

Workforce Demands In the Construction Industry

Workforce Solutions

February 2015

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

An Overview of Construction

Today, the Gulf Coast Region's construction industry employs some 205,000 people. While construction industry employment has yet to recover all jobs lost during the recent recession, it has been steadily rising since 2011 and is approaching the pre-recession high of some 210,000 jobs.

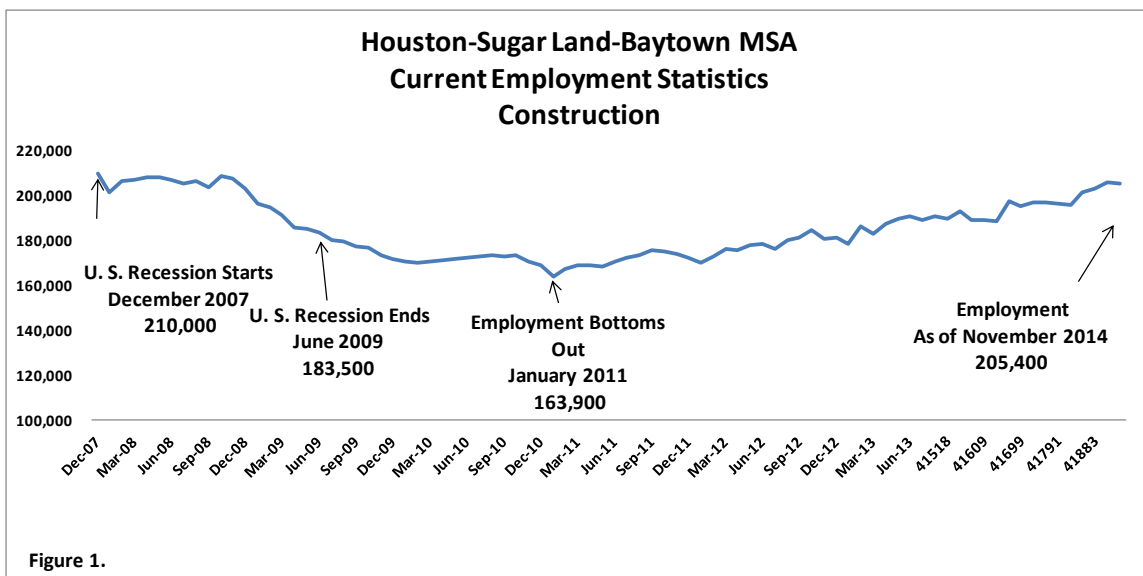
The construction industry provides an extensive range of career opportunities. Growth is projected for numerous occupations throughout the industry, from construction laborers to engineers. Many of these positions offer good wages and have varying education and training requirements ranging anywhere from short term on-the-job training to post-secondary degrees and professional licenses.

This report provides an overview from a workforce stance on the state of the construction industry, its various subsectors, and the challenges the Gulf Coast Region faces now and in the future to serve the industry.

Employment and the Great Recession

Each month the Current Employment Statistics (CES) program of the Bureau of Labor Statistics produces nonfarm industry employment estimates based on a monthly employer's survey. The data is produced for the Houston-Sugar Land-Baytown Statistical Metropolitan Statistical Area (H-S-B MSA) and not the full 13-county level for the Gulf Coast Region, but it does capture most of the region's employment.

