Secretary of State Audit Report

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Improvements Needed to Better Meet Oregon's Middle-Skill Workforce Needs

Summary

The purpose of our audit was to determine whether Oregon's community colleges are on track to meet anticipated future workforce needs and, if not, identify opportunities for improvement.

Middle-skill jobs in Oregon

One third of current jobs in Oregon are considered middle-skill, such as bookkeepers, electricians, and dental hygienists. These jobs require education beyond high school, but less than a bachelor's degree. Oregon's middle-skill workers are generally able to earn a middle-class family income. For example, licensed electricians earn an average of $65,000 per year. In addition, these workers generally have lower unemployment rates.

National research warns about a growing shortage of middle-skill workers, which also has implications for Oregon's economic future. An adequate supply of trained workers can attract, retain, and grow businesses in Oregon. In addition, training workers to satisfy these business needs creates opportunities for better employment and increased earnings.

Partners in workforce training

Oregon's 17 Community Colleges are key access points for middle-skill training, with 28 percent of their full-time equivalent students enrolled in career and technical programs leading to a certificate or associate degree.

These community colleges are primarily funded by student tuition, local property taxes, and state general funds distributed by the Department of Community Colleges and Workforce Development and the State Board of Education. Since 2007, state general fund dollars budgeted for Oregon's community colleges have decreased by about 18%, while enrollment has increased by 33%.

Although Oregon's community colleges are considered one of the key providers of middle-skill training for Oregonians, they operate within a complex partnership of state agencies and business-led boards, at the statewide and regional levels. For example, at the local level, seven Local Workforce Investment Boards across the state manage and carry out

workforce development services needed in their local area. These boards are comprised of a majority of business representatives, but also include representatives from local economic development agencies, community colleges, and others invested in workforce development. Also, the Employment Department's Workforce and Economic Research Division routinely analyzes and distributes workforce and economic information, including ten-year industry and occupational projections that forecast long-term employment levels.

Workforce shortages impede businesses in Oregon

Some Oregon employers are saying that in spite of high unemployment, it is hard to find workers with the right skills. A 2011 Employment Department analysis showed that four middle-skill occupations with a combined total of about 500 vacancies had been open for more than 60 days.

We compared the number of trained middle-skill workers supplied in 2010 to ten-year projections of employer demand, statewide and regionally. We found projected supply gaps for a number of middle-skill occupations in each of six regions we defined. The largest statewide supply gaps were in the following occupations:

- Bookkeeping, Accounting, and Auditing Clerks
- Preschool Teachers, Except Special Education
- Legal Secretaries
- Medical Transcriptionists
- Water and Liquid Waste Treatment Plant and System Operators

Overall, projected supply gaps varied across Oregon, with the most and largest gaps in the Portland metropolitan area. We also noted that oversupplies are projected in some occupational clusters such as service sales representatives, healthcare support, personal appearance workers, and financial specialists.

Partners could better address workforce gaps

A broader approach is needed to ensure that the supply of trained workers will be aligned with the skill needs of businesses. Neither the Oregon Workforce Investment Board, nor the State Board of Education, nor the Department of Community Colleges and Workforce Development comprehensively identify high-demand occupations or skill needs of businesses in their planning or priority setting.

While the Employment Department provides regional data on projected job openings useful for identifying high-demand occupations or potential skill gaps, several community colleges say they mostly rely on industry representatives or workforce partners to inform them of specific skill needs in their community.

Colleges report that current state funding does not cover the costs of career and technical education programs and that opportunities to partner financially with industries are limited. We also found that completion

results are not currently tracked and evaluated for specific career and technical education programs.

We noted some successes among community colleges to develop cost-effective middle-skill programs and to inform students about high-demand occupations. For example, ten rural community colleges collaborated with a Local Workforce Investment Board on the Green Technician Certificate program. Students from each college take program courses online, but occasionally meet at one of the college campuses to get laboratory experience. In addition, Oregon's community colleges are nationally known for their Career Pathways Program, which provides skill competencies tied to a specific high-demand occupation, with more than 150 offerings developed since 2007.

Recommendations

We recommend that the governor's office coordinate with the Department of Community Colleges and Workforce Development, the Oregon Workforce Investment Board, and/or the Oregon Education Investment Board to incorporate high-demand occupational clusters into their planning, priority setting, budget allocations, and evaluation efforts.

Agency Response

The agency response is attached at the end of the report.

Background

Middle-skill jobs, such as bookkeepers, electricians, and dental hygienists, are important to Oregon's economy. One third of current jobs in Oregon are middle-skill jobs. Middle-skill jobs require some postsecondary education and training beyond high school but less than a bachelor's degree. Postsecondary education or training requirements for middle-skill jobs include associate's degrees, vocational certificates, apprenticeships, and significant on-the-job training.

In Oregon, middle-skill workers are typically able to earn a middle-class family income. For example, bookkeepers earn an average income of about $36,000 per year, and licensed electricians earn an average of $65,000 per year. These workers also have lower unemployment rates even during economic downturns, such as the current recession.

Growing Middle-Skill Gap

Nationally, several reports point to an emerging skills gap at all skill levels, including the middle-skill level. A skills gap results when the supply of trained workers is less than employers need for high-demand occupations. Research shows that in recent decades, the education and skills of the workforce have failed to keep pace with the growing demand for skills among employers. There is also a projected mismatch between the jobs that will be created over the next decade and the education and training of adult workers. California and Washington researchers found that the supply of workers with postsecondary education in their states will not meet projected demand for many middle-skill occupations. See the appendix for a list of references.

There are economic implications for projected skills gaps. The availability of skilled labor is a key factor in business location, retention and expansion. Because middle-skill jobs comprise a large portion of employment in our state, it is important for Oregon's economic development to ensure that there is an adequate source of trained workers to fill those positions.

Producing too few trained middle-skill workers for high-demand occupations creates missed opportunities for Oregon businesses to fill vacancies in certain industries and for better employment and earnings for workers. In contrast, having an adequate supply of trained middle-skill workers for high-demand occupations can increase the number of well-paying jobs and decrease unemployment.

Occupational Clusters

In many cases, postsecondary middle-skill training programs can prepare students for more than one related occupation. For example, a certificate or associate's degree in Computer and Information Sciences can prepare students to be a computer systems analyst or administrator, a database administrator, or a computer specialist. A student with an associate's degree in accounting can become an accountant, auditor, credit analyst, or other related occupation.

Because many occupations require similar skills, education, or training, they are sometimes grouped into occupational clusters. The occupational classification system used in this report, and by many federal and state agencies, is the Standard Occupational Classification system developed by the U.S. Bureau of Labor Statistics.

