



STATE OF WASHINGTON
EMPLOYMENT SECURITY DEPARTMENT
Labor Market and Economic Analysis Branch
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ANNUAL PERFORMANCE REPORT

September 24, 2004

As required in Training and Employment Guidance Letter No. 9-03 the following is a summary of Washington State's accomplishments in PY 2003. It concisely summarizes accomplishments, the results of an assessment of customer satisfaction with state's workforce information products and services, and recommendations for improvement to workforce information and services.

A. Accomplishments:

1. Continue to populate the ALMIS Database with state data:

The outcomes achieved compared to planned outcomes and an analysis that explains the cause of any significant variance from the plan. Describe any actions required to improve outcomes.

Throughout the year, Washington State's Labor Market and Economic Analysis (LMEA) Branch continued to populate, update, maintain, and enhance the core ALMIS database tables and several others. Updates were made to both core and non-core tables to keep them current. That included: monthly industry employment tables for the state and counties; Employment Service applicants and openings data by occupation and labor market area; occupational wage rates for metropolitan and non-metropolitan areas; short-, medium-, and long-term industry and occupation projections for all twelve of Washington's Workforce Development Areas (WDA); occupational wage tables; occupational supply and demand analysis tables for all WDAs; school programs and program completer data; ALMIS employer database table, labor force for state and areas, and unemployment claimants data tables. Enhancements included additional time periods for several tables, additional geographies and additional detail to existing data series. This also included NAICS coding for all industry data and SOC coding of all occupational data. The occupational licensing tables were also updated.

Washington continued to use the most current ALMIS 2.2 data structure and maintained the data in SQL Server 2000 as well as other environments. Throughout the period, emphasis was placed on continuous customer service through existing applications. Maintenance tasks included routine backup of production and development databases, validation of data integrity and data quality, and the performance of necessary reformatting and manipulating of data files necessary to comply with ALMIS database standards. This also included

installing necessary server software upgrades and loading state and local data through existing and new data management tools.

The Workforce Explorer, the main access to the ALMIS database, is an integral part of Washington's Five-Year Plan and throughout the reporting period provided ETA funded core LMI products and services for WIA program operations. It also met the goal of "universal access" specified in Washington's Five-Year Plan. In addition to serving both job seekers and business customers, the Workforce Explorer made LMI available to WorkSource Service Centers, libraries, and home computers.

The main measurable outcome of this delivery system was the number of "visits" recorded on the various sections of the Workforce Explorer. From July 1, 2003 to June 30, 2004, a total of 624,700 customers had visited our web site. Counts of visits to individual sections will help to determine what seems to be in most demand. The Branch's website, can be accessed at: <http://www.workforceexplorer.com>

The extent to which the activity has conformed to the planned milestones, including an explanation for the cause of any significant variance from schedule.

All milestones were completed as planned.

Actual aggregate expenditures and an explanation for any significant variance from planned aggregate expenditures:

Planned expenditures: \$354,500

Actual expenditures: \$230,349

Actual expenditures were below planned expenditures as the Branch was able to use other State resources for this work. Resources not spent in PY 2003 will be used in PY 2004 to support the continued development of the Workforce Explorer and the Branches ability to conduct more in depth research on the Agency's administrative records.

2. Produce and disseminate industry and occupational employment projections:

The outcomes achieved compared to planned outcomes and an analysis that explains the cause of any significant variance from the plan. Describe any actions required to improve outcomes.

In November 2003, LMEA produced the first NAICS based short-, medium-, and long-term industry projections for the state and the state's twelve local Workforce Development Areas. Those projections were produced using the guidelines developed by the Projections Consortium. However, instead of the MicroMatrix software LMEA used the suggested alternate software option, Eviews 4, for that work. For the industry projections, we used the NAICS based historical time series from January 1990 to March 2003. The base year for the medium (5-year) and long-term (10-year) projections was 2002. The projected years were 2007 and 2012. The base quarter for the short-term (2-year) projections was 2003Q1 and the projected output was for 2005Q1. The statewide long-term projections produced by LMEA were also compared and reconciled with those developed by the Washington State Office of Financial Management.

