



Hurricane Harvey Special Report: *A Look Back at the Impacts of Hurricane Ike on the Gulf Coast Labor Market*

Workforce Solutions is an affiliate of the Gulf Coast Workforce Board, which manages a regional system that helps employers solve their workforce problems and residents build careers so both can compete in the global economy. The workforce system serves the City of Houston and the surrounding 13 Texas Gulf Coast counties including: Austin, Brazoria, Chambers, Colorado, Fort Bend, Galveston, Harris, Liberty, Matagorda, Montgomery, Walker, Waller, and Wharton.

Introduction

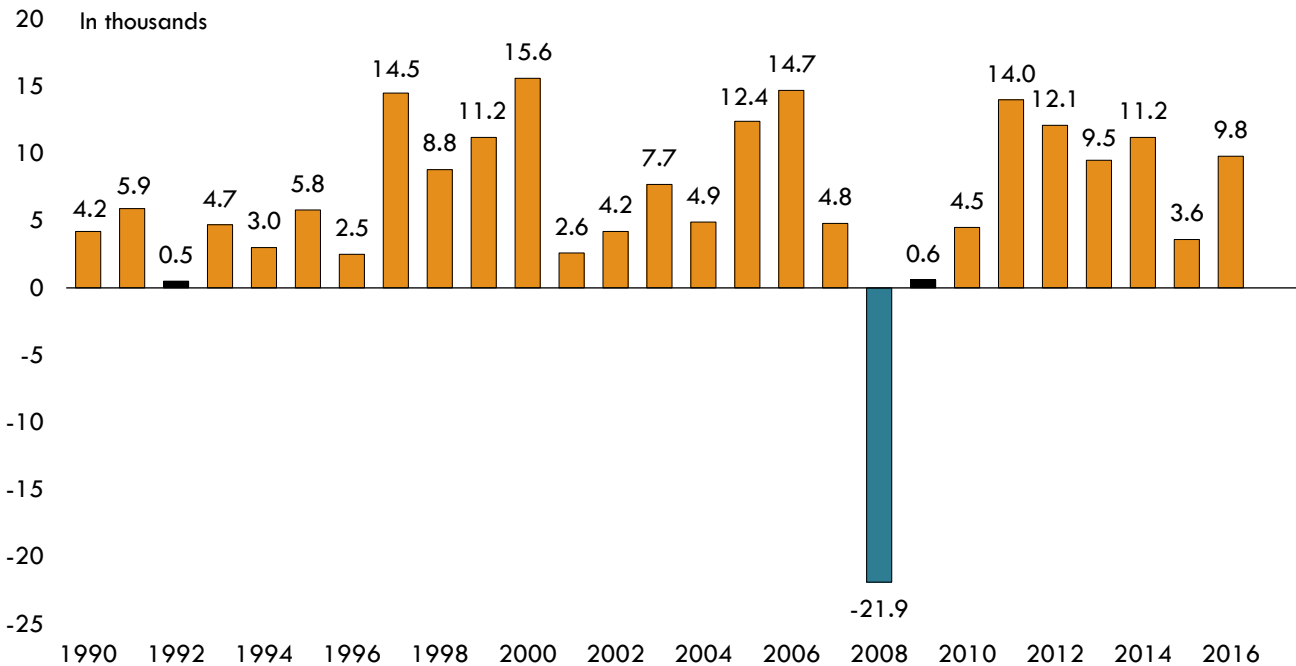
On August 17th, 2017, the earliest signs of what would become Hurricane Harvey appeared in the Atlantic Ocean reaching tropical storm status. By August 25th, Hurricane Harvey, a category 4 storm, and the third hurricane of the 2017 hurricane season, made landfall near Rockport, TX. Over the next several days Harvey proceeded to devastate much of Southeast Texas and portions of Louisiana with record rainfall resulting in widespread flooding but relatively little wind damage. Recent reports suggest that the highest amounts of rainfall in the region occurred along the border of Harris and Liberty Counties with as much as 55 inches.ⁱ The full extent of damage and disruption continues to evolve however experts have already declared Hurricane Harvey one of the most expensive disasters in U.S. history. Estimates of \$180 billion as a result of damage to 250,000 vehicles and at least as many dwellings have been frequently cited yet these figures pale in comparison to the 75 lives lost in Texas alone.ⁱⁱ