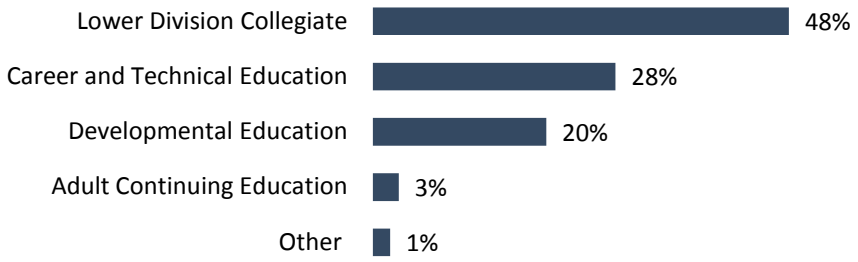
Oregon's Community Colleges

Oregon's community colleges are key access points for middle-skill training. They provide opportunities for hundreds of thousands of students to advance their education and acquire new skills. Oregon community colleges provide education programming in five main areas:

- Lower Division Collegiate: Courses and programs that parallel the first two years of four-year institutions and provide regular college credit.
- Career and Technical Education: Courses that generally lead to a certificate or associate degree in a professional program and provide practical experience in a particular occupational field. Career and technical education is a source of training for middle-skill workers.
- Developmental Education: Includes Adult Basic Education, English as a Second Language, General Educational Development (GED), and post-secondary remedial courses.
- Adult Continuing Education: Courses that aid in student self-development but do not lead to a degree. Continuing education is required for many professions and to maintain professional licenses.
- Other: Courses relating to hobbies and recreational activities.

As shown in Figure 1, nearly half of student full-time equivalent enrollment in community colleges is in lower division courses, and 28 percent is in Career and Technical Education.

Figure 1: Oregon community college program areas with percentage of full-time equivalent enrollment for the 2009-10 school year



Source: Department of Community Colleges and Workforce Development, 2011

Career and Technical Education at the community colleges encompasses a broad range of technical and academic instruction that prepares students for middle-skill jobs, and for further education and training. Students may earn an Associate of Applied Science Degree or a Certificate of Completion. Graphic designers and engineering technicians are examples of occupations requiring an associate's degree. Truck drivers and pharmacy technicians are examples of occupations requiring a postsecondary certificate. For other occupations, postsecondary education is not required, but taking one or more technical courses may make students more competitive for a job. For example, a student could take welding or office administration courses to be competitive for those positions.

In Oregon, there is a decentralized system of 17 independent community colleges. The Department of Community Colleges and Workforce Development (CCWD) and the State Board of Education distribute state and federal funds to each of the community colleges, set broad policies, and approve new courses and programs. CCWD does not govern the colleges, but does provide assistance and information to the colleges when needed. Locally elected education boards are responsible for setting policy for their individual colleges, while executive staff at the colleges are responsible for administering and managing program offerings.

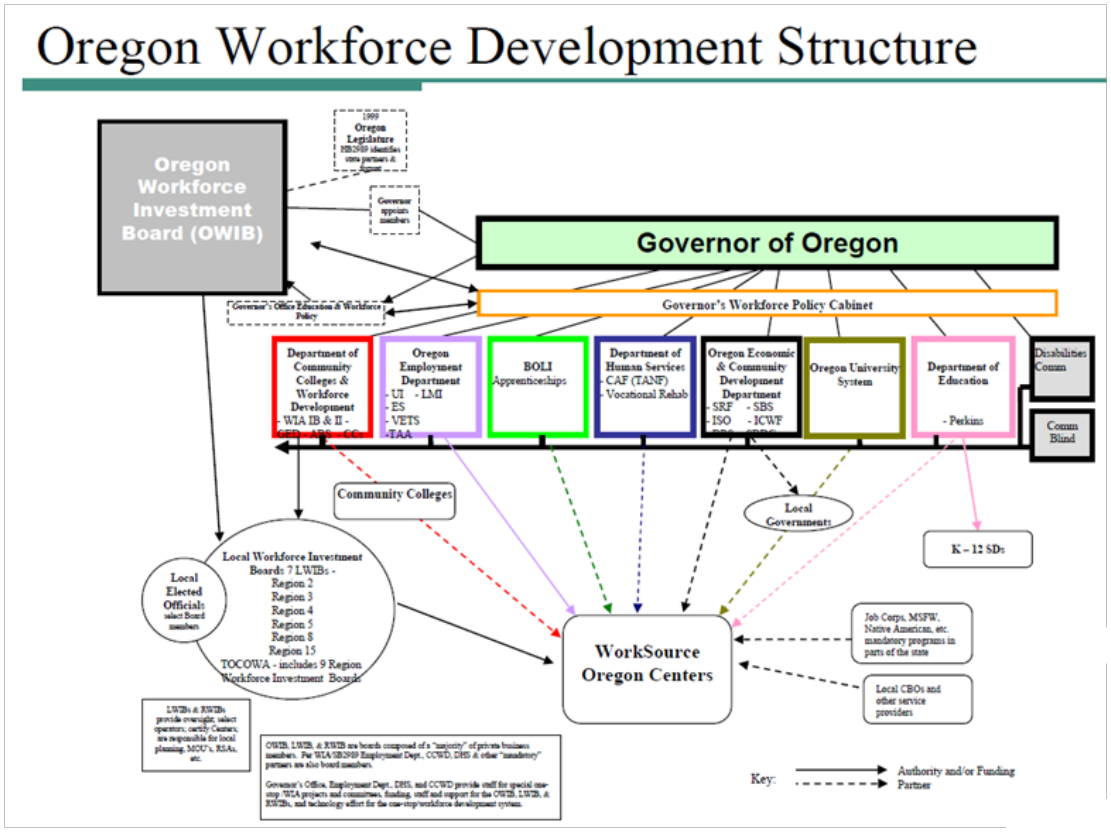
Community colleges are funded primarily by three sources: local property taxes, state general funds, and student tuition and fees. The remaining funding comes primarily from federal grant funds. The state's general fund contribution makes up about 40 percent of total funding across all colleges. In the 2011-13 biennium, the legislature approved about $410 million in support to the community colleges. Since the 2007-09 biennium, state general fund dollars budgeted for Oregon's community colleges have decreased by about 18% (down from $500 million), while enrollment has increased by 33% since the 2006-07 school year.

Oregon's Workforce Development System

Although Oregon's community colleges are considered one of the key providers of middle-skill training for Oregonians, they are only one piece of a large workforce development system. Oregon's workforce development system is a complex partnership of state agencies and business-led boards (see Figure 2). The system aims to prepare individuals across all skill levels, including middle-skill, to enter and advance in the workplace, and to meet the needs of businesses.