For occupational staffing patterns, LMEA used the full three year OES survey cycle (1999 – 2001). The OES sample currently provided by BLS for Washington State was not adequate for producing accurate staffing patterns for all twelve sub-state areas. To correct for that, LMEA worked with initial survey responses and manually corrected the automatically produced staffing patterns. The current version of MicroMatrix could not be used for such analyses. So, in order to accomplish this work, LMEA used MS Excel and Access as well as EvIEWS 4. Care was taken to make sure that our core model for converting industries to occupations was the same as used in the MicroMatrix.

LMEA populated the ALMIS database with the 2003–2005 short-term and 2002-2012 long-term projections data and submitted the data for public dissemination following the procedures and instructions provided by the Projections Consortium and the Projections Managing Partnership.

In April 2004, LMEA updated the medium- and long-term projections and produced new short-term projections from 2003Q3 to 2005Q3. Such updates were necessary due to the dynamic structural changes in our economy as we move to recovery. For the new round of projections we used the new self-employment and replacement rates from the MicroMatrix, and some enhancements to the staffing patterns (mainly reflecting non-economic code changes). The new projections for the state and twelve WDAs are currently available on our Workforce Explorer web site in support of the state’s Five-Year Strategic Plan to provide universal access to LMI. The state projections were also submitted to the Projections Consortium in accordance with the MicroMatrix structure and its directories of output.

Two staff members, who work on projections, attended three “Consortium” sponsored training sessions in order to keep current on the latest developments and to share Washington’s experiences with others. These sessions were held in Boise, Idaho and Albuquerque, New Mexico.

In our enhancements we used customer feedback which advised us to rely more on strategic changes rather than on a continuation of existing trends. Also, in response to inquiries from the Projections Consortium, LMEA submitted a proposal based on our experience and that proposal is included in section “C” of this report.

The extent to which the activity has conformed to the planned milestones, including an explanation for the cause of any significant variance from schedule.

All activities conformed to planned milestones with the addition of a projections update in the 4th quarter of the PY. As indicated in our plan, work on the projections continued throughout the program year. Both the short-term and long-term projections were completed in the 2nd quarter of PY 2003 and the results became available to the public, in electronic form, starting with the 3rd quarter of the PY.

Actual aggregate expenditures and an explanation for any significant variance from planned aggregate expenditures:

Planned expenditures: \$236,000

Actual expenditures: \$207,281

Actual expenditures were below planned expenditures primarily because of a state imposed hiring freeze and our inability to fill two vacant economist positions at the close of the program year. Resources not spent in PY 2003 will be used in PY 2004 for work on customer satisfaction information and for travel and training of new economists.

3. Provide occupational and career information for public use:

The outcomes achieved compared to planned outcomes and an analysis that explains the cause of any significant variance from the plan. Describe any actions required to improve outcomes.

During this reporting period, LMEA produced an extensive range of SOC-based occupational and career information products in support of the state's Five-Year Plan. Since other resources were available for the production of these products, one-stop funding supported a relatively small share of this work. Specific products included:

- A suite of tools including career assessment tools, local labor market information, job listings, and potential employers (infoUSA).

This suite of tools is integrated in our web site allowing the user to transition from tool to tool without duplicating any information.

- A marketing brochure linking occupational projections and wage information to required training levels (4th Qt. PY03)
- A "Training Benefits List" assessing occupational demand and supply relationships for occupations in each WDA (4/04).
- A listing of high wage occupations on the Workforce Explorer for each Workforce Development Area.
- "Vacancy Survey" reports summarizing the findings from surveys in late fall and early summer.
- A "Benefits Survey" report summarizing the benefits offered to employees by industry, area, and firm size.
- A monthly feature, on the Workforce Explorer web site, on a targeted occupation.
- An annual report on the occupational outlook for the state – produced in December 2003.
- Current (weekly and monthly) Unemployment Insurance claimant information by county, occupation, and industry.
- Aggregated and detailed occupational information tables for EEO planning purposes (Job applicant & Census data).
- Two Spanish language publications on occupational outlook for the state's largest Limited English Proficiency (LEP) population.

LMEA determined that several media need to be used for the dissemination of industry and occupation information. So, in addition to the Workforce Explorer, which is the primary dissemination media, LMEA also produced hard copy reports such as the "Occupational Outlooks" for each of the state's Workforce Development Areas. LMEA also maintained an "Occupations of the Unemployed" web site and a special purpose listing of qualifying occupations for the Training Benefits Program. That listing is maintained in cooperation with the Workforce Development Council staffs. For assisting individuals with special

needs, LMEA maintained a Labor Market Information Center (LMIC) with an “800” number to provide quick and thorough responses to both written and electronic LMI requests and to assist customers in locating data on the Workforce Explorer.

