Labor Market Analysis of the Susquehanna Workforce Investment Area

Submitted by:
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Labor Market Analysis of the Susquehanna Workforce Investment Area

Executive Summary

Purpose of this Report

The Susquehanna Workforce Investment Area (Susquehanna WIA or SWIA) is located in the northeastern corner of Maryland and is comprised of Cecil and Harford Counties. Among the region's signatures is its intermodal transportation system, which includes I-95, heavy and commuter rail service and a number of other significant roadways.

The region is literally sandwiched between two major metropolitan areas, with Cecil County defined as being part of the Philadelphia/Wilmington metropolitan area (approximately 6 million people) and Harford County forming part of the Baltimore/Washington metropolitan area (more than 8.4 million people). These are among the largest regions in the nation and provide Cecil and Harford county residents with access to massive levels of employment opportunities.

Thanks to its advantageous location, the availability of industrial sites, and a relatively low cost of living, the region enjoys a diverse economic base, including large numbers of businesses in distribution, manufacturing, healthcare, defense contracting, professional services, retail and leisure/hospitality. Though there are employment opportunities available, the number of job openings in the region is suppressed relative to historic norms due to ongoing slow economic recovery. Moreover, it is not obvious that today's jobseekers possess the skills necessary to render themselves relevant to rapidly expanding employers and economic segments.

The preparedness of the local workforce represents the subject of this Sage Policy Group, Inc. (Sage) report. Through the assistance of educational programs, grants and other mechanisms, the region endeavors to accelerate development of the local workforce to reduce unemployment, increase household income, improve the performance of local businesses and expand local tax bases. This report focuses on both the opportunities and challenges facing current and future labor force participants in northeast Maryland. This report may also be useful in developing a strategic plan.

Key Analytical Findings

- The public sector now represents nearly a quarter of SWIA employment. One implication of this high public sector employment is that the SWIA is extraordinarily vulnerable to federal government downsizing, including in the form of diminished procurement.
- On a daily basis, the Susquehanna region exports more workers than it imports. According to available data, SWIA has a net job outflow in the range of 56,000. In other words, Maryland's northeast corner represents a massive net exporter of labor force participants, a hallmark of primarily bedroom communities.

- Increasingly, job growth in Northeast Maryland is concentrated in industries that require elevated levels of human capital, including in education, health, logistics and professional services. Many of those who have been displaced from employment must be retooled in order to become relevant to these emerging segments, which are associated with fierce competition for available positions.

- The trade, transportation & utilities sector represents a key segment of the Susquehanna region's economy, providing 22 percent of local employment. The segment has contributed 349 jobs over the past five years, expanding its employment contribution by 1.4 percent.

- Health care and educational services expanded more rapidly than any other industry in the Susquehanna region between 2005 and 2011. The Department of Labor, Licensing and Regulation projects that the number of healthcare practitioners and related technical workers will expand by more than 5,700 jobs or 3.5 percent by 2013 relative to 2011.

- Given the older demographics of today's construction workforce and the relative lack of expressed instruction in construction-related occupations among younger workers, the construction industry faces major worker shortages. In Cecil County, 14.2 percent of senior workers are employed in the construction sector while in Harford County the corresponding figure is 16.6 percent.

- While expansion of the Department of Defense and its contractors increased the need for computer programmers and software developers in the region, what many employers seemingly require are people who are able to use software with high levels of competence. Computer-assisted design in manufacturing, Building Information Management (BIM) software in construction and basic Microsoft Office in the service sector are associated with skills sets in demand. That said, there is still substantial demand for computer programmers and software developers in and out of the Susquehanna WIA.

