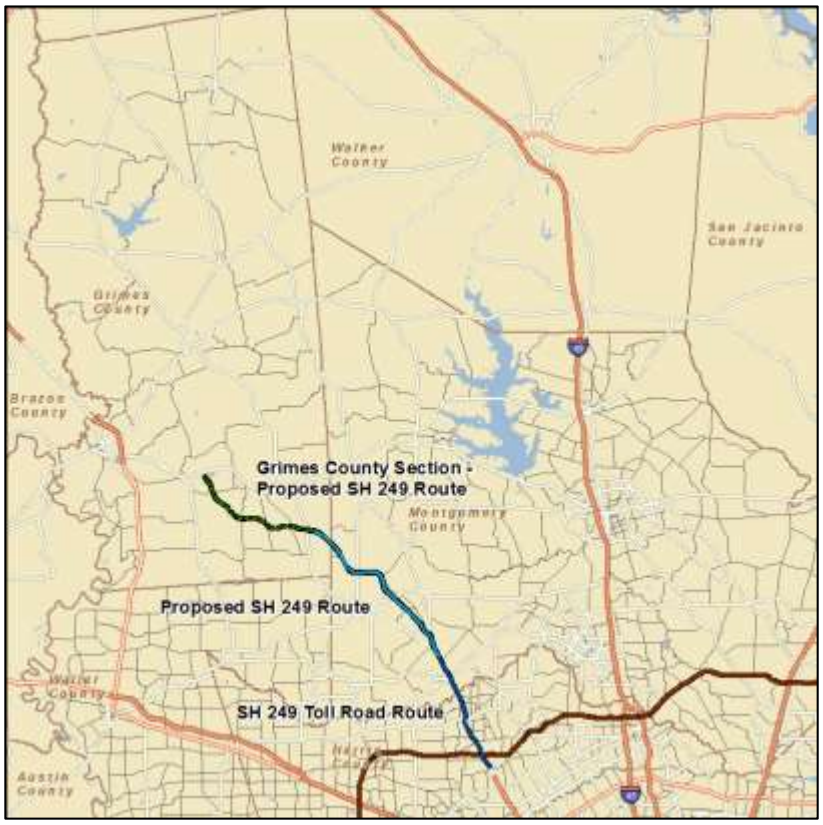
# SH 249 Toll Road
# Economic and Demographic Forecast Update

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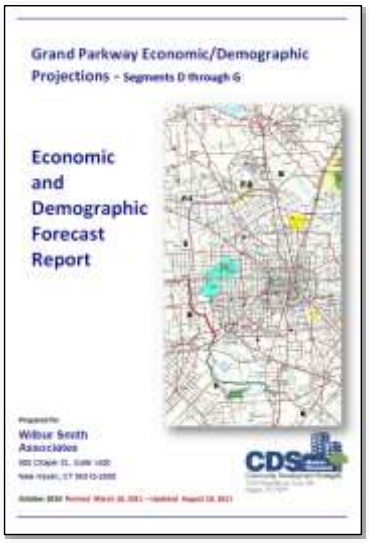
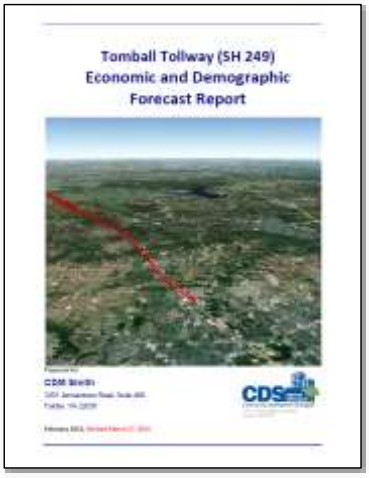
## Original Forecast Reports

**2011 Grand Parkway Forecast Report**




**2013 SH 249 Forecast Report**



The following work is in support of the Traffic and Revenue Study of the State Highway 249 toll road project.

In order to estimate the potential traffic and subsequent revenue on the toll lanes, CDM Smith contracted with CDS Market Research to provide small area forecasts of population and jobs in five year increments between the years of 2010 and 2040.

CDS's current forecast, as presented in this report, traces its original basis back to a forecast provided to CDM Smith as part of an economic and demographic project for the tolled sections of Grand Parkway Segments D-G in 2011. CDS further refined that analysis and forecast in a 2013 report focused on State Highway 249's tolled lanes.

**Commented [JYM1]:** How about 2014/2015 GP study updates

This report provides an update of those initial 2012 forecasts to account for changing conditions and recent "announced" and "under construction" residential and commercial development. In a departure from previous forecasting projects performed by CDS, it also uses current-year county-level estimates rather than forecasts for 2015's figures and incorporates H-GAC's new Traffic Analysis Zone structure. Information and material from other updates to the original 2011 report, completed from 2011 to 2015 for TxDOT, the Harris County Toll Road Authority (HCTRA), and the Fort Bend County Toll Road Authority (FBCTRA) is also included.

# Houston Metropolitan Trends

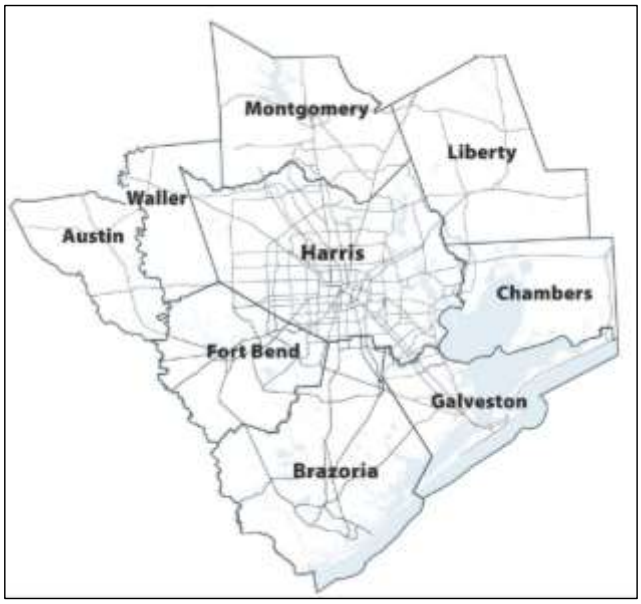
In this report, the overall historical growth of the Houston metropolitan region will be presented and analyzed. In addition, various projections of regional growth were investigated and compared. These forecasts, which have a basis in the population and household counts of the 2010 Census, form the starting point for the small area projections that are the end result of this analysis.

## Overview of Houston Regional Growth Trends

### The Houston Area Economy

Over the years, Houston's economy has evolved from a manufacturing economy to a services based economy. Service-providing organizations including Government now account for 80% of Houston MSA jobs and represented 81% of net job growth over the 15 years leading up to 2014. More and more, Houston is evolving to an economy based on engineering, computer, legal, accounting and administrative services. Houston's diversification and growth in the services sector is reflected in the charts depicting industry shares of new jobs and employment by industry.

**Houston-The Woodlands-Sugar Land Metropolitan Statistical Area (MSA)***




* San Jacinto County was removed from the MSA in a 2013 change to the MSA definition. It is included in this report for comparison with previous data sets.

In the twelve months from March 2014 to March 2015, the Houston economy has been adversely affected by lower oil and gas prices but the jobs data still demonstrates substantial growth in the energy-related cluster of sectors ("mining" professional services and "manufacturing").

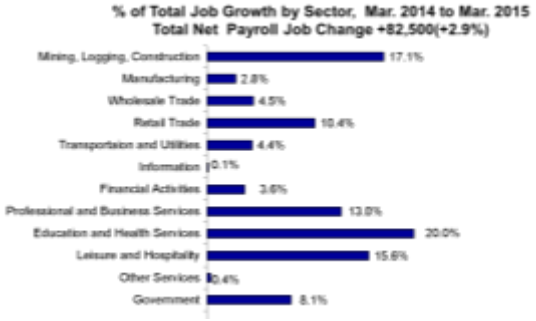
The chart on the following page illustrates the Industry shares of job growth over the 12 months from March 2014 to March 2015.

Houston's economic breadth is further substantiated by the number of large employers in the Houston area. According to the Greater Houston Partnership, as of 2014, there are 116 companies in Houston with 1,000 employees or more. A total of 21 Fortune 500 companies call Houston home.

In order to grow, Houston's employers rely on a substantial local college and university system. There are 17 community college campuses and 16 university campuses within the Houston MSA. Rice University has gained significant national attention with its recent discoveries in the field of nanotechnology.

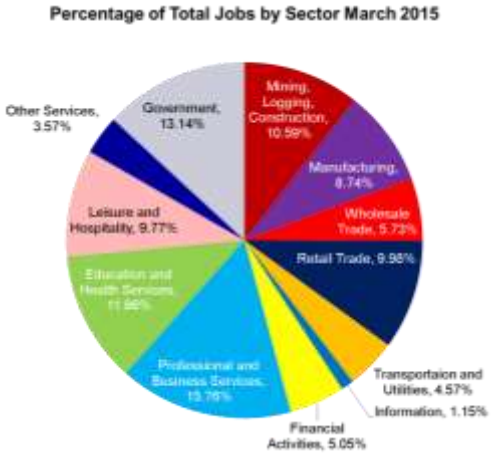
The chart on the following page, depicting Houston MSA job growth, demonstrates that the Houston economy was flat during national recessions in the early 90s and early 00s (following the 9/11 attacks) but very robust during the intervening and subsequent years up to 2008. Houston was affected by the recent national recession with job losses beginning in January 2009. Recent data show Houston's recovery began in early 2010 and the region has added 487,100 jobs from Jan 2010 to March 2015. In the most recent 12 months from March 2014 to March 2015, the Houston region added 82,500 jobs – the fastest growing urban region in the U.S.

## Industry Shares of Job Change



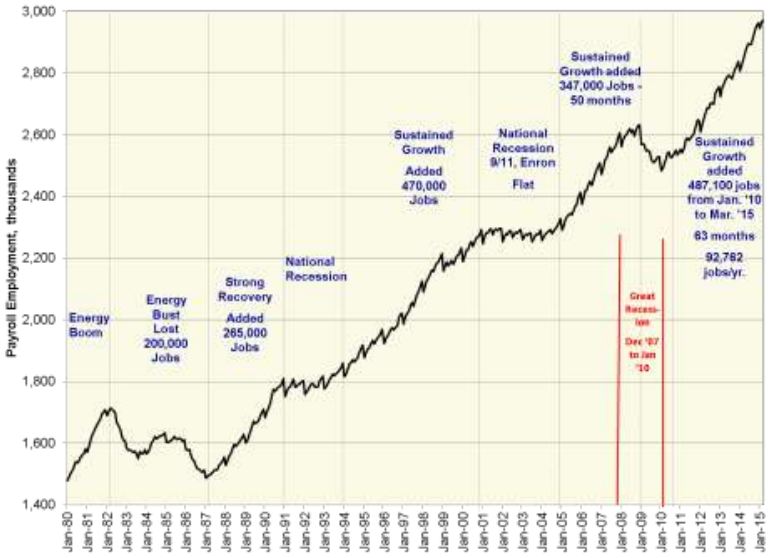

**Source:** Texas Workforce Commission, From Greater Houston Partnership, June 2015

## Employment by Industry




**Source:** Texas Workforce Commission, From Greater Houston Partnership, Feb 2015

## Houston MSA Long-Term Employment Growth Trends




**Source:** Texas Workforce Commission, Feb 2015

Real GDP by metropolitan area is an inflation-adjusted measure of each area's gross product that is based on national prices for the goods and services produced within the metropolitan area. This is an excellent measure of comparative levels of real regional economic activity because, for instance, a cup of coffee served at a restaurant is counted at the same dollar amount (a national average) regardless of whether it is served in high-cost New York City or low-cost Houston, Texas.

Houston is outperforming every other city in the United States by a significant margin in terms of its growth rate. Its performance is especially remarkable because it is a large city; only Houston and Dallas rank in the top ten metropolitan areas for regional GDP and are also in the top ten for the rate of growth. Houston is also in the top echelon of cities ranked by GDP per capita and is the fastest-growing city in that category. Whereas Dallas or Austin are experiencing rapid GDP growth mostly as a function of population growth, Houston's growth is driven by both population and productivity gains.

## GDP Ranked by Metropolitan Area

| Rank | Metropolitan Area | 2013 Per Capita GPD ($) | Rank | Metropolitan Area | 2010 Per Capita GPD ($) | 2013 Per Capita GPD ($) | Percent Change |
|---|---|---|---|---|---|---|---|
| 1 | New York-Newark-Jersey City, NY-NJ-PA | 1,377,989 | 1 | Houston-The Woodlands-Sugar Land, TX | 379,595 | 456,177 | 20.17% |
| 2 | Los Angeles-Long Beach-Anaheim, CA | 775,967 | 2 | San Jose-Sunnyvale-Santa Clara, CA | 165,435 | 192,184 | 16.17% |
| 3 | Chicago-Naperville-Elgin, IL-IN-WI | 550,793 | 3 | Austin-Round Rock, TX | 86,546 | 98,126 | 13.38% |
| 4 | Houston-The Woodlands-Sugar Land, TX | 456,177 | 4 | Portland-Vancouver-Hillsboro, OR-WA | 140,717 | 159,266 | 13.18% |
| 5 | Washington-Arlington-Alexandria, DC-VA-MD-WV | 437,085 | 5 | Charlotte-Concord-Gastonia, NC-SC | 115,229 | 130,318 | 13.09% |
| 6 | Dallas-Fort Worth-Arlington, TX | 413,627 | 6 | Oklahoma City, OK | 57,856 | 65,246 | 12.77% |
| 7 | Philadelphia-Camden-Wilmington, PA-NJ-DE-MD | 358,091 | 7 | Nashville-Davidson–Murfreesboro–Franklin, TN | 84,572 | 95,124 | 12.48% |
| 8 | San Francisco-Oakland-Hayward, CA | 356,081 | 8 | Dallas-Fort Worth-Arlington, TX | 368,015 | 413,627 | 12.39% |
| 9 | Boston-Cambridge-Newton, MA-NH | 349,652 | 9 | Salt Lake City, UT | 63,090 | 70,719 | 12.09% |
| 10 | Atlanta-Sandy Springs-Roswell, GA | 288,175 | 10 | San Antonio-New Braunfels, TX | 80,101 | 89,463 | 11.69% |

Sources: U.S. Bureau of Economic Analysis

## GDP Per Capita Ranked by Metropolitan Area

| Rank | Metropolitan Area | 2013 Per Capita GPD ($) | Rank | Metropolitan Area | 2010 Per Capita GPD ($) | 2013 Per Capita GPD ($) | Percent Change |
|---|---|---|---|---|---|---|---|
| 1 | San Jose-Sunnyvale-Santa Clara, CA | 100,115 | 1 | Houston-The Woodlands-Sugar Land, TX | 63,816 | 72,258 | 13.23% |
| 2 | San Francisco-Oakland-Hayward, CA | 78,844 | 2 | San Jose-Sunnyvale-Santa Clara, CA | 89,806 | 100,115 | 11.48% |
| 3 | Seattle-Tacoma-Bellevue, WA | 74,701 | 3 | Portland-Vancouver-Hillsboro, OR-WA | 63,025 | 68,810 | 9.18% |
| 4 | Boston-Cambridge-Newton, MA-NH | 74,643 | 4 | Columbus, OH | 50,370 | 54,493 | 8.19% |
| 5 | Washington-Arlington-Alexandria, DC-VA-MD-WV | 73,461 | 5 | Grand Rapids-Wyoming, MI | 41,248 | 44,482 | 7.84% |
| 6 | Houston-The Woodlands-Sugar Land, TX | 72,258 | 6 | Charlotte-Concord-Gastonia, NC-SC | 51,819 | 55,802 | 7.69% |
| 7 | New York-Newark-Jersey City, NY-NJ-PA | 69,074 | 7 | Oklahoma City, OK | 45,993 | 49,441 | 7.50% |
| 8 | Portland-Vancouver-Hillsboro, OR-WA | 68,810 | 8 | Salt Lake City, UT | 57,790 | 62,008 | 7.30% |
| 9 | Hartford-West Hartford-East Hartford, CT | 66,870 | 9 | Nashville-Davidson–Murfreesboro–Franklin, TN | 50,464 | 54,112 | 7.23% |
| 10 | Salt Lake City, UT | 62,008 | 10 | Detroit-Warren-Dearborn, MI | 46,314 | 49,653 | 7.21% |

Sources: U.S. Bureau of Economic Analysis

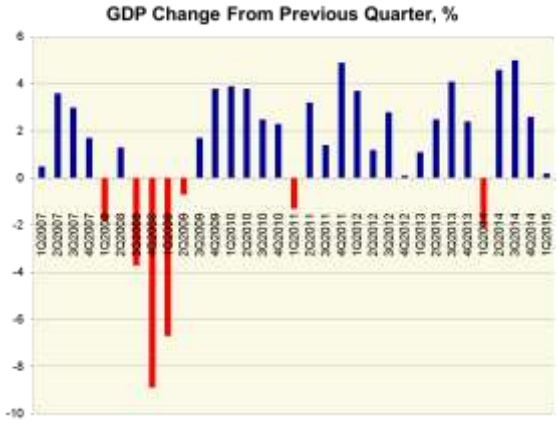
## Factors Affecting Future Regional Economic Growth

According to the Federal Reserve Bank and the Greater Houston Partnership, three factors have governed the state of Houston's economy for the past ten years:

- the health of the national economy;
- the value of the U.S. dollar against foreign currencies; and
- the prices of oil and gas.

All of the drivers of the economy entered a period of decline starting in mid-2008, real GDP began to drop, the value of the dollar began to rise and in oil prices began a sharp decline. These factors began to have an effect on the Houston economy. However, since that recession, the factors contributing to Houston's growth have been positive. In late 2014 oil and gas prices have plummeted and the U.S. dollar strengthened, creating headwinds for Houston's economy.

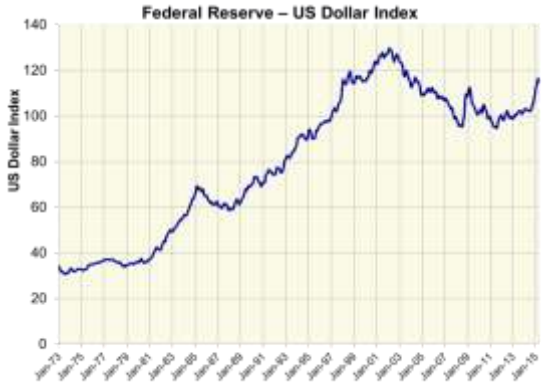
**U.S GDP Trends**




Source: Bureau of Economic Analysis, January 2015.

**Major Foreign Currencies vs. the Dollar**

Dollar Index U.S. Federal Reserve Bank



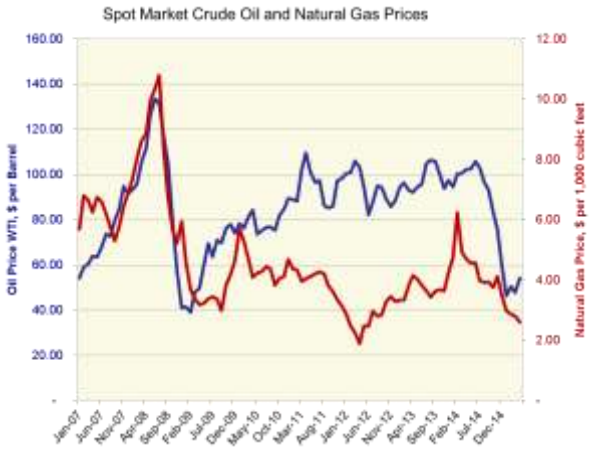

Source: U.S. Federal Reserve Bank, January 2015.

**The National Economy**—According to the Bureau of Economic Analysis, U.S. real gross domestic product (GDP) peaked at $13.36 trillion in the fourth quarter of 2007 and then declined by $555.0 billion by mid-2009. GDP has subsequently increased in 20 of the past 22 quarters culminating in as estimate of $17.710 trillion in the fourth quarter of 2014. First quarter 2015 reflects a 0.2% increase.

**The U.S. Dollar** – The U.S. Dollar is at a relatively high level today as compared to the long-term historical trend of the Dollar Index of the Federal Reserve Bank. It is, however, substantially lower than the peak level of 129 set in late 2001. As of April of 2015 the index was 115 (14 points below the 2001 peak.) A weak dollar stimulates Houston's manufacturing/export sectors; however a strong dollar has the negative effect of reducing Houston's exports.

**Energy Prices** – Higher oil and gas prices stimulate demand for oil field equipment and services which is a strong sector within the Houston economy. Prices for West Texas Intermediate (WTI) crude began the decade in the $20-$30/Bbl range and remained there until 2004 when they began a steady climb to a peak of nearly $140/Bbl. during the first half of 2008. The worldwide recession, accompanied by a fall-off in demand, resulted in a decrease in WTI crude oil prices **(blue line in the graph to the right)** to less than $40/Bbl. By 2011, WTI price rebounded to more than $100/Bbl and fluctuated within a range of $85 to $110 until June of 2014 when it declined from a high of $106 to $46 in January of 2015. Oil prices have rebounded slightly in the following three months of 2015, reaching $54.20 by April 2015. Concurrently, Henry Hub spot natural gas **(red line in the graph)** remained under $10/mm Btu before falling to a low of $2/mm BTU and then rebounding to $6 in late 2009. Spot natural gas prices again fell to $2 in the spring of 2012 but reached $6.24 by February of 2014. Since that peak, natural gas prices have dropped to $2.60 as of April of 2015.

**Energy Price Trends**




Source: U.S. Energy Information Administration, January 2015.

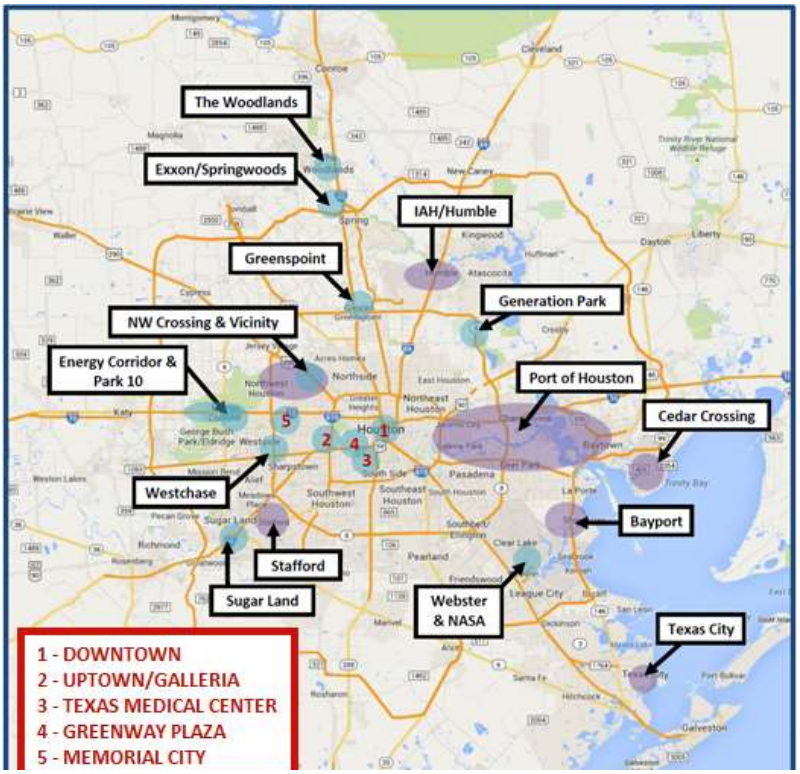
At the current time, only one of the three factors that affect the Houston economy, **National Economic Growth**, presents slightly positive signs for the Houston economy. Most analysts now expect Houston's economy to be less robust until energy prices rebound to 2007 levels

## Economic Geography

The Houston MSA has historically developed in a low-density suburban form, uninhibited by natural geographic boundaries or excessive political regulation. The region's central business district presently accounts for only about six percent of regional employment. Other loosely-defined 'edge cities' comprise a large portion of the region's employment base. These typically are made up of a loose cluster of office, medical office, hotel, and supportive retail land uses. Examples within the Houston area include the Uptown/Galleria area and Texas Medical Center in the urban core, or the Energy Corridor and The Woodlands in the suburbs. The region's heavy industries are heavily clustered around the Houston Ship Channel and the Galveston Bay area. Additionally, a significant number of jobs are spread among Houston's suburbs in numerous office parks, retail centers, and light industrial facilities. Emerging clusters include Springwoods Village, Generation Park, and Cedar Crossing.

The accompanying map illustrates the locations of the principal activity centers (in blue) and industrial districts (in purple) in the Houston MSA. Note that all future sections of the Grand Parkway are indicated on the map.

### Major Regional Employment & Activity Centers are there any major activity centers along SH 249?



### The H-GAC Transportation Planning Region

As described in the previous sections, the Houston-The Woodlands-Sugar Land Metropolitan Statistical Area (MSA) as of 2013 includes 9 counties. The MSA had previously included 10 counties, with San Jacinto County subtracted from the 2013 definition. For transportation planning purposes, the Houston-Galveston Area Council (H-GAC) as the Metropolitan Planning Organization (MPO) currently uses an 8-county region, as the Transportation Management Area (TMA) shown in the map to the right, which until 2004 was defined as the Houston-Galveston- Brazoria Combined Metropolitan Statistical Area (CMSA). Included in that geography are the following counties: Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller. The only currently-defined MSA county that is not a part of the H-GAC management area is Austin County.

**H-GAC Transportation Management Area**


For the remainder of this report, the 8-county region will be the focus of the analysis. Some data is also noted separately for Grimes County, located to the northwest of the 8-county area. CDS added Grimes County to the previous version of this forecast (SH 249 tollway) and has continued its inclusion as a part of the US 290 forecast.

### Houston Area Growth Patterns

The Houston region has a history of growth in all areas of the community. Since 1980, the growth has been biased to the southwest, west and northwestern areas of the region.

## Population

### Historic Growth and Projections

Population growth is one of the principal measures of the economic vitality of any area because increasing population is generally the result of more jobs, a high level of immigration and a stable or expanding economy. The table entitled Population Growth Trends and Projections summarizes historical Census population counts for 1980, 1990, 2000, and 2010.

The Houston MSA has undergone tremendous growth in recent decades – from 3.1 million in 1980 to 4.7 million in 2000. In 2010, total population reached 5.89 million.

As the table on the right demonstrates, population has grown rapidly in the counties that comprise the 8-county region. The 2010 Census revealed that the population of the region was 5,891,999.

Fort Bend County was the fastest growing county by percentage from 2000 to 2010 adding 324,000 persons (91.5%). Montgomery County grew by 162,000 persons (55.1%) in that 10-year period. Harris County grew the most in number of net new residents adding 691,000 (20.3%).

## Population Growth Trends

Counties 1960 – 2010 (in thousands of persons)

| | Historical Census Population, 1,000s | | | | | Census |
|---|---|---|---|---|---|---|
| **County** | **1960** | **1970** | **1980** | **1990** | **2000** | **2010** |
| **Brazoria** | 76 | 108 | 170 | 192 | 242 | 313 |
| **Chambers** | 10 | 12 | 19 | 20 | 26 | 40 |
| **Fort Bend** | 41 | 52 | 131 | 225 | 354 | 678 |
| **Galveston** | 140 | 170 | 196 | 217 | 250 | 291 |
| **Harris** | 1,243 | 1,742 | 2,410 | 2,818 | 3,401 | 4,092 |
| **Liberty** | 32 | 33 | 47 | 53 | 70 | 76 |
| **Montgomery** | 27 | 49 | 129 | 182 | 294 | 456 |
| **Waller** | 12 | 14 | 20 | 23 | 33 | 36 |
| **8-Co. Total** | 1,581 | 2,180 | 3,122 | 3,730 | 4,670 | 5,892 |
| **Grimes** | 13 | 12 | 14 | 19 | 24 | 27 |

Source: U.S. Bureau of the Census

## Population Growth Accounted for by In-Migration

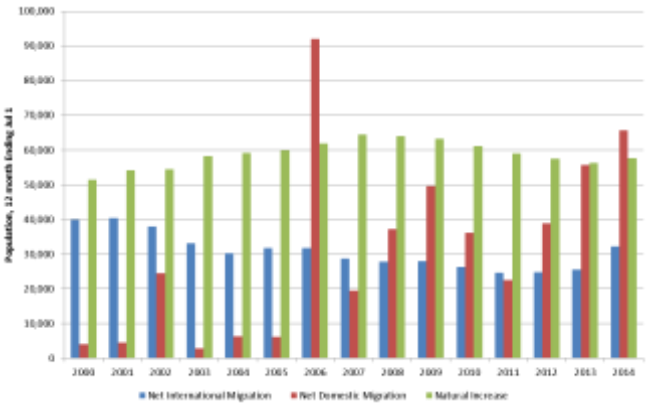
Components of change in the population published by the U.S. Bureau of the Census are presented in the chart below. Net in-migration, which is calculated based on the number of persons moving in versus the number moving out, has accounted for almost 50% of the growth in MSA population over the 2000-2011 period. International migration comprised 29.1% of the total net change while domestic migration made up a slightly smaller share of 21.7% of the net change in population in the region. Natural increase accounted for just over one-half of the increase.

The most recent data on the components of population change is shown in the table below right. From 2010 to 2014, natural increase in the 8-county region accounts for 43.5% of the net population change while international and domestic migration accounted for 22.8% and 33.7%, respectively.

Harris County received 77.6% of the international migrants accounting for the 28.8% of the total County's change. Galveston, Grimes, Montgomery and Fort Bend counties received the largest share of ~~thier~~their net growth from domestic migration.

### Components of Population Change

Houston-The Woodlands-Sugar Land MSA (10 County)




Source: U.S. Bureau of the Census, 2013

### Components of Population Change by County

Cumulative April 1 2010 to July 1 2014

| County | Total Population Change | Natural Increase | International Migration | Domestic Migration |
|---|---|---|---|---|
| **Brazoria** | 24,997 | 10,825 | 2,544 | 11,303 |
| **Chambers** | 3,049 | 891 | 126 | 1,987 |
| **Fort Bend** | 100,448 | 23,657 | 16,646 | 58,395 |
| **Galveston** | 22,894 | 6,719 | 2,873 | 13,009 |
| **Harris** | 348,359 | 187,642 | 100,542 | 63,037 |
| **Liberty** | 2,474 | 1,380 | 238 | 856 |
| **Montgomery** | 63,183 | 14,317 | 6,384 | 40,967 |
| **Waller** | 3,583 | 1,278 | 210 | 2,044 |
| **8-county Region** | 568,987 | 246,709 | 129,563 | 191,598 |
| **Grimes** | 604 | 162 | 82 | 333 |

Source: U.S. Bureau of the Census, May 2015

# Regional Population and Employment Projections

A key element of this report is to evaluate population and employment forecasts for the overall 8-county region. Small area forecasts are most often performed using allocations of regional "control total" values to the small geographies.

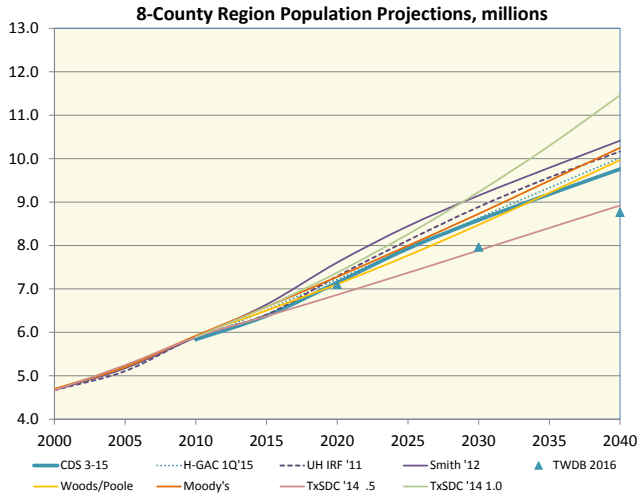
In this section, we will investigate alternative forecasts of Houston area population and employment.

## Population Projections

The chart on the right illustrates eight forecasts of population growth in the Houston region. The sources are:

- The CDS 2015 forecasts using the University of Houston Institute for Regional Forecasting (UH-IRF) model updated to recent employment trends.
- The most recent Houston-Galveston Area Council (H-GAC), 2040 Regional Growth Forecast for the 1st Quarter pf 2015 (H-GAC 1Q '15);
- The latest regional forecasts from the University of Houston – Institute for Regional Forecasting (UH-IRF '11);l

### Population Projection Comparisons




- The most recent forecasts from Dr. Barton Smith using the UH-IRF model he developed. (Smith '12)
- The Texas Water Development Board (TWDB) 2016 State Water Plan Projections Data (TWDB 2016);
- Woods & Poole Economics, Inc., County Forecasts to 2040, 2015 (Woods/Poole);
- Moody's Economy.com Projections 2015 (Moody's); and
- The Texas State Data Center (TxSDC '~~07~~14), 2014 Population Projections, two migration scenarios. Scenario 1.0 based on 100% of the 2000-2010 migration rates (TxSDC '~~12~~ '14 1.0) and Scenario .5 based on migration at 50% of the 2000-2010 rates (TxSDC14 0.5).

All of the forecasts present the expectation of substantial future growth in the Houston region. From a 2010 population of 5.89 million, the region is expected to grow to between 8.7 and 11.5 million residents by 2040. That range of annual growth is 97,666 to 188,490 new residents annually. As discussed previously, this region added an average of 118,000 new residents annually between 2000 and 2010.

An important issue to note is that the CDS '15 population includes only the population in households, excluding persons living in group quarters such as ~~dormatories~~dormitories and jails.

To additionally illustrate the information shown in the chart on the previous page, the following table summarizes the data for 5-year increments.