To enhance our ability to work with the large databases that are necessary for preparing area level industry and occupation projections as well as develop occupational analysis products, one-stop funding was used to replace a number of the LMEA PCs with more powerful computers and a number of software programs were upgraded. LMEA also purchased a subscription to Global Insights Inc. for national inputs to the projections process.

During this reporting period, LMEA has also developed the "Skills Gap Analyzer" which looks at the gap of supply and demand for various occupations based on user-selected industries or parameters.

The extent to which the activity has conformed to the planned milestones, including an explanation for the cause of any significant variance from schedule.

Most of the planned milestones were completed successfully. Additional products, such as the Spanish language occupational outlook publications were added in response to local needs. Good progress was also made in integrating the various job analysis and job search tools in the Workforce Explorer as indicated above. However, staff shortages limited the amount of customer satisfaction surveying work that could be accomplished during this reporting period and more effort will need to be put on this in the next PY.

Actual aggregate expenditures and an explanation for any significant variance from planned aggregate expenditures:

Planned expenditures: \$3,569

Actual expenditures: \$3,778

Actual expenditures exceeded planned expenditures by \$209 due to a slight underestimation of salary costs. Most of the work on the indicated products was funded by resources other than the One-stop/LMI Grant.

4. Provide public electronic access to the ALMIS Employer Database:

The outcomes achieved compared to planned outcomes and an analysis that explains the cause of any significant variance from the plan. Describe any actions required to improve outcomes.

Washington’s ALMIS Employer Database was made available to the public through our Internet web site, the Workforce Explorer. During this reporting period, two versions of the ALMIS employer database were integrated into the Workforce Explorer Internet delivery systems. The “infoUSA” licensing agreement required us to make a few changes in our screen design and they were made. We also increased the exposure to the database by providing more entry points, and linking directly to a list of employers from other delivery systems.

In addition, we have identified a number of employer lists, produced by private and public organizations, which can be accessed by the public. (For example “The Book of Lists” published by the Seattle Business Journal and similar employer lists published by the Spokane Business Journal.) When appropriate, LMEA refers clients to those lists. In addition, LMEA supplemented this information with additional Internet links to sites that provide information on employment opportunities in each local labor market area.

In the “ES-202 Re-file,” we are asking employers for permission to include them in our employer listings. This work was started in 2002 and will be finished with the completion of the 2004 Re-file. This will enable us to provide listings of employer names in each industry in each labor market area. Without this permission, federal and state regulations prohibited us from doing so.

The extent to which the activity has conformed to the planned milestones, including an explanation for the cause of any significant variance from schedule.

All milestones were completed as planned and the results of the “ES-202 Re-file” will enable us to provide even more specific employer information in the future than we have been able to provide in the past.

Actual aggregate expenditures and an explanation for any significant variance from planned aggregate expenditures:

Planned expenditures: \$2,000

Actual expenditures: \$2,000

Actual expenditures were as planned.

5. Provide information and support to state and local Workforce Investment Boards (WIBS) and produce other special demand information and products:

The outcomes achieved compared to planned outcomes and an analysis that explains the cause of any significant variance from the plan. Describe any actions required to improve outcomes.

The web based Workforce Explorer LMI delivery system, in combination with the out-stationed and central office economists, provided local area support to Washington State’s Workforce Development Councils (WDC) and other data users. Area economists gave periodic economic briefings to the WDC members in order to keep them current on changes in local labor market conditions. As requested by the local WDCs, these economists worked with local planners and program administrators to identify their needs and to provide the necessary information. Their main responsibility was to know the local labor market and to be able to speak, write, and answer questions about it.

Since each area has its own distinct way of achieving its employment and workforce development goals, LMEA did not have a blanket strategy for meeting local LMI needs. What it did was to provide the out-stationed economists with general guidelines in their job descriptions for serving local needs. During the past year, each Regional Labor Economist performed this task in response to WDC requests and the needs that each of them was able

to identify. This included preparing special local reports, assisting individuals with information on the Workforce Explorer, giving presentations, writing county profiles, interpreting the employment situation, and providing technical assistance to other researchers.