Exhibit E1. Highest Level of Educational Attainment of Susquehanna WIA Residents, Age 25 and over

	2005	**2010**	**Absolute Change**	**Percent Change**
Population 25 and over	*216,882*	*231,031*	*14,149*	*6.5%*
Less than 9th grade	6,759	6,227	-532	-7.9%
9th to 12th grade, no diploma	18,422	13,969	-4,453	-24.2%
High school graduate	67,964	72,780	4,816	7.1%
Some college, no degree	47,219	53,155	5,936	12.6%
Associates degree	17,207	18,024	817	4.7%
Bachelor's degree	38,869	41,270	2,401	6.2%
Graduate or professional degree	20,442	25,606	5,164	25.3%
High School or more	*191,701*	*210,835*	*19,134*	*9.98%*
Bachelor's degree or more	*59,311*	*66,876*	*7,565*	*12.75%*

Source: U.S. Census Bureau American Community Survey, 2005 & 2010 **Note that population changed.

- Large businesses (more than 100 employees) represent 36 percent of total private employment in the Susquehanna WIA. Businesses of this size are more likely to be looking for certain specific credentials that help them efficiently screen out large numbers of applicants. The workforce needs to be positioned to understand which credentials are important and how to acquire them.
- Many employers shrunk dramatically during the economic downturn and its aftermath. Correspondingly, today's workers need to be more versatile in order to fulfill multiple functions.
- The SWIA is far more educated today than it was even five years ago. The need to add credentials, retool, and better compete in an economy characterized by rising globalization, a severe economic downturn and rampant automation has induced many Susquehanna residents to pursue additional education. Shifts in the resident base, including some related to base realignment, may also help explain the significant gains made in educational attainment (see Exhibit E1).

Recommendations

Based on the findings detailed above and throughout this report, the study team recommends that the following categories represent focal points for future regional workforce development efforts. Five of these focal points represent industry/occupational categories worthy of focus (recommendations 1-5). The other two represent more tactical approaches (6 and 7).

1. Pursue logistics

The Susquehanna region is a natural fit for the logistics industry. The two counties have abundant developable land, benefit from intermodal transportation, and the wage rates associated with distribution/logistics are often high enough to represent a significant opportunity at upward mobility.

2. Train for primary and preventative healthcare, including lab work

Thanks in part to healthcare reform, there will be growing demand for nurses and primary care practitioners. Certain portions of the Susquehanna region are already designated as Health Care Professional Shortage Areas (HPSA) in primary medical care by the Health Resources and Services Administration. An area or health care organization is designated as an HPSA if the proportion of the geographic population to the number of physicians is greater than 2,000 to 1.

3. Consider construction, including skills related to green construction and infrastructure build-out

Ongoing technological revolutions in construction – in particular, developments in construction software (e.g., BIM), green construction mandates, and digitization – will create many high-wage opportunities in a segment of the economy that is increasingly associated with pre-fabrication, modularization, and globalization.

4. Promote manufacturing and assembly

According to the Governor's Workforce Investment Board, employers in the manufacturing industry demand a comprehensive foundation in basic employability skills (data indicates that 70 percent of applicants are rejected from employment opportunities because they lack basic skills), relevant technical skills, and a commitment to life-long learning to keep pace with the rate of industry innovation.

5. Supply human capital to the information technology sector

Occupational forecasts generally rank information technology as among the most rapidly expanding segments of the U.S. and Maryland economies. Workers in this segment generally require formal training and lifelong learning opportunities. The IT industry will see healthy growth in Susquehanna region during the foreseeable future. According to Maryland's Department of Labor Licensing and Regulation, Susquehanna will add 345 computer specialist jobs (or an increase of 17.4 percent of 2008 employment level) through 2018.

6. Implement an innovative credentialing strategy

Large employers in particular seek to streamline the hiring process. This streamlining results in fewer interviews and increased use of checklists focused upon a set of credentials to identify the most qualified job candidates. It is important to understand the types of credentials most commonly sought by employers. There are now important efforts taking place seeking to wrap credentials around soft skills mastery and the Susquehanna region should seek to be a leader in this form of credentialing.

7. Aggressively advocate for career and technical education at local high schools

Perhaps most importantly, entry into CTE programs provides high school juniors and seniors with early focus. This can alleviate aimlessness and may help students identify a passion prior to graduation. Of course, CTE programming cannot be static. Just as community colleges and other institutions are required to continue to shift their programming in conjunction with emerging technologies and industry requirements, so too are CTE programs.