## Various Population Projections

8-County Houston Region (CDS estimate for 2015 is higher than Barton Smith, why is forecast lower for future years compared to Barton Smith?

| | Year | CDS '15 | H-GAC 1Q '15 | Barton Smith '12 | TWDB | Woods & Poole | Moody's | TxSDC 1.0 |
|---|---|---|---|---|---|---|---|---|
| Popula-tion by Year | 2000 | 4,669,589 | 4,669,589 | 4,669,589 | 4,591,812 | 4,693,671 | 4,693,548 | 4,669,589 |
| | 2005 | | | 5,175,064 | 5,202,623 | 5,207,398 | 5,207,035 | 5,175,064 |
| | 2010 | 5,837,975 | 5,809,869 | 5,814,383 | 5,813,433 | 5,920,246 | 5,920,385 | 5,891,999 |
| | 2015 | 6,381,891 | 6,518,074 | 6,552,928 | | 6,503,555 | 6,589,202 | 6,589,809 |
| | 2020 | 7,147,718 | 7,222,074 | 7,504,591 | 7,102,261 | 7,110,775 | 7,278,379 | 7,376,672 |
| | 2025 | 7,929,375 | 7,925,285 | 8,326,692 | | 7,769,738 | 7,994,382 | 8,258,811 |
| | 2030 | 8,585,516 | 8,633,186 | 9,016,482 | 7,964,492 | 8,475,948 | 8,729,635 | 9,232,149 |
| | 2035 | 9,181,012 | 9,331,321 | 9,642,309 | | 9,211,606 | 9,492,060 | 10,296,493 |
| | 2040 | 9,759,720 | 10,018,940 | 10,250,381 | 8,764,753 | 9,968,088 | 10,249,120 | 11,459,984 |
| | | | | | | | | |
| Annual Average Growth by Period | '00-'10 | 116,839 | 114,028 | 114,479 | 122,162 | 122,658 | 122,684 | 122,241 |
| | '10-'20 | 130,974 | 141,221 | 169,021 | 128,883 | 119,053 | 135,799 | 148,467 |
| | '20-'30 | 143,780 | 141,111 | 151,189 | 86,223 | 136,517 | 145,126 | 185,548 |
| | '30-'40 | 117,420 | 138,575 | 123,390 | 80,026 | 149,214 | 151,949 | 222,784 |
| | '10-'40 | 130,725 | 140,302 | 147,867 | 98,377 | 134,928 | 144,291 | 185,600 |

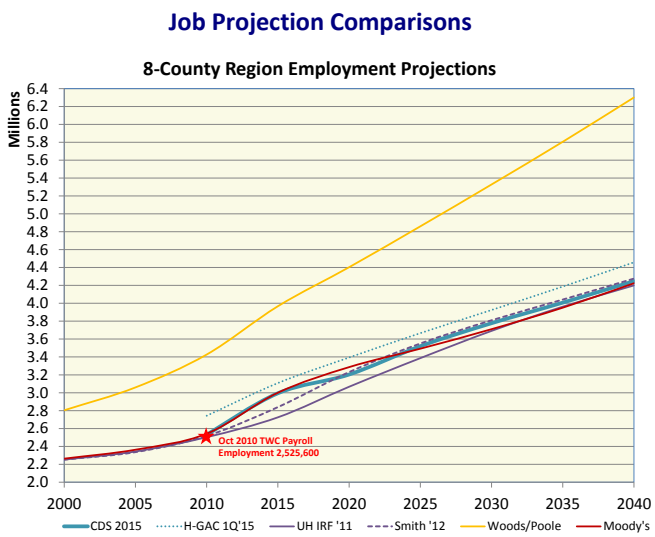
A review of these forecasts suggests that they can be grouped. The Texas Water Development Board growth scenario represents the low side of potential growth. The CDS and Woods & Poole forecasts are similar and represent the mid-range of the projections. The H-GAC forecast sits just above that mid-range. The Barton Smith 2012 and Moody's forecasts both grow to a population of 10.25 million residents by 2040.

The TxSDC's most recent 1.0 projections are by far the highest, topping 11.45 million residents in 2040. The TxSDC's various scenarios are demographic projections assuming varying levels of foreign immigration to Texas and do not account for specific economic trends or known developments.

## Employment Projections

The chart on the right illustrates five forecasts of employment growth in the Houston region. The sources are:

- The CDS 2015 forecasts using the University of Houston Institute for Regional Forecasting (UH-IRF) model updated to recent employment trends.
- The Houston-Galveston Area Council (H-GAC), 2040 Regional Growth Forecast 1st Quarter 2015;
- Two forecasts from Dr. Barton Smith, UH-IRF '11 and an update Smith '12;
- Woods & Poole Economics, Inc., County Forecasts to 2040, 2015; and
- Moody's Economy.com Projections 2015 (Moody's).




The Texas State Data Center and the Texas Water Development Board do not forecast employment.

One major aberration in these projections is that Woods & Poole uses a measure of "total jobs" which adds self-employed persons and part-time jobs to the payroll job counts used by the other forecasts and are therefore not comparable to the others.

Consistent with the population data, all of the employment forecasts present the expectation of future growth in the Houston region.

As discussed previously, Woods & Poole uses a measure of "total jobs" rather than the "payroll job" count used by the other forecasts and therefore is not included in the following analysis.

Another anomaly is that the H-GAC forecast starts at a 2010 job base that is higher than most of the current estimates of other sources listed in the table to the right by more than 230,000 jobs. This is likely the likely result of adding ~~self employed~~self-employed and part-time workers to the job base in some counties. The net result is that their average annual job growth is 48,832. By comparison, from December 1986 to December 2008 (before the recession hit Houston) the average annual job growth was 51,000 jobs.

**Various Job Projections**

8-County Houston Region similar comment as population, year 2015 CDS estimate is higher than Barton Smith, why is forecast in future years lower?

| | Year | CDS '15 | H-GAC 1Q '15 | Barton Smith '12 | Moody's | Woods & Poole |
|---|---|---|---|---|---|---|
| Jobs by Year | 2000 | 2,252,103 | 2,252,103 | 2,252,103 | 2,263,045 | 2,804,020 |
| | 2005 | | | 2,343,072 | 2,362,961 | 3,059,401 |
| | 2010 | 2,529,876 | 2,742,616 | 2,516,653 | 2,541,894 | 3,426,993 |
| | 2015 | 2,994,160 | 3,108,285 | 2,838,786 | 3,000,248 | 3,967,130 |
| | 2020 | 3,203,751 | 3,393,918 | 3,230,522 | 3,286,364 | 4,403,127 |
| | 2025 | 3,520,282 | 3,666,405 | 3,550,217 | 3,492,518 | 4,860,329 |
| | 2030 | 3,777,323 | 3,925,289 | 3,809,538 | 3,710,551 | 5,328,288 |
| | 2035 | 4,007,178 | 4,187,474 | 4,041,283 | 3,950,812 | 5,805,515 |
| | 2040 | 4,247,608 | 4,458,904 | 4,276,011 | 4,223,996 | 6,301,224 |
| | | | | | | |
| Annual Average Growth by Period | '00-'10 | 27,777 | 49,051 | 26,455 | 27,885 | 62,297 |
| | '10-'20 | 67,388 | 65,130 | 71,387 | 74,447 | 97,613 |
| | '20-'30 | 57,357 | 53,137 | 57,902 | 42,419 | 92,516 |
| | '30-'40 | 47,029 | 53,362 | 46,647 | 51,344 | 97,294 |
| | '10-'40 | 57,258 | 57,210 | 58,645 | 56,070 | 95,808 |

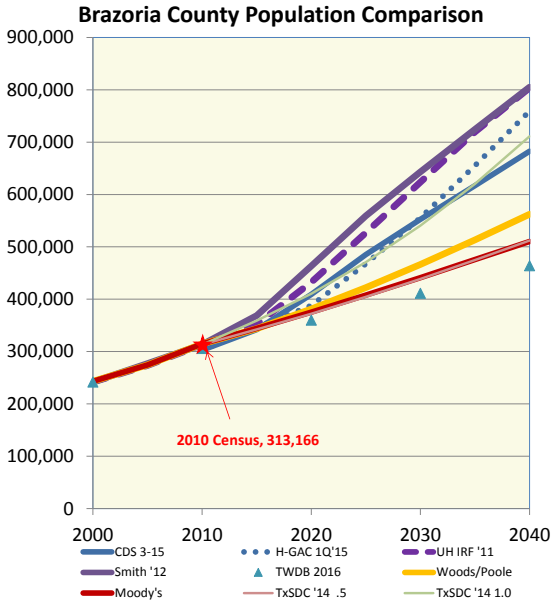
From a current employment of 2.5 million, the region is expected to grow to between 4.2~~1~~2 and 4.~~28~~45 million jobs by 2040. That narrow range of annual employment growth is ~~48,832~~57,210 to 58,645 new jobs annually.

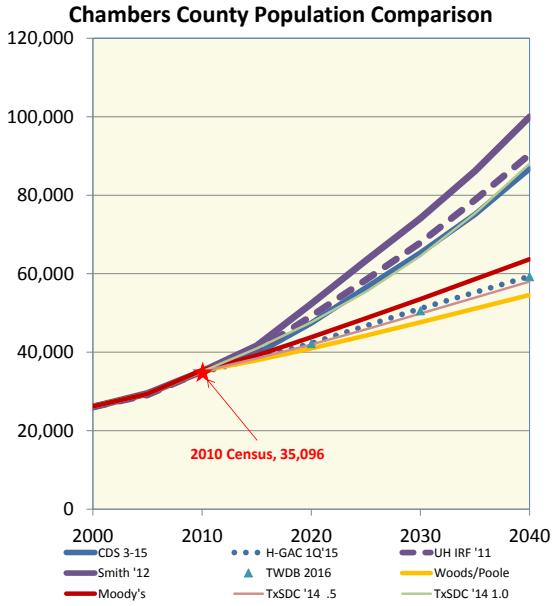
## County Forecast Comparisons

On the following pages, the same sets of forecasts at the county level are presented and discussed. Note that, because of the wide variation in the population and jobs in the eight counties of the region, the scales on the following graphs are all different making visual comparisons of growth rates difficult.

## County Population Comparisons

### County Population Forecast Comparisons – ~~Brazozia~~Brazoria and Chambers Counties



**Brazoria County:**

All forecasts present substantial growth for Brazoria County. The Smith ’12 and UH-IRF ’11 are highest, followed by the H-GAC 1Q’15 and the TxSDC 1.0. The CDS ’15 forecast is in the middle followed by Woods & Poole and Moody’s. The TWBD forecast is the lowest.

Brazoria County is poised to capture substantial growth in the north as the next southerly expansion of the Houston urban region.

**Chambers County:**

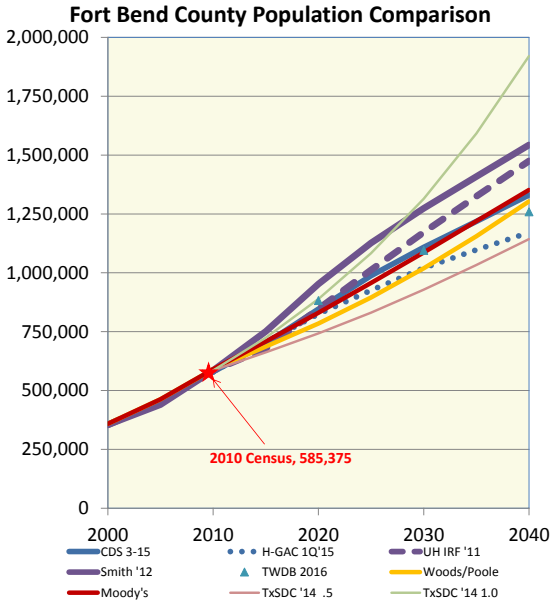
The forecast comparison represents a wide range of growth estimates for Chambers County. The Smith ’12 and UH-IRF ’11 are highest, followed by the CDS ’15 and the TxSDC 1.0. Moody’s, H-GAC 1Q’15, TWDB, TxSDC and Woods & Poole form up a low-range set of forecasts.

## County Population Forecast Comparisons – Fort Bend and Galveston Counties

**Fort Bend County:**

All forecasts present substantial growth for Fort Bend County. The TxSDC 1.0 forecast is the highest, predicting 1.9 million residents by 2040. Smith '12 and UH-IRF '11 are next highest, followed by the TWDB, CDS '15 and the Woods & Poole. The H-GAC 1Q'15 is in the bottom group of the forecast along with the TxSDC .5 forecast.

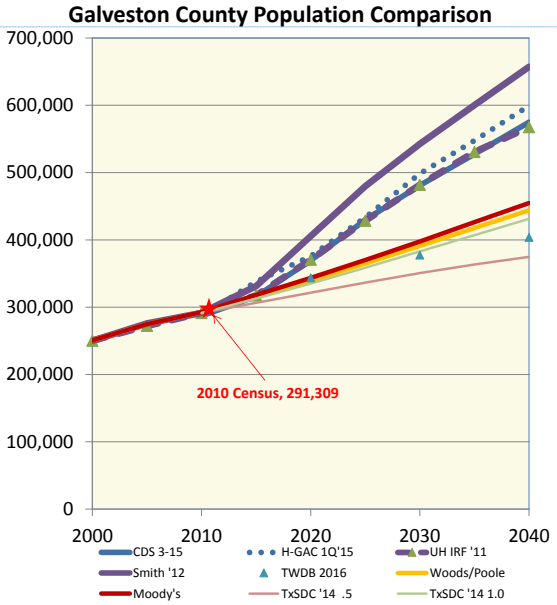
Fort Bend has been one of the fastest growing counties in the nation. The mid-range of forecasts has Fort Bend reaching a population of 1.3 million by 2040.




**Galveston County:**

The forecast comparison for Galveston County represents a wide range of growth estimates. The Smith '12 is the highest, followed by the TxSDC 1'0, the ~~the~~ H-GAC 1Q '15, and the CDS '15. The low range of forecasts include Moody's, Woods & Poole, the TxSDC 1.0 and TWDB. The TxSDC .5 is the lowest – predicting very little growth for Galveston County.

The wide range of forecasts are due to the fact that the southern portion of Galveston County was hit hard by Hurricane Ike in 2008 and has struggled to regain its population growth. The bullish forecasts are all locally generated and likely expect future growth in the County.

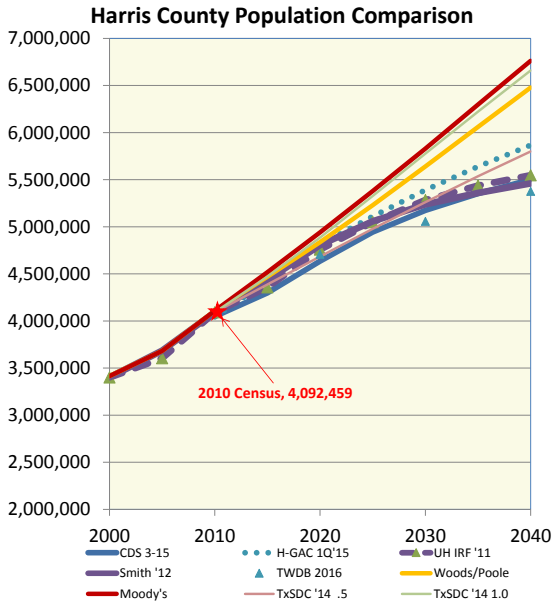



**Commented [ZL2]:** Looks like CDS 3-15 is exactly the same as UH IRF'11 in all future years?

## County Population Forecast Comparisons – Harris and Liberty Counties

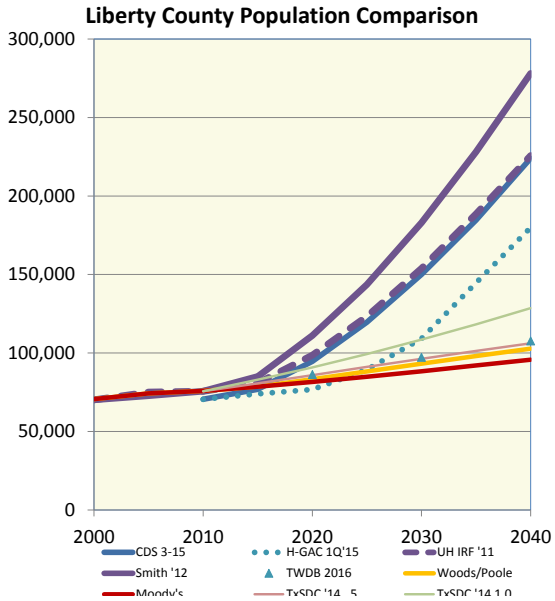
**Harris County:**

All forecasts present substantial growth for Harris County. The Moody's, TxSDC 1.0, and Woods & Poole forecasts represent the ~~hiis the~~ highest, predicting around 6.5 million residents by 2040. The remainder of the forecasts predicts a ~~slow down~~slowdown in population growth as the County reaches near full development. The H-GAC 1Q '15 is the highest of the low range group. Smith '12, UH-IRF '11 and TxSDC .5 and CDS '15 are tightly grouped as the low-range forecasts with 2040 population reaching 5.5 million ~~residents.The~~residents. The TWDB predicts the lowest growth.




**Liberty County:**

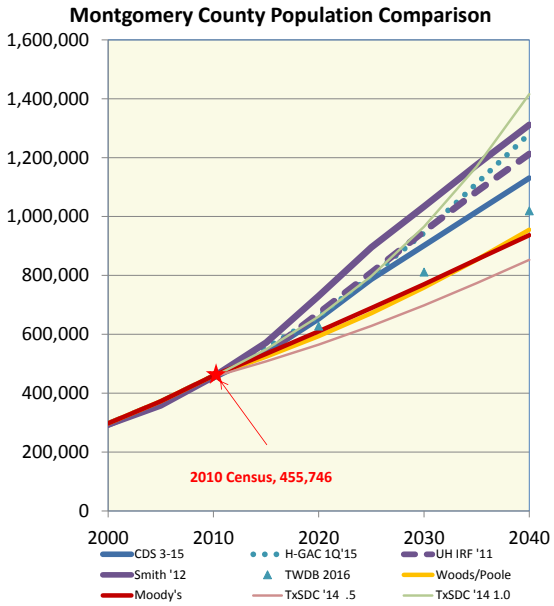
The forecast comparison for Liberty County represents a wide range of growth estimates. The Smith '12 is the highest predicting a 2040 population for Liberty County of 275,000. That bullish forecast is followed by the UH-IRF and the CDS ~~'14~~ '15 which all use the same model. The TxSDC 1'0 is at the top of the low-range group. The H-GAC 1Q '15 predicts very little population growth in Liberty County until 2030.



## County Population Forecast Comparisons – Montgomery and Waller Counties

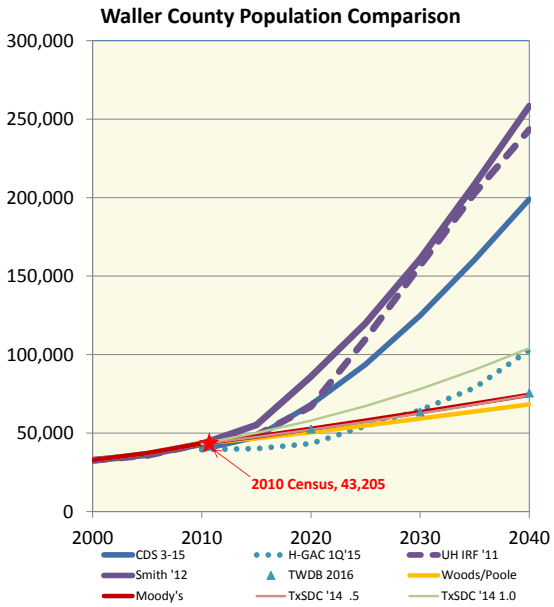
**Montgomery County:**

All forecasts present substantial growth for Montgomery County – historically on of the nation's fastest growing counties. The TxSDC 1.0 forecast is the highest, predicting 1.4 million residents by 2040. Smith '12, H-GAC 1Q '15, and UH-IRF '11 are next highest, followed by the CDS '15. The TWDB forecast represents the mid-range. Woods & Poole and Moody's forecasts are almost identical. The TxSDC .5 forecast represents the lowest growth in population – reaching only 810,000 residents by 2040.



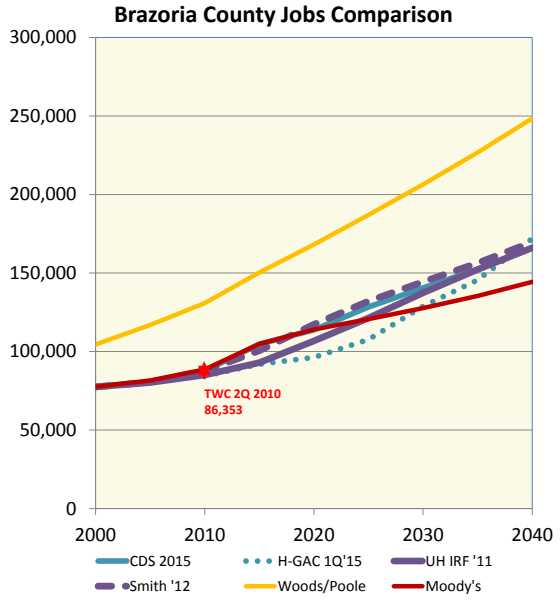

**Waller County:**

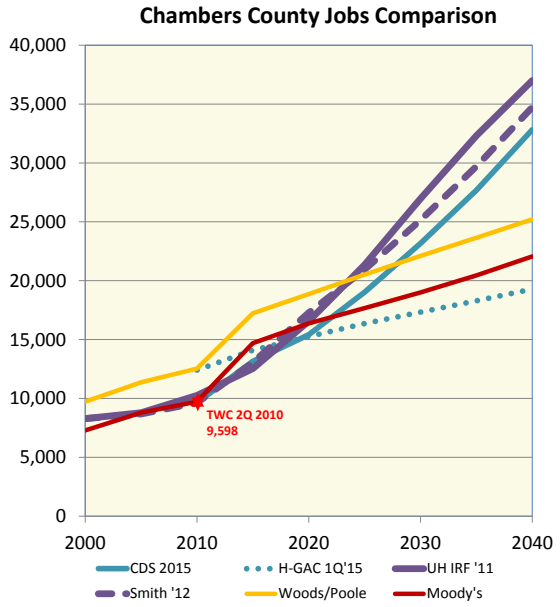
As with most of the more rural counties of the region, Waller County forecasts demonstrate a wide range of future population growth expectations. The Smith '12 and UH-IFR are the highest forecasts, followed by the CDS '15 – all using the same regional growth model. The TxSDC 1'0 is the highest of the low range forecasts. The H-GAC 1Q '15 Moody's, Woods & Poole, and TxSDC .5 and the TWDB forecasts predict only moderate growth in Waller County.



## County Employment Comparisons

### County Jobs Forecast Comparisons – ~~Brazozia~~Brazoria and Chambers Counties



Because the Woods & Poole forecasts are based on total employment rather than payroll employment in the counties, those forecasts will not be included in the narratives below.

**Brazoria County:**

All forecasts present significant job growth for Brazoria County. All predict 2040 employment in the County of between 140,000 and 165,000 jobs.

The Smith '12, UH-IRF '11 and CDS '15 are highest, followed by the Moody's forecast. ~~Tthe~~The H-GAC 1Q '15 begins as the lowest, but picks up substantial job growth after 2025 to match most of the other forecasts.

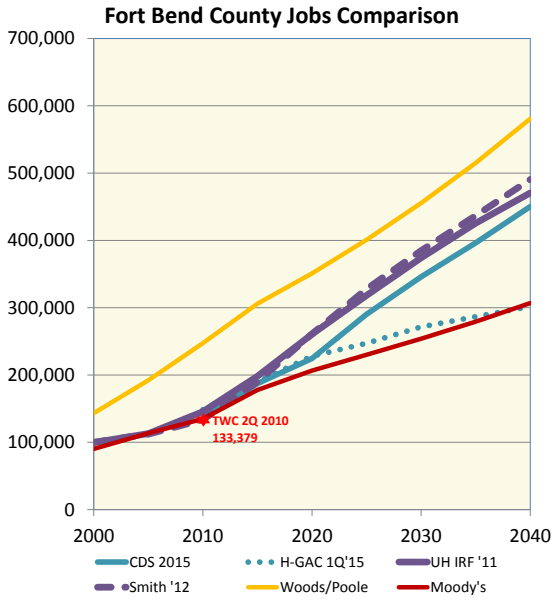
**Chambers County:**

The jobs forecast comparison for Chambers County again represents a very wide range of growth estimates. The three forecasts using the UH-IRF model represent the highest growth band, predicting ~~betwwen~~between 33,000 and 37,000 jobs by 2040. The Moody's forecast predicts only 22,000 jobs by 2040. The H-GAC 1Q'15 forecasts is by far the lowest – predicting very little job growth in Chambers County.

## County Jobs Forecast Comparisons – Fort Bend and Galveston Counties

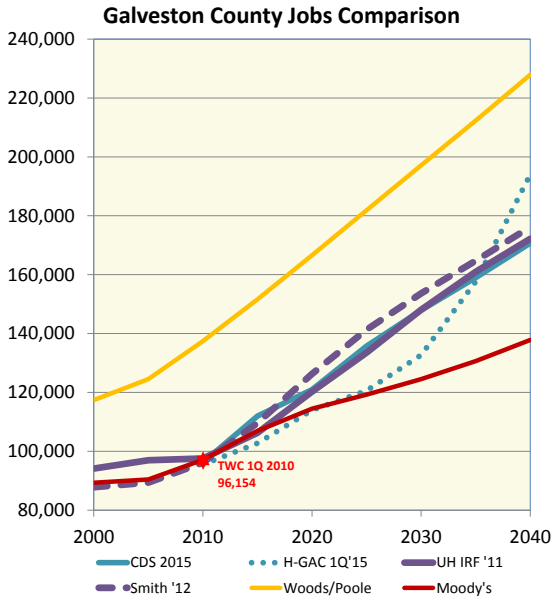
**Fort Bend County:**

The employment forecasts for Fort Bend County form two ~~distict~~distinct growth forecasts. The top band includes the three UH-IRF based model ~~resuls~~results and present substantial job growth for Fort Bend County reaching approximately 450,000 jobs by 2040. The H-GAC 1Q'15 and Moody's job forecasts are almost identical with jobs reaching 300,000 by 2040.




**Galveston County:**

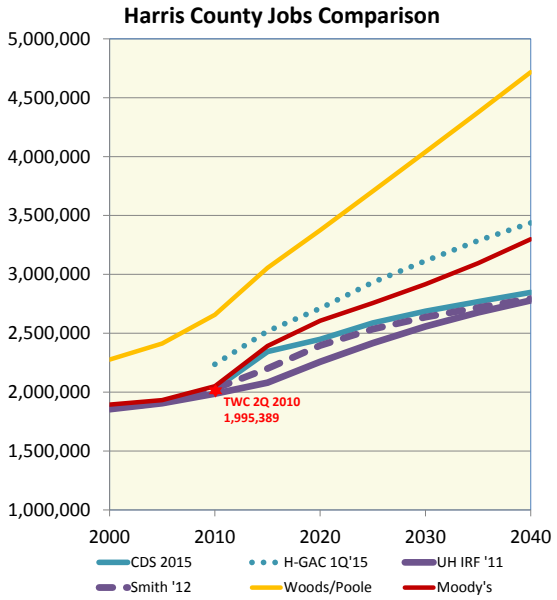
Four of the five jobs forecasts for Galveston County reach 170,000 jobs by 2040. However, the H-GAC 1Q '15 forecast predicts fairly slow growth until 2030 and then a dramatic growth spurt. Moody's forecast is the lowest with 2040 jobs of 139,000.



## County Jobs Forecast Comparisons – Harris and Liberty Counties

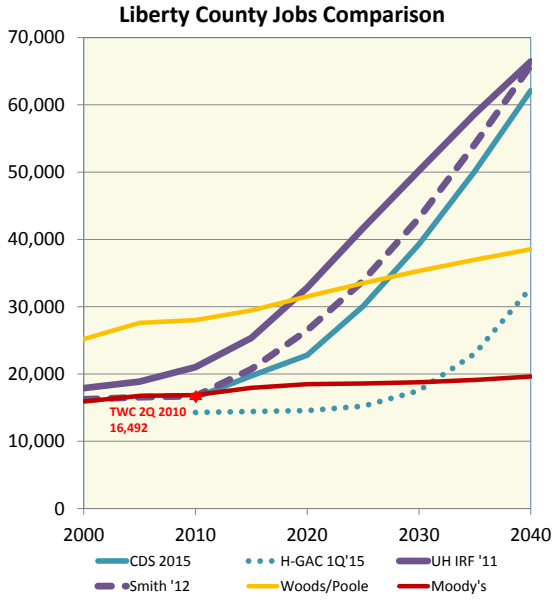
**Harris County:**

The job growth forecasts for Harris County are in two groups. The high growth band represented by the H-GAC 1Q '15 and Moody's forecasts, have employment in Harris County reaching 3.25 million by 2040. Note that the H-GAC employment estimate for 2010 exceeds the others by a substantial margin. The three UH-IRF model-based forecasts also predict substantial growth at a slightly slower rate – reaching 2.75 million jobs by 2040.




**Liberty County:**

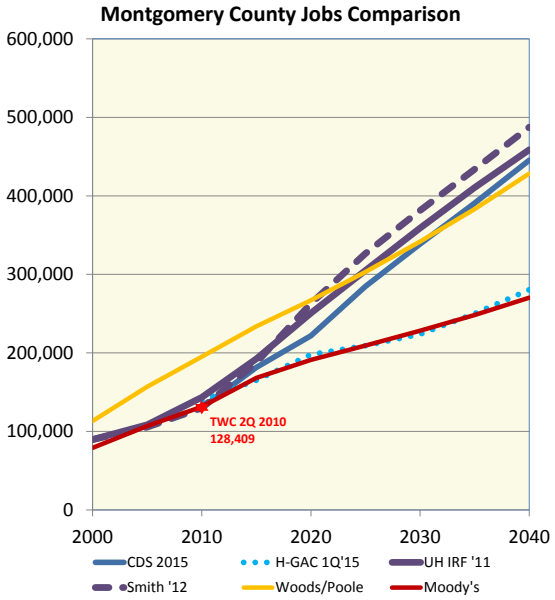
As with the population forecast, the job forecast comparison for Liberty County represents a wide range of growth estimates. The three forecasts based on the UH-IRF model predict substantial job growth in Liberty County, reaching more than 60,000 jobs by 2040. The H-GAC 1Q '15 predicts practically no job growth in the County until 2030, while the Moody's forecast demonstrates very little job expansion in the County throughout the forecast period.



## County Jobs Forecast Comparisons – Montgomery and Waller Counties

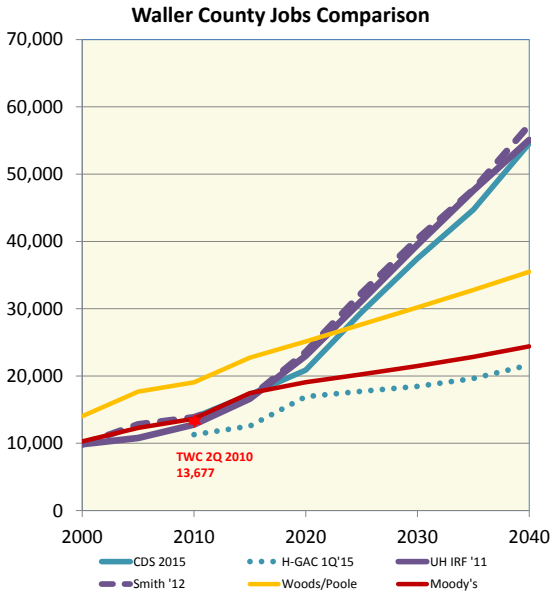
**Montgomery County:**

Most forecasts present substantial job growth for Montgomery County. The three UH-IRF forecasts represent the high growth band. They all predict more than 400,000 jobs in the County by 2040. The low growth band including the, H-GAC 1Q '15, and Moody's forecast result in only 250,000 jobs in Montgomery County by 2040.




**Waller County:**

Similar to the population forecasts, the Waller County ~~mployment~~employment forecasts demonstrate a wide range of future job growth expectations. The three UH-IRF-based models represent the high range of job growth with substantial expansion after 2020. The Moody's and H-GAC forecasts predict very little job growth in Waller County.



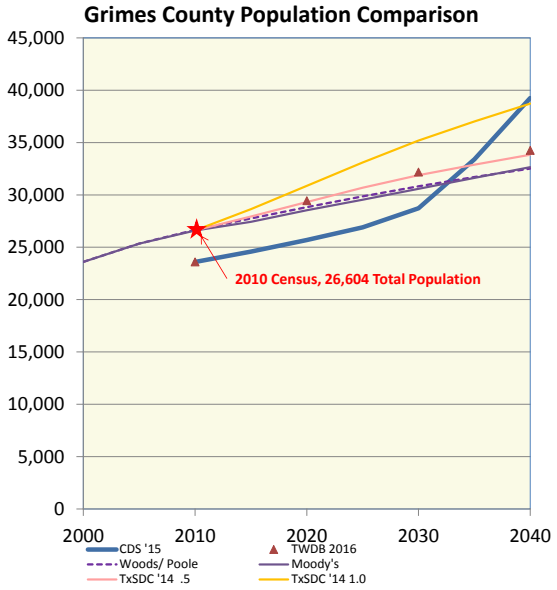
## Grimes County Forecast Comparisons

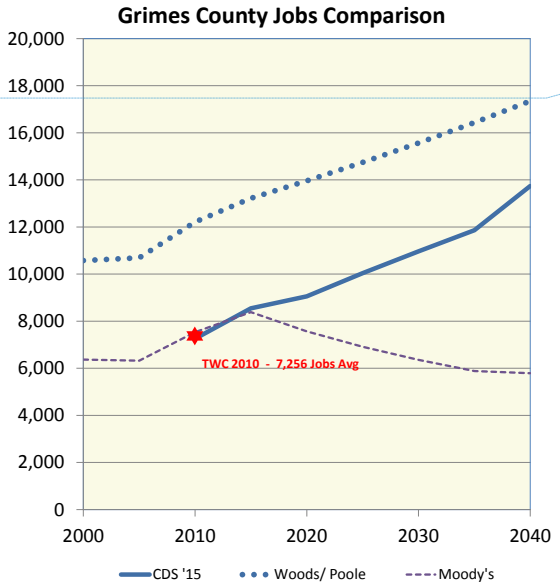
Because Grimes County is not included in the 8-county H-GAC Transportation Planning Region, there are no H-GAC forecasts to compare. The UH IRF and Barton Smith forecasts did not cover the county either. CDS built the county-wide Grimes forecast based on past trends in the County and, for 2025 and beyond, the recent growth trends in sections of Waller and Montgomery counties that border and lead in to Grimes County.

The CDS '15 population forecast begins with 3,000 fewer people than the other comparable forecasts due to its use of population in households instead of total population. There are two state prisons in the County, accounting for most of the group quarters population that makes up this gap. The TWDB, Moody's, Woods & Poole, and TxSDC .5 forecasts are all remarkably consistent. The CDS '15 forecast matches the growth rate of these other forecasts as well, until 2025, when it accelerates rapidly. CDS expects that growth will begin to push into the County at this time from Montgomery County on the east and Waller County on the south.

The CDS '15 employment forecast for Grimes grows at a rate consistent with Woods & Poole's forecast. The Moody's forecast is consistent with CDS '15 through 2015 before beginning a steady decline through 2040. This seems very unlikely given the forecasted population growth that Moody's and others expect in Grimes County.

### Grimes County Forecast Comparisons – Population and Jobs




**Commented [JYM3]:** CDS forecasts for both population and employment are significantly higher than other sources. We will have to make sure they are appropriately explained as it will be a question from TxDOT

**Commented [ZL4]:** Any evidence to justify this estimate? For example densities of those two counties beyond 2025? As I mentioned in an earlier email, the very aggressive future growth trends will certainly draw people's attention. We need to be very comfortable with explaining the reasons. If this growth is caused by saturation of current fast-growing counties, for example, then we need to have evidence to show the high density in the future. Another example if you saw historical patterns from some other counties and expected the repeating growth pattern in Grimes, you need to prepare the data showing those historical growth and similarity between Grimes county and those counties. You need to have strong justirications of the trends forecasted in further future.

## Selection of Appropriate Regional and County-level Forecasts

Long-term economic forecasts are most often a reasonable extension of historical trends into the future. There is no assurance that those trends will be sustained. Future growth is likely to deviate, higher or lower than history would suggest. The historical employment growth of the Houston region presented on page 4 of this report confirms that growth is not likely to follow a straight line or smooth curve into the future. All economies go through periods of growth and recession. For the reasons presented in this report, the Houston region is resilient and oriented to support future growth.