The types and levels of workforce development training vary in Oregon and include preparatory training for a future job, training for current workers, as well as other career development training. Preparatory training, both long-term and short-term, includes postsecondary certificates and degree programs provided by community colleges, private career colleges, universities, and apprenticeship programs. Training for current workers is provided when businesses want to improve skills for their workers. Businesses often partner with Local Workforce Investment Boards or community colleges to develop and offer this training directly to their employees. Career development training and job placement services, including resume writing and interview training, are provided at WorkSource centers for unemployed and under-employed workers.

Figure 2: Oregon's Workforce Development System



Source: Department of Community Colleges and Workforce Development

Federal Workforce Investment Act

In addition to state general funds for community colleges, another important source of funding for Oregon's workforce training activities comes from the Federal Workforce Investment Act (WIA). This funding supports dislocated or unemployed workers by providing career development services and training scholarships through Local Workforce Investment Boards and WorkSource centers. WIA funding also supports developmental education programs for adults. However, ongoing funding for WIA services has been declining over the years.

The Oregon Workforce Investment Board is an advisory board to the Governor led by a business majority. This statewide board is mandated by the WIA to create a five-year strategic plan to guide workforce development activities. Members of the board include representatives of labor, youth-serving organizations, and community colleges; members of the Oregon State Legislature; and representatives of government agencies involved in workforce development. The government agency representatives also form the Governor's Workforce Policy Cabinet to promote interagency cooperation and information-sharing regarding workforce development.

At the local level, seven Local Workforce Investment Boards across the state manage and carry out workforce development services needed in their local areas for adults, dislocated workers, and youth. Members of these local boards include a business representative majority, local economic development agencies, community colleges, and others involved in workforce development.

The Department of Community Colleges and Workforce Development is responsible for distributing federal WIA funds to the Local Workforce Investment Boards. The department also coordinates and provides statewide administration of workforce development services and adult education and literacy programs. In addition, the department provides support to the local boards, and is responsible for WIA compliance and reporting.

The Oregon Employment Department also plays a key role in the state's workforce development efforts. It administers unemployment insurance benefits and partners with the Department of Community Colleges and Workforce Development and Local Workforce Investment Boards to manage local WorkSource Centers. WorkSource Centers integrate employment services and WIA provider services. At WorkSource Centers, local job seekers can access resources to improve their skills, learn about career and educational opportunities, and get assistance with job placement.

Workforce and Economic Research

The Employment Department's Workforce and Economic Research Division routinely analyzes and distributes workforce and economic information, including unemployment rates, wage data, and occupational

projections. Much of this information is available on the Research Division's website, qualityinfo.org. Every two years, the Research Division develops ten-year industry and occupational projections that forecast long-term employment levels. Occupational projections are based on expected new and replacement job openings. The projected number of job openings for a particular occupation is not linear and is meant to predict long-term trends. However, the projections are often reported as average annual job openings.

In 2008, the Research Division developed the Occupational Prioritization for Training model. This model includes a variety of measures such as projected job openings, wage data, and vacancy data. The model also includes a statewide supply gap analysis that compares the current supply of trained workers to projected average annual job openings. The occupational projections and prioritization model are intended as a starting point. The Research Division is a valuable resource to help identify information that community colleges and other workforce partners can use to assess the demand for future workers and make informed decisions about training priorities.

Economic development

Economic development agencies are also integral to Oregon's workforce development system. Business Oregon, Oregon's state economic development agency, aims to create, retain, expand and attract businesses that provide sustainable, living-wage jobs for Oregonians. Business Oregon is represented on the Oregon Workforce Investment Board and the Governor's Workforce Policy Cabinet. Business development officers from Business Oregon work with businesses to identify local needs, including any workforce development needs.

Representatives of economic development also sit on Local Workforce Investment Boards and help identify local business workforce training needs. These agencies help new and established businesses start, grow and succeed. Their services typically include start up advice, financial assistance, location and site selection assistance, and employee recruitment and training assistance.

Recent workforce development initiatives

The Governor, state lawmakers, and the Oregon Workforce Investment Board have recently pursued strategies to improve Oregon's workforce development system. One strategy, known as 40-40-20, is an educational attainment goal for adult Oregonians that was approved by the legislature with leadership from the Governor. This goal, to be achieved by 2025, has three parts:

- 40 percent will earn a post-secondary credential such as an associate's degree or certificate;
- 40 percent will obtain a bachelor's degree or higher; and
- the remaining 20 percent will earn only a high school diploma or equivalent.

In addition, the Oregon Education Investment Board was recently created. It will oversee efforts to create a seamless, unified system for investing in and delivering public education from early childhood through high school and college. The purpose of a unified system is to prepare all Oregonians for careers in our economy. As part of Oregon's 40-40-20 education attainment goal, the Oregon Education Investment Board will enter into annual achievement compacts with each community college. The compacts, which will be focused on college completion and progress, as well as connections to and from college, could be linked to performance based funding in the future.

State lawmakers also recently approved an advisory committee composed of members of the Oregon Workforce Investment Board and the Governor. This advisory committee is charged with developing initiatives, recommendations, and proposed legislation to better align and coordinate services and resources among the different workforce development partners. It is also required to submit a report on its workforce development activities to the 2013 Legislative Assembly. Lawmakers acknowledged, in the legislative bill creating the committee, that Oregon's current workforce system and economic development initiatives could be better aligned and leveraged to deliver a workforce that meets business needs for skilled workers.

In addition, the Oregon Workforce Investment Board is currently developing a new statewide strategic plan. The vision and strategic framework for the plan has three goals:

- Goal 1: A competitively skilled workforce is consistently available to fill both current replacement and newly developed jobs.
- Goal 2: Employers attract and retain the skilled Oregonians they need to remain competitive and support local prosperity.
- Goal 3: The workforce system provides integrated services and exceptional customer service, leading to successful employment for all who can and want to work.

The vision and strategic framework for the plan includes strategies:

- Industry Sector and Cross-Sector Strategies: Critical industry sectors fuel the state's economy. The workforce system must prepare workers within those sectors for today's jobs and tomorrow's careers.
- Work Ready Communities: Oregon's communities have and can demonstrate the skilled workforce necessary for companies to locate and grow here.
- System Innovation: Realignment and system capacity building will be needed to drive change and achieve necessary results. Key focus areas will help organize collaborative planning, promote service integration and improve service delivery.

Audit Results

Oregon Has a Projected Shortage of Middle-Skill Workers

To understand how Oregon is meeting demand for middle-skill workers, we compared the number of trained middle-skill workers supplied in 2010 to ten-year projections of employer demand. Based on the objective and scope of our audit, our analysis included only the portion of middle-skill occupations that require a minimum education level of Associate degree or Postsecondary certificate. For the middle-skill occupations we selected, we compared the supply of trained middle-skill workers from Oregon's community colleges, private career schools, and state apprenticeship programs. We did this comparison for occupations statewide and regionally. We also analyzed occupational clusters statewide, comparing the supply of trained middle-skill workers to the demand in related occupations.

