**BLS Response to questions during March 16, 2012, Webinar, “Employment Outlook – Long-term Projections”**

The following provides responses to the questions asked during the Webinar, some of which could not be responded to during the time available. The questions have been grouped by topic, with the individual questions shown and the answers provided in narrative.

**Education and Training**

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| Maria (1000723343405971687): Slide 46 why does the BS education level person make more money than a master level educated person? |

*Response:* This chart shows that occupations where master's degree was the typical entry level education required had, as a group, a median annual wage of $60,240 in May 2010. The median for the group of occupations where bachelor's degree was the typical level was somewhat higher at $63,430.

This illustrates the vagaries of the particular occupations that appeared in each group. First of all, the master's degree group is pretty small, with 29 occupations out of the 749 for which we do projections. By contrast, 154 occupations are assigned bachelor's degree as the typical entry-level education.

Secondly, this illustrates that the occupational field, as well as the education requirement, can affect wages. The master's degree group includes a number of counseling occupations that tend not to be very highly paid, even though they have the master's degree requirement. What we often see is some of the helping professions don't pay very well, compared to occupations in management, science and engineering, and computer technology, and so forth. Many of these are in the bachelor's degree group.

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| David (1000723343405970069): Are there occupational charts available for Associate degrees? |

*Response:* Yes. The Winter 2012 issue of the *Occupational Outlook Quarterly* (*OOQ*) has charts depicting the projections for Associate degree as well as other education levels. See the Occupational section of the Winter *OOQ* at <http://www.bls.gov/opub/ooq/2011/winter/home.htm>

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| Carl (1000723343405979731): Given the growth of career and technical training, is there a way to tease out the number of jobs which will require this type of credential? |

*Response:* In the BLS education and training categories, we do include postsecondary vocational award as one of the education categories. So you could probably find some useful information there; and also by looking at the OJT categories.

In developing our new education and training system, we found the area between high school diploma and associate's degree difficult. A variety of kinds of training occur that are not captured in a comprehensive set of information, and is therefore difficult to depict this training. We'd love to hear from you about things you think maybe we've missed.

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| Annick (1001133564920195328): Since health care occupations are still in demand and appear to be in demand for some years to come, are apprenticeship opportunities being considered?  |

*Response:* In the BLS education and training categories, apprenticeship is one of the typical on-the-job training categories. The definition of apprenticeship we are using is provided at <http://www.bls.gov/emp/ep_definitions_edtrain.pdf>. Among healthcare occupations (SOC Major group 29, Healthcare Practitioners and Technical Occupations, and SOC Major Group 31, Healthcare Support Occupations), no occupation has an assignment of apprenticeship as the typical on-the-job training needed to attain competency. BLS will update the education and training assignments at least every two years. If apprenticeship emerges as a typical OJT in these occupations, we will reflect that.

**How good are these projections?**

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| Daniel (1001104150615787693): How accurate have these projections proven to be? |

*Response:* Evaluating the accuracy of the projections can prove to be a challenging exercise. Often times there are considerable changes to the data series, definitions, and classification systems over the decade or so between publication and when the results are analyzed. However, BLS does attempt to review the accuracy of its projections.

The most recent evaluation completed, for the 2006 projections, is available at <http://www.bls.gov/opub/mlr/2010/09/art3full.pdf>. BLS models for the 2006 projections outperformed naive models for the labor force, industries, and occupations. As the housing bubble was roughly at or near its peak in 2006, BLS tended to under-project housing related components of GDP as well as related employment sectors.

**Green jobs**

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| Pam (1001000763789757282): Brian, when does BLS anticipate releasing the Federal Green Jobs Report? I had heard fiscal 2012 a first-ever report is coming. |

*Response:* BLS published the first results from the Green Goods and Services survey on March 27, 2012. See <http://www.bls.gov/ggs/>

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| Christina (1001122060986467642): Do you have a coding for green jobs? |

*Response:* No. In researching green jobs to develop our definition, we concluded that green jobs generally could not be identified through occupational or industry classifications.

**Labor force and related questions**

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| Christina (1001122060986467642): Whites include Latinos/Hispanics? |

*Response:* Whites include some Latinos/Hispanics, but not all of them. BLS follows the categories for race and ethnicity defined by the Office of Management and Budget for federal statistical data. Race is a separate category from ethnicity. Therefore a person who considers him- or herself Hispanic may be of any race.

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| William (1001207535207512972): Are retirees considered to be in the labor force? |

*Response:* To be counted in the labor force, an individual must be either employed (working for pay or profit) or not employed but actively looking for work. (See Current Population Survey FAQ’s 4, 5 and 6 at <http://www.bls.gov/cps/faq.htm>.)