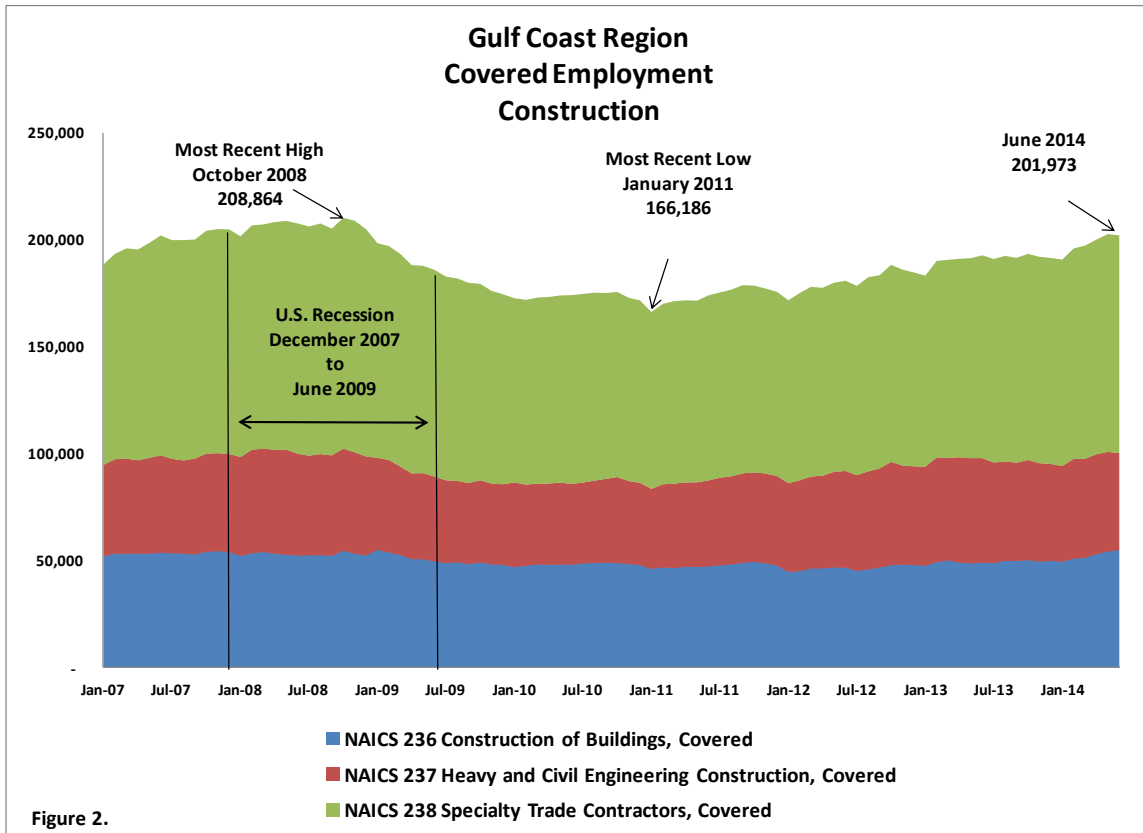
Prior employment highs in Construction were bolstered by sub-prime mortgage lending. Beginning in December 2007 the industry lost tens of thousands of jobs, bottoming out in January 2011. Since then more than 41,500 jobs have been recovered.



Payroll data acquired from the Texas Workforce Commission enables a more detailed view of employment for the region. The following data was compiled from quarterly employment reports submitted by employers subject to the Texas Unemployment Compensation Act.

There are three subsectors of Construction: **Specialty Trade Contractors**, **Construction of Buildings**, and **Heavy and Civil Engineering Construction**.

Figure 2 shows payrolls for the Construction sector by subsector from 2007 to date.



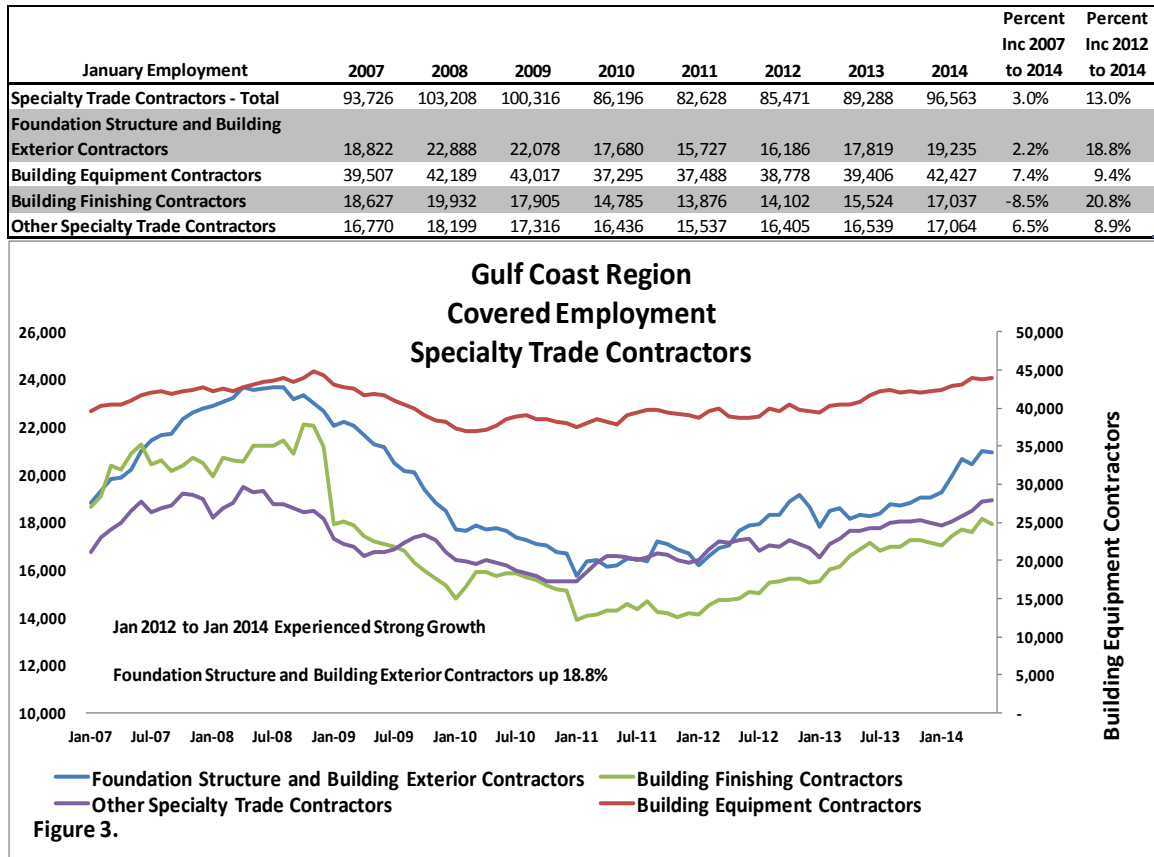
In **Specialty Trade Contractors**, the largest category of jobs is found in Building Equipment Contractors – which includes establishments that do plumbing, electrical, and HVAC installation and servicing.

