



Tom Price, North Carolina Dept. of Commerce

LEWIS, or Local Employment and Wage Information System. It is an automated system for producing, reviewing, screening, and publishing employment and wage estimates derived from the Occupational Employment Statistics (OES) program.

In the '90s, the Bureau of Labor Statistics (BLS) developed and distributed a program to the states they called EDS, an acronym for Estimates Delivery System. As the OES program evolved and prepared for its transition to the Standard Occupational Classification (SOC), it became clear it was in need of a major rewrite. BLS chose to abandon it in favor of a central SAS system and published statistics for BLS-specific areas.

At about the same time, the Workforce Investment Act (WIA) was cranking through Congress. Among other things, the WIA required states to publish local employment and wage data. Since this was no longer possible through EDS, the OES Policy Council and Workforce Information Council began looking for an alternative way. North Carolina stepped in, and with assistance from staff at BLS, EDS2000 was created. The 2000 was dropped after the first year - the system once becoming a namesake of the original BLS EDS product. That lasted until early 2015 when the Employment and Training Administration requested a name that more accurately reflected the system's purpose - hence, EDS became LEWIS.

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## WID Changes

Dana Placzek, Connecticut Dept. of Labor

*"Change is the only constant in life" Heraclitus*

As the Roman philosopher noted, life is ever-changing. So are data, and thus the Workforce Information Database (WID) has to change to adapt to new data. The Structure Committee of the Analyst Resource Center (ARC) is the group tasked with keeping up with new data and changing the structure to allow inclusion of data.

New data, made available by the National Crosswalk Service Center in Iowa, includes demographics based on the American Community Survey (ACS), career path and education data, and extended Consumer Product Index (CPI) data. WID version 2.6 added new tables, or fields to existing tables, to capture all of this data. [More on page 8](#)

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## Licensed Occupations – The Man Behind The Curtain

Steve Rosenow, National Crosswalk Service Center

Dorothy was amazed when she met the actual Wizard of Oz, who was hiding behind the curtain, and found him to be a mere mortal. Information about occupational licensing is gathered largely “behind the curtain” by workers in a variety of agencies and roles. It’s found in a number of locations including the Department of Labor’s [CareerOneStop](#) (COS) website and state workforce information sites and publications. This information has been published for a very long time in many states and has been online since the late 1990s (visit an [early version](#)). It’s unique in the workforce information world due to states’ diversity in the licenses they issue, the organization of licensing responsibilities, and the variety in readily available information that can be included in the licensed occupation tables. A great deal of work must occur at a number of levels before a state’s information appears online. Here’s a description of some of the behind-the-scenes work that is never seen:

Information Gathering: State workforce agencies are required to gather information about occupational licenses and update that content every two years. They are also required to furnish those updates to the National Crosswalk Service Center (NCSC) for inclusion in the CareerOneStop online application. The NCSC has been the funnel through which this information flows between the states and those who operate and maintain the online application. The person or persons who gather the source material may or may not be directly connected to those who generate most of the other content of the Workforce Information Database. Their task is to locate occupational licenses issued by state agencies, identifying both the licenses and respective agencies, gather descriptions of the licenses, and relate them to occupations from the O\*NET classification. This information is included in a database and furnished to the NCSC for further processing before inclusion in the COS licensed occupation application.

Testing: The NCSC receives licensing information in a variety of file types: Access, Excel, delimited text and others. Since the licensing updates are sent to COS in an Access database, the NCSC imports the state files into that format. The NCSC conducts a number of tests and other examinations of the files to ensure a relatively smooth transition into the COS database:

- **Relational testing**: Information in the WID and, to some degree, the COS are contained in normalized relational databases. The relational testing done by the NCSC ensures that a number of internal relationships exist: each agency issues at least one license; each license is issued by an agency, each license relates to at least one occupation, and each occupation is valid within the O\*NET classification.
- **Content testing**: The NCSC ensures that each mandatory field has content and that the content does not appear to be truncated. In the case of the LICAUTH table, multiple fields are provided for the agency name and address. Population of only one of each is required. The license description field in the LICENSE table receives special attention. The description is contained in long text field, variably described as VARCHAR(MAX), long text, or memo. The NCSC examines the content of this field to ensure that it is not truncated and examines for anomalies introduced when the content was imported from another source. In cases with relatively minor issues, the NCSC will attempt to correct them. In cases with widespread issues, information about those issues, along with possible methods to address them, are furnished to the source state. [More on page 5](#)

**In the Spotlight**



**Shannon Kinder**

South Carolina Department of Employment & Workforce

**How long have you been involved in the world of LMI?**

I have been with South Carolina Department of Employment and Workforce for almost four years.