One of the main cooperative efforts of LMEA and the WDCs during this reporting period was the creation and maintenance of the occupational “Demand and Decline” list. LMEA created that list using factors such as the population of the occupation, the expected growth rate and the occupational unemployment rate. Then it was reviewed, adjusted, and approved by the WDCs. As economic conditions changed affecting occupational demand, the LMEA economists and WDC staff worked together to update that list to reflect current occupational demand and supply conditions. That information is used in all WorkSource Service Centers to administer the state’s Training Benefits Program and it is maintained on an LMEA server.

LMEA produced two other customer driven products during this reporting period. One was the “Job Vacancy Survey,” published in May 2004. The survey produced information, which combined with the short-term occupational projections, and provided the WDCs with more insight into the occupational employment situation than they have ever had before. The other product was the “Benefits Survey” report. Completed in October 2003, it provided useful information both to employers as well as job seekers. The “Benefits Survey” report gained national recognition when it won first place in the “Product or Service for Business” category at the 2004 NASWA LMI publications competition.

Another demand-driven product was the Spanish language version of the “Occupational Outlook” for distribution in central Washington where there is a large Spanish population with Limited English Proficiency (LEP).

The extent to which the activity has conformed to the planned milestones, including an explanation for the cause of any significant variance from schedule.

All planned milestones were completed to some extent. However, the service provided in each Workforce Development Area was not consistent and depended in part on the marketing skills and efforts of the local economists. As LMEA builds closer working relationships with the state Workforce Investment Board and the Workforce Development Councils, we can also expect closer and more consistent working relationships at the local level as well.

Actual aggregate expenditures and an explanation for any significant variance from planned aggregate expenditures:

Planned expenditures: \$51,000

Actual expenditures: \$43,335

Actual expenditures were below planned expenditures primarily because of a hiring freeze resulting in our inability to fill vacancies. Resources not spent in PY 2003 will be used in PY 2004 to conduct more in-depth research on the agency’s administrative records, and for travel and training of new economists.

6. Improve and deploy electronic state workforce information delivery systems:

The outcomes achieved compared to planned outcomes and an analysis that explains the cause of any significant variance from the plan. Describe any actions required to improve outcomes.

As it is indicated in our plan, the LMEA Branch continued to deploy and maintain the Workforce Explorer, its main electronic data delivery system, for the dissemination of the state's workforce information core products. The Workforce Explorer is integrated into the state's WIA service delivery system through electronic connections to WorkSource Service Centers, WDA home pages, as well as being accessible from other state agency web sites.

In addition to the Workforce Explorer, LMEA maintained and populated another electronic data delivery site called the "Occupations of the Unemployed." It provides weekly and monthly information on the occupations and industries of the UI Program claimants. In PY-03 additional claimant characteristics were added to enrich the content of this delivery system. Two other systems that are delivering data from our ALMIS database to customers include "Occupations in Demand" and "UI Adjudicator Tool." All these systems have had improvements based on customer feedback during the year.

We are continually collecting customer feedback on the functionality and usefulness of the Workforce Explorer system. We've performed online surveys, as well as gathered direct feedback from customer groups, agency staff, and internal users. We have improved our process of handling and addressing feedback, allowing us to verify needs and validate proposed changes in response to feedback to meet user expectations.

Based on a number of readership survey results, LMEA has transitioned the distribution of its two main publications from hard copy reports to electronic newsletters on the Workforce Explorer. Both the monthly Labor Area Summaries reports and the Washington Labor Market reports are now on the web. In addition, the County Profiles were re-designed for the Internet and are now being distributed electronically. For those who need hard copies, our Labor Market Information Center can print these reports from the electronic files.

The Workforce Explorer supported the LMI needs of the WIA/Wagner-Peyser Five Year Plan and its one-stop LMI service delivery system in Washington State through statewide electronic access to LMI for program planning, administration, business management, career planning, and job search.

The extent to which the activity has conformed to the planned milestones, including an explanation for the cause of any significant variance from schedule.

Nearly all milestones were completed as planned. We had hoped to migrate the "Occupations of the Unemployed" to the Workforce Explorer. However, only some of the data was migrated and not the entire access system. Functionality requirements of the Occupations of the Unemployed have not been validated to help guide a successful integration with Workforce Explorer. The second milestone that we have not completed is having a customer rating system on our published articles on the website. This has been developed and tested, and is expected to go public within a month.