We found that Oregon is on track for meeting future demand for many middle-skill occupations and occupational clusters. However, we also found several occupations and clusters where additional supply will be needed to meet projected average annual demand. We identified five middle-skill occupations for which there is strong evidence for a projected statewide supply gap of middle-skill workers compared to average annual employer demand. The results in Table 1 show that the largest supply gap was for Bookkeeping, Accounting, and Auditing Clerks. To illustrate, if Oregon produces the same number of Bookkeeping, Accounting, and Auditing Clerks going into the future as it did in 2010, the supply gap is projected to grow by an average of 641 a year.

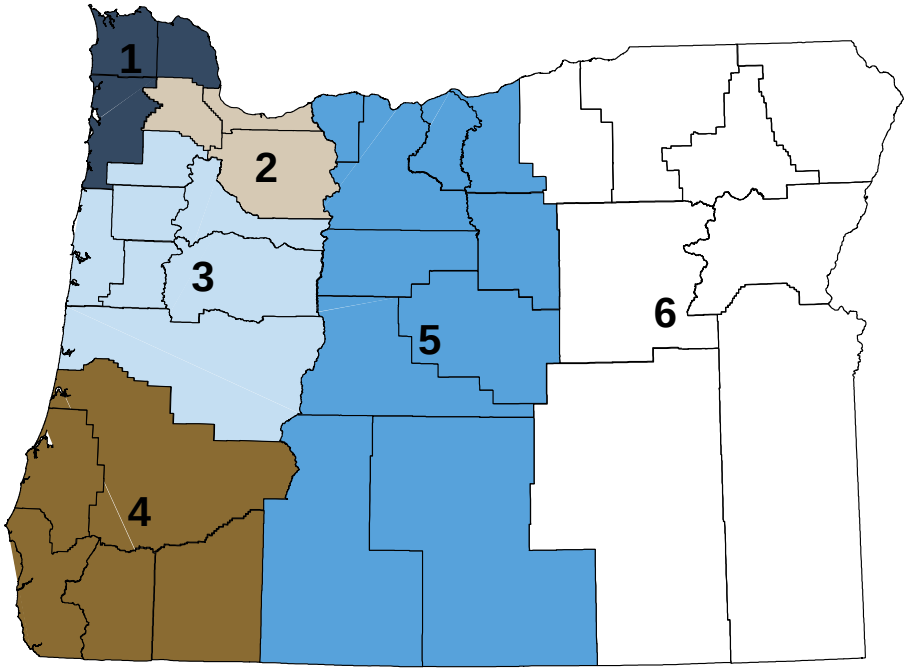
Table 1: Five middle-skill occupations with a projected statewide supply gap

Occupation	Projected Average Annual Supply Gap
Bookkeeping, Accounting, and Auditing Clerks	641
Preschool Teachers, Except Special Education	96
Legal Secretaries	89
Medical Transcriptionists	20
Water and Liquid Waste Treatment Plant and System Operators	16

Source: Oregon Employment Department, 2010

We also compared the 2010 supply of trained middle-skill workers against ten year projections of employer demand regionally for each occupation. For the regional analysis, we combined the 15 local workforce regions into six larger regions as shown in Figure 3. See the Appendix for a list of counties included in each auditor-defined region.

Figure 3: The six auditor-defined regions



Based on our regional analysis, we found projected annual supply gaps for a number of middle-skill occupations in each of the six auditor-defined regions. Each region varied in the number and types of occupations with projected supply gaps (see Figure 4). Two occupations have projected supply gaps in all six auditor-defined regions (Bookkeeping, Accounting, and Auditing Clerks; Truck Drivers, Heavy and Tractor-Trailer). One occupation (Automotive Service Technicians and Mechanics) had a projected supply gap in five regions, and two occupations had gaps in four of the six regions (Biological Technicians; Computer Support Specialists).

Region 2, which includes the Portland metropolitan area, had the most and largest projected middle-skill supply gaps of any region. The occupations in region 2 with the largest gaps were Bookkeeping, Accounting, and Auditing Clerks and Computer Support Specialists. The rural regions had smaller projected gaps. For example, region 5 in Central Oregon had a projected annual supply gap of 11 Pharmacy Technicians. This would probably not be considered a large gap for region 2, but for a rural region, it could be a relatively large gap critical to the regional economy.

Figure 4: Occupations with projected annual middle-skill supply gaps by auditor-defined region

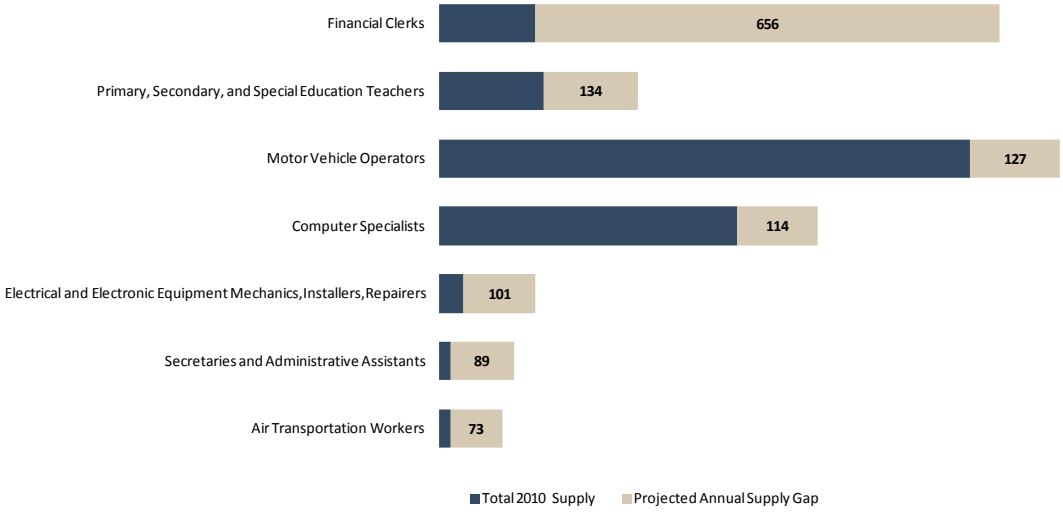
As described above, the supply of trained middle-skill workers included those from community colleges, private career schools, and apprenticeship programs. Many occupations are supplied with trained workers from primarily one source. For example, electricians, plumbers, and sheet metal workers are mostly supplied by apprenticeship programs, whereas truck drivers, real estate brokers, and real estate sales agents are mostly supplied by private career schools. Most of the occupations listed in Figure 4 are supplied by community colleges.

