Labor Market Estimating Conference
Methodology – August 2024

Occupational Classification at the Statewide Level...

As a starting basis, the analysis used the 2018 Standard Occupational Classification (SOC) taxonomy, comprising 848 civilian occupations. Of those, the US Bureau of Labor Statistics (BLS) Occupational Employment and Wages Statistics program (OEWS) has not published estimates for 28 detailed occupations for fiscal years 2021-22 and 2022-23. These 28 occupations were aggregated to or replaced by 12 occupations, some of which are SOC broad occupations and some of which are OEWS-specific occupational codes. These 12 occupations were added into the complete list of 848, and their 28 counterparts from the 2018 SOC taxonomy were removed. The final occupational list used for this analysis was therefore a blend of the 2018 SOC and 2023 OEWS-specific taxonomies, numbering 832 occupations. The analysis assumes that each of these 832 occupations exists in Florida.

Review of Occupations prior to Labor Supply and Labor Demand Analysis...

A process refinement was introduced to identify occupations with likely declining employment.

- The Florida Economic Estimating Conference (FEEC) uses the North American Industry Classification System (NAICS) to forecast nonfarm employment by industry. A detailed examination of the employment estimates by industry adopted by the FEEC was conducted to incorporate a particular element from that forecast. The examination produced 15 (2-digit and 3-digit) industries that are expected to decline by the end of the forecast horizon. While the FEEC forecasts the overall level of employment for a range of industries, it does not forecast the types of jobs (staffing patterns) within these industries. The BLS Employment Projections program publishes such staffing patterns by SOC system codes for a range of industries in its industry-occupation matrix. These national staffing patterns were applied to the 15 declining NAICS industries to populate them with the expected types of jobs prevalent in these industries. The goal was to isolate occupations in industries that are likely flat or in decline over the forecast period. Thirty-two occupations were identified as having a dominant share in the 15 declining industries. A dominant share was defined as at least 75 percent of the occupation's total employment concentrated in a declining industry.

A separate process was used for the gambling industry due to the unique nature of its expected evolution in Florida. This added eight occupations related to gambling to the declining occupations grouping, bringing the total to 40 occupations that would be subject to special treatment in both the labor supply and labor demand analyses.

Labor Supply...

The functional labor supply analysis is based on historical labor force and employment data for Florida from BLS and official statewide projections adopted by the FEEC in accordance with ss. 216.133-216.136, Florida Statutes.

The supply determination procedure contained the following steps:

- A ratio of annual occupational employment (including self-employed) to the official labor force projection was calculated for each occupation from Florida's OEWS employment for fiscal years 2021-22 and 2022-23 and Florida's IMPLAN estimates for fiscal year 2021-22. If OEWS data

existed, the maximum ratio was selected, otherwise the IMPLAN ratio was utilized as the representative ratio of labor supply for that occupation. The selected ratios were increased proportionally such that the sum of the employment across all occupations represented 100 percent of the labor force after adjustment for the occupations that were identified as either declining or gambling-related. In this way, these 40 occupations were able to be held constant in the supply analysis.

- To produce labor supply by occupation for each forecasted year, the statewide labor supply was allocated to each occupation based on its ratio—after adjusting for the 40 occupations that were held flat. These ratios were held constant throughout the forecast period.

Labor Demand...

The labor demand analysis uses a multi-step approach to estimate occupational employment over a 10-year forecast horizon. This approach includes: (1) establishing a base employment value by occupation for FY 2022-23, which was subsequently grown to the base employment FY 2023-24; and (2) conducting a series of tests to determine the best rate by which to grow each occupation. Historical data now encompass a lengthy post-COVID-19 period, so employment gyrations due to COVID-19 should have a minimal effect on future employment estimates. Moreover, lasting demand changes brought about by the COVID and post-COVID economic environments may be more evident.