Conclusion

The Susquehanna region possess a number of strengths, including its proximity to major metropolitan areas and highway/mass transit infrastructure, the presence of community colleges and the HEAT Center, and a significant manufacturing and distribution presence, among other things. The presence of an existing higher education sector in conjunction with several rapidly growing industries represents an opportunity to create better matches between skills demand and supply going forward.

Labor Market Analysis of the Susquehanna Workforce Investment Area

I. Introduction

The Susquehanna Workforce Area

- Purpose of this Report

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The region is literally sandwiched between two major metropolitan areas, with Cecil County defined as being part of the Philadelphia/Wilmington metropolitan area (approximately 6 million people) and Harford County forming part of the Baltimore/Washington metropolitan area (more than 8.4 million people).[1] These are among the largest and most prosperous regions in the nation and provide Cecil and Harford county residents with access to massive levels of employment opportunities.

Thanks to its advantageous location, the availability of industrial sites, and a relatively low cost of living, the region enjoys a diverse economic base, including large numbers of businesses in distribution, manufacturing, healthcare, defense contracting, professional services, retail and leisure/hospitality. Though there are employment opportunities available, the number of job openings in the region is suppressed relative to historic norms due to ongoing slow economic recovery. Moreover, it is not obvious that today's jobseekers possess the skills necessary to render themselves relevant to rapidly expanding employers and economic segments.

The preparedness of the local workforce represents the subject of this Sage Policy Group, Inc. (Sage) report. Through the assistance of educational programs, grants and other mechanisms, the region endeavors to accelerate development of the local workforce in order to reduce unemployment, increase household income, improve the performance of local businesses and expand local tax bases. This report focuses on both the opportunities and challenges facing current and future labor force participants in northeast Maryland.

- Focus Group Summary

In order to ensure that the study team analyzed and discussed topics of greatest concern to community stakeholders, Sage Policy Group, Inc. staff conducted a two-hour focus group on October 2012. Participants haled from for-profit, non-profit and public sectors. All are senior

[1]The Jacob France Institute and the Maryland DLLR. (February 2004). Susquehanna Workforce Development Study.

managers or leaders within their respective organizations. Many key regional industries were represented, including defense contracting, finance, healthcare, technology, manufacturing and distribution.

In general, participants agreed that even in the context of unusually high unemployment, skilled workers remain in short supply. Many focus group participants indicated an ongoing difficulty securing workers who possess both technical knowledge and elevated soft skills such as attention to detail, ability to work in team settings, motivation and customer orientation.

In fact, the emphasis on soft skills was perhaps the most surprising aspect of the focus group. Workforce development often focuses upon real and perceived hard skills shortages. For instance, there has been a general shortage of truck drivers, engineers and registered nurses in the economy for much of the past two decades. The solution is to produce more people with the right sets of licenses, educational credentials and examination completions. This reflects a focus upon hard skills and calls upon educational institutions, workforce development professionals, career counselors and others to ensure that the appropriate types of hard skill development opportunities exist in the environment.

There is a tendency to presume that soft skills merely exist and emerge from the individual. However, focus group participants indicated that this type of skill cannot be merely presumed.

Predictably, the focus group revealed that skill sets in demand have changed over time with the ongoing advance of technology and greater need for workforce versatility in the wake of the Great Recession and staff downsizing. Vocational candidates are expected to have broader skill sets than candidates of the past, including soft skills. Hard skill mastery has also become more technically demanding. The computerization of manufacturing implicates greater need for advanced knowledge of math and science among a larger fraction of the workforce. Many participants reported that these skills are often embodied in older members of their workforce and that there is growing concern regarding the extent to which younger workers can fill anticipated voids.