Thus, if an individual is retired, meaning they are not working and are not looking for work, he or she would be counted as not in the labor force. If an individual is retired in the sense that he or she is receiving retirement benefits from a former employer or Social Security benefits, but is also working for pay or actively looking for a job, that individual would be counted in the labor force.

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| Eric (1001207540606077449): Considering the "browning" population projections, won't whites be, proportionately, increasing (or the same) in the labor force by 2020? |

*Response:* The number of whites in the labor force is projected to grow from 125.1 million in 2010 to 130.5 million in 2020, a gain of 5.4 million. Because the rate of growth for whites is slower than for some other race groups, their share of the total labor force is projected to decline slightly from 81.3 percent in 2010 to 79.4 percent in 2020. The BLS labor force projections, including detail by race and ethnicity as well as by gender and age, are discussed in a Monthly Labor Review article available at <http://www.bls.gov/opub/mlr/2012/01/art3full.pdf>

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| Jasmine (1001207532297152074): What variables do you use to project labor force growth by race? |

*Response:* BLS projects labor force for four race groups (White, Black, Asian and “All other groups”). They are all based on the future size and composition of the population and projected labor force participation rates of various age, gender, race, and ethnic groups. The projection method uses an extrapolation technique, not a variable-driven or behavioral model. Our research indicates that the results are comparable to results from a behavioral model. The link to the labor force methodology is at <http://www.bls.gov/emp/ep_projections_methods.htm#labor>

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| Karen (1000935161626840362): To get a better sense of labor force, do you have percentages for 1. Hispanic Latino (all races), then 2. non-Hispanic/Latino (white alone) and then 3. non-hispanic/latino (black alone), etc. , etc. |

*Response:* The classifications of demographic data in the Current Population Survey (CPS) are Hispanic and non-Hispanic for all the different race groups of White, Black, Asian, and “All other groups. However, BLS prepares labor force projections only for Hispanics and the White non-Hispanic group and not for example Black non-Hispanics or Asian non-Hispanics.

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| Rosalinda (1001207538074107720): can we get projections based on certain groups such as veteran status |

*Response:* BLS does not do labor force projections by veteran status. BLS does publish data annually on the employment situation of veterans, with the most recent report released on March 20, 2012. See <http://www.bls.gov/news.release/vet.nr0.htm>

**Projections methods**

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| Jane (1001115859110154379): The Fastest Growing occupations--is that data from original research or is it provided by the individual states? |

*Response:* The national occupational projections are produced using BLS methods and research, and are not based on information provided by individual states. The process is actually the other way around: the state labor market information offices use the BLS national projections as inputs in preparing their state and area projections. The BLS projections methods are described at <http://www.bls.gov/emp/ep_projections_methods.htm>

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| Ernie (1001030641396734453): Can you please briefly discuss the methodology employed to estimate replacement needs by occupation for occupations that have appreciable numbers leaving the occupation each year? In the ‘Estimating Occupational Replacement Needs technical documentation’ page (http://www.bls.gov/emp/ep\_replacements.htm), the example given of a high-turnover occupation is Waiters and Waitresses, one which requires minimal training. What about other fields which require a moderate amount of training, like medical assisting? What about occupations that require significant training, like Actuaries and Statisticians – which are among those occupations with the highest 2010-2020 replacement rates? |

*Response:* The 2010-20 replacement rates and replacement needs for detailed occupations are available on the BLS website at: <http://www.bls.gov/emp/ep_table_110.htm>

Replacement needs in an occupational context should not be confused with the term “turnover” as is commonly used at the establishment or employer level. Occupational turnover refers to entries and separations both within an occupation as workers move from one job to another and also as workers leave for other occupations or quit the labor force entirely. BLS replacement needs reflect the rate at which incumbents leave the occupation to move to a different occupation, retire, or otherwise leave the labor force. Moving to a different job in the same occupation is not included.

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| Bill (1000935052536555588): Is the 2020 census expected to employ as many as the 2010 census? |

*Response:* We don’t know.

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| Meilin (1001115651292958964): how is outsourcing taken into account? also, how is temporary work taken into account? |

*Response:*  There are two types of outsourcing the questioner may be thinking of: off-shore outsourcing and domestic outsourcing. Offshore out-sourcing is indirectly taken into account in the BLS projections, as the econometric models deal with exports and imports.