Although some occupations do not show a projected statewide gap, we did find projected supply gaps in certain regions. For example, the state has recently made great strides to increase the number of nursing graduates. Currently, the supply of Registered Nurses is nearly equal to projected statewide demand. However, we found a projected supply gap of Registered Nurses in three of the six regions.

It is important to note that an individual may be trained in one region, but find employment in another. Also, community colleges are collaborating on opportunities like distance learning that allow students to remain in their region while receiving a degree from a college in another. It is also important to understand that other factors may affect the forecasts and results, and additional research may be needed. For example, we identified a projected gap statewide and in all six auditor-defined regions for the occupation Truck Drivers, Heavy and Tractor-Trailer. Yet, the Employment Department noted that due to the recession, employment is down approximately 4,000 for this occupation. This indicates that there may be a large pool of unemployed trained truck drivers available to fill those positions.

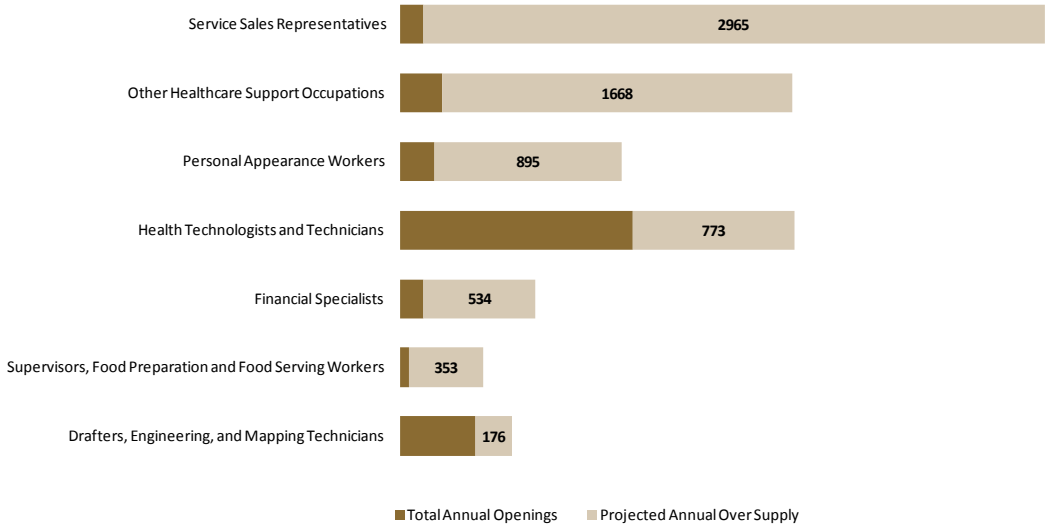
We also found significant projected statewide supply gaps for some occupational clusters. As shown in Figure 5, the occupational cluster Financial Clerks, which includes the occupation Bookkeeping, Accounting, and Auditing Clerks, had the largest projected statewide supply gap. The Primary, Secondary, and Special Education Teachers cluster, which includes the occupation Preschool Teachers, Except Special Education, had the second largest gap. If Oregon continues to produce the same number of trained preschool teachers as it did in 2010, the supply gap is projected to grow by an average of 134 a year. Supply for the occupational clusters with significant projected supply gaps is primarily from community colleges, with the exception of Motor Vehicle Operators whose supply is mostly from private career schools. See the Appendix for a list of middle-skill occupations that make up each occupational cluster included in Figure 5.

Figure 5: Seven occupational clusters with the largest projected annual middle-skill supply gap



In contrast, we also found some occupational clusters where there is a projected annual oversupply of trained middle-skill workers (see figure 6). For example, the occupational cluster labeled Service Sales Representatives, which includes the occupation Insurance Sales Agents, had the largest projected annual oversupply of trained middle-skill workers. The Other Healthcare Support Occupations cluster, which includes the occupations Massage Therapists, Medical Equipment Preparers, and Medical Transcriptionists, had the second largest projected oversupply. Supply for these clusters is mainly from private career schools. It is important to note that occupational clusters with an overall projected oversupply may include some occupations that have a supply gap. See the Appendix for a list of middle-skill occupations making up each of the occupational clusters included in Figure 6.

Figure 6: Seven occupational clusters with the largest projected annual oversupply of middle-skill workers



A shortage of middle-skill workers will impact Oregon's economy

Economic growth is linked with educational attainment, and having an adequate supply of skilled workers is central to a strong economy. Producing fewer trained middle-skill workers than businesses require creates missed opportunities for better employment and increased earnings for Oregon's workers. In addition, if employers have difficulties finding skilled workers to fill current positions, their ability to grow and be competitive will be impacted.

Postsecondary education has become the threshold requirement for a middle-class family income. Even one additional year of education beyond high school is linked to increased earnings. Additionally, workers with postsecondary training or degrees have lower unemployment rates, even during economic downturns such as during the current recession.

Some Oregon employers have noted that in spite of high unemployment, it is still hard to find workers with the right skills. This shortage of skilled workers was evident in a 2011 Employment Department job vacancy survey. It showed that four middle-skill occupations had a combined total of over 500 vacancies that had been open for more than 60 days. In its 2008 Oregon Employer Survey, the Employment Department found that employers who had difficulty finding qualified workers faced increased recruitment and overtime costs, and lowered productivity among current employees.

Comprehensive Efforts are Needed to Meet Middle-Skill Training Needs

Improved statewide and local strategic planning efforts needed

We found a lack of strategic planning at the state level related to the comprehensive identification of high-demand occupational clusters or industry sectors with a projected under-supply of trained workers. A strategic planning process should identify the high-demand occupations and skill needs of businesses in the state. This could be done by using occupational projection and other labor market data from the Employment Department, as well as by engaging a wide variety of business, industry, economic development, and workforce development stakeholders. The strategic plan could also identify workforce training priorities for specific high-demand occupational clusters or industry sectors, as well as specific quantifiable targets for the number of workers to be trained.

The Oregon Workforce Investment Board (OWIB) developed the last statewide strategic plan for Oregon's workforce development system in 2006. The 2006 OWIB strategic plan identified key industry sector strategies, including healthcare, manufacturing, green jobs, and high-skill/high-wage jobs. The plan prompted the OWIB, in partnership with the Department of Community Colleges and Workforce Development and the Employment Department, to invest in and conduct research to identify the top 20 high-wage/high-demand occupations and develop a method for prioritizing occupations for workforce training. The OWIB developed another plan in 2008 that was intended as a strategic investment plan. This plan identified supply gaps for a few occupations, and focused on traded-sector industries. Both of these plans identified high-demand occupations and industry sectors to focus strategic efforts. However, they lacked a comprehensive identification of skill gaps for occupations, occupational clusters, or industry sectors.