One aspect of the storm that until now has not been fully analyzed is the job market. Due to Hurricane Harvey making landfall in late-August 2017, any initial negative impacts on employment will remain unknown until September Current Employment Statistics (CES) estimates are released in late-October. Furthermore, any rebound will not become apparent until October's data are released in November. Until such time, it is instructive to examine labor market dynamics in the wake of the last major storm to hit the region: Hurricane Ike, which occurred in September 2008. Other relatively recent storms such as Tropical Storm Allison (2001) and Hurricane Rita (2005) displayed varying degrees of impact on the Gulf Coast labor market. However, by comparison the effects of Hurricane Ike were more clearly identifiable. Furthermore, the size of the Gulf Coast labor market in 2017 is more comparable to 2008 than either 2005 or 2001, and thus examination of trends due to Hurricane Ike are likely to provide the most useful insights into what we can expect from Hurricane Harvey.

Historical Total Nonfarm Job Growth in the Month of September

In September 2008, the Houston metropolitan area that comprises the majority of the 13-county Gulf Coast Region shed -21,900 jobs over the month. Prior to that, the Houston area averaged a gain of 7,100 jobs each September, highlighting the disruption that Hurricane Ike had on local employment. Furthermore, September 2008's decline was the only over-the-month loss of jobs in the month of September since records began in 1990. Even national economic downturns impacting Houston in 1992 and 2009 did not result in over the month declines in employment though job growth was especially low with only 500 and 600 jobs added, respectively. (See Chart 1.)ⁱⁱⁱ

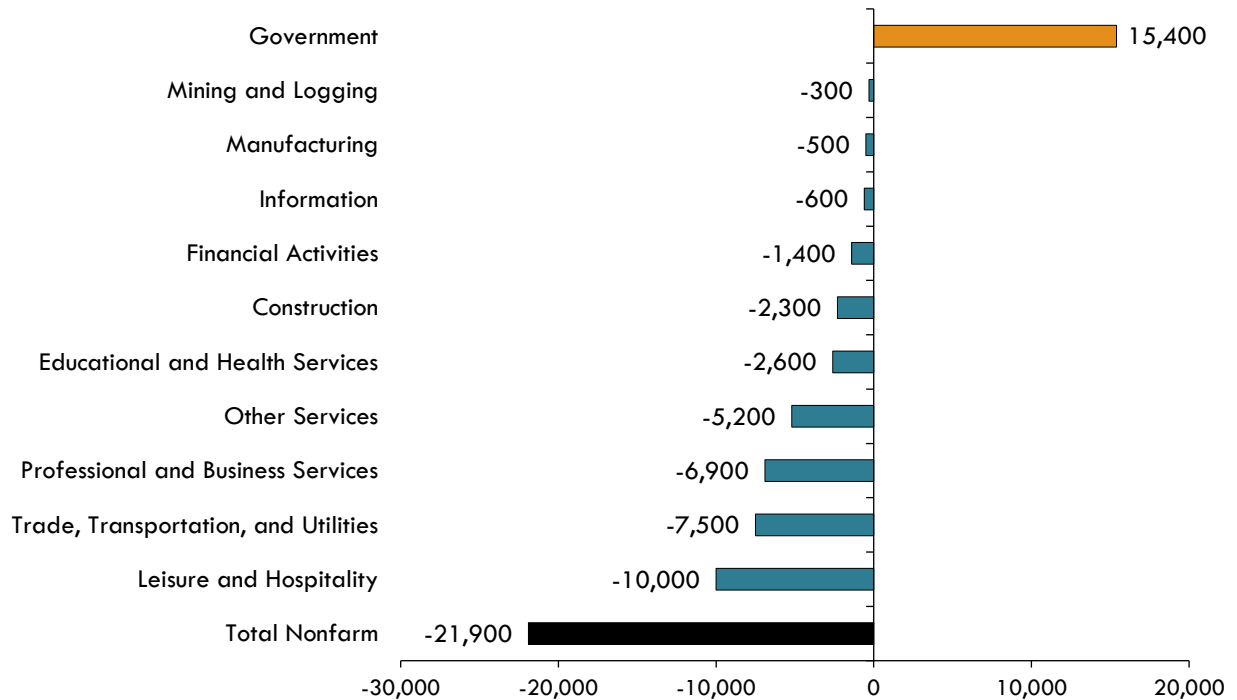
Chart 1. Over-the-month Net Change in Total Nonfarm Employment, All Septembers: 1990 – 2016



