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March 2004

Dear Workforce Professionals and Interested Parties:

The recently completed State of the Workforce Report (SOWR) was commissioned and designed to provide partners and stakeholders in the Workforce Development System with data, information, and analyses that will assist them in developing strategies and plans that meet the emerging workforce needs of Maryland's economy. The Governor's Workforce Investment Board (GWIB) and the local Workforce Investment Boards (WIBs) will take the lead in working with Maryland's growth industries to link economic development plans with workforce development plans. The information in the SOWR depicts State, County and Regional profiles and patterns.

Most of the data, which runs through 2001, is the latest available data from various State and Federal resources. Data, in general, is currently being converted from the traditional Standard Industrial Codes (SIC) to the newer North American Industrial Codes (NAIC). In some cases, this conversion interfered with the access of the most recent data. As this conversion nears completion, and as funds are available, we intend to update the SOWR.

As is usually the case, there is some good news and some bad news. The good news is that we enjoy the competitive advantage of having one of the best-educated and highly trained workforces in the Nation. This has enabled us to maintain a relatively stable economy with relatively low unemployment and workers that receive higher wages on average than most other states.

The not so good news is that, unless the GWIB and the local WIBs devise some effective workforce development strategies and plans, we will face a severe shortage of workers in the coming years. This shortage is primarily influenced by the "baby boomers" retiring and fewer new workers coming into the system. Needs and demands vary around the State which means that all stakeholders in this workforce development system will have to work together to ensure that we continue to support Maryland's economic growth.

The GWIB Healthcare Workforce Initiative and the Healthcare Steering Committee demonstrate that business, education and government can work together to effectively address workforce development challenges. We will use the Initiative as a model to address business workforce needs in other growth industries.

All stakeholders; business, education and government, should find data and direction in this report useful in creating strategies and plans that will result in workforce development initiatives to address identified business needs and, thereby, foster meaningful employment for all Marylanders.

The GWIB and staff want to acknowledge and thank the Jacob France Center of the University of Baltimore, the Executive Directors of the local WIBs and the Labor Market Information Service of the Department of Labor, Licensing and Regulation for their thoughtful and professional work in completing this report.

Sincerely,

Robert W. Seurkamp
Executive Director
Governor's Workforce Investment Board

State of the Workforce Executive Summary

Maryland's highly educated and productive workforce is among the chief economic development assets of the State. Maryland is one of the top states nationally in terms of educational attainment, personal income per capita, and scientists and engineers in the workforce. Maryland's strong network of colleges and universities, community colleges, and public and private training providers continues to produce highly educated and highly skilled workers. This report analyzes workforce supply and demand conditions in Maryland, using available metrics of both workforce and job characteristics.

Workforce Supply

Employment

- From 1990 to 2000, the number of persons employed in Maryland increased by 5%.
- The number of employed residents of Anne Arundel County increased by 12%.
- The number of employed residents of Frederick County increased by 27%.
- The number of employed residents in Mid-Maryland increased by 22%.
- The number of employed Southern Maryland residents increased by 21%.
- The number of employed residents of the Susquehanna region increased by 20%.

Educational Attainment

High School Graduation Rates

- Fifty-five percent (55%) of Maryland High School graduates in 2001 were going off to college.
- In Baltimore City, 53% of the high school graduates were going off to colleges or universities.
- In Frederick County, 61% of the high school graduates were going off to colleges or universities.
- In the Mid-Maryland region, 68% of the high school graduates were going off to colleges or universities.
- In Montgomery County, 74% of the high school graduates were going off to colleges or universities.

Four-Year College Graduates

- Public institutions awarded degrees to 23,282 persons in 2001 while private colleges and universities awarded degrees to 10,870 persons. Seventeen percent (17%) received degrees in business programs, 12% received degrees in education programs, 9% received degrees in health programs, 6% received degrees in computer science programs, 5% received degrees in biological science programs, 5% earned degrees in engineering programs, and 1% earned degrees in physical science programs. This supply of highly educated workers helps drive Maryland's important high technology, health, business and professional services, and government sectors.
- Baltimore City public and private colleges and universities awarded 11,785 degrees in 2001. This represents 35% of all Maryland college and university graduates. Of these degrees, 19% were in business related programs, 18% were in health related programs, 10% were in education related programs, 6% were in engineering programs, 4% were in biological science programs, 4% were in computer science programs, and 2% were in physical sciences programs.

- Baltimore County public and private colleges and universities awarded 5,931 degrees in 2001. Of these degrees, 15% were in computer science programs, 14% were in education related programs, 8% were in business related programs, 7% were in health related programs, 6% were in biological science programs, 2% were in engineering programs, and 1% were in physical sciences programs.
- Prince George's County public and private colleges and universities awarded 10,840 degrees in 2001. Of these degrees, 22% were in business related programs, 10% were in education related programs, 9% were in engineering programs, 5% were in computer science programs, 5% were in biological science programs, 2% were in health related programs, and 1% were in physical sciences programs.

Hard to Serve Populations

- Hard to Serve populations include persons in poverty, persons receiving welfare and persons who are on active parole. These hard to serve populations are often outside of the current economic mainstream, are often poor, and have difficulty finding work, often at least in part, due to the low levels of educational attainment or occupational skills. These populations represent a key potential target for Maryland's workforce development system in that targeted investment can create opportunities for employment mobility and improvements in earnings among these populations. These hard-to-serve populations represent 9% of Maryland's total population. From 1990 to 2000, the percentage of persons living in poverty in Maryland increased by 14% while the percentage of families living in poverty increased by 11%. Additionally, in 2001, according to the Maryland Department of Human Resources, there were a total of 19,888 persons in Maryland that received welfare assistance. The number of persons in Maryland on active parole as of September 1, 2002 was 3,778 persons.
- The number of persons in poverty decreased by 8% from 1990 to 2000 and the number of families in poverty decreased by 11%. In 2001, 12,768 adult persons in Baltimore City received welfare assistance and 1,995 persons were on active parole.
- In the Upper Shore region, the number of persons in poverty increased by 8% from 1990 to 2000 and the number of families in poverty increased by 6%. In 2001, 343 adults in the Upper Shore region received welfare assistance and 237 persons were on active parole.
- In Western Maryland, the percentage of persons in poverty fell by 3% from 1990 to 2000 and the percentage of families in poverty decreased by 14%. In 2001, 312 persons in Western Maryland received welfare assistance and 171 persons were on active parole.

Workforce Demand

Employment and Employment Growth

- From 1996 to 2001, the total number of persons employed in Maryland increased by 11%. Over 2000 to 2010, total Maryland employment is projected to increase by 16%, and create a total of 926,387 job openings due to the combination of economic growth and replacement demand. Maryland's employment growth was led by gains in several key sectors of the State's economy. Employment in the construction sector increased by 24% from 1996 to 2001. Services employment in Maryland grew by 19% and transportation, communications and public utilities employment grew by 11% from 1996 to 2001. The only sector in Maryland that lost employment was manufacturing which declined by 2% from 1996 to 2001.
- The number of persons employed in Frederick County increased by 23% from 1996 to 2001. Over 2000 to 2010, total County employment is projected to increase by 34% and create a total of

43,529 job openings. The County's employment growth from 1996 to 2001 was led by job growth in the construction sector (32%), services (30%), transportation, communications and public utilities (23%), and retail trade sector (21%).

- The number of persons employed in the Mid-Maryland region increased by 23% from 1996 to 2001. Over 2000 to 2010, total Mid-Maryland employment is projected to increase by 32% and create a total of 97,227 job openings. The Mid-Maryland's employment growth from 1996 to 2001 was led by several key sectors: construction (37%), services (32%), wholesale trade (26%), and retail trade (20%).
- Employment in Southern Maryland increased by 22% from 1996 to 2001. Between 2000 and 2010, total Southern Maryland employment is projected to increase by 31% and create a total of 47,572 job openings. Southern Maryland's employment growth from 1996 to 2001 was led by several key sectors: services (31%), government (27%), and construction (25%).

Job Openings

Occupational Openings from Economic Growth

- In Maryland, the top five job openings created by economic growth alone are computer and mathematical occupations, managerial occupations, office and administrative support occupations, sales and related occupations, and healthcare practitioners and technical occupations. These occupations account for 46% of the total job openings from economic job growth.
- In Baltimore City, the top five fastest growing occupational groups by total annual openings account for 54% of total annual openings. The five fastest growing occupational groups by total annual openings are office and administrative support occupations (1,563 jobs), management occupations (884 jobs), healthcare practitioners and technical occupations (843 jobs), education, training and library occupations (812 jobs), and sales and related occupations (802 jobs).
- The top five fastest growing occupations from economic growth in Montgomery County account for 54% of total openings due to economic growth. The five fastest growing occupations by economic growth are computer and mathematical occupations (1,434 jobs), management occupations (923 jobs), office and administrative support occupations (783 jobs), healthcare practitioners and technical occupations (551 jobs), and business and financial operations occupations (530 jobs).
- The top five fastest growing occupations from economic growth in Prince George's County account for 51% of total openings from economic growth. The five fastest growing occupations by economic growth are computer and mathematical occupations (594 jobs), construction and extraction occupations (533 jobs), education, training and library occupations (525 jobs), management occupations (432 jobs), and office and administrative support occupations (359 jobs).

Key Skills of Leading Occupations

- The top 25 job creating occupations in Maryland are dominated by lower skilled occupations, such as Retail Sales Persons, Cashiers, Waiters and Waitresses, Food Preparation Workers, and Stock Clerks, that dominate the residential demand based industries that serve Maryland's growing population. As a result, the most critical skills for Maryland's leading job-creating occupations are dominated by basic skills, such as Active Listening, Reading Comprehension, Speaking, Writing, and a Service Orientation. Furthermore, as is the case with Maryland's overall labor market, the top job creating occupations are highly bifurcated in terms of educational and skills requirements. Nineteen of Maryland's 25 top job creating occupations only require basic on-the-job training,

while five require a Bachelors degree or higher. Mid-skill level occupations represent a small base of either total employment in Maryland or of the top job creating industries. This finding highlights a core difficulty confronting Maryland's workforce development system. This is the need for improved basic skills training in Maryland's high schools.

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State of the Workforce – Maryland

Maryland’s highly educated and productive workforce is among the chief economic development assets of the State. Maryland is one of the top states nationally in terms of educational attainment, personal income per capita, and scientists and engineers in the workforce. Maryland’s strong network of colleges and universities, community colleges, and public and private training providers continues to produce highly educated and highly skilled workers. This report analyzes workforce supply and demand conditions in Maryland, using available metrics of both workforce and job characteristics.

Maryland’s Workforce Supply

From 1990 to 2000, Maryland’s civilian labor force increased by 6% (see Table 1). During that same time, the number of persons employed in Maryland increased by 5%. In 2000, 68% of Maryland’s population aged 16 and over were in the civilian labor force. Maryland is recognized as having a highly educated workforce. Using the most recent United States Bureau of the Census data, it is possible to analyze the education attainment of Maryland residents’ aged 25 or over. From 1990 to 2000, the overall level of educational attainment of Maryland’s workforce increased significantly. The percentage of Maryland residents aged 25 or higher with less than a high school diploma fell dramatically, from 22% to 16%, and the percentage of Maryland workers with a Bachelor’s degree or higher increased from 32% to 37%. The percentage of Maryland workers with a Bachelor’s degree increased by 29% between 1990 and 2000 and the number of workers with a graduate or professional degree increased by 39%.

Table 1
Employment Status of Maryland Residents

	1990	2000	% Change
Working Age Population (16+)	3,736,830	4,085,942	9%
In Labor Force	2,639,896	2,769,525	5%
Civilian Labor Force	2,592,878	2,737,359	6%
Employed	2,481,342	2,608,457	5%
Unemployed	111,536	128,902	16%
Armed Forces	47,018	32,166	-32%
Not in Labor Force	1,096,934	1,316,417	20%

Table 2
Educational Attainment of Maryland Residents

	1990	2000	% Change
Population 25+	3,122,665	3,495,595	12%
Less Than High School	671,432	565,086	-16%
High school/GED	878,432	933,836	6%
Some College, No Degree	580,833	711,127	22%
Associate Degree	163,304	186,186	14%
Bachelor's Degree	486,695	629,304	29%
Graduate or Professional Degree	339,469	470,056	38%

While it is important to know the general characteristics of Maryland's work force, it is also important to know the supply of labor that is being produced by Maryland's educational institutions (see Table 3). Of the nearly 50,000 Maryland high school graduates in 2001, 55% were going off to college with the remaining 45% available to enter the workforce or pursue other educational opportunities. Additionally, we also looked at the supply of workers produced by Maryland's community colleges and four-year institutions in key areas of interest to the State's labor market. There were a total of 6,901 community college graduates in 2001. Five percent (5%) received degrees in computer technology programs, 11% received degrees in business programs, and 17% received degrees in health related programs. Four-year public colleges and universities in Maryland produce the greatest number of degree receiving individuals in Maryland. Public institutions awarded degrees to 23,282 persons in 2001 while private colleges and universities awarded degrees to 10,870 persons. Seventeen percent (17%) received degrees in business programs, 12% received degrees in education programs, 9% received degrees in health programs, 6% received degrees in computer science programs, 5% received degrees in biological science programs, 5% earned degrees in engineering programs, and 1% earned degrees in physical science programs. This supply of highly educated workers helps drive Maryland's important high technology, health, business and professional services, and government sectors.

Table 3
Workforce Supply Characteristics

	2001			
High School Graduates	49,569			
Attending College	55%			
Community College Graduates	6,901			
Business Technology	737			
Computer Technology	356			
Health Technology	1,139			
		Bachelor's	Masters	Doctorate
		Professional		
Four-Year College Graduates	22,082	10,103	964	1,003
Public	16,967	4,909	556	850
Private	5,115	5,194	408	153
Biological Sciences	1,366	247	157	0
Business	3,151	2,811	6	0
Computer Science	1,358	709	26	0
Education	1,610	2,482	59	0
Engineering	906	679	155	0
Health	1,238	1,100	146	489
Physical Sciences	228	152	72	0

While it is important to know the supply of workers from Maryland's educational institutions, there is an additional pool of potential workers that are important to the State's workforce. These are individuals that are part of hard to serve populations (Table 4). This includes persons in poverty, persons receiving welfare and persons who are on active parole. These hard to serve populations are often outside of the current economic mainstream, are often poor, and have difficulty finding work, often at least in part, due to the low levels of educational attainment or occupational skills. These populations represent a key potential target for Maryland's workforce development system in that targeted investment can create opportunities for employment mobility and improvements in earnings among these populations. Furthermore, with unemployment below 4% in Maryland and below 3% in several Maryland jurisdictions, these populations represent a potential underutilized source of labor. These hard-to-serve populations represent 9% of Maryland's total population. From 1990 to 2000, the percentage of persons living in poverty in Maryland increased by 14% while the percentage of families living in poverty increased by 11%. Additionally, in 2001, according to the Maryland Department of Human Resources, there were a total of 19,888 persons in Maryland that received welfare assistance. The number of persons in Maryland on active parole as of September 1, 2002 was 3,778 persons. These hard to serve populations often face significant barriers of entry into the workforce such as lack of skills, education, or even a permanent residence, but with assistance and training, can become an additional supply of labor to fill the demand created by businesses in the State.

Table 4
Hard to Serve Populations in Maryland

	2001		
Welfare Population	19,888		
Active Parole	3,778		
	1990	2000	% Change
Individuals in Poverty	385,296	438,676	14%
Families in Poverty	75,313	83,232	11%

Maryland Workforce Demand

Maryland Employment and Employment Growth

From 1996 to 2001, the total number of persons employed in Maryland increased by 11% (Table 5). Over 2000 to 2010, total Maryland employment is projected to increase by 16%, and create a total of 926,387 job openings due to the combination of economic growth and replacement demand. Job openings from economic growth occur when firms start, move into, or expand in the state. Openings due to replacement demand are those jobs that are created by persons leaving an occupation and are not expected to return.

Maryland's employment growth was led by gains in several key sectors of the State's economy. Employment in the construction sector increased by 24% from 1996 to 2001. This is evident in the national housing boom that while less strong now, continues in Maryland. Services employment in Maryland grew by 19% and transportation, communications and public utilities employment grew by 11% from 1996 to 2001. The only sector in Maryland that lost employment was manufacturing which declined by 2% from 1996 to 2001.

Maryland employment was forecast for 2000 to 2010 for this report. The industries that are projected to gain the greatest number of jobs due to economic growth are services, retail trade and finance, insurance and real estate. Industries projected to experience the greatest number of total job openings due to both economic growth and replacement demand, are services, retail trade, and construction.

Five industry clusters - construction, health care, hospitality and tourism, education, and high technology - have been identified by the Governor's Workforce Investment Board as being vital to the future of the economy and workforce of Maryland. Key employment trends were tracked for these five industry clusters and are as follows:

- Maryland's **construction** industry accounts for 7% of the State's total employment. Workers on average earned \$769 per week. From 2000 to 2010, it is expected that a total of 18,568 new construction jobs will be created.

- In Maryland, the **health care** industry accounts for 9% of total employment and workers earn on average \$753 per week. It is projected that Maryland will add 47,522 health care workers from 2000 to 2010.
- The **hospitality and tourism** industry in Maryland accounts for 12% of total State employment and workers earn on average \$351 per week. The low earnings in this sector is largely due to the lower level of formal education or occupational skills required for these positions. This sector is expected to add 35,569 jobs from 2000 to 2010.
- Maryland's public **education** employees account for 7% of the State's total employment. Workers earn on average \$712 weekly. From 2000 to 2010, Maryland is expected to add 26,807 public education workers.
- Maryland's **high technology** sector is vital to its growth and development. High technology employment accounts for 7% of Maryland's total employment and workers earn \$1,299 per week on average. A total of 48,271 new high technology jobs are projected to be created in Maryland from 2000 to 2010. Information technology workers account for 3% of Maryland's total employment and earn on average \$1,360 per week. Information technology employment is expected to increase by 33,254 jobs from 2000 to 2010.

Maryland Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	2,175,520	2,422,078	11%	\$735	147,573	2,394,303	2,778,266	383,963	542,424	926,387
Government Total	408,046	441,435	8%	\$839	1,841	268,061	275,068	7,007	50,893	57,900
Federal Government	127,953	126,784	-1%	\$1,151	886	128,528	123,268	0	23,195	23,195
State Government	90,352	96,674	7%	\$751	396	58,501	64,055	5,554	10,732	16,286
Local Government	189,741	217,977	15%	\$697	559	81,032	87,745	6,713	16,966	23,679
Private Total	1,767,474	1,980,643	12%	\$712	145,732	2,126,242	2,503,198	376,956	491,531	868,487
Agriculture, Forestry and Fishing	19,629	23,815	21%	\$481	2,912	23,203	28,746	5,543	4,700	10,243
Mining	1,389	1,552	12%	\$981	86	1,404	1,076	-328	228	228
Construction	132,662	163,949	24%	\$769	16,079	156,826	175,394	18,568	30,349	48,917
Manufacturing	181,190	176,849	-2%	\$910	4,711	180,130	174,984	-5,146	35,926	35,926
TCPU ¹	100,515	111,990	11%	\$856	5,861	111,531	129,029	17,498	23,518	41,016
Wholesale Trade	105,372	112,783	7%	\$974	10,707	114,492	126,657	12,165	24,072	36,237
Retail Trade	417,566	441,253	6%	\$381	25,649	442,180	490,463	48,283	137,251	185,534
FIRE ²	132,998	143,162	8%	\$1,018	12,199	138,156	157,695	19,539	24,623	44,162
Services	674,598	799,479	19%	\$734	63,932	958,320	1,219,154	260,834	210,864	471,698
NonClassifiable	1,555	5,811	274%	\$805	3,596					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Maryland Industry Clusters

Industry Cluster	Employment Growth				Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001			2000	2010	Growth	Replacements	Total
Construction	133,006	164,179	7%	\$769	156,826	175,394	18,568	30,349	48,917
Health Care	201,326	211,672	9%	\$753	197,015	244,537	47,522	40,449	87,971
Hospitality and Tourism	265,063	288,822	12%	\$351	272,115	307,684	35,569	89,711	125,280
Education - Public	141,270	167,902	7%	\$712	194,388	221,195	26,807	42,940	69,747
Education - Private	29,261	37,254	2%	\$698			(Included in Education - Public)		
High Technology	140,365	173,953	7%	\$1,299	170,361	221,808	51,447	32,021	83,468
Information Technology	60,268	81,159	3%	\$1,360	80,139	113,393	33,254	13,110	46,364

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Knowing the sectors of the economy that are key drivers of the economy, growing rapidly, or creating large numbers of jobs is also important for use in planning and making workforce development investment decisions. In order to support workforce development planning, this report analyzes the five Maryland industries displaying the greatest growth in terms of overall employment growth, percentage change in employment growth, or represent a key sector of the State economy – measured using location quotients.

- The top job creating industries are analyzed because these are the industries that created the most jobs over the past five years and represent the key potential customers of the workforce development system.
- The fastest growing (in percentage growth terms) industries are analyzed because these rapid growth industries may represent the key future customers of the workforce development system or sectors where specialized skills training may be needed to support rapid business expansion. However, it is important to note that these industries may have only a small base of employment.
- The key economic driver – high location quotient – industries are analyzed because these industries represent key sectors that represent an above average concentration of employment in the State. For more information on location quotients, reference the data appendix.

From the period of 1996 to 2001, the top five employment growth industries in Maryland were, elementary and secondary schools, computer programming and data processing services, personnel supply services, management and public relations services, and colleges, universities, professional schools, and junior colleges. These five industry clusters added a total of 77,827 jobs (see Table 6). The five fastest growing industries in Maryland from 1996 to 2001 were schools and educational services, not elsewhere classified; drugs, drug proprietaries, and druggist sundries; services allied with the exchange of securities or commodities; job training and vocational rehabilitation services; and communication equipment. These industries were spread across several sectors of the economy from education to finance insurance and real estate, to services. On average these five industry clusters grew by over 74% from 1996 to 2001 compared to total employment growth in Maryland of 11% over the same time period. Those industries having the highest concentration of employment in relation to the national average – measured by the highest LQ - are search and navigation equipment, professional membership organizations, liquor stores, guided missiles, space vehicles and parts, and research and testing services. Three of Maryland's five high LQ industries are classified as high technology industries, indicating the importance of high technology to the State.

**Table 6
State of Maryland**

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Elementary And Secondary Schools	24,998
Computer Programming, Data Processing, And Other Computer Related Service	17,648
Personnel Supply Services	15,390
Management And Public Relations Services	10,164
Colleges, Universities, Professional Schools, And Junior Colleges	9,627

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Schools And Educational Services, Not Elsewhere Classified	117.7
Drugs, Drug Proprietaries, And Druggists' Sundries	84.2
Services Allied With The Exchange Of Securities Or Commodities	59.6
Job Training And Vocational Rehabilitation Services	55.0
Communications Equipment	54.5

Top 5 Location Quotients (LQ)

Industry Title	LQ
Search, Detection, Navigation, Guidance, Aeronautical, And Nautical	3.8
Professional Membership Organizations	2.9
Research, Development, And Testing Services	2.5
Liquor Stores	2.4
Guided Missiles And Space Vehicles And Parts	2.1

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Maryland Job Openings

Knowing which sectors and industries are growing or poised for growth is important, but yet only part of the picture. It is also important to know the characteristics of the jobs being created. This report analyzes job openings by both the key occupation and by the level of training and education required. Table 7 lists twenty-two occupational groups in Maryland, their projected annual growth from 2000 to 2010 from economic growth and from total openings.

Total Job Occupational Openings

The top five fastest growing occupational groups by total annual openings account for 48% of the total annual openings. These occupations are office and administrative support functions, sales and related occupations, food preparation and serving related occupations, managerial occupations, and transportation and material moving occupations. A majority of these occupations can be filled by the 45% of the State's high school graduates that are not attending a college or university. With the exception of managerial occupations, these jobs are primarily low-skill, low-wage positions. These occupations are important though in that they are jobs that support higher-wage, higher-skill occupations.

Occupational Openings from Economic Growth

When looking at job openings created by economic growth alone, the top five occupations are computer and mathematical occupations, managerial occupations, office and administrative support occupations, sales and related occupations, and healthcare practitioners and technical occupations. These occupations account for 46% of the total job openings from economic job growth. These jobs fit within the industries deemed as vital to future workforce development by GWIB, are higher-wage and higher-education/skill positions, with the exceptions of office and administrative support and sales and related occupations. These occupations are important in that they are those that are created by firms starting, expanding, or relocating to Maryland. This is an indicator of the strength of Maryland's economy and labor force.

Table 7
Maryland Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, All Occupations	2,394,303	2,778,266	38,396	54,229	92,625
Management Occupations	235,826	278,116	4,229	4,195	8,424
Business and Financial Operations Occupations	100,506	118,560	1,805	1,867	3,672
Computer and Mathematical Occupations	82,503	126,460	4,396	752	5,147
Architecture and Engineering Occupations	54,933	59,446	451	1,142	1,593
Life, Physical, and Social Science Occupations	29,612	34,652	504	878	1,382
Community and Social Services Occupations	41,283	54,651	1,337	628	1,965
Legal Occupations	17,355	21,549	419	152	571
Education, Training, and Library Occupations	139,884	167,652	2,777	3,048	5,825
Arts, Design, Entertainment, Sports, and Media Occupations	31,087	38,136	705	620	1,325
Healthcare Practitioners and Technical Occupations	115,457	143,693	2,824	2,296	5,120
Healthcare Support Occupations	49,318	66,275	1,696	964	2,659
Protective Service Occupations	41,944	51,538	959	1,279	2,238
Food Preparation and Serving Related Occupations	151,454	172,405	2,095	6,444	8,539
Building and Grounds Cleaning and Maintenance Occupations	79,199	93,555	1,436	1,618	3,054
Personal Care and Service Occupations	66,990	81,078	1,409	1,753	3,161
Sales and Related Occupations	230,226	259,812	2,959	6,905	9,864
Office and Administrative Support Occupations	419,760	453,388	3,363	8,408	11,771
Farming, Fishing, and Forestry Occupations	5,593	6,323	73	162	235
Construction and Extraction Occupations	121,884	138,611	1,673	2,405	4,077
Installation, Maintenance, and Repair Occupations	85,918	95,243	933	1,892	2,825
Production Occupations	134,560	136,538	198	3,079	3,277
Transportation and Material Moving Occupations	159,011	180,585	2,157	3,743	5,901

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Occupational Educational Requirements

Each of the occupations in Table 7 are assigned a level of education or training that workers must possess in order to fit the minimum requirements for the occupation. Table 8 lists eleven occupational educational levels and their projected growth from 2000 to 2010 from economic growth and replacement demand. Twenty-eight percent (28%) of total Maryland employment is in occupations requiring a Bachelor's degree, 5% require an Associates degree, 4% require post-secondary training, and 63% require only on the job training. Job openings created by economic growth have higher educational requirements than those created to meet replacement demand, with 36% requiring a Bachelor's degree, 7% requiring an Associates degree, 6% requiring post-secondary training, and 51% require only on the job training. Over 70% of job openings to meet replacement demand do not require more than on-the-job training. This indicates that the growing sectors of Maryland's economy have higher levels of formal educational requirements.