The key factor in evaluating forecasts is: ***Are they reasonable given all we know today?*** The best test is to consider multiple independent forecasts and consider which are most likely. Along with H-GAC's regional forecast, this report considered many forecasts of population from respected organizations and three separate forecasts of employment.

The H-GAC's regional forecasts, from which their small area forecasts are derived, tended to be in the middle of the independent forecasts considered in this project. It is the conclusion of this project team that the H-GAC 2040 forecasts at the "8-county regional level" were reasonable and consistent with other credible forecasts.

However, the small area and county-level forecast being produced in the H-GAC's 1Q 2015 forecast are somewhat discordant with recent growth trends. Recent versions of the H-GAC forecast have improved and have resolved many of the discrepancies uncovered in the previous analysis. H-GAC plans on updating their forecasts every quarter for the foreseeable future, and this improved is likely to continue.

The Woods & Poole 2015 Forecasts were reasonable for population but their employment forecasts considered self-employed and part-time workers – a determination not shared by the other forecasting groups. The Woods & Poole job forecasts are so much higher than previous forecasting used by the H-GAC travel demand model that their use as control totals would require adjustment in the modeling regimen. The Moody's forecasts while reasonable, were determined to be simple extensions of previous trends and don't capture the dynamics of the likely future spatial growth in the Houston region.

**After considering the various forecasts, it was decided to continue to use the Regional Forecasts produced from the University of Houston – Institute for Regional Forecasting (UH-IRF) ~~mdel~~model, updated by Dr. Barton Smith in 2012 and further updated for recent job growth by CDS Market Research (CDS '15), for future projections. The regional and county forecasts of the "CDS '15" will form the most appropriate basis for this revised set of small area forecasts for the Fort Bend Toll Road Traffic and Revenue Study. These forecasts were altered from their original state to move from forecasting housing units and total population to households and household population, as other sources (notably H-GAC) have done. Following are the key points that led to this conclusion:**

- The adopted baseline forecast for county totals is the model created and updated by Dr. Barton Smith, formerly of the University of Houston Institute for Regional Forecasting (IRF) and now working as an independent consultant. The original model was not developed for UofH, but for consulting work for TXDOT and Harris County Toll Road Authority and it has been used as the primary macro tool for at least a half dozen toll road studies. Dr. Smith updated the model in 2012, retaining the underlying model structure of the previous region model. CDS Market Research updated the model to capture the remarkable increase in job growth in the region from 2010 to 2014.

- When compared to H-GAC's forecast and others gathered by CDS, the "CDS '15" forecast model is notable for the extent of anticipated decentralization of both jobs and population. This pattern is consistent with what has happened in almost every major urban area in America, including both the older cities in the northeast and the newer ones in the south and west. This results in totals for those two variables in outlying counties which are well above H-GAC's and others' projections, while Harris County ends up with lower totals. An important reason is that the model is sensitive to two significant factors: the presence of vacant developable land (and conversely the lack of it in existing built-up areas) and the qualitative factors and market forces which tend to favor outlying locations for many types of new development.
- The "CDS '15" model, and its predecessors based on the model developed by Dr. Barton Smith for the UH-IRF, also allows counties to capture accelerating or decelerating (non-linear) shares of growth over time – signifying "tipping points" and changes in market momentum that are similar to patterns that typically play out in the marketplace. This is done through second-degree polynomial formulas incorporated into a shift-share model.
- Dr. Smith had previously adjusted the estimated coefficients further as he became aware of additional information that was particularly relevant such as the expansion of the toll road system in the region and the limited expansion of roadways in the urban core.
- While it is an alteration, the CDS '15 adjustment of the "Smith '12" forecast to consider households and household population instead of housing units and total population does not change the underlying methodology or conclusions of Dr. Smith's forecast. The method behind the alterations is quite simple. Housing units were converted to households by assuming a continuation of recent historical trends in housing occupancy, while total population was converted to household population by through the assumption that recent trends in share of population outside of households (group quarters) would continue. These alterations change the forecast totals very slightly, and do not affect the growth rates or shares in any significant way.
- The CDS '15 forecasts present a revised set of regional and county forecasts based on current conditions. However, an extended run of low oil prices and slowdown of the oil and gas industry is not out of the realm of possibility, and could make even the modified scenario that were used for the current forecast somewhat optimistic. While, the CDS'15 forecast assumes a moderate downturn in regional economic growth terms of sharpness and duration; sharper and longer downturns are certainly possible.

# Adjusting the Regional and County Forecasts to Recent Trends

The most significant change in the Houston area growth trends over the past four years has been the increased rate of job growth and resulting population growth as a result of the expansion of the upstream energy and related sectors. This section describes the process involved in adjusting the current estimates of population, households and employment and adjusting the forecasts in light of the likely effect of low oil prices on the local economy over an extended time period.

## 2015 Employment Adjustment

In adjusting the regional economic forecasts to the new information on growth from 2010 to 2014, the first step was to estimate the 2015 regional total employment. Compounding the issue of regional analysis is the varying definitions of the Houston region. The CDS model, using Barton Smith's UH-IRF forecasts was for an eight-county PMSA. This 8-county region is consistent with the Transportation Planning Region used by the regional MPO and TxDOT. CDS subsequently added Grimes County for use in the SH249 Toll Road Traffic and Revenue study. The official U.S. Census definition of the Houston Sugar Land Baytown MSA includes ten counties. Further complicating things, the most recent (February 2013) metropolitan area definition, called the Houston-The Woodlands-Sugar Land, TX MSA includes the nine counties of Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller. The Texas Workforce Commission uses the ten-county (Houston Sugar Land Baytown MSA) definition in their employment reporting. The comparison is shown in the table on the right.

| Houston Sugar Land Baytown MSA Counties | CDS/UH-IRF Houston Region Counties |
|---|---|
| Austin | |
| Brazoria | Brazoria |
| Chambers | Chambers |
| Fort Bend | Fort Bend |
| Galveston | Galveston |
| | Grimes |
| Harris | Harris |
| Liberty | Liberty |
| Montgomery | Montgomery |
| San Jacinto | |
| Waller | Waller |

The process used to determine a new 2015 employment forecast for the CDS model is as follows:

1. Determine the most recent employment estimates for the 10-county MSA from the Texas Workforce Commission (TWC). According to the TWC, the region contained 2,955,900 jobs as of November 2014.
2. Estimate the MSA employment for December 2014. According to the Greater Houston's Partnership analysis included in the 2015 Houston Employment Forecast, published on December 11, 2014, the estimated December 2014 regional employment would be 2,961,600.
3. Adjust the TWC June 2014 employment estimates by county proportionally to match the end-year 2014 MSA total employment (the adjustment factor was 1.02672).
4. To estimate the likely employment growth to mid-year 2015, three 2015 annual job growth estimates (shown in the table on the right) were averaged. Using one-half of the

**2015 MSA Projections**

| Source | Job Growth | Period |
|---|---|---|
| Greater Houston Partnership | 62,900 | 2015 |
| UH IRF - if oil prices recover | 76,000 | per year for 3 years |
| UH IRF - if oil prices do not recover | 50,000 | per year for 3 years |

average of the three projections, we added 31,500 jobs to the year-end estimate which resulted in a 2015 MSA jobs estimate of 2,993,100.

5. Next, the 2015 MSA estimate was adjusted to eliminate Austin and San Jacinto Counties and add Grimes County to reach the CDS model's 9-county region 2015 jobs estimate of 2,994,260. The table below illustrates the revised 2015 county and regional employment forecast base.
6. Using 2010 as the base, we estimate that the region will have added approximately 92,500 jobs per year from 2010 to 2015 as compared with the previous model assumption of 54,600.

**Adjusted 2015 Regional Employment Base**

| | Barton Smith 2012 | | Adjustment |
|---|---|---|---|
| County | 2010 | 2015 | For 2015 |
| Brazoria | 87,619 | 100,404 | 104,760 |
| Chambers | 9,637 | 13,062 | 13,150 |
| Fort Bend | 135,985 | 192,183 | 187,180 |
| Galveston | 96,165 | 109,600 | 111,970 |
| Grimes | 13,246 | 14,100 | 14,100 |
| Harris | 2,026,916 | 2,198,611 | 2,344,680 |
| Liberty | 16,492 | 20,509 | 19,710 |
| Montgomery | 129,965 | 187,665 | 181,490 |
| Waller | 13,851 | 16,755 | 17,220 |
| **Total** | **2,531,886** | **2,854,904** | **2,994,260** |

## 2015 Population and Household Adjustment

To adjust the population and household estimates for 2015 in the CDS model, the most recent data from the U.S. Bureau of the Census was utilized. In this case, the county population estimates for 2013 were available so no adjustments to the 10-county region were required. The steps were as follows:

1. The county estimates for 2010 to 2013 from the Census were used to determine the average growth rate of county population for those three years.
2. A population estimate by county for 2015 was computed by using the 2013 population, adding another year at the same rate to estimate 2014 and then using a somewhat arbitrary, slower rate of growth for 2015 (1/3 of the 2010 to 2013 average) to estimate the total population for 2015.
3. Since the CDS model uses "population in households" rather than "total population," the 2015 total population estimates were reduced by subtracting the previously estimated "persons in group quarters" the resulting estimates are compared with the previous

**Adjusted 2015 Regional Population Base**

| | Original Pop in HHs | | NEW Pop in HHs | |
|---|---|---|---|---|
| County | 2010 | 2015 | New Estimate 2015 | Diff New-Old |
| Brazoria | 302,607 | 356,145 | 324,838 | -31,307 |
| Chambers | 34,867 | 41,367 | 37,226 | -4,142 |
| Fort Bend | 579,439 | 743,475 | 672,361 | -71,114 |
| Galveston | 287,012 | 326,495 | 308,179 | -18,316 |
| Grimes | 23,592 | 24,947 | 23,789 | -1,158 |
| Harris | 4,047,935 | 4,388,085 | 4,389,826 | 1,741 |
| Liberty | 70,499 | 79,223 | 71,605 | -7,618 |
| Montgomery | 452,522 | 567,743 | 512,801 | -54,942 |
| Waller | 39,502 | 50,396 | 41,267 | -9,128 |
| **Total** | **5,837,975** | **6,577,875** | **6,381,891** | **-195,984** |

estimates in the table on the right.
It is curious that the population estimates for 2015 are lower in almost all counties than the forecasts used in the previous model. That slower population growth result suggests a changing dynamic of labor force participation in the Houston region. That is, there are more workers per population that in the past. Since unemployment rates have decreased, this result seems reasonable.

4. The CDS model also forecasts households for use in the travel demand modeling, so the next step involved determining a new estimate of the number of households by county for 2015. The American Community Survey (ACS) data of the U.S. Census was accessed to obtain the most recent household size data for the nine counties. In the case of the large counties, data on household size was available for 2013. In the case of the more rural counties such as Chambers, Grimes, Liberty, and Waller, the data was available for the 3-year 2010-2013 ACS.
5. The ACS 2015 ~~houshold~~household population was then divided by the ACS average county household size to estimate 2015 households, as seen in the table to the right.

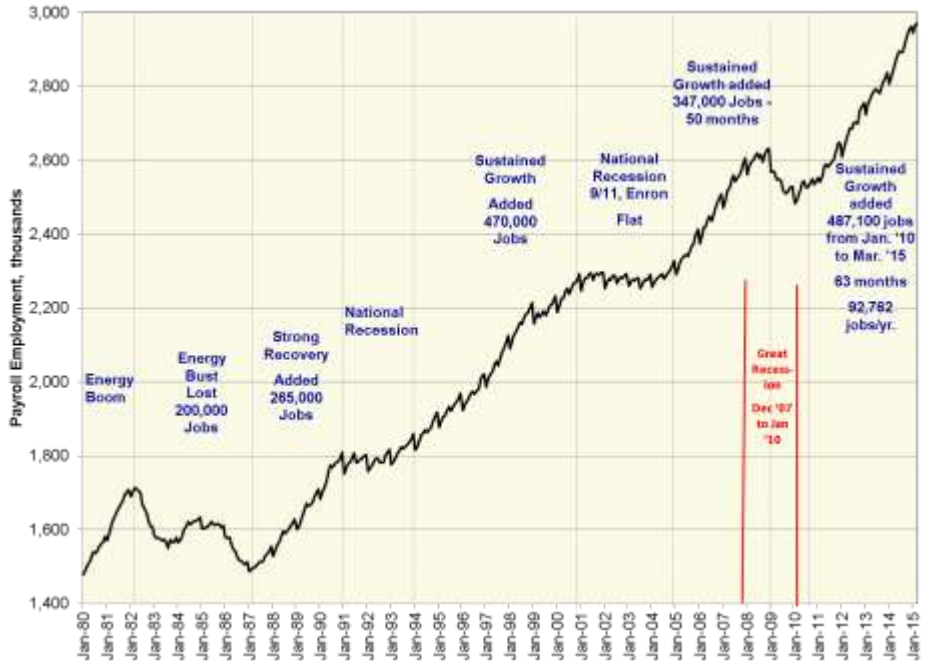
**Adjusted 2015 Regional Households Base**

| | Original Households | | New Households | |
|---|---|---|---|---|
| **County** | **2010** | **2015** | **New Estimate 2015** | **Diff New-Old** |
| **Brazoria** | 106,589 | 124,346 | 113,415 | -10,931 |
| **Chambers** | 11,952 | 14,050 | 12,643 | -1,407 |
| **Fort Bend** | 187,384 | 241,537 | 218,433 | -23,103 |
| **Galveston** | 108,969 | 121,512 | 114,695 | -6,817 |
| **Grimes** | 8,902 | 9,413 | 8,977 | -437 |
| **Harris** | 1,435,155 | 1,578,478 | 1,579,105 | 626 |
| **Liberty** | 25,073 | 28,092 | 25,391 | -2,701 |
| **Montgomery** | 162,530 | 205,564 | 185,671 | -19,893 |
| **Waller** | 14,040 | 17,942 | 14,692 | -3,250 |
| **Total** | **2,060,594** | **2,340,934** | **2,273,022** | **-67,912** |

## Future Conditions in the Houston Economy

The historical employment growth of the Houston region, shown in the chart below, illustrates both the occasional volatility of Houston's employment and the ultimate growth trend that the area has seen during the last 3 decades. All economies go through periods of growth and recession and Houston is no different. Historical data would indicate, as has been said, that the Houston regional economy is resilient and oriented to support future growth.

**Houston MSA Long-Term Employment Growth Trends**




In the first economic forecasting project for CDM Smith ***– Grand Parkway Economic/Demographic Projections - Segments D through G***— completed in the spring of 2011, CDS considered seven independent forecasts of population from respected organizations and three independent forecasts of employment. After the review, it was determined that " Regional and County-level forecasts" of the University of Houston – Institute for Regional Forecasting should form the appropriate basis for the small area forecasts for the Grand Parkway Investment Grade Traffic and Revenue Study."

In 2012, Dr. Barton Smith updated the forecasts to account for recent changes including the 2010 Census. All subsequent forecasts prepared for toll road traffic and revenue studies are based on these forecasts. Unfortunately, Dr. Smith has retired from the University of Houston and is no longer

affiliated with the Institute for Regional Forecasting IUH-IRF). Also unfortunately, the UH-IRF, under the new leadership of Dr. Bill Gilmer, has decided to discontinue the long-term regional forecasts prepared historically by Dr. Smith – focusing instead on current and short-range regional economic analyses. The adjustment of the regional forecast is now left to CDS Market Research using the same model as Dr. Smith used in the UH-IRF forecasts.

## Analysis of Regional Employment Growth and Oil Prices

As discussed in the previous section on employment growth, and illustrated in the chart on the previous page, the Houston region has recently experienced dramatic job growth – due in large part to the expansion of the upstream energy jobs. According to the Texas Workforce Commission's current job estimates, over the past 6 years, the 10- county MSA added almost 477,400 jobs, more than 95,000 jobs per year. In the nine-county region of the CDS forecast, the average annual job growth from 2010 to 2015 is estimated at approximately 92,500 jobs.

Note that the long-term job growth trend, evidenced in the chart on the previous page, from 1980 through 2014, is an average addition of 43,600 payroll jobs annually.

In the 5-year period from 1982 to 1987, when the Houston region suffered severe economic distress as a result of falling oil prices, the region lost almost 200,000 jobs. During that period, crude oil prices fell from about $35 per barrel to approximately $17 per barrel. In inflation adjusted 2014$ that would equate to a drop of $93 per barrel to $37 per barrel. In the following four years, 1987 to 1991, the region added 265,000 new jobs. In that period, oil prices remained low – at $17 to $20 per barrel ($37 to $41 in 2014$).

From July 2014 to January 2015, the price of crude oil declined from $105 per barrel to $48 per barrel.

It is clear that the lower crude oil prices will remain low over the near future and will certainly have somewhat of a negative effect on the growth of jobs and population in the Houston region.

The U.S. Energy Information Agency (EIA) in the January 2015, ***Short-Term Energy Outlook,*** predicted that the price of a barrel of WTI crude oil would average $54.58 in 2015 and $71.00 in 2016. The actual future prices of oil and the affect that oil prices will have on the Houston economy is not clear to all analysts. Examples are below. Links to the sources of these quotes can be found in Appendix B.

**Boyd Nash-Stacey, an economist at BBVA Compass Bank prediction with regards to the diversification of Houston economy compared to 1980's -** Houston Chronicle, November 19, 2014

> *While it is obvious that a decline in oil prices will negatively impact Houston's economy, our estimates suggests a moderate-to- mild impact. In fact, in the more severe demand-side scenario, growth is pulled 2.3 (percent points) below our baseline. In spite of losing nearly 34.9K in the mining sector jobs, home prices also remain largely unaffected by the direct impact from the mining sector.*
>
> *This could be explained from the fact that large O&G companies can offset losses from drilling and exploration activities with refining, since oil prices act as a boost to this*

*sector. In addition, as a share of employment, the mining sector only accounts for 3.5% of all employees and in fact is only 2.0 % of the total population.*

**Dr. Bill Gilmer's (Institute for Regional Forecasting at the University of Houston) view on oil prices and Houston Economy -** Houston Chronicle, November 25, 2014

*Nearly half of Houston jobs are tied to the energy sector in some way, said Robert Gilmer, who heads the Institute for Regional Forecasting at the University of Houston. If oil prices recover slightly, as predicted, the best Houstonians should hope for is an economic plateau over the next three years. The Houston area will likely add only 76,000 jobs a year on average, compared with the 120,000 jobs it added this year, he said.*

*If oil stays around $75 a barrel or drops further, U.S. producers will be forced to cut back dramatically on drilling. Analysts at Baird Equity Research Group estimated that if prices remain at current levels, North America could see a 10 percent cut in spending by oil and gas companies and a 25 percent reduction in the number of operating rigs.*

*Under that scenario, Gilmer said during a recent presentation, Houston would average only 50,000 new jobs a year, much slower than the rest of the nation.*

*"Crude in the $80-$90 a barrel range means modest cutbacks," Gilmer summed up. "At $70-$74 a barrel oil ... the Houston oil sector will be off, and that is the risk."*

*If the energy sector lays-off just 1 percent of its workforce, that's 17,000 lost Houston jobs, he added. The sector has already seen some layoffs. Houston oil driller Hercules Offshore plans to lay-off 324 rig workers, and Shell's Houston-based exploration and production unit for the Americas plans to cut 400 positions.*

*This pullback in oil and natural gas spending will test claims that Houston's economy has diversified.*

*Gilmer said cheap oil and natural gas prices mean cheaper inputs for the refineries and petrochemical plants along the Houston Ship Channel. He said the industrial boom on Houston's east side will likely continue for the next few years, keeping construction workers busy.*

**The Greater Houston Partnership's 2015 Houston Employment Forecast included these comments about the effects of lower oil prices -** December 11, 2014

*No one knows how far oil prices will fall in the coming months. Most oil companies would be grateful if prices remained that high. In early December, crude futures on the New York Mercantile Exchange traded between $65 and $68 per barrel through the end*

*of '15. Recent media reports suggested the Saudis would be content with Brent at $60 per barrel.*

*One thing is certain—the industry will drill fewer wells next year. Moody's Investor Services expects independents to cut their exploration budgets by 20 percent. An analysis by Tudor, Pickering, Holt & Co. suggests exploration budgets could fall 30 percent or more in '15. Both Tudor Pickering and Simmons & Co. anticipate the rig count to fall by 500 units by the end of '15, which suggests a dramatic cut in the number of wells drilled. Every basin will see a significant drop in activity, even the Eagle Ford, Permian and Bakken.*

*For the past four years, conventional wisdom held that the breakeven point for drilling a well in the Eagle Ford is $70 a barrel and between $50 and $80 in the Permian. The EIA estimates the breakeven for the Bakken much lower at $42. Those floors will be tested in the coming months.*

*As exploration firms pull back and the rig count falls, they will gain leverage to negotiate cheaper rates which will lower break-even points. Land acquisition, a significant upfront cost, will slow. Firms will work prospects already in their portfolios, focusing on wells that turn a profit at lower prices. Companies will utilize technologies to increase production from existing wells and test whether wells can be spaced closer without sacrificing overall production. The industry will adapt, and consequently production growth will not slow as quickly as OPEC hopes. The U.S. now produces 9.1 million barrels per day; EIA forecasts production will average 9.5 million in '15. If Libya returns to Gaddafi-era production levels or sanctions are lifted against Iran, the glut and subsequent low oil prices may linger.*

*A shakeout in the industry will undoubtedly occur. That change began with the pending Halliburton-Baker Hughes merger. Expect more mergers in the future.*

*Balance sheets will be as important as the economics of drilling individual wells. Companies burdened with debt will fold, providing others with opportunities to acquire assets at bargain prices. Service firms with offices in remote locations will consolidate, most likely into Houston. That was the pattern in the '80s and it should repeat itself in the '10s. Mega projects in their early stages will come under closer scrutiny. Those well underway will continue. In a year or two, perhaps more, the industry will emerge leaner and more efficient, and production growth will resume.*

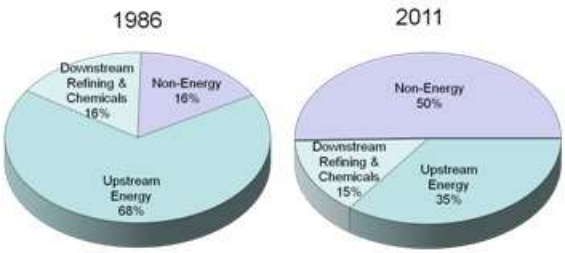
Expert estimates of Houston region job growth for 2015-18 suggest a tapering of recent trends but do not predict the job losses of the energy recession of the early 1980's. As discussed previously, the Greater Houston Partnership predicts that the region will add 62,900 jobs in 2015. The UH-IRF predicts job grow of 76,000 per year for the next 3 years if oil prices recover and they predict jobs growth of 50,000 per year for the next 3 years assuming that oil prices do not recover.

Recall that Houston's growth resumed strongly at the end of the 1980s, despite oil prices not having recovered significantly at that point from the mid-1980s crash. In the late 1990s after the Asian financial crisis, when oil prices also slumped, Houston's growth also continued, but at a slower pace.

Two elements of the Houston economy that must not be overlooked are:

1. The Houston economy is much less dependent on upstream and downstream energy sectors than it was in 1986, when an estimated 84% of the Houston economic base was dependent on those two sectors. By 2011, the last year that the UH-IRF made the analysis shown at the right, non-energy sectors accounted for 50% of the economic base.

**Houston's Economic Diversification**




Source: University of Houston, Institute for Regional Forecasting (2011 was the last year of this data)

2. The downstream sector of Houston's economy stands to benefit from lower crude prices. Recent refining and petrochemical plant expansions along the Houston Ship Channel and in the Baytown area expected to remain quite viable in spite of depressed crude oil prices and will produce a significant number of new jobs in the region.

## Forecast Shares – From Two Forecasts

The tables below illustrate the shift-share results for both population and employment in the forecast issued for this project. The percentages in the table represent the county shares of the regional growth in each time period. Historical data is included and the bold type is the forecast shares.

### Shares of Historical and Future Growth by County – CDS Forecast

County Share of Regional Population Change

| Period | Brazoria | Cham-bers | Ft. Bend | Galves-ton | Harris | Liberty | Mont-gomery | Waller |
|---|---|---|---|---|---|---|---|---|
| 1970 to 1980 | 6.54% | 0.68% | 8.39% | 2.77% | 71.24% | 1.50% | 8.30% | 2.11% |
| 1980 to 1990 | 3.61% | 0.25% | 15.42% | 3.54% | 66.70% | 0.92% | 8.97% | 0.59% |
| 1990 to 1995 | 5.06% | 0.46% | 13.35% | 2.48% | 63.33% | 1.72% | 12.72% | 0.88% |
| 1995 to 2000 | 5.46% | 0.73% | 13.93% | 3.94% | 61.49% | 1.92% | 11.52% | 1.04% |
| 2000 to 2005 | 6.94% | 0.66% | 17.00% | 5.08% | 56.24% | 0.52% | 12.83% | 0.70% |
| 2005 to 2010 | 5.06% | 0.78% | 20.22% | 2.16% | 56.85% | 0.40% | 13.55% | 0.97% |
| **2010 to 2015** | **7.25%** | **0.88%** | **22.21%** | **5.35%** | **46.06%** | **1.18%** | **15.60%** | **1.48%** |
| **2015 to 2020** | **8.76%** | **1.02%** | **19.07%** | **6.99%** | **44.08%** | **2.32%** | **15.06%** | **2.70%** |
| **2020 to 2025** | **9.75%** | **1.15%** | **18.16%** | **7.70%** | **39.51%** | **3.19%** | **17.25%** | **3.27%** |
| **2025 to 2030** | **10.31%** | **1.36%** | **18.45%** | **7.86%** | **35.13%** | **4.66%** | **17.46%** | **4.77%** |
| **2030 to 2035** | **10.84%** | **1.65%** | **18.47%** | **7.83%** | **30.11%** | **5.80%** | **19.31%** | **5.99%** |
| **2035 to 2040** | **11.38%** | **2.01%** | **19.48%** | **8.21%** | **25.65%** | **6.81%** | **19.80%** | **6.66%** |

County Share of Regional Employment Change

| Period | Brazoria | Cham-bers | Ft. Bend | Galves-ton | Harris | Liberty | Mont-gomery | Waller |
|---|---|---|---|---|---|---|---|---|
| 1970 to 1980 | 4.80% | 0.56% | 3.28% | 1.95% | 85.84% | 0.83% | 2.39% | 0.35% |
| 1980 to 1990 | 1.48% | -0.73% | 6.64% | 3.79% | 79.12% | 0.20% | 8.62% | 0.87% |
| 1990 to 1995 | 1.38% | 0.79% | 10.27% | 3.25% | 72.74% | 0.63% | 10.24% | 0.69% |
| 1995 to 2000 | 1.51% | 0.41% | 11.49% | 1.22% | 73.90% | 0.38% | 10.63% | 0.45% |
| 2000 to 2005 | 3.70% | 0.47% | 14.90% | 1.86% | 56.16% | 0.39% | 19.00% | 3.52% |
| 2005 to 2010 | 3.95% | 0.53% | 11.74% | 3.74% | 65.87% | 0.09% | 13.50% | 0.58% |
| **2010 to 2015** | **3.70%** | **0.76%** | **11.04%** | **3.41%** | **68.55%** | **0.69%** | **11.12%** | **0.73%** |
| **2015 to 2020** | **4.30%** | **1.08%** | **17.87%** | **4.29%** | **49.99%** | **1.47%** | **19.26%** | **1.75%** |
| **2020 to 2025** | **4.63%** | **1.15%** | **20.80%** | **4.69%** | **43.77%** | **2.31%** | **19.93%** | **2.73%** |
| **2025 to 2030** | **4.76%** | **1.62%** | **21.79%** | **4.76%** | **39.23%** | **3.60%** | **21.12%** | **3.12%** |
| **2030 to 2035** | **5.20%** | **1.97%** | **22.05%** | **4.83%** | **35.26%** | **4.75%** | **22.78%** | **3.17%** |
| **2035 to 2040** | **5.71%** | **2.15%** | **22.52%** | **4.90%** | **32.83%** | **5.00%** | **22.79%** | **4.11%** |

By comparison, the following tables illustrate the similar growth shares by county in the H-GAC 1Q 2015 forecast.

## Shares of Historical and Future Growth by County – H-GAC 1Q 2015 Forecast

County Share of Regional Population Change

| Period | Brazoria | Cham-bers | Ft. Bend | Galves-ton | Harris | Liberty | Mont-gomery | Waller |
|---|---|---|---|---|---|---|---|---|
| 2010 to 2015 | 6.15% | 0.51% | 18.03% | 7.21% | 53.28% | 0.49% | 14.25% | 0.09% |
| 2015 to 2020 | 5.92% | 0.54% | 16.91% | 5.38% | 55.04% | 0.40% | 15.35% | 0.45% |
| 2020 to 2025 | 11.32% | 0.63% | 14.29% | 8.18% | 42.65% | 1.80% | 19.53% | 1.59% |
| 2025 to 2030 | 12.41% | 0.62% | 13.42% | 9.18% | 39.62% | 2.78% | 20.54% | 1.42% |
| 2030 to 2035 | 14.33% | 0.59% | 11.02% | 7.06% | 35.80% | 5.10% | 24.05% | 2.05% |
| 2035 to 2040 | 15.10% | 0.59% | 10.73% | 7.53% | 32.94% | 5.11% | 24.52% | 3.49% |

County Share of Regional Employment Change

| Period | Brazoria | Cham-bers | Ft. Bend | Galves-ton | Harris | Liberty | Mont-gomery | Waller |
|---|---|---|---|---|---|---|---|---|
| 2010 to 2015 | 2.05% | 0.46% | 11.33% | 1.97% | 76.86% | 0.04% | 6.93% | 0.35% |
| 2015 to 2020 | 1.54% | 0.41% | 13.38% | 3.95% | 67.69% | 0.05% | 11.47% | 1.53% |
| 2020 to 2025 | 4.17% | 0.40% | 6.97% | 2.41% | 81.34% | 0.24% | 4.18% | 0.29% |
| 2025 to 2030 | 8.16% | 0.38% | 9.45% | 4.69% | 70.51% | 0.89% | 5.64% | 0.28% |
| 2030 to 2035 | 6.42% | 0.36% | 5.73% | 9.51% | 65.46% | 2.10% | 9.96% | 0.45% |
| 2035 to 2040 | 9.70% | 0.37% | 5.66% | 13.40% | 55.35% | 3.60% | 11.19% | 0.74% |

The tables below illustrate the forecast shift-share results for both population and employment in the Houston MSA for the CDS Forecast. The percentages in the table represent the county shares of the total 8-county region in each time period. Historical data is included and the bold type is the forecast shares.

## County Shares of Historical and Future Population and Employment – CDS Forecast

County Share of Regional Population

| Year | Brazoria | Cham-bers | Ft. Bend | Galves-ton | Harris | Liberty | Mont-gomery | Waller |
|---|---|---|---|---|---|---|---|---|
| 1970 | 4.97% | 0.56% | 2.40% | 7.78% | 79.86% | 1.51% | 2.27% | 0.65% |
| 1980 | 5.44% | 0.59% | 4.20% | 6.28% | 77.27% | 1.51% | 4.08% | 0.63% |
| 1990 | 5.14% | 0.54% | 6.04% | 5.83% | 75.53% | 1.41% | 4.88% | 0.63% |
| 1995 | 5.13% | 0.53% | 6.57% | 5.59% | 74.65% | 1.44% | 5.45% | 0.65% |
| 2000 | 5.18% | 0.56% | 7.59% | 5.36% | 72.82% | 1.50% | 6.29% | 0.70% |
| 2005 | 5.35% | 0.57% | 8.51% | 5.33% | 71.20% | 1.41% | 6.93% | 0.70% |
| 2010 | 5.20% | 0.60% | 9.97% | 4.94% | 69.62% | 1.21% | 7.78% | 0.68% |
| **2015** | **5.38%** | **0.62%** | **11.01%** | **4.97%** | **67.61%** | **1.21%** | **8.45%** | **0.75%** |
| **2020** | **5.74%** | **0.67%** | **11.88%** | **5.19%** | **65.08%** | **1.33%** | **9.16%** | **0.96%** |
| **2025** | **6.14%** | **0.71%** | **12.50%** | **5.44%** | **62.56%** | **1.51%** | **9.96%** | **1.19%** |
| **2030** | **6.46%** | **0.76%** | **12.95%** | **5.62%** | **60.46%** | **1.75%** | **10.53%** | **1.46%** |
| **2035** | **6.74%** | **0.82%** | **13.31%** | **5.76%** | **58.49%** | **2.02%** | **11.10%** | **1.75%** |
| **2040** | **7.02%** | **0.89%** | **13.68%** | **5.91%** | **56.54%** | **2.30%** | **11.62%** | **2.04%** |

County Share of Regional Employment

| Year | Brazoria | Cham-bers | Ft. Bend | Galves-ton | Harris | Liberty | Mont-gomery | Waller |
|---|---|---|---|---|---|---|---|---|
| 1970 | 3.75% | 0.39% | 1.57% | 6.52% | 85.49% | 0.88% | 1.04% | 0.38% |
| 1980 | 4.21% | 0.46% | 2.32% | 4.50% | 85.64% | 0.86% | 1.63% | 0.37% |
| 1990 | 3.92% | 0.33% | 2.79% | 4.43% | 84.94% | 0.79% | 2.39% | 0.42% |
| 1995 | 3.77% | 0.36% | 3.22% | 4.36% | 84.24% | 0.78% | 2.84% | 0.44% |
| 2000 | 3.44% | 0.37% | 4.43% | 3.90% | 82.72% | 0.72% | 3.98% | 0.44% |
| 2005 | 3.45% | 0.37% | 4.81% | 3.83% | 81.77% | 0.71% | 4.52% | 0.55% |
| 2010 | 3.49% | 0.38% | 5.30% | 3.82% | 80.63% | 0.66% | 5.16% | 0.55% |
| **2015** | **3.52%** | **0.44%** | **6.28%** | **3.76%** | **78.68%** | **0.66%** | **6.09%** | **0.58%** |
| **2020** | **3.57%** | **0.48%** | **7.04%** | **3.79%** | **76.80%** | **0.71%** | **6.95%** | **0.65%** |
| **2025** | **3.66%** | **0.54%** | **8.28%** | **3.87%** | **73.82%** | **0.86%** | **8.12%** | **0.84%** |
| **2030** | **3.74%** | **0.62%** | **9.20%** | **3.93%** | **71.47%** | **1.04%** | **9.01%** | **1.00%** |
| **2035** | **3.82%** | **0.69%** | **9.94%** | **3.98%** | **69.39%** | **1.26%** | **9.80%** | **1.12%** |
| **2040** | **3.93%** | **0.78%** | **10.65%** | **4.04%** | **67.32%** | **1.47%** | **10.53%** | **1.29%** |

By comparison, the following tables illustrate the similar growth shares by county in the H-GAC 1Q 2015 forecast.