While payrolls for all employers in the Specialty Trade Contractors fell significantly over the great recession, they made a full recovery—up 3.0 percent from January 2007 to January 2014.

Payrolls for Building Equipment Contractors made the strongest recovery—up 7.4 percent from January 2007 to January 2014.

Building Finishing Contractors have yet to recover with payrolls still down 8.5 percent from January 2007 to January 2014.

Figure 3 contains data for Specialty Trade Contractors and its included sectors.



For **Construction of Buildings** we find twice as many people working in Nonresidential Construction as in Residential Construction.

While job growth has returned in Residential Construction, employment remains down 15.5 percent as of January 2014.

Nonresidential Construction has seen a healthier recovery and was down only 1.4 percent from January 2007 to January 2014.

Job growth has recently resumed with payrolls increasing from January 2012 to January 2014 by 6.8 percent in Nonresidential Construction and a strong 26.6 percent in Residential Construction.

Figure 4 shows the details.

January Employment	2007	2008	2009	2010	2011	2012	2013	2014	Percent Inc 2007 to 2014	Percent Inc 2012 to 2014
Construction of Buildings - Total	52,021	52,182	55,073	47,039	46,156	44,775	47,655	49,508	-4.8%	10.6%
Residential Building Construction	12,671	11,900	10,373	8,576	8,033	8,456	9,076	10,705	-15.5%	26.6%
Nonresidential Construction	39,350	40,282	44,700	38,463	38,123	36,319	38,579	38,803	-1.4%	6.8%

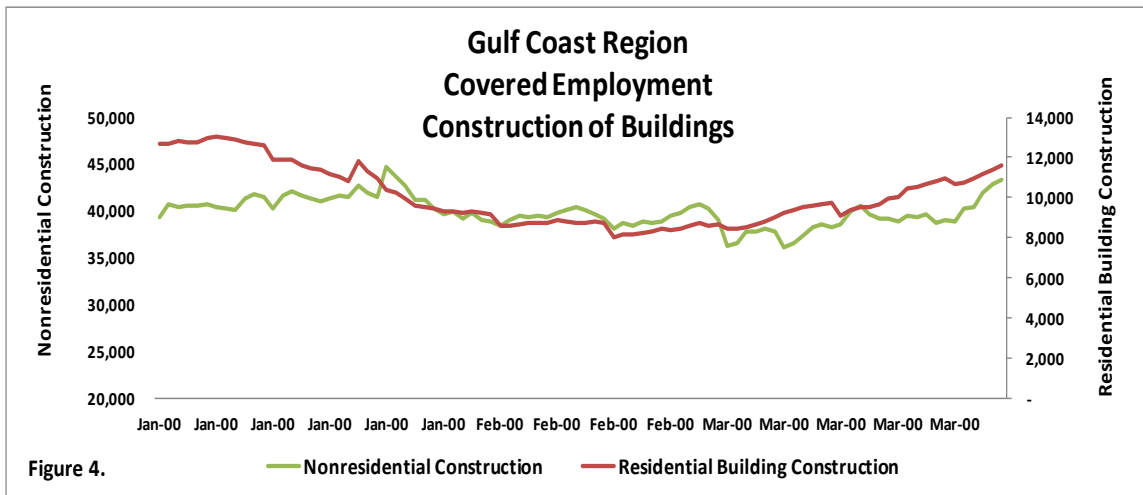


Figure 4.