**What is your current job title?**

I started as their database programmer for the Workforce Information Grant database and was promoted to Workforce Intelligence Manager. I am responsible for the reporting and performance requirement under the WIG and other ETA-funded programs.

**What is your educational background?**

I obtained a Business Administration degree from Polk State College and an Information Science degree from Florida State University, Go Noles!

**Are you originally from South Carolina?**

I am originally from Lakeland, FL and moved to South Carolina about 16 years ago. My husband and I have been married for 27 years and we have two wonderful boys (24 and 21). My eldest son is a warehouse lead for a major company in South Carolina and the youngest son is entering his senior year at The Citadel, then he is off to officer training in Virginia.

**What are your interests outside of work?**

My hobby, passion, outside of work is classic car restoration, specializing in Mustangs. Since we have been married, we have owned 19 Mustangs. My

favorite was a 1969 Mustang Convertible. A close second was the 1971 Mach 1, with a 351 Cleveland; fast and fun to drive. Currently, we own a 2001 Roush and a 2009 GT in Grabber Orange. My goal is to get another 1969, but in a Fastback body style and show both the 1969 and 2009 together. My husband has taught me everything about restoration - the last thing I need to learn is welding. When we retire, we hope to turn our hobby into a moneymaker (not a job).

**What is the most rewarding aspect of your current job?**

The most rewarding aspect of my job is watching the data and analyses we provide bring economic growth to South Carolina. I feel we are making a positive difference in getting South Carolinians back to employment.

**What is the strangest job you have ever had?**

The most interesting job I had was with a sports and entertainment marketing firm in Florida. The hardware/software companies would send us products to test prior to marketing. We catered to companies such as Sega and EA sports. I am to blame for my son's addiction to video games. He tested all the products for me. ☺



## This Is Not Your Grandfather's Licensing Database

Steve Rosenow, National Crosswalk Service Center

Your grandfather may have spent time gathering things: coins or stamps for his collection, sheep for shearing, information about his business competitors, and others. In some cases, the technologies of the times may have made his job easier. More recently, shepherds of information have been able to use today's technology to help in gathering information about licensed occupations and delivering that information to the public. Almost three decades ago, state agencies were asked to gather information about licensed occupations in their states. The requirements were simple: the license name, information about the license (unspecified), licensing agency information, and occupations related to individual licenses.

This information has been on government Internet sites since the late 1990s. What started as simple application designed to demonstrate the delivery of occupational and labor market information through the World Wide Web has grown into a very visible web application called [CareerOneStop](#), a Department of Labor web site that delivers a variety of occupational and career information. The database behind the application has grown to include information on more than 8,000 licenses from around the country with links to more than 11,000 occupations. In the early days, those bits of information numbered in the hundreds, not thousands.

The database growth and acceptance of this as an authoritative source of information about occupational licensing has not gone unnoticed and has resulted in greater visibility for this information. In addition, the COS website makes the licensing information available through web services, allowing web developers to incorporate this information into their own web sites. [More on page 9](#)

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## Looking Back & Looking Ahead: WID Nonstandard Tables

Steve Rosenow, National Crosswalk Service Center

It's a process that's been repeated a number of times. A new version of the Workforce Information Database (WID) is released. Tables included in the new release that had been included in the National Crosswalk Service Center's [Nonstandard Tables](#) page are removed to make way for more nonstandard tables. It's an important process that keeps the database fresh and current. It also provides a home for tables whose structures have changed, and whose new structures are yet to be included in the database.

The release of version 2.6 of the WID included a number of tables, some of which contained updates to content already in the database while others were intended to provide states with tools that can lead to a broader understanding of how their state economies function. The structure of the SOCCODE table was modified to include new estimates, developed by the Bureau of Labor Statistics, of education, experience and training generally required for entry into employment in an occupation. Other classifications represent ways the Career and Technical Education community looks at the relationships between education and employment. The revised SOCCODE table, along with lookup tables for the education, experience, and training categories were added in WID version 2.6. Lookup tables for Career Clusters and Career Pathways were also added. [More on page 6](#)



## Training for WID DBAs in 2016

Phil Ellsworth, ARC Education Committee

It's been a few years since the Analyst Resource Center (ARC) held a training session, but plans are back on track to do so in 2016.

The ARC Education/Communication Committee surveyed WID DBAs and Labor Market Information directors in each state and found that there is a considerable interest in attending an ARC-sponsored training.