## County Shares of Historical and Future Population and Employment – H-GAC 1Q 2015 Forecast

County Share of Regional Population

| Year | Brazoria | Cham-bers | Ft. Bend | Galves-ton | Harris | Liberty | Mont-gomery | Waller |
|---|---|---|---|---|---|---|---|---|
| 2010 | 5.21% | 0.60% | 9.95% | 4.94% | 69.62% | 1.21% | 7.79% | 0.68% |
| **2015** | **5.31%** | **0.59%** | **10.83%** | **5.19%** | **67.84%** | **1.13%** | **8.49%** | **0.62%** |
| **2020** | **5.37%** | **0.59%** | **11.42%** | **5.20%** | **66.60%** | **1.06%** | **9.16%** | **0.60%** |
| **2025** | **5.90%** | **0.59%** | **11.68%** | **5.47%** | **64.47%** | **1.13%** | **10.08%** | **0.69%** |
| **2030** | **6.43%** | **0.59%** | **11.82%** | **5.77%** | **62.43%** | **1.26%** | **10.94%** | **0.75%** |
| **2035** | **7.02%** | **0.59%** | **11.76%** | **5.87%** | **60.44%** | **1.55%** | **11.92%** | **0.85%** |
| **2040** | **7.58%** | **0.59%** | **11.69%** | **5.98%** | **58.55%** | **1.80%** | **12.78%** | **1.03%** |

County Share of Regional Employment

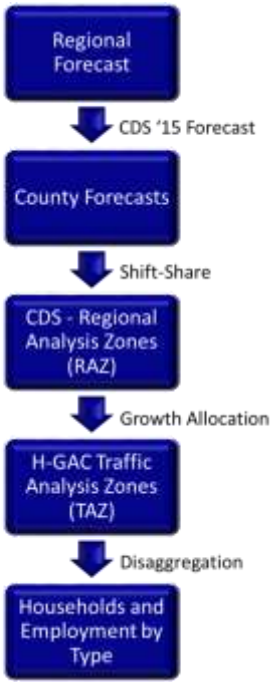
| Year | Brazoria | Cham-bers | Ft. Bend | Galves-ton | Harris | Liberty | Mont-gomery | Waller |
|---|---|---|---|---|---|---|---|---|
| 2010 | 3.08% | 0.45% | 5.41% | 3.48% | 81.55% | 0.52% | 5.10% | 0.41% |
| **2015** | **2.96%** | **0.45%** | **6.11%** | **3.30%** | **81.00%** | **0.46%** | **5.31%** | **0.40%** |
| **2020** | **2.84%** | **0.45%** | **6.72%** | **3.36%** | **79.88%** | **0.43%** | **5.83%** | **0.50%** |
| **2025** | **2.94%** | **0.45%** | **6.74%** | **3.29%** | **79.98%** | **0.41%** | **5.71%** | **0.48%** |
| **2030** | **3.28%** | **0.44%** | **6.92%** | **3.38%** | **79.36%** | **0.45%** | **5.70%** | **0.47%** |
| **2035** | **3.48%** | **0.44%** | **6.84%** | **3.76%** | **78.49%** | **0.55%** | **5.97%** | **0.47%** |
| **2040** | **3.86%** | **0.43%** | **6.77%** | **4.35%** | **77.08%** | **0.74%** | **6.29%** | **0.49%** |

A comparison of the various county-level forecasts for population and jobs that were considered by CDS, including the selected base forecast (the adjusted IRF), is given on the following pages.

# Small Area Forecast Method Overview

The previously mentioned Houston Galveston Area Council (H-GAC) forecast is available at smaller geographic areas in addition to its county and region-wide levels. CDS was tasked with providing an independent forecast using H-GAC's geographic forecasting structure and providing values for the same forecasting data variables. This meant that CDS would need to create datasets for all of H-GAC's Traffic Analysis Zones (TAZs) that include values for all output variables required by the agency's newest traffic model. In general, the methodology to create these independent forecast datasets included the following steps.

1. Begin with the CDS '15 forecast at the regional and county levels.
2. Investigate historical growth trends from:
   - the ~~deccenial~~decennial US Census and other Census Bureau sources such as the American Community Survey (ACS) and Longitudinal Employer-Household Dynamics (LEHD).
   - PCensus for ArcView, a program that distributes and displays Neilsen/Claritas demographic data which included 1990, 2000, and 2010 Census data, estimates for 2005 and 2014 as well as projections to 2019 at the census block level
   - historical employment information from the Texas Workforce Commission (TWC)/Bureau of Labor Statistics (BLS)
   - previous the H-GAC forecasting efforts
3. Investigate the opinions and forecasts of area governmental agencies, private organizations, and area experts.
4. Evaluate the potential growth inducing effects of the SH 249 Toll Road and other major infrastructure improvements, including the Grand Parkway.
5. Account for near-term residential and commercial developments that have been recently announced or begun.
6. Implement a "shift-share" forecasting methodology at the Regional Analysis Zone (RAZ) level. CDS created new RAZs for this project, as H-GAC no longer uses these geographies. This takes into account:
   - the historical trends
   - the known historical growth areas for housing and jobs
   - announced major developments
   - the land available for new development
   - likely areas in the community for new development based on locally influenced qualitative factors
7. Disaggregate the RAZ forecast into the smaller Traffic Analysis Zones (TAZ).
8. Disaggregate the TAZ forecast for households and employment by H-GAC's data categories.


Regional Forecast
CDS '15 Forecast
County Forecasts
Shift-Share
CDS - Regional Analysis Zones (RAZ)
Growth Allocation
H-GAC Traffic Analysis Zones (TAZ)
Disaggregation
Households and Employment by Type

# Forecasting Population and Jobs – County Control Totals

## County Level and Region Growth Projections

| | Year | 8-County CMSA | Brazoria | Cham-bers | Ft. Bend | Galveston | Harris | Liberty | Mont-gomery | Waller | Grimes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **POPULATION** | | | | | | | | | | | |
| Popu-lation by Year | 1970 | 2,181,316 | 108,312 | 12,187 | 52,314 | 169,812 | 1,741,913 | 33,014 | 49,479 | 14,285 | |
| | 1980 | 3,118,480 | 169,587 | 18,538 | 130,962 | 195,738 | 2,409,547 | 47,088 | 127,222 | 19,798 | |
| | 1990 | 3,731,131 | 191,707 | 20,088 | 225,421 | 217,399 | 2,818,199 | 52,726 | 182,201 | 23,390 | 18,790 |
| | 1995 | 4,021,841 | 206,421 | 21,416 | 264,235 | 224,620 | 3,002,304 | 57,713 | 219,190 | 25,941 | |
| | 2000 | 4,669,589 | 241,767 | 26,031 | 354,452 | 250,158 | 3,400,578 | 70,154 | 293,786 | 32,663 | 23,529 |
| | 2005 | 5,109,124 | 273,338 | 29,122 | 451,391 | 272,316 | 3,604,232 | 75,104 | 367,857 | 35,764 | 25,068 |
| | 2010 | 5,814,383 | 302,607 | 34,867 | 579,439 | 287,012 | 4,047,935 | 70,499 | 452,522 | 39,502 | 23,592 |
| | 2015 | 6,357,303 | 341,964 | 39,646 | 700,025 | 316,037 | 4,297,986 | 76,913 | 537,223 | 47,510 | 24,588 |
| | 2020 | 7,122,108 | 408,949 | 47,425 | 845,895 | 369,468 | 4,635,121 | 94,689 | 652,419 | 68,143 | 25,694 |
| | 2025 | 7,902,562 | 485,061 | 56,413 | 987,645 | 429,595 | 4,943,509 | 119,602 | 787,057 | 93,680 | 26,902 |
| | 2030 | 8,557,433 | 552,577 | 65,300 | 1,108,498 | 481,040 | 5,173,582 | 150,113 | 901,428 | 124,894 | 28,720 |
| | 2035 | 9,151,620 | 616,963 | 75,111 | 1,218,223 | 527,549 | 5,352,493 | 184,601 | 1,016,169 | 160,510 | 33,406 |
| | 2040 | 9,728,922 | 682,680 | 86,710 | 1,330,687 | 574,958 | 5,500,554 | 223,929 | 1,130,472 | 198,933 | 39,248 |
| | | | | | | | | | | | |
| Annual Average Pop. Growth by Period | '00-'10 | 114,479 | 6,084 | 884 | 22,499 | 3,685 | 64,736 | 35 | 15,874 | 684 | 6 |
| | '10-'20 | 130,773 | 10,634 | 1,256 | 26,646 | 8,246 | 58,719 | 2,419 | 19,990 | 2,864 | 210 |
| | '20-'30 | 143,532 | 14,363 | 1,787 | 26,260 | 11,157 | 53,846 | 5,542 | 24,901 | 5,675 | 303 |
| | '30-'40 | 117,149 | 13,010 | 2,141 | 22,219 | 9,392 | 32,697 | 7,382 | 22,904 | 7,404 | 1,053 |
| | '10-40 | 130,485 | 12,669 | 1,728 | 25,042 | 9,598 | 48,421 | 5,114 | 22,598 | 5,314 | 522 |
| **JOBS** | | | | | | | | | | | |
| Jobs by Year | 1970 | 904,142 | 33,873 | 3,509 | 14,159 | 58,934 | 772,907 | 7,919 | 9,403 | 3,438 | |
| | 1980 | 1,616,123 | 68,052 | 7,482 | 37,545 | 72,799 | 1,384,104 | 13,854 | 26,388 | 5,899 | |
| | 1990 | 1,811,944 | 70,950 | 6,048 | 50,546 | 80,224 | 1,539,045 | 14,251 | 43,268 | 7,612 | 7,460 |
| | 1995 | 1,922,608 | 72,482 | 6,921 | 61,908 | 83,826 | 1,619,544 | 14,951 | 54,602 | 8,373 | |
| | 2000 | 2,252,103 | 77,472 | 8,288 | 99,768 | 94,138 | 1,855,051 | 17,901 | 89,634 | 9,851 | 9,260 |
| | 2005 | 2,343,072 | 80,250 | 8,787 | 112,936 | 96,956 | 1,906,019 | 18,862 | 108,484 | 10,778 | 10,110 |
| | 2010 | 2,516,630 | 87,619 | 9,637 | 135,985 | 96,165 | 2,026,916 | 16,492 | 129,965 | 13,851 | 7,256 |
| | 2015 | 2,980,160 | 104,760 | 13,150 | 187,180 | 111,970 | 2,344,680 | 19,710 | 181,490 | 17,220 | 8,545 |
| | 2020 | 3,189,243 | 113,741 | 15,409 | 224,534 | 120,947 | 2,449,192 | 22,789 | 221,760 | 20,872 | 9,053 |
| | 2025 | 3,504,786 | 128,346 | 19,029 | 290,176 | 135,743 | 2,587,309 | 30,064 | 284,636 | 29,483 | 10,041 |
| | 2030 | 3,760,787 | 140,527 | 23,169 | 345,962 | 147,918 | 2,687,748 | 39,290 | 338,696 | 37,477 | 10,964 |
| | 2035 | 3,989,554 | 152,419 | 27,681 | 396,396 | 158,967 | 2,768,407 | 50,149 | 390,819 | 44,718 | 11,863 |
| | 2040 | 4,228,812 | 166,074 | 32,819 | 450,272 | 170,701 | 2,846,949 | 62,109 | 445,347 | 54,541 | 13,737 |
| | | | | | | | | | | | |
| Annual Average Jobs Growth by Period | '00-'10 | 26,453 | 1,015 | 135 | 3,622 | 203 | 17,187 | -141 | 4,033 | 400 | -200 |
| | '10-'20 | 67,261 | 2,612 | 577 | 8,855 | 2,478 | 42,228 | 630 | 9,179 | 702 | 180 |
| | '20-'30 | 57,154 | 2,679 | 776 | 12,143 | 2,697 | 23,856 | 1,650 | 11,694 | 1,661 | 191 |
| | '30-'40 | 46,802 | 2,555 | 965 | 10,431 | 2,278 | 15,920 | 2,282 | 10,665 | 1,706 | 277 |
| | '10-'40 | 57,073 | 2,615 | 773 | 10,476 | 2,485 | 27,334 | 1,521 | 10,513 | 1,356 | 216 |

# Use of the CDS-defined Regional Analysis Zones (RAZ)

In past forecasting projects, CDS used H-GAC's Regional Analysis Zones (RAZ) as an intermediate step in the shift-share process between the county-level control totals and the smaller TAZ geographies. Several years ago, H-GAC discontinued the use of RAZs for issuing and analyzing forecasts. Despite this, CDS continued to use RAZs as an intermediate step in the shift-share process as the TAZ structure H-GAC and CDM-Smith continued to use remained consistent with the RAZ boundaries.

H-GAC has also since developed a new TAZ structure, which CDS is now using for all forecasts going forward. Unlike the old TAZs, this new structure does not conform precisely to the boundaries of the previous RAZs, though the differences are generally fairly minor. Despite these minor differences, the new TAZs can be matched relatively well with a RAZ geography. CDS matched up the new TAZs as closely as possible to the old RAZ boundaries and created a redefined set of RAZs (map to right) fitted to the boundaries of the new TAZs. These zones are similar to H-GAC's RAZ but are not identical. This was done in order to continue to use the RAZ-level as an intermediate step in the shift-share process and to better enable the use of CDS' previous forecast work done for the old TAZ structure into the new structure.

**Map of CDS-defined Regional Analysis Zones**

Eight County Region

## Starting with Historical and Forecast Data at the RAZ and TAZ levels

It was beyond the scope of this report and the models available to the project team to produce a complete forecast for the entire Houston metropolitan region and every Traffic Analysis Zone (TAZ) from scratch. CDS began this forecasting process, as it has every forecast since the original 2011 Grand Parkway project, by using its most recent previous forecast as a starting point in terms of shift-share allocations at the RAZ and TAZ levels. This is done to incorporate and build upon previous work and expectations, as none of the transportation projects CDS has been asked to consider are assumed to be planned in lieu of others. CDS then compiled the data on recent trends (1990 to 2010) at the TAZ geographic level and recent forecasts by H-GAC. Those data were evaluated and adjustments were made to the forecasts using a variety of methods.

### The 2010 Base

The original CDS forecast done in 2011 began by identifying the appropriate 2010 base year data for population, housing units, and employment. This data has carried through all subsequent forecast projects with one major alteration. Beginning with the Grand Parkway Segments D-I forecast issued in 2015, CDS uses population in households and total households/occupied housing units instead of total population and housing units for both base and forecast years. The following is the process at which this information was obtained.

**Population and Households**

The 2010 population for TAZs was based on the household and household population at the Census block level from the 2010 Census.

**Employment (Jobs)**

Determining the 2010 base jobs by RAZ was substantially more difficult than housing and population. The reason is that there are no small area job estimates that are based on reliable data such as the Census. The U.S. Bureau of the Census County Business Patterns provides the most verifiable data but the lowest level of geography available is zip code. For their most recent forecast, H-GAC estimated the number of jobs in small areas using the county appraisal district data, augmented by information from InfoUSA™ and from internal and other sources not revealed to CDS.

One option that CDS has access to is the Nielsen/Claritas Business Facts® database for very small areas (Census block groups) through PCensus for ArcView. Claritas Business Facts® is developed using the InfoUSA™ data file as its base source. The InfoUSA™ database of over 12 million U.S. businesses is mined from over 4,900 Yellow Page directories published each year by Regional Bell Operating Companies (RBOC's) and independent phone companies. InfoUSA™ also compiles records from over 500 Business White Pages, regular White Pages, federal, state and municipal government Blue Pages, annual reports (publicly-held companies) industrial and regional business journals. InfoUSA™ then processes the information through several routines to ensure that the final product will be dependable for use by salespeople and marketers interested in using its contents for mailing campaigns. That includes calling existing and new businesses at least once each year to verify and collect new information.

Another option for current job estimates is to use the square feet of commercial buildings, office, retail, industrial and institutional buildings from the county appraisal districts to estimate the number of jobs

at each facility. CDS applied H-GAC's stated ratios of square feet per job as in the table on the right. Unfortunately that method did not produce consistent results.

Ultimately, the historical and current employment estimates were developed from a variety of sources. The 1990 and 2000 jobs estimates come from the special tabulations of the U.S. Decennial Census (CTTP) provided by the H-GAC. The 2005 estimates of jobs comes from the H-GAC's 2005-2035 forecast. The 2010 employment estimate was ultimately based on figures issued by Nielsen/Claritas based on the InfoUSA data previously described.

In all cases the values for the historical and base-year (2010) data for employment and population were adjusted proportionally to match the county-level totals provided by the Texas Workforce ~~Comission~~Commission/BLS and the CDS 2015 forecast control totals. The historical and projected population and jobs data by (CDS-defined) RAZ is presented in the appendices of this report.

**Square Feet per Employee by Building Activity**

| Building Type | SQFT Per Employee |
|---|---|
| **Education** | 1,400 |
| **Health Care** | 350 |
| **Lodging** | 917 |
| **Retail** | 500 |
| **Office** | 225 |
| **Public Assembly** | 1,000 |
| **Warehouse** | 1,000 |
| **Industrial** | 625 |
| **Mobile** | 0 |

### Switching the CDS Forecast to the new H-GAC TAZ structure

The new H-GAC TAZ forecast structure required for the SH 249 toll road project differs significantly from the one that formed the basis of CDS' previous forecasts. The old H-GAC TAZ structure contained 2,954 zones, a number that grew to over 3,500 zones in more recent forecasts as CDS and CDM-Smith divided several TAZs into smaller zones for a variety of purposes. The new H-GAC TAZ structure contains 5,217 zones, and much like with the RAZs, many of these zones do not conform to the boundaries of the old TAZs or the modified zones used in later forecasts.

In order to maintain the work done for previous forecasts, CDS sought to transfer the most recent forecast done using the old zones into the new TAZ structure. This was done through a variety of methods. In cases where the old and new zones where the same or very similar, the forecast assumptions were left unchanged. In other zones, CDS began with the data from the old structure zone or zones that most closely match the new TAZ geography and modified the assumptions based on the new base year historical data and the different expectations that may come from the area being geographically different. Similarly, in new TAZs that make up fractions of older, larger TAZs, CDS divided up the old zone's forecast data using the base year historical data and its own expectations for the future of the land inside the new TAZs.

Using this process, CDS was able to very nearly duplicate the growth distribution of its most recently issued prior forecast (Grand Parkway segments D through I) in the new H-GAC TAZ structure. This data would later be further adjusted based on CDS' SH 249 project-specific research.

## Future Transportation Network Assumption

In preparing the small area forecasts, it is clear that future transportation networks and the accessibility of the small area zones are affected by transportation infrastructure improvements over time. It was beyond the scope of this work to develop sophisticated models that took into account all changes in the transportation network including both highways and public transit. Therefore for this analysis it was assumed that transportation improvements would continue over time to serve the existing and new residents of the community and that any transportation funding crisis, regardless of how real it may seem today, will be ultimately resolved because of citizen demands. Therefore, for the purposes of this effort, it was assumed that the relative accessibility of the various zones in the region would not significantly change over time. However, recently opened and planned facilities such as the extension of the Fort Bend Toll Road and the Westpark Toll Road, the SH 249/Tomball Tollway, the Grand Parkway, the Fort Bend and City of Houston Major Thoroughfare Plans, known enhancements to existing facilities such as improvements to US 290, SH 288, I-45 South and I-45 North, and light rail extensions were included.

## Contact with Area Agencies and Organizations

In the course of developing small area forecasts for previous Traffic and Revenue studies, CDS sought out the demographic and economic projections and opinions from key public sector agencies and officials serving both the key areas around the toll roads in question and the Houston region as a whole. CDS's goal was to understand the projections used by these organizations and to account for knowledge and insight gained from conversations with the local organizations. Many of the organizations contacted stated that they did not develop their own projections, and instead utilized those provided for the region by H-GAC. As previously mentioned, H-GAC projections were also considered in CDS's efforts herein. Data from these organizations was collected both by contacting the organizations directly and researching publically available data offered on their websites and other sources.

CDS spoke with and reviewed an initial forecast with the following offices and organizations (listed in the order in which meetings took place):

- Montgomery Chamber of Commerce
- Magnolia Economic Development Corporation
- Harris County Precinct 4
- Montgomery County Precinct 2
- Grimes County Precinct 2
- Grimes County Precinct 4
- City of Navasota

The comments made by these offices and organizations were factored into many of the adjustments made to the small-area forecasts for this project.

## The RAZ-Level Forecasts

The forecasts at the RAZ level of geography were produced using a shift-share forecasting methodology accounting for land availability throughout the process. The methodology involved establishment of county-level forecasts from 2010 to 2040. Then the shares of the future county households, population and jobs were estimated for each 5-year period. An example of the methodology, for Waller County is shown below.

### Shift Share Analysis Example

RAZ Shares – Share of County Job Growth in Each 5-Year Period

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **140** | | 21.9% | 0.8% | 13.8% | 22.2% | 22.4% | 22.7% | 23.8% | 24.3% | 24.3% |
| **141** | | 6.9% | 4.7% | 9.5% | 11.1% | 10.5% | 10.1% | 9.7% | 9.5% | 9.5% |
| **142** | | 67.1% | 44.0% | 68.1% | 33.3% | 34.1% | 34.1% | 34.7% | 35.0% | 36.0% |
| **143** | | 4.1% | 50.5% | 8.6% | 33.3% | 33.0% | 33.1% | 31.8% | 31.1% | 30.2% |
| | | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

$$\text{Jobs}_{\text{Year n}} = \text{Jobs}_{\text{Year n-5}} + \text{RAZ Share}_{\text{Year n}} \times [\text{County Jobs}_{\text{Year n}} - \text{County Jobs}_{\text{Year n-5}}]$$

Jobs – Total Number of Jobs in the RAZ in the Year Shown

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **140** | 4,238 | 4,729 | 4,737 | 5,010 | 5,868 | 7,297 | 9,152 | 11,140 | 13,102 | 14,927 |
| **141** | 1,874 | 2,029 | 2,072 | 2,260 | 2,691 | 3,361 | 4,186 | 4,995 | 5,760 | 6,473 |
| **142** | 1,227 | 2,729 | 3,137 | 4,487 | 5,774 | 7,951 | 10,734 | 13,634 | 16,458 | 19,159 |
| **143** | 274 | 365 | 833 | 1,004 | 2,291 | 4,400 | 7,099 | 9,750 | 12,261 | 14,523 |
| **Total** | 7,612 | 9,851 | 10,778 | 12,761 | 16,623 | 23,008 | 31,172 | 39,518 | 47,581 | 55,082 |

In each case, the shares of future growth were based on:

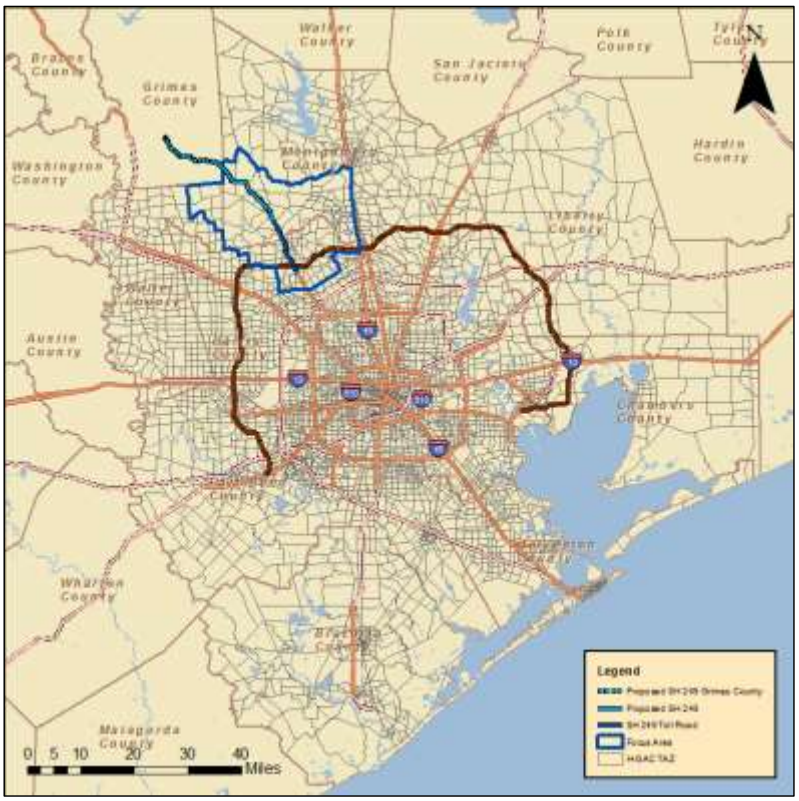
- recent history of growth capture
- information on growth from area agencies and organizations
- expected future capture of the growth
- estimation of the capacity of the vacant developable or redevelopable land in the RAZ for new development

# Distributing RAZ-Level Forecast Data to the TAZ and SAZ

## RAZ to TAZ Allocation

The forecasts for the 199 RAZs were distributed to the smaller TAZs, for the entire 8-county region. The map on the right illustrates the 5,217 H-GAC TAZs in the region as well as a "Focus Area" in which particular attention to new and potential development was paid.

**H-GAC Traffic Analysis Zone (TAZ) Structure and Focus Area**




The methodology for the distribution of the expected growth within the RAZs to the smaller TAZs was straightforward. For this effort, the CDS team:

1. Reviewed information for each RAZ, including aerial photographs, data from the appraisal districts, information from area agencies and previous TAZ-level forecasts prepared by the H-GAC;

2. Made an assessment as to the current distribution of housing units, jobs and population within each TAZ as a percentage of the total RAZ (using the team knowledge of trends and development plans); and

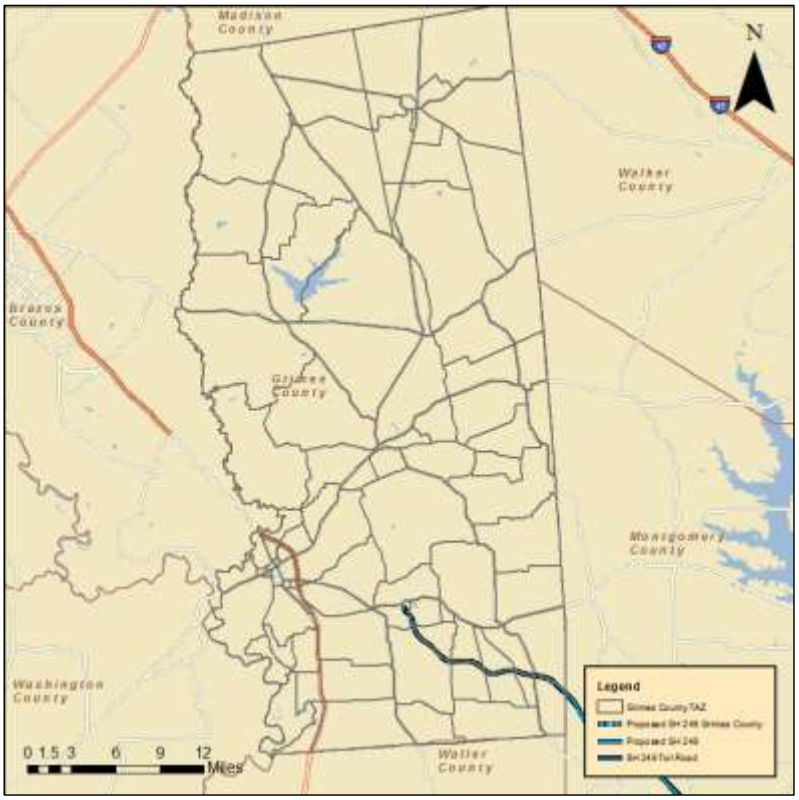
3. Made an assessment of the future growth of housing and jobs in each TAZ of the expected growth of the entire RAZ; and applied those growth percentages to the expected RAZ total growth to produce estimates of future growth of housing, population and jobs in the smaller zones.

# Forecasting Grimes County

## Creation of TAZs

Grimes County is not part of H-GAC's 8 county forecasting region, and thus, did not have a pre-existing TAZ structure to work with. For the purposes of this project, CDM Smith defined 96 zones to be used as TAZs within Grimes County. These zones are largely made up of groups of Census block and block group geographies.

**Grimes County (TAZ) Structure**




## County to TAZ Allocation

CDS employed the same shift-share process for Grimes County TAZs as it did for the TAZs in the 8 county area. One key difference was that the intermediate step of allocating the county-wide forecasts to a RAZ level. For Grimes County only, the county control totals are allocated directly to the TAZ. The relatively small number of TAZs within Grimes County did not require an RAZ level to make adjusting the forecasts more ~~managble~~manageable, as it does in counties with more zones.

## Summary of Considered Adjustments

The following tables illustrate the considered changes in the forecasts at the small area (RAZ and TAZ) level. In some cases, change in the forecast was required, in other cases, the original projections adequately included the growth from the newly announced projects or changing conditions. Many of these considered adjustments were noted by the officials and organizations that CDS met with during the course of this project. Nearly all of the items on these lists are located within the Focus Area illustrated on the previous page. There are two tables, one for adjustments related to population and housing (residential developments) and one for adjustments related to employment (commercial developments). A total of 49 zones in the main 8-County area and 67 zones in Grimes County (population and employment adjustments combined) were specifically examined and adjusted for this forecast.

### Population and Housing Adjustments

| TAZ | RAZ | County | Note/Adjustment |
|---|---|---|---|
| 2113 | 118 | Harris | Backfilling with homes now, adjusted up slightly |
| 2118 | 119 | Harris | Backfilling with homes now, adjusted up slightly |
| 2187 | 123 | Harris | New homes infilling, adjusted up |
| 2194 | 120 | Harris | Infill development occurring, adjusted up |
| 2195 | 120 | Harris | Infill development occurring, adjusted up |
| 2196 | 120 | Harris | Infill development occurring, adjusted up |
| 2226 | 122 | Harris | Backfilling with homes near Cypress Creek, adjusted up slightly |
| 2227 | 122 | Harris | Backfilling with homes near Cypress Creek, adjusted up slightly |
| 2242 | 122 | Harris | Backfilling with homes near Cypress Creek, adjusted up slightly |
| 2243 | 122 | Harris | Housing developing in this area now, expected to continue, adjusted up |
| 2243 | 122 | Harris | Backfilling with homes near Cypress Creek, no adjustment needed |
| 2246 | 121 | Harris | Housing developing in this area now, expected to continue, adjusted up |
| 4209 | 139 | Montgomery | Not enough land for intense development, adjusted down |
| 4210 | 139 | Montgomery | Not enough land for intense development, adjusted down |
| 4211 | 139 | Montgomery | Additional housing growth driven by extension of Nicholls Sawmill Road, adjusted up slightly |
| 4212 | 139 | Montgomery | 600 lots proposed in "Glen Oaks", adjusted up |
| 4215 | 139 | Montgomery | Woodtrace neighborhood will continue to add housing along Woodlands parkway extension, no adjustment needed |
| 4220 | 139 | Montgomery | "Legacy" development of 1,100 acres and 3,000 houses is proposed as well as 500 acre/1,000 home "Magnolia Ridge", adjusted up slightly |
| 4221 | 139 | Montgomery | "Legacy" development of 1,100 acres and 3,000 houses is proposed, adjusted up slightly |
| 4223 | 139 | Montgomery | 175 acre expansion of "Mostyn Manor", some floodplain in zone, no adjustment necessary |
| 4228 | 139 | Montgomery | 1,100 townhomes planned on west side, adjusted up |
| 4235 | 138 | Montgomery | 1,500 to 1,700 home "Magnolia Woods" planned also parts of the 6,000 acre "Woodard Tract" located here, adjusted up |
| 4236 | 138 | Montgomery | Part of 6,000 acre "Woodard Tract", housing expected, adjusted up |

| TAZ | RAZ | County | Note/Adjustment |
|---|---|---|---|
| 4237 | 138 | Montgomery | Location of "Bluejack National" golf course, adjusted up slightly |
| 4239 | 138 | Montgomery | Heavily deed restricted area, housing development should be limited, adjusted down |
| 4243 | 138 | Montgomery | Part of 6,000 acre "Woodard Tract", housing expected there and in Crown Ranch and High meadow Ranch Estates, adjusted up |
| 4254 | 137 | Montgomery | Sendera Ranch and Montgomery Trace, development limited due to lack of vacant land, no adjustment needed |
| 4265 | 136 | Montgomery | Handful of proposed housing, adjusted up |
| 4580 | 190 | Chambers | Growth severely limited by wetlands, adjusted down significantly |
| 9327 | - | Grimes | North side of SH 105, 3 miles out of Montgomery county, expected to be a growth corridor, forecast adjusted up |
| 9359 | - | Grimes | Growth in Bedias expected to be limited, forecast adjusted down |
| 9434 | - | Grimes | Growth not expected to match original rate, forecast adjusted down |
| 9436 | - | Grimes | Growth expected along FM 1774 near Renaissance Festival grounds and along FM 302, forecast sufficient |
| 9439 | - | Grimes | Eastern Navasota, expected to be where the city's growth is concentrated in the future, forecast adjusted up |
| 9442 | - | Grimes | National Oilwell Varco property, more land than they use, some housing expected, forecast adjusted up slightly |
| 9452 | - | Grimes | Growth in Bedias expected to be limited, forecast adjusted down |
| 9531 | - | Grimes | Growth potential coming from College Station to the West, forecast adjusted up |
| 9532 | - | Grimes | Growth moving out of Montgomery County and up FM 1774 expected, forecast adjusted up slightly |
| 9533 | - | Grimes | Bordered by Montgoemry County line and SH 105, and expected corridor for growth, forecast adjusted up |
| 9535 | - | Grimes | Eastern Navasota, expected to be where the city's growth is concentrated in the future, forecast adjusted up |
| 9550 | - | Grimes | King Oaks subdivision currently selling lots and 200 acres recently purchased nearby for possible housing development, growth potential coming from College Station to the West, forecast adjusted up |
| 9570 | - | Grimes | Large tract land owners said to be interested in selling to developers, forecast adjusted up |
| 9571 | - | Grimes | Large tract land owners said to be interested in selling to developers, forecast adjusted up |
| 9573 | - | Grimes | Located at SH 249 route and SH 105 intersection, forecast sufficient |
| 9604 | - | Grimes | Eastern Navasota, expected to be where the city's growth is concentrated in the future, forecast adjusted up |
| 9607 | - | Grimes | Eastern Navasota, expected to be where the city's growth is concentrated in the future, forecast adjusted up |
| 9618 | - | Grimes | Railroad and floodplain issues should limit growth, forecast adjusted down |
| 9619 | - | Grimes | Central Navasota, limited opportunity for growth, forecast adjusted down |
| 9642 | - | Grimes | Central Navasota, limited opportunity for growth, forecast adjusted down |
| 9645 | - | Grimes | Growth in Bedias expected to be limited, forecast sufficient |

| TAZ | RAZ | County | Note/Adjustment |
|---|---|---|---|
| 9647 | - | Grimes | Growth in Bedias expected to be limited, forecast sufficient |
| 9662 | - | Grimes | Bordered by SH 249 route and SH 105, forecast adjusted up |
| 9665 | - | Grimes | Bordered by SH 249 route and FM 302, forecast adjusted up |
| 9666 | - | Grimes | Bordered by SH 249 route and FM 302, forecast adjusted up |
| 9667 | - | Grimes | Bordered by SH 249 route and FM 302, forecast adjusted up |
| 9669 | - | Grimes | Bordered by SH 249 route and SH 105, forecast adjusted up slightly |
| 9670 | - | Grimes | Bordered by FM 1774 and SH 249 route, forecast ~~adjsuted~~adjusted up |
| 9671 | - | Grimes | Crown Ranch subdivision under construction now, near SH 249 route and SH 105, forecast adjusted up |
| 9674 | - | Grimes | Located near SH 249 route and SH 105 intersection, forecast adjusted up |
| 9677 | - | Grimes | SH 105 frontage, forecast adjusted up slightly |
| 9678 | - | Grimes | Bordered by SH 249 route and SH 105, forecast adjusted up |
| 9682 | - | Grimes | Large zone with SH 249 route frontage, forecast adjusted up |
| 9683 | - | Grimes | SH 249 route frontage, forecast adjusted up |