Domestic outsourcing, where a business outsources activities to contractors, the shifts in employment are taken into account as they appear in the industry staffing patterns that are the basis of the occupational projections. Past domestic outsourcing will be captured in the input data, primarily from the BLS Occupational Employment Statistics program. Expectations about future outsourcing trends are taken into account in the ratio analysis process, where staffing patterns are projected. The BLS projections methods are described at <http://www.bls.gov/emp/ep_projections_methods.htm>

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| Candida (1001106236518447344): To what extent are the projections for job growth based on goods and services Americans provide domestically versus what American workers (or workers in the U.S. regardless of nationality) can produce for global audiences? |

*Response:* Underlying the industry employment projections is a set of detailed projections for the U.S. economy including a comprehensive input-output model. BLS publishes projections of domestic output including a detailed breakout of final demand components including imports and exports of both goods and services. Therefore, the industry employment projections are based on analysis of how much demand there will be and how it will be satisfied for a given commodity by both imports as well as domestic commodity output including exports.

**Industry questions**

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| Neil (1000723343406006133): Does the construction and extraction group include Oil and Gas drilling? |
| Judy (1001207648455099605): Where do oil and gas jobs fit in relative to job categories? |

*Response:* “Oil and gas jobs” are found in two industries in the North American Industry Classification System (NAICS): 211110 Oil and Gas Extraction and 213111 Drilling Oil and Gas Wells. The first of these industries includes businesses whose main activity is the production of crude petroleum and natural gas. The second industry is in a broader group, NAICS 213 Support Activities to Mining, and includes businesses whose main activity is to provide drilling services.

Neil’s question is a mix of occupation (construction and extraction occupations group) and industry (Oil and gas drilling) questions. Employment in the SOC Major Group 47 Construction and Extraction Occupations includes jobs in the two industries noted above. In the case of 213111 Drilling Oil and Gas Wells, the BLS projections do not go down to this level of industry detail. This detailed industry is part of the broader industry NAICS 213 Support Activities to Mining. If you want to see exactly how many jobs in Construction and Extraction Occupations (or any other occupation) are in these industries, see Table 1.9 on the BLS Employment Projections website, <http://www.bls.gov/emp/tables.htm>

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|  Sherrie (1000723343405998924): It was mentioned that educational services are private only? I just want to confirm that as the definition on the BLS web site includes Universities, Junior Colleges etc. leaving the impression it covers the public Universities as well. Just looking for clarification! Thanks! |

*Response:* Education employment in State and Local government is not included within the “Educational services” sector. State and Local government educational services are treated as components of the State government and Local government industries.

**O\*NET and the BLS Projections**

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| Richard (1001207465623234454): Are these new education categories consistent with those in O\*NET? |
| Richard (1001207465623234454): Bottom line; BLS and O\*NET education categories are not really compatible. That's how I understand the answer. |

*Response:* Since the webinar we have looked at this question more closely. The concepts and definitions used in the O\*NET Job Zones and the BLS education and training categories, while seemingly similar, are different enough that there is not a close correspondence between the two systems. The Job Zones are quite broad, with five zones encompassing all occupations, while the BLS system is more detailed, with eight education categories, six OJT categories, and four related work experience categories. The work experience and training concepts are also somewhat different. We are working with our O\*NET partners to better understand the extent to which the two systems align.

**Occupational Projections**

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| Richard (1001207465623234454): Does Office and admin support include PPOs?Richard (1001207465623234454): Rather than PPO, I meant PEOs |

*Response:* A “Professional Employer Organization” is an industry sector whereas the “Office and administrative support” category referred to in the question is an occupational category. PEOs would certainly employ workers in office and administrative support occupations, in addition to many workers in business support occupations such as HR specialists.

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| Shawn (1000924350108658026): Do these job opening #s include turnover/replacement, or are they pure growth?  |

*Response:* In the occupational projections, BLS provides two numbers. First is new jobs resulting from growth in demand. For major occupation groups, these are shown as projected employment change on slides 35-36. Second, we provide the total number of job openings (slides 40-41). These slides show the total number of openings, broken out into the number of new jobs and the number of job openings from replacements. Note that “replacements” is not the same thing as “turnover.” Replacement needs result from workers permanently leaving the occupation, either for employment in another occupation or by leaving the labor force. Turnover would include workers changing jobs within the same occupation, as well as those leaving the occupation altogether. This would be a higher number than the replacement openings, and is not estimated in the BLS projections.