The ARC is tentatively planning a three-day training session sometime between July 1, 2016, and September 30, 2016, possibly in Minneapolis, MN. There would not be a registration fee for this training, although states would be required to cover travel, lodging, and meal expenses for their attendees. The training materials will also be developed as online resources on the ARC website.

It is anticipated that training sessions will fall into five categories, including hands-on training sessions in SQL and data visualization:

- A Workforce Information Database (WID) overview session that will include the history of the WID, who uses the WID, how the structure is determined, and what are the deliverables, LMI programs, etc.
- A session covering the ARC, WID and NCSC including what they are, what's a TEGL, versions of the WID, and deprecation.
- A session on Understand the WID, DBA knowledge, loading the WID, finding help, more on the TEGL, and an introduction to the data dictionary.
- A session that delves deeper into the WID and provides a hands-on SQL segment
- And finally, a session devoted to data visualization. This information was presented at the LMI Forum in June of this year.

For more information about ARC's training plans, please contact Phil Ellsworth, ARC Education and Communication committee chair, at [phil.ellsworth@wyo.gov](mailto:phil.ellsworth@wyo.gov). If you haven't yet filled out our questionnaire, please do so at [ARC Training Survey 2015](#). We'd still like to have your input.

## Licensed Occupations *continued from page 2*

Any changes that are made to a state's tables are reviewed with that state's contact person, providing the state with the opportunity to propose alternate solutions to issues involved.

Transmission and Publication: Once all issues have been resolved, a state's tables are flagged as ready for inclusion in a COS update. Most updates include information from several states.

In each case, the complete license database is furnished to COS for further testing and inclusion in their online applications. Once COS is satisfied with the database content, it is placed on a staging server for states to review their information.

For more information, please contact Steve Rosenow of the NCSC at [steve.rosenow@iowa.gov](mailto:steve.rosenow@iowa.gov).

## Looking...WID Nonstandard Tables *continued from page 4*

They reflect the growing number of partnerships between education and workforce agencies working to create more comprehensive information on educational outcomes and other measures.

Two other new tables in WID 2.6 that first appeared on the Nonstandard Tables page were designed to provide state analysts with more detailed information about populations and economies below the national level:

**population demographics** and detailed **Consumer Price Information (CPI)** data. The former table utilizes information from the Decennial Census and American Community Survey to provide age, gender, race and ethnicity estimates for geographic types down to the place level. The aging of the population, along with its increasing diversification are important contributors to understanding changes in both the demand for goods and services and the characteristics of potential labor force participants. The expanded CPI table contains monthly or quarterly price indices for 40 market basket items for 45 geographic levels including regions and metropolitan areas. This file provides analysts with another way to compare and contrast regional economic information that may be useful in understanding local conditions.

The nonstandard tables developed since the release of WID 2.6 have focused on increasing the amount of available information relating to state and local economic conditions and performance. Two tables have been added to the nonstandard tables page, and another is currently under development. The two new tables are:

- **State Gross Domestic Product (GDP):** These annual estimates from the Bureau of Economic Development estimate output from sectors of the states' economies along with other components such as wages and subsidies. They provide a fairly detailed and comprehensive snapshot of economic activity.
- **State Personal Consumption Expenditures (PCE):** These estimates, also developed annually by BEA, track the majority of economic activity in states. Nationally, PCE accounts for nearly 70 percent of economic activity. The state estimates are largely industry based and include adjustments for such items as net foreign travel.

A third data series is under development by the National Crosswalk Service Center and review by the Analyst Resource Center structure committee: **ZIP Code Business Patterns (ZBP)**. These estimates, developed by the Census Bureau, look at industry information at the very local level, ZIP codes. One table, their totals file, contains total employment and payroll information by ZIP code. There are nearly 39,000 ZIP codes in the U.S. A second table, their detailed file, contains a distribution of firms by size class, industry, and ZIP code. This file contains more than 3.1 million records. The NCSC and Structure Committee are exploring the possible development of supporting ZIP Code-based resources and creation of a set of these files covering several years. Once this preliminary set of parameters is developed, the ZBP files may appear on the nonstandard tables page.

Please address any questions or comments to the NCSC at [ncsc@iowa.gov](mailto:ncsc@iowa.gov)

**LEWIS** *continued from page 1***Who should use this program?**

The original intent of LEWIS was to produce local employment and wage estimates for areas that BLS doesn't support, such as workforce investment areas, labor market areas, or broad geographic regions. LEWIS can provide this information, and include it in a publication that combines it with other results from the BLS.

In LEWIS, you can review the underlying microdata in order you to see where questionable numbers originated, and suppress questionable cells before publication (these cells don't even have to be ones that the system calculated). LEWIS maintains a history of cell screening changes and will allow you to produce an export of cells where their screening has been changed since creation.