## Employment Adjustments

| TAZ | RAZ | County | Note/Adjustment |
|---|---|---|---|
| 2139 | 118 | Harris | Developing as industrial, new county Precinct facility to be built as well, adjusted up slightly |
| 2140 | 118 | Harris | Developing as industrial, adjusted up |
| 2245 | 121 | Harris | Job growth expected to occur elsewhere in area, adjusted down |
| 4206 | 139 | Montgomery | Expected to be industrial corridor along FM 1488 as well as site of Lone Star College campus, adjusted up |
| 4208 | 139 | Montgomery | Expected to be industrial corridor along FM 1488 as well as site of Lone Star College campus, adjusted up |
| 4209 | 139 | Montgomery | Not enough land for intense development, adjusted down |
| 4210 | 139 | Montgomery | Not enough land for intense development, adjusted down |
| 4215 | 139 | Montgomery | Retail expected in front of Woodtrace, adjusted up |
| 4216 | 139 | Montgomery | No dense job growth expected, adjusted down |
| 4217 | 139 | Montgomery | No dense job growth expected, adjusted down |
| 4222 | 139 | Montgomery | 20 acres purchased for major retail center with grocery and home improvement anchors, adjusted up |
| 4226 | 139 | Montgomery | New high school planned, post 2020, adjusted up slightly |
| 4228 | 139 | Montgomery | Major retail and office/warehouse business park planned near west end of zone as well as proposed Tomball Regional Hospital location, adjusted up significantly |
| 4230 | 138 | Montgomery | New medical facilities planned, expected to draw employment in office/warehouse type buildings, adjusted up |
| 4237 | 138 | Montgomery | Location of "Bluejack National" golf course community, 368 homes and 10+ year buildout, adjusted up slightly |
| 4240 | 138 | Montgomery | Planned new schools and some rail-served industrial possibilities, no adjustments needed |
| 4258 | 136 | Montgomery | New middle and high school planned, retail expected on north end, adjusted up |
| 4265 | 136 | Montgomery | New business park under construction, adjusted up |
| 4272 | 136 | Montgomery | Planned grocery-anchored shopping center and business park, adjusted up significantly |
| 4580 | 190 | Chambers | Growth severely limited by wetlands, adjusted down significantly |
| 9327 | - | Grimes | North side of SH 105, 3 miles out of Montgomery county, expected to be a growth corridor and elementary school expansion already planned, forecast adjusted up |
| 9436 | - | Grimes | Renaissance Festival grounds and FM 1774 and FM 302 frontage, near SH 249 route, forecast sufficient |
| 9442 | - | Grimes | National Oilwell Varco property, more land than they use, retail and commercial expected along SH 105, forecast adjusted up |
| 9484 | - | Grimes | Growth not expected to be significant in small Navasota blocks, forecast adjusted down |
| 9516 | - | Grimes | Too much floodplain for significant growth, forecast adjusted down |
| 9530 | - | Grimes | Too much floodplain for significant growth, forecast adjusted down |
| 9533 | - | Grimes | SH 105 frontage, 300 acres for sale now, forecast adjusted up slightly |

| TAZ | RAZ | County | Note/Adjustment |
|---|---|---|---|
| 9573 | - | Grimes | Located at SH 249 route and SH 105 intersection, forecast adjusted up |
| 9584 | - | Grimes | Too much floodplain for significant growth, forecast adjusted down |
| 9586 | - | Grimes | Navasota business park and National Oilwell Varco facility located here, forecast sufficient |
| 9598 | - | Grimes | Walmart location, SH 6 and SH 105 frontage, forecast adjusted up |
| 9604 | - | Grimes | SH 6 and SH 105 frontage, forecast adjusted up slightly |
| 9607 | - | Grimes | Navasota High School, SH 6 frontage, forecast adjusted up |
| 9610 | - | Grimes | TDCJ Luther Unit Prison, forecast adjusted up slightly |
| 9613 | - | Grimes | Growth not expected to be significant around Singleton, forecast adjusted down |
| 9614 | - | Grimes | Growth not expected to be significant in small Navasota blocks, forecast adjusted down |
| 9618 | - | Grimes | Small business park located here, room for expansion but not at rates previously used, forecast adjusted down |
| 9619 | - | Grimes | Growth not expected to be significant in small Navasota blocks, forecast adjusted down |
| 9622 | - | Grimes | Growth not expected to be significant in small Navasota blocks, forecast adjusted down |
| 9623 | - | Grimes | TDCJ Wallace Pack Unit Prison, forecast adjusted up slightly |
| 9624 | - | Grimes | TDCJ Luther Unit Prison, forecast sufficient |
| 9662 | - | Grimes | Bordered by SH 249 route and SH 105, high capacity electricity and fiber-optic infrastructure in place now for industrial users, forecast adjusted up |
| 9665 | - | Grimes | Bordered by SH 249 route and FM 302, forecast adjusted up slightly |
| 9666 | - | Grimes | Bordered by SH 249 route and FM 302, forecast adjusted up |
| 9667 | - | Grimes | Bordered by SH 249 route and FM 302, forecast adjusted up |
| 9669 | - | Grimes | Bordered by SH 249 route and SH 105, high capacity electricity and fiber-optic infrastructure in place now for industrial users, forecast adjusted up slightly |
| 9670 | - | Grimes | FM 1774 and SH 249 route frontage, forecast adjusted up |
| 9671 | - | Grimes | SH 105 and SH 249 route frontage, high capacity electricity and fiber-optic infrastructure in place now for industrial users, forecast adjusted up |
| 9674 | - | Grimes | Located near SH 249 route and SH 105 intersection, forecast adjusted up |
| 9677 | - | Grimes | SH 105 frontage, forecast adjusted up slightly |
| 9678 | - | Grimes | Bordered by SH 249 route and SH 105, forecast adjusted up |
| 9682 | - | Grimes | Large zone with SH 249 route frontage, forecast sufficient |
| 9683 | - | Grimes | SH 249 route frontage, forecast adjusted up |

## Disaggregation of Households and Employment by Type

In addition to producing forecasts using H-GAC's new TAZ structure, CDS was tasked with providing disaggregated forecasts for households and employment as H-GAC does. The household forecast was disaggregated by multiple characteristics: household size, number of workers living in household, and household income level. The employment disaggregation is more straightforward, dividing up the total number of jobs into ten industry-specific categories. All of these categories and ~~disaggregations~~disaggregation were defined by H-GAC, and CDS was tasked with matching H-GAC's format in the data that was delivered. The process CDS used to produce these disaggregated forecasts is described in the figures below. CDS did not provide this disaggregation for Grimes County, as there was no preexisting forecast to work with.

### Household Disaggregation

| Task | Step | Action |
|---|---|---|
| Create master file of households by size, by TAZ for CDS projections | 1 | Create 2010 base file of number of HHs by size by TAZ from Census |
| | 2 | Compute average HH size by TAZ |
| | 3 | Create table of breakdown of HHs by size for typical TAZs by average HH size |
| | 4 | Using average HH size for each TAZ in future periods, compute distribution of HHs by size by TAZ in all future periods |
| Create starting Base Demographic File | 5 | Use H-GAC file percentages of workers per HH and HH income by HH size to compute TAZ breakdowns of all variables for all future periods – using our number of HHs by size – rounded to integers |
| | 6 | Locate TAZs where the CDS forecast contains data but the H-GAC forecast does not and fill these gaps with shares from similar nearby TAZs |
| Make adjustments in the Focus Area based upon reasonable | 7 | From the Base Demographic File completed in 5, Compute the average number of workers per household and the average income of each TAZ into future periods |
| | 8 | Evaluate each TAZ in the Focus Area on future average income projections and make adjustment to the Base Demographic File based on CDS expectations of future income shifts. |

### Example Household Disaggregated Data File Structure

The resultant file for each TAZ may look like this, with a maximum of 70 records per TAZ. There are 5 categories for HH size, 3 for workers, and 5 for income (see chart to the right for income category definitions)

| TAZ | HHSZ | WORKERS | HH INCOME | HHS |
|---|---|---|---|---|
| 1 | 1 | 0 | 0 | 2 |
| 1 | 1 | 1 | 0 | 3 |
| 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 3 | 9 |
| 1 | 2 | 0 | 4 | 4 |
| 1 | 2 | 1 | 1 | 6 |
| 1 | 2 | 2+ | 2 | 12 |
| 1 | 2 | 2+ | 3 | 25 |
| 1 | 3 | 1 | 2 | 11 |
| 1 | 3 | 2+ | 3 | 6 |
| 1 | 4 | 1 | 0 | 11 |
| 1 | 4 | 2+ | 1 | 2 |
| 1 | 4 | 2+ | 2 | 5 |
| 1 | 5+ | 1 | 0 | 1 |
| 1 | 5+ | 2+ | 2 | 1 |

### H-GAC Income Range Categories

| Income Code | Household Income Range |
|---|---|
| 0 | $0- 22K |
| 1 | $23-40K |
| 2 | $41-65K |
| 3 | $66-100K |
| 4 | $101K+ |

| | | |
|---|---|---|
| expectation of demographic shifts | 9 | Evaluate each TAZ in the Focus Area on future average workers per HH projections and make adjustment to the Base Demographic File based on CDS expectations of future demographic shifts. |

## Employment ~~Disaggregagtion~~Disaggregation

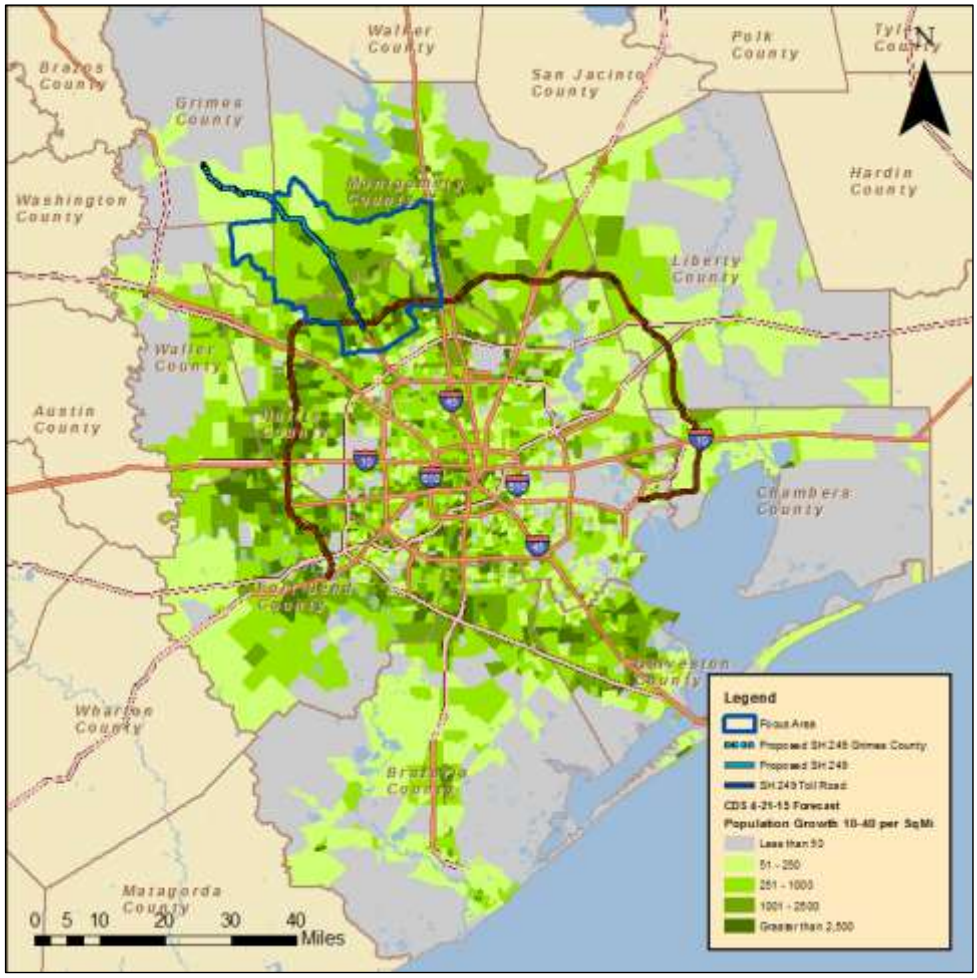
### H-GAC Employment Categories

| Abbreviation | Description |
|---|---|
| EDUK12 | Primary and secondary education |
| EDUPOST | Post-secondary education |
| ENTERTAIN | Entertainment and media * |
| RESTAUR | Restaurant and hospitality * |
| RETAIL | Retail |
| INDUST | Industrial and manufacturing |
| OFFICE | Office, non-medical |
| MED1 | Hospital and clinic |
| MED2 | Medical professional |
| GOVERN | Government, public agency |

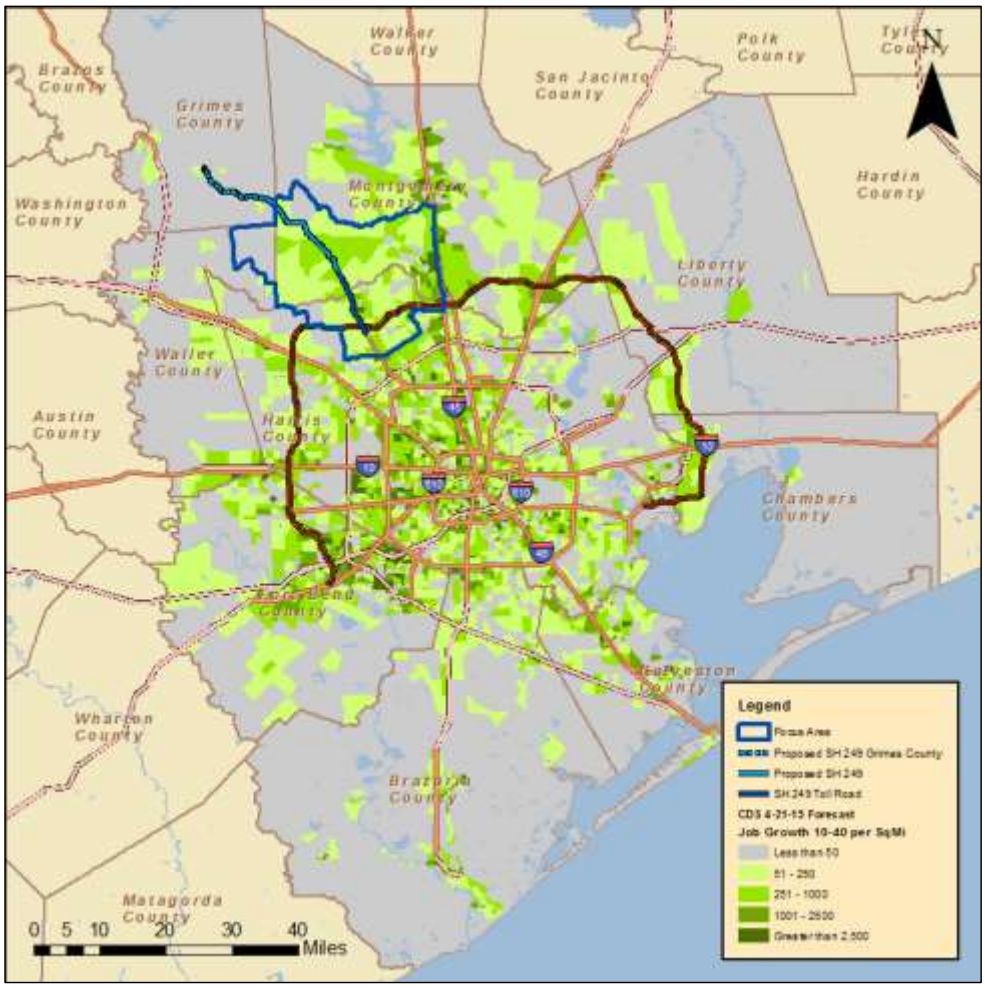
* These two categories remain in H-GAC's disaggregated forecast structure but contain no data throughout every TAZ and forecast year. CDS also does not forecast jobs for these categories, but retains their place in the table structure. Jobs that would fall in these two categories are assumed to be located in the retail category.

| Task | Step | Action |
|---|---|---|
| Create starting Base Employment File | 1 | Use H-GAC file percentages of jobs by land use category and apply to CDS jobs forecast to compute TAZ breakdowns of all categories for all future periods. |
| | 2 | Locate TAZs where the CDS forecast contains data but the H-GAC forecast does not and fill these gaps with shares from similar nearby TAZs |
| Make adjustments in the Focus Area | 3 | Within the focus area only, evaluate each TAZ to determine if the distribution of jobs by category is reasonable based on current trends and CDS expectations. |
| | 4 | Make adjustments as necessary and create the final jobs file. |

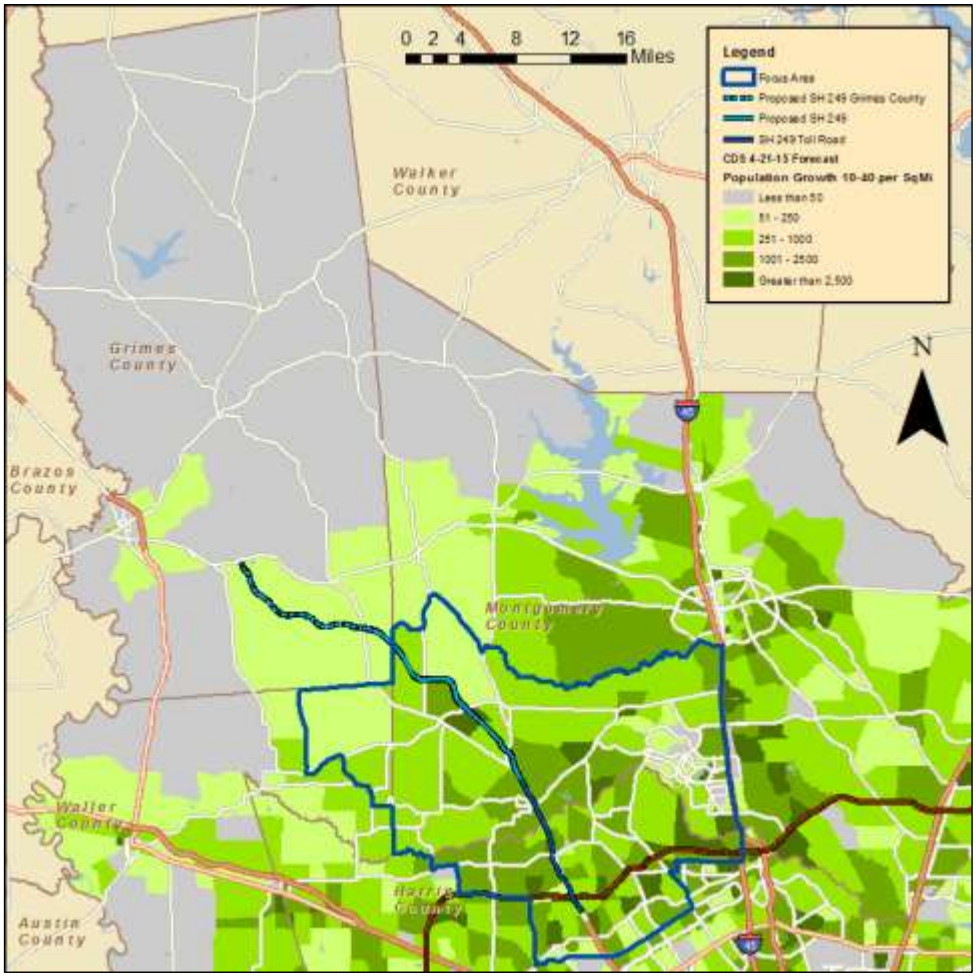
## 2010 – 2040 Projected Population Growth per Square Mile by TAZ



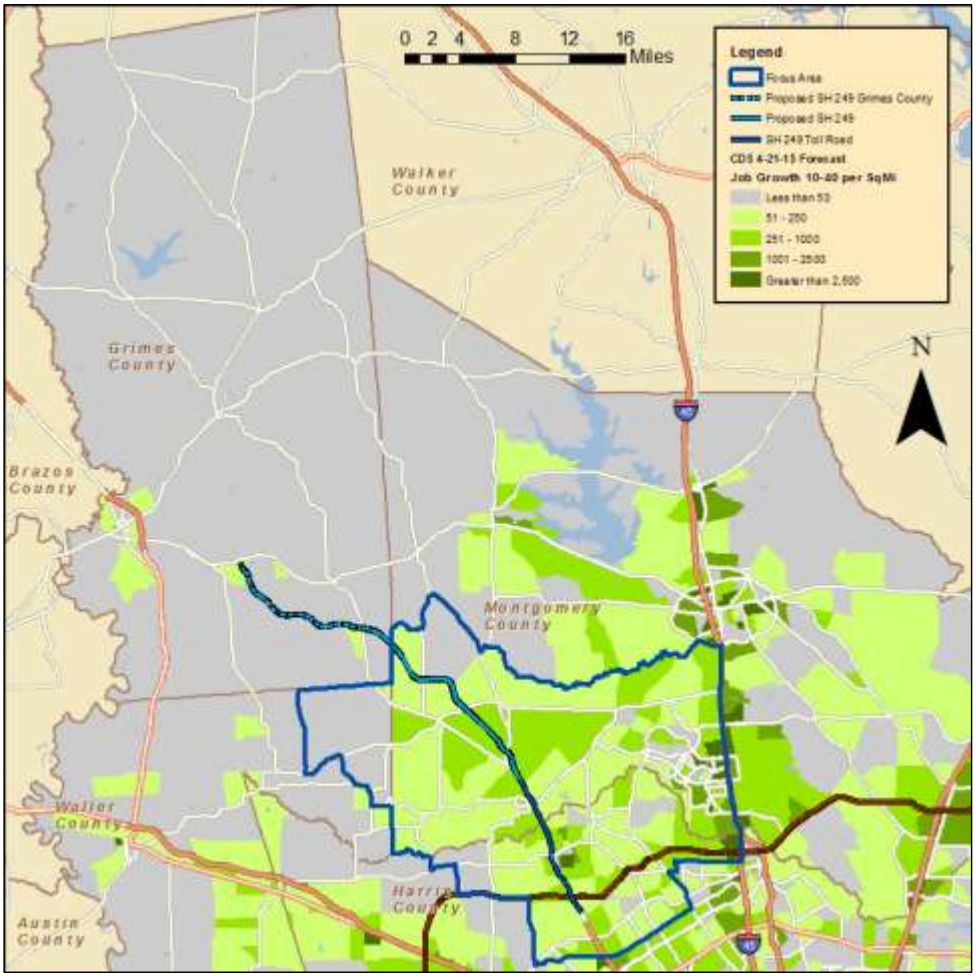
## 2010 – 2040 Projected Job Growth per Square Mile by TAZ



## 2010 – 2040 Projected Population Growth per Square Mile by TAZ – Focus Area



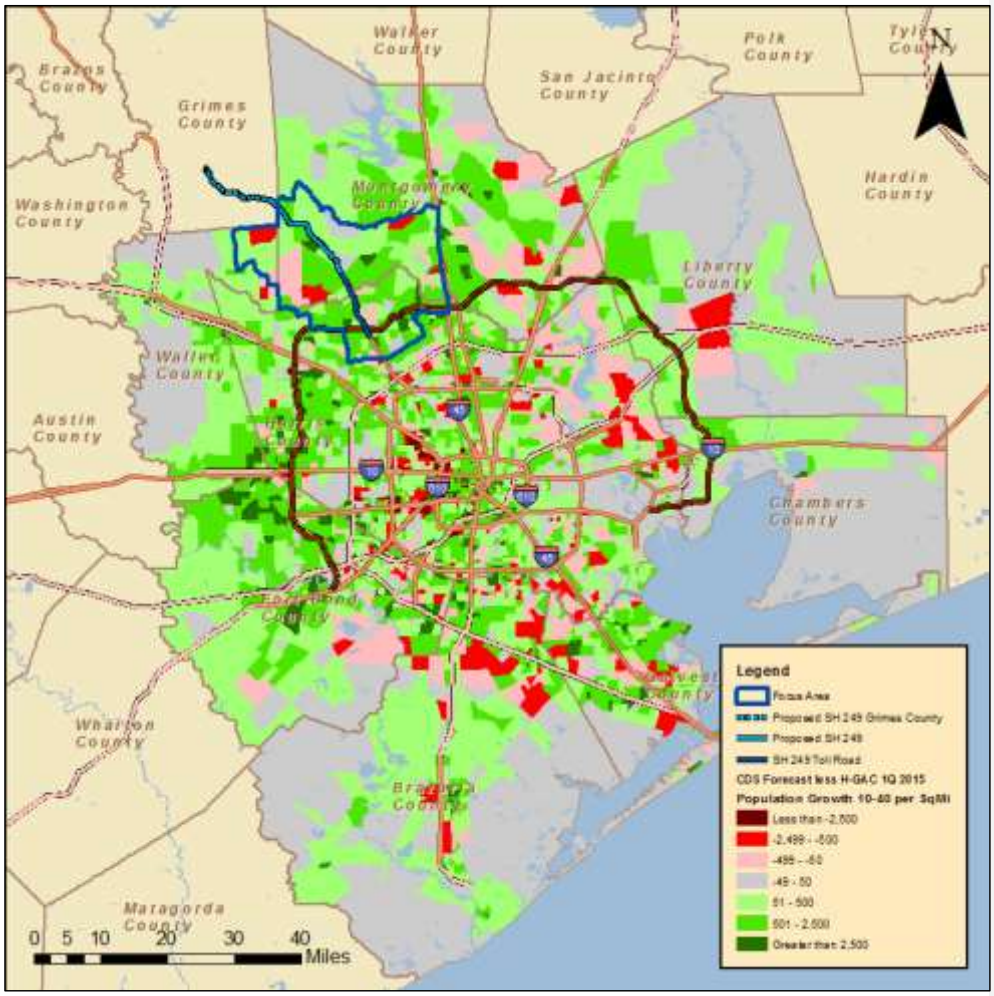
## 2010 – 2040 Projected Job Growth per Square Mile by TAZ – Focus Area



The following charts compare this most recent CDS forecast with the H-GAC 2040 forecast provided to CDS in the first quarter of 2015. The green areas are where the CDS forecast of population or job growth from 2010 to 2040 is greater than that of H-GAC. The red areas are those where CDS' forecasts are lower than H-GAC. These charts divide the change by the area of the zone to eliminate bias for large vs. small zones. It is important to note that the H-GAC forecasts are expected to be modified and

## Comparison of Population Growth Density 2010 – 2040

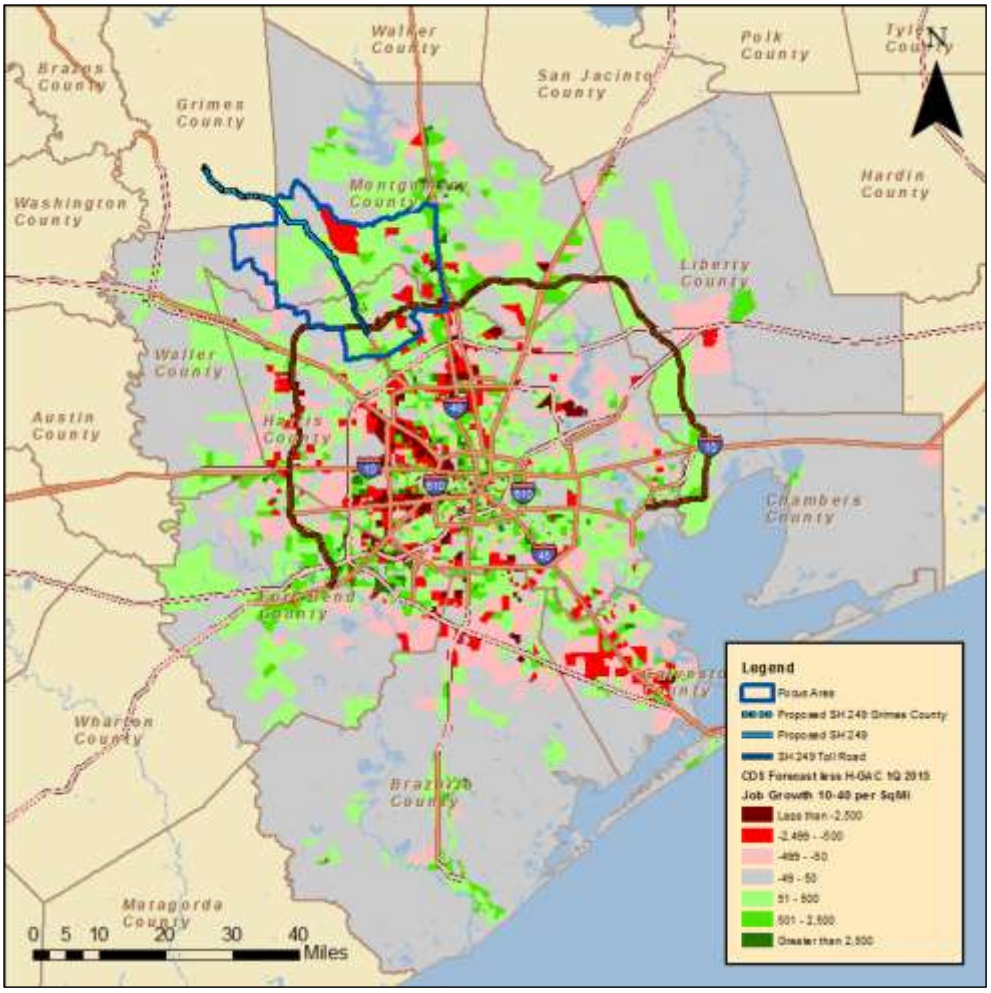
CDS Forecast Compared with 1Q 2015 H-GAC 2040 Forecast by TAZ



updated every quarter for the foreseeable future. No Grimes County data is mapped, as H-GAC does not forecast Grimes County.

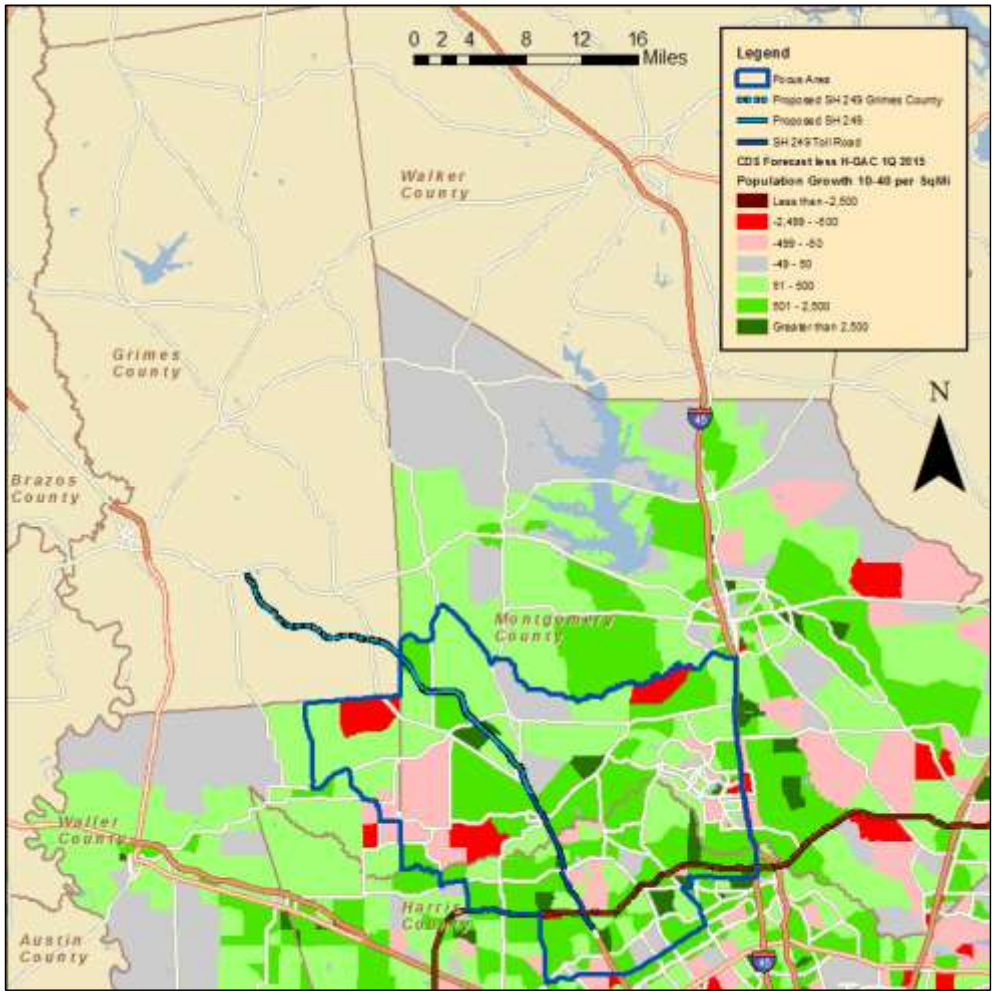
## Comparison of Job Growth Density 2010 – 2040

CDS Forecast Compared with 1Q 2015 H-GAC 2040 Forecast by TAZ



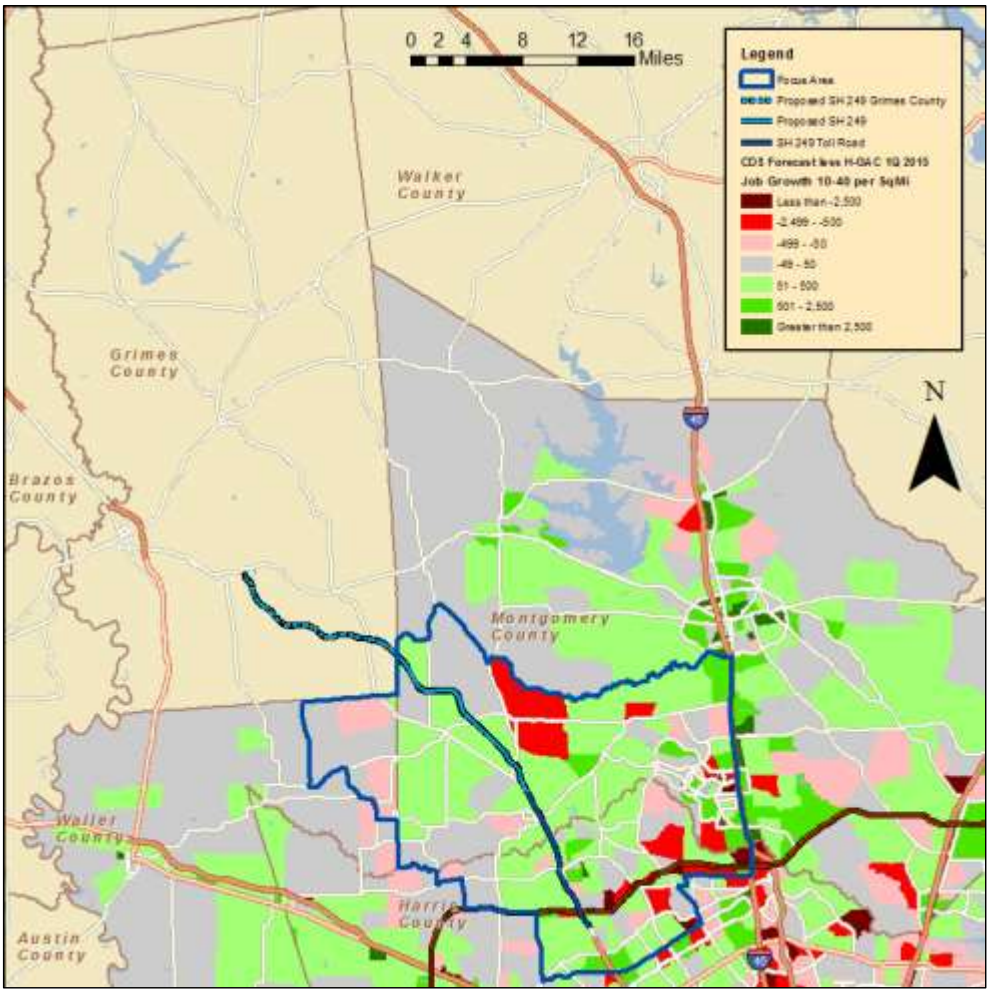
## Comparison of Population Growth Density in Focus Area 2010 – 2040

CDS Forecast Compared with 1Q 2015 H-GAC 2040 Forecast by TAZ



## Comparison of Job Growth Density in Focus Area 2010 – 2040

CDS Forecast Compared with 1Q 2015 H-GAC 2040 Forecast by TAZ



# Project Deliverables

In addition to this report, three electronic datasets for each of the three forecasts were produced and sent to CDM Smith. A list of the delivered files is below. The files are listed in order of production, with the initial 8 County forecast listed first (dated 4-21-2015) followed by the Grimes County (6-30-2015) forecasts.

