

Industry and Occupational Employment Projections
(2006 - 2016)

Executive Summary

This report summarizes the methodology used to create industry and occupational employment forecasts through 2016. The report begins with the basic methodology and presents summary tables of results. The basic methodology consisted of:

- The LWC Research and Statistics Division began the process of creating industry employment forecasts in July 2007. These industry forecasts were created using the Micro Matrix System developed by the state of Utah. A total of 855 forecasts were made for each three digit NAICS for the state and all eight Louisiana Regional Labor Market Areas.
- Dr. Dek Terrell and Dr. Loren Scott reviewed the forecasts in May and June of 2009. This review consisted of evaluating the previous forecasts in light of additional data and conversations with Louisiana business and industry leaders. Modifications were made to 177 industry forecasts in this review.
- The final step consisted of translating the industry employment forecasts into occupational employment forecasts. The Micro Matrix System supplies a method of making this translation based on observed staffing patterns in each industry.

This report summarizes the methodology used to create the 2016 occupational employment forecasts. The basic methodology consists of first forecasting industry employment for each of Louisiana's eight Regional Labor Markets Areas (RLMA). These forecasts are then converted to occupational employment forecasts. The strategy of beginning with industry level forecasts is standard for this type of study. The primary motivation for this approach is that a consistent time series of employment by industry is available, but not by occupation.

The initial 2016 industry projections were begun in July of 2007 when the 2006 annual averaged covered employment payroll data were available. The Research and Statistics Division worked with Dr. Raymond Brady to develop the industry and occupational projections. These industry projections were created through the use of the Micro Matrix System, a software program developed by the state of Utah used to produce occupational projections. Historical covered employment payroll data provides the base for the forward projection. Other inputs into the Long Term Micro Matrix Projections Suite were nonfarm employment, staffing patterns from the occupational wage survey using almost all wage and salary industries, current population survey, and additional federal data from the Office of Personnel Management. Forecasts were made for 95 industries in each of Louisiana's eight RLMAs and for the state. This generates 855 industry/region forecasts.

During May and June of 2009, the Research and Statistics Division worked with Dr. Loren Scott and Dr. Dek Terrell to incorporate later data and new Louisiana specific information. This phase began by adding data through 2008 to evaluate more recent trends. This is particularly important in the wake of Hurricane Katrina when the pace of employment recovery is more difficult to predict.

The review also incorporated recent information from news clippings and information from discussions with key Louisiana business leaders. In addition to leaders of essential manufacturing firms and crucial firms in the oil and gas industry, major regional Chambers of Commerce and Louisiana Economic Development officials were contacted to track significant developments around the state.

The most frequent reasons for modifications of the initial forecasts were deviations from the anticipated trend or events that were not included in the initial forecasts. For example, employment and population data for 2007 and 2008 in RLMA 1 indicated a slower recovery than projected in the initial forecasts. This led to a downward adjustment in many New Orleans industry level forecasts. Likewise, new adjustments were made to account for the Go Zone legislation's impact on several sectors. The reduction of workforce in the GM plant in Shreveport and plans to reduce employment at Lockheed Martin Space Systems in New Orleans are among a number of events or announcements that led to downward adjustments in forecasts.

A number of positive developments were also added to the model. Expansions of various refineries, including the new Inca refinery in the New Orleans area as well as the Shintech and SNF chemical plants in Baton Rouge were included in the adjustments. The new Precision Energy expansion and expansions at Edison Chouest and Bollinger Shipyards affected a number of forecasts in Houma. In Lafayette, Cameron Valves led to an expansion, while in Lake Charles the new Shaw nuclear parts plant and casino expansions were incorporated. Cleco's Rodemacher plant and the new Roy E. Martin strand board plant were incorporated into the Alexandria area forecast. In Shreveport, the Haynesville Shale development led to an upward adjustment in a number of sectors in Shreveport. In Monroe, expansions at CenturyTel and the new V-Vehicle plant were the key announcements that led to upward revisions.

The next step is to translate the industry employment projections into occupational employment projections by using data collected by the Occupational Employment Statistics (OES) wage survey program under the guidelines of the BLS. Both of these data sets are imported into the Micro Matrix System. Data sets used to supplement the survey data include national replacement rates (a rate used to estimate the number of workers either retiring or terminating employment in that occupation), change factors (factors that account for the change in the occupational mix of an industry), estimates of self-employed and state-specific federal employment.

The following tables provide a summary of the statewide occupational employment projections. Along with 2006 employment and projected 2016 employment, the tables also provide an estimated number of annual total openings. This number not only includes openings due to new growth, but also consists of openings caused by retirement or termination.