The Impact on Individual Sectors – September 2008

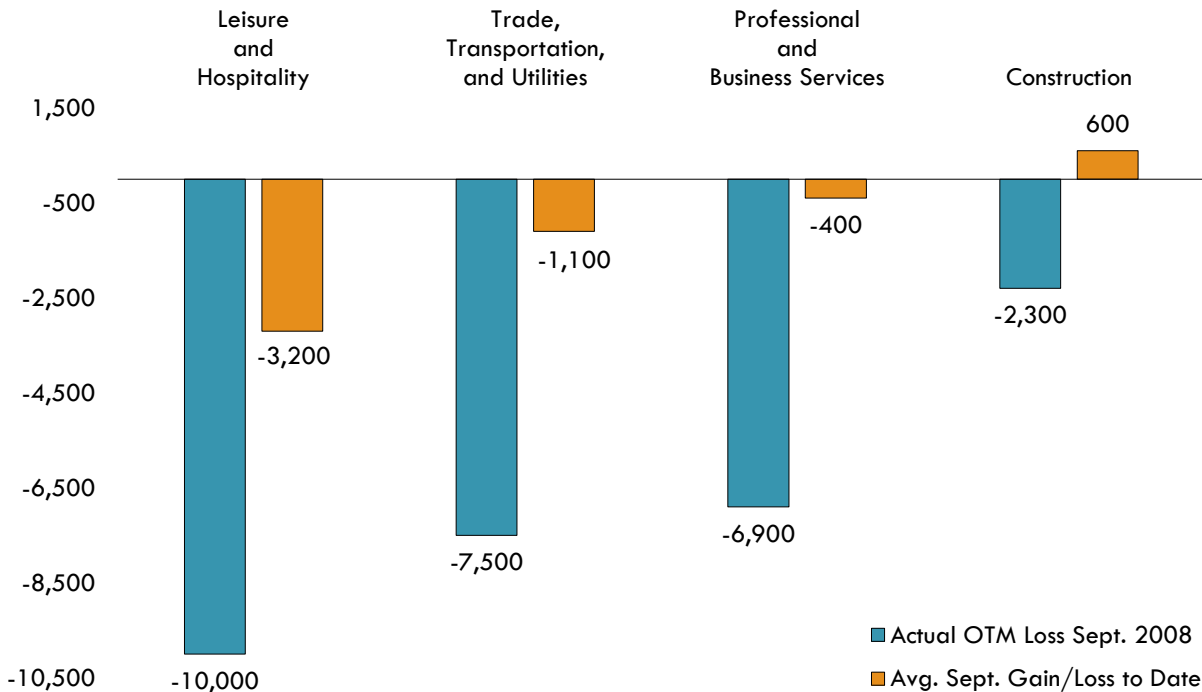
All sectors except Government, which for the Gulf Coast Region mainly refers to publicly-funded primary, secondary, and postsecondary educational institutions, lost jobs in September 2008. This is the only instance where this has occurred in the month of September since records began in 1990. It is likely that the 15,400 jobs added to Government payrolls was the result of the school year having already begun roughly one to two weeks prior to Hurricane Ike making landfall on September 13th. Hurricane Harvey struck just prior to the start of the 2017/2018 school year and in some cases delayed the start of the academic year until the middle of September 2017. This could result in relatively muted job growth in Government employment for September. Even if this proves to be the case, we can expect a complete return of public school payrolls when October employment estimates are released in November. As for the sectors that saw declines in September 2008, job losses were concentrated among three of the largest service sectors in the region: Leisure and Hospitality, Trade Transportation and Utilities, and Professional and Business Services. At the time, these sectors combined accounted 44 percent of jobs in the region however they comprised two-thirds of losses indicating a disproportionate impact due to the storm. (See Chart 2.)

