

Workforce Analysis

A workforce analysis was performed to complement and enhance the supply chain analysis completed by Camoin Associates (provided as an appendix to the final report). The need for this analysis was predicated by the Montreal, Maine & Atlantic Railway, Ltd. derailment and massive lay-offs in manufacturing (most notably the paper mill industry) resulting in more than 1,500 lost jobs. As the closures in direct and related supply chain businesses continue to grow, the need for a “reboot” to identify those industries poised to become the new economic drivers in this region is critical. As noted in the Camoin report, “leveraging the assets to grow the regional economy will require a reset of the economic, workforce, and community development system.”

This will require a new vision coupled with a new culture to build our region’s capacity for a transformation into a new systems approach to leverage growing and emerging opportunities. A key component of this transformation will be an assessment of the necessary platforms crafted to build a capable and trained workforce to meet growing demands and to assist workers who are being displaced from contracting industries and occupations.

The trends are unmistakable. Among the region’s industries, projected job gains are highest in healthcare, professional and business services, leisure and hospitality, and retail; continued job losses are expected in manufacturing. Among occupations, projected gains are concentrated in professional and service occupations and losses in production jobs. This projected demand tracks closely to the composition of the 50 largest employers in the region where 19 are providers of healthcare and social services and 8 are retailers. These projections also align fairly well with EMDC’s results in training and placing WIOA customers this past year where 43% of our WIOA job placements were in healthcare and social service, and 13% were in a combination of the retail sector and leisure and hospitality industries. EMDC’s business lending program also reflects an industry distribution that closely aligns with these labor market trends.

Healthcare practitioners and technicians represent 60 percent of the net job gain in professional occupations and healthcare support jobs represent 26 percent of net gain in service jobs. Other professional occupations with faster than average growth are: business and financial operations, computer and mathematical, science, and legal occupations.

Other service occupations with faster than average growth are: personal care, food preparation and service, and buildings and grounds maintenance occupations.

The pre-dominance of healthcare occupations - six of the top ten (and thirteen of the top forty occupations) growing occupations are in the Healthcare Practitioner and Technical Occupations; while five others are in Healthcare Support Occupations - accurately reflects the employment mix throughout the tri-county economy as well.

The recession accelerated the restructuring of employment in the region on multiple levels and can be seen most starkly in past 24 months with the implosion of the paper industry in the region. On an industry level, jobs being lost have been concentrated in manufacturing and construction, a trend that is accelerating with a long term decline in jobs related to producing goods relative to those providing services. The greatest number of declining occupations in Maine (and in EMDC’s region), are in Production Occupations – with nineteen of the forty fastest declining occupations.

This changing composition of industries and occupations within the region are having significant impacts on workers, business and the region itself.

Impact on Workers

Many jobs in manufacturing and construction pay above average wages and are accessible to workers without post-secondary education. Jobs such as these in well-paying occupations with lower educational requirements are declining or growing very slowly.

Many workers displaced from production as well as other declining industries such as construction, office and administrative support, and others lack the qualifications to fill jobs in growing occupations that offer similar levels of pay. Because jobs lost from declining industries or in slow-growing occupations are not expected to return, job prospects for those without post-secondary education are likely to worsen in the years ahead without well-directed job training resources.

Impact on Businesses

While many individuals find their years of accumulated experience are no longer in demand, many employers are also challenged to find the workers with the education, experience, or skills needed to perform functions critical to their operations. Demand for workers in education and healthcare, professional and business services, and leisure and hospitality is rising. The staffing needs of those industries are primarily for professional and technical functions—which generally require post-secondary education or training and offer higher-than-average earnings—and for service, sales, and administrative support functions—which generally do not require post-secondary education or training and offer lower than average earnings. The result is job growth concentrated at the upper and lower ends of the education and earnings spectrum.

Impact on Sub-Regional Economies

Structural shifts in employment are also exacerbating economic divisions between regions and between rural and urban areas within the region. Penobscot County provides a dramatic example of the disparity between rural and more urban areas. In the Bangor Metro Area gains in non-manufacturing jobs outnumbered losses in manufacturing jobs for a net gain of jobs during the past several years. Outside the Bangor Metro Area in the balance of Penobscot County, losses in manufacturing jobs outnumbered gains in non-manufacturing jobs for a net decrease of 1,800 jobs.

The shift toward professional and service occupations in industries such as healthcare, business services and leisure and hospitality conveys some economic advantages to Bangor Metro Area and southern Hancock County where the region's largest population and service centers are located, while communities in the Katahdin area and Piscataquis County continue to lose jobs and population.