Actual aggregate expenditures and an explanation for any significant variance from planned aggregate expenditures

Planned expenditures: \$49,500

Actual expenditures: \$50,000

Expenditures exceeded planned amount by \$500 - less funding from other sources.

7. Support state workforce information training activities:

The outcomes achieved compared to planned outcomes and an analysis that explains the cause of any significant variance from the plan. Describe any actions required to improve outcomes.

During this reporting period, the LMEA trainer conducted 43 training sessions and reached 2,484 LMI clients. This does not include regular LMI presentations given by the Regional Labor Economists in the local areas. Whenever possible, regional economists stationed in WorkSource Service Centers assisted staff and clients with the use and interpretation of LMI in resource rooms, on the Workforce Explorer, and other Internet locations. LMEA also launched a marketing plan in PY 2003 to make schools aware of both our electronic and hard copy products in order to increase both the use and satisfaction with our long-term projections products. As part of that effort, LMEA prepared and published "Jobs for the Sidewalk Economist" and to date about 3,500 copies of that publication have been distributed.

In PY 2003, twenty-three LMEA staff members attended 61 out-of-state conferences and training sessions. In addition, our newest staff member attended the August 10, 2003 ALMIS "Analysts Training" session in Portland, Oregon. A number of individuals also took computer software courses to upgrade their skills and become familiar with the new Win-202 operating system.

On October 15, 2003, LMEA joined the Office of Financial Management and the U.S. Census Bureau in a collaborative effort to put on a Census Information workshop at Central Washington University in Ellensburg. The workshop was well attended with people coming from all around the state. The following month on November 14th, LMEA staff presented an Economic Symposium in Olympia which was attended by over one hundred forty economists and other LMI data users. It highlighted key aspects of the state's economic developments and new technology for accessing labor market information. The very successful one-day event was covered by the news media and videotaped by TVW. Excerpts from the Symposium presentations were shown on public television repeatedly throughout the next week. A three-reel set of videotapes, that cover the presentations, was also made available for viewing by LMEA and other agency staff who were not able to attend or view it on TV.

The extent to which the activity has conformed to the planned milestones, including an explanation for the cause of any significant variance from schedule.

LMEA conducted eleven more training sessions than planned and reached about 1,683 more people than planned. However, the higher number included two conferences with and

attendance of about 1,000. In addition to the formal training, LMEA staff assisted in resource rooms and provided individual assistance to staff in the WorkSource Service Centers. As our client surveys have indicated, that more training is needed than we have been able to provide in the past and that need will be an important consideration in planning next years activities.

Actual aggregate expenditures and an explanation for any significant variance from planned aggregate expenditures:

Planned expenditures: \$51,500

Actual expenditures: \$52,142

Actual expenditures exceeded planned expenditures by \$642.

B. Customer Satisfaction Assessment:

Throughout the program year, LMEA collected information on customer satisfaction using survey forms, electronic responses, and in-person contacts. Survey forms were mainly used at training sessions. Survey forms were used in several of the larger training sessions and the 2003 Economic Symposium. On one occasion the form also included questions of what other sources of LMI do our clients use. Electronic feedback was gathered in response to special area reports and in-person feedback was solicited by staff at every opportunity. LMEA has not prepared a comprehensive summary of customer satisfaction survey results. Individual summaries, however, indicated many positive responses as well as areas where we need to improve. Individual electronic feedback from special report recipients has been very positive. However, the largest statewide survey, conducted by the WorkSource Operations Division, focused on the usability and functionality of the Workforce Explorer and it turned up a number of problems and concerns that LMEA will be addressing in the coming program year.

Count of “visits” to the Workforce Explorer

The main distribution channel for the industry and occupational employment projections, as well as most of LMEA products, was the Workforce Explorer. It provided a count of “visits” and an opportunity for clients to indicate their level of satisfaction with the information provided. Unfortunately, this opportunity was seldom used; however there were about 624,000 “visits” to the site in PY 2003.