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| Caran (1000916949383197136): Are the registered nurse openings anticipated to be available to new graduates or will experience be necessary? |

*Response*: It is difficult to state with certainty. Replacement needs are an estimate of the number of occupational entrants minus the number of leavers, who must be replaced by workers new to the occupation. For an occupation that has formal training requirements, such as registered nurses, replacement needs represent a rough measure of the number of individuals who must be trained to replace workers who leave. However, as experienced nurses retire or leave the occupation, employers may either hire a newly-trained nurse, or hire an experienced nurse to replace the experienced nurse who retired.

For registered nurses, job openings due to growth in demand will be more numerous than replacement openings. Because these are new jobs, employers may look for new graduates. However, BLS has not studied employment outcomes for new graduates, or hiring patterns of employers.

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| Coretta (1001207443220024239): In the occupation projections, why the sharp increase in personal care? |

*Response*: Growth in demand in Personal Care and Service Occupations is driven primarily by the aging of the population. The most rapidly growing and one of the largest occupations in this group is personal care aide - these are workers who provide assistance in basic living tasks. They are not home health aides who do health care, another large and rapidly growing occupation that is in the Healthcare Support Occupations group. Other large occupations in this group are child care workers and hairdressers, hairstylists, and cosmetologists.

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| Ganga (1001010534201911301): Do we have IT employment projections? |

*Response:* Yes. Information technology occupations are mainly in SOC Major Group 15 Computer and Mathematical Occupations. This group is projected to grow at an above average rate of 22.0 percent over the 2010-20 decade and add about 778,000 new jobs. See Table 1.1 in the BLS projections website at <http://www.bls.gov/emp/tables.htm>.

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| Cathy (1001207538601317915): what is driving the growth in goods producing occupations vs. growth n service producing jobs-why  |

*Response:* The split between goods producing and service producing jobs is generally discussed within industries and not occupations. Occupations are often employed by both goods and service producing industries. For example, both a manufacturing firm and a financial firm may employ human resource workers.

Employment within service producing industries is expected to continue to grow faster than goods producing industries as it has for some time now. Goods producing industries have become much more productive in the past couple of decades, requiring fewer workers to produce the same level of output. In labor intensive goods producing industries, aside from construction, demand has increasingly been satisfied by imports.

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| dave (1001207444487261088): Why isn't net replacement jobs total going up as the baby boom retires? |

*Response:* Two factors may help to explain why overall replacement rates are not increasing as baby boomers retire:

1. Labor force participation rates have been rising for older age groups (see table 3.3 at <http://www.bls.gov/emp/ep_table_303.htm>), which effectively lowers replacement rates. For example, between 2000 and 2010, the participation rates for workers in the age groups 55-64 and 65-74 have increased 5.6 and 6.5 percentage points, respectively. Labor force participation trends are discussed in our Monthly Labor Review article, “Labor force projections to 2020: a more slowly growing workforce", <http://www.bls.gov/opub/mlr/2012/01/art3full.pdf>
2. Retirements do not necessarily account for the major share of replacement needs. Replacement rates are very high among younger workers in some very large occupations, such as cashiers and waiters and waitresses. These rates reflect not retirements, but the large number of young workers who take these jobs temporarily and leave to find other work as they get older.

**Questions about Other BLS Data**

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| Suzanna (1001131841849092893): Do we have statistics on the ratio of Small Businesses to Large Businesses as a part of employers? |

*Response:* BLS has begun providing an experimental data set on employment by size class. See <http://www.bls.gov/ces/cessizeclass.htm>. In the BLS projections, we do not use any size class information. However, the employment data used includes all sizes of businesses, from one employee and up.

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| Denis (1000723343405999691): Does BLS publish veterans' labor force data by State |

*Response:* BLS does publish data annually on the employment situation of veterans, with the most recent report released on March 20, 2012. See <http://www.bls.gov/news.release/vet.nr0.htm>. This report does not contain any data by state.

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| Barry (1001105471485473884): Does BLS provides re: % of disabled employees in any of these studies. If so, how are they accessed? If not, why not? |

*Response:* BLS does publish data annually on the labor force characteristics of persons with a disability, with the most recent report released on June 24, 2011. See <http://www.bls.gov/news.release/pdf/disabl.pdf>. We do not produce projections by disability status. However, in October 2010 the *Monthly Labor Review* published an article by non-BLS researchers on disability and occupational projections, available at <http://www.bls.gov/opub/mlr/2010/10/art3exc.htm>

**Self-employment**

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| Bruce (1001009045713571577): Are self employed in the employment numbers? |

*Response:* Yes. Slide 24 shows the non-farm wage and salary, which is the bulk of the employment, and then a really small sliver up there in yellow that was representing other types of employment: agriculture, self-employed, unpaid family workers and so forth. Self-employed are included total employment and in the occupational projections as well.