The State Board of Education and the Department of Community Colleges and Workforce Development set broad policies and approve new courses and programs for community colleges. However, neither agency has strategic governance over the colleges, leaving the process for identifying and prioritizing high-demand occupations up to each individual college.

Oregon's community colleges are responsible for planning and developing educational programming that meets the needs of their community. Yet, some of the community colleges reported not having a strategic planning process for career and technical education programming, while others find it difficult to prioritize resources among lower division transfer courses, career and technical education programs, and other key program areas. One college described its approach as "opportunistic" when it came to prioritizing career and technical education programs. Programs with the strongest business partners, including those that provide financial support, are chosen over others.

At the local level, it is important that each community college develop strategic and operational plans aligned with a statewide strategic plan. Identification of high-demand occupations or occupational clusters and the skill needs of local business are also important at the regional level, as skill needs can vary across the state. Operational plans would include the educational programs that the college will provide, as well as specific enrollment and completion targets.

The achievement compacts between the Oregon Education Investment Board and each community college will include targets for key student outcomes, including targets for completion, progress, and connections after completion. The completion targets include the number of students completing General Educational Development credentials, postsecondary certificates, associate's degrees, and transfer degrees. However, the achievement compacts currently focus on overall numbers of completers and do not provide expectations for meeting completion targets for specific career and technical education programs linked with high-demand occupations or occupational clusters.

Identification of middle-skill needs is not comprehensive

Few workforce training needs are identified through a comprehensive strategic effort. Currently, middle-skill training needs are identified primarily at the local level. The identification of specific training needs is often brought to the attention of community colleges when the needs of a particular business or industry are made known.

While the Employment Department provides regional data on projected job openings, useful for identifying high-demand occupations or potential skill gaps, several community colleges say they mostly rely on industry representatives or workforce partners to inform them of specific skill needs in their community. For example, Chemeketa Community College learned of the need for a Hemodialysis Technician training program through an industry representative. However a workforce need is identified, the colleges must use Employment Department data to further support the need for the career and technical education program.

While it is important for community colleges to identify needs from local industries and partners, some needs may go unnoticed if other sources of information are not explored. For example, support occupations like bookkeeping or computer support specialists that cut across many industries may not have a local representative to call attention to those skill needs.

Targeted investments could better meet workforce training needs

Often, career and technical education programs have high start-up costs, are capital intensive, and cost more to operate than other educational program areas at the community colleges. The cost of instructional equipment, lack of available facility space, and competition with industry over instructor salaries are all significant cost factors to the colleges. Oregon statute states that the funding formula for career and technical

education should reflect these higher costs. However, the current state reimbursement formula does not reflect capital cost differences between programs.

Targeting funding for career and technical education programs would help ensure that skill needs are met for high-demand occupations or occupational clusters. For example, Washington State created a grant program that allows community colleges to apply for funds that can be used for start-up costs of a new program, or to help expand existing programs associated with high-demand occupations with supply gaps.

Oregon's community colleges receive state general funding based on the number of full-time equivalency hours taught. Many colleges reported that this allocation method does not adequately cover the costs of career and technical education programs. Instead, state funding allocations disproportionally favor courses and educational programs that do not have high start-up costs or do not require a low faculty-to-student ratio. Thus, colleges rely on the allocations for lower cost programs to help cover the costs of career and technical education courses. In addition, current funding allocations may create disincentives for colleges to collaborate on the development of new career and technical education programs.

Since 2007, state funding for Oregon's community colleges has decreased by about $100 million, while enrollment has increased by 33%. This has made it all the more difficult for the colleges to cover the costs of creating new career and technical education programs. Some colleges may even discontinue current career and technical education programs due to these budget constraints.

Limited shared funding between community colleges and industries for career and technical education

In the face of funding constraints, many colleges have had recent success in obtaining support from industry partners, which have funded start-up and ongoing costs for career and technical education programs. For example, Chemeketa Community College was able to create a new Hemodialysis Technician program with industry support. Hemodialysis Technicians help treat clients with end-stage renal failure. Local employers supplied ten dialysis machines to aid in instruction and committed to donating ongoing supplies for the program. According to managers at Chemeketa, had the college not received financial support from industry partners, the Hemodialysis Technician program would not have been possible.

Despite some successful collaboration between colleges and industry, there are also examples of colleges lacking the funding for new programs for which there is an identified need. For example, several colleges noted that they were unable to start or expand needed allied health occupation training programs (e.g., Registered Nurse, Physical Therapy Assistant) due to their high costs. In addition, support occupations such as computer support specialists, preschool teachers, and bookkeeping may not have an

industry or an organized group of employers to pool resources to offer financial support.

Completion results for specific career and technical education programs are not evaluated

Program results should be evaluated and compared to plan targets to determine if strategies are working. If targets are not reached, barriers and solutions could be identified, and new strategies could be incorporated in the next round of strategic and operational plan development. It is also important to communicate performance results to leadership at the state and local level and to workforce development partners.

In 2008, with leadership from the Department of Community Colleges and Workforce Development, a Community College Student Success Plan was produced. While this plan focused on student success, retention, and general completion rates, it lacked completion rate targets for specific career and technical education programs.

As mentioned above, the achievement compacts between the Oregon Education Investment Board and each community college include targets for overall numbers of completers, but do not provide expectations for meeting completion targets for specific career and technical education programs. However, the compacts include optional targets to be set by community colleges based on local priorities.

The achievement compacts will be the first attempt at linking results to funding allocations. It is anticipated that the state will phase in performance funding over the next 8 years. However, it is not clear at this time how funding will be tied to outcomes. Also, until and unless the achievement compacts are structured to include targets for specific training programs, colleges may be rewarded for overall output of degrees or certificates produced. Funding for overall output would be an improvement over current funding based on enrollment inputs, but could continue the current incentive for low cost programs of study, rather than the higher cost career and technical education programs needed to meet workforce training needs.

Successful Efforts to Create Needed Career and Technical Education Programs

Once a community college identifies a training need, a thorough review process is conducted before a new program is created. For its Hemodialysis Technician Program, for example, Chemeketa Community College conducted a needs assessment, a mission level review, and a curriculum committee review before getting approval from the college's Board of Education. The program was then reviewed by the Department of Community Colleges and Workforce Development and received final approval by the State Board of Education.

As part of the state approval process, community colleges are required to provide clear evidence of the need for the program, including relevant labor market data. The colleges also must provide information on the projected number of job openings, the wages for different levels of training, and the supply of similar training programs in the state.