Sometimes, an opposite problem occurs. A result that you would really like to publish isn't in the BLS publication, perhaps the result of a failed confidentiality screening test that the cell really could have passed. One way to make a confidential cell publishable is by obtaining "permission to publish," sometimes called a waiver - from one or more of the larger employers in the cell. LEWIS allows you to apply waivers and have the affected cells automatically rescreened.

Did you know that the data for estimates produced by the OES program are several months old before they are published? For example, the most recent files released in March 2015 reflect Quarter 2, 2014 data. If you're planning to use those estimates to determine what someone is worth today, perhaps those results are not current enough. LEWIS can update both its own results and those produced by BLS using the employment cost index.

LEWIS can also produce employment estimates at a given wage, a wage at a given percentile, or a mean of any percentile range. The ability to estimate employment at a given wage is new in this version and can be a useful tool for minimum wage or working poor studies.

LEWIS provides the ability to produce estimates for specific combinations of ownerships, size classes, or special aggregates of industries and/or occupations. Do big or small companies pay best? How much more do people working in private ownerships make than their public counterparts? LEWIS can help answer these questions.

LEWIS produces a "micro-matrix" export format the projection suite uses in producing short and long-term projections, and finally, LEWIS performs secondary confidential screening to ensure that the estimates you produce are in compliance with CIPSEA.

**Now a part of the ARC**

Between 2000 and 2012, LEWIS was funded by a series of one-time grants from ETA and additional funding from BLS. In 2013, in a move was intended to provide a more stable source of funding, fiscal responsibility was moved to the Analyst Resource Center. As part of this change, a steering committee was established, succession planning was initiated, and training sessions were scheduled. The goal of these efforts is to make LEWIS a mainstream product for the foreseeable future.

For additional information, please contact Tom Price, North Carolina Department of Commerce  
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## LEWIS Training Manual

### Available On-Line

The manual that was used for the LEWIS training in Boise, ID that took place in June is available on-line at the LEWIS website [www.oes-eds.com](http://www.oes-eds.com).

When you go to the website you will need to login before you can download the manual.

If you don't already have an account you will need to create one, since there are security issues related to the site you will need to contact [Tom Price](#) to get the process started. His contact information will show when you select the "Create an Account" link.

Once you have logged in to the site, you can find the Manual in the Downloads Module. Modules are listed in the Modules section of the left-hand navigation bar. The Downloads module has 6 categories under the Training Section. Select **Boise 2015** to download a zip file containing the training manual. This manual has been recommended as a great resource for users of the LEWIS (Estimate Delivery System) by attendees of the training as a great reference for setup, use and understanding the LEWIS system.

You can also sign up for the LEWIS Newsletter that contains helpful hints, system releases, and FAQs by sending a blank email to: [EDSNewsletter-subscribe@yahoogroups.com](mailto:EDSNewsletter-subscribe@yahoogroups.com)

### ARC Newsletter

**Editors:** Steve Rosenow and Barbara Ledvina

If you have questions regarding the ARC eNews or would like to contribute information, please contact Steve Rosenow at 515-242-5034 or Email: [Steve.Rosenow@iowa.gov](mailto:Steve.Rosenow@iowa.gov) or Barbara Ledvina at 515-242-5036 or via Email: [Barbara.Ledvina@iowa.gov](mailto:Barbara.Ledvina@iowa.gov)

### WID Changes continued from page 1

One of the changes introduced in v2.6 was the idea of "deprecated tables." Deprecation is a fairly common practice in software development; think of HTML tags that are no longer used, some of which are still supported for backward compatibility. This was applied to the WID database, and a list of tables to be eliminated was agreed upon. And just as deprecated features in software are supported for some time to ensure backward compatibility, the tables deprecated in v2.6 will be supported for some time into the future (three WID versions being the accepted standard).

Deprecating tables were conceived of as a way to warn database administrators (DBAs) and developers that the Structure Committee intended to eliminate specific tables at some point in the future, giving them time to prepare for the change. Most of these deprecated tables are lookup tables for obsolete code systems (e.g. the Dictionary of Occupational Titles or Standard Industry Codes), or deprecated because the table is redundant with other tables in the database, and thus not needed. In the case of redundancy the Committee had to decide which version of the table best served the states, while also adhering to database rules of Normalization and other best practices. In the case of wage data, a new table based largely on one of the existing tables was developed.

Other changes came about with the realization that many of the crosswalk tables could be further normalized to include multiple versions of a particular code system. In v2.6, we focused on those that included *soccode*, which has two versions to date. With v2.6.1 this was extended to the *occxocc* and *indxind* tables, creating totally generic crosswalk tables.