— Nonresidential Construction — Residential Building Construction

In **Heavy and Civil Engineering Construction**, the major share of employment occurs in Utility System Construction which has more than three times the employment of any other subsector. This is where utility construction of water, sewer lines, and water treatment plants is found, as well as oil and gas pipeline construction.

Robust shale activity has resulted in thousands of miles of new pipelines into the Gulf Coast Region as seen in an 18.9 percent increase in Utility System Construction payrolls from January 2007 to January 2014.

Payrolls in Highway, Street and Bridge Construction have been on the rise but are down 6.3 percent in January 2014 from January 2007.

Other Civil Engineering Construction, where substantial miscellaneous construction activity is found (such as dredging, marine development, and park development), has seen payrolls stabilize recently after a 19.6-percent decline from January 2007 to January 2014.

Land Subdivision, where companies subdivide land for subsequent sale to builders, represents a much small number of jobs with payrolls down 21.1 percent from January 2007 to January 2014.

January Employment	2007	2008	2009	2010	2011	2012	2013	2014	Percent Inc 2007 to 2014	Percent Inc 2007 to 2014
Heavy and Civil Engineering Construction - Total	42,716	46,201	42,941	39,421	37,402	41,448	46,231	44,624	4.5%	7.7%
Utility System Construction	23,527	26,324	24,240	22,992	21,960	25,868	30,007	27,976	18.9%	8.1%
Land Subdivision	1,193	1,189	1,175	1,047	1,057	928	892	941	-21.1%	1.4%
Highway Street and Bridge Construction	9,314	9,410	8,349	8,143	8,097	8,525	8,966	8,728	-6.3%	2.4%
Other Civil Engineering Construction	8,682	9,278	9,177	7,239	6,288	6,127	6,366	6,979	-19.6%	13.9%

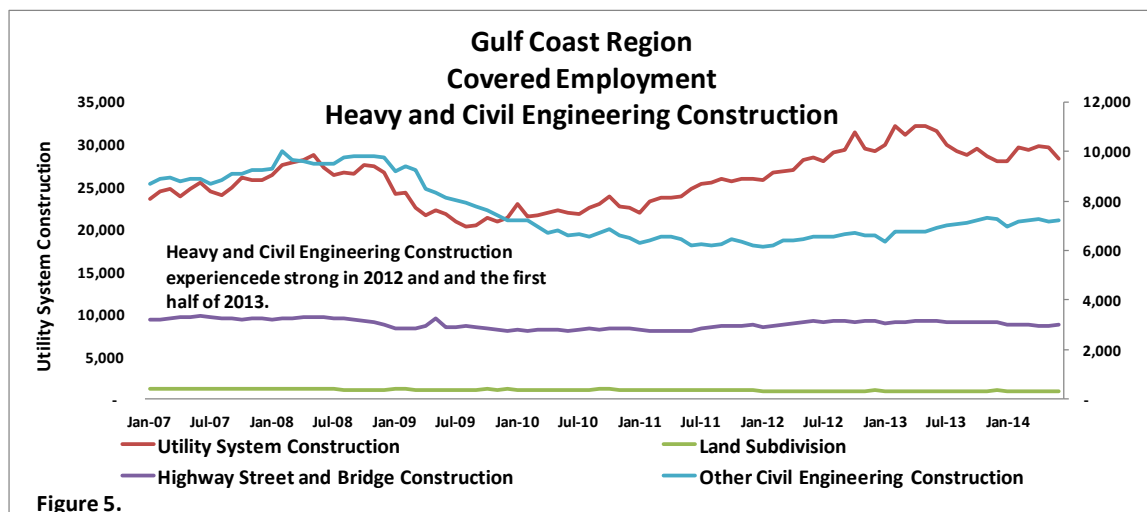


Figure 5.

Challenges

Competition for Skilled Workers

Unlike many historical recessions, the Gulf Coast Region's economy escaped a slow recovery that is often seen due to reduced energy demand. Strong drilling activity in shale regions helped place the region in the national spotlight for creating jobs. As of November 2014 the region recovered all jobs lost during the recession and added an additional 200,000 jobs. The entire Gulf Coast Region economy benefits from the energy boom which also drives the strong demand in construction industry.