Chart 2. Over-the-month Net Change in Employment by Sector, September 2008



It is important to note that all employment data contained in this report are not seasonally adjusted unless explicitly stated otherwise. Several sectors that saw job losses in September 2008 typically experience seasonal declines each September. Therefore, one might question whether the losses that appear to coincide with Hurricane Ike were simply the result of normal seasonal trends. In short, the answer is no. The three service sectors previously highlighted all experienced declines in employment in excess of their respective historical trends up that point. Leisure and Hospitality shed -10,000 jobs that month compared to an average of -3,200; Trade, Transportation, and Utilities lost -7,500 jobs versus a more typical -1,100; and Professional and Business Services declined by -6,900 whereas the average loss prior to September 2008 was -400 jobs. For all three sectors, these declines were also the largest on record for the month of September and in the case of Leisure and Hospitality, the single-largest decline of all time regardless of month. Lastly, given that Construction becomes an integral part of future recovery efforts after any natural disaster, it is worth noting that it too was impacted more than expected by the hurricane given its loss of -2,300 jobs. This remains Construction's largest September decline on record compared to an average gain of 600 jobs in the month of September. (See Chart 3.)

Chart 3. Over-the-month Net Decline in Employment for Selected Sectors, September 2008 Compared to September Historical Averages (1990-2007)



As noted, Leisure and Hospitality, Trade Transportation and Utilities, and Professional and Business Services were disproportionately impacted by Hurricane Ike’s disruptive effects. Naturally these impacts extended to key subsectors that employ hundreds of thousands of residents in the region such as Accommodation and Food Services, which lost -7,400 jobs, Retail Trade (-5,500), and Administrative and Waste Services (-4,300). Combined, these losses equated to 78 percent of total losses recorded in September 2008. In terms of compensation, these subsectors tend to provide below average hourly pay rather than annual salaries. In the third quarter of 2008 based on data from the Quarterly Census of Employment and Wages (QCEW), average hourly wages across all industries stood at \$25.08. Accommodation and Food Services paid \$7.90 an hour, which was nearly 69 percent below the average while Retail Trade paid \$12.88 an hour and Administrative and Waste Services provided the highest hourly rate of the three subsectors at \$18.00 an hour. In other words, workers in industries with some of the lowest wages and variable work schedules were more likely to be laid-off due to the storm than workers in other industries. (See Table 1.)