This raises the question: why a WID v2.6.1? There were two reasons. The first is that deprecation was not as well received as the Committee hoped (an understatement!). In particular, our choice of wage table caused some consternation among some DBAs.

[More on page 10](#)

## Licensing Database *continued from page 4*

As the information has become more visible, it's been used in a variety of ways, some of which were never envisioned when gathering information began in the last century, including analysis of licensing requirements across states or as part of a more extensive analysis of local labor markets. The states' informal information gathering and the unstructured nature of much of the information make analysis of licensing requirements and related information difficult, if not impossible. Database users have been forced to focus on two identifiable quantities: identification of which states provide licenses in a subject (registered nurse, cosmetologist, etc.) and how those states relate specific licenses to occupations.

The analysis done on some of the information from the licensing database has relied on database content and relationships that were less than optimal. The National Crosswalk Service Center (NCSC), which has gathered this information from the states and incorporated it into applications or furnished it to other Department of Labor web developers, has developed steps that can be taken to increase the consistency and usefulness of the licensing information, especially when information from several states are used:

- Development of a list of “core licenses” that should be found in nearly every state. Examples include Physicians, Professional Engineers and Psychologists. These licenses would be included for all states in the licensing database used in the COS application. Exceptions could be made for states whose licensing practices may differ from the norm.
- Development and application of a standard set of links to occupations for the “core licenses.” Some research that utilizes occupations rather than licenses as a starting point have discovered inconsistencies among the states in the relationships between licenses and occupations. The NCSC has devoted significant resources to helping states to increase consistency in license-occupation links for several years, and this consistency has improved significantly. Since links to licensing information are found in the occupational reports and profiles generated by COS, improving license-occupation links will increase exposure of state licensing information to the site's visitors.
- Identification and possible removal of business licenses and occupational certifications from the licensing database. Certifications are included in another COS application, and business licenses can confuse site visitors. Since states gather this information for delivery through their own web applications, and the histories of their information delivery differ, they may continue to offer this information on their own sites.

It's worth noting that this represents a fundamental shift in how licensing information is viewed. The emphasis had been on keeping COS content as consistent as possible with that being delivered by the states. The increased visibility and use of this information has forced a change in that emphasis. Licenses in the COS licensing application and their relationships to occupations will be standardized to a greater degree, and those relationships will be shared with the states for possible inclusion in their own delivery systems.

For more information, please contact Steve Rosenow of the NCSC at [steve.rosenow@iowa.gov](mailto:steve.rosenow@iowa.gov) .

**WID Changes** – continued from page 6

This was perhaps exacerbated by an ARC policy that new tables would only be added to the WID after starting life on the Nonstandard page, and going through a test process where they were successfully populated and used. At the March 2015 ARC meeting, the decision was made to loosen this rule in the case of replacement tables for those deprecated, to allow DBAs to see what we intend to replace the deprecated table with. V2.6.1 included the wage replacement table as part of the standard WID.

The other reason can be summed up in the phrase "maintenance release." Up through v2.5, the dictionary had been edited by Bill Stambaugh of North Carolina, who retired between v2.5 and v2.6. The transfer of the editing task, using a different approach than before, has not been seamless, and some errors had crept in. Those were corrected in version 2.6.1. The new system should actually be more streamlined now that it has had its "shakedown" release.

Where will the WID go next? The Structure Committee has considered alternative structures to its current normalized structure, ultimately deciding that the current structure is flexible enough that forcing states to totally revamp systems based on the WID is unwarranted at this time. The original ALMIS database was designed to be a common structure for States to store LMI and related data with, allowing analysts to easily perform analysis, and also compare data between States. The WID continues in this tradition, growing and adapting to meet ever-changing data in a world where change is a constant.

For additional information, please contact Dana Placzek, Connecticut Department of Labor  
[dana.placzek@ct.gov](mailto:dana.placzek@ct.gov)

The ARC (Analyst Resource Center) provides a set of products and services to enhance information delivery to workforce development customers in the employment, education, and economic development sectors. These resources are a critical part of the Workforce Information System. In addition to maintenance and support for the Workforce Information Database, these services include the ARC Employer Database, the National Crosswalk Service Center, LEWIS (Local Employment & Wage Information System) and the provision of training and technical assistance to state database administrators.

Members included Minnesota (lead), Connecticut, Florida, Iowa, Montana, Nevada, North Carolina, Oregon, South Carolina, Wisconsin, Wyoming, and ETA, along with the support from the National Crosswalk Service Center.