Table 8
Maryland Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	2,381,664	2,762,822	38,116	54,250	92,366
First professional degree	38,581	47,389	881	599	1,480
Doctoral degree	19,635	23,707	407	516	923
Master's degree	36,747	45,227	848	781	1,629
Work experience plus bachelor's or higher degree	202,514	241,044	3,853	3,571	7,424
Bachelor's degree	361,593	440,251	7,866	6,800	14,666
Associate degree	89,517	116,407	2,689	1,711	4,400
Postsecondary vocational training	93,073	114,353	2,128	2,007	4,135
Work experience in a related occupation	184,835	206,781	2,195	3,600	5,795
Long-term on-the-job training	156,580	175,398	1,882	3,202	5,084
Moderate-term on-the-job training	410,599	459,232	4,863	7,457	12,320
Short-term on-the-job training	787,990	893,033	10,504	24,006	34,510

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Key Skills of Leading Occupations

The top 25 job creating occupations in Maryland are dominated by lower skilled occupations, such as Retail Sales Persons, Cashiers, Waiters and Waitresses, Food Preparation Workers, and Stock Clerks, that dominate the residential demand based industries that serve Maryland's growing population. As a result, the most critical skills for Maryland's leading job-creating occupations are dominated by basic skills, such as Active Listening, Reading Comprehension, Speaking, Writing, and a Service Orientation. Furthermore, as is the case with Maryland's overall labor market, the top job creating occupations are highly bifurcated in terms of educational and skills requirements. Nineteen of Maryland's 25 top job creating occupations only require basic on-the-job training, while five require a Bachelors degree or higher. Mid-skill level occupations represent a small base of either total employment in Maryland or of the top job creating industries. This finding highlights a core difficulty confronting Maryland's workforce development system. This is the need for improved basic skills training in Maryland's high schools. According to the University of Baltimore's *Maryland Business Climate Survey* 38% of Maryland employers who hire workers with only a high school level of education are not satisfied with their basic skills.

Table 9
Most Important Skills for 25 Leading Job Creating Occupations

	Percent of Top 25 Occupations Requiring the Indicated Skill
Active Listening	84%
Reading Comprehension	84%
Speaking	80%
Writing	68%
Service Orientation	56%
Social Perceptiveness	52%
Coordination	44%
Mathematics	36%
Critical Thinking	24%
Equipment Selection	20%
Monitoring	20%
Operation and Control	20%

Source: Maryland Department of Labor, Licensing and Regulation

Summary

Maryland's future lies in its workforce. This is the supply of labor from which businesses will have to choose from when filling positions or looking to locate their business. The supply of labor is of primary concern to businesses in making business location decisions. Maryland is recognized as having one of the most educated and skilled workforces nationally. The question as to whether the supply of labor will meet the expected demand has been partially addressed by looking at indicators of the State's workforce and projected sector, industry, and occupational growth. The educational institutions within the State continue to produce a highly educated source of labor and over half of Maryland high school graduates are going off to college.

Anne Arundel County

Introduction

Anne Arundel County possesses a highly educated and productive workforce. One of the County's greatest assets is its location between Baltimore City and Washington, D.C. It is this location that makes it both a desirable place to reside and an attractive location for businesses. One of the greatest assets to the County is Baltimore Washington International airport and the recent expansion of business development, especially high technology business development, in the area surrounding the airport. Tourism is another of the County's strengths, with its historical locations and its vast waterfront. This report analyzes workforce supply and demand conditions in Anne Arundel County, using available metrics of both workforce and job characteristics.

Anne Arundel County's Workforce Supply

From 1990 to 2000, Anne Arundel County made significant gains in population and in the share of the County's workforce that have a degree from a college or university. With a growing population and an expanding business community, Anne Arundel is a desired place to both live and work. Employers such as the National Security Agency, Northrop Grumman, Arinc, and Verizon require workers that have a high level of education and skills. Several highlights of the supply of labor and the County's workforce are:

- The County's civilian labor force increased by 12% from 1990 to 2000. The County's labor force participation rate decreased slightly from 73% in 1990 to 71% in 2000.
- The number of employed residents of Anne Arundel County increased by 12% from 1990 to 2000.
- The percentage of persons aged 25 or older in Anne Arundel County having less than a high school diploma fell from 19% in 1990 to 14% in 2000, while the percentage of persons having a Bachelor's degree or higher increased from 25% to 31%.
- The number of Anne Arundel County residents with an Associates degree increased by 27% between 1990 and 2000, the percentage having a Bachelor's degree increased by 44%, and the percentage having a Graduate or Professional degree increased by 55%.
- Of the 4,344 high school graduates in 2001, 57% were going off to colleges or universities.
- There was a total of 979 community college graduates in 2001, with 7% earning degrees in business programs, 5% earning degrees in computer programs, and 13% earning degrees in health related programs.

- Hard to serve populations, such as persons receiving welfare and persons on active parole, represent a potential additional source of workers that business can recruit from. The number of persons in poverty increased by 32% from 1990 to 2000 and the number of families in poverty increased by 33%. In 2001, 671 adult persons in Anne Arundel County received welfare assistance and 90 persons were on active parole.

Anne Arundel County Workforce Demand

Anne Arundel County Employment and Employment Growth

In 2001, Anne Arundel County accounted for 8% of the State's workforce and outpaced the State in terms of total employment growth from 1996 to 2001. The transportation, communications and public utilities sector, services sector, and construction sector drove the County's economy from 1996 to 2001. Several highlights of the County's employment and employment growth include:

- The number of persons employed in Anne Arundel increased by 19% from 1996 to 2001.
- From 2000 to 2010, total County employment is projected to increase by 21% and create a total of 87,357 job openings.
- The County's employment growth from 1996 to 2001 was led by several key sectors: transportation, communications and public utilities (35%), services (28%), and construction (24%).
- Each of the sectors in the County's economy experienced positive employment growth from 1996 to 2001.
- For 2000 to 2010, the industries that are projected to gain the greatest number of jobs due to economic growth and replacement demand are services, retail trade, and transportation, communications and public utilities.

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to workforce and economic development account for 45% of total employment in Anne Arundel County. High technology development is the focus of the County's recent economic development efforts and several of the major employers of the County require workers that have these technology skills.

- Anne Arundel County's **construction** industry accounts for 7% of the County's total employment. Workers earned \$746 on average per week. From 2000 to 2010, it is expected that a total of 4,175 new construction jobs will be created.
- The County's **health care** industry accounts for 6% of total employment and workers earn \$715 on average per week. It is projected that the County will add a total of 7,182 health care workers from 2000 to 2010.

- The **hospitality and tourism** industry accounts for 17% of total employment in the County and workers earn \$444 on average per week. This sector is expected to add 14,710 jobs from 2000 to 2010.
- Anne Arundel's public **education** employees account for 6% of the County workforce and earn \$702 on average per week. From 2000 to 2010, the County is expected to add 6,333 public education workers.
- The **high technology** industry accounts for 10% of the County's total employment and workers earn \$1,343 on average per week. A total of 8,086 new high technology jobs are projected for the County from 2000 to 2010. Information technology workers account for 4% of the total employment in the County and workers earn \$1,328 on average per week. Over half of the projected high technology jobs expected to be created in the County from 2000 to 2010 are in the information technology industry (4,454 jobs).

Top Growth Industries

Anne Arundel County's location is its driver of economic activity. With its close proximity to the Port of Baltimore, access to several major highways and interstates, railways, and the BWI airport, industries that are related to these infrastructure assets have fueled the County's development. Additionally, technology firms benefit from the infrastructure and proximity to NSA and major federal labs in the State and Washington, D.C. The infrastructure, location, and business mix also make the County a desirable place to live.

- The top five employment growth industries from 1996 to 2001 in Anne Arundel County were, air transportation services, computer programming services, elementary and secondary schools, personnel supply services, and engineering, architectural and surveying services. These industries added 11,006 jobs.
- The five fastest growing industries in the County from 1996 to 2001 were motion picture theatres, cable and other pay television services, airports and airport terminal services, electronic components, and engineering, architectural and surveying services. On average these five industry clusters grew by 123% compared to total County employment growth of 19%.
- Those industries having the highest LQs in Anne Arundel are search and navigation equipment, bookbinding and related work, boat dealers, title offices, and air transportation, scheduled, and air courier services.

Anne Arundel Job Openings

In order to better identify the key occupational employment trends impacting Anne Arundel County, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

A majority of the job openings for the County can be filled by the 43% of the County's high school graduates that are not attending a college or university. While not primarily high-wage positions, these occupations are important in that they support higher-wage, higher-skill occupations.

- The top five fastest growing occupational groups by total annual openings account for 53% of total annual openings. The five fastest growing occupational groups by total annual openings are office and administrative support occupations, sales and related occupations, food preparation and serving related occupations, transportation and material moving occupations, and management occupations.

Occupational Openings from Economic Growth

These occupations are important in that they support industries which have been the backbone for growth and economic development within the County, especially those industries related to the County's infrastructure.

- The top five fastest growing occupations from economic growth account for 46% of total openings due to economic growth. The five fastest growing occupations by economic growth are office and administrative support occupations, transportation and material moving occupations, management occupations, sales and related occupations, and food preparation and serving related occupations.

Occupational Educational Requirements

Corporate headquarters, technology based companies, and distribution and logistical operations that support Baltimore Washington International Airport require workers with a high level of education and skills. Northrop Grumman, the American Urological Association, Corporate Express, Hydro Aluminum North America, and Washington Brick and Terra Cotta Company all have headquarters within Anne Arundel County and require a highly educated workforce.

- Twenty-six percent (26%) of total Anne Arundel employment is in occupations requiring at least a Bachelor's degree, 3% require an Associates degree, 4% require post-secondary training, and 67% require only on the job training.
- Thirty-one percent (31%) of job openings created by economic growth require a Bachelor's degree, 5% require an Associates degree, 5% require post-secondary training, and 59% require only on the job training.

- Twenty-five percent (25%) of total job openings created by economic growth and replacement demand require a Bachelor's degree, 3% require an Associates degree, 4% require post-secondary training, and 68% require only on the job training.

Key Skills of Leading Occupations

The top twenty-five occupations ranked by projected job openings in Anne Arundel County are dominated by lower skilled occupations serving the region's residential demand based industries and tourism sector. As a result, the most important skills for the top job creating occupations are dominated by basic skills – such as speaking, active listening, reading comprehension, service orientation, and writing.

Anne Arundel County WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	333,403	379,394	13.8%
In Labor Force	245,789	269,772	9.8%
Civilian Labor Force	231,621	258,331	11.5%
Employed	224,381	250,254	11.5%
Unemployed	7,240	8,077	11.6%
Armed Forces	14,168	11,441	-19.2%
Not in Labor Force	87,614	109,622	25.1%

Educational Attainment	1990	2000	Percent Change
Population 25+	276,130	326,999	18.4%
Less Than High School	52,224	44,323	-15.1%
High school/GED	83,672	91,307	9.1%
Some College, No Degree	56,788	71,485	25.9%
Associate Degree	15,623	19,806	26.8%
Bachelor's Degree	43,477	62,371	43.5%
Graduate of Professional Degree	24,346	37,707	54.9%

	2001	Percent Going to College
High School Graduates	4,344	56.7%
College Prep	2,157	
Vocational	877	
Community College Grads	979	
Business Tech	68	
Computer Tech	48	
Health Tech	132	

	Bachelor	Master	Doctorate	Professional
Four Year College Grads	95	38	0	0
Biological Sciences	0	0	0	0
Business	0	0	0	0
Computer Science	0	0	0	0
Education	0	0	0	0
Engineering	0	0	0	0
Health	0	0	0	0
Physical Sciences	0	0	0	0

Hard to Serve Populations

	2001
Welfare Population	671
Active Parole	90

<i>Poverty Status</i>	1990	2000	Percent Change
Families in Poverty	3,472	4,626	33.2%
Individuals in Poverty	18,391	24,335	32.3%

	2000
Immigration (foreign born)	23,211

Anne Arundel WIA County Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	169,426	201,902	19.2%	\$715	12,503	193,582	234,106	40,524	46,833	87,357
Government Total	29,695	34,271	15.4%	\$772	187	22,129	23,180	1,051	4,334	5,385
Federal Government	7,147	7,552	5.7%	\$946	95	7,695	7,356	0	1,463	1,463
State Government	9,163	9,467	3.3%	\$737	68	8,467	9,164	697	1,667	2,364
Local Government	13,385	17,252	28.9%	\$716	24	5,967	6,660	693	1,204	1,897
Private Total	139,731	167,631	20.0%	\$704	12,316	171,453	210,926	39,473	42,499	81,972
Agriculture, Forestry and Fishing	1,650	2,225	34.8%	\$483	238	2,031	2,592	561	449	1,010
Mining	77	139	80.5%	\$2,370	9	111	136	25	30	55
Construction	10,766	13,344	23.9%	\$746	1,656	12,730	14,436	1,706	2,469	4,175
Manufacturing	14,645	17,123	16.9%	\$1,093	391	15,752	16,889	1,137	3,319	4,456
TCPU ¹	12,288	16,631	35.3%	\$843	656	15,695	18,838	3,143	3,670	6,813
Wholesale Trade	7,829	9,037	15.4%	\$962	800	9,160	10,100	940	2,011	2,951
Retail Trade	39,754	43,021	8.2%	\$384	2,346	41,390	48,593	7,203	13,757	20,960
FIRE ²	6,409	6,513	1.6%	\$869	994	6,286	6,924	638	1,265	1,903
Services	46,201	59,326	28.4%	\$722	5,037	68,298	92,418	24,120	15,529	39,649
NonClassifiable	112	272	142.9%	\$541	189					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Anne Arundel County Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	10,766	13,344	6.6%	8.1%	\$746	12,730	14,436	1,706	2,469	4,175
Health Care	11,436	12,984	6.4%	6.1%	\$715	11,859	16,631	4,772	2,410	7,182
Hospitality and Tourism	30,147	34,342	17.0%	11.9%	\$444	27,696	33,013	5,317	9,393	14,710
Education - Public	8,968	11,216	5.6%	6.7%	\$702	12,173	15,589	3,416	2,917	6,333
Education - Private	1,281	1,639	0.8%	4.4%	\$575					
High Technology	14,249	19,630	9.7%	11.3%	\$1,343	18,575	23,169	4,594	3,492	8,086
Information Technology	4,164	8,371	4.1%	10.3%	\$1,328	7,502	10,435	2,933	1,521	4,454

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Anne Arundel County WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Air Transportation, Scheduled, And Air Courier Services	2,855
Computer Programming, Data Processing, And Other Computer Related Service	2,497
Elementary And Secondary Schools	2,101
Personnel Supply Services	1,794
Engineering, Architectural, And Surveying Services	1,759

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Motion Picture Theaters	173.0
Cable And Other Pay Television Services	144.1
Airports, Flying Fields, And Airport Terminal Services	109.0
Electronic Components And Accessories	98.1
Engineering, Architectural, And Surveying Services	91.2

Top 5 Location Quotients (LQ)

Industry Title	LQ
Search, Detection, Navigation, Guidance, Aeronautical, And Nautical	26.3
Blankbooks, Looseleaf Binders, And Bookbinding And Related Work	9.5
Boat Dealers	7.4
Title Abstract Offices	4.3
Air Transportation, Scheduled, And Air Courier Services	4.1

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Anne Arundel County WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	193,582	234,106	4,052	4,679	8,731
Management Occupations	18,972	22,750	378	346	723
Business and Financial Operations Occupations	6,714	8,098	138	131	269
Computer and Mathematical Occupations	5,408	8,548	314	57	371
Architecture and Engineering Occupations	5,935	6,846	91	117	208
Life, Physical, and Social Science Occupations	2,010	2,397	39	61	100
Community and Social Services Occupations	1,727	2,440	71	27	98
Legal Occupations	919	1,110	19	7	27
Education, Training, and Library Occupations	9,519	12,218	270	220	490
Arts, Design, Entertainment, Sports, and Media Occupations	3,051	3,936	89	56	145
Healthcare Practitioners and Technical Occupations	6,631	9,046	242	125	366
Healthcare Support Occupations	4,365	6,288	192	89	281
Protective Service Occupations	3,058	3,541	48	110	158
Food Preparation and Serving Related Occupations	15,149	18,434	329	653	982
Building and Grounds Cleaning and Maintenance Occupations	6,368	7,682	131	127	258
Personal Care and Service Occupations	7,290	9,231	194	191	385
Sales and Related Occupations	19,609	23,114	351	642	992
Office and Administrative Support Occupations	33,353	37,380	403	732	1,135
Farming, Fishing, and Forestry Occupations	845	921	8	20	27
Construction and Extraction Occupations	10,288	11,753	147	198	344
Installation, Maintenance, and Repair Occupations	7,558	8,936	138	181	318
Production Occupations	8,101	8,913	81	191	273
Transportation and Material Moving Occupations	16,712	20,524	381	401	782

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Anne Arundel County WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	192,551	232,841	4,029	4,687	8,716
First professional degree	1,998	2,674	68	30	98
Doctoral degree	670	949	28	20	48
Master's degree	2,085	2,784	70	47	117
Work experience plus bachelor's or higher degree	16,680	20,369	369	304	673
Bachelor's degree	28,581	35,605	702	565	1,267
Associate degree	5,137	7,191	205	96	301
Postsecondary vocational training	6,758	8,848	209	147	356
Work experience in a related occupation	14,791	17,107	232	290	522
Long-term on-the-job training	15,660	18,270	261	337	598
Moderate-term on-the-job training	28,087	32,308	422	560	982
Short-term on-the-job training	72,104	86,736	1,463	2,291	3,754

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Anne Arundel County WIA
Most Important Skills for Leading Job Creating Occupations

<u>Skill</u>	<u>Percent of Top 25 Occupations Requiring the Indicated Skill</u>
Speaking	84%
Active Listening	80%
Reading Comprehension	76%
Service Orientation	60%
Writing	60%
Social Perceptiveness	52%
Coordination	48%
Mathematics	40%
Critical Thinking	24%
Equipment Selection	20%
Management of Personnel Resources	20%
Monitoring	20%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Baltimore City

Introduction

While the State of Maryland's population grew by 11% from 1990 to 2000, the population of Baltimore City declined by 12%. In addition to the loss of people, the City also lost both workers and employers as residents and businesses moved into the suburbs. The focus of development is now revitalizing the City, making it a premier location to live and work. With current efforts to attract, retain, and create high technology businesses and efforts to promote the revitalization of both the East and West sides of the City,, the City's vision is becoming more of a reality. This report analyzes workforce supply and demand conditions in Baltimore City, using available metrics of both workforce and job characteristics.

Baltimore City's Workforce Supply

From 1990 to 2000, Baltimore City made important gains in the percentage of persons having a degree from a college or university. But, with a shrinking population and a declining business base, Baltimore City is making a concerted effort to make the City into a desirable place to both live and work. Several highlights of the supply of labor and the City's workforce are:

- The City's civilian labor force decreased by 17% from 1990 to 2000.
- The percentage of people' aged 16 and above that are not in the labor force increased from 39% in 1990 to 43% in 2000.
- The number of Baltimore City residents that are employed fell by 19% from 1990 to 2000.
- The percentage of persons aged 25 or older in Baltimore City having less than a high school diploma fell from 39% in 1990 to 32% in 2000, while the percentage of persons having a Bachelor's degree or higher increased from 15% to 19%.
- The number of Baltimore City residents with an Associates degree decreased by 11% between 1990 and 2000, but the number having a Bachelor's degree increased by 9%, and the number having a Graduate or Professional degree increased by 10%.
- Of the 4,365 high school graduates in 2001, 53% were going off to colleges or universities. However, it is also important to note that many of the City's high school students drop out of school prior to graduation.
- There was a total of 406 community college graduates in 2001, with 11% earning degrees in business programs, 4% earning degrees in computer programs, and 19% earning degrees in health related programs.
- Baltimore City public and private colleges and universities awarded 11,785 degrees in 2001. This represents 35% of all Maryland college and university graduates. Of these degrees, 19% were in business related programs, 18% were in health related programs, 10% were in education related programs, 6% were in engineering

programs, 4% were in biological science programs, 4% were in computer science programs, and 2% were in physical sciences programs.

- The number of persons in poverty decreased by 8% from 1990 to 2000 and the number of families in poverty decreased by 11%. In 2001, 12,768 adult persons in Baltimore City received welfare assistance and 1,995 persons were on active parole.

Baltimore City Workforce Demand

Baltimore City Employment and Employment Growth

In 2001, Baltimore City accounted for 15% of the State's workforce but lagged the State in terms of total employment growth from 1996 to 2001. Several highlights of the City's employment and employment growth include:

- The number of persons employed in Baltimore City increased by 1% from 1996 to 2001.
- Over 2000 to 2010, total City employment is projected to increase by 2% and create a total of 91,379 job openings.
- The City's employment growth from 1996 to 2001 was led by job growth in the services sector (12%) and construction (11%).
- Several sectors of the City's economy lost jobs including manufacturing (-19%) and wholesale trade (-10%) from 1996 to 2001.
- For 2000 to 2010, the industries that are projected to gain the greatest number of jobs due to economic growth and replacement demand are retail trade (12,631 jobs), manufacturing (5,330 jobs), and finance, insurance and real estate (5,275 jobs).

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to workforce and economic development account for 35% of total employment in Baltimore City. High technology development has become a focus of the City's recent economic development efforts and several major projects including the East Baltimore Biotech Park and the University of Maryland Research Park have the potential to create a significant number of jobs.

- Baltimore City's **construction** industry accounts for 3% of the City's total employment. Workers earned \$790 on average per week. From 2000 to 2010, it is expected that a total of 2,562 new construction jobs will be created.
- The **health care** industry is a key driver of the City's economy. The health care sector accounts for 14% of total employment in Baltimore City compared to 9% in Maryland. Workers earn \$739 on average per week. It is projected that the City will add a total of 17,280 health care workers from 2000 to 2010.

- The **hospitality and tourism** industry accounts for 8% of total employment in the City and workers earn on average \$377 per week. This sector is expected to add 10,196 jobs from 2000 to 2010.
- Baltimore City's public **education** employees account for 6% of the City workforce and earn on average \$784 per week. From 2000 to 2010, the City is expected to add 11,258 public education workers.
- The **high technology** industry accounts for 3% of the City's total employment and workers earn on average \$1,167 per week. A total of 3,393 new high technology jobs are projected for the City from 2000 to 2010. Information technology employment accounts for 1% of the total employment in the City and workers earn on average \$1,255 per week. Almost half of the projected high technology jobs created in the City from 2000 to 2010 are in the information technology industry (1,598 jobs).

Top Growth Industries

Baltimore City's concentration of major colleges and universities is a major driver of economic activity. These colleges and universities attract students, researchers, and visitors nationally and internationally. These colleges and universities also are vital in creating and attracting high technology companies that are a focus of economic development in the City. Additionally, the City's tourism industry and its diverse neighborhoods is a valuable asset to the City's economy.

- The top five employment growth industries from 1996 to 2001 in Baltimore City were colleges, universities, professional schools and junior colleges, elementary and secondary schools, management and public relation services, computer programming services, and services to dwellings and other buildings. These industries added 12,479 jobs.
- The five fastest growing industries in the City from 1996 to 2001 were schools and educational services, not elsewhere classified, job training services, computer programming services, management and public relations services, and professional and commercial equipment and supplies. On average these five industry clusters grew by 147% compared to total City employment growth of 1%.
- Those industries having the highest LQs in Baltimore City are deep sea foreign transportation of freight, surety insurance, botanical or zoological gardens, taxicabs, and services allied with the exchange of securities or commodities.

Baltimore City Job Openings

In order to better identify the key occupational employment trends impacting Baltimore City, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

While a portion of the job openings for the City can be filled by the 47% of the City's high school graduates that are not attending a college or university, a majority of positions require a high level of educational attainment and technical skills.

- The top five fastest growing occupational groups by total annual openings account for 54% of total annual openings. The five fastest growing occupational groups by total annual openings are office and administrative support occupations (1,563 jobs), management occupations (884 jobs), healthcare practitioners and technical occupations (843 jobs), education, training and library occupations (812 jobs), and sales and related occupations (802 jobs).

Occupational Educational Requirements

With the decline of traditionally blue-collar jobs in the City, Baltimore has looked to high technology firms as the new potential source of economic growth. While these businesses require occupations that have a high level of educational attainment and technical skills, they also require numerous lower skilled jobs that can be filled by the City residents that have lower levels of skills and educational attainment.

- Thirty percent (30%) of total City employment is in occupations requiring a Bachelor's degree, 5% require an Associates degree, 3% require post-secondary training, and 62% require only on the job training.
- Thirty-two percent (32%) of total job openings created by economic growth and replacement demand require a Bachelor's degree, 7% require an Associates degree, 3% require post-secondary training, and 58% require only on the job training.

Key Skills of Leading Occupations

Lower skilled occupations serving the City's service-based industries and tourism sector dominate the top twenty-five occupations ranked by projected job openings in Baltimore City. As a result, the most important skills for the top job creating occupations are dominated by basic skills – such as active listening, reading comprehension, speaking, writing, social perceptiveness, and social orientation.

