise the work plan appropriately for the upcoming year. The evaluation plan for the CEDS will be based on a list of four performance measures, with progress reported at quarterly GCEDD Board meetings. The performance measures are scored by the Executive Committee and the results will be used to determine which activities to keep, which activities to modify, and what possible new activities should be developed.

Any projects that receive EDA investment must demonstrate that outcomes are tied to the CEDS. The evaluation should include where actual results met, exceeded, or fell short of projected outcomes.

GCEDD staff will convene the CEDS committee on an annual basis to review these evaluation criteria, objectives and metrics, and overall effectiveness of the document. A summary document will be created from these meetings and provided to the District Board for final review. The CEDS performance is to be measured at the completion of the contract period. The evaluation is to be on a scale of 1 to 5, with 5 indicating the ideal.