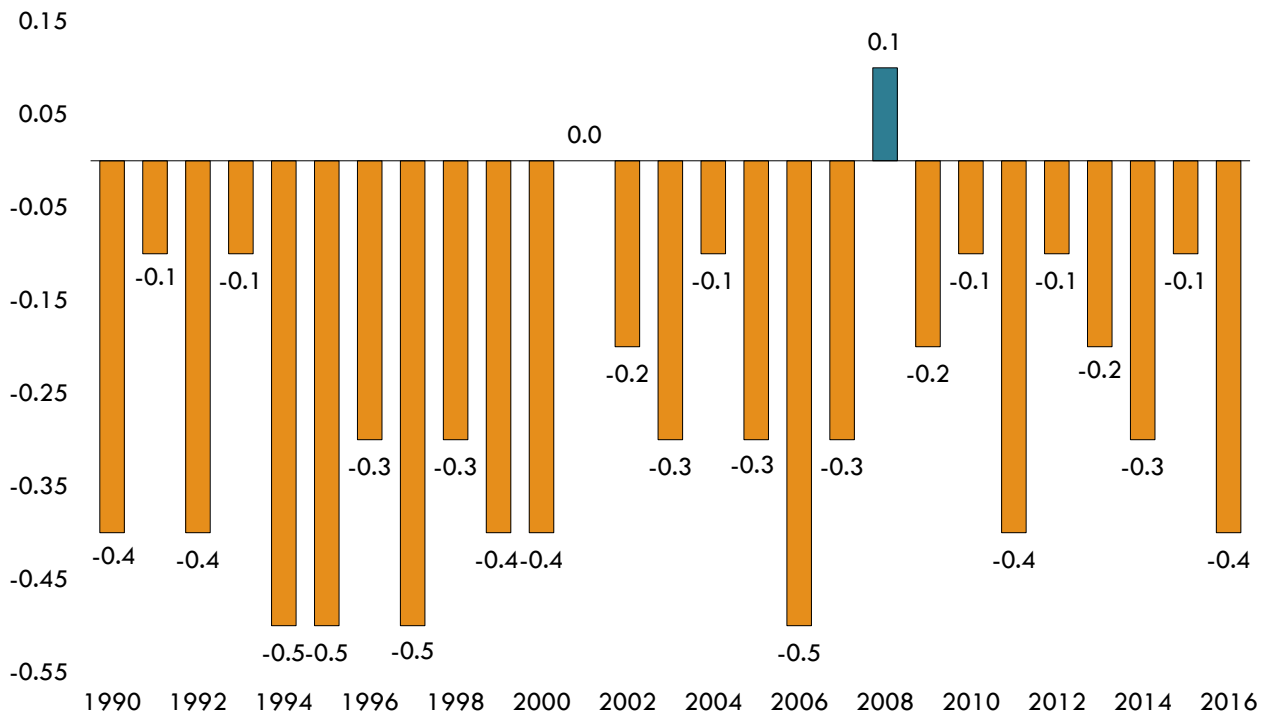
Table 1. Over-the-month Net Declines in Employment and Wages of Key Subsectors Impacted Most by Hurricane Ike, September/Q3 2008

Industry	Jobs Lost	Avg. Hourly Wage Q3 2008
Accommodation and Food Services	-7,400	\$7.90
Retail Trade	-5,500	\$12.88
Administrative and Waste Services	-4,300	\$18.00
Total/Average All Industries	-17,200	\$25.08

The Impact on the Unemployment Rate – October 2008

In contrast to the sector employment impacts observed in September 2008, the effects of Hurricane Ike on the unemployment rate did not manifest themselves until October. This was likely due the timing of the Local Area Unemployment Statistics (LAUS) survey, which requires an assessment of a person’s unemployment status and their efforts to re-secure employment in the four weeks *after* they initially become unemployed. In October 2008, the not-seasonally-adjusted unemployment rose 0.1-percentage point over the month. In a mirror image of the isolated September over-the-month declines in employment mentioned earlier, this was the only instance of an over-the-month *increase* in the unemployment rate in October since records began in 1990. Prior to that, the unemployment could be expected to decline on average by 0.3-percentage points. Unfortunately, the unemployment rate continued to climb throughout the remainder of 2008 and the beginning of 2009 due to Great Recession. (See Chart 4.)