1. Excel spreadsheet files:
    a. ***4-21-2015 CDS Forecast 2010-2040 Data and Summary.xlsx***
    b. ***6-30-2015 CDS Forecast 2010-2040 Data and Summary for Grimes.xlsx***
    c. ***taz5217_employment_2010_CDS_4-21-15.xlsx***
    d. ***taz5217_employment_2015_CDS_4-21-15.xlsx***
    e. ***taz5217_employment_2020_CDS_4-21-15.xlsx***
    f. ***taz5217_employment_2025_CDS_4-21-15.xlsx***
    g. ***taz5217_employment_2030_CDS_4-21-15.xlsx***
    h. ***taz5217_employment_2035_CDS_4-21-15.xlsx***
    i. ***taz5217_employment_2040_CDS_4-21-15.xlsx***
    j. ***taz5217_households_tad_2010_CDS_4-21-15.xlsx***
    k. ***taz5217_households_tad_2015_CDS_4-21-15.xlsx***
    l. ***taz5217_households_tad_2020_CDS_4-21-15.xlsx***
    m. ***taz5217_households_tad_2025_CDS_4-21-15.xlsx***
    n. ***taz5217_households_tad_2030_CDS_4-21-15.xlsx***
    o. ***taz5217_households_tad_2035_CDS_4-21-15.xlsx***
    p. ***taz5217_households_tad_2040_CDS_4-21-15.xlsx***
2. ARC GIS shape files:
    a. ***4_21_2015_CDS_Forecast_2010_2040_8_County.cpg***
    b. ***4_21_2015_CDS_Forecast_2010_2040_8_County.dbf***
    c. ***4_21_2015_CDS_Forecast_2010_2040_8_County.prj***
    d. ***4_21_2015_CDS_Forecast_2010_2040_8_County.sbn***
    e. ***4_21_2015_CDS_Forecast_2010_2040_8_County.sbx***
    f. ***4_21_2015_CDS_Forecast_2010_2040_8_County.shp***
    g. ***4_21_2015_CDS_Forecast_2010_2040_8_County.shx***
    h. ***6_30_2015_CDS_Forecast_2010_2040_Grimes.cpg***
    i. ***6_30_2015_CDS_Forecast_2010_2040_Grimes.dbf***
    j. ***6_30_2015_CDS_Forecast_2010_2040_Grimes.prj***
    k. ***6_30_2015_CDS_Forecast_2010_2040_Grimes.sbn***
    l. ***6_30_2015_CDS_Forecast_2010_2040_Grimes.sbx***
    m. ***6_30_2015_CDS_Forecast_2010_2040_Grimes.shp***
    n. ***6_30_2015_CDS_Forecast_2010_2040_Grimes.shx***

# Appendix A – RAZ-Level Forecasts

## Population

### Harris County Population (RAZ 1 to 127)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7,059 | 6,733 | 7,070 | 2,298 | 3,451 | 5,006 | 6,426 | 7,526 | 8,374 | 9,048 |
| 2 | 34,882 | 40,537 | 38,432 | 30,622 | 31,337 | 32,663 | 33,433 | 33,933 | 34,288 | 34,561 |
| 3 | 3,451 | 3,310 | 3,572 | 3,691 | 4,171 | 5,684 | 7,013 | 8,069 | 8,881 | 9,522 |
| 4 | 5,224 | 5,819 | 6,743 | 6,466 | 7,886 | 10,115 | 12,441 | 14,472 | 16,035 | 17,276 |
| 5 | 23,136 | 23,668 | 24,054 | 20,031 | 21,186 | 23,037 | 25,023 | 26,659 | 27,932 | 28,961 |
| 6 | 30,347 | 32,828 | 33,931 | 36,071 | 37,484 | 39,384 | 41,119 | 42,698 | 43,933 | 44,969 |
| 7 | 10,008 | 10,263 | 11,901 | 15,368 | 17,770 | 20,269 | 23,377 | 24,620 | 25,583 | 26,362 |
| 8 | 32,026 | 30,313 | 28,539 | 28,984 | 29,945 | 31,294 | 32,241 | 33,487 | 34,446 | 35,220 |
| 9 | 31,094 | 32,503 | 31,681 | 27,745 | 28,098 | 28,716 | 29,163 | 29,520 | 29,799 | 30,023 |
| 10 | 5,500 | 5,171 | 4,638 | 4,780 | 4,944 | 5,355 | 5,789 | 6,153 | 6,439 | 6,667 |
| 11 | 4,305 | 3,948 | 4,016 | 3,610 | 3,940 | 4,387 | 4,805 | 5,137 | 5,397 | 5,606 |
| 12 | 9,001 | 9,230 | 9,004 | 8,408 | 8,572 | 8,797 | 9,006 | 9,172 | 9,302 | 9,407 |
| 13 | 53,057 | 54,171 | 50,745 | 44,820 | 45,745 | 46,670 | 47,084 | 47,414 | 47,672 | 47,879 |
| 14 | 22,863 | 24,108 | 23,126 | 21,761 | 22,488 | 24,060 | 25,488 | 26,637 | 27,524 | 28,226 |
| 15 | 6,816 | 7,133 | 8,392 | 4,797 | 5,005 | 5,343 | 5,654 | 5,902 | 6,095 | 6,250 |
| 16 | 7,891 | 10,180 | 11,002 | 10,077 | 11,925 | 13,159 | 14,577 | 15,914 | 17,108 | 18,211 |
| 17 | 23,623 | 24,055 | 24,432 | 25,495 | 27,420 | 29,701 | 31,665 | 33,216 | 34,405 | 35,344 |
| 18 | 4,360 | 4,387 | 4,396 | 4,918 | 6,086 | 7,099 | 8,046 | 8,793 | 9,368 | 9,833 |
| 19 | 13,164 | 12,918 | 12,544 | 11,944 | 12,406 | 13,024 | 13,504 | 13,910 | 14,228 | 14,481 |
| 20 | 16,649 | 19,881 | 20,735 | 20,746 | 22,067 | 23,710 | 25,242 | 26,462 | 27,413 | 28,179 |
| 21 | 17,650 | 20,123 | 20,835 | 22,611 | 23,997 | 25,231 | 26,082 | 26,534 | 26,886 | 27,170 |
| 22 | 21,524 | 25,383 | 27,226 | 27,444 | 27,680 | 28,000 | 28,298 | 28,536 | 28,721 | 28,871 |
| 23 | 11,567 | 14,906 | 14,658 | 18,139 | 20,912 | 24,613 | 25,754 | 26,206 | 26,558 | 26,842 |
| 24 | 5,799 | 6,304 | 5,919 | 6,227 | 6,391 | 6,621 | 7,516 | 8,705 | 9,632 | 10,412 |
| 25 | 7,210 | 8,413 | 8,118 | 8,057 | 10,075 | 12,753 | 14,890 | 16,038 | 16,487 | 16,858 |
| 26 | 4,247 | 4,315 | 5,321 | 6,293 | 6,894 | 7,519 | 8,090 | 8,542 | 8,893 | 9,177 |
| 27 | 16,446 | 16,375 | 17,513 | 19,927 | 22,469 | 23,451 | 23,942 | 24,227 | 24,419 | 24,564 |
| 28 | 36,343 | 35,346 | 33,431 | 32,781 | 33,243 | 34,168 | 35,303 | 36,723 | 37,818 | 38,685 |
| 29 | 17,507 | 18,981 | 18,621 | 18,219 | 19,167 | 20,759 | 22,336 | 23,587 | 24,547 | 25,305 |
| 30 | 22,071 | 23,223 | 22,235 | 23,448 | 23,934 | 24,722 | 25,477 | 26,095 | 26,575 | 26,956 |
| 31 | 36,736 | 43,658 | 42,406 | 40,868 | 41,052 | 41,299 | 41,526 | 41,704 | 41,840 | 41,950 |
| 32 | 43,282 | 50,987 | 50,646 | 49,203 | 49,862 | 51,025 | 52,165 | 53,106 | 53,838 | 54,418 |
| 33 | 42,160 | 40,988 | 40,022 | 42,021 | 43,996 | 46,334 | 48,346 | 49,934 | 51,151 | 52,111 |
| 34 | 13,848 | 15,958 | 16,908 | 22,329 | 25,102 | 28,808 | 35,305 | 39,840 | 43,357 | 46,203 |
| 35 | 31,636 | 34,003 | 32,734 | 32,165 | 32,876 | 34,149 | 35,530 | 36,602 | 37,426 | 38,081 |
| 36 | 12,130 | 12,633 | 12,263 | 12,095 | 12,144 | 12,211 | 12,273 | 12,323 | 12,362 | 12,393 |
| 37 | 7,537 | 8,327 | 8,990 | 8,720 | 8,837 | 9,282 | 9,777 | 10,200 | 10,532 | 10,797 |
| 38 | 32,158 | 45,475 | 45,779 | 42,538 | 43,924 | 45,158 | 46,009 | 46,900 | 47,648 | 48,240 |
| 39 | 10,144 | 10,860 | 11,210 | 14,922 | 18,157 | 22,435 | 26,273 | 28,500 | 30,207 | 31,585 |
| 40 | 28,108 | 33,039 | 35,142 | 39,480 | 40,664 | 42,574 | 44,465 | 46,044 | 47,086 | 47,914 |

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 8,433 | 9,898 | 10,288 | 10,165 | 10,279 | 10,430 | 10,571 | 10,681 | 10,765 | 11,116 |
| 42 | 4,128 | 5,086 | 5,248 | 5,063 | 5,557 | 6,033 | 6,402 | 6,683 | 6,895 | 7,061 |
| 43 | 27,826 | 31,932 | 31,716 | 30,018 | 30,480 | 31,714 | 31,984 | 32,243 | 32,455 | 32,625 |
| 44 | 31,464 | 32,420 | 31,728 | 29,582 | 30,735 | 32,138 | 33,359 | 34,326 | 35,069 | 35,655 |
| 45 | 17,983 | 21,232 | 21,035 | 20,698 | 21,045 | 21,684 | 22,219 | 22,636 | 22,954 | 23,206 |
| 46 | 9,300 | 10,846 | 10,753 | 11,708 | 11,988 | 12,326 | 12,619 | 12,851 | 13,029 | 13,169 |
| 47 | 9,240 | 9,568 | 9,669 | 9,559 | 9,679 | 9,849 | 10,159 | 10,283 | 10,379 | 10,457 |
| 48 | 17,151 | 16,225 | 15,761 | 15,531 | 16,213 | 17,154 | 18,013 | 18,705 | 19,239 | 19,662 |
| 49 | 17,404 | 21,503 | 23,153 | 29,302 | 31,433 | 34,299 | 36,335 | 38,140 | 39,182 | 39,912 |
| 50 | 70,823 | 84,595 | 90,484 | 101,675 | 105,582 | 110,835 | 115,489 | 118,195 | 120,453 | 122,014 |
| 51 | 8,193 | 9,263 | 9,232 | 9,144 | 9,168 | 9,200 | 9,231 | 9,254 | 9,273 | 9,288 |
| 52 | 22 | 47 | 67 | 0 | 24 | 91 | 402 | 526 | 622 | 700 |
| 53 | 53,656 | 60,887 | 59,208 | 60,762 | 60,762 | 61,362 | 62,099 | 62,744 | 63,255 | 63,662 |
| 54 | 53,537 | 62,017 | 62,150 | 63,936 | 64,598 | 66,158 | 67,786 | 69,153 | 70,222 | 71,071 |
| 55 | 60 | 34 | 31 | 33 | 42 | 76 | 107 | 231 | 327 | 405 |
| 56 | 17,586 | 23,450 | 27,229 | 38,284 | 41,126 | 43,723 | 45,266 | 46,454 | 47,383 | 48,162 |
| 57 | 21,080 | 21,826 | 22,604 | 28,176 | 31,411 | 36,351 | 40,589 | 42,508 | 44,009 | 44,788 |
| 58 | 12,928 | 15,404 | 16,031 | 22,417 | 24,728 | 28,428 | 32,685 | 36,251 | 38,009 | 39,399 |
| 59 | 12,759 | 14,774 | 17,103 | 25,604 | 28,446 | 31,630 | 34,248 | 36,278 | 37,667 | 38,769 |
| 60 | 62,877 | 79,845 | 82,704 | 76,613 | 76,943 | 78,106 | 79,391 | 80,486 | 81,347 | 82,032 |
| 61 | 30,861 | 38,268 | 39,039 | 34,689 | 34,705 | 34,729 | 34,750 | 34,766 | 34,779 | 34,790 |
| 62 | 51,030 | 70,290 | 72,699 | 69,126 | 69,895 | 70,934 | 71,899 | 72,641 | 73,222 | 73,742 |
| 63 | 37,548 | 43,258 | 44,563 | 48,956 | 50,573 | 53,657 | 56,764 | 58,993 | 60,722 | 61,842 |
| 64 | 22,154 | 22,884 | 23,092 | 23,460 | 23,954 | 24,642 | 25,276 | 25,783 | 26,177 | 26,494 |
| 65 | 72,139 | 85,193 | 86,253 | 81,823 | 82,793 | 84,480 | 85,101 | 85,599 | 85,984 | 86,296 |
| 66 | 6,814 | 8,137 | 8,104 | 9,878 | 10,589 | 11,544 | 12,416 | 13,093 | 13,614 | 14,028 |
| 67 | 22,112 | 27,488 | 27,790 | 24,664 | 26,476 | 28,747 | 30,747 | 32,339 | 33,563 | 34,530 |
| 68 | 59,259 | 67,714 | 66,482 | 73,030 | 74,339 | 76,193 | 77,938 | 79,517 | 80,906 | 82,146 |
| 69 | 10,621 | 10,940 | 11,425 | 11,590 | 12,503 | 13,635 | 14,628 | 15,416 | 16,022 | 16,500 |
| 70 | 21,482 | 26,282 | 26,742 | 28,847 | 29,040 | 29,344 | 29,624 | 29,847 | 30,020 | 30,160 |
| 71 | 11,795 | 15,152 | 15,212 | 17,466 | 17,821 | 18,776 | 19,649 | 20,325 | 20,846 | 21,260 |
| 72 | 10,895 | 12,591 | 12,225 | 11,639 | 11,663 | 11,697 | 11,728 | 11,803 | 11,880 | 11,958 |
| 73 | 17,838 | 21,347 | 23,476 | 23,000 | 23,049 | 23,150 | 23,275 | 23,523 | 23,715 | 23,870 |
| 74 | 17,412 | 20,111 | 20,619 | 20,003 | 20,970 | 22,270 | 23,457 | 25,036 | 26,600 | 27,978 |
| 75 | 6,373 | 7,181 | 7,201 | 10,334 | 11,982 | 13,682 | 16,008 | 18,038 | 19,689 | 21,067 |
| 76 | 9,999 | 11,306 | 11,797 | 16,440 | 18,170 | 19,711 | 20,853 | 21,699 | 22,334 | 22,832 |
| 77 | 11,110 | 12,956 | 12,687 | 16,118 | 18,051 | 20,917 | 23,825 | 26,307 | 28,217 | 29,871 |
| 78 | 25,001 | 41,496 | 51,791 | 72,936 | 79,844 | 86,568 | 91,390 | 94,854 | 97,175 | 98,798 |
| 79 | 41,486 | 52,748 | 53,484 | 56,280 | 57,247 | 58,936 | 61,422 | 63,406 | 64,944 | 66,184 |
| 80 | 7,404 | 9,538 | 10,498 | 13,812 | 15,313 | 20,334 | 24,911 | 27,899 | 29,871 | 31,328 |
| 81 | 9,955 | 11,421 | 12,913 | 15,976 | 17,443 | 19,783 | 21,912 | 23,729 | 25,318 | 26,483 |
| 82 | 2,682 | 3,263 | 4,734 | 13,009 | 15,810 | 18,818 | 21,556 | 23,373 | 24,784 | 25,785 |
| 83 | 8,368 | 8,830 | 9,345 | 9,977 | 10,973 | 12,644 | 15,229 | 17,500 | 19,442 | 21,045 |
| 84 | 18,022 | 20,803 | 22,808 | 29,482 | 32,220 | 36,565 | 40,823 | 44,230 | 46,877 | 48,917 |
| 85 | 8,937 | 7,745 | 7,148 | 6,376 | 6,514 | 6,707 | 6,886 | 7,030 | 7,142 | 7,230 |
| 86 | 45,135 | 47,632 | 47,879 | 50,263 | 51,911 | 54,237 | 56,376 | 58,104 | 59,439 | 60,496 |
| 87 | 25 | 32 | 30 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | | | | | | | | | | |

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **88** | 6,305 | 6,204 | 5,917 | 6,095 | 6,191 | 6,375 | 6,559 | 6,712 | 6,832 | 6,927 |
| **89** | 10,041 | 9,574 | 9,319 | 8,431 | 9,090 | 10,101 | 11,056 | 11,834 | 12,437 | 12,915 |
| **90** | 42,301 | 44,920 | 45,092 | 49,553 | 51,447 | 54,313 | 56,639 | 57,993 | 59,036 | 59,863 |
| **91** | 13,449 | 16,266 | 17,833 | 18,956 | 19,430 | 20,385 | 21,548 | 22,676 | 23,718 | 24,684 |
| **92** | 14,593 | 18,368 | 19,808 | 20,793 | 21,946 | 23,521 | 24,955 | 26,108 | 26,998 | 27,703 |
| **93** | 45,634 | 67,185 | 71,646 | 79,010 | 82,665 | 85,355 | 87,813 | 89,719 | 91,073 | 92,047 |
| **94** | 42,359 | 46,270 | 45,266 | 48,821 | 49,305 | 50,318 | 51,561 | 52,556 | 53,326 | 53,950 |
| **95** | 16,485 | 21,585 | 23,687 | 27,042 | 28,372 | 29,394 | 30,072 | 30,549 | 30,899 | 31,171 |
| **96** | 39,003 | 38,650 | 41,634 | 53,903 | 56,869 | 58,705 | 59,671 | 60,257 | 60,660 | 60,966 |
| **97** | 43,968 | 53,531 | 53,040 | 53,320 | 54,638 | 56,302 | 57,772 | 58,943 | 59,844 | 60,555 |
| **98** | 34,559 | 43,660 | 46,218 | 50,289 | 51,979 | 54,332 | 56,499 | 58,726 | 60,661 | 62,446 |
| **99** | 41,111 | 55,811 | 61,926 | 71,838 | 76,095 | 79,766 | 83,174 | 85,797 | 87,848 | 89,569 |
| **100** | 16,362 | 23,565 | 25,636 | 32,537 | 33,294 | 35,302 | 35,913 | 36,372 | 36,552 | 36,848 |
| **101** | 31,343 | 36,953 | 37,126 | 34,231 | 34,231 | 34,266 | 34,330 | 34,379 | 34,418 | 34,466 |
| **102** | 30,719 | 31,640 | 32,029 | 32,535 | 33,854 | 35,468 | 36,876 | 37,993 | 38,852 | 39,529 |
| **103** | 114 | 543 | 721 | 463 | 496 | 540 | 1,303 | 1,333 | 1,356 | 1,579 |
| **104** | 21,795 | 25,103 | 24,799 | 23,639 | 24,823 | 26,415 | 27,869 | 28,997 | 29,864 | 30,554 |
| **105** | 23,533 | 36,702 | 43,344 | 46,426 | 48,320 | 50,833 | 53,125 | 54,850 | 56,196 | 57,310 |
| **106** | 8,865 | 12,732 | 15,906 | 17,342 | 18,307 | 19,146 | 19,911 | 20,487 | 20,936 | 21,308 |
| **107** | 42,190 | 67,320 | 74,873 | 84,329 | 89,272 | 95,920 | 100,282 | 103,440 | 105,698 | 107,076 |
| **108** | 29,336 | 38,191 | 43,196 | 51,738 | 54,343 | 57,861 | 61,126 | 63,639 | 64,606 | 65,094 |
| **109** | 25,313 | 30,555 | 31,360 | 31,592 | 33,249 | 35,796 | 38,414 | 40,670 | 42,581 | 44,235 |
| **110** | 18,157 | 22,395 | 25,462 | 29,334 | 30,895 | 33,088 | 35,139 | 36,758 | 38,005 | 39,013 |
| **111** | 29,835 | 48,607 | 57,263 | 61,266 | 62,415 | 64,268 | 65,962 | 67,299 | 68,337 | 69,177 |
| **112** | 6,359 | 9,611 | 10,964 | 11,330 | 12,631 | 15,216 | 17,823 | 19,991 | 21,683 | 23,025 |
| **113** | 27,234 | 45,245 | 61,276 | 110,533 | 127,421 | 151,424 | 173,794 | 191,232 | 206,635 | 220,175 |
| **114** | 27,372 | 39,961 | 47,008 | 67,026 | 73,031 | 79,780 | 82,934 | 84,179 | 85,139 | 85,913 |
| **115** | 665 | 1,392 | 1,917 | 2,062 | 3,217 | 8,614 | 14,289 | 19,333 | 24,451 | 29,965 |
| **116** | 21,618 | 34,912 | 49,563 | 90,894 | 108,189 | 130,797 | 153,499 | 173,543 | 188,898 | 201,581 |
| **117** | 3,312 | 5,084 | 5,950 | 6,440 | 7,595 | 12,220 | 17,895 | 22,795 | 27,592 | 32,239 |
| **118** | 18,576 | 46,091 | 68,711 | 100,709 | 112,708 | 136,456 | 158,308 | 174,700 | 188,178 | 200,124 |
| **119** | 41,607 | 51,629 | 58,452 | 68,047 | 72,669 | 77,294 | 80,416 | 82,685 | 84,244 | 85,401 |
| **120** | 7,587 | 10,429 | 11,742 | 11,709 | 13,824 | 17,167 | 20,513 | 23,692 | 26,420 | 29,334 |
| **121** | 2,329 | 5,813 | 7,676 | 14,152 | 17,751 | 23,179 | 28,798 | 33,842 | 37,934 | 41,172 |
| **122** | 69,796 | 91,845 | 105,419 | 150,318 | 172,669 | 200,101 | 226,779 | 239,221 | 247,886 | 255,054 |
| **123** | 93,646 | 121,457 | 132,514 | 150,909 | 157,320 | 164,246 | 169,068 | 171,542 | 172,509 | 173,159 |
| **124** | 13,861 | 17,941 | 22,015 | 44,226 | 51,425 | 58,210 | 64,554 | 67,046 | 69,923 | 71,392 |
| **125** | 15,643 | 17,505 | 18,625 | 26,658 | 29,540 | 33,251 | 36,405 | 38,409 | 40,116 | 41,494 |
| **126** | 2,905 | 3,638 | 4,321 | 4,832 | 5,552 | 6,827 | 8,215 | 10,018 | 11,073 | 11,909 |
| **127** | 32,857 | 35,788 | 39,821 | 57,461 | 63,946 | 70,114 | 75,222 | 80,161 | 83,474 | 86,712 |
| **Total** | **2,818,203** | **3,400,582** | **3,604,235** | **4,048,360** | **4,298,411** | **4,635,546** | **4,943,934** | **5,174,007** | **5,352,918** | **5,500,979** |

## Montgomery County Population (RAZ 128 to 139)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **128** | 16,590 | 22,420 | 27,358 | 29,312 | 34,511 | 41,920 | 51,223 | 59,617 | 68,821 | 76,787 |
| **129** | 27,814 | 40,085 | 49,293 | 60,822 | 71,219 | 87,923 | 110,250 | 129,138 | 148,567 | 167,486 |
| **130** | 3,633 | 7,026 | 8,828 | 31,203 | 40,885 | 53,222 | 67,038 | 77,352 | 89,715 | 101,189 |
| **131** | 24,567 | 31,077 | 37,110 | 35,781 | 38,997 | 42,129 | 44,610 | 46,709 | 47,717 | 48,663 |
| **132** | 21,022 | 51,447 | 69,738 | 81,725 | 93,786 | 104,226 | 110,428 | 114,625 | 117,693 | 119,684 |
| **133** | 4,263 | 4,778 | 7,678 | 10,698 | 13,604 | 18,281 | 24,296 | 29,512 | 35,480 | 42,365 |
| **134** | 22,636 | 28,640 | 31,207 | 33,979 | 37,106 | 42,383 | 48,846 | 54,125 | 59,235 | 64,142 |
| **135** | 17,623 | 25,523 | 30,019 | 35,285 | 39,160 | 44,380 | 51,822 | 59,167 | 66,642 | 74,225 |
| **136** | 18,028 | 33,425 | 41,183 | 53,802 | 67,875 | 79,483 | 91,117 | 98,508 | 104,475 | 109,856 |
| **137** | 6,171 | 12,641 | 16,571 | 21,298 | 29,339 | 44,999 | 64,845 | 83,732 | 102,139 | 122,054 |
| **138** | 2,612 | 5,142 | 6,696 | 6,426 | 7,293 | 9,145 | 12,206 | 15,483 | 18,705 | 22,147 |
| **139** | 17,244 | 31,582 | 42,175 | 52,290 | 63,547 | 84,427 | 110,475 | 133,560 | 157,080 | 181,973 |
| **Total** | **182,203** | **293,786** | **367,856** | **452,621** | **537,322** | **652,518** | **787,156** | **901,527** | **1,016,268** | **1,130,571** |

## Waller County Population (RAZ 140 to 143)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **140** | 11,236 | 16,032 | 16,776 | 18,128 | 20,824 | 27,281 | 35,483 | 46,415 | 59,328 | 73,297 |
| **141** | 5,709 | 7,573 | 9,539 | 9,117 | 9,611 | 10,932 | 12,587 | 14,980 | 18,334 | 22,654 |
| **142** | 5,155 | 7,684 | 7,833 | 9,663 | 11,516 | 15,975 | 21,217 | 28,174 | 37,194 | 48,015 |
| **143** | 1,290 | 1,374 | 1,616 | 2,508 | 5,473 | 13,868 | 24,307 | 35,239 | 45,569 | 54,882 |
| **Total** | **23,390** | **32,663** | **35,764** | **39,416** | **47,424** | **68,057** | **93,594** | **124,808** | **160,424** | **198,847** |

## Fort Bend County Population (RAZ 144 to 158)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **144** | 2,686 | 19,074 | 36,706 | 77,420 | 100,654 | 116,044 | 126,605 | 131,931 | 134,378 | 135,683 |
| **145** | 3,059 | 4,656 | 5,759 | 10,372 | 21,519 | 45,425 | 72,599 | 100,583 | 125,990 | 148,301 |
| **146** | 31,624 | 51,744 | 64,485 | 111,193 | 139,061 | 160,311 | 180,692 | 197,482 | 212,726 | 229,459 |
| **147** | 1,575 | 1,865 | 1,867 | 1,948 | 2,628 | 3,778 | 5,043 | 6,221 | 8,354 | 11,715 |
| **148** | 4,407 | 5,655 | 6,060 | 7,704 | 10,027 | 18,011 | 26,739 | 34,537 | 41,282 | 48,464 |
| **149** | 29,234 | 33,803 | 39,546 | 35,273 | 37,249 | 39,170 | 40,888 | 42,389 | 43,641 | 44,984 |
| **150** | 4,335 | 21,407 | 30,825 | 33,705 | 38,352 | 46,202 | 53,923 | 60,735 | 65,765 | 69,831 |
| **151** | 30,468 | 40,185 | 46,897 | 51,943 | 55,428 | 60,666 | 64,207 | 67,296 | 68,622 | 70,029 |
| **152** | 16,656 | 30,337 | 36,540 | 36,383 | 39,017 | 42,218 | 45,342 | 48,070 | 48,733 | 49,014 |
| **153** | 38,817 | 45,727 | 53,196 | 50,280 | 51,442 | 54,934 | 56,704 | 56,858 | 56,991 | 57,132 |
| **154** | 23,718 | 44,277 | 56,870 | 61,389 | 72,837 | 84,137 | 93,748 | 100,699 | 106,814 | 113,342 |
| **155** | 28,563 | 41,940 | 56,918 | 78,382 | 95,808 | 116,983 | 137,364 | 153,582 | 167,263 | 180,473 |
| **156** | 2,341 | 3,343 | 4,073 | 11,135 | 20,293 | 37,244 | 56,466 | 73,843 | 92,786 | 112,601 |
| **157** | 4,798 | 5,843 | 6,591 | 6,754 | 8,793 | 11,412 | 14,953 | 18,814 | 22,791 | 28,421 |
| **158** | 3,140 | 4,594 | 5,057 | 5,799 | 7,158 | 9,602 | 12,612 | 15,701 | 22,329 | 31,478 |
| **Total** | **225,421** | **354,450** | **451,390** | **579,680** | **700,266** | **846,136** | **987,886** | **1,108,739** | **1,218,464** | **1,330,928** |

## Brazoria County Population (RAZ 159 to 172)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **159** | 11,591 | 11,937 | 12,894 | 12,036 | 13,325 | 15,595 | 18,471 | 21,109 | 23,599 | 26,100 |
| **160** | 16,761 | 17,949 | 19,044 | 16,742 | 17,699 | 19,306 | 21,159 | 23,099 | 24,925 | 27,096 |
| **161** | 2,998 | 3,026 | 3,011 | 2,844 | 3,282 | 3,922 | 4,688 | 5,033 | 5,357 | 5,746 |
| **162** | 6,931 | 7,131 | 7,029 | 6,593 | 7,031 | 7,671 | 8,054 | 8,744 | 9,521 | 10,431 |
| **163** | 9,784 | 13,052 | 13,860 | 13,619 | 14,495 | 15,773 | 17,305 | 17,995 | 18,643 | 19,293 |
| **164** | 31,015 | 33,090 | 33,718 | 33,770 | 34,918 | 36,204 | 36,945 | 37,592 | 38,200 | 38,821 |
| **165** | 1,377 | 1,785 | 1,852 | 1,672 | 1,863 | 2,185 | 2,555 | 2,879 | 3,183 | 3,493 |
| **166** | 10,860 | 13,137 | 14,177 | 13,503 | 16,188 | 21,297 | 27,606 | 33,512 | 39,299 | 45,196 |
| **167** | 18,756 | 20,668 | 20,337 | 20,083 | 22,768 | 27,877 | 34,557 | 40,462 | 46,555 | 52,762 |
| **168** | 1,917 | 2,297 | 2,479 | 2,727 | 2,946 | 3,330 | 3,866 | 4,556 | 5,852 | 7,799 |
| **169** | 11,299 | 15,111 | 16,177 | 11,324 | 14,502 | 23,499 | 35,544 | 48,980 | 62,777 | 79,803 |
| **170** | 31,835 | 38,268 | 40,021 | 41,776 | 47,347 | 57,797 | 71,104 | 83,355 | 95,414 | 109,547 |
| **171** | 8,164 | 21,190 | 32,473 | 65,628 | 76,769 | 93,368 | 110,175 | 124,878 | 137,511 | 146,344 |
| **172** | 28,419 | 43,126 | 56,266 | 60,140 | 68,682 | 80,977 | 92,882 | 100,233 | 105,976 | 110,098 |
| **Total** | **191,707** | **241,767** | **273,338** | **302,457** | **341,814** | **408,799** | **484,911** | **552,427** | **616,813** | **682,530** |

## Galveston County Population (RAZ 173 to 188)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **173** | 15,214 | 21,432 | 25,192 | 25,319 | 26,988 | 29,614 | 30,753 | 31,503 | 32,112 | 32,721 |
| **174** | 13,089 | 17,610 | 24,581 | 38,985 | 47,186 | 62,852 | 78,765 | 90,846 | 100,269 | 106,607 |
| **175** | 20,133 | 32,714 | 40,104 | 47,881 | 55,368 | 65,412 | 74,605 | 78,688 | 79,662 | 81,132 |
| **176** | 9,641 | 12,215 | 12,391 | 14,387 | 15,578 | 18,159 | 21,588 | 25,006 | 28,352 | 31,947 |
| **177** | 16,382 | 18,387 | 18,614 | 21,382 | 23,386 | 26,827 | 31,004 | 35,036 | 38,942 | 43,123 |
| **178** | 16,471 | 19,615 | 20,841 | 22,073 | 23,570 | 29,114 | 37,774 | 46,834 | 55,843 | 65,573 |
| **179** | 4,059 | 5,643 | 5,878 | 8,180 | 10,176 | 13,617 | 19,313 | 26,118 | 33,888 | 42,830 |
| **180** | 24,800 | 25,325 | 26,603 | 25,748 | 26,247 | 27,001 | 27,115 | 27,187 | 27,243 | 27,298 |
| **181** | 9,756 | 8,806 | 9,824 | 9,263 | 10,065 | 10,728 | 11,140 | 11,395 | 11,594 | 11,789 |
| **182** | 11,848 | 11,197 | 11,084 | 10,673 | 11,070 | 12,097 | 13,534 | 14,990 | 16,424 | 17,966 |
| **183** | 7,786 | 8,916 | 9,873 | 9,794 | 10,588 | 13,371 | 17,533 | 22,064 | 27,188 | 33,083 |
| **184** | 5,006 | 5,146 | 5,160 | 4,766 | 5,166 | 5,766 | 6,446 | 7,085 | 7,698 | 8,352 |
| **185** | 4,661 | 6,453 | 6,746 | 6,679 | 7,475 | 8,988 | 10,146 | 10,920 | 11,556 | 12,195 |
| **186** | 53,504 | 50,213 | 49,103 | 39,043 | 39,877 | 40,927 | 42,421 | 43,442 | 44,415 | 45,396 |
| **187** | 1,740 | 1,976 | 2,161 | 622 | 702 | 1,650 | 3,250 | 4,955 | 6,661 | 8,507 |
| **188** | 3,310 | 4,511 | 4,161 | 2,397 | 2,772 | 3,525 | 4,387 | 5,153 | 5,883 | 6,619 |
| **Total** | **217,400** | **250,159** | **272,316** | **287,192** | **316,217** | **369,648** | **429,775** | **481,220** | **527,729** | **575,138** |