Table 1 lists the occupations that are projected to add the largest number of new openings due to employment growth from 2006 to 2016. The occupation with the greatest projected growth is Registered Nurse. In a ten-year period, there are expected to be 13,510 new openings in this field. Including replacement, there is expected to be demand for 1,990 registered nurses each year with an annual average wage of \$55,673. Retail Salesperson is projected to have the second largest growth in employment with 12,210 new openings by 2016. Taking into account opening caused by retirement and termination, there are expected to be 3,030 openings for retail salespersons annually with an annual average wage of \$23,285. The occupation with the third highest projected growth in employment is Customer Service Representative. By 2016, there are will be an estimated 8,410 new openings. There will be 1,530 total openings each year including replacements. Table 2 lists the occupations projected to add the largest number of new openings

with annual average wages greater-than \$30,000. Registered Nurse is again the top occupation, however, Elementary School Teachers and Maintenance and Repair Workers are the second and third with projected employment growth of 5,220 and 4,250 respectively.

Table 3 lists the occupations projected to have the greatest employment by 2016. Retail Salesperson is expected to have the highest employment at 70,910. The occupation expected to have the second highest employment is Cashier at 64,590. Registered Nurse will have the third highest employment in 2016 with 52,250 positions. Table 4 lists the occupations projected to have the greatest employment with annual average wages greater-than \$30,000. Again, Registered Nurse is at the top of the list. General and Operations Manager is projected to reach employment of 41,130 by 2016. Elementary School Teacher, with projected employment of 29,740, will have the third highest employment of occupations making over \$30,000 per year.

Table 1: Top Growth Occupations

SOC	SOC Title	2006 Employment	2016 Employment	Annual Total Openings	State Annual Average Wage	10 Year Growth
00-0000	Total, All Occupations	1,919,200	2,271,170	79,520		351,970
29-1111	Registered Nurses	38,740	52,250	1,990	55,673	13,510
41-2031	Retail Salespersons	58,700	70,910	3,030	23,285	12,210
43-4051	Customer Service Representatives	24,710	33,120	1,530	25,206	8,410
35-3031	Waiters and Waitresses	30,170	37,860	2,410	15,447	7,690
43-9061	Office Clerks, General	36,700	44,240	1,430	20,062	7,540
31-1012	Nursing Aides, Orderlies, and Attendants	24,780	32,200	960	17,544	7,420
35-2021	Food Preparation Workers	22,660	29,350	1,460	15,084	6,690
39-9021	Personal and Home Care Aides	10,920	17,600	850	15,613	6,680
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	29,040	35,110	1,160	17,955	6,070
31-1011	Home Health Aides	8,090	13,930	660	17,154	5,840
43-3031	Bookkeeping, Accounting, and Auditing Clerks	28,370	34,050	1,010	29,467	5,680
39-9011	Child Care Workers	11,720	17,050	870	15,775	5,330
25-2021	Elementary School Teachers, Except Special Education	24,520	29,740	1,060	40,962	5,220
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	15,420	20,570	810	14,707	5,150
37-2012	Maids and Housekeeping Cleaners	15,400	19,730	720	15,534	4,330
43-4171	Receptionists and Information Clerks	16,200	20,490	830	20,470	4,290
49-9042	Maintenance and Repair Workers, General	24,140	28,390	490	30,673	4,250
29-2061	Licensed Practical and Licensed Vocational Nurses	18,750	22,660	900	33,752	3,910
51-4121	Welders, Cutters, Solderers, and Brazers	16,270	20,130	730	37,695	3,860
33-9032	Security Guards	15,570	19,390	700	21,991	3,820
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	20,710	24,530	840	51,291	3,820
53-3032	Truck Drivers, Heavy and Tractor-Trailer	25,410	29,200	830	32,519	3,790
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	41,450	45,170	1,700	20,885	3,720

**Table 2: Top Growth Occupations
(over \$30,000 annual average wage)**

SOC	SOC Title	2006 Employment	2016 Employment	Annual Total Openings	State Annual Average Wage	10 Year Growth
00-0000	Total, All Occupations	1,919,200	2,271,170	79,520		351,970
29-1111	Registered Nurses	38,740	52,250	1,990	55,673	13,510
25-2021	Elementary School Teachers, Except Special Education	24,520	29,740	1,060	40,962	5,220
49-9042	Maintenance and Repair Workers, General	24,140	28,390	490	30,673	4,250
29-2061	Licensed Practical and Licensed Vocational Nurses	18,750	22,660	900	33,752	3,910
51-4121	Welders, Cutters, Solderers, and Brazers	16,270	20,130	730	37,695	3,860
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	20,710	24,530	840	51,291	3,820
53-3032	Truck Drivers, Heavy and Tractor-Trailer	25,410	29,200	830	32,519	3,790
11-1021	General and Operations Managers	37,750	41,130	1,250	87,253	3,380
43-6011	Executive Secretaries and Administrative Assistants	15,590	18,760	570	33,148	3,170
13-2011	Accountants and Auditors	13,120	16,210	540	53,010	3,090
41-1011	First-Line Supervisors/Managers of Retail Sales Workers	24,670	27,640	820	33,727	2,970
53-5021	Captains, Mates, and Pilots of Water Vessels	7,700	10,160	450	67,379	2,460
53-5011	Sailors and Marine Oilers	7,060	9,480	490	33,580	2,420
43-1011	First-Line Supervisors/Managers of Office and Administrative Support Workers	21,730	23,970	670	38,113	2,240
47-2031	Carpenters	18,780	20,880	460	33,657	2,100
11-9199	Managers, All Other	13,770	15,750	470	66,033	1,980
13-1199	Business Operations Specialists, All Other	9,630	11,600	300	44,671	1,970
49-3023	Automotive Service Technicians and Mechanics	10,410	12,350	400	31,906	1,940
47-2152	Plumbers, Pipefitters, and Steamfitters	12,700	14,370	430	41,817	1,670
27-2011	Actors	1,100	2,680	180		1,580
33-3051	Police and Sheriff's Patrol Officers	8,590	10,140	390	31,839	1,550
25-2031	Secondary School Teachers, Except Special and Vocational Education	11,520	13,040	490	41,963	1,520
47-1011	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	12,450	13,950	330	52,399	1,500