General satisfaction – WDC survey & ratings

In June 2004 LMEA conducted a survey of WDC Directors to assess their satisfaction with branch products, the electronic delivery system, access to and service provided by LMEA staff, and the specific products provided. In a ranking of “1” for very dissatisfied to “5” as very satisfied the average response was 4.2 with “access and service provided” ranking the highest (4.6) and “products” ranking the lowest (3.9).

Statewide Customer satisfaction Survey

In early August, the WorkSource Operations Division conducted a statewide survey, supported by the Regional Directors, to assess the usability and functionality of the Workforce Explorer. Their questions and a brief summary of their findings were as follows:

1. *How is the Workforce Explorer accessed by staff or clients?* The answers varied, in some offices icons were on both staff and client computers, in others only on the staff computers and in some offices the Workforce Explorer was accessed through the “go2worksource.com” link. All offices seemed to have some capability to access the system.
2. *Is it an easy tool for staff & clients to use?* Here again the responses varied. Some offices reported that “from a staff perspective the tool is relatively easy to use” while others indicated that it was not easy to use because it “required computer literacy,” was time consuming, cumbersome and that “the words used are not easily understood.” Most offices reported that “for job seekers it was not user friendly” for a variety of reasons that included clarity of text and difficulty with navigation. These observations were somewhat of a surprise to us and will require client input to fix.
3. *Is it meeting the needs of staff & clients?* The general consensus from most offices was that “it is a great tool with a large amount of useful information but it is not easy to navigate” and as a result is less useful than it could be.
4. *To what degree do staff & clients access & use this tool?* It is being used to some extent by staff and clients to access occupation and industry projections, wage information, labor force statistics, employer information, and data for training plans. However, the survey strongly indicated that some usability improvements are needed for wider acceptance and use.
5. *Have staff received adequate training on the use of this tool?* The consensus from one region was that “training is available and adequate.” However, the majority reported that they have not received adequate training or they need more hands on training.

This survey, which included input from all four regions of the state, provided a lot of good feedback which will be used to improve the Workforce Explorer. It also produced a number of specific “requests for changes” from the WorkSource Operations Division which we will be working on in cooperation with our clients.

Staff observations on the need for training and marketing

During the past year, the LMEA trainer has been gathering feedback from LMEA field staff, WorkSource Service Centers, contractors, employers, training institutions, and job seekers. Her observations indicate that while LMEA supplies terrific economic data to anyone seeking it, relatively few people are aware of its potential. Her impressions are from contacts with professional staff, cut across agency lines, geographic areas, and professional expertise.

- University instructors teaching counseling are asking about online career resources without understanding that they need to interpret economic data as well.
- It appears that incorporating economic data into the job search process has never been a part of the counseling process for high school teachers, career specialists, and counselors.

- WorkSource staff employed within the agency are just beginning to view the Workforce Explorer as a possible resource.
- Survey of Southwest Washington staff indicated a lack of familiarity with Workforce Explorer.
- The regional economists have said the Workforce Explorer is not helpful, yet.
- The WTECB staff are organizing skills panels, preparing “Work Readiness Credentials” and contracting for needs assessment data when much of the economic data they need is available free online.
- WDC staff working on Skills Panels are not familiar with the resources in Workforce Explorer.

Her findings indicated that a viable marketing plan needs to accompany our efforts to redesign the Workforce Explorer to make it more user-friendly. Staff within LMEA need to be comfortable with it. Program staff within ES need to know how to use it so their contracts with outside vendors contain realistic outcomes. ESD staff have been responding to legislative mandate to provide programs with a “can-do” spirit. With more labor market data, they can work in a much more targeted way. In PY 2004, LMEA will work to organize itself with funding and staff to improve the training and marketing efforts in order to serve a larger client population.

C. Recommendations for Improvement or Changes to the Suite of Core Products.

Washington State’s proposals for projections software enhancements

1. Long-Term Industry Projections (LTIP) software is a very useful tool, especially for states which do not have other means for producing projections. However, we have concerns about the use of shares and dummy variables to convert the historical SIC time series to NAICS for years prior to 1990. This may be an example of forcing reality to a model, rather than the model to reality. The nationally recognized “Global Insights” model uses a shorter employment time series, even though they use a much longer historical time series for other variables.

If the shorter employment time series (1990-forward) were used, the following enhancements could be made in order to produce reliable results:

1. Use quarterly time series instead of annual data (the Global Insights model produces 10 year forecasts based upon quarterly data);
2. Use stability controls and inter-industry relation restrictions for projected numbers;

We have tested the quarterly time series and stability controls in our latest round of projections and can provide the specific methodology on request.