## Chambers County Population (RAZ 189 to 192)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **189** | 7,780 | 9,788 | 10,429 | 9,936 | 10,592 | 11,516 | 12,480 | 13,360 | 14,369 | 15,572 |
| **190** | 2,941 | 3,188 | 3,407 | 2,885 | 3,851 | 5,540 | 7,709 | 10,180 | 12,897 | 16,610 |
| **191** | 5,052 | 7,797 | 9,532 | 15,558 | 16,782 | 18,670 | 20,730 | 22,608 | 24,673 | 27,024 |
| **192** | 4,315 | 5,258 | 5,754 | 6,506 | 8,438 | 11,717 | 15,512 | 19,170 | 23,190 | 27,522 |
| **Total** | **20,088** | **26,031** | **29,122** | **34,885** | **39,664** | **47,443** | **56,431** | **65,318** | **75,129** | **86,728** |

## Liberty County Population (RAZ 193 to 199)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **193** | 545 | 723 | 825 | 795 | 975 | 1,443 | 2,093 | 2,919 | 4,053 | 5,326 |
| **194** | 12,006 | 12,549 | 13,054 | 11,915 | 12,258 | 13,175 | 14,443 | 16,483 | 19,649 | 23,594 |
| **195** | 13,936 | 24,746 | 26,869 | 24,107 | 26,166 | 31,517 | 37,854 | 46,597 | 56,491 | 67,448 |
| **196** | 6,192 | 8,244 | 9,180 | 9,516 | 12,459 | 20,499 | 32,396 | 44,901 | 56,036 | 67,930 |
| **197** | 6,014 | 7,148 | 7,332 | 6,586 | 6,687 | 7,103 | 7,881 | 9,135 | 11,113 | 13,367 |
| **198** | 6,245 | 7,824 | 8,810 | 8,774 | 9,363 | 10,971 | 13,350 | 16,476 | 20,930 | 26,877 |
| **199** | 7,787 | 8,920 | 9,034 | 8,836 | 9,035 | 10,011 | 11,615 | 13,632 | 16,359 | 19,416 |
| **Total** | **52,725** | **70,154** | **75,104** | **70,529** | **76,943** | **94,719** | **119,632** | **150,143** | **184,631** | **223,959** |

## Grimes County Population

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **18,790** | **23,529** | **25,068** | **23,592** | **24,588** | **25,694** | **26,902** | **28,720** | **33,406** | **39,248** |

# Jobs

## Harris County Jobs (RAZ 1 to 127)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 131,096 | 143,372 | 129,297 | 147,372 | 161,175 | 163,189 | 169,129 | 173,818 | 177,583 | 181,413 |
| 2 | 14,428 | 14,288 | 15,389 | 17,348 | 23,537 | 25,453 | 27,822 | 29,641 | 31,098 | 32,580 |
| 3 | 12,904 | 4,411 | 4,211 | 4,793 | 5,415 | 5,455 | 5,437 | 5,405 | 5,375 | 5,343 |
| 4 | 10,732 | 10,053 | 11,064 | 11,837 | 14,650 | 15,570 | 16,728 | 17,623 | 18,342 | 19,073 |
| 5 | 13,624 | 12,600 | 15,133 | 15,739 | 18,553 | 19,540 | 20,813 | 21,803 | 22,601 | 23,413 |
| 6 | 35,281 | 34,724 | 36,975 | 35,252 | 36,785 | 37,330 | 38,744 | 39,817 | 40,672 | 41,511 |
| 7 | 16,882 | 17,668 | 13,177 | 14,005 | 16,790 | 17,317 | 17,885 | 18,101 | 18,272 | 18,358 |
| 8 | 14,287 | 13,813 | 14,981 | 16,825 | 20,614 | 21,531 | 22,552 | 23,306 | 23,903 | 24,506 |
| 9 | 4,014 | 3,899 | 3,758 | 3,838 | 4,492 | 4,746 | 5,083 | 5,348 | 5,562 | 5,779 |
| 10 | 8,720 | 8,249 | 8,059 | 8,992 | 10,891 | 11,347 | 11,854 | 12,227 | 12,523 | 12,821 |
| 11 | 5,024 | 4,185 | 4,485 | 6,036 | 9,103 | 10,193 | 11,607 | 12,680 | 13,535 | 14,389 |
| 12 | 11,079 | 10,268 | 9,987 | 11,621 | 14,487 | 15,085 | 15,696 | 16,132 | 16,472 | 16,815 |
| 13 | 23,191 | 21,600 | 22,682 | 24,347 | 27,213 | 27,811 | 28,422 | 28,857 | 29,197 | 29,540 |
| 14 | 3,914 | 3,739 | 6,297 | 6,713 | 7,330 | 7,541 | 7,831 | 7,939 | 8,025 | 8,111 |
| 15 | 12,399 | 8,294 | 14,642 | 14,714 | 16,357 | 17,048 | 17,983 | 18,723 | 19,321 | 19,931 |
| 16 | 5,787 | 4,968 | 6,552 | 7,768 | 10,856 | 11,384 | 11,668 | 11,776 | 11,861 | 11,947 |
| 17 | 8,275 | 7,908 | 9,850 | 12,261 | 16,465 | 17,335 | 18,219 | 18,848 | 19,339 | 19,833 |
| 18 | 45,099 | 60,437 | 37,708 | 74,130 | 77,913 | 79,631 | 81,997 | 83,877 | 85,400 | 86,896 |
| 19 | 15,931 | 15,109 | 22,250 | 24,051 | 27,038 | 27,628 | 28,208 | 28,615 | 28,930 | 29,247 |
| 20 | 20,386 | 24,252 | 26,727 | 28,643 | 33,244 | 34,878 | 36,999 | 38,609 | 39,891 | 41,172 |
| 21 | 7,225 | 4,880 | 5,793 | 7,141 | 8,597 | 8,695 | 8,695 | 8,695 | 8,738 | 8,781 |
| 22 | 11,020 | 8,790 | 13,400 | 13,406 | 15,302 | 16,130 | 17,259 | 18,155 | 18,879 | 19,619 |
| 23 | 52,916 | 64,887 | 53,149 | 52,349 | 53,894 | 54,421 | 55,131 | 55,670 | 56,528 | 57,387 |
| 24 | 4,347 | 4,213 | 4,138 | 4,498 | 8,281 | 9,036 | 10,114 | 10,617 | 11,013 | 11,324 |
| 25 | 10,951 | 12,440 | 17,060 | 17,817 | 20,772 | 21,762 | 23,018 | 23,992 | 24,774 | 25,570 |
| 26 | 3,319 | 4,158 | 3,939 | 4,276 | 4,812 | 4,912 | 5,007 | 5,072 | 5,122 | 5,172 |
| 27 | 24,641 | 21,351 | 28,221 | 30,475 | 35,635 | 36,591 | 37,489 | 38,104 | 38,577 | 39,051 |
| 28 | 6,823 | 5,415 | 6,136 | 6,629 | 7,824 | 8,148 | 8,530 | 8,818 | 9,047 | 9,279 |
| 29 | 7,787 | 9,683 | 11,373 | 12,215 | 14,008 | 14,457 | 14,964 | 15,340 | 15,639 | 15,942 |
| 30 | 5,425 | 7,306 | 11,871 | 12,456 | 13,988 | 14,425 | 14,949 | 15,347 | 15,665 | 15,988 |
| 31 | 19,908 | 17,061 | 13,304 | 14,026 | 16,089 | 16,703 | 17,452 | 18,024 | 18,482 | 18,947 |
| 32 | 16,392 | 15,253 | 20,927 | 21,041 | 23,922 | 25,139 | 26,786 | 28,089 | 29,143 | 30,218 |
| 33 | 6,840 | 5,779 | 7,635 | 8,116 | 9,138 | 9,394 | 9,683 | 9,898 | 10,068 | 10,241 |
| 34 | 10,858 | 10,543 | 16,085 | 16,135 | 19,202 | 20,509 | 22,206 | 23,494 | 24,776 | 26,057 |
| 35 | 7,561 | 7,764 | 11,726 | 12,110 | 13,036 | 13,459 | 14,026 | 14,457 | 14,715 | 14,973 |
| 36 | 2,757 | 2,845 | 3,081 | 3,421 | 3,559 | 3,606 | 3,628 | 3,635 | 3,638 | 3,641 |
| 37 | 5,686 | 7,704 | 7,902 | 7,875 | 8,612 | 8,947 | 9,408 | 9,774 | 10,071 | 10,374 |
| 38 | 15,362 | 14,034 | 16,702 | 16,718 | 17,336 | 17,547 | 18,544 | 19,334 | 19,973 | 20,625 |
| 39 | 57,417 | 65,455 | 74,551 | 71,967 | 84,575 | 88,101 | 92,144 | 94,658 | 96,639 | 98,583 |
| 40 | 28,207 | 29,849 | 31,939 | 30,622 | 32,166 | 32,694 | 33,404 | 33,942 | 34,372 | 34,801 |
| 41 | 6,195 | 7,593 | 8,001 | 7,617 | 7,679 | 8,207 | 8,917 | 8,938 | 8,955 | 8,973 |
| 42 | 16,160 | 22,261 | 21,164 | 21,790 | 23,980 | 24,691 | 25,584 | 26,273 | 26,827 | 27,390 |
| 43 | 19,039 | 25,482 | 21,921 | 21,803 | 24,356 | 25,522 | 27,129 | 28,407 | 29,443 | 30,500 |
| | | | | | | | | | | |

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| 44 | 18,672 | 20,100 | 19,285 | 20,221 | 23,577 | 24,670 | 26,046 | 27,109 | 27,963 | 28,831 |
| 45 | 8,097 | 7,621 | 8,668 | 8,698 | 10,233 | 10,893 | 11,790 | 12,500 | 13,075 | 13,661 |
| 46 | 3,072 | 4,864 | 3,332 | 3,482 | 4,050 | 4,239 | 4,477 | 4,661 | 4,810 | 4,960 |
| 47 | 2,181 | 1,638 | 3,776 | 4,113 | 4,583 | 4,654 | 4,709 | 4,743 | 4,768 | 4,792 |
| 48 | 1,693 | 2,173 | 2,180 | 2,241 | 2,696 | 2,870 | 3,100 | 3,280 | 3,426 | 3,574 |
| 49 | 3,466 | 4,141 | 5,230 | 5,549 | 6,414 | 6,697 | 7,067 | 7,367 | 7,623 | 7,879 |
| 50 | 16,632 | 18,561 | 19,194 | 20,422 | 22,894 | 23,487 | 24,143 | 24,627 | 25,009 | 25,396 |
| 51 | 6,754 | 12,297 | 15,234 | 15,205 | 17,177 | 18,052 | 19,251 | 20,203 | 20,974 | 21,761 |
| 52 | 2,645 | 1,059 | 1,552 | 1,461 | 1,574 | 1,660 | 1,789 | 1,894 | 1,979 | 2,067 |
| 53 | 17,293 | 15,650 | 21,703 | 22,369 | 25,683 | 26,867 | 28,401 | 29,598 | 30,561 | 31,542 |
| 54 | 13,992 | 17,993 | 23,573 | 24,883 | 28,934 | 30,182 | 31,721 | 32,903 | 33,850 | 34,812 |
| 55 | 5,382 | 5,823 | 2,220 | 2,149 | 2,346 | 2,461 | 2,626 | 2,760 | 2,868 | 2,979 |
| 56 | 12,243 | 11,348 | 12,690 | 13,503 | 15,862 | 16,569 | 17,431 | 18,091 | 18,619 | 19,155 |
| 57 | 3,172 | 3,071 | 4,768 | 5,509 | 8,577 | 9,666 | 11,080 | 12,154 | 13,008 | 13,862 |
| 58 | 3,063 | 3,666 | 4,518 | 4,870 | 7,076 | 8,083 | 9,701 | 11,008 | 11,880 | 12,658 |
| 59 | 3,626 | 3,524 | 4,275 | 5,076 | 6,194 | 6,362 | 6,492 | 6,570 | 6,628 | 6,684 |
| 60 | 10,970 | 16,157 | 12,353 | 12,820 | 14,919 | 15,651 | 16,592 | 17,324 | 17,913 | 18,513 |
| 61 | 17,964 | 13,058 | 21,916 | 21,681 | 23,883 | 24,635 | 25,647 | 26,415 | 27,027 | 27,639 |
| 62 | 29,433 | 32,187 | 34,593 | 33,714 | 36,185 | 37,135 | 38,412 | 39,489 | 41,208 | 43,020 |
| 63 | 31,034 | 39,113 | 42,891 | 42,292 | 46,495 | 48,078 | 50,703 | 52,904 | 54,719 | 56,655 |
| 64 | 12,549 | 14,767 | 16,994 | 16,370 | 18,194 | 19,243 | 20,754 | 21,971 | 22,961 | 23,973 |
| 65 | 26,716 | 31,206 | 33,472 | 34,566 | 38,597 | 39,927 | 41,606 | 42,906 | 43,950 | 45,012 |
| 66 | 15,903 | 27,599 | 26,678 | 26,761 | 30,191 | 31,660 | 33,657 | 35,238 | 36,517 | 37,821 |
| 67 | 9,398 | 16,571 | 17,091 | 17,583 | 19,653 | 20,363 | 21,272 | 21,978 | 22,546 | 23,124 |
| 68 | 7,959 | 9,380 | 11,883 | 12,847 | 15,255 | 15,923 | 16,713 | 17,312 | 17,789 | 18,272 |
| 69 | 4,609 | 3,965 | 5,164 | 5,455 | 6,483 | 6,816 | 7,234 | 7,557 | 7,816 | 8,080 |
| 70 | 6,038 | 5,316 | 5,671 | 5,958 | 7,023 | 7,374 | 7,817 | 8,160 | 8,436 | 8,716 |
| 71 | 5,785 | 6,435 | 5,948 | 6,026 | 7,234 | 7,730 | 8,398 | 8,926 | 9,352 | 9,787 |
| 72 | 2,991 | 2,823 | 4,890 | 5,564 | 6,492 | 6,628 | 6,730 | 6,790 | 6,834 | 6,877 |
| 73 | 6,566 | 4,731 | 4,701 | 5,153 | 6,236 | 6,529 | 6,872 | 7,130 | 7,336 | 7,544 |
| 74 | 6,439 | 10,235 | 12,804 | 12,882 | 15,254 | 15,860 | 16,552 | 17,069 | 17,480 | 17,895 |
| 75 | 6,094 | 14,867 | 13,417 | 13,317 | 15,126 | 15,959 | 17,108 | 18,022 | 18,763 | 19,519 |
| 76 | 1,535 | 1,550 | 2,322 | 2,792 | 3,409 | 3,490 | 3,543 | 3,571 | 3,590 | 3,608 |
| 77 | 9,531 | 10,367 | 9,551 | 10,471 | 11,677 | 11,837 | 11,942 | 11,997 | 12,035 | 12,071 |
| 78 | 3,450 | 7,206 | 9,028 | 9,404 | 11,247 | 11,901 | 12,748 | 13,408 | 13,940 | 14,481 |
| 79 | 7,462 | 10,852 | 9,720 | 10,031 | 11,150 | 11,517 | 11,979 | 12,336 | 12,623 | 12,915 |
| 80 | 916 | 1,576 | 1,178 | 1,560 | 2,309 | 2,483 | 2,672 | 2,811 | 2,921 | 3,031 |
| 81 | 1,068 | 1,366 | 1,168 | 1,510 | 2,431 | 2,757 | 3,182 | 3,504 | 3,931 | 4,358 |
| 82 | 1,910 | 993 | 2,057 | 2,220 | 3,904 | 4,746 | 6,108 | 7,107 | 7,745 | 8,135 |
| 83 | 1,557 | 2,890 | 2,295 | 2,571 | 3,343 | 3,570 | 3,845 | 4,055 | 4,223 | 4,393 |
| 84 | 7,134 | 7,814 | 6,664 | 7,420 | 9,084 | 9,508 | 9,992 | 10,353 | 10,640 | 10,930 |
| 85 | 6,700 | 7,091 | 4,334 | 4,309 | 4,813 | 5,043 | 5,362 | 5,615 | 5,820 | 6,029 |
| 86 | 17,590 | 19,394 | 19,262 | 20,373 | 22,905 | 23,571 | 24,341 | 24,919 | 25,378 | 25,843 |
| 87 | 18,213 | 9,220 | 7,305 | 6,917 | 7,505 | 7,919 | 8,533 | 9,032 | 9,439 | 9,855 |
| 88 | 449 | 1,461 | 1,453 | 1,693 | 3,226 | 3,880 | 4,870 | 5,729 | 6,498 | 7,352 |
| 89 | 9,472 | 7,764 | 5,956 | 6,524 | 7,499 | 7,698 | 7,899 | 8,042 | 8,153 | 8,264 |
| 90 | 6,028 | 19,940 | 16,719 | 17,020 | 19,151 | 19,964 | 21,038 | 21,880 | 22,560 | 23,252 |
| | | | | | | | | | | |

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **91** | 5,739 | 9,865 | 8,140 | 7,888 | 8,953 | 9,520 | 10,327 | 10,974 | 11,499 | 12,036 |
| **92** | 3,663 | 10,075 | 6,509 | 6,659 | 7,582 | 7,927 | 8,379 | 8,733 | 9,018 | 9,309 |
| **93** | 14,408 | 27,825 | 26,217 | 28,130 | 32,101 | 33,074 | 34,165 | 34,973 | 35,613 | 36,260 |
| **94** | 44,760 | 36,687 | 42,258 | 41,060 | 43,424 | 44,079 | 44,483 | 45,291 | 45,931 | 46,578 |
| **95** | 5,367 | 7,378 | 9,006 | 10,000 | 11,072 | 11,145 | 11,242 | 11,316 | 11,374 | 11,431 |
| **96** | 5,973 | 8,476 | 10,852 | 11,759 | 13,603 | 14,048 | 14,542 | 14,906 | 15,194 | 15,486 |
| **97** | 12,637 | 17,139 | 15,030 | 15,600 | 17,728 | 18,432 | 19,322 | 20,011 | 20,564 | 21,127 |
| **98** | 16,275 | 22,769 | 25,052 | 25,035 | 27,042 | 27,886 | 29,022 | 30,099 | 30,958 | 31,817 |
| **99** | 9,702 | 10,929 | 10,200 | 10,593 | 11,928 | 12,422 | 13,144 | 13,894 | 14,486 | 15,067 |
| **100** | 9,665 | 15,192 | 13,768 | 23,941 | 39,700 | 42,819 | 46,224 | 48,723 | 50,477 | 51,255 |
| **101** | 10,966 | 16,968 | 14,224 | 14,938 | 16,352 | 16,688 | 17,057 | 17,330 | 17,544 | 17,762 |
| **102** | 29,548 | 21,214 | 23,541 | 23,900 | 25,445 | 26,692 | 27,850 | 28,749 | 29,547 | 30,053 |
| **103** | 879 | 557 | 1,419 | 1,456 | 2,383 | 2,911 | 4,330 | 5,407 | 6,266 | 7,291 |
| **104** | 15,980 | 27,527 | 27,687 | 27,080 | 29,918 | 31,062 | 32,832 | 34,332 | 35,528 | 36,501 |
| **105** | 6,603 | 22,725 | 31,149 | 30,967 | 34,248 | 35,912 | 38,227 | 40,026 | 41,542 | 43,021 |
| **106** | 1,763 | 7,136 | 10,583 | 10,982 | 12,126 | 12,468 | 12,886 | 13,206 | 13,462 | 13,722 |
| **107** | 11,316 | 31,415 | 29,074 | 30,217 | 34,423 | 35,807 | 37,556 | 38,908 | 39,994 | 41,099 |
| **108** | 5,996 | 15,264 | 15,492 | 16,209 | 18,286 | 19,118 | 20,616 | 21,616 | 22,333 | 22,878 |
| **109** | 24,333 | 33,477 | 32,591 | 31,955 | 36,312 | 38,475 | 41,507 | 43,930 | 45,897 | 47,905 |
| **110** | 5,623 | 4,753 | 3,233 | 3,529 | 4,060 | 4,173 | 4,291 | 4,376 | 4,442 | 4,509 |
| **111** | 6,501 | 15,291 | 13,360 | 14,079 | 15,932 | 16,565 | 17,423 | 18,076 | 18,592 | 19,366 |
| **112** | 4,294 | 3,866 | 3,722 | 3,976 | 4,602 | 4,824 | 5,093 | 5,298 | 5,419 | 5,542 |
| **113** | 2,065 | 6,248 | 8,497 | 9,372 | 13,130 | 14,572 | 16,541 | 18,042 | 19,384 | 20,933 |
| **114** | 6,052 | 17,100 | 20,920 | 21,389 | 29,906 | 31,766 | 33,537 | 34,936 | 36,514 | 38,149 |
| **115** | 38 | 236 | 387 | 807 | 2,373 | 4,891 | 6,913 | 7,918 | 8,632 | 9,332 |
| **116** | 2,226 | 6,849 | 7,575 | 8,078 | 9,957 | 11,621 | 14,311 | 16,357 | 18,141 | 20,186 |
| **117** | 171 | 893 | 940 | 1,294 | 2,547 | 3,102 | 3,909 | 4,522 | 5,009 | 5,500 |
| **118** | 1,836 | 8,867 | 9,451 | 11,421 | 14,553 | 15,940 | 17,957 | 19,491 | 20,708 | 21,935 |
| **119** | 13,495 | 27,605 | 15,891 | 16,750 | 19,706 | 21,152 | 22,227 | 23,054 | 23,716 | 24,390 |
| **120** | 5,668 | 9,165 | 8,887 | 9,771 | 12,243 | 13,518 | 15,115 | 16,129 | 16,792 | 17,465 |
| **121** | 48 | 447 | 409 | 712 | 1,964 | 2,297 | 2,701 | 3,008 | 3,251 | 3,496 |
| **122** | 10,178 | 21,715 | 23,170 | 24,693 | 40,351 | 46,368 | 57,010 | 61,067 | 64,239 | 65,875 |
| **123** | 34,009 | 44,302 | 50,188 | 50,764 | 63,128 | 67,051 | 70,988 | 73,984 | 75,120 | 76,101 |
| **124** | 9,575 | 14,194 | 18,993 | 20,060 | 22,252 | 22,917 | 23,456 | 23,660 | 23,822 | 23,904 |
| **125** | 5,168 | 7,207 | 5,576 | 5,894 | 7,146 | 7,479 | 7,786 | 8,020 | 8,207 | 8,397 |
| **126** | 15,816 | 27,792 | 12,666 | 12,908 | 13,834 | 14,151 | 14,577 | 14,900 | 15,158 | 15,415 |
| **127** | 5,374 | 5,900 | 4,443 | 4,706 | 5,958 | 6,402 | 7,075 | 7,586 | 7,870 | 8,159 |
| **Total** | **1,539,045** | **1,855,054** | **1,906,018** | **2,026,916** | **2,344,680** | **2,449,192** | **2,587,309** | **2,687,748** | **2,768,407** | **2,846,949** |

## Montgomery County Jobs (RAZ 128 to 139)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **128** | 1,058 | 6,400 | 6,374 | 8,675 | 14,044 | 18,200 | 24,924 | 30,618 | 36,681 | 43,370 |
| **129** | 9,741 | 6,848 | 5,967 | 7,136 | 10,119 | 14,141 | 20,444 | 26,080 | 31,813 | 38,478 |
| **130** | 207 | 527 | 1,290 | 1,761 | 2,954 | 4,072 | 6,873 | 9,255 | 11,570 | 13,903 |
| **131** | 5,155 | 13,348 | 21,143 | 22,795 | 27,006 | 29,890 | 33,754 | 36,525 | 38,634 | 40,287 |
| **132** | 879 | 20,041 | 20,532 | 24,051 | 31,209 | 36,125 | 43,129 | 48,358 | 52,216 | 54,993 |
| **133** | 2,571 | 952 | 2,507 | 3,002 | 6,592 | 9,745 | 14,830 | 19,373 | 23,567 | 27,791 |
| **134** | 9,432 | 16,260 | 16,681 | 20,188 | 29,911 | 36,885 | 46,605 | 54,825 | 63,153 | 71,665 |
| **135** | 2,915 | 6,844 | 6,300 | 8,502 | 14,878 | 19,267 | 26,492 | 32,815 | 38,828 | 45,714 |
| **136** | 9,044 | 11,448 | 12,601 | 15,272 | 18,851 | 22,039 | 26,809 | 31,324 | 35,731 | 40,337 |
| **137** | 110 | 1,668 | 2,958 | 3,711 | 6,097 | 8,064 | 11,566 | 14,645 | 17,842 | 21,175 |
| **138** | 651 | 740 | 542 | 658 | 1,255 | 1,702 | 2,402 | 3,128 | 3,955 | 5,066 |
| **139** | 1,505 | 4,558 | 11,589 | 14,213 | 18,574 | 21,631 | 26,808 | 31,749 | 36,828 | 42,568 |
| **Total** | **43,268** | **89,634** | **108,484** | **129,965** | **181,490** | **221,760** | **284,636** | **338,696** | **390,819** | **445,347** |

## Waller County Jobs (RAZ 140 to 143)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **140** | 4,238 | 4,729 | 4,737 | 5,438 | 6,186 | 7,003 | 8,961 | 10,865 | 12,626 | 15,016 |
| **141** | 1,874 | 2,029 | 2,072 | 2,453 | 2,829 | 3,212 | 4,083 | 4,857 | 5,545 | 6,477 |
| **142** | 1,227 | 2,729 | 3,137 | 4,870 | 5,993 | 7,238 | 10,174 | 12,951 | 15,487 | 19,025 |
| **143** | 274 | 365 | 833 | 1,090 | 2,212 | 3,419 | 6,266 | 8,804 | 11,059 | 14,023 |
| **Total** | **7,612** | **9,851** | **10,778** | **13,851** | **17,220** | **20,872** | **29,483** | **37,477** | **44,718** | **54,541** |

## Fort Bend County Jobs (RAZ 144 to 158)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **144** | 1,071 | 5,672 | 5,265 | 6,781 | 11,904 | 15,791 | 22,743 | 28,927 | 34,763 | 41,506 |
| **145** | 323 | 925 | 1,896 | 2,608 | 3,873 | 4,976 | 7,227 | 9,664 | 11,619 | 13,237 |
| **146** | 6,359 | 5,763 | 5,038 | 6,733 | 13,305 | 18,930 | 28,991 | 37,940 | 46,385 | 55,551 |
| **147** | 90 | 365 | 417 | 681 | 1,318 | 1,801 | 2,666 | 3,434 | 4,160 | 4,999 |
| **148** | 484 | 1,948 | 2,783 | 3,779 | 5,477 | 6,766 | 9,071 | 11,121 | 13,056 | 15,292 |
| **149** | 10,100 | 12,870 | 19,693 | 23,328 | 27,793 | 30,240 | 33,759 | 36,110 | 37,714 | 38,898 |
| **150** | 609 | 6,528 | 5,132 | 6,194 | 8,932 | 11,379 | 16,306 | 21,008 | 25,820 | 31,212 |
| **151** | 12,881 | 21,542 | 21,683 | 24,282 | 29,759 | 32,206 | 36,429 | 39,367 | 41,506 | 43,534 |
| **152** | 11,046 | 23,221 | 27,177 | 30,993 | 38,191 | 43,683 | 52,648 | 59,144 | 64,075 | 68,145 |
| **153** | 4,103 | 4,813 | 7,685 | 8,837 | 11,628 | 13,746 | 17,533 | 20,903 | 24,082 | 27,757 |
| **154** | 1,159 | 8,726 | 6,697 | 8,785 | 13,254 | 16,623 | 22,520 | 27,481 | 32,370 | 37,762 |
| **155** | 1,348 | 4,048 | 4,234 | 6,276 | 10,184 | 13,148 | 18,451 | 23,169 | 27,620 | 32,764 |
| **156** | 403 | 1,939 | 2,972 | 3,619 | 6,968 | 9,509 | 14,054 | 18,098 | 21,913 | 26,322 |
| **157** | 516 | 790 | 1,421 | 1,783 | 2,341 | 2,764 | 3,522 | 4,196 | 4,832 | 5,567 |
| **158** | 56 | 619 | 843 | 1,305 | 2,253 | 2,971 | 4,257 | 5,401 | 6,480 | 7,727 |
| **Total** | **50,548** | **99,769** | **112,936** | **135,985** | **187,180** | **224,534** | **290,176** | **345,962** | **396,396** | **450,272** |

## Brazoria County Jobs (RAZ 159 to 172)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **159** | 13,316 | 3,510 | 3,239 | 3,291 | 3,438 | 3,755 | 4,424 | 5,093 | 5,466 | 6,063 |
| **160** | 2,216 | 3,740 | 2,267 | 2,560 | 3,037 | 3,271 | 3,673 | 4,063 | 4,425 | 4,904 |
| **161** | 125 | 272 | 181 | 169 | 173 | 218 | 334 | 387 | 402 | 413 |
| **162** | 9,642 | 1,429 | 1,057 | 1,113 | 1,908 | 2,297 | 2,766 | 3,156 | 3,415 | 3,714 |
| **163** | 9,158 | 16,650 | 10,909 | 11,924 | 13,545 | 14,304 | 15,803 | 16,558 | 17,648 | 18,720 |
| **164** | 9,373 | 11,582 | 15,108 | 16,058 | 18,084 | 18,812 | 19,609 | 20,567 | 22,120 | 23,657 |
| **165** | 191 | 1,038 | 418 | 409 | 472 | 505 | 558 | 592 | 623 | 653 |
| **166** | 1,794 | 4,228 | 4,703 | 5,327 | 6,421 | 7,254 | 8,415 | 9,857 | 10,738 | 11,750 |
| **167** | 4,931 | 6,548 | 6,379 | 6,930 | 8,069 | 8,377 | 8,997 | 9,482 | 10,152 | 11,055 |
| **168** | 4,229 | 1,795 | 296 | 372 | 1,166 | 1,633 | 2,035 | 2,370 | 2,576 | 2,816 |
| **169** | 89 | 2,819 | 1,288 | 1,350 | 2,940 | 3,795 | 5,403 | 6,741 | 8,292 | 10,091 |
| **170** | 9,330 | 11,200 | 10,679 | 11,773 | 13,664 | 14,509 | 16,122 | 17,215 | 18,378 | 20,203 |
| **171** | 130 | 1,455 | 4,707 | 5,719 | 8,247 | 10,323 | 14,096 | 17,087 | 19,610 | 22,359 |
| **172** | 6,426 | 11,226 | 19,019 | 20,624 | 23,595 | 24,689 | 26,113 | 27,360 | 28,574 | 29,674 |
| **Total** | **70,950** | **77,492** | **80,250** | **87,619** | **104,760** | **113,741** | **128,346** | **140,527** | **152,419** | **166,074** |

## Galveston County Jobs (RAZ 173 to 188)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **173** | 2,455 | 5,573 | 3,417 | 3,609 | 5,201 | 6,147 | 7,713 | 9,004 | 10,179 | 11,487 |
| **174** | 1,475 | 3,563 | 2,122 | 2,569 | 5,198 | 6,685 | 9,261 | 11,373 | 13,293 | 15,302 |
| **175** | 8,695 | 9,705 | 11,520 | 11,674 | 13,531 | 14,560 | 16,254 | 17,658 | 18,933 | 20,308 |
| **176** | 1,643 | 2,757 | 5,161 | 5,264 | 5,665 | 5,793 | 5,949 | 6,062 | 6,161 | 6,269 |
| **177** | 4,734 | 4,052 | 3,327 | 3,495 | 4,913 | 5,759 | 7,158 | 8,313 | 9,363 | 10,532 |
| **178** | 730 | 3,643 | 8,585 | 8,573 | 9,558 | 10,116 | 11,025 | 11,771 | 12,448 | 13,202 |
| **179** | 2,077 | 4,584 | 2,076 | 2,577 | 5,255 | 6,743 | 9,150 | 11,119 | 12,908 | 14,896 |
| **180** | 6,212 | 6,454 | 2,708 | 2,845 | 3,496 | 3,869 | 4,331 | 4,586 | 4,818 | 4,943 |
| **181** | 965 | 2,628 | 1,868 | 2,038 | 3,333 | 4,106 | 5,384 | 6,438 | 7,397 | 8,464 |
| **182** | 3,240 | 2,714 | 1,794 | 1,780 | 1,858 | 1,904 | 1,981 | 2,044 | 2,101 | 2,165 |
| **183** | 1,155 | 2,676 | 5,506 | 5,578 | 5,667 | 5,759 | 5,906 | 6,027 | 6,137 | 6,259 |
| **184** | 11,834 | 6,926 | 5,569 | 5,348 | 5,841 | 6,120 | 6,574 | 7,009 | 7,405 | 7,781 |
| **185** | 474 | 2,461 | 2,568 | 2,730 | 3,055 | 3,242 | 3,696 | 4,079 | 4,427 | 4,802 |
| **186** | 32,604 | 32,759 | 34,664 | 31,708 | 31,872 | 31,967 | 32,122 | 32,251 | 32,368 | 32,494 |
| **187** | 1,806 | 3,283 | 4,878 | 4,910 | 5,731 | 6,289 | 7,198 | 8,130 | 8,977 | 9,730 |
| **188** | 125 | 360 | 1,193 | 1,467 | 1,796 | 1,889 | 2,040 | 2,053 | 2,053 | 2,066 |
| **Total** | **80,224** | **94,138** | **96,956** | **96,165** | **111,970** | **120,947** | **135,743** | **147,918** | **158,967** | **170,701** |

## Chambers County Jobs (RAZ 189 to 192)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **189** | 2,174 | 2,997 | 1,925 | 1,216 | 1,464 | 1,620 | 1,863 | 2,138 | 2,432 | 2,767 |
| **190** | 100 | 197 | 312 | 383 | 539 | 639 | 862 | 1,150 | 1,536 | 1,976 |
| **191** | 2,292 | 2,497 | 2,781 | 3,414 | 5,124 | 6,231 | 7,978 | 9,961 | 12,085 | 14,505 |
| **192** | 1,482 | 2,597 | 3,769 | 4,625 | 6,024 | 6,919 | 8,325 | 9,920 | 11,627 | 13,571 |
| **Total** | **6,048** | **8,288** | **8,787** | **9,637** | **13,150** | **15,409** | **19,029** | **23,169** | **27,681** | **32,819** |