Focus group members generally agreed that one of the major educational priorities is that local community colleges should offer more courses in STEM subjects for both new learners and for those already in the labor force. There was also widespread agreement that young people do not appear to be as readily exposed to math and science as their predecessors. For instance, much discussion revolved around the historic standoff between the U.S. and Soviet space programs during the 1960s and 1970s, which persuaded many young people at that time to take an interest in the commanding heights of then-existing mathematical and scientific knowledge. Apparently, a corresponding level of motivation is lacking today, including among children from more rural areas within Cecil and Harford counties.

Many participants also expressed concern that the best and brightest young workers will be induced to leave the area for more metropolitan communities in Philadelphia, Baltimore, Washington or other parts of the nation. The threat of this is particularly acute given the lack of a four-year institution in the region, which means that the most capable students will likely spend at least four years away from home, which renders it more probable that they will settle elsewhere.

Focus group members also reported that they are often required to recruit personnel from outside the region. This represents perhaps the focus group's most important finding. The fact that the local labor force is often not able to supply expanding employers with broadly-skilled personnel represents both challenge and opportunity. In other words, there is room for improvement and prospects for substantially better regional labor force outcomes.

- Brief History and Report Organization

A 2004 study of the region's workforce found that private employment in the Susquehanna region (by place of work) expanded 18 percent between 1997 and 2002. The region outperformed the balance of the state in terms of employment growth. By 2002, employment in the region represented 4 percent of the state's total, up from 3.7 percent in 1997.[2]

However, the region's labor market has experienced seismic and often negative shifts in recent years. The Great Recession was unkind to Maryland and to the Susquehanna Workforce Investment Area, though many other communities fared worse. Between December 2007 and December 2009, more than 109,000 jobs were lost in Maryland.[3] Although the impact of recession was not as severe in the SWIA as in other parts of the state, more than 4,000 jobs (approximately 3.5 percent of total employment) disappeared. During this same period, unemployment surged from just above 3 percent to 8 percent statewide. In Harford County, the unemployment rate rose to 7.7 percent at its cyclical peak and ballooned to 9.9 percent in Cecil County.

Predictably, circumstances have improved recently in concert with the national and global economies. Between 2009 and 2011, more than 800 jobs were added in the Susquehanna region and the community is now home to more jobs than it was in 2005. However, this still represents disappointing performance both because of the mildness of the pace of employment recovery and because base realignment's impact was expected to be a bit more profound.

The balance of this report analyzes growth prospects for the region, including at industry and occupational levels, and the extent to which the labor force appears prepared for the future. The

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[2]Id., p.1.
[3]Bureau of Labor and Statistics. (n.d.). State and Metro Area Employment, Hours, & Earnings. Retrieved on October 5th, 2012, from http://data.bls.gov/cgi-bin/dsrv.

Susquehanna Workforce Network hired Sage to provide a report that supports economic and workforce professionals to establish goals and strategies to meet future workforce needs. This report may also be useful in developing a strategic plan.

It would appear that some adjustments in the spheres of workforce and economic development are required. Despite still elevated unemployment rates, many employers claim that they cannot suitably fill many available positions, an indication of structural skills mismatches that the region will need to address if it is to achieve its potential. The specter of imminent retirement among many of the regions most experienced and often most skilled workers also represents another challenge with which the region will need to contend.

The remainder of this report is divided into four sections. In the next section (Section II), the study team provides an analysis of current labor market conditions relative to 2005 as a way to supplement the aforementioned 2004 report. Section III discusses the region's workforce from the perspective of labor force growth, demographic characteristics such as educational attainment and occupational breakdowns. Section IV summarizes and identifies regional economic and workforce assets, sources of competitive/comparative advantage, and opportunities for accelerated employment growth. Section V provides the study team's recommendations and associated rationales.

II. Labor Market Conditions

Industry Trends, Projections and Growth Potential

Exhibits 1 and 2 below provide statistical detail regarding the number of business establishments and employment in the Susquehanna WIA and in Maryland. Interestingly, while the number of business establishments located in the SWIA has actually expanded slower than statewide, employment has expanded more quickly.