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| Candida (1001106236518447344): As the self-employed workforce grows, are there plans to address independent contractors in the employment rate? |

*Response:* BLS data include independent contractors.  Also, our data show that the number of self-employed workers is not actually projected to grow very fast. Projections program data show that in 2010 there were about 11.1 million self-employed workers, and this number is projected to grow by a below average rate of 6.9 percent to 11.9 million by 2020.  In fact, between 2000 and 2006 (prior to the recession), the number of self-employed and unpaid family workers remained level at 12.3 million.

**Skills Gap**

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| Paul (1000723343405997667): We keep hearing that the Manufacturing Sector has 600,000 vacancies right now that they can't fill because they can’t find qualified machinists, assemblers and more. Are you aware of this issue? Where does it fit into your analysis? Thank you.  |

*Response:* We are aware of this issue. We hear about it in the news, and probably the same way many of you hear about it, from businesses and so forth.

We don't have occupational vacancy information, so we don't have any specific data on how many vacancies manufacturers are recruiting for at the moment and in what occupations or at what wage rates. And anytime one hears about a possible shortage, one should also ask whether the wage offered is a market rate.

In our projections, we are looking at the trends in total employment, how it has changed over time, and what our economic outlook says about what might happen with manufacturing employment. Total manufacturing employment has been on a long-term decline for many decades, but we're seeing some increase in it right now as part of the rebound from the recession. But we are projecting that manufacturing employment is going to be somewhat lower by 2020 than its 2010 level.

**Occupational classification questions**

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| Richard (1001207465623234454): Do these projections employ SOC 2010? |
| Richard (1001207465623234454): Which SOC (2000? 2010? Hybrid?) will the states use for their next set of occupational projections? |

*Response:* The 201-20 projections use a “hybrid” of the 2000 and 2010 Standard Occupational Classification (SOC). This is because the primary source of occupational data is the BLS Occupational Employment Statistics (OES) program, which developed a hybrid classification for use during its transition to the pure 2010 SOC. The occupational classification used in the projections is described at <http://www.bls.gov/emp/ep_crosswalks.htm>

Because the states also use the OES data as the major input and use other inputs from the BLS projections, their projections this time around will also be on the hybrid SOC.

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| Coretta (1001207443220024239): When are you mailing the full changeover to 2010 SOC? |

*Response:* The BLS Occupational Employment Statistics (OES) program will complete its transition to the 2010 SOC with the publication of data for May 2012, to be released around March 2013. The next set of BLS projections, for 2012-2022, will be fully on the 2010 SOC. This means we will have projections for some new occupations, such as the more detailed nursing occupations (nurse anesthetists, nurse midwives, and nurse practitioners) and two “green” occupations (solar PV installers and wind turbine service technicians). For a list of the 24 new occupations in the 2010 SOC, see <http://www.bls.gov/soc/soc_2010_whats_new.pdf>.

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| Rosalinda (1001207538074107720): slide 37, what is production occupation? |

*Response:* Production Occupations are Major Group 51 in the Standard Occupational Classification. This major group includes supervisors of production workers; assemblers and fabricators; food processing workers; metal workers and plastics workers; printing workers; textile, apparel, and furnishings workers; woodworkers; plant and systems operators; and other production occupations. The complete list of production occupations and their definitions is available at <http://www.bls.gov/soc/2010/soc510000.htm>

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| Richard (1001207465623234454): Do you think that you are up to date on emerging occupations? |

*Response:* For an occupation to be included in the Standard Occupational Classification, it must already have “emerged” – that is, be well enough established that it can be specifically defined and is large enough so that either BLS or the Census Bureau can measure it in our surveys. Thus, the SOC will always be a somewhat behind the curve on emerging occupations. The O\*NET program, however, does work on emerging occupations.

**Regional and area projections**

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| Judy (1001207648455099605): is regional information available |
| Kathleen (1001206847776813827): Can we access projections by county? |
| Meilin (1001115651292958964): when/how will we know where the jobs will be? |

*Response:* BLS produces national employment projections. The State labor market information (LMI) offices prepare projections for their state and areas. The specific area definitions (county, MSA, region) vary from state to state. Please contact your state LMI office to see what they provide, as well as their planned release times. State and area projections are available at <http://www.projectionscentral.com/>.

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| Richard (1001207465623234454): Will each and every state LMI office have its state-level projections by July 1st, 2012? |

*Response:* We can’t answer this question. If you are concerned about your particular state, please contact your state LMI office.

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| Richard (1001207465623234454): If one adds up all the state projections would they equal the national projections? |

*Response:* No.