Many that were working in construction prior to the recession left to work in the energy industry, leaving a gap in the construction workforce that would not be filled as demand recovered. This gap has added to an already tight labor market in the construction industry.

The Gulf Coast Region is one of the world's largest petrochemical manufacturing centers. With easy access to affordable natural gas, the future of the chemical industry is bright with major expansions under development. Supporting the petrochemical industry are thousands of miles of pipelines—and the construction of additional pipelines compounds the workforce shortages.

These expansions cause a sharp rise in demand for highly skilled workers in many crafts with contractors finding it extremely difficult to find qualified workers for their projects.

The shortages are sometimes so acute that project deadlines may be missed or projects cancelled. Shortages also cause a ripple effect with industrial construction taking workers from commercial construction which in turn is taking workers from residential construction.

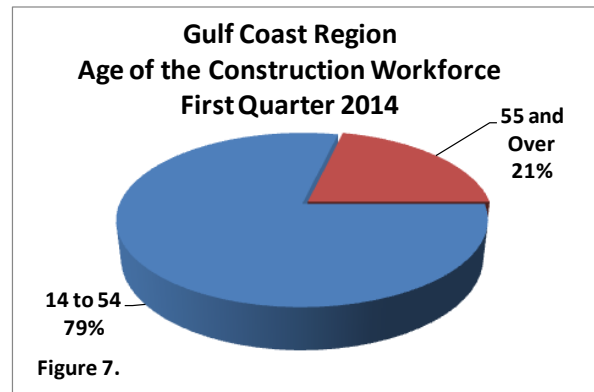
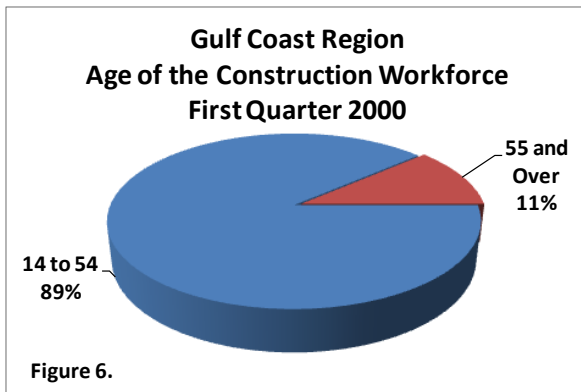
Public Image and the Next Generation

Attracting the next generation to the industry is another barrier to meeting demand in construction. The construction industry is not viewed as favorably as it was in the 60's and 70's when children often followed the footsteps of their parents. Parents and teachers alike have shied away from encouraging students to pursue craft, construction, and skilled trade careers thus contributing to the workforce shortage. Recently, efforts have been made to encourage interests in the field while increasing the accessibility to career and technology education in craft, construction, and skilled trades.