The base employment determination procedure contained the following steps:

- The governing assumption is that base-year demand must meet or exceed filled jobs. Out of 832 occupations, 765 occupations' base employment utilized the maximum employment from Florida's OEWS employment for either fiscal year 2021-22 or 2022-23.
- The remaining 127 occupations received differentiated base-employment treatment as described below:
    - A maximum OEWS employment was selected from fiscal years 2021-22 and 2022-23.
    - National occupational per capita ratios were calculated for each occupation from 2023 BLS data for the United States and US Census population estimates. These ratios were then applied to Florida's population to produce implied Florida occupational employment.
    - An average of 2022 Florida employment by occupation from IMPLAN and the 2023 National BLS per capita ratios applied to Florida was calculated.
    - If the BLS maximum was greater than the average of IMPLAN and the applied national employment data, the BLS maximum was used; otherwise, the base employment was set to the maximum BLS employment plus 7.5 percent of the difference between the maximum and the average.
- If Florida OEWS employment was missing, Florida IMPLAN employment was used, and if no IMPLAN data was available, the National per capita ratio applied to Florida was used.
- Employment for the 40 occupations identified as either declining or gambling-related were held constant in the forecast to their current levels.
- The resulting employment by occupation was then adjusted to include the self-employed for each occupation using BLS self-employment factors.

Growth Rates...

The growth rate determination procedure contained the following steps:

- To determine the most appropriate growth rate by occupation, the analysis relied on Florida's per capita OEWS employment by occupation (without self-employed) compared to all states and the District of Columbia for fiscal years 2021-22 and 2022-23. A set of per capita ratios were generated using state employment published by BLS and population data published by the US Census Bureau. Published national OEWS estimates by occupation were used for the series mean, and the standard deviation of per capita employment for each occupation for each fiscal year was calculated. By occupation, Florida's ratios were then compared to the national mean in each year and evaluated to see if they fell within one standard deviation relative to all states and DC for which there was published data.
- Next, three analytical tests were applied to determine the appropriate assignment of an occupational growth rate: (1) Florida occupational employment fell outside of one standard deviation for both years; (2) Florida occupational employment was missing for at least one year but fell within one standard deviation for the other year; and (3) Florida occupational employment fell outside of one standard deviation for one year, but fell within one standard deviation for the other year.
    - For the 832 occupations, the results of the standard deviation analysis for the 2021-22 and 2022-23 fiscal years were as follows:

Standard Deviation Analysis (SD)	Number of Occupations
Fell within one SD in both years	659
Fell outside one SD in both years	52
Fell inside one SD in one year only	32
Missing in both years	41
Missing in one year	48

- In general, occupations falling within one SD in both years were assigned the growth rate for Florida's total population with the following exceptions:
    - All teaching and healthcare occupations were designated for independent review, as were all occupations with missing data or failing results.
    - The occupation for legislators was held constant throughout the forecast, as were occupations identified as dominant in declining industries and the gambling-related occupations.
    - Overall, the following growth assignments were made:

Growth Rate	Number of Occupations
Total population	693
Specialized population age group	78
Economic-related variable	14
Held constant	47

Determination of Areas of Concern...
Areas of concern were identified by comparing the estimates for occupational supply and demand in the 10th year of the forecast to determine where projected demand exceeds expected supply by more than 5 percent. This percentage was reduced from the 10 percent adopted at the Conference held on July 14, 2023, primarily due to the increased value of the underlying data. Relative to last year, additional panels have been added to the data series that reflect partial information from 2023, thereby reducing the number of assumptions that were previously needed to transition to a functional labor market.

Essentially, this condition means that (1) demand exceeds supply currently and will continue to do so in the future, or (2) the growth in future demand will outpace the likely labor supply for that occupation. These findings were produced by independent model runs that simulated each occupation's employment supply and demand trajectories over the forecast period.

Although some occupations have both limited supply and demand, the analysis found that there is reason to believe that a significant gap in supply will exist for 85 out of 832 discrete occupations (10.2 percent). The prior analysis had shown 101 occupations. Note that evolving or emerging trends have yet to be addressed. As such, this analysis does not alter the existing economic structure, meaning the results represent foundational imbalances that would be expected to persist into the future, absent intervention.