## Liberty County Jobs (RAZ 193 to 199)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **193** | 1 | 27 | 45 | 40 | 61 | 105 | 217 | 366 | 551 | 769 |
| **194** | 7,233 | 7,228 | 7,371 | 6,577 | 7,358 | 8,080 | 9,626 | 11,599 | 14,091 | 17,042 |
| **195** | 1,826 | 3,828 | 4,631 | 3,931 | 4,935 | 5,799 | 7,635 | 9,948 | 12,784 | 16,109 |
| **196** | 8 | 1,077 | 1,007 | 746 | 1,136 | 1,677 | 3,610 | 6,077 | 8,568 | 10,781 |
| **197** | 3,634 | 4,828 | 5,129 | 4,206 | 4,976 | 5,663 | 7,118 | 8,946 | 11,187 | 13,869 |
| **198** | 985 | 77 | 75 | 51 | 179 | 288 | 518 | 806 | 1,160 | 1,575 |
| **199** | 564 | 839 | 603 | 942 | 1,065 | 1,178 | 1,341 | 1,548 | 1,809 | 1,965 |
| **Total** | **14,251** | **17,904** | **18,861** | **16,492** | **19,710** | **22,789** | **30,064** | **39,290** | **50,149** | **62,109** |

## Grimes County Jobs

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **7,460** | **9,260** | **10,110** | **7,256** | **8,545** | **9,053** | **10,041** | **10,964** | **11,863** | **13,737** |

# Households

## Harris County Households (RAZ 1 to 127)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 374 | 1,619 | 1,971 | 1,736 | 2,237 | 2,808 | 3,335 | 3,751 | 4,044 | 4,283 |
| 2 | 10,542 | 11,538 | 11,594 | 10,140 | 10,450 | 10,937 | 11,223 | 11,412 | 11,535 | 11,632 |
| 3 | 1,078 | 1,158 | 1,348 | 1,324 | 1,533 | 2,088 | 2,582 | 2,981 | 3,261 | 3,489 |
| 4 | 1,446 | 1,699 | 2,549 | 2,949 | 3,566 | 4,384 | 5,248 | 6,016 | 6,556 | 6,996 |
| 5 | 9,045 | 11,087 | 11,771 | 9,434 | 9,936 | 10,615 | 11,353 | 11,971 | 12,411 | 12,776 |
| 6 | 16,219 | 21,213 | 23,005 | 21,916 | 22,530 | 23,227 | 23,872 | 24,469 | 24,895 | 25,263 |
| 7 | 3,367 | 4,536 | 6,850 | 8,311 | 9,354 | 10,272 | 11,426 | 11,896 | 12,229 | 12,505 |
| 8 | 12,969 | 14,627 | 15,182 | 14,061 | 14,478 | 14,974 | 15,326 | 15,796 | 16,128 | 16,402 |
| 9 | 10,003 | 11,452 | 11,343 | 9,195 | 9,349 | 9,575 | 9,741 | 9,876 | 9,973 | 10,052 |
| 10 | 1,762 | 1,940 | 1,942 | 1,675 | 1,746 | 1,897 | 2,058 | 2,196 | 2,295 | 2,376 |
| 11 | 1,532 | 1,577 | 1,572 | 1,386 | 1,529 | 1,694 | 1,849 | 1,974 | 2,064 | 2,138 |
| 12 | 2,362 | 2,690 | 2,689 | 2,396 | 2,467 | 2,550 | 2,627 | 2,690 | 2,735 | 2,772 |
| 13 | 14,790 | 16,918 | 16,917 | 14,261 | 14,663 | 15,002 | 15,156 | 15,281 | 15,370 | 15,444 |
| 14 | 6,450 | 6,839 | 7,038 | 6,325 | 6,641 | 7,218 | 7,748 | 8,183 | 8,489 | 8,738 |
| 15 | 1,600 | 1,818 | 2,026 | 1,978 | 2,068 | 2,192 | 2,308 | 2,402 | 2,468 | 2,523 |
| 16 | 2,299 | 2,795 | 2,988 | 2,900 | 3,703 | 4,156 | 4,683 | 5,188 | 5,600 | 5,991 |
| 17 | 8,147 | 9,627 | 10,720 | 10,040 | 10,876 | 11,714 | 12,443 | 13,029 | 13,440 | 13,773 |
| 18 | 1,753 | 2,322 | 2,931 | 2,711 | 3,218 | 3,590 | 3,942 | 4,224 | 4,423 | 4,588 |
| 19 | 5,525 | 6,152 | 6,352 | 5,825 | 6,026 | 6,252 | 6,431 | 6,584 | 6,694 | 6,784 |
| 20 | 9,011 | 12,015 | 12,950 | 11,886 | 12,460 | 13,063 | 13,632 | 14,093 | 14,422 | 14,693 |
| 21 | 8,821 | 11,044 | 11,964 | 11,208 | 11,810 | 12,263 | 12,579 | 12,750 | 12,872 | 12,972 |
| 22 | 9,188 | 10,872 | 11,146 | 10,770 | 10,872 | 10,990 | 11,101 | 11,191 | 11,255 | 11,308 |
| 23 | 7,104 | 10,645 | 12,138 | 11,431 | 12,635 | 13,994 | 14,418 | 14,589 | 14,710 | 14,811 |
| 24 | 2,671 | 3,144 | 3,118 | 2,800 | 2,871 | 2,956 | 3,288 | 3,738 | 4,058 | 4,334 |
| 25 | 3,798 | 4,993 | 4,866 | 4,461 | 5,338 | 6,321 | 7,114 | 7,549 | 7,704 | 7,835 |
| 26 | 2,056 | 3,045 | 3,584 | 3,465 | 3,726 | 3,955 | 4,168 | 4,338 | 4,460 | 4,561 |
| 27 | 6,666 | 7,110 | 8,910 | 9,719 | 10,823 | 11,184 | 11,366 | 11,474 | 11,540 | 11,591 |
| 28 | 11,507 | 12,889 | 12,847 | 11,023 | 11,224 | 11,563 | 11,985 | 12,522 | 12,900 | 13,207 |
| 29 | 5,475 | 6,122 | 6,328 | 5,591 | 6,003 | 6,587 | 7,173 | 7,646 | 7,978 | 8,246 |
| 30 | 6,884 | 7,280 | 7,431 | 6,877 | 7,088 | 7,377 | 7,658 | 7,892 | 8,057 | 8,192 |
| 31 | 12,082 | 13,410 | 13,441 | 11,573 | 11,653 | 11,744 | 11,828 | 11,895 | 11,942 | 11,981 |
| 32 | 15,495 | 17,122 | 17,278 | 15,486 | 15,772 | 16,199 | 16,623 | 16,978 | 17,231 | 17,437 |
| 33 | 13,286 | 14,835 | 15,588 | 14,527 | 15,385 | 16,243 | 16,991 | 17,591 | 18,011 | 18,352 |
| 34 | 4,150 | 4,854 | 6,353 | 7,252 | 8,456 | 9,817 | 12,230 | 13,945 | 15,159 | 16,169 |
| 35 | 11,968 | 13,643 | 13,705 | 12,835 | 13,144 | 13,611 | 14,124 | 14,529 | 14,814 | 15,046 |
| 36 | 5,453 | 5,677 | 5,681 | 5,201 | 5,222 | 5,247 | 5,270 | 5,289 | 5,302 | 5,313 |
| 37 | 3,086 | 3,219 | 3,259 | 3,108 | 3,159 | 3,322 | 3,506 | 3,666 | 3,781 | 3,875 |
| 38 | 12,302 | 17,052 | 16,947 | 14,208 | 14,810 | 15,263 | 15,579 | 15,916 | 16,174 | 16,384 |
| 39 | 5,562 | 6,901 | 8,683 | 8,701 | 10,106 | 11,677 | 13,103 | 13,944 | 14,534 | 15,023 |
| 40 | 16,015 | 20,912 | 21,831 | 19,854 | 20,368 | 21,070 | 21,772 | 22,369 | 22,729 | 23,022 |
| 41 | 4,214 | 5,599 | 5,602 | 5,244 | 5,293 | 5,349 | 5,401 | 5,443 | 5,472 | 5,596 |
| 42 | 1,388 | 1,627 | 1,871 | 1,691 | 1,906 | 2,080 | 2,218 | 2,323 | 2,397 | 2,456 |
| 43 | 11,146 | 12,679 | 12,889 | 11,503 | 11,704 | 12,157 | 12,257 | 12,355 | 12,428 | 12,489 |
| | | | | | | | | | | |

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| 44 | 11,715 | 13,028 | 13,194 | 11,639 | 12,140 | 12,655 | 13,108 | 13,474 | 13,731 | 13,939 |
| 45 | 5,814 | 6,826 | 6,922 | 6,437 | 6,588 | 6,822 | 7,021 | 7,179 | 7,289 | 7,378 |
| 46 | 2,967 | 3,584 | 3,815 | 3,586 | 3,708 | 3,832 | 3,940 | 4,028 | 4,090 | 4,139 |
| 47 | 2,666 | 3,040 | 3,083 | 2,850 | 2,902 | 2,964 | 3,080 | 3,127 | 3,160 | 3,187 |
| 48 | 4,816 | 5,357 | 5,621 | 5,339 | 5,635 | 5,981 | 6,300 | 6,561 | 6,746 | 6,896 |
| 49 | 5,222 | 6,664 | 7,957 | 8,386 | 9,312 | 10,364 | 11,120 | 11,802 | 12,162 | 12,421 |
| 50 | 23,744 | 28,681 | 31,401 | 30,774 | 32,471 | 34,400 | 36,128 | 37,151 | 37,931 | 38,485 |
| 51 | 2,642 | 3,003 | 2,940 | 2,573 | 2,583 | 2,595 | 2,607 | 2,616 | 2,622 | 2,627 |
| 52 | 0 | 14 | 7 | 0 | 10 | 35 | 151 | 197 | 231 | 258 |
| 53 | 18,273 | 20,795 | 20,883 | 18,756 | 18,756 | 18,976 | 19,250 | 19,494 | 19,670 | 19,815 |
| 54 | 18,281 | 20,855 | 21,268 | 19,149 | 19,437 | 20,010 | 20,614 | 21,131 | 21,500 | 21,801 |
| 55 | 20 | 19 | 18 | 15 | 19 | 31 | 43 | 90 | 123 | 150 |
| 56 | 6,504 | 8,488 | 10,509 | 11,589 | 12,823 | 13,777 | 14,350 | 14,799 | 15,120 | 15,396 |
| 57 | 6,599 | 7,901 | 9,720 | 9,950 | 11,355 | 13,169 | 14,743 | 15,469 | 15,987 | 16,263 |
| 58 | 3,714 | 4,711 | 6,022 | 6,858 | 7,862 | 9,220 | 10,802 | 12,149 | 12,757 | 13,250 |
| 59 | 3,728 | 4,581 | 6,306 | 7,436 | 8,670 | 9,840 | 10,812 | 11,579 | 12,059 | 12,450 |
| 60 | 24,817 | 30,700 | 31,395 | 27,662 | 27,805 | 28,232 | 28,710 | 29,124 | 29,421 | 29,664 |
| 61 | 12,561 | 14,390 | 14,255 | 12,202 | 12,209 | 12,218 | 12,225 | 12,232 | 12,236 | 12,240 |
| 62 | 21,980 | 27,244 | 27,946 | 23,891 | 24,225 | 24,607 | 24,965 | 25,245 | 25,446 | 25,630 |
| 63 | 20,752 | 25,388 | 26,444 | 24,484 | 25,186 | 26,319 | 27,473 | 28,315 | 28,913 | 29,310 |
| 64 | 9,024 | 10,094 | 9,746 | 9,108 | 9,323 | 9,575 | 9,811 | 10,002 | 10,138 | 10,251 |
| 65 | 24,874 | 29,351 | 30,052 | 27,307 | 27,728 | 28,348 | 28,578 | 28,767 | 28,900 | 29,010 |
| 66 | 3,107 | 3,546 | 3,808 | 3,428 | 3,737 | 4,087 | 4,411 | 4,667 | 4,847 | 4,994 |
| 67 | 9,470 | 12,181 | 12,540 | 9,685 | 10,472 | 11,306 | 12,049 | 12,651 | 13,073 | 13,416 |
| 68 | 19,653 | 22,598 | 23,925 | 22,767 | 23,335 | 24,016 | 24,664 | 25,261 | 25,741 | 26,181 |
| 69 | 3,459 | 4,018 | 4,218 | 3,973 | 4,370 | 4,785 | 5,154 | 5,452 | 5,661 | 5,831 |
| 70 | 6,770 | 7,940 | 8,322 | 7,944 | 8,028 | 8,140 | 8,243 | 8,328 | 8,388 | 8,437 |
| 71 | 3,784 | 4,538 | 4,685 | 4,497 | 4,651 | 5,002 | 5,326 | 5,582 | 5,762 | 5,909 |
| 72 | 3,055 | 3,447 | 3,417 | 2,973 | 2,983 | 2,996 | 3,008 | 3,036 | 3,063 | 3,090 |
| 73 | 4,918 | 5,926 | 6,152 | 5,814 | 5,835 | 5,873 | 5,919 | 6,012 | 6,079 | 6,134 |
| 74 | 4,937 | 5,850 | 5,809 | 5,249 | 5,669 | 6,146 | 6,587 | 7,184 | 7,724 | 8,213 |
| 75 | 2,108 | 2,468 | 3,214 | 3,590 | 4,306 | 4,930 | 5,794 | 6,561 | 7,131 | 7,620 |
| 76 | 3,116 | 3,774 | 5,074 | 5,549 | 6,300 | 6,866 | 7,290 | 7,610 | 7,829 | 8,006 |
| 77 | 4,228 | 5,018 | 5,583 | 5,462 | 6,302 | 7,354 | 8,434 | 9,372 | 10,032 | 10,619 |
| 78 | 7,411 | 13,141 | 19,072 | 23,928 | 26,928 | 29,397 | 31,188 | 32,498 | 33,299 | 33,875 |
| 79 | 13,346 | 18,983 | 20,509 | 20,650 | 21,070 | 21,690 | 22,614 | 23,364 | 23,895 | 24,335 |
| 80 | 2432 | 3,543 | 4,340 | 4,713 | 5,365 | 7,208 | 8,909 | 10,038 | 10,719 | 11,236 |
| 81 | 3,387 | 4,213 | 5,096 | 5,589 | 6,226 | 7,085 | 7,876 | 8,563 | 9,112 | 9,525 |
| 82 | 886 | 1150 | 2,891 | 4,330 | 5,546 | 6,651 | 7,668 | 8,355 | 8,842 | 9,197 |
| 83 | 2,768 | 3,378 | 3,632 | 3,479 | 3,911 | 4,525 | 5,485 | 6,344 | 7,014 | 7,583 |
| 84 | 6,031 | 7,741 | 9,300 | 10,079 | 11,268 | 12,864 | 14,445 | 15,733 | 16,647 | 17,371 |
| 85 | 3,041 | 3,066 | 2,798 | 2,250 | 2,310 | 2,381 | 2,447 | 2,502 | 2,540 | 2,572 |
| 86 | 16,157 | 18,770 | 19,855 | 17,717 | 18,433 | 19,287 | 20,081 | 20,734 | 21,196 | 21,570 |
| 87 | 12 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 88 | 1996 | 2,306 | 2,321 | 2,005 | 2,046 | 2,114 | 2,183 | 2,241 | 2,282 | 2,316 |
| 89 | 3,454 | 3,908 | 3,916 | 3,274 | 3,560 | 3,931 | 4,286 | 4,580 | 4,789 | 4,958 |
| 90 | 13,662 | 15,795 | 16,894 | 17,129 | 17,952 | 19,004 | 19,868 | 20,380 | 20,740 | 21,034 |
| | | | | | | | | | | |

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **91** | 4,363 | 5,823 | 6,384 | 6,643 | 6,849 | 7,199 | 7,632 | 8,058 | 8,418 | 8,760 |
| **92** | 6,091 | 8,160 | 8,824 | 8,308 | 8,809 | 9,387 | 9,920 | 10,356 | 10,663 | 10,913 |
| **93** | 16,891 | 24,924 | 27,420 | 28,383 | 29,970 | 30,958 | 31,871 | 32,592 | 33,059 | 33,405 |
| **94** | 18,643 | 22,377 | 23,686 | 22,276 | 22,486 | 22,858 | 23,320 | 23,696 | 23,962 | 24,183 |
| **95** | 5,913 | 8,084 | 9,322 | 9,988 | 10,566 | 10,941 | 11,193 | 11,373 | 11,494 | 11,590 |
| **96** | 12,693 | 13,212 | 16,021 | 17,912 | 19,200 | 19,874 | 20,233 | 20,455 | 20,594 | 20,702 |
| **97** | 17,196 | 19,628 | 19,881 | 17,370 | 17,943 | 18,554 | 19,099 | 19,542 | 19,853 | 20,105 |
| **98** | 13,321 | 17,850 | 19,445 | 18,702 | 19,436 | 20,300 | 21,105 | 21,947 | 22,615 | 23,248 |
| **99** | 16,312 | 21,274 | 24,348 | 24,388 | 26,237 | 27,585 | 28,851 | 29,842 | 30,551 | 31,161 |
| **100** | 8,043 | 13,029 | 15,132 | 15,549 | 15,878 | 16,615 | 16,842 | 17,016 | 17,078 | 17,183 |
| **101** | 12,900 | 17,346 | 17,500 | 15,317 | 15,317 | 15,330 | 15,354 | 15,372 | 15,385 | 15,403 |
| **102** | 11,075 | 12,411 | 13,367 | 12,636 | 13,209 | 13,802 | 14,325 | 14,747 | 15,043 | 15,284 |
| **103** | 43 | 365 | 360 | 228 | 242 | 258 | 542 | 553 | 561 | 640 |
| **104** | 7,650 | 8,900 | 9,222 | 8,432 | 8,946 | 9,531 | 10,071 | 10,497 | 10,797 | 11,041 |
| **105** | 8,637 | 13,004 | 14,614 | 15,332 | 16,155 | 17,078 | 17,929 | 18,581 | 19,046 | 19,441 |
| **106** | 3,082 | 4,673 | 5,786 | 6,468 | 6,887 | 7,195 | 7,479 | 7,697 | 7,852 | 7,984 |
| **107** | 13,698 | 24,358 | 28,447 | 30,212 | 32,359 | 34,800 | 36,420 | 37,614 | 38,394 | 38,883 |
| **108** | 9,714 | 12,021 | 14,019 | 14,581 | 15,712 | 17,004 | 18,217 | 19,167 | 19,501 | 19,674 |
| **109** | 8,665 | 10,216 | 10,273 | 9,132 | 9,852 | 10,787 | 11,759 | 12,612 | 13,272 | 13,859 |
| **110** | 5,906 | 8,018 | 9,412 | 9,680 | 10,358 | 11,163 | 11,925 | 12,537 | 12,968 | 13,325 |
| **111** | 9,237 | 16,285 | 19,412 | 21,493 | 21,992 | 22,672 | 23,302 | 23,807 | 24,166 | 24,463 |
| **112** | 2,019 | 3,124 | 3,503 | 3,750 | 4,315 | 5,264 | 6,233 | 7,052 | 7,636 | 8,112 |
| **113** | 8,708 | 14,422 | 24,335 | 32,549 | 39,884 | 48,698 | 57,007 | 63,598 | 68,918 | 73,721 |
| **114** | 9,179 | 13,908 | 18,776 | 22,070 | 24,678 | 27,156 | 28,328 | 28,799 | 29,130 | 29,404 |
| **115** | 216 | 474 | 565 | 587 | 1,089 | 3,070 | 5,178 | 7,085 | 8,853 | 10,808 |
| **116** | 7,181 | 11,572 | 21,125 | 29,133 | 36,645 | 44,946 | 53,379 | 60,955 | 66,259 | 70,757 |
| **117** | 1087 | 1840 | 2038 | 2,052 | 2,554 | 4,252 | 6,360 | 8,212 | 9,869 | 11,517 |
| **118** | 5,925 | 15,567 | 24,931 | 32,988 | 38,199 | 46,920 | 55,036 | 61,232 | 65,887 | 70,125 |
| **119** | 13,722 | 18,967 | 22,993 | 25,340 | 27,347 | 29,046 | 30,205 | 31,063 | 31,601 | 32,012 |
| **120** | 2,860 | 4,318 | 4,802 | 4,796 | 5,715 | 6,942 | 8,185 | 9,387 | 10,329 | 11,363 |
| **121** | 916 | 2237 | 3774.5 | 4,706 | 6,269 | 8,262 | 10,349 | 12,256 | 13,669 | 14,818 |
| **122** | 22,100 | 31,153 | 42,481 | 50,854 | 60,562 | 70,635 | 80,544 | 85,247 | 88,239 | 90,782 |
| **123** | 36,416 | 49,508 | 56,439 | 55,318 | 58,102 | 60,646 | 62,437 | 63,372 | 63,706 | 63,936 |
| **124** | 6,102 | 8,045 | 12,022 | 13,770 | 16,897 | 19,388 | 21,745 | 22,686 | 23,680 | 24,201 |
| **125** | 5,932 | 7,169 | 8,844 | 9,385 | 10,637 | 12,000 | 13,171 | 13,928 | 14,518 | 15,007 |
| **126** | 1,174 | 1,624 | 1,871 | 1,910 | 2,223 | 2,691 | 3,206 | 3,888 | 4,252 | 4,549 |
| **127** | 10,499 | 12,212 | 16,133 | 18,731 | 21,548 | 23,812 | 25,710 | 27,577 | 28,721 | 29,870 |
| **Total** | **1,018,601** | **1,288,410** | **1,443,554** | **1,436,014** | **1,544,617** | **1,668,412** | **1,782,959** | **1,869,923** | **1,931,719** | **1,984,237** |

## Montgomery County Households (RAZ 128 to 139)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **128** | 5,440 | 8,453 | 10,146 | 10,816 | 12,817 | 15,653 | 19,321 | 22,277 | 25,524 | 28,170 |
| **129** | 9,139 | 14,289 | 18,118 | 20,123 | 24,126 | 30,518 | 39,322 | 45,972 | 52,826 | 59,112 |
| **130** | 1156 | 2386 | 6,477 | 10,153 | 13,880 | 18,602 | 24,050 | 27,681 | 32,042 | 35,854 |
| **131** | 8,836 | 12,726 | 14,282 | 14,555 | 15,793 | 16,992 | 17,970 | 18,709 | 19,065 | 19,379 |
| **132** | 7058 | 17,858 | 25,381 | 31,007 | 35,650 | 39,646 | 42,091 | 43,569 | 44,651 | 45,313 |
| **133** | 1,344 | 1595 | 2,648 | 3,482 | 4,601 | 6,391 | 8,763 | 10,599 | 12,704 | 14,992 |
| **134** | 8,336 | 11,027 | 12,075 | 12,133 | 13,337 | 15,356 | 17,905 | 19,763 | 21,566 | 23,196 |
| **135** | 5,714 | 8,761 | 10,629 | 11,372 | 12,864 | 14,861 | 17,796 | 20,382 | 23,019 | 25,538 |
| **136** | 7,100 | 16,462 | 21,423 | 21,962 | 27,380 | 31,822 | 36,410 | 39,012 | 41,117 | 42,905 |
| **137** | 2347 | 5,091 | 6,599 | 7,594 | 10,690 | 16,682 | 24,508 | 31,158 | 37,652 | 44,268 |
| **138** | 918 | 1938 | 2266 | 2,332 | 2,666 | 3,375 | 4,581 | 5,735 | 6,872 | 8,015 |
| **139** | 5,616 | 11,038 | 14,593 | 17,151 | 21,485 | 29,475 | 39,746 | 47,874 | 56,172 | 64,442 |
| **Total** | **63,004** | **111,624** | **144,634** | **162,680** | **195,289** | **239,373** | **292,463** | **332,731** | **373,209** | **411,184** |

## Waller County Households (RAZ 140 to 143)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **140** | 3,119 | 5,328 | 6,389 | 6,601 | 7,596 | 9,882 | 12,832 | 16,679 | 21,372 | 26,362 |
| **141** | 2,126 | 3,128 | 3,483 | 3,422 | 3,604 | 4,072 | 4,667 | 5,509 | 6,728 | 8,272 |
| **142** | 1,655 | 2,849 | 3,259 | 3,207 | 3,891 | 5,469 | 7,354 | 9,803 | 13,081 | 16,947 |
| **143** | 347 | 431 | 657 | 831 | 1,926 | 4,897 | 8,651 | 12,498 | 16,253 | 19,580 |
| **Total** | **7,247** | **11,736** | **13,788** | **14,061** | **17,018** | **24,319** | **33,504** | **44,489** | **57,434** | **71,160** |

## Fort Bend County Households (RAZ 144 to 158)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **144** | 990 | 6,336 | 15,739 | 24,220 | 32,126 | 37,187 | 40,769 | 42,544 | 43,390 | 43,834 |
| **145** | 1092 | 1749 | 2,831 | 3,644 | 7,437 | 15,298 | 24,514 | 33,840 | 42,628 | 50,217 |
| **146** | 9,069 | 15,572 | 25,778 | 34,470 | 43,953 | 50,941 | 57,852 | 63,448 | 68,721 | 74,413 |
| **147** | 480 | 647 | 734 | 695 | 926 | 1,305 | 1,733 | 2,126 | 2,864 | 4,007 |
| **148** | 1402 | 1,998 | 2,356 | 2,505 | 3,296 | 5,921 | 8,881 | 11,479 | 13,813 | 16,255 |
| **149** | 9,046 | 11,083 | 11,941 | 11,754 | 12,426 | 13,058 | 13,641 | 14,141 | 14,574 | 15,031 |
| **150** | 1418 | 6,160 | 8,524 | 10,524 | 12,105 | 14,687 | 17,305 | 19,575 | 21,315 | 22,698 |
| **151** | 9,625 | 14,008 | 16,374 | 18,001 | 19,187 | 20,909 | 22,110 | 23,140 | 23,598 | 24,077 |
| **152** | 5,554 | 10,462 | 12,110 | 13,198 | 14,094 | 15,147 | 16,206 | 17,115 | 17,345 | 17,440 |
| **153** | 11,551 | 14,114 | 15,441 | 16,019 | 16,414 | 17,563 | 18,163 | 18,214 | 18,260 | 18,308 |
| **154** | 7,155 | 13,979 | 17,423 | 20,232 | 24,127 | 27,843 | 31,103 | 33,419 | 35,534 | 37,755 |
| **155** | 8,475 | 12,920 | 19,472 | 24,452 | 30,382 | 37,345 | 44,256 | 49,661 | 54,393 | 58,887 |
| **156** | 807 | 1,450 | 2,663 | 3,582 | 6,698 | 12,272 | 18,791 | 24,582 | 31,134 | 37,875 |
| **157** | 1,597 | 2,101 | 2,345 | 2,409 | 3,103 | 3,964 | 5,165 | 6,452 | 7,827 | 9,742 |
| **158** | 1,041 | 1,634 | 1,892 | 1,988 | 2,450 | 3,254 | 4,275 | 5,304 | 7,597 | 10,709 |
| **Total** | **69,302** | **114,213** | **155,621** | **187,693** | **228,727** | **276,692** | **324,764** | **365,041** | **402,993** | **441,248** |

## Brazoria County Households (RAZ 159 to 172)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **159** | 4,071 | 4,886 | 5,062 | 4,592 | 5,033 | 5,812 | 6,809 | 7,695 | 8,556 | 9,394 |
| **160** | 5,385 | 6,951 | 7,176 | 6,393 | 6,720 | 7,272 | 7,914 | 8,565 | 9,197 | 9,925 |
| **161** | 1036 | 1203 | 1171.5 | 1,035 | 1,185 | 1,404 | 1,670 | 1,786 | 1,898 | 2,028 |
| **162** | 2,330 | 2,717 | 2,656 | 2,066 | 2,216 | 2,435 | 2,568 | 2,800 | 3,069 | 3,374 |
| **163** | 3,402 | 5,525 | 5,768 | 5,150 | 5,449 | 5,888 | 6,419 | 6,651 | 6,875 | 7,093 |
| **164** | 11,001 | 12,854 | 13,329 | 12,509 | 12,902 | 13,343 | 13,600 | 13,817 | 14,027 | 14,235 |
| **165** | 561 | 1,661 | 1878 | 765 | 830 | 941 | 1,069 | 1,178 | 1,283 | 1,387 |
| **166** | 3,232 | 4,408 | 4,812 | 4,806 | 5,724 | 7,477 | 9,664 | 11,648 | 13,649 | 15,626 |
| **167** | 6,360 | 7,684 | 7,885 | 7,401 | 8,319 | 10,072 | 12,388 | 14,371 | 16,478 | 18,559 |
| **168** | 676 | 1,020 | 1114.5 | 1,025 | 1,100 | 1,232 | 1,417 | 1,649 | 2,097 | 2,750 |
| **169** | 1909 | 3,068 | 3,550 | 3,648 | 4,734 | 7,822 | 11,998 | 16,509 | 21,280 | 26,989 |
| **170** | 10,898 | 14,138 | 15,029 | 14,691 | 16,595 | 20,182 | 24,795 | 28,909 | 33,079 | 37,818 |
| **171** | 2877 | 7,927 | 15,900 | 22,350 | 26,159 | 31,855 | 37,682 | 42,619 | 46,987 | 49,949 |
| **172** | 9,738 | 15,728 | 18,725 | 20,322 | 23,242 | 27,462 | 31,589 | 34,057 | 36,043 | 37,425 |
| **Total** | **63,476** | **89,770** | **104,053** | **106,753** | **120,208** | **143,196** | **169,582** | **192,254** | **214,517** | **236,552** |

## Galveston County Households (RAZ 173 to 188)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **173** | 5,008 | 7,354 | 8,255 | 8,861 | 9,487 | 10,393 | 10,888 | 11,212 | 11,482 | 11,766 |
| **174** | 4,299 | 6,146 | 9,833 | 13,016 | 15,443 | 19,978 | 24,688 | 28,185 | 31,000 | 32,858 |
| **175** | 7,485 | 13,241 | 16,665 | 18,578 | 21,117 | 24,589 | 27,838 | 29,250 | 29,597 | 30,112 |
| **176** | 3,565 | 5,639 | 5,991 | 5,372 | 5,839 | 6,740 | 8,187 | 9,633 | 11,133 | 12,820 |
| **177** | 5,693 | 6,863 | 7,463 | 7,541 | 8,188 | 9,283 | 10,641 | 11,924 | 13,206 | 14,553 |
| **178** | 5623 | 7,321 | 7,990 | 8,053 | 8,659 | 10,500 | 13,440 | 16,448 | 19,536 | 22,808 |
| **179** | 1,563 | 2,242 | 3,056 | 3,302 | 4,076 | 5,280 | 7,686 | 10,569 | 14,077 | 18,319 |
| **180** | 8,929 | 9,968 | 10,096 | 9,243 | 9,424 | 9,678 | 9,727 | 9,758 | 9,783 | 9,808 |
| **181** | 3809 | 3,744 | 4,048 | 3,744 | 4,052 | 4,282 | 4,456 | 4,564 | 4,653 | 4,744 |
| **182** | 4,419 | 4,678 | 4,661 | 4,078 | 4,236 | 4,595 | 5,204 | 5,823 | 6,465 | 7,188 |
| **183** | 2,862 | 3,861 | 4,067 | 3,677 | 3,992 | 4,967 | 6,721 | 8,412 | 10,387 | 12,617 |
| **184** | 1,873 | 2,644 | 2,797 | 2,203 | 2,316 | 2,510 | 2,795 | 3,068 | 3,355 | 3,672 |
| **185** | 2159 | 6,229 | 7,436 | 3,309 | 3,262 | 3,661 | 4,153 | 4,495 | 4,836 | 5,181 |
| **186** | 21,731 | 24,590 | 24,611 | 16,892 | 17,338 | 17,786 | 18,479 | 18,920 | 19,384 | 19,864 |
| **187** | 421 | 664 | 519 | 274 | 320 | 686 | 1,361 | 2,077 | 2,822 | 3,679 |
| **188** | 1274 | 5424 | 4,066 | 1,071 | 969 | 1,123 | 1,449 | 1,750 | 2,052 | 2,385 |
| **Total** | **80,713** | **110,608** | **121,550** | **109,214** | **118,718** | **136,050** | **157,713** | **176,089** | **193,769** | **212,375** |

## Chambers County Households (RAZ 189 to 192)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **189** | 2,758 | 4,016 | 4,047 | 3,567 | 3,785 | 4,092 | 4,421 | 4,716 | 5,067 | 5,478 |
| **190** | 1031 | 1352 | 1327 | 1,118 | 1,439 | 2,000 | 2,741 | 3,569 | 4,513 | 5,783 |
| **191** | 1,675 | 2,899 | 4,189 | 5,061 | 5,468 | 6,095 | 6,798 | 7,428 | 8,145 | 8,949 |
| **192** | 1,397 | 1,933 | 2,184 | 2,243 | 2,886 | 3,975 | 5,270 | 6,497 | 7,893 | 9,375 |
| **Total** | **6,861** | **10,200** | **11,746** | **11,989** | **13,579** | **16,163** | **19,230** | **22,211** | **25,618** | **29,585** |

## Liberty County Households (RAZ 193 to 199)

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **193** | 197 | 293 | 302 | 290 | 354 | 520 | 756 | 1,050 | 1,468 | 1,932 |
| **194** | 4,262 | 5,000 | 4,998 | 4,428 | 4,550 | 4,876 | 5,336 | 6,062 | 7,230 | 8,665 |
| **195** | 4,688 | 7,665 | 8,460 | 8,274 | 9,009 | 10,910 | 13,209 | 16,319 | 19,969 | 23,956 |
| **196** | 2174 | 3,129 | 3,396 | 3,262 | 4,312 | 7,169 | 11,485 | 15,934 | 20,041 | 24,369 |
| **197** | 1,943 | 2,621 | 2,634 | 2,346 | 2,382 | 2,530 | 2,812 | 3,258 | 3,988 | 4,808 |
| **198** | 2211 | 3267 | 3444.5 | 3,128 | 3,338 | 3,909 | 4,773 | 5,885 | 7,528 | 9,692 |
| **199** | 2871 | 4109 | 4188 | 3,401 | 3,472 | 3,819 | 4,401 | 5,118 | 6,124 | 7,237 |
| **Total** | **18,346** | **26,084** | **27,422** | **25,129** | **27,417** | **33,734** | **42,773** | **53,626** | **66,347** | **80,659** |

## Grimes County Households

| RAZ | 1990 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **6,032** | **9,460** | **10,178** | **8,902** | **9,290** | **9,708** | **10,178** | **10,860** | **12,571** | **14,740** |

# Appendix B – Quote Sources

**Boyd Nash-Stacey** – Houston Chronicle, November 19, 2014

http://fuelfix.com/blog/2014/11/19/study-houston-economy-can-withstand-low-oil-prices/

**Dr. Bill Gilmer** – Houston Chronicle, November 25, 2014

http://www.houstonchronicle.com/business/columnists/tomlinson/article/Gasoline-prices-mean-big-break-for-Americans-but-5917427.php

**Greater Houston Partnership Employment Forecast** – GHP, December 11, 2014

https://www.houston.org/pdf/research/quickview/Employment-Forecast.pdf

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