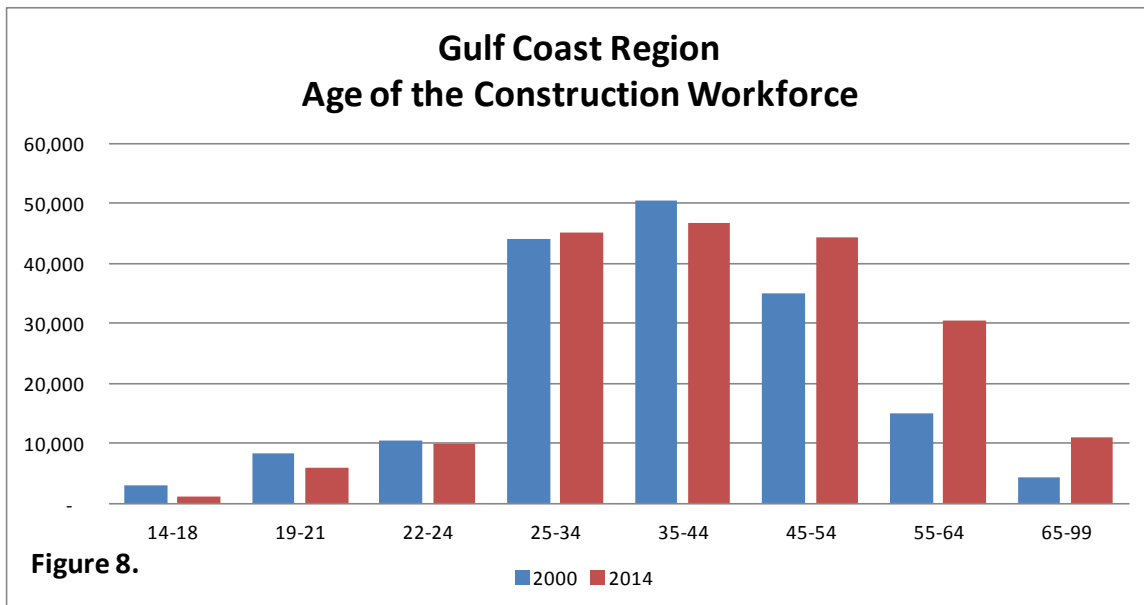
An Aging Workforce

Another factor contributing to the workforce shortage is an aging population. The percentage of the population that is 55 and over has risen by 5 percent since 2000 and is expected to rise another 3 percent by 2018 to 23.36 percent.

Population by Age								
	2000 Census		2010 CENSUS		2013 ESTIMATE		2018 FORECAST	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	4,854,389	100.00%	6,087,133	100.00%	6,366,422	100.00%	7,064,464	100.00%
Age 55+	739,122	15.23%	1,156,059	18.99%	1,294,545	20.33%	1,650,040	23.36%



The age of the construction workforce is increasing rapidly with the number approaching retirement age compounding the severity of workforce shortages in the region. The percentage of workers ages 55 and over in the construction industry has nearly doubled from 11 percent in 2000 to 21 percent in 2014. See figures 6, 7, and 8.



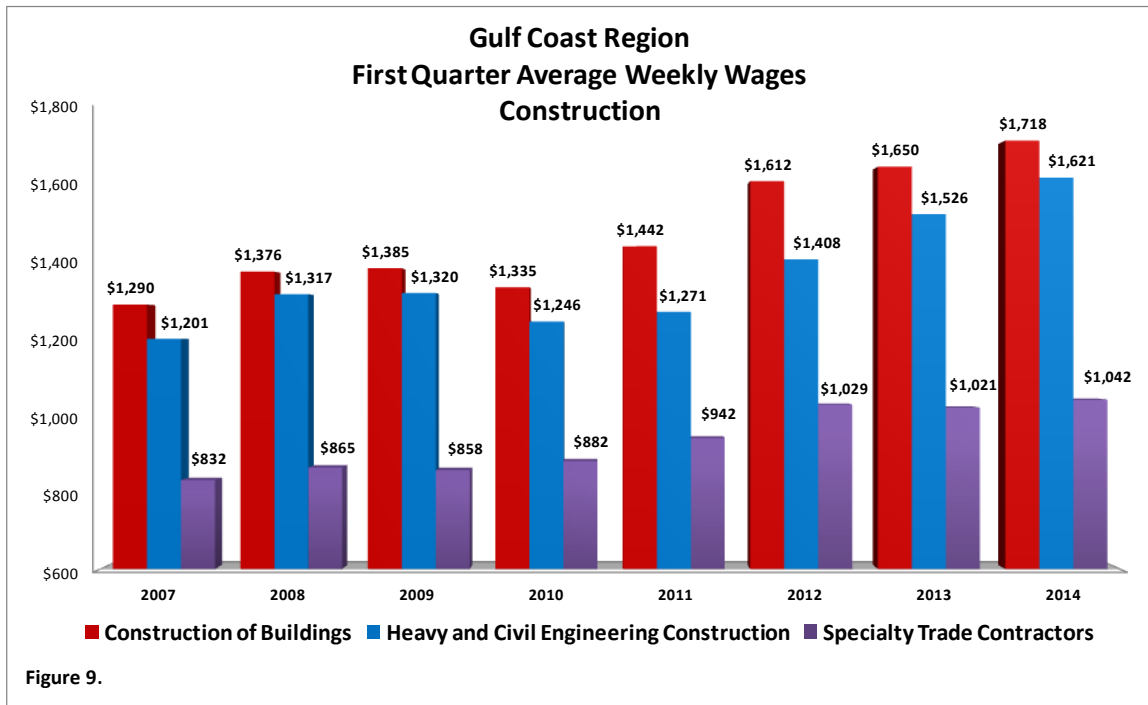
Construction and Wage Pressures Driven by Shortages

Each of the three subsectors of construction makes significant contributions to the region in terms of wages. Specialty Trade Contractors had the largest payroll of over \$1.3 billion in first quarter 2014 representing 38 percent of all wages in the construction industry.

Since the beginning of the recession, the growth in wages in the construction industry has outpaced that of the private sector as a whole.