- Occupational Areas of Concern (by Educational Requirement): The results of the above analysis were grouped by educational requirement. A total of eight classifications are generally used to represent the typical education level most workers need to enter an occupation: "No formal educational credential," "High school diploma or equivalent," "Some college, no degree," "Postsecondary nondegree award," "Associate's degree," "Bachelor's degree," "Master's degree," and "Doctoral or professional degree." For more details on these groupings, see the sources section. The table below reflects the number of areas of concern by educational requirement:

Educational Requirement	Number of Occupations
No formal educational credential	3
High school diploma or equivalent	30
Some college, no degree	3
Postsecondary nondegree award	10
Associate's degree	5
Bachelor's degree	15
Master's degree	10
Doctoral or professional degree	9

- Occupational Areas of Concern (by Major Occupational Group): The 85 occupations of critical concern were also organized by the 22 major civilian occupational groups of the SOC. At this point, an additional analysis was conducted:
    - By group, the demand for those occupations in the 10th year of the forecast was then compared to the total statewide demand for all occupations.
    - By percentage of demand represented by the occupational areas of concern, two groups stand out: (1) Healthcare Practitioners and Technical Occupations with occupational

areas of concern that represent 3.4 percent of statewide demand in that year; and (2) Healthcare Support Occupations with occupational areas of concern that represent 2.2 percent of statewide demand in that year.

- The healthcare occupations are flagged; however, no action was proposed as part of this analysis until the Live Health Act of 2024 takes full effect.

The table below shows the number of areas of concern by occupational group:

Occupational Group	**Number of Occupations**
Management Occupations	1
Business and Financial Operations Occupations	0
Computer and Mathematical Occupations	1
Architecture and Engineering Occupations	4
Life, Physical, and Social Science Occupations	13
Community and Social Service Occupations	3
Legal Occupations	0
Educational Instruction and Library Occupations	8
Arts, Design, Entertainment, Sports, and Media Occupations	1
Healthcare Practitioners and Technical Occupations	11
Healthcare Support Occupations	3
Protective Service Occupations	1
Food Preparation and Serving Related Occupations	2
Building and Grounds Cleaning and Maintenance Occupations	0
Personal Care and Service Occupations	2
Sales and Related Occupations	1
Office and Administrative Support Occupations	2
Farming, Fishing, and Forestry Occupations	2
Construction and Extraction Occupations	2
Installation, Maintenance, and Repair Occupations	1
Production Occupations	21
Transportation and Material Moving Occupations	6

Sources

Occupational Taxonomy – Codes and Titles...

- US Department of Labor, Bureau of Labor Statistics, Standard Occupational Classification System, https://www.bls.gov/soc/home.htm

Occupational codes and titles used in this analysis are from the US Department of Labor, Bureau of Labor Statistics, Standard Occupational Classification System and the National Employment Matrix Occupational Coverage, BLS Office of Occupational Statistics and Employment Projections (https://www.bls.gov/soc/home.htm). The 2018 Standard Occupational Classification (SOC) is a product of the US Office of Management and Budget.

The 2018 Standard Occupational Classification (SOC) system is a federal statistical standard used by federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. All workers are classified into one of 867 detailed occupations according to their occupational definition. Excluding the military occupations, there are 848 civilian occupations. To facilitate classification, detailed occupations are combined to form 459 broad occupations, 98 minor groups, and 23 major groups. Detailed occupations in the SOC with similar job duties, and in some cases skills, education, and/or training, are grouped together. This analysis focuses on the 22 civilian occupational groups and excludes military occupations (major group 55). To reflect changes in the economy and the nature of work, the SOC is revised on a 10-year cycle.

The 2018 SOC taxonomy with the 848 civilian occupations is the starting point. However, data are not yet available for 28 of these detailed occupations. Instead, BLS published aggregated data for 12 occupations representing the 28 detailed occupations, resulting in a total of 832 occupations with published data in this analysis.

The 2018 taxonomy was used in the 2023 LMEC as well. The May 2021 estimates were the first OEWS estimates based solely on survey data collected using the 2018 SOC.

Employment by Occupation...

- State Occupational Employment and Wage Estimates, US Department of Labor, Bureau of Labor Statistics, https://www.bls.gov/oes/current/oes_fl.htm.
- Florida Commerce, Bureau of Workforce Statistics and Economic Research, OEWS Occupational Employment and Wage Statistics - FloridaJobs.org.