There are a number of possible explanations for this, but one is that new business formations have been more apparent in the balance of the state, including in the heavily metropolitan jurisdictions of Central Maryland. This generates more rapid business establishment growth, but also reduces average firm size all things being equal. Cecil and Harford counties were less impacted by the downturn than a number of Central Maryland jurisdictions more closely aligned with the global financial crisis, which implies that a higher fraction of local established businesses survived.

Between the two jurisdictions that comprise the SWIA, Harford County appears to have experienced more rapid new business formation and has certainly experienced better employment performance. The number of business establishments in Harford County expanded 1.4 percent between 2005 and 2011. The corresponding Cecil County statistic was 0.6 percent.

Moreover, while Harford County added 3.4 percent to employment totals between 2005 and 2011, the number of jobs in Cecil County slipped 4.5 percent. As reflected in Exhibit 2, employment in the Susquehanna region expanded by 1.4 percent between 2005 and 2011. During this corresponding period, Maryland employment declined 0.8 percent. Harford County is presently home to nearly three-fourths of SWIA businesses and three-fourths of total regional employment while representing a slightly more than seven-tenths of population.

Exhibit 1. Number of Business Establishments the Susquehanna WIA, 2011 vs. 2005

	Total Number of Establishments		
	2005	*2011**	*% Change*
Maryland	160,084	164,358	2.7%
Susquehanna WIA	7,420	7,506	1.2%
Harford	5,488	5,563	1.4%
Cecil	1,932	1,943	0.6%

Source: Bureau of Labor Statistics; *2011 data are preliminary estimates

Exhibit 2. Total Employment, 2011 vs. 2005

	Total Employment (Average Annual)		
	2005	*2011**	*% Change*
Maryland	2,497,487	2,478,505	-0.8%
Baltimore Metro	1,229,752	1,221,230	-0.7%
Susquehanna WIA	109,720	111,231	1.4%
Harford	80,527	83,286	3.4%
Cecil	29,193	27,945	-4.5%

Source: Bureau of Labor Statistics; *2011 data are preliminary estimates

Employment Growth by Industry

Private sector employment in the Susquehanna region shrank 2.8 percent between 2005 and 2011. This is a sharp contrast to the 23 percent growth that was experienced during the 1997-2002 period; a period that also encompassed one recession. The fact that overall employment expanded during this period is a reflection of the expanding number of government jobs recently, including those attributable to base realignment at Aberdeen Proving Ground. Regional public sector employment expanded nearly 17 percent between 2005 and 2011, which translates into nearly 4,000 net new jobs. This gain more than fully offset private sector retrenchment.

Within the region's private sector, service-providing industries continue to be dominant and comprised 81.5 percent of all private jobs in 2011. Employment in the goods-producing sector, which embodies employment in construction, mining, manufacturing and national resources, represents the balance (18.5%). Goods-producing employers collectively shed nearly 18 percent of their workforce since 2005. This finding contrasts with the 14 percent expansion that occurred in goods-producing segments between 1997 and 2002.