Baltimore City WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	572,963	507,534	-11.4%
In Labor Force	347,593	287,159	-17.4%
Civilian Labor Force	346,527	286,735	-17.3%
Employed	314,688	256,036	-18.6%
Unemployed	31,839	30,699	-3.6%
Armed Forces	1,066	424	-60.2%
Not in Labor Force	225,370	220,375	-2.2%

Educational Attainment	1990	2000	Percent Change
Population 25+	474,307	419,581	-11.5%
Less Than High School	186,630	132,699	-28.9%
High school/GED	130,317	118,175	-9.3%
Some College, No Degree	67,403	73,677	9.3%
Associate Degree	16,561	14,706	-11.2%
Bachelor's Degree	40,081	43,746	9.1%
Graduate of Professional Degree	33,315	36,578	9.8%

	2001	Percent Going to College
High School Graduates	4,365	53.2%
College Prep	1,903	
Vocational	579	

Community College Grads	406
Business Tech	43
Computer Tech	16
Health Tech	79

	Bachelor	Master	Doctorate	Professional
Four Year College Grads	4,643	5,693	484	965
Biological Sciences	210	151	118	0
Business	879	1,304	0	0
Computer Science	181	290	5	0
Education	165	1,011	3	0
Engineering	320	346	47	0
Health	723	829	146	461
Physical Sciences	62	110	21	0

Hard to Serve Populations	2001
Welfare Population	12,768
Active Parole	1,995

<i>Poverty Status</i>	1990	2000	Percent Change
Families in Poverty	31,174	27,864	-10.6%
Individuals in Poverty	156,284	143,514	-8.2%
Immigration (foreign born)	29,638		

Baltimore City WIA Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	369,785	373,409	1.0%	\$780	14,272	386,867	394,334	7,467	83,912	91,379
Government Total	84,220	80,295	-4.7%	\$782	244	60,780	59,806	0	11,639	11,639
Federal Government	13,492	10,606	-21.4%	\$927	47	12,465	11,480	0	2,471	2,471
State Government	39,741	37,881	-4.7%	\$813	118	30,426	30,588	162	5,425	5,587
Local Government	30,987	31,808	2.6%	\$696	79	17,889	17,738	0	3,743	3,743
Private Total	285,565	293,114	2.6%	\$780	14,028	326,087	334,528	8,441	72,273	80,714
Agriculture, Forestry and Fishing	1,096	1,158	5.7%	\$550	80	1,282	1,180	0	290	290
Mining	0	7	NA	\$560	1	0	0	0	0	0
Construction	10,612	11,825	11.4%	\$790	839	13,477	12,418	0	2,562	2,562
Manufacturing	32,226	26,083	-19.1%	\$859	641	27,597	21,121	0	5,330	5,330
TCPU ¹	18,292	18,700	2.2%	\$886	612	18,632	18,404	0	3,750	3,750
Wholesale Trade	16,178	14,507	-10.3%	\$958	882	17,124	14,505	0	3,558	3,558
Retail Trade	39,600	37,363	-5.6%	\$353	3,265	42,027	37,685	0	12,631	12,631
FIRE ²	31,640	31,611	-0.1%	\$1,395	1,324	32,310	30,442	0	5,275	5,275
Services	135,773	151,439	11.5%	\$715	6,099	173,638	198,773	25,135	38,877	64,012
NonClassifiable	148	421	184.5%	\$497	285					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Baltimore City Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	10,612	11,825	3.2%	7.2%	\$790	13,477	12,418	0	2,562	2,562
Health Care	55,954	53,597	14.4%	25.3%	\$739	52,165	58,938	6,773	10,507	17,280
Hospitality and Tourism	28,282	30,598	8.2%	10.6%	\$377	30,347	31,112	765	9,431	10,196
Education - Public	19,325	22,424	6.0%	13.4%	\$784	41,425	43,306	1,881	9,377	11,258
Education - Private	16,072	19,974	5.3%	53.6%	\$814	41,425	43,306	1,881	9,377	11,258
High Technology	7,429	10,129	2.7%	5.8%	\$1,167	10,044	11,614	1,570	1,823	3,393
Information Technology	1,650	3,450	0.9%	4.3%	\$1,255	2,943	4,159	1,216	382	1,598

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Baltimore City WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Colleges, Universities, Professional Schools, And Junior Colleges	4,124
Elementary And Secondary Schools	2,877
Management And Public Relations Services	2,095
Computer Programming, Data Processing, And Other Computer Related Service	1,826
Services To Dwellings And Other Buildings	1,557

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Schools And Educational Services, Not Elsewhere Classified	247.3
Job Training And Vocational Rehabilitation Services	185.2
Computer Programming, Data Processing, And Other Computer Related Service	136.4
Management And Public Relations Services	105.4
Professional And Commercial Equipment And Supplies	61.3

Top 5 Location Quotients (LQ)

Industry Title	LQ
Deep Sea Foreign Transportation Of Freight	11.2
Surety Insurance	10.4
Arboreta And Botanical Or Zoological Gardens	8.7
Taxicabs	8.3
Services Allied With The Exchange Of Securities Or Commodities	7.3

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Baltimore City WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	386,867	394,334	747	8,376	9,123
Management Occupations	41,674	43,142	147	737	884
Business and Financial Operations Occupations	19,528	20,539	101	365	466
Computer and Mathematical Occupations	8,467	11,755	329	67	396
Architecture and Engineering Occupations	5,779	5,833	5	122	128
Life, Physical, and Social Science Occupations	3,852	4,093	24	112	136
Community and Social Services Occupations	13,062	14,987	193	195	388
Legal Occupations	6,333	7,050	72	55	126
Education, Training, and Library Occupations	24,852	27,285	243	569	812
Arts, Design, Entertainment, Sports, and Media Occupations	4,607	4,900	29	91	120
Healthcare Practitioners and Technical Occupations	24,601	28,009	341	502	843
Healthcare Support Occupations	9,501	11,537	204	187	391
Protective Service Occupations	9,527	10,543	102	277	379
Food Preparation and Serving Related Occupations	17,989	18,153	16	727	743
Building and Grounds Cleaning and Maintenance Occupations	14,645	15,501	86	294	380
Personal Care and Service Occupations	7,277	8,226	95	223	318
Sales and Related Occupations	26,734	24,058	0	802	802
Office and Administrative Support Occupations	79,529	75,571	0	1,563	1,563
Farming, Fishing, and Forestry Occupations	156	183	3	4	6
Construction and Extraction Occupations	12,450	11,797	0	228	228
Installation, Maintenance, and Repair Occupations	12,234	11,718	0	262	262
Production Occupations	20,206	17,163	0	455	455
Transportation and Material Moving Occupations	23,864	22,291	0	539	539

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Baltimore City WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	385,630	392,954	732	8,394	9,727
First professional degree	9,393	10,725	133	131	264
Doctoral degree	4,676	5,351	68	129	197
Master's degree	7,950	8,890	94	169	263
Work experience plus bachelor's or higher degree	35,470	36,764	129	633	762
Bachelor's degree	59,765	65,169	540	1,092	1,632
Associate degree	18,525	21,580	306	361	667
Postsecondary vocational training	12,135	12,765	63	272	335
Work experience in a related occupation	24,281	23,649	-63	490	490
Long-term on-the-job training	21,411	20,893	-52	434	434
Moderate-term on-the-job training	74,122	71,778	-234	1,323	1,323
Short-term on-the-job training	117,902	115,390	-251	3,360	3,360

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Baltimore City WIA
Most Important Skills for Leading Job Creating Occupations

	Percent of Top 25 Occupations Requiring the Indicated Skill
Active Listening	88%
Reading Comprehension	88%
Speaking	80%
Writing	72%
Social Perceptiveness	60%
Service Orientation	56%
Coordination	36%
Mathematics	28%
Learning Strategies	24%
Critical Thinking	20%
Equipment Selection	20%
Instructing	20%
Judgment and Decision Making	20%
Monitoring	20%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Baltimore County

Introduction

Baltimore County has become more than just a suburb of Baltimore City. It has become a major employment center in its own right. Baltimore County is home to major corporations such as Black and Decker, McCormick, and to Care First Blue Cross Blue Shield. Several major financial institutions such as T. Rowe Price and Legg Mason have operations in the County, as well as other companies such as MBNA, which has a call center, and Toyota which has its customer service operations for the East Cost located in the County. Places such as Owings Mills and Towson have experienced huge growth in population over the past decade and are desirable locations to both live and work within the County. This report analyzes workforce supply and demand conditions in Baltimore County, using available metrics of both workforce and job characteristics.

Baltimore County's Workforce Supply

Baltimore County possesses a highly educated and skilled workforce. The County also possesses a community college and several major four-year colleges and universities including the University of Maryland, Baltimore County, Towson University, and Villa Julie College. These institutions are key to providing a highly skilled and educated workforce. Several highlights of the supply of labor and the County's workforce are:

- The labor force participation rate in Baltimore County decreased from 69% in 1990 to 67% in 2000.
- The number of residents in Baltimore County that are employed increased by 4% from 1990 to 2000.
- The percentage of persons aged 25 or older in Baltimore County having less than a high school diploma fell from 22% in 1990 to 16% in 2000, while the percentage of persons having a Bachelor's degree or higher increased from 25% to 31%.
- The number of Baltimore County residents with an Associates degree increased by 16% between 1990 and 2000, the percentage having a Bachelor's degree increased by 30%, and the percentage having a Graduate or Professional degree increased by 35%.
- Of the 6,592 high school graduates in 2001, 58% were going off to colleges or universities.
- There was a total of 1,198 community college graduates in 2001, with 6% earning degrees in business programs, 5% earning degrees in computer programs, and 17% earning degrees in health related programs.
- Baltimore County public and private colleges and universities awarded 5,931 degrees in 2001. Of these degrees, 15% were in computer science programs, 14% were in education related programs, 8% were in business related programs, 7% were in health

related programs, 6% were in biological science programs, 2% were in engineering programs, and 1% were in physical sciences programs.

- Hard to serve populations represent a potential additional source of workers from which businesses can recruit from. The number of persons in poverty increased by 28% from 1990 to 2000 and the number of families in poverty increased by 24%. In 2001, 1,335 adult persons in Baltimore County received welfare assistance and 240 persons were on active parole.

Baltimore County Workforce Demand

Baltimore County Employment and Employment Growth

From 1996 to 2001, Baltimore County lagged the State in terms of total employment growth but for the period of 2000 to 2010, the County is projected to outpace the State in total employment growth. Several highlights of the County's employment and employment growth include:

- The number of persons employed in Baltimore County increased by 8% from 1996 to 2001.
- Over 2000 to 2010, total County employment is projected to increase by 19% and create a total of 150,263 job openings.
- The County's employment growth from 1996 to 2001 was led by job growth in the government sector (19%), finance, insurance and real estate (16%), services (14%), and construction sector (12%).
- Several sectors of the County's economy lost jobs including manufacturing (-13%) and transportation, communications and public utilities (-5%) from 1996 to 2001.
- For 2000 to 2010, the industries that are projected to gain the greatest number of job openings due to economic growth and replacement demand are services (76,741 jobs), retail trade (28,022 jobs), and construction (10,622 jobs).

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to the State's workforce and economic development account for 39% of total employment in Baltimore County.

- Baltimore County County's **construction** industry accounts for 6% of the County's total employment. Workers earned \$777 on average per week. From 2000 to 2010, it is expected that a total of 10,622 new construction jobs will be created.
- The County's **health care** industry accounts for 9% of total employment and workers earn \$818 on average per week. It is projected that the County will add a total of 15,228 health care workers from 2000 to 2010.

- The **hospitality and tourism** industry accounts for 12% of total employment in the County and workers earn \$340 on average per week. This sector is expected to add 17,566 jobs from 2000 to 2010.
- Baltimore County's public **education** employees account for 7% of the County workforce and earn \$632 on average per week. From 2000 to 2010, the County is expected to add 12,520 public education workers.
- The **high technology** industry accounts for 5% of the County's total employment and workers earn \$1,190 on average per week. A total of 9,149 new high technology jobs are projected for the County from 2000 to 2010. Information technology workers account for 2% of the total employment in the County and workers earn \$1,225 on average per week. Forty-three percent (43%) of the projected high technology jobs created in the County from 2000 to 2010 will be in the information technology industry (3,924 jobs).

Top Growth Industries

Baltimore County has become a desirable location to live and with the additional population, there has been the growth of new residential communities that require new services and businesses to support the new population. Additionally, Baltimore County has benefited from the presence of major financial institutions in Baltimore City. Looking to create corporate campuses, these firms have located portions of their operations in the County.

- The top five employment growth industries from 1996 to 2001 in Baltimore County were elementary and secondary schools, personnel supply services, colleges, universities, professional schools, and junior colleges, residential care, and computer programming services. These industries added 14,673 jobs.
- The five fastest growing industries in the County from 1996 to 2001 were consumer credit reporting agencies, schools and educational services, not elsewhere classified, cable and other pay television services, personal credit institutions, and services allied with the exchange of securities or commodities. On average these five industry clusters grew by 157% compared to total County employment growth of 8%.
- Those industries having the highest LQs in Baltimore County are steel works, blast furnaces, and rolling and finishing mills, consumer credit reporting agencies, miscellaneous food preparations and kindred products, women's accessory and specialty stores, and paperboard containers and boxes.

Baltimore County Job Openings

In order to better identify the key occupational employment trends impacting Baltimore County, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

Many of the job openings for the County can be filled by the 42% of the County's high school graduates that are not attending a college or university. Two of the fastest growing occupations, management occupations and healthcare practitioner occupations, require a high level of educational attainment and technical skills that the highly educated County workforce possesses.

- The top five fastest growing occupational groups by total annual openings account for 47% of total annual openings. The five fastest growing occupational groups by total annual openings are office and administrative support occupations (1,994 jobs), sales and related occupations (1,659 jobs), management occupations (1,230 jobs), food preparation and serving related occupations (1,203 jobs), and healthcare practitioners and technical occupations (1,005 jobs).

Occupational Openings from Economic Growth

These occupations are important in that they are mainly positions that require a high level of educational attainment or a specific set of skills.

- The top five fastest growing occupations from economic growth account for 46% of total openings due to economic growth. The five fastest growing occupations from economic growth are office and administrative support occupations (749 jobs), management occupations (647 jobs), healthcare practitioners and technical occupations (601 jobs), education, training and library occupations (578 jobs), and construction and extraction occupations (516 jobs).

Occupational Educational Requirements

Current and projected occupations in the County will either require a high level of educational attainment or on-the-job training.

- Twenty-four percent (24%) of total County employment is in occupations requiring a Bachelor's degree, 4% require an Associates degree, 5% require post-secondary training, and 67% require only on the job training.
- Thirty-two percent (32%) of job openings created by economic growth require a Bachelor's degree, 7% require an Associates degree, 6% require post-secondary training, and 55% require only on the job training.
- Twenty-five percent (25%) of total job openings created by economic growth and replacement demand combined require a Bachelor's degree, 5% require an Associates degree, 6% require post-secondary training, and 65% require only on the job training.

Key Skills of Leading Occupations

The top twenty-five occupations ranked by projected job openings in Baltimore County are dominated by lower skilled occupations serving the region's residential demand based industries. As a result, the most important skills for the top job creating occupations are

dominated by basic skills – such as active listening, reading comprehension, speaking, writing, and service orientation. However, several of the key job creating occupations, such as computer systems analysts, chief executives, and computer support specialists are higher skilled occupations related to the County’s expanding corporate and high technology base. These occupations have more advanced skill profiles.

Baltimore County WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	556,056	595,770	7.1%
In Labor Force	381,531	396,897	4.0%
Civilian Labor Force	380,440	396,226	4.1%
Employed	366,276	379,705	3.7%
Unemployed	14,164	16,521	16.6%
Armed Forces	1,091	671	-38.5%
Not in Labor Force	174,525	198,873	14.0%

Educational Attainment	1990	2000	Percent Change
Population 25+	473,574	511,434	8.0%
Less Than High School	102,418	80,054	-21.8%
High school/GED	137,453	141,035	2.6%
Some College, No Degree	90,542	105,147	16.1%
Associate Degree	24,867	28,857	16.0%
Bachelor's Degree	70,925	92,487	30.4%
Graduate of Professional Degree	47,369	63,854	34.8%

	2001	Percent Going to College
High School Graduates	6,592	58.1%
College Prep	2,388	
Vocational	1,480	

Community College Grads	1,198
Business Tech	68
Computer Tech	57
Health Tech	201

	Bachelor	Master	Doctorate	Professional
Four Year College Grads	4,847	1,034	50	0
Biological Sciences	299	33	6	0
Business	485	3	0	0
Computer Science	713	173	1	0
Education	421	388	0	0
Engineering	60	17	15	0
Health	309	116	0	0
Physical Sciences	44	6	5	0

Hard to Serve Populations	2001
Welfare Population	1,335
Active Parole	240

<i>Poverty Status</i>	1990	2000	Percent Change
Families in Poverty	7,335	9,058	23.5%
Individuals in Poverty	37,154	47,603	28.1%
	2000		
Immigration (foreign born)	53,784		

Baltimore County WIA Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	335,419	362,475	8.1%	\$697	19,605	356,845	424,781	67,936	82,327	150,263
Government Total	47,485	56,488	19.0%	\$800	109	30,685	33,424	2,739	5,762	8,501
Federal Government	13,630	15,372	12.8%	\$1,170	63	15,824	17,216	1,392	2,718	4,110
State Government	9,041	11,929	31.9%	\$781	25	5,989	6,911	922	1,159	2,081
Local Government	24,814	29,187	17.6%	\$613	21	8,872	9,297	425	1,885	2,310
Private Total	287,934	305,987	6.3%	\$678	19,496	326,160	391,357	65,197	76,565	141,762
Agriculture, Forestry and Fishing	2,670	3,357	25.7%	\$468	445	2,980	3,876	896	669	1,565
Mining	122	97	-20.5%	\$835	7	113	137	24	19	43
Construction	19,861	22,247	12.0%	\$777	2,007	21,368	27,630	6,262	4,360	10,622
Manufacturing	38,242	33,172	-13.3%	\$994	654	33,965	33,673	0	7,034	7,034
TCPU ¹	14,013	13,341	-4.8%	\$825	692	14,087	16,099	2,012	2,940	4,952
Wholesale Trade	14,349	15,699	9.4%	\$889	1,240	16,135	18,411	2,276	3,426	5,702
Retail Trade	72,680	74,378	2.3%	\$379	3,835	73,771	79,195	5,424	22,598	28,022
FIRE ²	22,738	26,340	15.8%	\$888	1,958	24,193	27,293	3,100	4,273	7,373
Services	103,116	116,998	13.5%	\$674	8,395	139,548	185,043	45,495	31,246	76,741
NonClassifiable	143	358	150.3%	\$549	263					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Baltimore County Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	19,861	22,247	6.1%	13.6%	\$777	21,368	27,630	6,262	4,360	10,622
Health Care	33,405	33,640	9.3%	15.9%	\$818	32,147	40,807	8,660	6,568	15,228
Hospitality and Tourism	41,588	42,362	11.7%	14.7%	\$340	42,028	45,932	3,904	13,662	17,566
Education - Public	18,425	24,667	6.8%	14.7%	\$632	26,293	32,987	6,694	5,826	12,520
Education - Private	3,475	4,437	1.2%	11.9%	\$567					
High Technology	16,468	19,150	5.3%	11.0%	\$1,190	19,377	24,609	5,232	3,917	9,149
Information Technology	6,299	6,899	1.9%	8.5%	\$1,225	7,030	9,720	2,690	1,234	3,924

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation

Office of Labor Market Analysis and Information

Baltimore County WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Elementary And Secondary Schools	4,311
Personnel Supply Services	4,093
Colleges, Universities, Professional Schools, And Junior Colleges	2,893
Residential Care	1,804
Computer Programming, Data Processing, And Other Computer Related Service	1,572

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Consumer Credit Reporting Agencies, Mercantile Reporting Agencies	225.5
Schools And Educational Services, Not Elsewhere Classified	208.2
Cable And Other Pay Television Services	137.5
Personal Credit Institutions	123.5
Services Allied With The Exchange Of Securities Or Commodities	89.6

Top 5 Location Quotients (LQ)

Industry Title	LQ
Steel Works, Blast Furnaces, And Rolling And Finishing Mills	7.7
Consumer Credit Reporting Agencies, Mercantile Reporting Agencies	5.1
Miscellaneous Food Preparations And Kindred Products	4.9
Women's Accessory And Specialty Stores	4.3
Paperboard Containers And Boxes	4.0

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Baltimore County WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	356,845	424,781	6,794	8,229	15,023
Management Occupations	32,698	39,165	647	583	1,230
Business and Financial Operations Occupations	16,892	20,063	317	329	646
Computer and Mathematical Occupations	9,376	14,052	468	81	548
Architecture and Engineering Occupations	5,835	7,055	122	126	248
Life, Physical, and Social Science Occupations	3,054	4,141	109	79	187
Community and Social Services Occupations	6,440	9,329	289	102	391
Legal Occupations	3,435	4,375	94	38	132
Education, Training, and Library Occupations	17,561	23,336	578	329	907
Arts, Design, Entertainment, Sports, and Media Occupations	3,915	5,002	109	71	180
Healthcare Practitioners and Technical Occupations	18,910	24,922	601	404	1,005
Healthcare Support Occupations	9,176	12,556	338	170	508
Protective Service Occupations	8,492	10,311	182	266	448
Food Preparation and Serving Related Occupations	22,976	25,210	223	980	1,203
Building and Grounds Cleaning and Maintenance Occupations	10,885	13,409	252	225	477
Personal Care and Service Occupations	9,444	11,846	240	257	497
Sales and Related Occupations	41,827	45,820	399	1,260	1,659
Office and Administrative Support Occupations	61,156	68,645	749	1,245	1,994
Farming, Fishing, and Forestry Occupations	175	220	5	5	9
Construction and Extraction Occupations	16,842	21,999	516	345	861
Installation, Maintenance, and Repair Occupations	14,546	16,380	183	318	502
Production Occupations	23,256	23,503	25	531	556
Transportation and Material Moving Occupations	19,954	23,442	349	487	835

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Baltimore County WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	355,756	423,274	6,752	8,237	14,989
First professional degree	4,605	5,990	139	75	214
Doctoral degree	1,654	2,118	46	42	88
Master's degree	5,756	7,700	194	126	320
Work experience plus bachelor's or higher degree	27,808	33,724	592	500	1,092
Bachelor's degree	45,156	57,324	1,217	785	2,002
Associate degree	12,728	17,347	462	234	696
Postsecondary vocational training	18,371	22,549	418	420	838
Work experience in a related occupation	29,534	33,146	361	564	925
Long-term on-the-job training	22,897	26,772	388	457	845
Moderate-term on-the-job training	59,971	69,613	964	1,116	2,080
Short-term on-the-job training	127,276	146,991	1,972	3,918	5,890

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

**Baltimore County WIA
Most Important Skills for Leading Job Creating Occupations**

	Percent of Top 25 Occupations Requiring the Indicated Skill
Active Listening	88%
Reading Comprehension	84%
Speaking	76%
Writing	68%
Service Orientation	64%
Social Perceptiveness	56%
Coordination	40%
Critical Thinking	32%
Mathematics	32%
Equipment Selection	20%
Monitoring	20%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Frederick County

Introduction

Frederick County describes itself as just far enough from the Baltimore/Washington metropolis to enjoy the perfect balance between lively commerce and pastoral tranquility. The County has capitalized on its proximity to the I-270 technology corridor and its rural landscape to attract both residents and businesses. The County has turned its attention to targeting businesses in agriculture, bioscience, information technology, and manufacturing for attraction, retention, and growth. This report analyzes workforce supply and demand conditions in Frederick County, using available metrics of both workforce and job characteristics.

Frederick County's Workforce Supply

Frederick County has experienced a boom in employment and population growth over the past ten years. The County also possesses a highly educated and skilled workforce. Several highlights of the supply of labor and the County's workforce are:

- The County's civilian labor force participation rate decreased slightly from 74% in 1990 to 73% in 2000.
- The number of employed residents of Frederick County increased by 27% from 1990 to 2000.
- The percentage of persons aged 25 or older in Frederick County having less than a high school diploma fell from 20% in 1990 to 13% in 2000, while the percentage of persons having a Bachelor's degree or higher increased from 22% to 30%.
- The number of Frederick County residents with an Associates degree increased by 39% between 1990 and 2000, the number having a Bachelor's degree increased by 85%, and the number having a Graduate or Professional degree increased by 79%.
- Of the 2,301 high school graduates in 2001, 61% were going off to colleges or universities.
- There was a total of 403 community college graduates in 2001, with 5% earning degrees in business programs, 2% earning degrees in computer programs, and 13% earning degrees in health related programs.
- Frederick County public and private colleges and universities awarded 734 degrees in 2001. Of these degrees, 26% were in business related programs, 17% were in education related programs, 9% were in biological science programs, 6% were in computer science programs, 2% were in health related programs, and 1% were in physical sciences programs.
- Hard to serve populations represent an additional source of workers that business can tap into. The number of persons in poverty increased by 21% from 1990 to 2000 and the number of families in poverty increased by 8%. In 2001, 237 adult persons in Frederick County received welfare assistance and 70 persons were on active parole.

Frederick County Workforce Demand

Frederick County Employment and Employment Growth

From 1996 to 2001, Frederick County outpaced the State in terms of total employment growth and for the period of 2000 to 2010, the County is projected to continue to outpace the State in total employment growth. Several highlights of the County's employment and employment growth include:

- The number of persons employed in Frederick County increased by 23% from 1996 to 2001.
- Over 2000 to 2010, total County employment is projected to increase by 34% and create a total of 43,529 job openings.
- The County's employment growth from 1996 to 2001 was led by job growth in the construction sector (32%), services (30%), transportation, communications and public utilities (23%), and retail trade sector (21%).
- For 2000 to 2010, the industries that are projected to create the greatest number of job openings due to economic growth and replacement demand are retail trade (10,979 jobs), construction (3,633 jobs), and manufacturing (3,613 jobs).

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to workforce and economic development account for 45% of total employment in Frederick County.

- Frederick County County's **construction** industry accounts for 11% of the County's total employment. Workers earned \$675 on average per week. From 2000 to 2010, it is expected that a total of 3,633 new construction jobs will be created.
- The County's **health care** industry accounts for 7% of total employment and workers earn \$725 on average per week. It is projected that the County will add a total of 4,110 health care workers from 2000 to 2010.
- The **hospitality and tourism** industry accounts for 12% of total employment in the County and workers earn \$259 on average per week. This sector is expected to add 6,385 jobs from 2000 to 2010.
- Frederick County's public **education** employees account for 8% of the County workforce and earn \$645 on average per week. From 2000 to 2010, the County is expected to add 3,750 public education workers.
- The **high technology** industry accounts for 7% of the County's total employment and workers earn \$1,029 on average per week. A total of 4,668 new high technology jobs are projected for the County from 2000 to 2010. Information technology workers account for 3% of the total employment in the County and workers earn \$1,031 on

average per week. According to MD Bio, 8% of the State's biotechnology companies (24 firms) are located in Frederick County. Thirty-eight percent (38%) of the projected high technology jobs created in the County from 2000 to 2010 are in the information technology industry (1,775 jobs).

Top Growth Industries

Frederick County is a desirable location to both live and work. Additionally, Frederick County has benefited from the presence of several major companies in Frederick County, such as Bechtel, State Farm's regional headquarters, Alcoa-Eastalco Works, and MidAtlantic Medical Services.