- While average wages in the private sector increased by 23.8 percent from 2007 to 2014, wages in Construction have increased by 30.1 percent.
- Construction of Buildings and Heavy and Civil Engineering Construction experienced strongest wage gains over this time increasing by more than 30 percent.
- Wage increases are a clear indicator that demand exceeds supply in the construction industry.

The wage data that follows was compiled from quarterly employment and wage reports submitted by employers subject to the Texas Unemployment Compensation Act.



Year	Percent Increase		
	2007	2014	2007 to 2014
Private Sector - Total	\$1,097	\$1,358	23.8%
Construction - Total	\$1,041	\$1,354	30.1%
Construction of Buildings	\$1,290	\$1,718	33.2%
Heavy and Civil Engineering Construction	\$1,201	\$1,624	35.2%
Specialty Trade Contractors	\$832	\$1,042	25.2%

Where the Jobs Will Be

Industry Projections: 2012 to 2022

The Gulf Coast Region's employment is projected to add **712,430 jobs** from **2012 to 2022**. The 23.8% growth rate is higher than the previously projected 22.7% for the period of 2010 to 2020.

The pace of job **growth in construction** is predicted to be above average in the Gulf Coast Region with a **projected 28.7%** increase over the ten year period. Employment in construction is projected to increase from 182,680 jobs in 2012 to 235,140 jobs in 2022 adding 52,460 jobs. Nearly every category in construction is projected to expand at an above average pace.

Nearly half of the increase in construction employment is expected to be in Special Trade Contractors (NAICS 238), up 24,930 jobs, or 27.8% over the ten year period but the fastest growth will be in Utility System Construction, up 10,470 jobs or 35.8%.

GULF COAST REGION PROJECTIONS

Industry Codes	Industry Title	Annual Average Employment		Number Change	Growth Rate
		2012	2022		
23	Construction	182,680	235,140	52,460	28.7%
236	Construction of Buildings	47,500	60,480	12,980	27.3%
2361	Residential Building Construction	9,080	12,020	2,940	32.4%
2362	Nonresidential Building Construction	38,420	48,460	10,040	26.1%
237	Heavy & Civil Engineering Construction	45,650	60,190	14,540	31.9%
2371	Utility System Construction	29,210	39,680	10,470	35.8%
2372	Land Subdivision	940	990	50	5.3%
2373	Highway, Street, & Bridge Construction	9,000	11,280	2,280	25.3%
2379	Other Heavy Construction	6,500	8,240	1,740	26.8%
238	Specialty Trade Contractors	89,530	114,460	24,930	27.8%
2381	Building Foundation & Exterior Contractors	17,800	22,770	4,970	27.9%
2382	Building Equipment Contractors	39,510	50,960	11,450	29.0%
2383	Building Finishing Contractors	15,050	18,860	3,810	25.3%
2389	Other Specialty Trade Contractors	17,170	21,880	4,710	27.4%

Occupations in Construction, Where the Jobs Are 2014

The following table represents the top 20 occupations in the construction industry and their estimated 2014 employment levels. The total number of people working in the Gulf Coast Region under the capacity of each occupation is actually larger.

Gulf Coast Region Construction (NAICS 23) Top 20 Construction Occupations

OCC. CODE	OCCUPATIONAL TITLE	Estimated 2014 Employment	Percent of Construction Industry Employment	2013 Average Hourly Wage*
47-2061	Construction Laborers	29,562	15.2	\$13.59
47-1011	First-Line Supervisors of Construction Trades & Extraction Workers	13,224	6.8	\$31.01
47-2111	Electricians	9,948	5.1	\$22.63
47-2031	Carpenters	9,006	4.6	\$16.60
11-9021	Construction Managers	8,408	4.3	\$42.04
47-2073	Operating Engineers & Other Construction Equipment Operators	7,878	4.0	\$20.63
47-2152	Plumbers, Pipefitters, & Steamfitters	7,781	4.0	\$24.21
11-1021	General & Operations Managers	5,703	2.9	\$62.77
43-9061	Office Clerks, General	5,444	2.8	\$15.68
47-2141	Painters, Construction & Maintenance	4,833	2.5	\$15.71
47-2051	Cement Masons & Concrete Finishers	4,671	2.4	\$14.25
43-6014	Secretaries & Administrative Assistants, Ex. Legal, Medical, & Executive	4,526	2.3	\$16.31
49-9021	Heating, Air Conditioning, & Refrigeration Mechanics & Installers	4,389	2.3	\$20.87
51-4121	Welders, Cutters, Solderers, & Brazers	3,113	1.6	\$20.56
13-1051	Cost Estimators	2,846	1.5	\$33.43
47-2221	Structural Iron & Steel Workers	2,585	1.3	\$19.58
53-3032	Heavy & Tractor-Trailer Truck Drivers	2,567	1.3	\$22.51
47-2081	Drywall & Ceiling Tile Installers	2,503	1.3	\$15.39
47-3013	Helpers--Electricians	2,482	1.3	\$15.29
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, & Steamfitters	2,431	1.2	\$14.90

*Not industry specific.