Oregon's community colleges are nationally known for their Career Pathways Program. This program has a goal of creating post-secondary certificates that demonstrate competencies tied to a specific high-demand occupation. Students can also use these certificates as a stepping stone to an associate's degree. Career Pathways Certificates prepare students for entry-level occupations while also allowing them to move to higher-wage positions within an industry as they complete more training. At Portland Community College, for example, a student could earn a Manufacturing Technician certificate and then continue studies to earn an associate's degree in Machine Manufacturing Technology. More than 150 Career Pathway Certificate programs have been developed since the certificates were approved by the State Board of Education in 2007.

Oregon's community colleges have also worked together on strategies to make programs cost-effective. For example, distance learning has been a benefit for colleges and students when enrollment or employer demand has not been high enough in a region to make the program cost-effective. Distance learning allows students in other regions of the state to participate in a career and technical education program at a different college via online learning. For example, ten rural community colleges collaborated with a Local Workforce Investment Board on the Green Technician Certificate program. Students from each college take program courses online, but occasionally meet at one of the college campuses to get laboratory experience. This program also received federal grant dollars to help pay for laboratory start-up costs.

In addition to successful efforts of community colleges to create career and technical education programs that meet high-demand occupations, most colleges noted they provide students with information on high-demand occupations and the training requirements for those jobs. We also found that, in collaboration with other partners, the Employment Department has

developed a web-based regional and statewide list of high-wage, high-demand occupations. The state also has a Career Information System that students and career planners can use. Users of the Career Information System can find information about occupations and industries, postsecondary programs and schools, and job search assistance.

Recommendations

To better meet the need for an adequate supply of middle-skill workers, we recommend that the governor's office coordinate with the Department of Community Colleges and Workforce Development, the Oregon Workforce Investment Board, and/or the Oregon Education Investment Board to:

- Expand the statewide workforce development strategic planning process to include the identification of high-demand occupational clusters and industry sectors with the greatest projected under-supply of trained workers.
- Consider aligning state funding allocations to account for the higher cost of career and technical education programs.
- Explore other opportunities to fund or incentivize creating or expanding career and technical education programs that supply the high-demand occupational clusters and industry sectors identified during the statewide planning process.
- Request that the community colleges collaborate with Local Workforce Investment Boards on shared community workforce development strategies that address the high-demand occupational clusters and industry sectors identified during the statewide and local implementation planning processes.
- Request that the community colleges and Local Workforce Investment Boards identify, prioritize, and develop shared targets for career and technical education programs that supply the identified high-demand occupational clusters, industry sectors, and local needs.
- Continue to support community college and Local Workforce Investment Board partnerships with industry to leverage additional resources for creating or expanding needed career and technical education programs.

Objectives, Scope and Methodology

The objective of our audit was to determine whether Oregon's community colleges are on track to meet anticipated future workforce needs and, if not, identify opportunities for improvement. We learned during our review of national and state reports that researchers have identified an emerging skills gap. Thus, during our audit, we sought to identify any projected supply gaps for middle-skill high-demand occupations, and to identify barriers to achieving better collaboration between community colleges and workforce development partners.

To answer our audit objective, we first used analysis results produced by the Employment Department as part of its Occupational Prioritization for Training model to identify any projected statewide supply gaps for middle-skill occupations.

To identify any regional projected supply gaps for middle-skill occupations, we compared the 2010 supply of trained middle-skill workers from Oregon's community colleges, private career schools, and apprenticeship programs to Oregon Employment Department 2020 occupational projection data. For our comparison, we limited middle-skill occupations to those that require a minimum education level of Associate degree or Postsecondary certificate, as assigned by the Oregon Employment Department.

For the regional analysis, we grouped the community college districts, counties, and 15 workforce regions into six auditor-defined regions (See Figure 3 on page 12).

We also analyzed occupational clusters statewide, comparing the supply of trained middle-skill workers to the demand in related occupations. We excluded any duplication of supply, since some training programs prepare students for more than one related occupation.

We used Oregon Community College and Oregon Private Career School completion data compiled by the Oregon Employment Department. The Employment Department obtained this data both from the Integrated Postsecondary Education Data System (IPEDS) Data Center and from the Oregon Department of Education's Private Career School database. We also used apprenticeship completion data provided by the Oregon State Apprenticeship and Training Division at the Bureau of Labor and Industries.

To gain assurance of the completeness and accuracy of the data, we gained an understanding of the data and confirmed that we received the complete data sets we requested. We also selected and tested a sample of completion data records we obtained to confirm they matched data from the online IPEDS Data Center, and found no exceptions. As a result of these procedures, we determined the data to be sufficiently reliable for our audit purposes.

To obtain criteria and best practices for identifying middle-skill training needs and methods for prioritizing middle-skill training, we reviewed various national and state reports and interviewed management and staff at the Oregon Employment Department.

We interviewed management and staff at Oregon's community colleges, Local Workforce Investment Boards, Business Oregon, and other workforce development organizations. We developed two electronic surveys, one for Oregon community college contacts and one for various workforce development partners, including Local Workforce Investment Boards, local economic development organizations, Business Oregon, and two business associations. We used the interviews and surveys to obtain information on barriers to meeting middle-skill workforce needs and better collaboration between community colleges and workforce development partners. The interviews and surveys also pointed to positive efforts at meeting middle-skill workforce needs and successful examples of collaboration between the community colleges and workforce development partners.

To gain an understanding of Oregon's workforce development system, we reviewed various reports and documents, and interviewed management and staff from the Department of Community Colleges and Workforce Development, the Oregon Workforce Investment Board, the Oregon Employment Department, Business Oregon, Oregon Bureau of Labor and Industries, Local Workforce Investment Boards, and others.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix

References

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Counties by auditor defined region

Region 1 (Northwest Oregon)
- Clatsop County
- Tillamook County
- Columbia County

Region 2 (Portland Metropolitan Area)
- Washington County
- Multnomah County
- Clackamas County

Region 3 (West Central Oregon)
- Yamhill County
- Polk County
- Marion County
- Lincoln County
- Benton County
- Linn County
- Lane County

Region 4 (Southwest Oregon)
- Douglas County
- Coos County
- Curry County
- Josephine County
- Jackson County

Region 5 (Central Oregon)
- Hood River County
- Wasco County
- Sherman County
- Gilliam County
- Jefferson County
- Wheeler County
- Crook County
- Deschutes County
- Klamath County
- Lake County

Region 6 (Eastern Oregon)
- Morrow County
- Umatilla County
- Union County
- Wallowa County
- Grant County
- Baker County
- Harney County
- Malheur County

Middle-skill occupations making up the seven occupational clusters with significant supply gaps

Financial Clerks
- Bookkeeping, Accounting, and Auditing Clerks

Primary, Secondary, and Special Education Teachers
- Preschool Teachers, Except Special Education

Motor Vehicle Operators
- Truck Drivers, Heavy and Tractor-Trailer

Computer Specialists
- Computer Support Specialists
- Computer Specialists, All Other