- The top five employment growth industries from 1996 to 2001 in Frederick County were elementary and secondary schools, eating and drinking places, personnel supply services, grocery stores, and miscellaneous shopping goods stores. These industries added 3,537 jobs.
- The five fastest growing industries in the County from 1996 to 2001 were millwork and structural wood manufacturing, family clothing stores, radio, television, consumer electronics and music stores, telephone communications, and engineering architectural and surveying services. On average these five industry clusters grew by 219% compared to total County employment growth of 23%.
- Those industries having the highest LQs in Frederick County are primary smelting and refining of nonferrous metals, men's and boy's suits and coats, operative builders, manifold business forms, and animal specialties.

Frederick County Job Openings

In order to better identify the key occupational employment trends impacting Frederick County, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

Many of the job openings for the County can be filled by the 39% of the County's high school graduates that are not attending a college or university. While these might not be high wage, high skill occupations, they are important in that they support higher wage and higher skill occupations.

- The top five fastest growing occupational groups by total annual openings account for 50% of total annual openings. The five fastest growing occupational groups by total annual openings are office and administrative support occupations (571 jobs), sales and related occupations (468 jobs), food preparation and serving related occupations (456 jobs), management occupations (348 jobs), and transportation and material moving occupations (312 jobs).

Occupational Openings from Economic Growth

Occupational openings from economic growth in Frederick County are important in that they are mainly positions that requiring a high level of educational attainment or specific skills. These positions are generally high-wage occupations.

- The top five fastest growing occupations from economic growth account for 45% of total openings due to economic growth. The five fastest growing occupations by economic growth are office and administrative support occupations (288 jobs), sales and related occupations (253 jobs), management occupations (222 jobs), food preparation and serving related occupations (206 jobs), and education, training and library occupations (190 jobs).

Occupational Educational Requirements

While projected occupational openings in Frederick County will mostly require on-the-job training, over one-fifth of the openings will require at least a bachelor's degree.

- Twenty-three percent (23%) of total County employment is in occupations requiring a Bachelor's degree, 4% require an Associates degree, 5% require post-secondary training, and 68% require only on the job training.
- Twenty-four percent (24%) of total job openings created by economic growth require a Bachelor's degree, 6% require an Associates degree, 6% require post-secondary training, and 63% require only on the job training.
- Twenty-two percent (22%) of total job openings created by economic growth and replacement demand require a Bachelor's degree, 5% require an Associates degree, 5% require post-secondary training, and 68% require only on the job training.

Key Skills of Leading Occupations

The top fifteen occupations ranked by projected job openings in Frederick County are dominated by lower skilled occupations serving the County's residential demand based industries and construction sector. As a result, the most important skills for the top job creating occupations are dominated by basic skills – such as listening, speaking, reading comprehension, service orientation, writing, and coordination.

Frederick County WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	114,419	147,144	28.6%
In Labor Force	84,253	107,151	27.2%
Civilian Labor Force	83,121	106,145	27.7%
Employed	80,833	102,856	27.2%
Unemployed	2,288	3,289	43.8%
Armed Forces	1,132	1,006	-11.1%
Not in Labor Force	30,166	39,993	32.6%

Educational Attainment	1990	2000	Percent Change
Population 25+	94,994	127,256	34.0%
Less Than High School	18,618	16,424	-11.8%
High school/GED	32,293	38,314	18.6%
Some College, No Degree	17,290	26,109	51.0%
Associate Degree	5,921	8,233	39.0%
Bachelor's Degree	12,958	23,989	85.1%
Graduate of Professional Degree	7,914	14,187	79.3%

	2001	Percent Going to College
High School Graduates	2,301	60.6%
College Prep	1,475	
Vocational	503	

Community College Grads	403
Business Tech	21
Computer Tech	9
Health Tech	53

	Bachelor	Master	Doctorate	Professional
Four Year College Grads	515	219	0	0
Biological Sciences	58	11	0	0
Business	121	73	0	0
Computer Science	8	38	0	0
Education	66	60	0	0
Engineering	0	0	0	0
Health	0	11	0	0
Physical Sciences	4	0	0	0

Hard to Serve Populations

Welfare Population	237
Active Parole	70

Poverty Status

	1990	2000	Percent Change
Families in Poverty	1,417	1,530	8.0%
Individuals in Poverty	7,055	8,550	21.2%

Immigration (foreign born)	7,779
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Frederick County WIA Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	65,328	80,090	22.6%	\$633	4,994	76,269	101,906	25,637	17,892	43,529
Government Total	9,926	12,387	24.8%	\$730	76	6,030	6,633	603	1,185	1,788
Federal Government	2,353	3,063	30.2%	\$1,012	55	3,056	2,935	0	612	612
State Government	422	644	52.6%	\$637	8	304	432	128	60	188
Local Government	7,151	8,680	21.4%	\$637	13	2,670	3,266	596	513	1,109
Private Total	55,402	67,703	22.2%	\$615	4,918	70,239	95,273	25,034	16,707	41,741
Agriculture, Forestry and Fishing	1,261	1,438	14.0%	\$477	181	996	1,229	233	193	426
Mining	3	0	-100.0%	NA	0	0	0	0	0	0
Construction	6,524	8,599	31.8%	\$675	879	7,993	10,177	2,184	1,449	3,633
Manufacturing	7,326	7,686	4.9%	\$810	179	7,612	9,560	1,948	1,665	3,613
TCPU ¹	1,753	2,159	23.2%	\$706	148	1,901	2,096	195	293	488
Wholesale Trade	3,135	3,518	12.2%	\$780	292	3,523	4,664	1,141	743	1,884
Retail Trade	13,683	16,607	21.4%	\$338	944	16,242	22,113	5,871	5,108	10,979
FIRE ²	4,861	5,627	15.8%	\$794	375	5,474	5,867	393	1,015	1,408
Services	16,840	21,873	29.9%	\$661	1,834	26,498	39,567	13,069	6,241	19,310
NonClassifiable	16	196	1125.0%	\$573	86					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Frederick County Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	6,524	8,599	10.7%	5.2%	\$675	7,993	10,177	2,184	1,449	3,633
Health Care	4,743	5,961	7.4%	2.8%	\$725	5,592	8,533	2,941	1,169	4,110
Hospitality and Tourism	8,519	9,512	11.9%	3.3%	\$259	9,554	12,747	3,193	3,192	6,385
Education - Public	4,987	6,080	7.6%	3.6%	\$645	6,950	9,215	2,265	1,485	3,750
Education - Private	1,167	1,201	1.5%	3.2%	\$477	(Included in Education - Public)				
High Technology	5,615	5,944	7.4%	3.4%	\$1,029	5,796	9,058	3,262	1,406	4,668
Information Technology	1,555	2,226	2.8%	2.7%	\$1,031	2,015	3,245	1,230	545	1,775

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation

Office of Labor Market Analysis and Information

Frederick County WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Elementary And Secondary Schools	1,012
Eating And Drinking Places	662
Personnel Supply Services	646
Grocery Stores	638
Miscellaneous Shopping Goods Stores	579

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Millwork, Veneer, Plywood, And Structural Wood Members	450.0
Family Clothing Stores	197.7
Radio, Television, Consumer Electronics, And Music Stores	166.7
Telephone Communications	164.6
Engineering, Architectural, And Surveying Services	113.8

Top 5 Location Quotients (LQ)

Industry Title	LQ
Primary Smelting And Refining Of Nonferrous Metals	35.6
Men's And Boys' Suits, Coats, And Overcoats	35.3
Operative Builders	33.9
Manifold Business Forms	20.5
Animal Specialties	19.3

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Frederick County WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	76,269	101,906	2,564	1,783	4,346
Management Occupations	7,087	9,311	222	126	348
Business and Financial Operations Occupations	2,762	3,612	85	53	138
Computer and Mathematical Occupations	1,552	2,769	122	14	135
Architecture and Engineering Occupations	1,644	2,230	59	37	95
Life, Physical, and Social Science Occupations	1,059	1,411	35	34	70
Community and Social Services Occupations	938	1,468	53	15	68
Legal Occupations	72	86	1	1	2
Education, Training, and Library Occupations	4,943	6,844	190	98	288
Arts, Design, Entertainment, Sports, and Media Occupations	916	1,220	30	20	50
Healthcare Practitioners and Technical Occupations	2,759	4,148	139	59	198
Healthcare Support Occupations	1,767	2,809	104	34	139
Protective Service Occupations	817	999	18	22	41
Food Preparation and Serving Related Occupations	5,961	8,022	206	249	456
Building and Grounds Cleaning and Maintenance Occupations	2,270	3,003	73	47	120
Personal Care and Service Occupations	1,648	2,349	70	46	116
Sales and Related Occupations	6,830	9,362	253	215	468
Office and Administrative Support Occupations	13,256	16,135	288	284	571
Farming, Fishing, and Forestry Occupations	84	119	4	2	6
Construction and Extraction Occupations	5,751	7,515	176	107	283
Installation, Maintenance, and Repair Occupations	3,122	4,102	98	73	171
Production Occupations	5,436	6,921	149	124	272
Transportation and Material Moving Occupations	5,595	7,471	188	124	312

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Frederick County WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	76,154	101,734	2,558	1,790	4,348
First professional degree	588	826	24	10	34
Doctoral degree	392	486	9	12	21
Master's degree	827	1,212	39	19	58
Work experience plus bachelor's or higher degree	5,888	7,718	183	106	289
Bachelor's degree	9,871	13,512	364	189	553
Associate degree	2,746	4,389	164	58	222
Postsecondary vocational training	3,447	4,961	151	78	229
Work experience in a related occupation	6,674	8,878	220	132	352
Long-term on-the-job training	5,741	7,413	167	112	279
Moderate-term on-the-job training	13,366	17,132	377	247	624
Short-term on-the-job training	26,614	35,207	859	827	1,686

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Frederick County WIA
Most Important Skills for Leading Job Creating Occupations

	Percent of Top 25 Occupations Requiring the Indicated Skill
Active Listening	84%
Speaking	84%
Reading Comprehension	80%
Service Orientation	60%
Writing	56%
Coordination	52%
Mathematics	44%
Social Perceptiveness	44%
Equipment Selection	28%
Critical Thinking	20%
Equipment Maintenance	20%
Operation and Control	20%
Time Management	20%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Lower Shore

Introduction

The Lower Shore region is composed of Somerset, Wicomico, and Worcester counties. This region has experienced tremendous growth from 1990 to 2000. The Lower Shore has long been viewed as a place to visit and the core of the region's economy is the hospitality and tourism sector. Recently, the region has begun to benefit from the opinion that the Lower Shore is a desirable location to live based on quality of life attributes. With this change in view, the region needs to better develop its economy to support and employ this growth in population. This report analyzes workforce supply and demand conditions in Lower Shore, using available metrics of both workforce and job characteristics. It is also important to note that the data in this report was compiled prior to the Tyson Foods announcement to close their plant on the Lower Shore.

Lower Shore's Workforce Supply

From 1990 to 2000, the Lower Shore region made gains in the percentage of people employed and significant gains in the educational attainment of its workforce. Several highlights of the supply of labor and the Lower Shore's workforce are:

- The Lower Shore region's civilian labor force increased by 17% from 1990 to 2000. Labor force participation in 2000 was 63% down from 64% in 1990.
- The number of employed Lower Shore region residents increased by 15% from 1990 to 2000.
- The percentage of persons aged 25 or older in Lower Shore having less than a high school diploma fell from 30% in 1990 to 21% in 2000, while the percentage of persons having a Bachelor's degree or higher increased from 16% to 20%.
- The number of Lower Shore residents with an Associates degree increased by 43% between 1990 and 2000, the number having a Bachelor's degree increased by 44%, and the number having a Graduate or Professional degree increased by 64%.
- Of the 1,486 high school graduates in 2001, 55% were going off to colleges or universities.
- There was a total of 150 community college graduates in 2001, with 26% earning degrees in business programs, 6% earning degrees in computer programs, and 28% earning degrees in health related programs.
- Lower Shore public and private colleges and universities awarded 1,959 degrees in 2001. Of these degrees, 18% were in business related programs, 18% were in education related programs, 9% were in biological science programs, 7% were in health related programs, 6% were in computer science programs, 1% were in engineering programs, and 1% were in physical sciences programs.

- Hard to serve populations, such as persons receiving welfare and persons on active parole, represent a potential additional source of workers from which businesses can recruit. The number of persons in poverty increased by 24% from 1990 to 2000 and the number of families in poverty increased by 23%. In 2001, 308 adult persons in the Lower Shore region received welfare assistance and 266 persons were on active parole.

Lower Shore Workforce Demand

Lower Shore Employment and Employment Growth

The construction, services, and retail trade sectors drove the Lower Shore's economy from 1996 to 2001. Several highlights of the Lower Shore region's employment and employment growth include:

- The number of persons employed in the Lower Shore region increased by 12% from 1996 to 2001.
- Over 2000 to 2010, total Lower Shore employment is projected to increase by 18% and create a total of 30,435 job openings.
- The Lower Shore's employment growth from 1996 to 2001 was led by several key sectors: construction (34%), services (17%), and retail trade (14%).
- Manufacturing employment in the Lower Shore decreased by 10%, or 1,330 jobs from 1996 to 2001.
- For 2000 to 2010, the industries that are projected to gain the greatest number of jobs due to economic growth and replacement demand are services (13,740 jobs), retail trade (8,572 jobs), manufacturing (1,925 jobs), and construction (1,659 jobs).

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to workforce and economic development account for 50% of total employment in the Lower Shore region.

- Lower Shore's **construction** industry accounts for 6% of the Lower Shore's total employment. Workers earned \$550 on average per week. From 2000 to 2010, it is expected that a total of 1,659 new construction jobs will be created.
- The Lower Shore region's **health care** industry accounts for 10% of total employment and workers earn \$700 on average per week. It is projected that the Lower Shore region will add a total of 3,291 health care workers from 2000 to 2010.
- The **hospitality and tourism** industry accounts for 22% of total employment in Lower Shore and workers earn \$277 on average per week. This sector is expected to add 7,674 jobs from 2000 to 2010.

- Lower Shore's public **education** employees account for 8% of the Lower Shore workforce and earn \$684 on average per week. From 2000 to 2010, the Lower Shore region is expected to add 3,007 public education workers.
- The **high technology** industry accounts for 4% of total employment and workers earn \$629 on average per week. A total of 1,258 new high technology jobs are projected to be created in the Lower Shore between 2000 and 2010. Information technology workers account for 3% of the total employment in Lower Shore and workers earn \$606 on average per week. Seventy-one percent (71%) of the projected high technology jobs created in the Lower Shore region from 2000 to 2010 are in the information technology industry (887 jobs).

Top Growth Industries

Those industries that have experienced the greatest growth in the Lower Shore region are an example of how the region has developed over the past decade. The Lower Shore's strongest industry, hospitality and tourism, remains the core of the Lower Shore's economy, but with the increase in population, there will be a strong need for services to support the population.

- The top five employment growth industries from 1996 to 2001 in the Lower Shore were, eating and drinking places, elementary and secondary schools, hospitals, colleges, universities, professional schools and junior colleges, and electronic components and accessories. These industries added 3,482 jobs.
- The five fastest growing industries in Lower Shore from 1996 to 2001 were surgical, medical and dental instruments and supplies, professional and commercial equipment and supplies, computer programming and data processing services, landscape and horticultural services, and painting and paper hanging. On average these five industry clusters grew by 107% compared to total Lower Shore employment growth of 12%.
- Those industries having the highest LQs in Lower Shore are metal cans and shipping containers, manifold business forms, meat products, paint, glass and wallpaper stores, and miscellaneous apparel and accessory stores.

Lower Shore Job Openings

In order to better identify the key occupational employment trends impacting the Lower Shore region, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

A majority of the job openings for Lower Shore can be filled by the 45% of the region's high school graduates that are not attending a college or university. While not primarily high-

wage positions, these occupations are important in that they support higher-wage, higher-skill occupations.

- The top five fastest growing occupational groups by total annual openings account for 54% of total annual openings. The five fastest growing occupational groups by total annual openings are food preparation and serving related occupations (547 jobs), sales and related occupations (386 jobs), office and administrative support occupations (308 jobs), management occupations (212 jobs), and education, training and library occupations (181 jobs).

Occupational Openings from Economic Growth

The top occupations that are forecasted to be created by economic growth in the Lower Shore region account for 47% of the projected job openings. Most of the positions are support-type positions, but are important in that they are jobs that are critical to the region or are occupations in industries that have been traditionally tied to the region.

- The top five fastest growing occupations by economic growth account for 47% of total openings due to economic growth. The five fastest growing occupations by economic growth are food preparation and serving related occupations (168 jobs), sales and related occupations (111 jobs), management occupations (110 jobs), education, training and library occupations (105 jobs), and office and administrative support occupations (95 jobs).

Occupational Educational Requirements

While the Lower Shore region has made progress in the educational attainment level of its workforce, a majority of the jobs will require workers to have only on-the-job training. While these jobs are important and support higher wage and higher skill positions, it is vital for the region to attract and retain firms that require workers having a higher level of educational attainment and skills set.

- Seventeen percent (17%) of total Lower Shore employment is in occupations requiring a Bachelor's degree, 4% require an Associates degree, 5% require post-secondary training, and 74% require only on the job training.
- Twenty-six percent (26%) of job openings created by economic growth require a Bachelor's degree, 7% require an Associates degree, 7% require post-secondary training, and 60% require only on the job training.
- Nineteen percent (19%) of total job openings created by economic growth and replacement demand require a Bachelor's degree, 4% require an Associates degree, 5% require post-secondary training, and 72% require only on the job training.

Key Skills of Leading Occupations

The top fifteen occupations ranked by projected job openings in the Lower Shore region are dominated by lower skilled occupations serving the region's tourism sector and residential

demand based industries. Only two of the top fifteen occupations, registered nurses and secondary school teachers require an Associates degree or higher. As a result, the most important skills for the top job creating occupations are dominated by basic skills – such as listening, reading comprehension, service orientation, social perceptiveness, and speaking.

Lower Shore WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	105,275	124,956	18.7%
In Labor Force	67,188	78,326	16.6%
Civilian Labor Force	67,061	78,133	16.5%
Employed	63,517	73,089	15.1%
Unemployed	3,544	5,044	42.3%
Armed Forces	127	193	52.0%
Not in Labor Force	38,087	46,630	22.4%

Educational Attainment	1990	2000	Percent Change
Population 25+	87,960	103,934	18.2%
Less Than High School	26,565	21,556	-18.9%
High school/GED	30,647	36,035	17.6%
Some College, No Degree	13,267	20,277	52.8%
Associate Degree	3,542	5,070	43.1%
Bachelor's Degree	9,372	13,494	44.0%
Graduate of Professional Degree	4,567	7,502	64.3%

	2001	Percent Going to College
High School Graduates	1,486	54.9%
College Prep	701	
Vocational	361	

Community College Grads	150
Business Tech	39
Computer Tech	9
Health Tech	42

	Bachelor	Master	Doctorate	Professional
Four Year College Grads	1,728	231	0	0
Biological Sciences	162	6	0	0
Business	315	35	0	0
Computer Science	82	27	0	0
Education	263	96	0	0
Engineering	13	0	0	0
Health	110	33	0	0
Physical Sciences	27	0	0	0

Hard to Serve Populations	2001
Welfare Population	308
Active Parole	266

<i>Poverty Status</i>	1990	2000	Percent Change
Families in Poverty	3,014	3,691	22.5%
Individuals in Poverty	15,227	18,837	23.7%
Immigration (foreign Born)	5,136		

Lower Shore WIA Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	65,576	73,284	11.8%	\$501	5,129	70,849	83,286	12,437	17,998	30,435
Government Total	10,250	12,243	19.4%	\$632	154	5,568	6,296	728	1,226	1,954
Federal Government	645	655	1.6%	\$781	58	716	744	28	187	215
State Government	3,572	4,486	25.6%	\$617	27	1,562	1,832	270	311	581
Local Government	6,033	7,102	17.7%	\$628	69	3,290	3,720	430	728	1,158
Private Total	55,326	61,041	10.3%	\$475	4,975	65,281	76,990	11,709	16,772	28,481
Agriculture, Forestry and Fishing	1,022	1,004	-1.8%	\$420	138	390	459	69	92	161
Mining	12	20	66.7%	\$595	3	7	25	18	3	21
Construction	3,264	4,371	33.9%	\$550	681	3,934	4,678	744	915	1,659
Manufacturing	9,279	8,399	-9.5%	\$588	193	9,171	8,513	0	1,925	1,925
TCPU ¹	2,826	2,932	3.8%	\$666	226	2,871	3,150	279	610	889
Wholesale Trade	3,045	3,171	4.1%	\$715	250	2,734	3,376	642	703	1,345
Retail Trade	16,397	18,636	13.7%	\$304	1,318	18,241	20,727	2,486	6,086	8,572
FIRE ²	2,730	2,923	7.1%	\$588	460	2,844	3,138	294	533	827
Services	16,731	19,538	16.8%	\$491	1,670	25,089	32,924	7,835	5,905	13,740
NonClassifiable	20	47	135.0%	\$337	36					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Lower Shore Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	3,304	4,412	6.0%	2.7%	\$550	3,934	4,678	744	915	1,659
Health Care	6,167	7,351	10.0%	3.5%	\$700	6,678	8,528	1,850	1,441	3,291
Hospitality and Tourism	13,794	16,123	22.0%	5.6%	\$277	14,690	17,307	2,617	5,057	7,674
Education - Public	4,759	5,820	7.9%	3.5%	\$684	5,703	7,314	1,611	1,396	3,007
Education - Private	195	251	0.3%	0.7%	\$413					
High Technology	2,244	2,801	3.8%	1.6%	\$629	2,828	3,458	630	628	1,258
Information Technology	1,491	1,931	2.6%	2.4%	\$606	1,807	2,269	462	425	887

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Lower Shore WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Eating And Drinking Places	1,422
Elementary And Secondary Schools	651
Hospitals	516
Colleges, Universities, Professional Schools, And Junior Colleges	466
Electronic Components And Accessories	427

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Surgical, Medical, And Dental Instruments And Supplies	125.6
Professional And Commercial Equipment And Supplies	119.4
Computer Programming, Data Processing, And Other Computer Related Service	98.3
Landscape And Horticultural Services	97.6
Painting And Paper Hanging	95.9

Top 5 Location Quotients (LQ)

Industry Title	LQ
Metal Cans And Shipping Containers	10.1
Manifold Business Forms	9.6
Meat Products	9.0
Paint, Glass And Wallpaper Stores	7.5
Miscellaneous Apparel And Accessory Stores	6.7

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Lower Shore WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	70,849	83,286	1,244	1,802	3,045
Management Occupations	5,793	6,890	110	103	212
Business and Financial Operations Occupations	1,336	1,568	23	27	50
Computer and Mathematical Occupations	634	1,053	42	7	49
Architecture and Engineering Occupations	724	858	13	15	28
Life, Physical, and Social Science Occupations	426	512	9	13	22
Community and Social Services Occupations	969	1,445	48	16	63
Legal Occupations	248	375	13	2	15
Education, Training, and Library Occupations	3,236	4,284	105	76	181
Arts, Design, Entertainment, Sports, and Media Occupations	590	715	13	12	25
Healthcare Practitioners and Technical Occupations	3,480	4,365	89	69	158
Healthcare Support Occupations	1,911	2,696	79	35	114
Protective Service Occupations	1,345	1,662	32	38	70
Food Preparation and Serving Related Occupations	9,002	10,686	168	379	547
Building and Grounds Cleaning and Maintenance Occupations	3,628	4,503	88	76	164
Personal Care and Service Occupations	2,136	2,959	82	56	138
Sales and Related Occupations	8,519	9,631	111	274	386
Office and Administrative Support Occupations	9,988	10,939	95	212	308
Farming, Fishing, and Forestry Occupations	511	629	12	15	26
Construction and Extraction Occupations	3,188	3,744	56	78	134
Installation, Maintenance, and Repair Occupations	3,699	4,255	56	83	138
Production Occupations	6,097	5,768	0	141	141
Transportation and Material Moving Occupations	3,389	3,749	36	76	112

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Lower Shore WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	70,370	82,644	1,227	1,803	3,030
First professional degree	645	820	18	11	29
Doctoral degree	435	611	18	9	27
Master's degree	842	1,232	39	19	58
Work experience plus bachelor's or higher degree	4,711	5,634	92	86	178
Bachelor's degree	5,656	7,214	156	115	271
Associate degree	2,484	3,318	83	50	133
Postsecondary vocational training	3,281	4,139	86	79	165
Work experience in a related occupation	6,037	6,943	91	122	213
Long-term on-the-job training	5,383	6,144	76	116	192
Moderate-term on-the-job training	10,418	11,465	105	197	302
Short-term on-the-job training	30,478	35,124	465	999	1,464

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Lower Shore WIA
Most Important Skills for Leading Job Creating Occupations

	% of Top 15 Occupations Listing Skill Among Top Skills
Active Listening	87%
Reading Comprehension	67%
Service Orientation	67%
Social Perceptiveness	67%
Speaking	67%
Coordination	53%
Mathematics	53%
Writing	47%
Equipment Selection	33%
Equipment Maintenance	27%
Critical Thinking	20%
Installation	20%
Operation and Control	20%
Repairing	20%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Mid-Maryland

Introduction

The Mid-Maryland region, composed of Carroll and Howard counties, offers significant locational, workforce, and quality of life benefits. The Mid-Maryland region has become both a major employment and residential center. Several of the major employers within the region are Johns Hopkins Applied Physics Laboratory, SAIC, Micros Systems, Northrop Grumman, WR Grace, Verizon Wireless, and Joseph A. Banks Clothiers. This report analyzes workforce supply and demand conditions in Mid-Maryland, using available metrics of both workforce and job characteristics.

Mid-Maryland's Workforce Supply

The Mid-Maryland region has a highly educated workforce and an acclaimed school system. With four of every ten persons aged 25 and above having a Bachelor's degree or higher and 68% of the high school students going off to attend college the region has a highly skilled workforce. The region has experienced tremendous growth and economic development from 1990 to 2000. Several highlights of the supply of labor and the Mid-Maryland's workforce are:

- The Mid-Maryland region's civilian labor force increased by 22% from 1990 to 2000. Labor force participation in 2000 was 74% down from 76% in 1990.
- The number of employed residents in Mid-Maryland increased by 22% from 1990 to 2000.
- The percentage of persons aged 25 or older in Mid-Maryland having less than a high school diploma fell from 14% in 1990 to 10% in 2000, while the percentage of persons having a Bachelor's degree or higher increased from 36% to 42%.
- The number of Mid-Maryland residents with an Associates degree increased by 27% between 1990 and 2000, the number having a Bachelor's degree increased by 46%, and the number having a Graduate or Professional degree increased by 62%.
- Of the 4,689 high school graduates in 2001, 68% were going off to colleges or universities.
- There was a total of 499 community college graduates in 2001, with 5% earning degrees in business programs, 4% earning degrees in computer programs, and 9% earning degrees in health related programs.
- Mid-Maryland public and private colleges and universities awarded 788 degrees in 2001. Of these degrees, 51% were in education related programs, 7% were business related programs, 3% were in biological science programs, and 1% were in physical sciences programs.
- Hard to serve populations, such as persons receiving welfare and persons on active parole, represent a potential additional source of workers from which businesses can

recruit. The number of persons in poverty increased by 47% from 1990 to 2000 and the number of families in poverty increased by 42%. In 2001, 200 adult persons in the Mid-Maryland region received welfare assistance and 43 persons were on active parole.