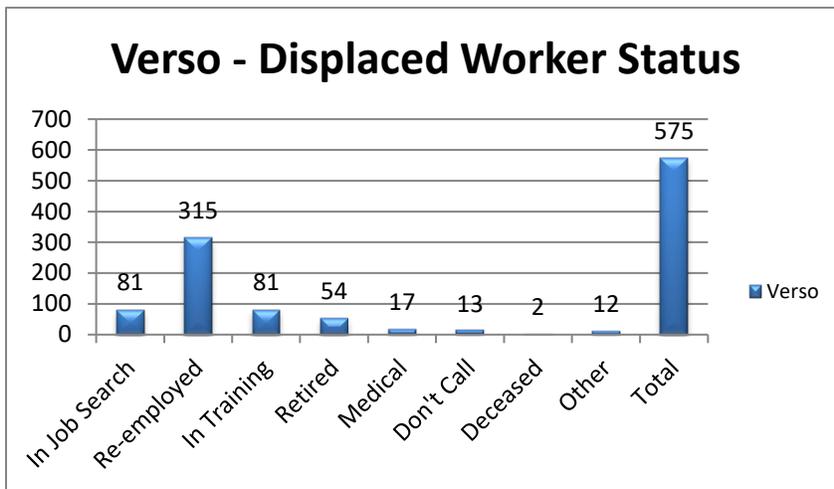
Workforce Profile – The Paper Industry

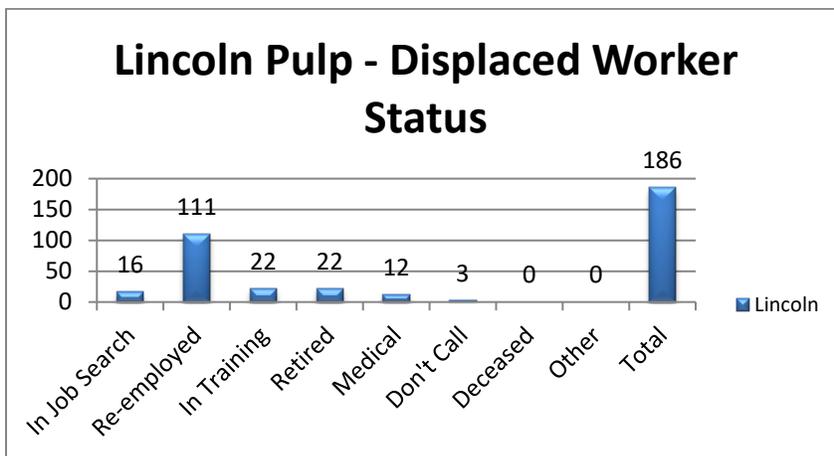
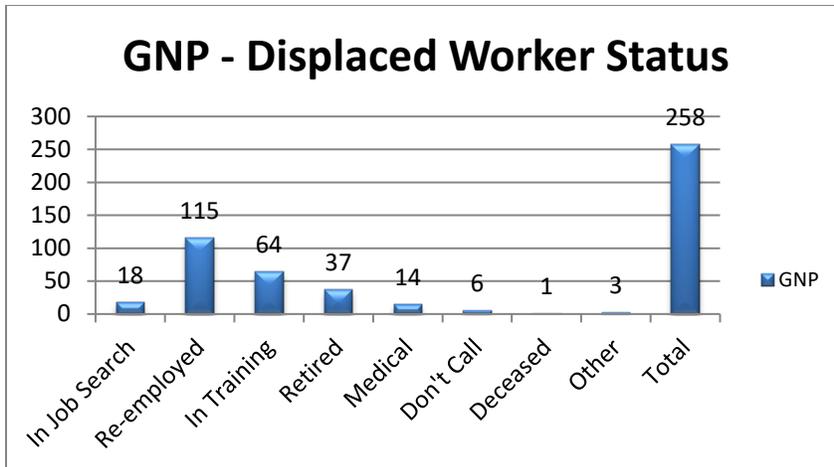
The impacts of changing labor markets has been most felt in our region by the Paper Industry and the workers who have traditionally comprised this workforce. The paper industry has historically been a major economic employer in rural Maine. Since the 1730's, this industry has been the region's economic driver and 100 years ago, there were more than 100 vital mills operating in Maine. Since then the number has been steadily declining; that number was recently

reduced by over 1,700 workers with the mills in Jay, Old Town, and Lincoln being the latest casualties. Maine Pulp & Paper Association reported that in 2011, about 7,300 persons were employed in pulp and paper manufacturing supporting a state-wide payroll of \$470 million. At an average salary of \$64,000, employees in this industry enjoyed livable-wage jobs with excellent employee benefit packages. Property tax revenues comprised approximately 60-70% of the total tax base in most mill communities.