Table 3: Top Occupations by 2016 Employment

SOC	SOC Title	2006 Employment	2016 Employment	Annual Total Openings	State Annual Average Wage
00-0000	Total, All Occupations	1,919,200	2,271,170	79,520	
41-2031	Retail Salespersons	58,700	70,910	3,030	23,285
41-2011	Cashiers	61,310	64,590	3,240	15,606
29-1111	Registered Nurses	38,740	52,250	1,990	55,673
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	41,450	45,170	1,700	20,885
43-9061	Office Clerks, General	36,700	44,240	1,430	20,062
11-1021	General and Operations Managers	37,750	41,130	1,250	87,253
43-6014	Secretaries, Except Legal, Medical, and Executive	35,740	38,320	830	24,387
35-3031	Waiters and Waitresses	30,170	37,860	2,410	15,447
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	29,040	35,110	1,160	17,955
43-3031	Bookkeeping, Accounting, and Auditing Clerks	28,370	34,050	1,010	29,467
43-4051	Customer Service Representatives	24,710	33,120	1,530	25,206
31-1012	Nursing Aides, Orderlies, and Attendants	24,780	32,200	960	17,544
25-2021	Elementary School Teachers, Except Special Education	24,520	29,740	1,060	40,962
35-2021	Food Preparation Workers	22,660	29,350	1,460	15,084
53-3032	Truck Drivers, Heavy and Tractor-Trailer	25,410	29,200	830	32,519
49-9042	Maintenance and Repair Workers, General	24,140	28,390	490	30,673
41-1011	First-Line Supervisors/Managers of Retail Sales Workers	24,670	27,640	820	33,727
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	20,710	24,530	840	51,291
43-1011	First-Line Supervisors/Managers of Office and Administrative Support Workers	21,730	23,970	670	38,113
29-2061	Licensed Practical and Licensed Vocational Nurses	18,750	22,660	900	33,752
47-2061	Construction Laborers	18,890	21,320	390	24,912
47-2031	Carpenters	18,780	20,880	460	33,657
53-3033	Truck Drivers, Light or Delivery Services	17,500	20,750	640	24,461

**Table 4: Top Occupations by 2016 Employment
(over \$30,000 annual average wage)**

SOC	SOC Title	2006 Employment	2016 Employment	Annual Total Openings	State Annual Average Wage
00-0000	Total, All Occupations	1,919,200	2,271,170	79,520	
29-1111	Registered Nurses	38,740	52,250	1,990	55,673
11-1021	General and Operations Managers	37,750	41,130	1,250	87,253
25-2021	Elementary School Teachers, Except Special Education	24,520	29,740	1,060	40,962
53-3032	Truck Drivers, Heavy and Tractor-Trailer	25,410	29,200	830	32,519
49-9042	Maintenance and Repair Workers, General	24,140	28,390	490	30,673
41-1011	First-Line Supervisors/Managers of Retail Sales Workers	24,670	27,640	820	33,727
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	20,710	24,530	840	51,291
43-1011	First-Line Supervisors/Managers of Office and Administrative Support Workers	21,730	23,970	670	38,113
29-2061	Licensed Practical and Licensed Vocational Nurses	18,750	22,660	900	33,752
47-2031	Carpenters	18,780	20,880	460	33,657
51-4121	Welders, Cutters, Solderers, and Brazers	16,270	20,130	730	37,695
43-6011	Executive Secretaries and Administrative Assistants	15,590	18,760	570	33,148
13-2011	Accountants and Auditors	13,120	16,210	540	53,010
Nov-99	Managers, All Other	13,770	15,750	470	66,033
47-2152	Plumbers, Pipefitters, and Steamfitters	12,700	14,370	430	41,817
47-1011	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	12,450	13,950	330	52,399
25-2031	Secondary School Teachers, Except Special and Vocational Education	11,520	13,040	490	41,963
47-2111	Electricians	11,390	12,510	410	42,362
49-3023	Automotive Service Technicians and Mechanics	10,410	12,350	400	31,906
13-1199	Business Operations Specialists, All Other	9,630	11,600	300	44,671
23-1011	Lawyers	9,310	10,770	320	99,531
47-2141	Painters, Construction and Maintenance	9,310	10,540	290	30,526
53-5021	Captains, Mates, and Pilots of Water Vessels	7,700	10,160	450	67,379