Mid-Maryland Workforce Demand

Mid-Maryland Employment and Employment Growth

The construction, services, wholesale trade, and retail trade sectors drove the Mid-Maryland economy from 1996 to 2001. Several highlights of the Mid-Maryland region's employment and employment growth include:

- The number of persons employed in the Mid-Maryland region increased by 23% from 1996 to 2001.
- Over 2000 to 2010, total Mid-Maryland employment is projected to increase by 32% and create a total of 97,227 job openings.
- The Mid-Maryland's employment growth from 1996 to 2001 was led by several key sectors: construction (37%), services (32%), wholesale trade (26%), and retail trade (20%).
- For 2000 to 2010, the industries that are projected to gain the greatest number of jobs due to economic growth and replacement demand are services (37,753 jobs), retail trade (24,156 jobs), wholesale trade (9,993 jobs), and construction (9,099 jobs).

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to workforce and economic development in Maryland account for 43% of total employment in the Mid-Maryland region.

- Mid-Maryland's **construction** industry accounts for 10% of the Mid-Maryland's total employment. Workers earned \$838 on average per week. From 2000 to 2010, it is expected that a total of 9,099 new construction jobs will be created.
- The Mid-Maryland region's **health care** industry accounts for 6% of total employment and workers earn \$688 on average per week. It is projected that the Mid-Maryland region will add a total of 5,343 health care workers from 2000 to 2010.
- The **hospitality and tourism** industry accounts for 12% of total employment in Mid-Maryland and workers earn \$269 on average per week. This sector is expected to add 15,142 jobs from 2000 to 2010.
- Mid-Maryland's public **education** employees account for 7% of the Mid-Maryland workforce and earn \$663 on average per week. From 2000 to 2010, the Mid-Maryland region is expected to add 6,987 public education workers.

- The **high technology** industry accounts for 9% of total employment and these workers earn \$1,286 on average per week. A total of 9,292 new high technology jobs are projected to be created between 2000 and 2010 in the Mid-Maryland region. Information technology workers account for 3% of the total employment in Mid-Maryland and workers earn \$1,420 on average per week. Forty-three percent (43%) of the projected high technology jobs created in the Mid-Maryland region from 2000 to 2010 are in the information technology industry (3,962 jobs).

Top Growth Industries

The rapidly suburbanizing and developing Mid-Maryland region has experienced growth in both residential demand based industries and export-based goods and services. The region experienced strong growth in residential demand based industries, such as education, eating and drinking places, retail, and personal services, to support the region's increasing population. The region is also linked to Maryland's strong technology sector, with both a high degree of concentration and rapid growth in research, development and testing services.

- The top five employment growth industries from 1996 to 2001 in the Mid-Maryland were, elementary and secondary schools, electrical work, personnel supply services, eating and drinking places, and research, development and testing services. These industries added 10,969 jobs.
- The five fastest growing industries in Mid-Maryland from 1996 to 2001 were individual and family social services, miscellaneous personal services, electrical work, personnel supply services, and family clothing stores. On average these five industry clusters grew by 170% compared to total Mid-Maryland employment growth of 23%.
- Those industries having the highest LQs in Mid-Maryland are men's and boys' suits coats and overcoats, cement, research, development and testing services, charter bus services, and miscellaneous apparel and accessories.

Mid-Maryland Job Openings

In order to better identify the key occupational employment trends impacting the Mid-Maryland region, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

A majority of the total number of job openings for Mid-Maryland can be filled by the 32% of the region's high school graduates that are not attending a college or university. While not primarily high-wage positions, these occupations are important in that they support higher-wage, higher-skill occupations.

- The top five fastest growing occupational groups by total annual openings account for 52% of total annual openings. The five fastest growing occupational groups by total annual openings are sales and related occupations (1,234 jobs), office and administrative support occupations (1,212 jobs), food preparation and serving related occupations (1,016 jobs), management occupations (855 jobs), and transportation and material moving occupations (724 jobs).

Occupational Openings from Economic Growth

The top occupations that are projected to be created by economic growth in the Mid-Maryland region account for 49% of the projected job openings. Most of the positions are lower skilled, support-type positions, but are important in that they are jobs that are critical to the region or are occupations in industries that have been traditionally tied to the region.

- The top five fastest growing occupations from economic growth account for 49% of total openings due to economic growth. The five fastest growing occupations from economic growth are sales and related occupations (677 jobs), office and administrative support occupations (591 jobs), management occupations (557 jobs), food preparation and serving related occupations (506 jobs), and construction and extraction occupations (452 jobs).

Occupational Educational Requirements

Nearly three of every ten jobs created by economic growth in the Mid-Maryland region from 2000 to 2010 will require a Bachelor's degree or higher. This is important in that while a majority of jobs will only require on-the-job training, the jobs created by the expanding sectors of the region's economy require higher educational attainment levels and a higher level of skills.

- Twenty-four percent (24%) of total Mid-Maryland employment is in occupations requiring a Bachelor's degree, 4% require an Associates degree, 3% require post-secondary training, and 69% require only on the job training.
- Twenty-eight percent (28%) of job openings created by economic growth require a Bachelor's degree, 5% require an Associates degree, 3% require post-secondary training, and 64% require only on the job training.
- Twenty-five percent (25%) of total job openings created by economic growth and replacement demand require a Bachelor's degree, 4% require an Associates degree, 3% require post-secondary training, and 68% require only on the job training.

Key Skills of Leading Occupations

The top fifteen occupations ranked by projected job openings in the Mid-Maryland region are dominated by lower skilled occupations serving the region's residential demand based industries and the region's important distribution sector. The most important skills for the top job creating occupations are dominated by basic skills – such as reading comprehension, speaking, listening, writing, math, and service orientation. However, several of the region's top

job creating occupations, such as computer software engineers and computer programmers, related to the region's rapidly expanding technology sector and require higher level skills.

Mid-Maryland WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	237,360	298,842	25.9%
In Labor Force	181,485	220,652	21.6%
Civilian Labor Force	179,991	219,485	21.9%
Employed	175,831	213,948	21.7%
Unemployed	4,160	5,537	33.1%
Armed Forces	1,494	1,167	-21.9%
Not in Labor Force	55,875	78,190	39.9%

Educational Attainment	1990	2000	Percent Change
Population 25+	201,607	261,992	30.0%
Less Than High School	27,902	25,769	-7.6%
High school/GED	50,303	59,404	18.1%
Some College, No Degree	38,317	50,477	31.7%
Associate Degree	12,159	15,422	26.8%
Bachelor's Degree	43,916	63,996	45.7%
Graduate of Professional Degree	29,010	46,924	61.8%

	2001	Percent Going going to college
High School Graduates	4,689	67.9%
College Prep	2,884	
Vocational	403	

Community College Grads	499
Business Tech	26
Computer Tech	21
Health Tech	46

	Bachelor	Master	Doctorate	Professional
Four Year College Grads	392	396	0	0
Biological Sciences	27	0	0	0
Business	53	0	0	0
Computer Science	0	0	0	0
Education	23	381	0	0
Engineering	0	0	0	0
Health	0	0	0	0
Physical Sciences	0	0	0	0

Hard to Serve Populations	2001
Welfare Population	200
Active Parole	43

<i>Poverty Status</i>	1990	2000	Percent Change
Families in Poverty	1,992	2,818	41.5%
Individuals in Poverty	10,312	15,108	46.5%
Immigration (foreign Born)	2000	31,159	

Mid-Maryland WIA Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	148,490	182,275	22.8%	\$713	11,308	175,354	231,989	56,635	40,592	97,227
Government Total	18,746	22,524	20.2%	\$690	108	9,006	10,991	1,985	2,010	3,995
Federal Government	846	1,073	26.8%	\$932	53	1,089	1,215	126	234	360
State Government	5,066	5,048	-0.4%	\$728	22	3,541	4,346	805	758	1,563
Local Government	12,834	16,403	27.8%	\$662	33	4,376	5,430	1,054	1,018	2,072
Private Total	129,744	159,751	23.1%	\$717	11,200	166,348	220,998	54,650	38,582	93,232
Agriculture, Forestry and Fishing	2,363	2,946	24.7%	\$510	369	2,363	3,355	992	531	1,523
Mining	22	27	22.7%	\$668	2	21	31	10	4	14
Construction	13,465	18,489	37.3%	\$838	1,660	16,106	21,913	5,807	3,292	9,099
Manufacturing	12,844	13,185	2.7%	\$816	409	13,538	15,379	1,841	2,840	4,681
TCPU ¹	7,473	7,778	4.1%	\$715	474	7,825	9,119	1,294	1,402	2,696
Wholesale Trade	14,237	17,936	26.0%	\$963	925	15,077	21,485	6,408	3,585	9,993
Retail Trade	30,073	36,073	20.0%	\$372	1,695	35,287	48,171	12,884	11,272	24,156
FIRE ²	8,160	9,003	10.3%	\$999	936	7,444	9,248	1,804	1,513	3,317
Services	41,050	54,134	31.9%	\$763	4,582	68,687	92,297	23,610	14,143	37,753
NonClassifiable	57	180	215.8%	\$640	148					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Mid-Maryland Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	13,465	18,489	10.1%	11.3%	\$838	16,106	21,913	5,807	3,292	9,099
Health Care	10,767	10,739	5.9%	5.1%	\$688	10,225	13,467	3,242	2,101	5,343
Hospitality and Tourism	18,132	21,510	11.8%	7.4%	\$269	20,755	28,829	8,074	7,068	15,142
Education - Public	9,037	12,087	6.6%	7.2%	\$663	12,561	16,720	4,159	2,828	6,987
Education - Private	1,029	1,536	0.8%	4.1%	\$515					
High Technology	12,780	16,150	8.9%	9.3%	\$1,286	16,308	22,552	6,244	3,048	9,292
Information Technology	4,728	5,829	3.2%	7.2%	\$1,420	6,322	9,276	2,954	1,008	3,962

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Mid-Maryland WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Elementary And Secondary Schools	2,827
Electrical Work	2,370
Personnel Supply Services	1,999
Eating And Drinking Places	1,896
Research, Development, And Testing Services	1,877

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Individual And Family Social Services	253.3
Miscellaneous Personal Services	179.6
Electrical Work	167.5
Personnel Supply Services	159.0
Family Clothing Stores	91.8

Top 5 Location Quotients (LQ)

Industry Title	LQ
Men's And Boys' Suits, Coats, And Overcoats	25.3
Cement, Hydraulic	11.6
Research, Development, And Testing Services	5.7
Bus Charter Service	5.7
Miscellaneous Apparel And Accessories	5.3

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Mid-Maryland WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	175,354	231,989	5,664	4,053	9,717
Management Occupations	16,631	22,197	557	299	855
Business and Financial Operations Occupations	5,186	6,964	178	101	279
Computer and Mathematical Occupations	5,788	9,199	341	71	412
Architecture and Engineering Occupations	3,568	4,555	99	77	176
Life, Physical, and Social Science Occupations	1,963	2,698	74	52	125
Community and Social Services Occupations	3,087	4,048	96	48	144
Legal Occupations	548	792	24	4	29
Education, Training, and Library Occupations	9,707	13,478	377	214	591
Arts, Design, Entertainment, Sports, and Media Occupations	2,250	3,056	81	45	125
Healthcare Practitioners and Technical Occupations	9,046	12,555	351	183	534
Healthcare Support Occupations	2,865	4,032	117	58	175
Protective Service Occupations	4,190	5,498	131	111	242
Food Preparation and Serving Related Occupations	11,910	16,966	506	510	1,016
Building and Grounds Cleaning and Maintenance Occupations	4,632	6,097	147	96	243
Personal Care and Service Occupations	3,949	5,127	118	105	222
Sales and Related Occupations	18,779	25,547	677	557	1,234
Office and Administrative Support Occupations	29,205	35,119	591	620	1,212
Farming, Fishing, and Forestry Occupations	199	225	3	6	9
Construction and Extraction Occupations	11,973	16,497	452	234	686
Installation, Maintenance, and Repair Occupations	6,202	7,895	169	136	305
Production Occupations	9,663	11,306	164	217	382
Transportation and Material Moving Occupations	14,013	18,138	413	312	724

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Mid-MD WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	173,864	229,890	5,603	4,062	9,665
First professional degree	1994	2805	81	43	124
Doctoral degree	657	1075	42	12	54
Master's degree	3339	4369	103	70	173
Work experience plus bachelor's or higher degree	13196	17835	464	239	703
Bachelor's degree	23327	32262	894	447	1,341
Associate degree	6376	9306	293	125	418
Postsecondary vocational training	5502	6927	143	127	270
Work experience in a related occupation	14823	19027	420	291	711
Long-term on-the-job training	14432	19207	478	297	775
Moderate-term on-the-job training	33389	41989	860	611	1,471
Short-term on-the-job training	56829	75088	1,826	1,800	3,626

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Mid-Maryland WIA
Most Important Skills for Leading Job Creating Occupations

	Percent of Top 25 Occupations Requiring the Indicated Skill
Reading Comprehension	84%
Speaking	80%
Active Listening	76%
Writing	72%
Mathematics	52%
Service Orientation	52%
Social Perceptiveness	48%
Coordination	32%
Operation and Control	20%
Critical Thinking	16%
Equipment Selection	16%
Instructing	16%
Monitoring	16%
Repairing	16%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Montgomery County

Introduction

Montgomery County is nationally recognized as not only having a highly educated and skilled workforce but as a national location for high technology companies. Time Magazine wrote “the 15 mile stretch of Interstate 270 that runs from Bethesda to Gaithersburg now houses on of the word’s largest and smartest collections of genomic firms.” With its access to Washington, D.C. and the presence of several major federal agencies, including the National Institute of Health, the Food and Drug Administration, and the National Institute of Standards and Technology, Montgomery County has developed into a desirable place to both live and work. Additionally, the County has been recognized for its “green space” and its collection of national Blue Ribbon schools. This report analyzes workforce supply and demand conditions in Montgomery County, using available metrics of both workforce and job characteristics.

Montgomery County’s Workforce Supply

Montgomery County has experienced a boom in population and employment growth over the past ten years. The County also possesses a highly educated and skilled workforce. Several highlights of the supply of labor and the County’s workforce are:

- The number of employed residents of Montgomery County increased by 6% from 1990 to 2000.
- The percentage of persons aged 25 or older in Montgomery County having less than a high school diploma stayed nearly steady from 9% in 1990 to 10% in 2000, while the percentage of persons having a Bachelor’s degree or higher increased from 50% to 55%.
- The number of Montgomery County residents with an Associates degree decreased by 3% between 1990 and 2000, the number having a Bachelor’s degree increased by 17%, and the number having a Graduate or Professional degree increased by 37%.
- Of the 8,078 high school graduates in 2001, 74% were going off to colleges or universities.
- There was a total of 964 community college graduates in 2001, with 11% earning degrees in business programs, 4% earning degrees in computer programs, and 10% earning degrees in health related programs.
- The number of persons in poverty increased by 49% from 1990 to 2000 and the number of families in poverty increased by 53%. In 2001, 585 adults in Montgomery County received welfare assistance and 60 persons were on active parole.

Montgomery County Workforce Demand

Montgomery County Employment and Employment Growth

From 1996 to 2001, Montgomery County outpaced the State in terms of total employment growth and for the period of 2000 to 2010, the County is projected to continue to outpace the State in total employment growth. Several highlights of the County's employment and employment growth include:

- The number of persons employed in Montgomery County increased by 16% from 1996 to 2001.
- Over 2000 to 2010, total County employment is projected to increase by 18% and create a total of 175,969 job openings.
- The County's employment growth from 1996 to 2001 was led by job growth in the construction sector (37%), transportation, communications and public utilities (31%), and services sector (22%).
- For 2000 to 2010, the industries that are projected to gain the greatest number of job openings due to economic growth and replacement demand are retail trade (28,294 jobs), finance, insurance and real estate (11,552 jobs), and construction (8,066 jobs).

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to workforce and economic development account for 43% of total employment in Montgomery County.

- Montgomery County County's **construction** industry accounts for 6% of the County's total employment. Workers earned \$865 on average per week. From 2000 to 2010, it is expected that a total of 8,066 new construction jobs will be created.
- The County's **health care** industry accounts for 8% of total employment and workers earn \$824 on average per week. It is projected that the County will add a total of 15,128 health care workers from 2000 to 2010.
- The **hospitality and tourism** industry accounts for 11% of total employment in the County and workers earn \$460 on average per week. This sector is expected to add 21,093 jobs from 2000 to 2010.
- Montgomery County's public **education** employees account for 5% of the County workforce and earn \$842 on average per week. From 2000 to 2010, the County is expected to add 9,557 public education workers.

- The **high technology** industry accounts for 12% of the County's total employment and workers earn \$1,456 on average per week. A total of 27,898 new high technology jobs are projected for the County between 2000 and 2010. Information technology workers account for 7% of the total employment in the County and workers earn \$1,496 on average per week. Sixty-four percent (64%) of the projected high technology jobs created in the County between 2000 and 2010 are in the information technology industry (17,798 jobs). Biotechnology is of significant importance to the County, and according to MD Bio, 56% of the State's biotech companies (163 firms) are located in Montgomery County.

Top Growth Industries

Montgomery County is a desirable location to live and work. Additionally, Montgomery County has benefited from the presence of several major federal agencies, including the National Institute of Health, the Food and Drug Administration, and the National Institute of Standards and Technology. As a result, Montgomery County has seen growth in its residential demand based sectors, high technology sector, and business services sector.

- The top five employment growth industries from 1996 to 2001 in Montgomery County were computer programming services, elementary and secondary schools, personnel supply services, research, development and testing services (which includes biotechnology research), and management and public relations services. These industries added 19,512 jobs.
- The five fastest growing industries in the County from 1996 to 2001 were concrete work, radio and television broadcasting stations, job training and vocational services, videotape rental, and individual and family social services. On average these five industry clusters grew by 101% compared to total County employment growth of 16%.
- Those industries having the highest LQs in Montgomery County are communications services, not elsewhere classified, research, development, and testing services, professional membership organizations, communications equipment, and periodicals publishing.

Montgomery County Job Openings

In order to better identify the key occupational employment trends impacting Montgomery County, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

Many of the job openings for the County can be filled by the 26% of the County's high school graduates that are not attending a college or university.

- The top five fastest growing occupational groups by total annual openings account for 51% of total annual openings. The five fastest growing occupational groups by total annual openings are office and administrative support occupations (2,277 jobs), management occupations (1,766 jobs), sales and related occupations (1,723 jobs), computer and mathematical occupations (1,682 jobs), and food preparation and serving related occupations (1,473 jobs).

Occupational Openings from Economic Growth

These occupations are important in that they are mainly positions that require a high level of educational attainment or a specific set of skills. These positions are generally high-wage occupations.

- The top five fastest growing occupations from economic growth account for 54% of total openings due to economic growth. The five fastest growing occupations by economic growth are computer and mathematical occupations (1,434 jobs), management occupations (923 jobs), office and administrative support occupations (783 jobs), healthcare practitioners and technical occupations (551 jobs), and business and financial operations occupations (530 jobs).

Occupational Educational Requirements

Montgomery County's current occupational profile and projected occupational needs require a high level of educational attainment.

- Thirty-three percent (33%) of total County employment is in occupations requiring a Bachelor's degree or above, 4% require an Associates degree, 5% require post-secondary training, and 58% require only on the job training.
- The growing sectors of the Montgomery County economy have high levels of educational requirements. Forty-four percent (44%) of total job openings created by economic growth require a Bachelor's degree, 7% require an Associates degree, 8% require post-secondary training, and 41% require only on the job training.
- Thirty-four percent (34%) of total job openings created by economic growth and replacement demand require a Bachelor's degree, 5% require an Associates degree, 6% require post-secondary training, and 55% require only on the job training.

Key Skills of Leading Occupations

The top twenty-five occupations ranked by projected job openings in Montgomery County are dominated by lower skilled occupations serving the County's residential demand based industries. Three of the County's top 25 leading job creating occupations are tied to the County's high technology sector, computer software engineers, computer systems analysts, and computer support services. Still the most important skills for the top job creating occupations are dominated by basic skills – such as active listening, speaking, reading comprehension, service orientation, and writing.

Montgomery County WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	596,994	675,119	13.1%
In Labor Force	448,284	477,123	6.4%
Civilian Labor Force	443,711	473,851	6.8%
Employed	431,572	458,824	6.3%
Unemployed	12,139	15,027	23.8%
Armed Forces	4,573	3,272	-28.4%
Not in Labor Force	148,710	197,996	33.1%

Educational Attainment	1990	2000	Percent Change
Population 25+	512,839	594,034	15.8%
Less Than High School	48,292	57,476	19.0%
High school/GED	85,907	86,009	0.1%
Some College, No Degree	94,332	99,098	5.1%
Associate Degree	28,177	27,371	-2.9%
Bachelor's Degree	137,105	160,754	17.2%
Graduate of Professional Degree	119,026	163,326	37.2%

	2001	Percent Going to College
High School Graduates	8,078	74.3%
College Prep	5,895	
Vocational	588	

Community College Grads	964
Business Tech	106
Computer Tech	39
Health Tech	99

	Bachelor	Master	Doctorate	Professional
Four Year College Grads	355	0	0	0
Biological Sciences	9	0	0	0
Business	85	0	0	0
Computer Science	29	0	0	0
Education	11	0	0	0
Engineering	0	0	0	0
Health	17	0	0	0
Physical Sciences	1	0	0	0

Hard to Serve Populations	2001
Welfare Population	585
Active Parole	60

<i>Poverty Status</i>	1990	2000	Percent Change
Families in Poverty	5,514	8,428	52.8%
Individuals in Poverty	31,651	47,024	48.6%
Immigration (foreign born)	232,996		

Montgomery County WIA Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	388,718	450,547	15.9%	\$885	29,897	444,865	522,860	77,995	97,974	175,969
Government Total	76,197	79,796	4.7%	\$1,021	141	55,852	58,705	2,853	10,333	13,186
Federal Government	41,261	40,462	-1.9%	\$1,250	96	39,615	40,277	662	6,991	7,653
State Government	1,287	1,096	-14.8%	\$616	9	1,100	1,135	35	176	211
Local Government	33,649	38,238	13.6%	\$789	36	15,137	17,293	2,156	3,166	5,322
Private Total	312,521	370,751	18.6%	\$856	29,756	389,013	464,155	75,142	87,641	162,783
Agriculture, Forestry and Fishing	3,737	4,746	27.0%	\$513	507	4,471	5,604	1,133	1,004	2,137
Mining	99	174	75.8%	\$989	5	92	129	37	23	60
Construction	20,000	27,295	36.5%	\$865	2,256	26,254	29,256	3,002	5,064	8,066
Manufacturing	17,637	20,262	14.9%	\$1,291	575	20,158	20,427	269	3,985	4,254
TCPU ¹	11,605	15,149	30.5%	\$1,218	647	13,480	15,014	1,534	2,679	4,213
Wholesale Trade	11,689	12,815	9.6%	\$1,313	1,190	13,532	14,346	814	2,524	3,338
Retail Trade	68,439	72,581	6.1%	\$429	3,876	73,212	79,291	6,079	22,215	28,294
FIRE ²	28,639	32,888	14.8%	\$1,107	2,515	31,575	37,459	5,884	5,638	11,522
Services	150,483	183,263	21.8%	\$878	17,327	206,239	262,629	56,390	44,509	100,899
NonClassifiable	193	1,578	717.6%	\$745	858					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Montgomery County Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	20,000	27,296	6.1%	16.6%	\$865	26,254	29,256	3,002	5,064	8,066
Health Care	31,671	35,550	7.9%	16.8%	\$824	32,669	41,036	8,367	6,761	15,128
Hospitality and Tourism	45,816	51,001	11.3%	17.7%	\$460	46,225	52,114	5,889	15,204	21,093
Education - Public	18,860	22,638	5.0%	13.5%	\$842	26,595	29,579	2,984	6,573	9,557
Education - Private	3,775	5,050	1.1%	13.6%	\$653					
High Technology	44,653	55,764	12.4%	32.1%	\$1,456	56,634	74,563	17,929	9,969	27,898
Information Technology	24,861	32,725	7.3%	40.3%	\$1,496	33,154	45,901	12,747	5,051	17,798

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Montgomery County WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Computer Programming, Data Processing, And Other Computer Related Service	5,896
Elementary And Secondary Schools	4,592
Personnel Supply Services	3,894
Research, Development, And Testing Services	2,653
Management And Public Relations Services	2,477

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Concrete Work	154.6
Radio And Television Broadcasting Stations	118.0
Job Training And Vocational Rehabilitation Services	103.5
Video Tape Rental	65.7
Individual And Family Social Services	63.1

Top 5 Location Quotients (LQ)

Industry Title	LQ
Communications Services, Not Elsewhere Classified	17.4
Professional Membership Organizations	8.7
Communications Equipment	6.2
Periodicals: Publishing, Or Publishing And Printing	5.3
Research, Development, And Testing Services	4.9

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Montgomery County WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	444,865	522,860	7,800	9,794	17,593
Management Occupations	47,962	57,194	923	842	1,766
Business and Financial Operations Occupations	23,199	28,501	530	412	942
Computer and Mathematical Occupations	26,556	40,891	1,434	249	1,682
Architecture and Engineering Occupations	13,374	14,333	96	275	371
Life, Physical, and Social Science Occupations	10,952	12,921	197	334	531
Community and Social Services Occupations	6,398	8,381	198	102	300
Legal Occupations	3,261	4,182	92	24	116
Education, Training, and Library Occupations	19,486	23,079	359	382	741
Arts, Design, Entertainment, Sports, and Media Occupations	7,280	9,237	196	154	350
Healthcare Practitioners and Technical Occupations	24,423	29,933	551	449	1,000
Healthcare Support Occupations	8,820	11,910	309	174	483
Protective Service Occupations	5,800	7,212	141	193	335
Food Preparation and Serving Related Occupations	25,710	28,916	321	1,152	1,473
Building and Grounds Cleaning and Maintenance Occupations	20,478	23,341	286	420	706
Personal Care and Service Occupations	15,468	18,165	270	402	672
Sales and Related Occupations	42,073	46,748	468	1,255	1,723
Office and Administrative Support Occupations	76,060	83,887	783	1,494	2,277
Farming, Fishing, and Forestry Occupations	240	283	4	8	12
Construction and Extraction Occupations	18,402	21,046	264	357	622
Installation, Maintenance, and Repair Occupations	14,377	15,667	129	291	420
Production Occupations	13,943	14,237	29	330	360
Transportation and Material Moving Occupations	20,603	22,796	219	496	715

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Montgomery County WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	441,713	519,190	7,748	9,800	17,548
First professional degree	11,361	13,767	241	175	416
Doctoral degree	4,176	4,939	76	103	179
Master's degree	8,100	9,761	166	174	340
Work experience plus bachelor's or higher degree	41,247	50,246	900	703	1,603
Bachelor's degree	80,012	100,029	2,002	1,462	3,464
Associate degree	16,236	21,337	510	306	816
Postsecondary vocational training	20,100	25,927	583	386	969
Work experience in a related occupation	35,262	39,259	400	677	1,077
Long-term on-the-job training	24,052	27,199	315	482	797
Moderate-term on-the-job training	62,736	70,873	814	1,120	1,934
Short-term on-the-job training	138,431	155,853	1,742	4,212	5,954

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Montgomery County WIA
Most Important Skills for Leading Job Creating Occupations

	Percent of Top 25 Occupations Requiring the Indicated Skill
Active Listening	80%
Speaking	76%
Reading Comprehension	68%
Service Orientation	60%
Writing	56%
Coordination	44%
Social Perceptiveness	44%
Mathematics	40%
Critical Thinking	20%
Operations Analysis	20%
Time Management	20%
Troubleshooting	20%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Prince George's County

Introduction

Prince George's County grew in population at approximately the same rate as the State of Maryland from 1990 to 2000. But, the County's employment grew at a slower rate than that of the State from 1996 to 2001. The County has made gains in attracting new businesses and tying into the close proximity of the federal government. This report analyzes workforce supply and demand conditions in Prince George's County, using available metrics of both workforce and job characteristics.