This picture has begun to shift in recent years. Technology has decreased the demand for paper-based products and competition from other states and overseas has eroded the wood products/paper industry, leading to the reduction of paper mills from a peak of 28 in 2006 to the current number. Added to this is the automation of jobs formally performed by people, and the number of jobs lost continues to grow. The Portland Press Herald reported on October 2014 that the Maine Department of Labor projected by 2020, the total number of mill workers is expected to be down to 5,200. In fact, this number may be less with the significant closures in 2015.

A snapshot of the current status of mill employment for three major employers – Verso Paper (Bucksport), Greater Northern Paper Company (GNP), and Lincoln Pulp & Paper (Lincoln) – is provided below. As noted in the tables, many have been reemployed while approximately 11% have opted to retire (many choosing early retirement). Another 28% are still engaged in the job seeking/retraining process. It is important to note that, of those displaced workers attaining employment, a growing number have either had to travel longer distances to find suitable employment or in some cases have left the region to find livable wage jobs. This action results in a reduction of population, community tax base, and talent leaving the region for other opportunities.





The transition of these workers into other industries and occupations within the region (and outside) reflect the evolving composition of the regional economy, where jobs are growing and where they are not and the difficulties that workers face when challenged by unforeseen changes in the pattern of tradition employment compacts. The other major employment sectors in our region where workers have found re-employment include:

- Healthcare & Bioscience (bioscience/biotechnical research, direct healthcare services, home healthcare, psychiatric/substance abuse hospitals/care, skilled nursing, assisted living facilities)
- Retail (supermarkets and other grocery stores, household appliances, general merchandise, car dealerships)
- Education
- Tourism & Hospitality (hotel/motel, restaurants, casino, retail)
- Agriculture & Food Products (farming, frozen fruit and vegetable manufacturing, seafood product preparation and packaging)
- Composites & Boat Building
- Skilled Labor (security, office administrative services, janitorial)

- Manufacturing (surgical supplies to switchgear/switchboard apparatus, shelving/partitions)
- Wood Product (paper mill, sawmills, wood product manufacturing)

Of interest, these top industry employers align with the outcomes of the supply chain analysis that identified these industries as our region's Sectors of Impact for future growth and opportunity. Although the future industries of employment remain somewhat aligned with current statistics, the fact remains that a shift in opportunities for jobs is occurring, with wood products dropping in significance while healthcare, tourism & hospitality, and retail are on the up-swing.

In addition to the job opportunities, we have clear evidence that the characteristics of future industry opportunities will require a concentrated shift in education and workforce/skills training to adapt persons to future employment opportunities. The platform needed to build the future workforce will require collaboration between education and skills/training with business owners to assure that the necessary skills are being developed in the region's future workforce.

Region's Workforce Demographics

The changes in the industrial and occupational composition of the region's economy – as seen in the recent mill closure events – have highlighted two critical issues for future success of workers and the overall economy. These include the dual factors of an aging workforce and the skill and education gaps that characterize the workforce in general.

Aging Workforce

Trends in Maine's population and workforce present challenges and opportunities. Maine has the oldest population in the nation. The large baby boom generation, currently in their 50s and 60s, is aging toward retirement. At the same time, the number of births per year has fallen below the number of deaths, resulting in natural decrease in population (births minus deaths). Between 2010 and 2030 Maine's working-age population (ages 20 through 64) is projected to shrink by 14 percent from 805,700 to 696,300 – a loss of 109,400 potential workers.

Like the state, the region will be challenged by a rapidly aging population. Between 2010 and 2030 the region is projected to lose 15 percent of working age population (ages 20 through 64); within the region, outlook ranges from a loss of 9 percent (Penobscot County) to 27 percent (Hancock) and 31 percent (Piscataquis County) of working age population.

In the near-term (through 2020) we expect modest labor force growth as the first baby boomers reach traditional retirement age and many continue to work. Labor force participation among people over age 60 initially increases, presenting an opportunity to find ways to capitalize on the skills and experience of older workers who continue in their current careers or in "encore" careers.