**Chart 4. Over-the-month Net Change in Unemployment Rate (Not Seasonally Adjusted)
All Octobers 1990 – 2016**



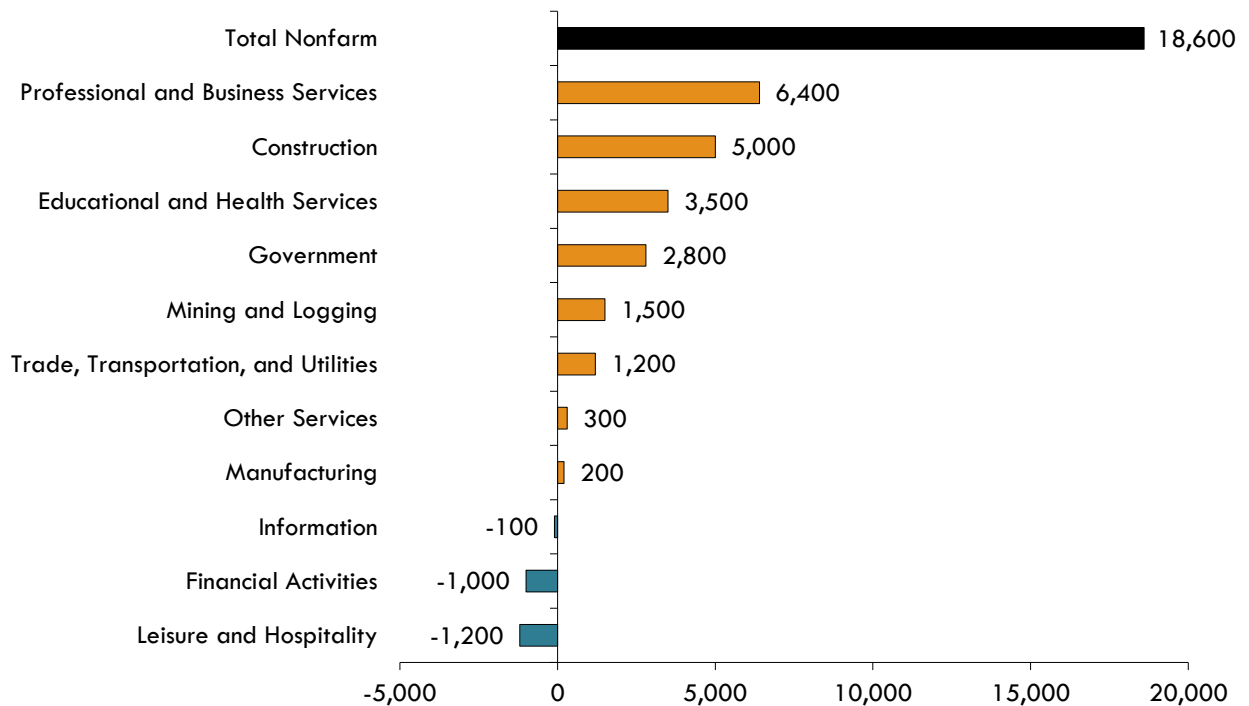
The October 2008 Rebound in Employment

October 2008 saw a rebound in overall Total Nonfarm Employment, up 18,600 jobs from September, which equated to a recovery of 85 percent of the jobs lost the previous month. Prior to 2007, gains of 5,000 jobs were common thanks to four consecutive October declines between 2000 and 2004. However, from 2007 onward, average gains were approximately 15,000. In this context October 2008's increase was not particularly noteworthy and regardless it fell short of the pre- and post-2007 records of 22,900 jobs added in October 1996 and 26,600 jobs added in October 2014.

Continued Losses in Leisure and Hospitality

While overall employment rose in October 2008, three sectors continued to jobs, most notably Leisure and Hospitality.^{iv} This sector experiences seasonal job losses each October in a continuation from September. In 2008 Leisure and Hospitality lost -1,200 over the month. The average decrease in October prior to that year was -2,600, which implies that losses were somewhat less than expected. At first glance, one might assume that a portion of Leisure and Hospitality's typical October losses were simply pulled forward into September's figure. Yet cumulative seasonal losses of -11,200 across September and October were the largest on record reconfirming that this sector saw unusually large losses related to Hurricane Ike. In a reversal of seasonal losses, November and December 2008 posted gains of 1,700 and 1,600, respectively. Technically these gains were well above their long-term averages at the time. However, increases of these magnitudes have become typical in recent years. As a result, there is no clear evidence of a recovery in this sector prior to the onset of the Great Recession that began affecting Houston's labor market in early 2009. (See Chart 5.)