Prince George's County's Workforce Supply

Prince George's County has experienced difficulties in supplying a highly skilled workforce. While the County's population has grown, the percentage of persons in the labor force has decreased, as has the percentage of residents who are employed. The County has not experienced the same growth in the educational attainment levels of its residents, as its neighboring counties. The County's greatest assets are the presence of the University of Maryland, College Park and the Goddard Space Flight Center, which are helping to fuel the development of high technology businesses. Several highlights of the supply of labor and the County's workforce are:

- The County's civilian labor force decreased slightly from 76% in 1990 to 70% in 2000. The labor force participation rate in the County decreased from 78% in 1990 to 71% in 2000.
- The percentage of persons not in the labor force increased from 22% in 1990 to 29% in 2000.
- The number of employed residents of Prince George's County decreased by 3% from 1990 to 2000.
- The percentage of persons aged 25 or older in Prince George's County having less than a high school diploma decreased slightly from 17% in 1990 to 15% in 2000, while the percentage of persons having a Bachelor's degree or higher increased slightly from 25% to 27%.
- The number of Prince George's County residents with an Associates degree increased by 3% between 1990 and 2000, the number having a Bachelor's degree increased by 15%, and the number having a Graduate or Professional degree increased by 21%.
- Of the 7,490 high school graduates in 2001, 51% were going off to colleges or universities.
- There was a total of 719 community college graduates in 2001, with 16% earning degrees in business programs, 12% earning degrees in computer programs, and 16% earning degrees in health related programs.

- Prince George's County public and private colleges and universities awarded 10,840 degrees in 2001. Of these degrees, 22% were in business related programs, 10% were in education related programs, 9% were in engineering programs, 5% were in computer science programs, 5% were in biological science programs, 2% were in health related programs, and 1% were in physical sciences programs.
- The number of persons in poverty increased by 46% from 1990 to 2000 and the number of families in poverty increased by 55%. In 2001, 2,100 adults in Prince George's County received welfare assistance and 263 persons were on active parole.

Prince George's County Workforce Demand

Prince George's County Employment and Employment Growth

From 1996 to 2001, Prince George's County lagged the State in terms of total employment growth and those sectors in which the County is projected to experience the greatest gains are lower-wage, support type positions. Several highlights of the County's employment and employment growth include:

- The number of persons employed in Prince George's County increased by 9% from 1996 to 2001.
- Over 2000 to 2010, total County employment is projected to increase by 16% and create a total of 116,041 job openings.
- The County's employment growth from 1996 to 2001 was led by job growth in the construction sector (34%), transportation, communications and public utilities (12%), and services sector (11%).
- For 2000 to 2010, the industries that are projected to gain the greatest number of jobs due to economic growth and replacement demand are services (53,139 jobs), retail trade (20,446 jobs), and construction (13,417 jobs).

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to workforce and economic development account for 45% of total employment in Prince George's County.

- Prince George's County's **construction** industry accounts for 10% of the County's total employment. Workers earned \$824 on average per week. From 2000 to 2010, it is expected that a total of 13,417 new construction jobs will be created.
- The County's **health care** industry accounts for 6% of total employment and workers earn \$745 on average per week. It is projected that the County will add a total of 7,764 health care workers from 2000 to 2010.

- The **hospitality and tourism** industry accounts for 11% of total employment in the County and workers earn \$297 on average per week. This sector is expected to add 12,102 jobs from 2000 to 2010.
- Prince George's County's public **education** employees account for 12% of the County workforce and earn \$726 on average per week. From 2000 to 2010, the County is expected to add 12,176 public education workers.
- The **high technology** sector accounts for 7% of the County's total employment and workers earn \$1,266 on average per week. A total of 9,655 new high technology jobs are projected for the County from 2000 to 2010. Information technology workers account for 4% of the total employment in the County and workers earn \$1,329 on average per week. Seventy-one percent (71%) of the projected high technology jobs created in the County from 2000 to 2010 are in the information technology industry (6,823 jobs).

Top Growth Industries

The Prince George's County economy has been dominated by education and services related businesses. High technology businesses such as computer programming services and guided missiles and space vehicles have also supported the County's economic growth.

- The top five employment growth industries from 1996 to 2001 in Prince George's County were elementary and secondary schools, computer programming services, electrical work, colleges, universities, professional schools and junior colleges, and plumbing, heating and air conditioning. These industries added 11,778 jobs.
- The five fastest growing industries in the County from 1996 to 2001 were life insurance, individual and family social services, job training services, electrical work, and furniture and home furnishings. On average these five industry clusters grew by 120% compared to total County employment growth of 9%.
- Those industries having the highest LQs in Prince George's County are paints and allied products, commercial sports, guided missiles and space vehicles, motor vehicle dealers (used), and liquor stores.

Prince George's County Job Openings

In order to better identify the key occupational employment trends impacting Prince George's County, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

Many of the job openings for the County can be filled by the 49% of the County's high school graduates that are not attending a college or university.

- The top five fastest growing occupations from total annual openings account for 50% of total annual openings. The five fastest growing occupational groups by total annual openings are office and administrative support occupations (1,492 jobs), sales and related occupations (1,307 jobs), education, training and library occupations (1,133 jobs), construction and extraction occupations (956 jobs), and management occupations (868 jobs).

Occupational Openings from Economic Growth

The jobs created by projected economic growth are a mixture of positions that are high wage, high skill and lower wage, lower skill positions.

- The top five fastest growing occupations from economic growth account for 51% of total openings from economic growth. The five fastest growing occupations by economic growth are computer and mathematical occupations (594 jobs), construction and extraction occupations (533 jobs), education, training and library occupations (525 jobs), management occupations (432 jobs), and office and administrative support occupations (359 jobs).

Occupational Educational Requirements

Two-thirds of the occupational employment within the County require only on-the-job training and the occupations that the County is forecasted to create are also primarily in lower skill positions that require a lower level of educational attainment.

- Twenty-seven percent (27%) of total County employment is in occupations requiring a Bachelor's degree, 3% require an Associates degree, 3% require post-secondary training, and 67% require only on the job training.
- Thirty-seven percent (37%) of total job openings created by economic growth require a Bachelor's degree, 6% require an Associates degree, 3% require post-secondary training, and 54% require only on the job training.
- Twenty-eight percent (28%) of total job openings created by economic growth and replacement demand require at least a Bachelor's degree, 4% require an Associates degree, 3% require post-secondary training, and 65% require only on the job training.

Key Skills of Leading Occupations

The top twenty-five occupations ranked by projected job openings in Prince George's County are dominated by lower skilled occupations serving the County's residential demand based industries. Three of the top leading occupations are tied to the County's high technology sector, computer software engineers, computer systems analysts, and computer support specialists. The most important skills for the top job creating occupations are dominated by basic skills – such as reading comprehension, speaking, active listening, and writing.

Prince George's County WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	569,454	608,651	6.9%
In Labor Force	441,800	431,120	-2.4%
Civilian Labor Force	431,110	424,422	-1.6%
Employed	412,742	399,355	-3.2%
Unemployed	18,368	25,067	36.5%
Armed Forces	10,690	6,698	-37.3%
Not in Labor Force	127,654	177,531	39.1%

Educational Attainment	1990	2000	Percent Change
Population 25+	458,296	503,698	9.9%
Less Than High School	76,825	76,141	-0.9%
High school/GED	133,951	137,265	2.5%
Some College, No Degree	104,230	126,033	20.9%
Associate Degree	26,562	27,471	3.4%
Bachelor's Degree	74,130	85,325	15.1%
Graduate of Professional Degree	42,598	51,463	20.8%

	2001	Percent Going to College
High School Graduates	7,490	51.2%
College Prep	4,449	
Vocational	623	

Community College Grads	719
Business Tech	116
Computer Tech	89
Health Tech	118

	Bachelor	Master	Doctorate	Professional
Four Year College Grads	8,103	2,269	430	38
Biological Sciences	504	46	33	0
Business	1,046	1,293	6	0
Computer Science	297	181	20	0
Education	524	456	56	0
Engineering	513	316	93	0
Health	79	111	0	28
Physical Sciences	69	36	46	0

Hard to Serve Populations	2001
Welfare Population	2,100
Active Parole	263

<i>Poverty Status</i>	1990	2000	Percent Change
Families in Poverty	6,872	10,641	54.8%
Individuals in Poverty	41,282	60,196	45.8%
Immigration (foreign born)	110,481		

Prince George's County WIA Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	280,767	304,727	8.5%	\$745	14,320	300,406	348,594	48,188	67,853	116,041
Government Total	66,382	74,386	12.1%	\$900	162	38,916	41,982	3,066	7,606	10,672
Federal Government	23,483	25,886	10.2%	\$1,166	104	26,137	27,460	1,323	4,797	6,120
State Government	15,007	17,039	13.5%	\$716	14	1,334	1,375	41	211	252
Local Government	27,892	31,461	12.8%	\$781	44	11,445	13,147	1,702	2,598	4,300
Private Total	214,385	230,341	7.4%	\$695	14,158	261,490	306,612	45,122	60,247	105,369
Agriculture, Forestry and Fishing	1,894	2,286	20.7%	\$482	202	1,988	2,638	650	473	1,123
Mining	145	138	-4.8%	\$819	10	106	191	85	26	111
Construction	22,329	30,005	34.4%	\$824	1,641	28,006	35,615	7,609	5,808	13,417
Manufacturing	12,603	13,090	3.9%	\$925	395	12,530	14,894	2,364	2,766	5,130
TCPU ¹	13,599	15,255	12.2%	\$780	529	17,111	17,987	876	3,169	4,045
Wholesale Trade	14,370	14,914	3.8%	\$934	887	15,660	16,889	1,229	3,397	4,626
Retail Trade	63,313	60,148	-5.0%	\$439	2,913	60,702	63,521	2,819	17,627	20,446
FIRE ²	12,613	12,355	-2.0%	\$749	1,263	12,255	13,288	1,033	2,299	3,332
Services	73,393	81,421	10.9%	\$739	5,967	113,132	141,589	28,457	24,682	53,139
NonClassifiable	126	729	478.6%	\$524	351					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Prince George's County Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	22,329	30,005	9.8%	18.3%	\$824	28,006	35,615	7,609	5,808	13,417
Health Care	15,381	16,960	5.6%	8.0%	\$745	15,860	20,217	4,357	3,407	7,764
Hospitality and Tourism	32,983	32,454	10.7%	11.2%	\$297	31,891	34,049	2,158	9,944	12,102
Education - Public	30,463	35,517	11.7%	21.2%	\$726	33,962	38,612	4,650	7,526	12,176
Education - Private	752	1,168	0.4%	3.1%	\$505					
High Technology	18,442	20,814	6.8%	12.0%	\$1,266	19,458	25,965	6,507	3,148	9,655
Information Technology	10,328	12,763	4.2%	15.7%	\$1,329	12,300	17,389	5,089	1,734	6,823

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation

Office of Labor Market Analysis and Information

Prince George's County WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Elementary And Secondary Schools	3,309
Computer Programming, Data Processing, And Other Computer Related Service	2,325
Electrical Work	2,201
Colleges, Universities, Professional Schools, And Junior Colleges	2,161
Plumbing, Heating And Air-Conditioning	1,782

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Life Insurance	209.5
Individual And Family Social Services	171.8
Job Training And Vocational Rehabilitation Services	77.1
Electrical Work	70.2
Furniture And Home Furnishings	69.6

Top 5 Location Quotients (LQ)

Industry Title	LQ
Paints, Varnishes, Lacquers, Enamels, And Allied Products	6.3
Commercial Sports	5.9
Guided Missiles And Space Vehicles And Parts	5.1
Motor Vehicle Dealers (Used Only)	3.8
Liquor Stores	3.6

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Prince George's County WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	300,406	348,594	4,819	6,777	11,595
Management Occupations	24,686	29,003	432	436	868
Business and Financial Operations Occupations	10,061	11,760	170	175	345
Computer and Mathematical Occupations	14,632	20,569	594	129	722
Architecture and Engineering Occupations	7,293	8,099	81	147	228
Life, Physical, and Social Science Occupations	3,635	4,062	43	109	151
Community and Social Services Occupations	2,631	3,501	87	38	125
Legal Occupations	1,465	1,737	27	12	39
Education, Training, and Library Occupations	26,205	31,457	525	608	1,133
Arts, Design, Entertainment, Sports, and Media Occupations	3,531	4,152	62	76	138
Healthcare Practitioners and Technical Occupations	8,729	11,059	233	182	415
Healthcare Support Occupations	3,672	5,109	144	65	209
Protective Service Occupations	6,218	7,742	152	169	322
Food Preparation and Serving Related Occupations	13,733	15,216	148	601	750
Building and Grounds Cleaning and Maintenance Occupations	8,304	10,148	184	171	355
Personal Care and Service Occupations	4,934	5,982	105	140	245
Sales and Related Occupations	33,570	36,643	307	999	1,307
Office and Administrative Support Occupations	56,253	59,842	359	1,133	1,492
Farming, Fishing, and Forestry Occupations	198	233	4	6	10
Construction and Extraction Occupations	19,797	25,127	533	423	956
Installation, Maintenance, and Repair Occupations	12,706	14,386	168	272	440
Production Occupations	13,341	15,149	181	307	488
Transportation and Material Moving Occupations	24,812	27,618	281	578	858

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Prince George's County WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	299,383	347,146	4,776	6,788	11,564
First professional degree	2,321	2,985	66	41	107
Doctoral degree	3,299	4,056	76	79	155
Master's degree	3,555	4,051	50	73	123
Work experience plus bachelor's or higher degree	22,244	26,504	426	378	804
Bachelor's degree	49,363	60,790	1,143	941	2,084
Associate degree	10,093	12,833	274	187	461
Postsecondary vocational training	8,819	10,125	131	190	321
Work experience in a related occupation	24,142	26,731	259	461	720
Long-term on-the-job training	22,569	26,688	412	463	875
Moderate-term on-the-job training	50,787	58,005	722	904	1,626
Short-term on-the-job training	102,191	114,378	1,219	3,071	4,290

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

**Prince George's County WIA
Most Important Skills for Leading Job Creating Occupations**

	Percent of Top 25 Occupations Requiring the Indicated Skill
Reading Comprehension	80%
Speaking	80%
Active Listening	76%
Writing	64%
Service Orientation	48%
Mathematics	44%
Social Perceptiveness	40%
Coordination	28%
Critical Thinking	24%
Instructing	20%
Troubleshooting	20%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Southern Maryland

Introduction

The Southern Maryland region is composed of Calvert, Charles, and St. Mary's counties. Southern Maryland is viewed as a highly desirable place to both live and to work due to its amenities, quality of life, and an expanding business community. Southern Maryland has benefited from both rapid population growth and strong local employment growth based on the expansion of the Patuxent River Naval Air Station. Several of the major employers within the region are Patuxent River Naval Air Station, Calvert Cliffs Nuclear Power Plant, BAE Systems, and Veridian Engineering. St. Mary's County has been designated the 2nd technology corridor in the state of Maryland. This report analyzes workforce supply and demand conditions in Southern Maryland, using available metrics of both workforce and job characteristics.

Southern Maryland's Workforce Supply

The Southern Maryland region has experienced rapid development from 1990 to 2000. With an increasing population and growing business base, the region is poised to grow and develop even further. One of the region's strengths is its quality of life and access to Washington, D.C. Several highlights of the supply of labor and the Southern Maryland's workforce are:

- The Southern Maryland region's civilian labor force increased by 22% from 1990 to 2000. Labor force participation in 2000 was 72% down from 74% in 1990.
- The number of employed Southern Maryland residents increased by 21% from 1990 to 2000.
- The percentage of persons aged 25 or older in Southern Maryland having less than a high school diploma fell from 21% in 1990 to 14% in 2000, while the percentage of persons having a Bachelor's degree or higher increased from 17% to 21%.
- The number of Southern Maryland residents with an Associates degree increased by 45% between 1990 and 2000, the number having a Bachelor's degree increased by 59%, and the number having a Graduate or Professional degree increased by 78%.
- Of the 3,352 high school graduates in 2001, 54% were going off to colleges or universities.
- There was a total of 531 community college graduates in 2001, with 14% earning degrees in business programs, 15% earning degrees in computer programs, and 11% earning degrees in health related programs.
- Southern Maryland public and private colleges and universities awarded 357 degrees in 2001. Of these degrees, 17% were in biological science programs, 3% were computer science programs, 2% were in physical sciences programs, and 1% were in education related programs.

- Hard to serve populations, such as persons receiving welfare and persons on active parole, represent a potential additional source of workers in which businesses can recruit from. The percentage of persons in poverty increased by 21% from 1990 to 2000 and the percentages of families in poverty increased by 15%. In 2001, 453 persons in Southern Maryland received welfare assistance and 185 persons were on active parole.

Southern Maryland Workforce Demand

Southern Maryland Employment and Employment Growth

The services, government, and construction sectors drove Southern Maryland's economy from 1996 to 2001. Several highlights of the Southern Maryland region's employment and employment growth include:

- Employment in Southern Maryland increased by 22% from 1996 to 2001.
- Between 2000 and 2010, total Southern Maryland employment is projected to increase by 31% and create a total of 47,572 job openings.
- Southern Maryland's employment growth from 1996 to 2001 was led by several key sectors: services (31%), government (27%), and construction (25%).
- For 2000 to 2010, the industries that are projected to gain the greatest number of jobs due to economic growth and replacement demand are services (19,349 jobs), retail trade (15,239 jobs), and government (5,246 jobs).

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to workforce and economic development account for 50% of total employment in Southern Maryland.

- Southern Maryland's **construction** industry accounts for 8% of Southern Maryland's total employment. Workers on average earned \$649 per week. From 2000 to 2010, it is expected that a total of 2,811 new construction jobs will be created.
- Southern Maryland's **health care** industry accounts for 7% of total employment and workers earn on average \$644 per week. It is projected that the Southern Maryland region will add a total of 3,807 health care workers from 2000 to 2010.
- The **hospitality and tourism** industry accounts for 18% of total employment in Southern Maryland and workers earn on average \$295 per week. This sector is expected to add 10,888 jobs from 2000 to 2010.
- Southern Maryland's public **education** employees account for 9% of the Southern Maryland workforce and earn on average \$673 per week. From 2000 to 2010, Southern Maryland is expected to add 4,231 public education workers.

- The **high technology** industry accounts for 9% of total employment and high tech employees earn on average \$1,026 per week. A total of 4,572 new high technology jobs are projected for the Southern Maryland from 2000 to 2010. Information technology workers accounts for 2% of the total employment in Southern Maryland and workers earn on average \$1,054 per week. Thirty-seven percent (27%) of the projected high technology jobs created in the Southern Maryland region from 2000 to 2010 are in the information technology industry (1,225 jobs).

Top Growth Industries

The Southern Maryland region's development has been spurred by the growth in population and the resulting growth in residential demand industries and the expansion of the Patuxent River Naval Air Station.

- The top five employment growth industries from 1996 to 2001 in the Southern Maryland were eating and drinking places, elementary and secondary schools, engineering, architectural and surveying services, management and public relations services, and offices and clinics of doctors of medicine. These industries added 6,516 jobs.
- The five fastest growing industries in Southern Maryland from 1996 to 2001 were management and public relation services, miscellaneous food preparations and kindred products, groceries and related products, roofing, siding and sheet metal work, and general building contractors. On average these five industry clusters grew by 113% compared to total Southern Maryland employment growth of 22%.
- Those industries having the highest LQs in Southern Maryland are airports, flying fields and airport terminal services, combination electric and gas and other utility services, operative builders, water well drilling, and bus charter service.

Southern Maryland Job Openings

In order to better identify the key occupational employment trends impacting the Southern Maryland region, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

A majority of the job openings for Southern Maryland can be filled by the 46% of the region's high school graduates that are not attending a college or university. While not primarily high-wage positions, these occupations are important in that they support higher-wage, higher-skill occupations.

- The top five fastest growing occupational groups by total annual openings account for 54% of total annual openings. The five fastest growing occupational groups by total annual openings are food preparation and serving related occupations (717 jobs), sales and related occupations (642 jobs), office and administrative support occupations (545 jobs), management occupations (331 jobs), and education, library and library occupations (320 jobs).

Occupational Openings from Economic Growth

The top occupations that are forecasted to grow in the Southern Maryland region account for 51% of the projected job openings. Most of the positions are support-type positions, but are important in that they are jobs that are critical to the region or are occupations in industries that have been traditionally tied to the region.

- The top five fastest growing occupations from economic growth account for 51% of total openings due to economic growth. The five fastest growing occupations by economic growth are food preparation and serving related occupations (337 jobs), sales and related occupations (336 jobs), office and administrative support occupations (269 jobs), education, library and library occupations (198 jobs), and management occupations (197 jobs).

Occupational Educational Requirements

The Southern Maryland region has quickly become a highly desired place to reside in the State. With its combination of amenities and developing business community, the region has greatly grown and developed. While the occupations that are projected to grow the greatest from 2000 to 2010 are primarily support type positions, jobs within the region also require a high level of educational attainment. Employment within the region shows that there is demand for workers having only on-the-job training and those requiring a Bachelor's degree or higher.

- Twenty-seven percent (27%) of total Southern Maryland employment is in occupations requiring a Bachelor's degree, 4% require an Associates degree, 3% require post-secondary training, and 66% require only on the job training.
- Twenty-eight percent (28%) of job openings created by economic growth require a Bachelor's degree, 4% require an Associates degree, 3% require post-secondary training, and 65% require only on the job training.
- Twenty-four percent (24%) of total job openings created by economic growth and replacement demand require a Bachelor's degree, 4% require an Associates degree, 3% require post-secondary training, and 69% require only on the job training.

Key Skills of Leading Occupations

The top fifteen occupations ranked by projected job openings in Southern Maryland are dominated by lower skilled occupations serving the County's residential demand based industries. Three of the region's top 15 leading job-creating occupations are tied to the County's high technology sector, computer software engineers, computer systems analysts, and

management analysts. Still the most important skills for the top job creating occupations are dominated by basic skills – such as active listening, speaking, reading comprehension, writing, service orientation, and math.