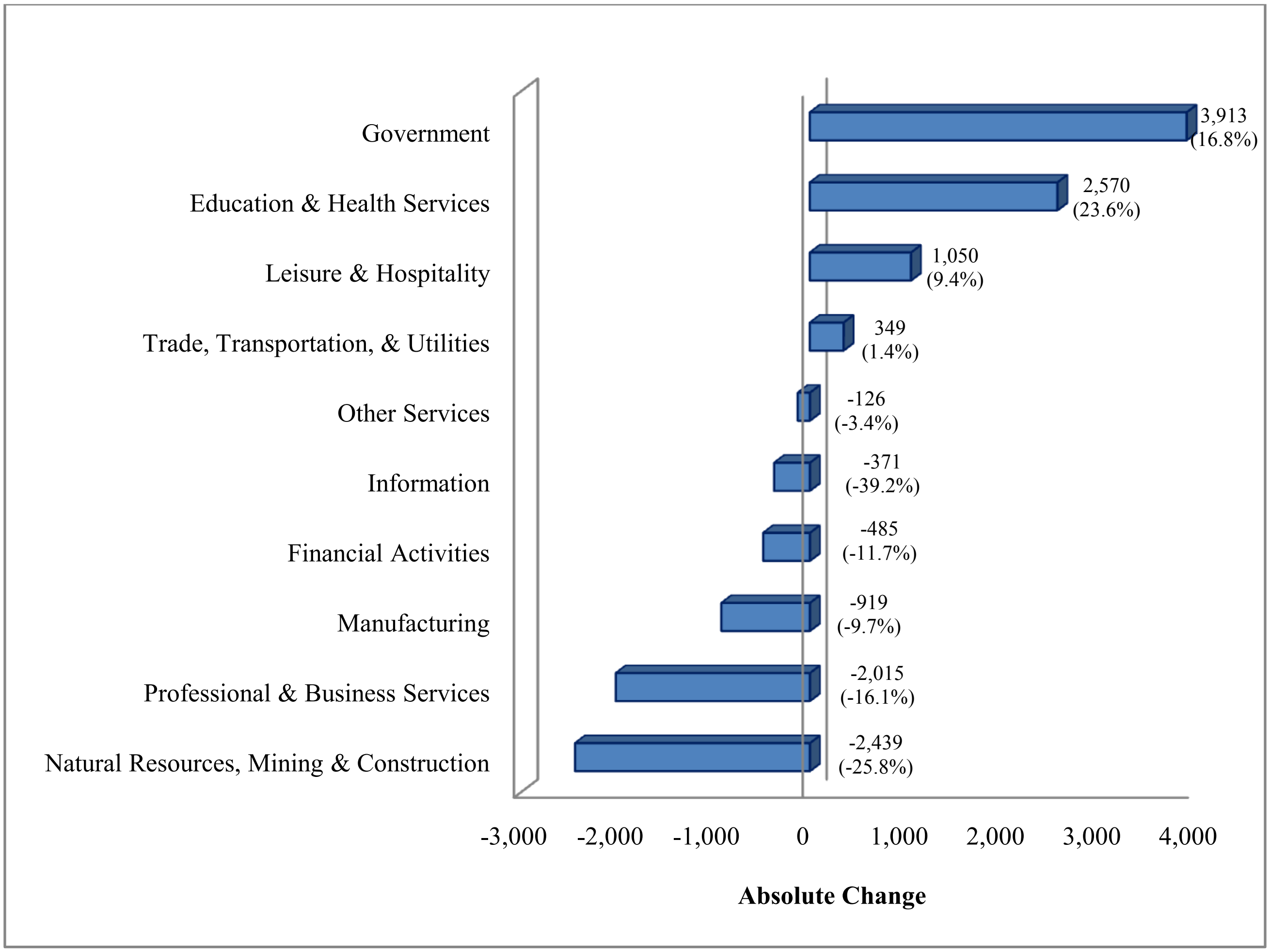
Exhibit 3. Susquehanna WIA Employment by Sector, 2005 vs. 2011

	Total Employment (Average Annual)			
	2005	*2011*	*Absolute Chg.*	*% Chg.*
Total Employment	109,720	111,231	+1,511	1.4%
Public Sector Total	23,321	27,234	+3,913	+16.8%
Private Sector Total	86,399	83,997	-2,402	-2.8%
Goods-Producing	18,862	15,506	-3,356	-17.8%
Service-Providing	67,536	68,491	955	+1.4%

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages
*Numbers may not add up due to rounding

From 2005 to 2011, government represented the single-fastest growing element of the local economy. Three private segments also added jobs. These were education & health services (+2,570, +23.6%), leisure & hospitality (+1,050, +9.4%), and trade, transportation, & utilities (otherwise known as the supply chain; +349, +1.4%). From a private sector perspective, growth in these industries was largely offset by losses in goods-producing industries like construction (-2,439, -25.8%) and manufacturing (-919, -9.7%). A large number of jobs were also lost in certain service-providing industries like professional & business services (-2,015, -16.1%) and financial activities (-485, -11.7%).