However, in less than a decade, labor force participation is likely to decline as increasing numbers of baby boomers age into their 70s and beyond. Exiting older workers will outnumber

young people entering the labor force. Compounding this situation is the fact that older workers generally have more experience, higher earnings, higher labor force participation rates, and lower unemployment rates than younger workers who are still developing the skills and experience necessary for success. The challenge facing employers is two-fold: a deficit of younger workers to replace older workers leaving the labor force; and accelerating losses of skilled and experienced employees.

The economic development challenge for the region will be greater due to these changes. Eastern Maine and the four counties comprising our region are characterized by an aging population. The median age for the counties is as follows:

- Hancock 46.7
- Penobscot 40.4
- Piscataquis 48.5
- Waldo 44.4

This compares to a median age of 37.6 for the U.S. (American Factfinder, 2013). For these same counties, the percent of persons age 40 and older is 58.9% (Hancock), 50.6% (Penobscot), 61.2% (Piscataquis), and 55.9% (Waldo). Workers available for employment in Eastern Maine consist of a large older worker and senior population. This aging workforce phenomena is particular acute for manufacturing where the number of older workers is almost seven times higher than in the information sector. This is particularly true of the paper industry where over 70% of the workers are over 50 years of age.

A research brief from the Center for Workforce Research and Information and published by the Maine Department of Labor reports that the window for retiring baby boomers reaching the age of 65 began in 2011, with the youngest baby boomers reaching that age in 2029. This impact of this data is already surfacing and the effects of our aging, slowing growing population will result in a slow labor force growth in the coming years. Add to this the recent impacts of number mill closures, those entering retirement have increased with many opting for early retirement.

The aging of the workforce is predicted to create both a labor and skill shortage across many industries with negative impacts on productivity and sectoral shifts driven by workforce supply and demand factors. This will require adjustments in both the labor market and the employment and training system that prepares workers for jobs. One adjustment that we have identified and will have to be made is in the area of technology and networks needed to increase the flow of information to connect workers to potential employers and locate jobs that fit older workers skills and situations. Improvements in digital access, including the broadening of higher education through that access, is imperative to enhance the labor market to ensure that workers are available and equipped with the skills required for the region's future economy.

Educational Attainment

The educational attainment of residents in Eastern Maine can be characterized as follows:

Hancock		
	Percent high school graduate or higher	92.5%
	Percent bachelor's degree or higher	33.0%

Penobscot		
Percent high school graduate or higher		90.7%
Percent bachelor's degree or higher		23.8%
Piscataquis		
Percent high school graduate or higher		87.8%
Percent bachelor's degree or higher		16.4%
Waldo		
Percent high school graduate or higher		91.2%
Percent bachelor's degree or higher		28.2%

While a high percent of residents attain a high school or equivalent diploma, a considerably smaller number continue on to college and graduate school. This lack of post-secondary education and training creates a significant drag on the capacity of the region's businesses and industries to grow, to diversify and compete on a global level.

Forty-three percent of net job growth is expected to occur in occupations requiring some form of post-secondary training or credential; twenty-five of the forty fastest growing occupations fall into this category. On the other end of the spectrum, of the forty occupations expected to lose the most jobs, most are occupations that require a high school diploma or less for entry. Workers entering or returning to the job market with lower levels of education are less likely to find a job or prosper in an economy that places a premium on education or training beyond high school.

How the region is currently combating the Skills Gap is reflected in the output of the region's post-secondary educational system. Data for 2014 shows that the four leading areas of program completion includes graduates of business, management, marketing and related support services programs; health professionals; engineering and engineering technologies; and education professionals.

While these programs are supplying much needed human capital for the region's businesses, much more needs to be done to increase the supply of post-secondary trained workers.

Skill Gap Analysis

EMDC's region, like Maine as a whole, is home to many individuals who need a job or a better job and many businesses that need high-skilled and well educated workers. However, the gap between current and future workforce skills is creating significant mismatches between the two groups which, in turn, results in barriers to employment.

In addition to the trend toward jobs at the upper and lower ends of the education and earnings spectrums, the flattening of organizations in all sectors puts a premium on self-organization, self-management, and personal initiative by workers at all organizational levels. Specialization of functions is becoming a thing of the past as workers increasingly are given more diverse sets of responsibilities not only requiring higher knowledge and skills but also raising occupational qualifications. Jobs that once required little more than a strong back or manual dexterity now

require higher levels of reading comprehension and skills in communication, critical thinking, and decision making.