Southern Maryland WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	169,242	209,173	23.6%
In Labor Force	125,680	150,356	19.6%
Civilian Labor Force	119,449	145,163	21.5%
Employed	115,383	139,893	21.2%
Unemployed	4,066	5,270	29.6%
Armed Forces	6,231	5,193	-16.7%
Not in Labor Force	43,562	58,817	35.0%

Educational Attainment	1990	2000	Percent Change
Population 25+	138,821	179,307	29.2%
Less Than High School	28,671	25,144	-12.3%
High school/GED	50,411	61,183	21.4%
Some College, No Degree	29,236	44,002	50.5%
Associate Degree	7,257	10,530	45.1%
Bachelor's Degree	15,524	24,743	59.4%
Graduate of Professional Degree	7,722	13,705	77.5%

	2001	Percent Going to College
High School Graduates	3,352	54.3%
College Prep	1,385	
Vocational	1,076	

	2001	Bachelor	Master	Doctorate	Professional
Community College Grads	531				
Business Tech	72				
Computer Tech	78				
Health Tech	56				
Four Year College Grads	357	0	0	0	0
Biological Sciences	61	0	0	0	0
Business	0	0	0	0	0
Computer Science	11	0	0	0	0
Education	4	0	0	0	0
Engineering	0	0	0	0	0
Health	0	0	0	0	0
Physical Sciences	8	0	0	0	0

Hard to Serve Populations	2001
Welfare Population	453
Active Parole	185

<i>Poverty Status</i>	1990	2000	Percent Change
Families in Poverty	2,603	3,002	15.3%
Individuals in Poverty	13,054	15,784	20.9%
Immigration (foreign Born)	7,545		

Southern Maryland WIA Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	73,284	89,573	22.2%	\$643	5,868	85,786	112,093	26,307	21,265	47,572
Government Total	17,121	21,812	27.4%	\$889	154	13,285	15,819	2,534	2,712	5,246
Federal Government	7,244	9,063	25.1%	\$1,222	74	9,248	9,545	297	1,684	1,981
State Government	860	1,412	64.2%	\$609	23	700	1,106	406	159	565
Local Government	9,017	11,337	25.7%	\$658	57	3,337	5,168	1,831	869	2,700
Private Total	56,163	67,761	20.7%	\$564	5,714	72,501	96,274	23,773	18,553	42,326
Agriculture, Forestry and Fishing	561	740	31.9%	\$397	130	681	977	296	152	448
Mining	52	56	7.7%	\$878	1	50	39	0	3	3
Construction	5,944	7,407	24.6%	\$649	1,092	6,716	8,107	1,391	1,420	2,811
Manufacturing	2,788	3,008	7.9%	\$700	135	3,089	3,085	0	568	568
TCPU ¹	5,456	6,110	12.0%	\$866	371	5,934	6,674	740	1,355	2,095
Wholesale Trade	1,527	1,599	4.7%	\$638	214	1,574	1,895	321	342	663
Retail Trade	19,515	22,486	15.2%	\$320	1,234	21,818	29,525	7,707	7,532	15,239
FIRE ²	2,137	2,410	12.8%	\$673	429	2,316	2,976	660	505	1,165
Services	18,150	23,726	30.7%	\$663	1,998	30,323	42,996	12,673	6,676	19,349
NonClassifiable	33	219	563.6%	\$449	110					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Southern Maryland Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	5,944	7,407	8.3%	4.5%	\$649	6,716	8,107	1,391	1,420	2,811
Health Care	6,056	6,598	7.4%	3.1%	\$644	6,194	8,722	2,528	1,279	3,807
Hospitality and Tourism	13,219	16,268	18.2%	5.6%	\$295	15,115	20,465	5,350	5,538	10,888
Education - Public	6,608	8,394	9.4%	5.0%	\$673	8,187	10,579	2,392	1,839	4,231
Education - Private	225	278	0.3%	0.7%	\$497		(Included in Education - Public)			
High Technology	6,868	8,278	9.2%	4.8%	\$1,026	8,020	11,131	3,111	1,461	4,572
Information Technology	1,298	1,692	1.9%	2.1%	\$1,054	1,802	2,763	961	264	1,225

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation

Office of Labor Market Analysis and Information

Southern Maryland WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Eating And Drinking Places	1,974
Elementary And Secondary Schools	1,638
Engineering, Architectural, And Surveying Services	1,388
Management And Public Relations Services	1,006
Offices And Clinics Of Doctors Of Medicine	510

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Management And Public Relations Services	140.1
Miscellaneous Food Preparations And Kindred Products	138.5
Groceries And Related Products	108.6
Roofing, Siding, And Sheet Metal Work	95.5
General Building Contractors-Nonresidential Buildings	80.1

Top 5 Location Quotients (LQ)

Industry Title	LQ
Airports, Flying Fields, And Airport Terminal Services	14.6
Combination Electric And Gas, And Other Utility Services	11.4
Operative Builders	9.1
Water Well Drilling	7.0
Bus Charter Service	6.3

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Southern Maryland WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Total Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	85,786	112,093	2,631	2,123	4,754
Management Occupations	7,565	9,533	197	135	331
Business and Financial Operations Occupations	4,409	5,604	120	78	197
Computer and Mathematical Occupations	2,373	3,849	148	24	171
Architecture and Engineering Occupations	4,440	4,787	35	94	129
Life, Physical, and Social Science Occupations	427	572	15	13	27
Community and Social Services Occupations	1,098	1,711	61	17	79
Legal Occupations	278	405	13	2	15
Education, Training, and Library Occupations	5,473	7,450	198	123	320
Arts, Design, Entertainment, Sports, and Media Occupations	830	1,079	25	17	42
Healthcare Practitioners and Technical Occupations	3,633	5,309	168	77	244
Healthcare Support Occupations	1,798	2,693	90	35	124
Protective Service Occupations	1,417	2,116	70	35	105
Food Preparation and Serving Related Occupations	8,184	11,549	337	381	717
Building and Grounds Cleaning and Maintenance Occupations	2,046	2,819	77	41	118
Personal Care and Service Occupations	2,222	3,056	83	58	141
Sales and Related Occupations	9,555	12,910	336	306	642
Office and Administrative Support Occupations	12,920	15,614	269	276	545
Farming, Fishing, and Forestry Occupations	42	58	2	1	3
Construction and Extraction Occupations	5,187	6,452	127	113	240
Installation, Maintenance, and Repair Occupations	3,447	4,263	82	83	164
Production Occupations	2,937	3,303	37	70	106
Transportation and Material Moving Occupations	5,505	6,961	146	147	293

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Southern Maryland WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	85,708	111,993	2,629	2,129	4,758
First professional degree	1,175	1,611	44	20	64
Doctoral degree	763	997	23	20	43
Master's degree	1,363	1,950	59	29	88
Work experience plus bachelor's or higher degree	7,119	9,275	216	116	332
Bachelor's degree	12,875	16,799	392	247	639
Associate degree	3,408	4,557	115	71	186
Postsecondary vocational training	2,853	3,710	86	65	151
Work experience in a related occupation	7,318	9,356	204	136	340
Long-term on-the-job training	5,970	7,686	172	127	299
Moderate-term on-the-job training	13,388	16,624	324	269	593
Short-term on-the-job training	29,476	39,428	995	1,029	2,024

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

**Southern Maryland WIA
Most Important Skills for Leading Job Creating Occupations**

	Percent of Top 25 Occupations Requiring the Indicated Skill
Active Listening	93%
Speaking	87%
Reading Comprehension	80%
Writing	73%
Service Orientation	67%
Mathematics	60%
Social Perceptiveness	60%
Coordination	33%
Critical Thinking	33%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Susquehanna

Introduction

The Susquehanna region is composed of Cecil and Harford counties. This region has experienced tremendous growth from 1990 to 2000. Leading this growth is the development of high technology companies and resources, such as, the Aberdeen Proving Grounds and Batelle. In addition, the region has grown due to residents seeking a location to live that offers good quality of life and access to major metropolitan regions. Residents of the Susquehanna region work in Maryland, Pennsylvania, and Delaware. The region's location and amenities make it desirable as both a place to live and for companies to locate. This report analyzes workforce supply and demand conditions in Susquehanna, using available metrics of both workforce and job characteristics.

Susquehanna's Workforce Supply

From 1990 to 2000, the Susquehanna region made gains in the percentage of people employed and significant gains in the percentage of persons having a degree from a college or university. With a growing population and an expanding business community, Susquehanna is a desired place to both live and work. Several highlights of the supply of labor and the Susquehanna's workforce are:

- The Susquehanna region's civilian labor force increased by 20% from 1990 to 2000. The labor force participation rate in 2000 was 70%, a slight increase from 69% in 1990.
- The number of employed residents of the Susquehanna region increased by 20% from 1990 to 2000.
- The percentage of persons aged 25 or older in Susquehanna having less than a high school diploma fell from 21% in 1990 to 15% in 2000, while the percentage of persons having a Bachelor's degree or higher increased from 19% to 24%.
- The number of Susquehanna residents with an Associates degree increased by 33% between 1990 and 2000, the number having a Bachelor's degree increased by 61%, and the number having a Graduate or Professional degree increased by 57%.
- Of the 3,110 high school graduates in 2001, 52% were going off to colleges or universities.
- There was a total of 500 community college graduates in 2001, with 8% earning degrees in business programs, 4% earning degrees in computer programs, and 17% earning degrees in health related programs.
- Hard to serve populations, such as persons receiving welfare and persons on active parole, represent a potential additional source of workers that business can access. The number of persons in poverty increased by 17% from 1990 to 2000 and the

number of families in poverty increased by 9%. In 2001, 576 adults in the Susquehanna region received welfare assistance and 158 persons were on active parole.

Susquehanna Workforce Demand

Susquehanna Employment and Employment Growth

The services, transportation, communications and public utilities, manufacturing, and retail trade sectors drove the Susquehanna's economy from 1996 to 2001. Several highlights of the Susquehanna region's employment and employment growth include:

- The number of persons employed in the Susquehanna region increased by 19% from 1996 to 2001.
- Over 2000 to 2010, total Susquehanna regional employment is projected to increase by 25% and create a total of 45,712 job openings.
- The Susquehanna region's employment growth from 1996 to 2001 was led by several key sectors: services (36%), transportation, communications and public utilities (32%), manufacturing (31%), and retail trade (24%).
- For 2000 to 2010, the industries that are projected to gain the greatest number of jobs due to economic growth and replacement demand are services (19,915 jobs), retail trade (9,941 jobs), and manufacturing (3,681 jobs).

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to workforce and economic development account for 44% of total employment in the Susquehanna region.

- The Susquehanna region's **construction** industry accounts for 7% of the Susquehanna's total employment. Workers earned \$612 on average per week. From 2000 to 2010, it is expected that a total of 2,237 new construction jobs will be created.
- The Susquehanna region's **health care** industry accounts for 10% of total employment and workers earn \$816 on average per week. It is projected that the Susquehanna region will add a total of 4,362 health care workers from 2000 to 2010.
- The **hospitality and tourism** industry accounts for 13% of total employment in the Susquehanna region and workers earn \$247 on average per week. This sector is expected to add 6,894 jobs from 2000 to 2010.
- Public **education** employees account for 9% of the Susquehanna workforce and earn \$646 on average per week. From 2000 to 2010, the Susquehanna region is expected to add 4,957 public education workers.

- The **high technology** industry accounts for 6% of total employment and its workers earn \$1,219 on average per week. A total of 2,425 new high technology jobs are projected for the Susquehanna region from 2000 to 2010. Information technology workers accounts for less than one percent of the total employment in the Susquehanna region and workers earn \$957 on average per week. Nineteen percent (19%) of the projected high technology jobs created in Susquehanna from 2000 to 2010 are in the information technology industry (463 jobs).

Top Growth Industries

Those industries that have experienced the greatest growth in the Susquehanna region are an example of how the region has developed over the past decade. With the increase in population, there is a need for services to support the population. In addition, the development of new forms of employment is evident in the growth of the research and development services sector adding 12% of the net regional employment growth from 1996 to 2001.

- The top five employment growth industries from 1996 to 2001 in the Susquehanna region were, personnel supply services, research, development and testing services, drug stores and proprietary stores, eating and drinking places, and miscellaneous plastics products. These industries added 6,603 jobs.
- The five fastest growing industries in the Susquehanna region from 1996 to 2001 were nonstore retailers, personnel supply stores, drug stores and proprietary stores, research, development and testing services, and public warehousing and storage. On average these five industry clusters grew by 306% compared to total Susquehanna employment growth of 19%.
- Those industries having the highest LQs in the region are rubber and plastics footwear, organization hotels and lodging places, animal specialties, metal cans and shipping containers, and bookbinding and related work.

Susquehanna Job Openings

In order to better identify the key occupational employment trends impacting the Susquehanna region, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

A majority of the job openings for the region can be filled by the 48% of the region's high school graduates that are not attending a college or university. While not primarily high-wage positions, these occupations are important in that they support higher-wage, higher-skill occupations.

- The top five fastest growing occupations from total annual openings account for 50% of total annual openings. The five fastest growing occupational groups by total annual openings are office and administrative support occupations (579 jobs), food preparation and serving related occupations (501 jobs), transportation and material moving occupations (41 jobs), sales and related occupations (413 jobs), and education, training and library occupations (385 jobs).

Occupational Openings from Economic Growth

Most of the occupational growth is in support-type positions, but are important in that they are jobs that are critical to the region or are occupations in industries that have been traditionally tied to the region.

- The top five fastest growing occupations from economic growth account for 45% of total openings due to economic growth. The five fastest growing occupations by economic growth are education, training and library occupations (259 jobs), office and administrative support occupations (238 jobs), transportation and material moving occupations (208 jobs), healthcare practitioners and technical occupations (180 jobs), and food preparation and serving related occupations (156 jobs).

Occupational Educational Requirements

Occupations in the Susquehanna region have become increasingly dependent on higher levels of educational attainment. With continued development and attraction of high technology companies, the local workforce will need to continue to increase its skill set. Even with the technology presence in the counties, forecasted job growth requires mostly workers with on-the-job training. However, these positions support higher wage and more technical workers and are important to the local economy.

- Twenty-one percent (21%) of total Susquehanna employment is in occupations requiring a Bachelor's degree, 5% require an Associates degree, 5% require post-secondary training, and 69% require only on the job training.
- Twenty-four percent (24%) of job openings created by economic growth require a Bachelor's degree, 7% require an Associates degree, 7% require post-secondary training, and 62% require only on the job training.
- Twenty-one percent (21%) of total job openings created by economic growth and replacement demand require a Bachelor's degree, 6% require an Associates degree, 5% require post-secondary training, and 66% require only on the job training.

Key Skills of Leading Occupations

The top fifteen occupations ranked by projected job openings in the Susquehanna region are dominated by lower skilled occupations serving the region's residential demand based industries and distribution sector. Only two of the top fifteen occupations elementary school teachers and registered nurses require an Associates degree or higher. As a result, the most important skills for the top job creating occupations are dominated by basic skills – such as Active Listening, Reading Comprehension, Speaking and Writing.

Susquehanna WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	192,760	228,841	18.7%
In Labor Force	139,049	161,847	16.4%
Civilian Labor Force	133,675	160,101	19.8%
Employed	128,727	154,745	20.2%
Unemployed	4,948	5,356	8.2%
Armed Forces	5,374	1,746	-67.5%
Not in Labor Force	53,711	66,994	24.7%

Educational Attainment	1990	2000	Percent Change
Population 25+	160,143	198,865	24.2%
Less Than High School	33,668	29,494	-12.4%
High school/GED	52,300	61,534	17.7%
Some College, No Degree	33,683	45,897	36.3%
Associate Degree	10,288	13,716	33.3%
Bachelor's Degree	19,608	31,552	60.9%
Graduate of Professional Degree	10,596	16,672	57.3%

	2001	Percent Going to College
High School Graduates	3,110	54.3%
College Prep	1,905	
Vocational	478	

Community College Grads	500
Business Tech	39
Computer Tech	22
Health Tech	83

	Bachelor	Master	Doctorate	Professional
Four Year College Grads	0	0	0	0
Biological Sciences	0	0	0	0
Business	0	0	0	0
Computer Science	0	0	0	0
Education	0	0	0	0
Engineering	0	0	0	0
Health	0	0	0	0
Physical Sciences	0	0	0	0

Hard to Serve Populations	2001
Welfare Population	576
Active Parole	158

<i>Poverty Status</i>	1990	2000	Percent Change
Families in Poverty	3,148	3,425	8.8%
Individuals in Poverty	14,328	16,761	17.0%
	2000		
Immigration (foreign Born)	8,931		

Susquehanna WIA Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	81,069	96,579	19.1%	\$626	6,361	91,970	114,946	22,976	22,736	45,712
Government Total	22,664	22,889	1.0%	\$900	118	12,854	14,508	1,654	2,767	4,421
Federal Government	11,905	10,964	-7.9%	\$1,175	82	9,377	10,081	704	1,978	2,682
State Government	509	811	59.3%	\$604	14	665	883	218	133	351
Local Government	10,250	11,114	8.4%	\$650	22	2,812	3,544	732	656	1,388
Private Total	58,405	73,690	26.2%	\$541	6,243	79,116	100,438	21,322	19,969	41,291
Agriculture, Forestry and Fishing	1,185	1,427	20.4%	\$448	227	922	1,247	325	223	548
Mining	204	232	13.7%	\$810	8	228	218	0	35	35
Construction	5,848	6,757	15.5%	\$612	1,060	6,352	7,220	868	1,369	2,237
Manufacturing	7,214	9,429	30.7%	\$796	229	8,955	10,755	1,800	1,881	3,681
TCPU ¹	3,105	4,103	32.1%	\$654	375	3,942	4,807	865	895	1,760
Wholesale Trade	3,559	3,986	12.0%	\$684	343	4,597	5,679	1,082	1,054	2,136
Retail Trade	17,846	22,075	23.7%	\$353	1,260	21,865	24,862	2,997	6,944	9,941
FIRE ²	2,721	2,897	6.5%	\$628	480	2,673	3,135	462	586	1,048
Services	16,685	22,709	36.1%	\$543	2,194	29,582	42,515	12,933	6,982	19,915
NonClassifiable	38	75	97.4%	\$491	67					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Susquehanna Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	5,848	6,757	7.0%	4.1%	\$612	6,352	7,220	868	1,369	2,237
Health Care	9,327	9,895	10.2%	4.7%	\$816	6,442	9,345	2,903	1,459	4,362
Hospitality and Tourism	10,711	12,113	12.5%	4.2%	\$247	12,126	14,646	2,520	4,374	6,894
Education - Public	7,770	8,186	8.5%	4.9%	\$646	8,376	11,548	3,172	1,785	4,957
Education - Private	344	458	0.5%	1.2%	\$475	(Included in Education - Public)				
High Technology	2,690	5,861	6.1%	3.4%	\$1,219	4,077	5,704	1,627	798	2,425
Information Technology	361	614	0.6%	0.8%	\$957	469	832	363	100	463

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Susquehanna WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Personnel Supply Services	2,098
Research, Development, And Testing Services	1,787
Drug Stores And Proprietary Stores	1,398
Eating And Drinking Places	694
Miscellaneous Plastics Products	626

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Nonstore Retailers	494.8
Personnel Supply Services	352.0
Drug Stores And Proprietary Stores	260.3
Research, Development, And Testing Services	211.7
Public Warehousing And Storage	209.5

Top 5 Location Quotients (LQ)

Industry Title	LQ
Rubber And Plastics Footwear	52.0
Organization Hotels And Lodging Houses, On Membership Basis	9.4
Animal Specialties	8.3
Metal Cans And Shipping Containers	7.3
Blankbooks, Looseleaf Binders, And Bookbinding And Related Work	7.2

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Susquehanna WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	91,970	114,946	2,298	2,264	4,561
Management Occupations	6,461	7,894	143	117	261
Business and Financial Operations Occupations	2,608	3,188	58	51	109
Computer and Mathematical Occupations	2,029	3,029	100	28	128
Architecture and Engineering Occupations	3,236	3,799	56	71	127
Life, Physical, and Social Science Occupations	1,232	1,457	23	40	63
Community and Social Services Occupations	834	1,186	35	15	51
Legal Occupations	240	365	13	2	14
Education, Training, and Library Occupations	6,023	8,616	259	125	385
Arts, Design, Entertainment, Sports, and Media Occupations	1,269	1,739	47	23	70
Healthcare Practitioners and Technical Occupations	4,225	6,021	180	93	273
Healthcare Support Occupations	1,599	2,529	93	29	122
Protective Service Occupations	1,416	2,012	60	38	98
Food Preparation and Serving Related Occupations	8,005	9,562	156	345	501
Building and Grounds Cleaning and Maintenance Occupations	3,223	4,257	103	65	168
Personal Care and Service Occupations	2,124	3,064	94	59	153
Sales and Related Occupations	8,200	9,693	149	264	413
Office and Administrative Support Occupations	15,229	17,604	238	341	579
Farming, Fishing, and Forestry Occupations	234	279	5	7	12
Construction and Extraction Occupations	4,971	5,763	79	112	191
Installation, Maintenance, and Repair Occupations	3,525	4,340	82	83	165
Production Occupations	6,068	7,248	118	142	260
Transportation and Material Moving Occupations	9,219	11,301	208	213	421

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Susquehanna WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	91,785	114,695	2,291	2,276	4,567
First professional degree	618	860	24	12	36
Doctoral degree	405	536	13	9	22
Master's degree	1,592	1,965	37	36	73
Work experience plus bachelor's or higher degree	5,318	6,557	124	96	220
Bachelor's degree	11,154	14,748	359	235	594
Associate degree	4,287	5,897	161	90	251
Postsecondary vocational training	4,170	5,745	158	92	250
Work experience in a related occupation	7,336	8,711	138	150	288
Long-term on-the-job training	6,340	7,775	144	134	278
Moderate-term on-the-job training	14,361	17,084	272	273	545
Short-term on-the-job training	36,204	44,817	861	1,149	2,010

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Susquehanna WIA
Most Important Skills for Leading Job Creating Occupations

	Percent of Top 25 Occupations Requiring the Indicated Skill
Active Listening	87%
Reading Comprehension	87%
Speaking	80%
Writing	73%
Service Orientation	60%
Social Perceptiveness	60%
Mathematics	53%
Monitoring	33%
Equipment Selection	27%
Operation and Control	27%
Coordination	20%
Learning Strategies	20%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Upper Shore

Introduction

The Upper Shore region is composed of Caroline, Dorchester, Kent, Queen Anne's, and Talbot counties. This region of Maryland has long been seen as a place for agriculture, tourism, or retirement living. The hospitality and tourism sector continues to drive the Upper Shore economy. Recently, the Upper Shore has begun to benefit from a changing view that the region is not only a great place to retire or vacation, but also a place to live and to work. Even with this change in view, the region needs to capitalize on its strengths and promote itself and better develop its business base. This report analyzes workforce supply and demand conditions in Upper Shore, using available metrics of both workforce and job characteristics. It is vital to note that the data in this report was compiled prior to the announcement and closing of the Black and Decker plant in Easton, Maryland.

Upper Shore's Workforce Supply

From 1990 to 2000, the Upper Shore region has made important gains in the percentage of people employed and significant gains in the percentage of persons having a degree from a community college or a college or university. With a growing population and growing needs of that community, the Upper Shore region needs to attract and help develop industries not only to support the population, but to employ the residents of the region as well. Several highlights of the supply of labor and the Upper Shore's workforce are:

- The Upper Shore region's civilian labor force increased by 8% from 1990 to 2000. Labor force participation in 2000 was 65% down from 66% in 1990.
- The number of employed residents in the Upper Shore region increased by 8% from 1990 to 2000.
- The percentage of persons aged 25 or older in Upper Shore having less than a high school diploma fell from 28% in 1990 to 20% in 2000, while the percentage of persons having a Bachelor's degree or higher increased from 17% to 20%.
- The number of Upper Shore residents with an Associates degree increased by 21% between 1990 and 2000, the number having a Bachelor's degree increased by 30%, and the number having a Graduate or Professional degree increased by 54%.
- Of the 1,513 high school graduates in 2001, 50% were going off to colleges or universities.
- There was a total of 127 community college graduates in 2001, with 48% earning degrees in business programs, 5% earning degrees in computer programs, and 28% earning degrees in health related programs.

- Upper Shore public and private colleges and universities awarded 243 degrees in 2001. Of these degrees, 11% were in business related programs, 8% were in biological science programs, 5% were in physical science programs, and less than 1% were in computer science programs.
- Hard to serve populations, such as persons receiving welfare and persons on active parole, represent a potential additional source of workers from which businesses can recruit from. The number of persons in poverty increased by 8% from 1990 to 2000 and the number of families in poverty increased by 6%. In 2001, 343 adults in the Upper Shore region received welfare assistance and 237 persons were on active parole.

Upper Shore Workforce Demand

Upper Shore Employment and Employment Growth

The finance, insurance and real estate sector, construction, government, and retail trade sectors drove the Upper Shore's economy from 1996 to 2001. Several highlights of the Upper Shore region's employment and employment growth include:

- The Upper Shore's employment increased by 12% from 1996 to 2001.
- Over 2000 to 2010, total Upper Shore employment is projected to increase by 17% and create a total of 22,946 job openings.
- The Upper Shore's employment growth from 1996 to 2001 was led by several key sectors: finance, insurance and real estate (28%), construction (21%), government (21%), and retail trade (17%).
- Manufacturing employment in the Upper Shore decreased by 3%, and transportation, communications and public utilities employment decreased by 14% from 1996 to 2001.
- For 2000 to 2010, the industries that are projected to gain the greatest number of jobs due to economic growth and replacement demand are services (9,419 jobs), retail trade (5,739 jobs), and manufacturing (2,152 jobs).

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to workforce and economic development account for 39% of total employment in the Upper Shore region.

- Upper Shore's **construction** industry accounts for 7% of the Upper Shore's total employment. Workers earned \$554 on average per week. From 2000 to 2010, it is expected that a total of 1,295 new construction jobs will be created.

- The Upper Shore region's **health care** industry accounts for 9% of total employment and workers earn \$614 on average per week. It is projected that the Upper Shore region will add a total of 2,603 health care workers from 2000 to 2010.
- The **hospitality and tourism** industry accounts for 14% of total employment in Upper Shore and workers earn \$254 on average per week. This sector is expected to add 3,983 jobs from 2000 to 2010.
- Upper Shore's public **education** employees account for 7% of the Upper Shore workforce and earn \$660 on average per week. From 2000 to 2010, the Upper Shore region is expected to add 2,277 public education workers.
- The **high technology** industry accounts for 3% of total employment and its workers earn \$666 on average per week. A total of 553 new high technology jobs are projected for the Upper Shore from 2000 to 2010. Information technology workers account for 1% of the total employment in Upper Shore and workers earn \$655 on average per week. Forty-eight percent (48%) of the projected high technology jobs created in the Upper Shore region from 2000 to 2010 are in the information technology industry (264 jobs).

Top Growth Industries

The Upper Shore region has a diverse economic base. The top job creating industries were all related to serving the region's rapidly growing population base. The five fastest growing industries were a mix of residential demand based industries, such as real estate agents and managers, export based sectors, such as, electrical goods and refrigeration and service industry machinery, and high technology, computer programming. High industry (high LQ) industries were a mix of export based production and residential demand based retail.

- The top five employment growth industries from 1996 to 2001 in the Upper Shore were elementary and secondary schools, eating and drinking places, hospitals, department stores, and real estate agents and managers. These industries added 2,215 jobs.
- The five fastest growing industries in Upper Shore from 1996 to 2001 were electrical goods (wholesale trade), refrigeration and service industry machinery, real estate agents and managers, special industry machinery, and computer programming and data processing services. On average these five industry clusters grew by 185% compared to total Upper Shore employment growth of 12%.
- Those industries having the highest LQs in Upper Shore are electric transmission and distribution equipment, musical instrument manufacturing, boat dealers, book manufacturing, and miscellaneous food preparations and kindred products.

Upper Shore Job Openings

In order to better identify the key occupational employment trends impacting the Upper Shore, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

A majority of the job openings for Upper Shore can be filled by the 50% of the region's high school graduates that are not attending a college or university. While not primarily high-wage positions, these occupations are important in that they support higher-wage, higher-skill occupations.

- The top five fastest growing occupations from total annual openings account for 52% of total annual openings. The five fastest growing occupational groups by total annual openings are office and administrative support occupations (331 jobs), food preparation and serving related occupations (313 jobs), sales and related occupations (241 jobs), management occupations (162 jobs), and transportation and material moving occupations (159 jobs).

Occupational Openings from Economic Growth

The top five job openings projected to be created by employment growth in the Upper Shore account for 50% of the projected job openings. Most of the positions are support-type positions, but are important in that they are jobs that are critical to the region or are occupations in industries that have been traditionally tied to the region.

- The top five fastest growing occupations from economic growth account for 50% of total openings due to economic growth. The five fastest growing occupations by economic growth are office and administrative support occupations (118 jobs), healthcare practitioners and technical occupations (98 jobs), management occupations (85 jobs), food preparation and serving related occupations (80 jobs), and sales and related occupations (78 jobs).

Occupational Educational Requirements

Projected job openings from 2000 to 2010 will be mainly support type positions that will only require on-the-job training. There is no major change in the educational requirements of occupations that currently exist in the Upper Shore and those that are projected.