Chart 5. Over-the-month Net in Unemployment Rate (Not Seasonally Adjusted) All Octobers 1990 – 2016



Sharp Recoveries in Professional and Business Services and Construction

The most notable rebounds in October 2008 were in Professional and Business Services and Construction. Employment in Professional and Business Services rose by 6,400 jobs making that October its best on record and nearly offsetting all losses from the previous month. Unfortunately, this recovery was short-lived as it appears that the Great Recession started to affect this sector even earlier than the overall job market. Professional and Business Services went on to suffer its worst November (-2,600) and December (-3,100) on record at the end of 2008.

As part of post-Hurricane Ike recovery efforts, Construction rallied strongly in October 2008, up 5,000 jobs over the month and nearly double the number of jobs lost in September. At the time, this was the largest increase on record in the month of October compared to an average of 1,600 jobs. Construction experiences seasonal declines each November and December and in 2008 it posted losses of -1,500 jobs and -4,000 jobs respectively. November's losses were in line with the long-term average however December's losses were the second-worst in the month of December on record. The cause of December's unusually large decline remains unclear although the growing momentum of the Great Recession was likely a contributing factor. (See Chart 6.)

Chart 6. Over-the-month Net Change in Employment for Selected Sectors, October 2008 Compared to October Historical Averages (1990-2007)



The Impact on Population Growth

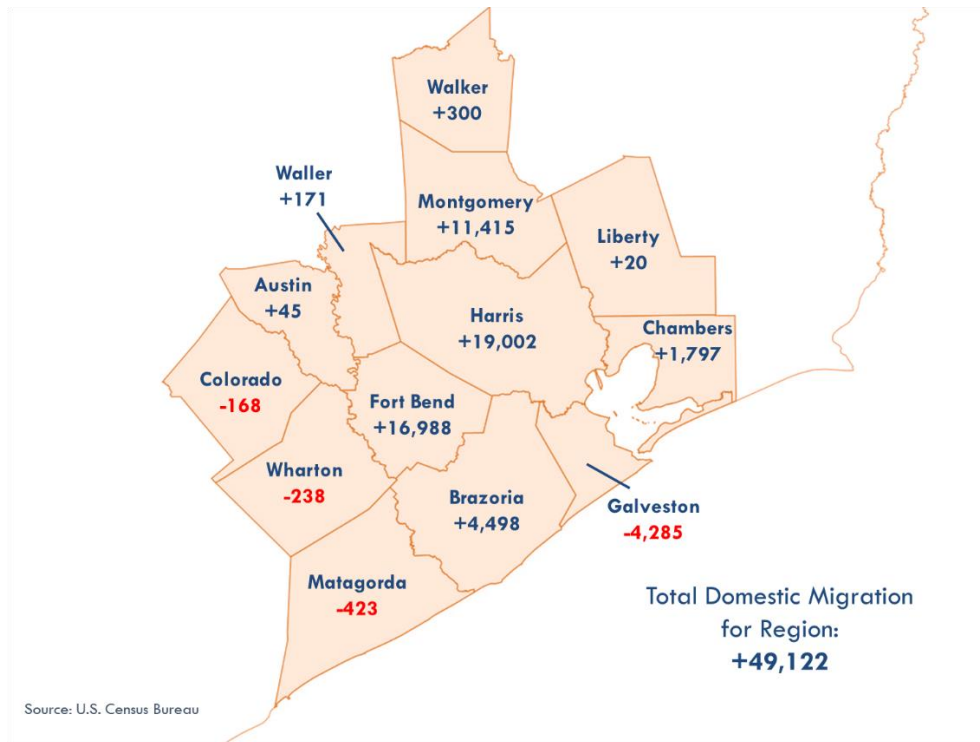
As a reminder, annual population estimates from the U.S. Census Bureau are produced on a July-to-July basis. Since Hurricane Ike occurred in September 2008, it is necessary to examine estimates for 2009 compared to 2008 in order to discern any impact on population growth. Further complicating analysis is the fact that roughly three-quarters of a year had elapsed between the occurrence of the hurricane and the reporting of new data and 2009 was arguably the most severe period during the Great Recession. Consequently, there may have been a drop in population immediately after the hurricane followed by a quick recovery, which would not be perceptible from the data. Data for July 2017 will not be released until 2018. Given that Hurricane Harvey made landfall in late-August early-September, the effects on the Gulf Coast population will not be apparent until 2018 figures are released in 2019.