According to research data collected by the Maine Department of Labor job vacancy surveys identify occupations with persistently high rates of openings and are an effective way to precisely identify knowledge and skill gaps and identify occupations in which employers are persistently challenged to find staff. In conjunction with occupational projections, job vacancy data provides another tool with which to target limited training and educational resources, better serving both employers and job seekers.

In addition to current job vacancy data, we can use O*Net skill importance ratings to compare and contrast occupations in demand to occupations projected to decline between 2012 and 2022. The following table lists twelve skills of relative importance to eleven high-growth high-wage in-demand occupations; only skills with an average rating of 50 or higher (where 100 = most important) are selected for comparison.

Skill	Average skills importance rating		
	High Wage, High Growth, In Demand Occupations	Declining Occupations	
		Production	Office and Admin. Support
Active Listening	64	47	63
Critical Thinking	63	50	51
Speaking	63	47	64
Reading Comprehension	60	46	52
Judgment and Decision Making	57	43	47
Monitoring	57	51	49
Social Perceptiveness	55	45	54
Complex Problem Solving	53	42	44
Coordination	53	45	51
Time Management	53	46	51
Writing	51	35	44
Active Learning	50	34	41

Thirty-four of forty occupations with the highest projected losses have an entry requirement of high school diploma or less; of these, eighteen are production and seven are office and administrative support occupations. Skill ratings for the declining occupations were averaged for each group. Differences between the average for in-demand occupations and the averages for declining occupations indicate potential skill mismatches.

On the whole, average skill ratings for office and administrative support occupations are closer to growing occupations, with the largest gaps in critical thinking, judgment and decision making and complex problem solving. Ratings for production occupations differ by a larger margin from growing occupations in nearly all skills, with the largest gaps in active learning, writing, active listening, speaking and judgment and decision making.

This analysis looks only at those good-paying, growing occupations that do not usually require a post-secondary education or credential. The reality for many or most workers displaced from declining occupations is that they will need additional education or training to qualify for work in an occupation that offers similar wages. This is particularly true of workers displaced from well-paying production jobs.

Workforce Development Strategies

Closing the growing skill mismatches between worker and businesses has reached a critical stage within the region. To give workers the best chance of a successful transition in this job market, it is important that workforce programs connect with the businesses in demand industries and work to understand the skills required to meet their needs. We know from our discussion with employers that they are increasingly demanding proof of competency of workers not only in formal degrees but also through industry-based certification programs and credentials. This is consistent with the trend that the majority of new jobs projected in Maine require some type of post-secondary training or education. We know that this is true for employers in high demand high wage sectors such as healthcare, business services, advanced manufacturing and construction who are hiring workers into positions requiring at least community college-level specific occupational skills preparation with advanced IT, technical and financial management skills. But we also that for employers who are hiring into high growth but relatively low-skilled, entry positions such as retail and some leisure and hospitality sectors, that basic employability, customer service and communication skills are crucial. Feedback from employers generated in various venues including focus groups, one-on-one meetings, and survey responses has indicated that basic and higher levels of “soft” skills including communication skills, computer skills, teamwork skills and supervisory skills are needed across the workforce.

To address these issues EMDC and its partners in the education and training sector, regional businesses and economic development partners will pursue a mix of strategies including the following.

EMDC will promote partnerships and linkages with businesses, professional service organizations, and trade associations to support sector goals.

The EMDC has progressively built direct links in with its business and economic development partners within the region to best respond to challenging economic conditions. Maintaining existing relationships and developing relationships with new employers continues to be a primary goal of the EMDC. As the Workforce Innovation and Opportunity Act (WIOA) Service Provider, and the Economic Development District (EDD) for the region EMDC’s overall approach has been to engage businesses directly to find out what their current and future needs

are, and to work with them to customize workforce services to meet those needs. We currently works with hundreds of businesses each year providing workforce development services, business counseling, loans for expansions, business training, and technical assistance with government contracting.

The coordination of employer outreach for both economic development and workforce development services has helped create a single point of contact for those businesses so that they can access the services on demand. Over the past six years EMDC has also worked systematically to bring business and industry to the table to develop new training programs and to engage individual employers in preparing workers for the reality and expectations of the modern workplace.