The Occupational Employment and Wage Statistics (OEWS) survey is a national semiannual survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States. It is the most detailed public source of occupational data available in terms of both occupational nomenclature and local geographies. OEWS estimates are constructed from a sample of about 1.1 million national establishments. The OEWS survey sample is drawn from the database of businesses reporting to the state unemployment insurance (UI) programs. Each year, two semiannual panels of approximately 180,000 to 185,000 sampled establishments are contacted, one panel in May and the other in November. Responses are obtained by mail, internet or other electronic

means, email, telephone, or personal visit. The May 2023 estimates[1] are based on responses from six semiannual panels collected over a 3-year period: May 2023, November 2022, May 2022, November 2021, May 2021, and November 2020 panels. The unweighted sampled employment of 83 million across all six semiannual panels represents approximately 56 percent of total national employment. In Florida, the OEWS survey draws its sample from state Reemployment Assistance (unemployment insurance) files. This data source excludes the self-employed since they are not subject to the Reemployment Assistance tax and the OEWS does not collect data on them. The Florida sample for OEWS is slightly less than 11,000 units (establishments) per survey panel and approximately 66,000 total units over the six panels comprising the data used to publish the annual release.

National self-employment factors were applied to occupational employment based on data from the US Department of Labor, Bureau of Labor Statistics. These factors expand the occupational employment estimates to account for the self-employed. Some occupations, such as barbers and real estate brokers, tend to have more self-employed or sole proprietors (unincorporated businesses) than others.
Wages for the OEWS survey are straight-time, gross pay, exclusive of premium pay. Base rate; cost-of-living allowances; guaranteed pay; hazardous-duty pay; incentive pay, including commissions and production bonuses; and tips are included. Excluded are overtime pay, severance pay, shift differentials, nonproduction bonuses, employer cost for supplementary benefits, and tuition reimbursements.

Employment Estimates from IMPLAN...
IMPLAN (www.implan.com) is a proprietary economic modeling platform that combines a set of extensive databases, economic factors, multipliers, and demographic statistics with a highly refined modeling system. IMPLAN is based on an input-output economic model. Input-output analysis is a form of economic analysis based on the interdependencies between economic sectors. Input-output is commonly used to estimate the impacts of "shocks" to an economy and to analyze their resulting ripple effects. IMPLAN data contains 546 sectors representing all private industries in the United States as defined by the North American Industry Classification System (NAICS) codes. Employment, employee compensation, industry expenditures, commodity demands, relationships between industries, and more are collected to form IMPLAN's ever-growing database.

Educational Requirements...
A total of eight classifications are generally used to represent the typical education level most workers need to enter an occupation: "No formal educational credential," "High school diploma or equivalent," "Some college, no degree," "Postsecondary nondegree award," "Associate's degree," "Bachelor's degree," "Master's degree," and "Doctoral or professional degree."

To assign a unique educational requirement to each occupation, a master list was developed by combining two products: (1) the CIP-SOC crosswalk, provided by the Reimagining Education and Career Help Office (REACH Office); and (2) the Education and Training Assignments by detailed occupation, produced by the US Department of Labor, Bureau of Labor Statistics (BLS). The REACH crosswalk used the BLS 2018 SOC taxonomy. The BLS educational assignments also use the 2018 SOC taxonomy in this analysis.

[1] The May 2023 estimates were published by BLS in April 2024.

The assignment procedure contained the following steps:

- For occupations that had a one-to-one linkage between the occupation and the educational requirement in the REACH Office crosswalk:
    - A direct assignment was made, preserving the REACH Office code.
- For occupations that had multiple educational requirements in the REACH Office crosswalk:
    - As directed by the REACH Office and the DOE workgroup, 17 occupations (using 2018 SOC counts) were assigned the lower educational requirement.
- For occupations that had "Recognized industry credential" as the educational requirement in the crosswalk:
    - As directed by the REACH and DOE workgroup, 84 occupations (using 2018 SOC counts) were re-named "Postsecondary nondegree award" to match the category name in BLS's codes (but not necessarily the BLS educational assignment).
- For occupations that were absent from the REACH Office's crosswalk (209):
    - BLS educational requirement codes were assigned.

Prepared by: Florida Legislature, Office of Economic and Demographic Research
August 2024