Domestic Net Migration in 2008 for the entire 13-County Gulf Coast Region was 36,377, which rose to 49,122 in 2009. Given this increase, there was no evidence of a population drop as a result of the hurricane and in fact more people moved into the region, perhaps in support of recovery efforts or other pull-factors. This over-the-year population gain was echoed by the region's largest county, Harris. In 2008 domestic migration was -980 (i.e. on net 980 people left Harris County) while in 2009 it was +19,002. Again, there was no apparent out migration from Harris County due to Hurricane Ike.

Other large population counties in the region such as Brazoria, Fort Bend, Montgomery also failed to show any net domestic out migration with the exception of Galveston, which in 2009 saw a net loss of -4,285 residents. This is consistent with a report from the National Oceanic Atmospheric Agency (NOAA) report titled *Texas Hurricane History* that "the worst damage was seen in Galveston and Chambers counties." Chambers may have experienced extensive property damage but no significant loss of population per Census data. Besides a statistical anomaly of net out migration of -53 residents in the year 2000, likely an artifact of the estimation process used by Census, Galveston County has never seen net domestic out migration going back to the year 2000.

With regard to births, deaths, and international net migration between 2008 and 2009, there were minimal impacts from Hurricane Ike. The number of births across the 13-county region remained virtually unchanged from 2008 to 2009 with 98,267 and 98,299 respectively. The number of deaths rose slightly from 33,513 to 34,383 for an increase of 870. According to the report from NOAA, officially there were 20 direct and 64 indirect deaths related to Hurricane Ike therefore it appears that the bulk of the year-over-year uptick was unrelated to the storm. International net migration was essentially unchanged across years with 28,243 people moving to the region from outside the U.S. in 2008 rising slightly to 28,368 in 2009. (See Map 1.)

**Map 1. 13-County Gulf Coast Workforce Development Area: Domestic Net Migration
July 2008 – July 2009**



Final Thoughts

As mentioned, the effect of the Gulf Coast's most recent weather-related disaster, Hurricane Harvey, will not be known until September 2017 data are released in October, at the earliest. November data will likely provide further confirmation of trends while a definitive assessment will only be possible after annual benchmark revisions in 2018 and 2019. In the interim, a review of labor market impacts immediately following Hurricane Ike in 2008 may provide insights into what can be expected although the Great Recession diminished comparability beyond the initial few months. It should be kept in mind however that overall employment in the region has grown significantly since 2008. Leisure and Hospitality alone is 43 percent larger in 2017 than in 2008. Professional and Business Services is 22 percent larger and Trade, Transportation, and Utilities is 13 percent larger. The growth in these sectors coupled with more extensive damage to infrastructure across the entire 13-county region has the potential to amplify the dislocation of workers. This could in turn lead to many of the employment and unemployment records set during Hurricane Ike being broken.

ⁱ <http://www.houstonchronicle.com/news/houston-texas/houston/article/City-of-Liberty-claims-new-unofficial-Harvey-12218068.php>

ⁱⁱ <http://abc13.com/harvey-destroyed-more-than-15500-homes-in-texas/2454379/>

ⁱⁱⁱ NOTE: at the time of Hurricane Ike, the U.S. had technically been in recession for nine months i.e. since December 2007, however the impact on monthly job growth in Houston did not become apparent until December 2008 when only 2,200 jobs were added compared to a December average of 12,600 up to that point.

^{iv} The remaining two sectors that continued losing jobs in October 2008 were Information (-100) and Financial Activities (-1,000). Information has been in long-term decline since 2001. Given that along with relatively small losses, any impact from Hurricane Ike does not merit extensive analysis. Monthly changes in Financial Activities employment has been erratic over time complicating identification of any trends.

^v <http://www.wpc.ncep.noaa.gov/research/txhur.pdf>