Exhibit 4. Employment Changes by Industry Sector by 2-digit NAICS, 2005-2011 vs. 2009-2011



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages (Percentage growth is in parenthesis)

The public sector now represents nearly a quarter of SWIA employment. Recent expansion has been largely a Harford County phenomenon where between 2005 and 2011, federal employment expanded 59 percent in Harford County (assuredly a reflection of base realignment). One implication of this going forward is that the SWIA will now be extraordinarily vulnerable to federal government downsizing, including in the form of diminished procurement. This renders workforce development all the more important.

Exhibit 5. Susquehanna Regional Government Employment, 2005 vs. 2011

Industry	**Average Annual Employment**							
	Susquehanna WIA				Harford		Cecil	
	2005	*% of 2005 Total**	*2011*	*% of 2011 Total**	*2005*	*2011*	*2005*	*2011*
Public Sector Total	23,321	*21.3%*	27,234	*24.5%*	16,253	21,495	7,068	5,739
Federal Government	10,924	*10.0%*	13,416	*12.1%*	7,533	11,992	3,391	1,424
State Government	799	*0.7%*	781	*0.7%*	475	467	324	314
Local Government	11,598	*10.6%*	13,037	*11.7%*	8,245	9,036	3,353	4,001
Absolute and Percentage Change, 2005-2011								
Public Sector Total		*+3,913*		*16.8%*	*+5,242*	*+32.3%*	*-1,329*	*-18.8%*
Federal Government		+2,492		22.8%	+4,459	+59.1%	-1,967	-58.0%
State Government		-19		-2.4%	-8	-1.7%	-10	-3.1%
Local Government		+1,439		12.4%	+791	+9.6%	+648	+19.3%

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages *Percentage of total Susquehanna employment

As reflected in Exhibit 6, employment growth in the Education and Health services category was disproportionately driven by expansion in ambulatory health care, which added more than 800 jobs regionally between 2005 and 2011. Among other things, this segment is associated with outpatient treatment and will likely continue to expand given the emphasis on primary and preventative care embodied in the Affordable Care Act.

Exhibit 6. Susquehanna Region Employment, Education & Health Services, and Important Subsectors, 2005 vs. 2011

Industry	**Average Annual Employment**							
	Susquehanna WIA				Harford		Cecil	
	2005	*% of 2005 Total**	*2011*	*% of 2011 Total**	*2005*	*2011*	*2005*	*2011*
Education & Health Services Total	*10,879*	*9.9%*	*13,449*	*12.1%*	*8,070*	*9,816*	*2,809*	*3,633*
Ambulatory health care services	3,271		4,149		2520	3121	751	1,028
Educational services	872		1,109		585	695	287	414
Absolute and Percentage Change, 2005-2011								
Education & Health Services Total		*+2,570*		*+23.6%*	*+1,746*	*+21.6%*	*+824*	*+29.4%*
Ambulatory health care services		+878		*+26.8%*	+601	+23.8%	+277	+36.9%
Educational services		*+237*		*+27.2%*	+110	+18.8%	+127	+44.3%

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages *Percentages of the total Susquehanna employment

During these years, employment in Leisure and Hospitality expanded by more than 9 percent, adding 1,050 jobs. The opening of Hollywood Casino in Perryville seems to have played a part. The subsector known as amusement, gambling and recreation added 240 jobs during this period, accounting for nearly 90 percent of leisure and hospitality growth in Cecil County between 2005 and 2011.