- Sixteen percent (16%) of total Upper Shore employment is in occupations requiring a Bachelor's degree, 3% require an Associates degree, 5% require post-secondary training, and 76% require only on the job training.
- Twenty-five percent (25%) of job openings created by economic growth require a Bachelor's degree, 8% require an Associates degree, 7% require post-secondary training, and 60% require only on the job training.

- Eighteen percent (18%) of total job openings created by economic growth and replacement demand require a Bachelor's degree, 5% require an Associates degree, 5% require post-secondary training, and 72% require only on the job training.

Key Skills of Leading Occupations

The top fifteen occupations ranked by projected job openings in the Upper Shore region are dominated by lower skilled occupations serving the region's tourism related and residential demand based industries. Only one of the top fifteen occupations, registered nurses require an Associates degree or higher. As a result, the most important skills for the top job creating occupations are dominated by basic skills – such as active listening, reading comprehension, service orientation, speaking, and coordination.

Upper Shore WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	110,231	121,361	10.1%
In Labor Force	72,736	78,560	8.0%
Civilian Labor Force	72,529	78,416	8.1%
Employed	69,722	75,210	7.9%
Unemployed	2,807	3,206	14.2%
Armed Forces	207	144	-30.4%
Not in Labor Force	37,495	42,801	14.2%

Educational Attainment

	1990	2000	Percent Change
Population 25+	95,089	106,915	12.4%
Less Than High School	27,036	21,491	-20.5%
High school/GED	34,166	38,026	11.3%
Some College, No Degree	13,770	20,364	47.9%
Associate Degree	4,337	5,251	21.1%
Bachelor's Degree	10,288	13,347	29.7%
Graduate of Professional Degree	5,492	8,436	53.6%

Percent Going to College

	2001	
High School Graduates	1,513	50.1%
College Prep	688	
Vocational	367	

Community College Grads	127
Business Tech	61
Computer Tech	6
Health Tech	36

	Bachelor	Master	Doctorate	Professional
Four Year College Grads	235	8	0	0
Biological Sciences	20	0	0	0
Business	26	0	0	0
Computer Science	1	0	0	0
Education	0	0	0	0
Engineering	0	0	0	0
Health	0	0	0	0
Physical Sciences	6	0	0	0

Hard to Serve Populations

Welfare Population	343
Active Parole	237

Poverty Status

	1990	2000	Percent Change
Families in Poverty	2,913	3,088	6.0%
Individuals in Poverty	14,077	15,245	8.3%

Immigration (foreign Born)	4,003
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Upper Shore WIA Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	51,967	58,159	11.9%	\$502	4,947	55,719	64,939	9,220	13,726	22,946
Government Total	6,917	8,332	20.5%	\$615	173	4,011	4,901	890	970	1,860
Federal Government	629	646	2.7%	\$732	78	944	908	0	230	230
State Government	927	1,401	51.1%	\$615	36	805	1,243	438	187	625
Local Government	5,361	6,285	17.2%	\$604	59	2,262	2,750	488	553	1,041
Private Total	45,050	49,827	10.6%	\$483	4,774	51,708	60,038	8,330	12,756	21,086
Agriculture, Forestry and Fishing	1,353	1,596	18.0%	\$458	240	580	763	183	114	297
Mining	33	45	36.4%	\$666	4	43	31	0	9	9
Construction	3,234	3,913	21.0%	\$553	738	3,726	4,223	497	798	1,295
Manufacturing	10,000	9,746	-2.5%	\$574	242	10,175	9,950	0	2,152	2,152
TCPU ¹	2,674	2,301	-13.9%	\$566	286	2,305	2,500	195	480	675
Wholesale Trade	2,288	2,560	11.9%	\$631	296	2,214	2,548	334	490	824
Retail Trade	11,191	13,075	16.8%	\$316	997	12,975	14,454	1,479	4,260	5,739
FIRE ²	1,586	2,033	28.2%	\$644	352	1,974	2,443	469	444	913
Services	12,671	14,540	14.8%	\$495	1,603	17,716	23,126	5,410	4,009	9,419
NonClassifiable	20	18	-10.0%	\$520	16					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Upper Shore Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	3,388	3,975	6.8%	2.4%	\$554	3,726	4,223	497	798	1,295
Health Care	4,548	5,313	9.1%	2.5%	\$614	4,751	6,363	1,612	991	2,603
Hospitality and Tourism	6,828	7,969	13.7%	2.8%	\$254	7,679	8,924	1,245	2,738	3,983
Education - Public	3,293	3,866	6.6%	2.3%	\$660	4,619	5,752	1,133	1,144	2,277
Education - Private	679	912	1.6%	2.4%	\$469					
High Technology	1,723	1,549	2.7%	0.9%	\$666	1,955	2,115	160	393	553
Information Technology	1,046	783	1.3%	1.0%	\$655	1,145	1,149	4	260	264

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Upper Shore WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Elementary And Secondary Schools	698
Eating And Drinking Places	663
Hospitals	297
Department Stores	295
Real Estate Agents And Managers	262

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Electrical Goods	413.8
Refrigeration And Service Industry Machinery	159.3
Real Estate Agents And Managers	121.3
Special Industry Machinery, Except Metalworking Machinery	117.5
Computer Programming, Data Processing, And Other Computer Related Service	115.0

Top 5 Location Quotients (LQ)

Industry Title	LQ
Electric Transmission And Distribution Equipment	26.9
Musical Instruments	19.0
Boat Dealers	13.0
Books	11.4
Miscellaneous Food Preparations And Kindred Products	11.4

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Upper Shore WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	55,719	64,939	922	1,388	2,310
Management Occupations	3,998	4,852	85	76	162
Business and Financial Operations Occupations	1,026	1,231	21	21	42
Computer and Mathematical Occupations	292	445	15	3	18
Architecture and Engineering Occupations	543	651	11	11	22
Life, Physical, and Social Science Occupations	321	421	10	10	20
Community and Social Services Occupations	494	747	25	8	33
Legal Occupations	151	224	7	1	8
Education, Training, and Library Occupations	2,820	3,574	75	60	135
Arts, Design, Entertainment, Sports, and Media Occupations	349	449	10	6	16
Healthcare Practitioners and Technical Occupations	2,642	3,621	98	56	154
Healthcare Support Occupations	1,381	1,966	59	24	82
Protective Service Occupations	684	849	17	26	42
Food Preparation and Serving Related Occupations	5,482	6,284	80	233	313
Building and Grounds Cleaning and Maintenance Occupations	2,135	2,671	54	46	100
Personal Care and Service Occupations	1,724	2,277	55	49	104
Sales and Related Occupations	5,296	6,079	78	163	241
Office and Administrative Support Occupations	9,642	10,826	118	212	331
Farming, Fishing, and Forestry Occupations	77	83	1	2	3
Construction and Extraction Occupations	2,926	3,335	41	65	106
Installation, Maintenance, and Repair Occupations	2,695	3,011	32	60	92
Production Occupations	6,543	6,355	0	147	147
Transportation and Material Moving Occupations	4,498	4,988	49	110	159

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Upper Shore WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	55,549	64,687	914	1,374	2,288
First professional degree	387	521	13	8	21
Doctoral degree	108	152	4	1	5
Master's degree	426	597	17	8	25
Work experience plus bachelor's or higher degree	3,467	4,258	79	69	148
Bachelor's degree	4,661	5,846	119	87	206
Associate degree	1,878	2,569	69	39	108
Postsecondary vocational training	2,590	3,190	60	57	117
Work experience in a related occupation	3,584	4,101	52	71	123
Long-term on-the-job training	4,826	5,522	70	99	169
Moderate-term on-the-job training	10,926	11,802	88	204	292
Short-term on-the-job training	22,696	26,129	343	731	1,074

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Upper Shore WIA
Most Important Skills for Leading Job Creating Occupations

	Percent of Top 25 Occupations Requiring the Indicated Skill
Active Listening	80%
Reading Comprehension	80%
Service Orientation	73%
Speaking	73%
Coordination	53%
Social Perceptiveness	53%
Writing	53%
Mathematics	47%
Equipment Selection	40%
Monitoring	27%
Operation and Control	27%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Western Maryland

Introduction

Western Maryland is becoming more of a location for business to locate. One of the Western Maryland's greatest assets is its hospitality and tourism industry. It is this industry that is a driver of the region's economy. The region's quality of life and access to major metropolitan areas on the East Coast are major strengths to its economy. This report analyzes workforce supply and demand conditions in Western Maryland, using available metrics of both workforce and job characteristics.

Western Maryland's Workforce Supply

From 1990 to 2000, Western Maryland made gains in the percentage of persons employed and the percentage of persons having a degree from a college or university. With a growing population and an expanding business community, Western Maryland is a desired place to both live and work. Several highlights of the supply of labor and the Western Maryland's workforce are:

- Western Maryland's civilian labor force increased by 7% from 1990 to 2000. The labor force participation rate remained steady at 58% from 1990 to 2000.
- The number of persons employed in Western Maryland increased by 7% from 1990 to 2000.
- The percentage of persons aged 25 or older in Western Maryland having less than a high school diploma fell from 29% in 1990 to 21% in 2000, while the percentage of persons having a Bachelor's degree or higher increased from 11% to 14%.
- The number of Western Maryland residents with an Associates degree increased by 22% between 1990 and 2000, the number having a Bachelor's degree increased by 45%, and the number having a Graduate or Professional degree increased by 29%.
- Of the 2,249 high school graduates in 2001, 43% were going off to colleges or universities.
- There was a total of 956 community college graduates in 2001, with 16% earning degrees in business programs, 4% earning degrees in computer programs, and 26% earning degrees in health related programs.
- Western Maryland public colleges awarded 1,027 degrees in 2001. Of these degrees, 24% were in business related programs, 22% were in education related programs, 4% were in computer science programs, and 2% were in biological science programs.

- Hard to serve populations, such as persons receiving welfare and persons on active parole, represent a potential additional source of workers that business can access. The percentage of persons in poverty fell by 3% from 1990 to 2000 and the percentage of families in poverty decreased by 14%. In 2001, 312 persons in Western Maryland received welfare assistance and 171 persons were on active parole.

Western Maryland Workforce Demand

Western Maryland Employment and Employment Growth

The wholesale trade, services, and transportation, communications and public utilities sectors drove the Western Maryland's economy from 1996 to 2001. Several highlights of the Western Maryland's employment and employment growth include:

- The number of persons employed in Western Maryland increased by 9% from 1996 to 2001.
- Over 2000 to 2010, total Western Maryland employment is projected to increase by 13% and create a total of 37,346 job openings.
- Western Maryland's employment growth from 1996 to 2001 was led by several key sectors: wholesale trade (22%), services (16%), and transportation, communications and public utilities (14%).
- Several sectors of the region's economy, including manufacturing and mining experienced employment losses from 1996 to 2001.
- For 2000 to 2010, the industries that are projected to gain the greatest number of jobs due to economic growth and replacement demand are services (14,708 jobs), retail trade (10,082 jobs), and manufacturing (3,445 jobs).

GWIB Vital Industries

The five industry clusters GWIB has identified as vital to workforce and economic development account for 39% of total employment in Western Maryland.

- Western Maryland's **construction** industry accounts for 6% of the Western Maryland's total employment. Workers earned \$568 on average per week. From 2000 to 2010, it is expected that a total of 1,825 new construction jobs will be created.
- The Western Maryland's **health care** industry accounts for 12% of total employment and workers earn \$631 on average per week. It is projected that the Western Maryland will add a total of 4,148 health care workers from 2000 to 2010.
- The **hospitality and tourism** industry accounts for 13% of total employment in Western Maryland and workers earn \$238 on average per week. This sector is expected to add 6,049 jobs from 2000 to 2010.

- Western Maryland's public **education** employees account for 7% of the Western Maryland workforce and earn \$613 on average per week. From 2000 to 2010, the Western Maryland is expected to add 3,125 public education workers.
- The **high technology** industry accounts for 2% of Western Maryland's total employment and workers earn \$1,076 on average per week. A total of 684 new high technology jobs are projected for the Western Maryland from 2000 to 2010. Information technology workers accounts for less than one percent of the total employment in Western Maryland and workers earn \$736 on average per week. Eighty percent (80%) of the projected high technology jobs created in Western Maryland from 2000 to 2010 are in the information technology industry (545 jobs).

Top Growth Industries

Western Maryland's location is its driver of economic activity. Its tourism and hospitality businesses benefit from the spectacular foliage and relaxing atmosphere. Western Maryland is also home to ski resorts, Rocky Gap, and Deep Creek Lake.

- The top five employment growth industries from 1996 to 2001 in Western Maryland were, miscellaneous business services, eating and drinking places, miscellaneous shopping goods stores, residential care, and accounting and bookkeeping services. These industries added 3,824 jobs.
- The five fastest growing industries in Western Maryland from 1996 to 2001 were hardware and plumbing equipment and supplies, landscape and horticultural services, accounting and bookkeeping services, books, and miscellaneous business services. On average these five industry clusters grew by 92% compared to total Western Maryland employment growth of 9%.
- Those industries having the highest LQs in Western Maryland are leather tanning and finishing, narrow fabric mills, girls', children's and infant's outerwear, engines and turbines, and business credit institutions.

Western Maryland Job Openings

In order to better identify the key occupational employment trends impacting Western Maryland, we look at both total occupational openings and occupational openings from growth. Total occupational openings reflect the total demand for workers by summary occupation over the projection period. Occupational openings from growth represent the occupational demand required to support the growing sectors of the regional economy.

Total Job Occupational Openings

A majority of the job openings for Western Maryland can be filled by the 57% of the region's high school graduates that are not attending a college or university. While not primarily high-wage positions, these occupations are important in that they support higher-wage, higher-skill occupations.

- The top five fastest growing occupations from total annual openings account for 52% of total annual openings. The five fastest growing occupational groups by total annual openings are office and administrative support occupations (501 jobs), sales and related occupations (490 jobs), food preparation and serving related occupations (456 jobs), transportation and material moving occupations (253 jobs), and management occupations (252 jobs).

Occupational Openings from Economic Growth

These occupations are important in that they support industries which have been the backbone for economic development within the Western Maryland, especially that of its infrastructure.

- The top five fastest growing occupations from economic growth account for 48% of total openings due to economic growth. The five fastest growing occupations by economic growth are sales and related occupations (155 jobs), education, training and library occupations (126 jobs), healthcare support occupations (119 jobs), management occupations (114 jobs), and office and administrative support occupations (111 jobs).

Occupational Educational Requirements

While persons receiving on-the-job training can fill a majority of the occupations in the region, forecasted positions will increasingly need workers with a higher level of educational attainment. Over the period of 1990 to 2000, the percentage of persons in the region with a Bachelor's degree or higher increased significantly. This trend will need to continue if the region is to prosper in the future.

- Seventeen percent (17%) of total Western Maryland employment is in occupations requiring a Bachelor's degree, 4% require an Associates degree, 4% require post-secondary training, and 75% require only on the job training.
- Twenty-six percent (26%) of job openings created by economic growth require a Bachelor's degree, 8% require an Associates degree, 4% require post-secondary training, and 62% require only on the job training.
- Eighteen percent (18%) of total job openings created by economic growth and replacement demand require a Bachelor's degree, 5% require an Associates degree, 4% require post-secondary training, and 73% require only on the job training.

Key Skills of Leading Occupations

The top fifteen occupations ranked by projected job openings in the Western Maryland region are dominated by lower skilled occupations serving the region's tourism related, residential demand based industries, and distribution industries. Only two of the top fifteen occupations secondary school teachers and registered nurses require an Associates degree or higher. As a result, the most important skills for the top job creating occupations are dominated by basic skills – such as listening, reading comprehension, speaking, and writing.

Western Maryland WIA Workforce Supply

Workforce Supply Characteristics

<i>Employment Status</i>	1990	2000	Percent Change
Working Age Population (16+)	178,673	189,157	5.9%
In Labor Force	104,508	110,562	5.8%
Civilian Labor Force	103,643	110,351	6.5%
Employed	97,670	104,542	7.0%
Unemployed	5,973	5,809	-2.7%
Armed Forces	865	211	-75.6%
Not in Labor Force	74,165	78,595	6.0%

Educational Attainment	1990	2000	Percent Change
Population 25+	148,905	161,580	8.5%
Less Than High School	42,583	34,515	-18.9%
High school/GED	57,012	65,549	15.0%
Some College, No Degree	21,975	28,561	30.0%
Associate Degree	8,010	9,753	21.8%
Bachelor's Degree	9,311	13,500	45.0%
Graduate of Professional Degree	7,514	9,702	29.1%

	2001	Percent Going to College		
High School Graduates	2,249	42.6%		
College Prep	901			
Vocational	786			
Community College Grads	956			
Business Tech	150			
Computer Tech	40			
Health Tech	250			
	Bachelor	Master	Doctorate	Professional
Four Year College Grads	812	215	0	0
Biological Sciences	16	0	0	0
Business	141	103	0	0
Computer Science	36	0	0	0
Education	133	90	0	0
Engineering	0	0	0	0
Health	0	0	0	0
Physical Sciences	0	0	0	0

Hard to Serve Populations

Welfare Population	312
Active Parole	171

<i>Poverty Status</i>	1990	2000	Percent Change
Families in Poverty	5,859	5,061	-13.6%
Individuals in Poverty	26,481	25,719	-2.9%

	2000
Immigration (foreign Born)	3,652

Western Maryland WIA Employment Growth and Projected Employment Growth*

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		1996-2001 Percent Change	2001 Average Weekly Wage	2001 Number of Reporting Units	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Total Employment	95,549	104,190	9.0%	\$527	5,872	102,587	115,569	12,982	24,364	37,346
Government Total	14,433	15,810	9.5%	\$628	203	7,982	9,386	1,404	1,803	3,207
Federal Government	1,937	1,264	-34.7%	\$770	75	1,382	1,331	0	292	292
State Government	4,131	5,449	31.9%	\$654	31	3,620	4,650	1,030	871	1,901
Local Government	8,365	9,097	8.8%	\$593	97	2,980	3,405	425	640	1,065
Private Total	81,116	88,380	9.0%	\$509	5,669	94,605	106,183	11,578	22,561	34,139
Agriculture, Forestry and Fishing	475	742	56.2%	\$392	120	573	771	198	123	321
Mining	618	608	-1.6%	\$848	27	596	421	0	91	91
Construction	5,327	5,846	9.7%	\$567	741	5,543	6,243	700	1,125	1,825
Manufacturing	15,933	14,980	-6.0%	\$671	288	16,063	15,354	0	3,445	3,445
TCPU ¹	4,492	5,132	14.2%	\$675	353	5,044	5,743	699	1,076	1,775
Wholesale Trade	3,508	4,277	21.9%	\$580	317	4,341	4,661	320	991	1,311
Retail Trade	20,867	22,541	8.0%	\$306	1,464	21,552	24,595	3,043	7,039	10,082
FIRE ²	5,361	5,848	9.1%	\$647	387	5,795	6,220	425	1,040	1,465
Services	24,506	28,395	15.9%	\$499	1,961	35,098	42,175	7,077	7,631	14,708
NonClassifiable	29	11	-62.1%	\$324	11					

¹ Transportation, Communications and Public Utilities

² Finance, Insurance and Real Estate

Western Maryland Industry Clusters

Industry Title	Employment Growth					Projected Employment Growth				
	Employment		Percent of 2001 Total Employment	Percent of State Cluster Employment	2001 Average Weekly Wage	Employment		2000-2010 Openings		
	1996	2001				2000	2010	Growth	Replacements	Total
Construction	5,477	5,972	5.7%	3.6%	\$568	5,543	6,243	700	1,125	1,825
Health Care	10,990	12,027	11.5%	5.7%	\$631	11,070	12,939	1,869	2,279	4,148
Hospitality and Tourism	11,836	13,205	12.7%	4.6%	\$238	12,305	14,041	1,736	4,313	6,049
Education - Public	6,399	6,999	6.7%	4.2%	\$613	6,997	8,509	1,512	1,613	3,125
Education - Private	214	232	0.2%	0.6%	\$386					
High Technology	2,992	2,049	2.0%	1.2%	\$1,076	2,528	2,686	158	526	684
Information Technology	269	342	0.3%	0.4%	\$736	367	817	450	95	545

*See Data Appendix

SOURCE: Maryland Department of Labor, Licensing and Regulation

Office of Labor Market Analysis and Information

Western Maryland WIA

Top 5 Growth Industries, 1996-2001 by Total Number of Jobs

Industry Title	Number Change
Miscellaneous Business Services	1,451
Eating And Drinking Places	838
Miscellaneous Shopping Goods Stores	615
Residential Care	484
Accounting, Auditing, And Bookkeeping Services	436

The 5 Fastest Growing Industries, 1996-2001 by Percentage Growth

Industry Title	Percent Change
Hardware, And Plumbing And Heating Equipment And Supplies	132.1
Landscape And Horticultural Services	91.3
Accounting, Auditing, And Bookkeeping Services	82.9
Books	80.9
Miscellaneous Business Services	74.9

Top 5 Location Quotients (LQ)

Industry Title	LQ
Leather Tanning And Finishing	137.3
Narrow Fabric And Other Smallwares Mills: Cotton, Wool, Silk, And Manmade	49.0
Girls', Children's, And Infants' Outerwear	37.4
Engines And Turbines	22.8
Business Credit Institutions	21.1

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Western Maryland WIA Job Openings by Major Occupational Group

Occupational Group	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Openings
Total, All Occupations	102,587	115,569	1,298	2,439	3,738
Management Occupations	7,828	8,964	114	139	252
Business and Financial Operations Occupations	2,814	3,119	31	52	82
Computer and Mathematical Occupations	919	1,470	55	8	63
Architecture and Engineering Occupations	695	755	6	15	21
Life, Physical, and Social Science Occupations	518	610	9	16	25
Community and Social Services Occupations	1,466	1,954	49	23	72
Legal Occupations	263	344	8	2	10
Education, Training, and Library Occupations	4,590	5,850	126	106	232
Arts, Design, Entertainment, Sports, and Media Occupations	752	895	14	15	29
Healthcare Practitioners and Technical Occupations	5,175	6,369	119	107	227
Healthcare Support Occupations	2,846	3,600	75	53	128
Protective Service Occupations	2,348	3,123	78	74	152
Food Preparation and Serving Related Occupations	8,340	9,380	104	352	456
Building and Grounds Cleaning and Maintenance Occupations	3,113	3,571	46	64	110
Personal Care and Service Occupations	2,127	2,494	37	55	91
Sales and Related Occupations	10,592	12,146	155	334	490
Office and Administrative Support Occupations	19,494	20,607	111	390	501
Farming, Fishing, and Forestry Occupations	178	196	2	4	6
Construction and Extraction Occupations	5,193	5,743	55	106	161
Installation, Maintenance, and Repair Occupations	4,252	4,784	53	95	148
Production Occupations	10,468	10,421	0	235	235
Transportation and Material Moving Occupations	8,616	9,174	56	197	253

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Western Maryland WIA Occupational Education Requirements

Education/Training Level	Employment		Annual Openings		
	2000	2010	Growth	Replacement	Total
Total, Education/Training Level	102,200	115,060	1,286	2,439	3,725
First professional degree	1,025	1,248	22	17	39
Doctoral degree	260	366	11	2	13
Master's degree	1,049	1,324	28	23	51
Work experience plus bachelor's or higher degree	6,340	7,336	100	116	216
Bachelor's degree	8,809	10,514	171	171	342
Associate degree	3,699	4,709	101	73	174
Postsecondary vocational training	3,925	4,445	52	92	144
Work experience in a related occupation	7,807	8,752	95	155	250
Long-term on-the-job training	8,232	8,975	74	174	248
Moderate-term on-the-job training	23,282	25,444	216	433	649
Short-term on-the-job training	37,772	41,947	418	1,183	1,601

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

**Western Maryland WIA
Most Important Skills for Leading Job Creating Occupations**

	Percent of Top 25 Occupations Requiring the Indicated Skill
Active Listening	100%
Reading Comprehension	93%
Speaking	93%
Writing	73%
Service Orientation	67%
Social Perceptiveness	67%
Coordination	53%
Mathematics	53%
Critical Thinking	20%

SOURCE: Maryland Department of Labor, Licensing and Regulation
Office of Labor Market Analysis and Information

Data Appendix

Data for this report were collected in two areas: Workforce Supply and Workforce Demand. Workforce Supply data includes indicators of the quantity, characteristics and production of potential workers. Workforce Demand data includes measures of the final demand for workers by the employer community.

Workforce Supply Data

- General Workforce Characteristics data, including employment status, educational attainment, and poverty, were from the 1990 and 2000 U.S. Bureau of the Census.
- Workforce Supply Characteristics data, including high school graduates, the percentage of high school graduates going to college, community college graduates, and four-year college graduates, were from the Maryland State Department of Education and the Maryland Higher Education Commission.
- Data on Hard to Serve Populations were from the Maryland Department of Human Resources and the Maryland Department of Corrections.

Workforce Demand Data

- Data on employment, changes in employment, and projected employment growth were from various Maryland Department of Labor, Licensing and Regulation, Office of Labor Market Analysis and Information – DLLR/LMAI – sources. 1996 and 2001 employment figures were generated from data developed by Maryland's Covered Employment and Wages Program (CEW), commonly referred to as the ES-202 Program. They were then further adjusted to reflect known changes in a firm's business activity or location. DLLR/LMAI also provided the projected 2010 data. Data were analyzed by single digit standard industrial classification code and by the industries comprising each of the Governor's Workforce Investment Board industry clusters.
- The top five employment growth industries and fastest growing industries were based on 3-digit standard industrial codes (sic). An industry had to represent at least 0.1% of an area's total employment to be included. Also, public administration (sic 91-97) was excluded.
- Location quotients (LQ) are a measure of the employment concentration in a particular industry compared to the national average. A LQ above 1.0 signifies a higher than average specialization in an industry. Industries with less than 0.1% of total area employment were excluded from lists. In some cases, industries with higher location quotients than those analyzed here were excluded for economic reasons. Also excluded was public administration (sic 91-97). LQ's were calculated using 2000 data.
- Occupational employment projections were developed by DLLR/LMAI using standard projection techniques developed by the U. S. Department of Labor. In the projection project state and local education and hospitals are grouped with private employment. This aggregation requires the reader to use caution when comparing to other employment data.

- Occupational openings result from job growth and job replacement. Openings by growth are the numerical change during the projection period when growth is positive. When negative growth exists the openings by growth equals zero since, by definition, negative openings are not possible. Replacement openings are the result of workers leaving an occupation. This includes those that leave due to death or retirement. Normal job turnover is not included.
- Educational requirements are based on educational levels assigned to occupations by the Bureau of Labor Statistics (BLS). A few occupations were not able to be assigned a level and are excluded from the table.
- Skills for the top 25 occupations were obtained from O-Net data.
- Totals throughout the report may not sum due to rounding.

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