Electrical and Electronic Equipment Mechanics, Installers, and Repairers
- Radio Mechanics
- Telecommunications Equipment Installers and Repairers, Except Line Installers
- Avionics Technicians
- Electrical and Electronics Installers and Repairers, Transportation Equipment
- Electrical and Electronics Repairers, Commercial and Industrial Equipment
- Electrical and Electronics Repairers, Powerhouse, Substation, and Relay
- Electronic Equipment Installers and Repairers, Motor Vehicles
- Security and Fire Alarm Systems Installers

Secretaries and Administrative Assistants
- Legal Secretaries

Air Transportation Workers
- Airline Pilots, Copilots, and Flight Engineers
- Commercial Pilots, Exclude Airline Pilots
- Air Traffic Controllers

Middle-skill occupations making up the seven occupational clusters with significant oversupply

Sales Representatives, Service
- Insurance Sales Agents

Other Healthcare Support Occupations
- Massage Therapists
- Medical Equipment Preparers
- Medical Transcriptionists

Personal Appearance Workers
- Barbers
- Hairdressers, Hairstylists, and Cosmetologists

- Manicurists and Pedicurists
- Skin Care Specialists

Health Technologists and Technicians

- Dental Hygienists
- Cardiovascular Technologists and Technicians
- Diagnostic Medical Sonographers and Ultrasound Technologists
- Nuclear Medicine Technologists
- Radiologic, CAT, and MRI Technologists and Technicians
- Veterinary Technologists and Technicians
- Medical and Clinical Laboratory Technicians
- Emergency Medical Technicians and Paramedics
- Pharmacy Technicians
- Psychiatric Technicians
- Surgical Technologists
- Licensed Practical and Licensed Vocational Nurses
- Medical Records and Health Information Technicians
- Health Technologists and Technicians, All Other

Financial Specialists

- Appraisers and Assessors of Real Estate
- Tax Preparers

Supervisors, Food Preparation and Food Serving Workers

- Chefs and Head Cooks

Drafters, Engineering, and Mapping Technicians

- Architectural and Civil Drafters
- Electrical and Electronics Drafters
- Mechanical Drafters
- Drafters, All Other
- Civil Engineering Technicians
- Electrical and Electronic Engineering Technicians
- Electro-Mechanical Technicians
- Environmental Engineering Technicians
- Industrial Engineering Technicians
- Mechanical Engineering Technicians
- Engineering Technicians, All Other

John A. Kitzhaber, MD
Governor

MEMORANDUM

Date: June 11, 2012

To: James Scott, Secretary of State's Office

From: Agnes Balassa, Governor's Office

Re: Performance Audit - Workforce Development

The Performance Audit on Workforce Development asks a critical question for Oregon: is Oregon producing a sufficiently skilled supply of workers based on industry demand, particularly for middle skill jobs. The report identifies a number of challenges to achieving this goal and makes recommendations that support state efforts to create greater alignment and efficiency in publicly funded systems and programs.

As the report states, Oregon has undertaken a number of efforts to better align workforce supply and demand. This includes the regular publication of a report by the Oregon Employment Department identifying high demand, high wage occupations. The report was initiated by the Oregon Workforce Investment Board to provide better guidance for educational investments.

Under the Oregon Workforce Investment Board's new strategic plan, publicly funded state and local entities will utilize sector strategies to better identify the need for training in critical occupations. Sector strategies will also take into account the potential existing supply of skilled unemployed workers who have not yet transitioned back into the workforce.

The Secretary of State's report provides an alternative to sector strategies for identifying possible workforce gaps by looking at occupational clusters. This approach has the advantage of identifying occupational shortages that exist across industries that may not be readily visible when focusing only on specific industry sectors.

Because the six regions used for the Secretary of State's report do not line up completely with the way that workforce, education or economic development systems are organized, it will take some translation to make good use of the data provided. Still the report provides a good reminder that no one strategy alone will address the need for a skilled workforce in support of our economy. It also provides useful recommendations to encourage continued alignment and partnership between Oregon's education and workforce system using the best data available.

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June 12, 2012

James Scott, Audit Manager
Oregon Audits Division
255 Capitol St. NE, 5th Floor
Salem, OR 97310

Dear Mr. Scott:

Please accept this letter as the formal response by the Department of Community Colleges and Workforce Development (CCWD) to the Secretary of State's audit conducted to determine whether Oregon's community colleges are on track to meet the State's anticipated future workforce needs.

While CCWD is generally in agreement with the audit recommendations as potentially effective process improvement strategies to respond to workforce needs, I do want to comment on specific assumptions and conclusions in the audit report.

First, the total number of occupational clusters identified in the audit as having potential future supply gaps statewide is quite small, given the number of approved middle skill focused degree and certificate programs offered by the 17 Oregon public community colleges. Currently, these colleges offer over 1,100 career and technical education programs to help meet local and statewide middle skill workforce needs. The audit identifies *five* middle skill occupations with projected statewide supply gaps in 2020. Additionally, the projected number of jobs associated with any of these occupations is small: the largest projected gap is 641 in Bookkeeping, Accounting and Auditing Clerks; the anticipated supply gap for the remaining four occupations ranges from 16 to 96. The other side of this story is that the Oregon community colleges are, given the current funding level, effective in both meeting current workforce supply needs and in anticipating future workforce supply needs across a broad range of occupational areas.

Second, the community colleges and CCWD are committed to preparing Oregon's workforce into the future. Audit Recommendation three suggests "explor[ing] opportunities … for creating or expanding" CTE programs. This is precisely what the community colleges do; they work with their community partners to *anticipate* workforce needs, developing workforce programs to occupations that are so new they have not yet made their way onto any supply/demand list or into an occupational cluster. Creating leading-edge workforce development programs such as the Renewable Energy Technician – Wind program at Columbia Gorge Community College and the Renewable Energy Technician – Solar at Lane Community College, to meet emerging workforce needs are examples of Oregon community colleges being 'opportunistic' in serving local workforce needs.

Third, an assumption that underlays the audit report is that if the college offers the program that will, ipso facto, address the supply need. However, we know that while the preparation program may be available, the college offering it cannot guarantee that future workers will enroll, graduate or take jobs in the region with the identified supply gap.

Finally, to reiterate, the department finds the *processes* suggested in the six Recommendations potentially valuable strategies for the colleges and their community partners to engage in as they respond to workforce needs in their region.

Respectfully,

Dr. Camille Preus
Commissioner

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The courtesies and cooperation extended by officials and employees of the Department of Community Colleges and Workforce Development, Oregon Employment Department, Community Colleges, and state and local Workforce Investment Boards during the course of this audit were commendable and sincerely appreciated.