2. Short-Term Industry Projections (STIP) software is a well developed software system with a good combination of the models, however it is limited by an inability to use independent forecasts of leading indicators. As was demonstrated by Dr. Roy L. Pearson at the statistical training in Albuquerque, NM in January 2004, the VAR model (used to produce internal forecasts of leading indicators) could produce really crazy results especially in turbulent economic times. The testing we did in our state supports Dr. Pearson’s findings. The ability to use independent forecasts of leading indicators should be the first priority on the list of STIP enhancements.

3. We find the MicroMatrix system to be the weakest part of the software suite. Some of the major calculation errors from the old version have been fixed, but the new system is even less flexible than the old version. The major problem may stem from trying to build a completely mechanical and “fool proof” system, rather than a system based on the idea of “learn while you use it.” As a result, the current software version is a “black box” type of application. There is no detailed description of the system or its algorithms. We need to be able to produce verifiable results for policy analysis, explain our methodology, and to be able to satisfy customer requests involving impact analyses. The current version MicroMatrix software does not satisfy these needs.

The main advantage of the system is its ability to produce comparable occupational output for different states. However, a major task of the occupational projections is to develop and to verify staffing patterns outside the system. The direct use of staffing patterns from the electronic data system could produce nonsensical estimations. For example, “9999.99” is assigned to some occupations and is understood by the system as employment, even though they are actually dummy codes. The system also produces some extreme weights ranging from more than 3,000 to less than 0.35.

The sample design is another concern in that a valid sample is created for MSAs, but we are asked for projections for our WDAs (Workforce Development Areas, in Washington State) which are not always the same geographic areas. Also, in the transition from SIC to NAICS, there are some mismatches between OES coding and EQUI coding for estimated periods which can be quite significant.

Because of these concerns, the only way for us to produce reasonable estimates was to use initial sample responses and re-weight them based on EQUI data. Dual coded employers in the sample need to be manually evaluated based on common sense and business activities. This part of the work is the most important and time consuming, but it is not included in the projections system.

Beyond developing staffing patterns, the MicroMatrix system could be used to develop occupational projections, but we decided not to use it for the following reasons:

1. Mapping and rounding before making calculations creates calculations errors.
2. Calculations are very slow and to produce the needed results, multiple runs are required. For example, we needed to calculate 2, 5, and 10 year projections for the state and 12 local areas. In MS Access it takes less than 2 hours to run and we have a reproducible system that provides a good opportunity to respond to any methodological questions. In MicroMatrix it would take more time and we would have to run it 39 times without error tracking and no information on impact analyses types of questions. Also, the current system does not produce 5 year projections which we need to meet state requirements.
3. Occupational codes with 4 extra digits in the output reports from MicroMatrix are not helpful. They should be separated from commonly recognizable SOC codes and put in a separate column.

The secondary calculations of job openings also pose a significant problem as replacement rates are applied to the base year employment and do not relate to any employment growth. Such a calculation does not produce annual average openings due to replacements as stated

by MicroMatrix documentation. For example: assume that in the 10 year projections we have 2 occupations with the same base year employment of 100, replacement rate 5% and projected employment of 10 for one occupation and 200 for other. According to calculations in MicroMatrix, the average annual number of openings due to replacement for both occupations will be the same and equal to 5. This does not pass the common sense test. If we assume constant growth rate and apply replacement rates on compound annual basis, the average annual number due to replacement for the first occupation will be about 2.2, while in the second instance it would be about 7.

We suggest that the MicroMatrix system needs to be redesigned in order to satisfy customer needs and to meet statistical standards. The best way to develop the system is to use standard programming approaches. We believe that Utah has qualified staff to redesign the system, but they need clear direction. As it is now, only pieces of the existing system (as directory files) could be used successfully.

A general problem for all ALMIS applications is the use of FoxPro. The FoxPro software is less and less supported from Microsoft. The new version of MS Access excludes the FoxPro format from the available options. The FoxPro applications function badly in the Windows environment and causes frequent system crashes. Specifically, the MicroMatrix application will be automatically shut down/crashed if any problem is encountered. We suggest the use of some other software platform for ALMIS applications.