Through successful implementation of the following strategies, the EMDC will increase the number of employers engaged in the transformation of the region's workforce development and economic development systems. These will include:

- Enhance Career Development Education in Grades K-12 throughout the Region: Through school based forums, develop locally relevant place-based curriculum, and create internships with a strong connection to business and the development of entrepreneurial skills.
- Leverage partnerships to conduct skills assessments in preparation for programs to assure that employer's needs are understood and that potential employees have the training and skills necessary to meet those needs.
- Apprenticeships/Internships: Encourage educational programs using the apprenticeship/internship model to provide "real life" experience as part of curriculum.
- Expand the use of nontraditional financing options in our region to support start up or expansion of small business.
- EMDC will also consult directly with local businesses to better understand their needs in several ways. One approach will be to continue the process of bringing small groups together in business roundtable discussions, or focus groups, such as what we have done during this project including with the boat building industry in Hancock County, the hospitality industry in Penobscot County or the forest products industry in Piscataquis and northern Penobscot county.
- EMDC will continue to build its website as an information portal and as a communication tool related to the workforce system activities, and as a venue to create consistent messaging with accurate data to the employer community. EMDC has also developed a Facebook page that is used to share information on upcoming events with users of that system. EMDC will also explore strategies with its partners to increase branding and awareness of the region's workforce services and to reach new employer audiences.
- EMDC, will continue to survey business leaders, collecting data on various factors that contribute to their companies' growth, employment demand and potential skill shortages and accordingly will share with our regional partners.

EMDC will create new workforce development service delivery solutions for businesses including, but not limited to developing: career ladders, industry-recognize credentials, and/or customized delivery of workforce development services.

Strategies that align training benefits with current business recruitment and staffing needs are a priority of EMDC. This includes efforts to identify and coordinate short-term training programs that will result in industry-recognized certification leading directly to job placement for individuals enrolled in workforce programs. We will also continue to utilize other training strategies such as OJT, customized training and apprenticeship to train and place unemployed workers in self-sufficient employment.

The EMDC is also building on its commitment by consistently exploring ways to best incorporate partnerships and collaborations in all aspects of its efforts to develop new training programs. This approach incorporates a process that brings educators and businesses together to jointly design and implement new training programs in growing sectors such as health information technology, green construction, Composite technology, Bio-Manufacturing, tourism and hospitality sectors has improved immediate outcomes including employment and earnings of participants as well as employment retention and credential rates. The resultant training offerings will ensure that workers have the appropriate occupational skills instruction along with needed basic skills, work readiness training and job placement services to ensure direct placement into the target industry. In all cases the emphasis will be on ensuring that the training and education provided results in credentials that are consistent with the career ladders potentially available to workers either on-the-job or through further education pathways.

EMDC will ensure that businesses are offered the full spectrum of workforce services, including: layoff aversion strategies, On-the-Job training, customized and incumbent worker training, employee recruitment, employee development, labor market information, access to labor market data and other business data.

Research has shown that regions with a highly educated workforce also experience economic growth in terms of business attraction and development, as well as higher income levels for people in the region. Attaining a college degree or returning to school to receive advanced education and training is important to assure that skills match the needs of desired employers. Despite increased opportunity for educators to partner with businesses in workforce training and development, there remains a disconnection between education provided and employment opportunities. Actions suggested to address this need include:

- Better integrate the business sector with the education sector whereby the education system can be responsive to meet the current and future workforce needs.
- Encourage lifelong learning and the methods to address this through transferability of courses, encouragement by business to advance skills, access to courses, and affordability.
- Curriculum development that is driven by industry needs and with business involvement at all levels.
- Develop programs that assist with the retention/creation/attraction of business opportunities in the identified growth sectors in order to retain/attract/develop highly qualified employees.
- Develop a regional focus on ensuring students and workers have knowledge of identified career pathways and are ready to work upon graduation.

- The EMDC will also work closely with its partners to assure that employers have access to workforce training and information services including On-the-Job Training, Customized Training and Apprenticeship training services, and information on other education and training resources and programs in the region; labor market information, and business assistance information and referral.

Summary

The EMDC and its partners currently provide basic workforce development services through the One-Stop Career Center and affiliated sites throughout the region. Our primary goal as the workforce Service Provider in the region is to increase the quality and match between job seekers and employers by providing a full range of services including but not limited to: recruiting, screening, assessing applicants for job openings; working with employers to develop new strategies for attracting, employing and retaining diverse populations; developing strategies for businesses to address specific employee populations such as youth, older workers, individuals with disabilities, veterans and others; analyzing wages; developing job descriptions and consulting and identifying resources for other business needs and challenges.

As a result of the strategic planning that the region has engaged over the past year EMDC is better positioned to provide these services and to more effectively engage businesses by becoming a conduit and single point of contact for employers who need to access these services and to coordinate closely with all partners, the educational system partners and the economic development system partners to connect service providers with businesses as specific employer needs arise.