Five of the top 20 construction occupations are currently on the Gulf Coast Workforce Board's list of targeted high-skill high-growth occupations:

- Electricians
- Plumbers, Pipefitters, & Steamfitters
- Heating, Air Conditioning, & Refrigeration Mechanics and Installers
- Welders, Cutters, Solderers, and Brazers
- Cost Estimators

Occupation Projections: 2012 to 2022

Employment demand is a function of both job creation and replacement needs. The following table represents total projected employment demand across all industries in the Gulf Coast Region for 20 of the top frontline construction occupations. Occupations were selected based on their overall concentration of employment in the construction industry.

Gulf Coast Region Top 20 Frontline Construction Occupations Total Growth and Replacement Demand - All Industries

OCC. CODE	OCCUPATIONAL TITLE	2012	2022	10 Year Number Change	10 Year Pct Chg	Annual Growth	Annual Replacement	Total Annual Demand
47-2061	Construction Laborers	43,440	54,250	10,810	24.9	1,080	930	2,010
51-4121	Welders, Cutters, Solderers, & Brazers	17,210	21,730	4,520	26.3	450	420	870
47-1011	First-Line Supervisors of Construction Trades & Extraction Workers	21,120	27,040	5,920	28	590	230	820
11-9021	Construction Managers	21,470	25,870	4,400	20.5	440	340	780
47-2111	Electricians	14,560	18,220	3,660	25.1	365	275	640
47-2031	Carpenters	15,150	19,010	3,860	25.5	385	185	570
47-2073	Operating Engineers & Other Construction Equipment Operators	10,780	13,600	2,820	26.2	280	240	520
47-2152	Plumbers, Pipefitters, & Steamfitters	10,450	13,000	2,550	24.4	255	130	385
47-2141	Painters, Construction & Maintenance	8,620	10,580	1,960	22.7	195	130	325
49-9021	Heating, Air Conditioning, & Refrigeration Mechanics & Installers	6,270	7,880	1,610	25.7	160	160	320
13-1051	Cost Estimators	4,430	5,880	1,450	32.7	145	140	285
49-3042	Mobile Heavy Equipment Mechanics, Ex. Engines	4,600	5,810	1,210	26.3	120	135	255
47-2051	Cement Masons & Concrete Finishers	4,850	6,210	1,360	28	135	55	190
47-2211	Sheet Metal Workers	4,020	5,020	1,000	24.9	100	75	175
47-2221	Structural Iron & Steel Workers	2,590	3,270	680	26.3	70	85	155
47-3013	Helpers--Electricians	2,370	3,250	880	37.1	90	35	125
47-3015	Helpers--Pipefitters, Plumbers, Pipefitters, & Steamfitters	2,380	3,070	690	29	70	35	105
47-2081	Drywall & Ceiling Tile Installers	2,970	3,640	670	22.6	65	30	95
47-2132	Insulation Workers, Mechanical	1,390	2,050	660	47.5	65	20	85
47-2021	Brickmasons & Blockmasons	1,490	2,050	560	37.6	55	15	70

Six of the top 20 frontline construction occupations are currently on the Gulf Coast Workforce Board's list of targeted high-skill high-growth occupations:

- Electricians
- Plumbers, Pipefitters, & Steamfitters
- Heating, Air Conditioning, & Refrigeration Mechanics and Installers
- Welders, Cutters, Solderers, and Brazers
- Cost Estimators
- Mobile Heavy Equipment Mechanics

Projection Limitations

Industry and occupation projections are funded by the Employment and Training Administration, U.S. Department of Labor and updated every two years. The methodology involves four primary steps:

- Identify industry historical trends
- Develop industry employment projections
- Develop occupation staffing patterns for each industry
- Develop occupation employment projections

The projections will foretell the general industry and occupational trends and act as an indicator of relative magnitude and probable direction as opposed to an estimate of absolute values. Additional detail on projection methodology and its limitations can be found at: <http://www.tracer2.com/?PAGEID=67&SUBID=114>