Exhibit 7. Susquehanna Region Employment, Leisure & Hospitality, and Important Subsectors, 2005 vs. 2011

Industry	**Average Annual Employment**							
	Susquehanna WIA				Harford		Cecil	
	2005	*% of 2005 Total**	*2011*	*% of 2011 Total**	*2005*	*2011*	*2005*	*2011*
Leisure & Hospitality	*11,159*	*10.2%*	*12,209*	*11.0%*	*7,936*	*8,717*	*3,223*	*3,492*
Amusements, gambling, and recreation	1,587		1,797		1,226	1,196	361	601
Accommodation	787		825		499	503	288	322
Absolute and Percentage Change, 2005-2011								
Leisure & Hospitality	*+1,050*		*9.4%*		*+781*	*+9.8%*	*+269*	*+8.3%*
Amusement, gambling, and recreation	+210		13.2%		-30	-2.4%	+240	+66.5%
Accommodation	+38		4.8%		+4	+0.8%	+34	+11.8%

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages *Percentages of the total Susquehanna employment for each year

The sector known as Trade, Transportation & Utilities (roughly equivalent to the supply chain) consists of a variety of sub-segments including merchandise trade (both retail and wholesale), utilities, telecommunications, and public transportation. This represents a key segment of the Susquehanna region's economy, providing 22 percent of local employment. Between 1997 and 2002, the industry was a top job producer, creating more than 3,200 jobs during that five-year period. Over the past five years, job growth has slowed to a relative trickle. The segment has contributed 349 jobs over the past five years, expanding its employment contribution by 1.4 percent. Job gain is attributable exclusively to Cecil County's warehousing and storage subsector. Employment growth is likely to accelerate going forward. According to CBRE, there are the 20.3 million square feet of industrial space available in Cecil and Harford counties, 90 percent of which is a bulk space suited for warehousing.[4] Given recent developments at the Port of Baltimore and likely ongoing expansion of the East Coast economy, demand for this space will likely climb during the years ahead creating job opportunities in the process. Exhibit 8 provides relevant industry detail.

Exhibit 8. Susquehanna Region Employment, Trade, Transportation & Utility, and Important Subsectors, 2005 vs. 2011

Industry	**Average Annual Employment**							
	Susquehanna WIA				Harford		Cecil	
	2005	*% of 2005 Total**	*2011*	*% of 2011 Total**	*2005*	*2011*	*2005*	*2011*
Trade, Transportation & Utilities	*24,155*	*22.0%*	*24,504*	*22.0%*	*18,371*	*18,265*	*5,784*	*6,239*
Warehousing and storage	2,295		1,797		2,278	1,954	17	836
Merchant wholesalers, durable goods	1,283		1,068		1,002	803	281	265
Merchant wholesalers, nondurable goods	1,982		1,584		1,462	1,131	520	453
Absolute and Percentage Change, 2005-2011								
Trade, Transportation, & Utilities		*+349*		*1.4%*	*-106*	*-0.6%*	*+445*	*+7.7%*
Warehousing and storage		+495		*21.6%*	-324	-14.2%	+819	+4,817.6%
Merchant wholesalers, durable goods		-215		-16.8%	-199	-19.9%	-16	-5.7%
Merchant wholesalers, nondurable goods		-398		-20.1%	-331	-22.6%	-67	-5.7%

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages *Percentages of the total Susquehanna employment

[4] CBRE. (2011). Retrieved on September 23rd, 2012, from http://www.cbre.us/o/baltimore/AssetLibrary/HarfordCecil_Q3%2011.pdf

Goods producing segments (manufacturing, national resources, mining & construction) collectively represent 13.9 percent of the total employment in Susquehanna. This segment of the economy has been shrinking, at least with respect to employment. A number of forces, including automation and globalization, have conspired to reduce statewide and local goods producing employment. For instance, between 2005 and 2011, statewide manufacturing employment declined by more than 27,100 jobs, or 20 percent. That said, in the SWIA, a handful of manufacturing segments added jobs, including nonmetallic mineral product manufacturing and machinery manufacturing. Together, these two subsectors generated 100 jobs in the region between 2005 and 2011. Exhibit 9 provides relevant statistical detail and also highlights the large number of jobs lost in the region's construction industry (which is grouped together with much smaller segments like mining and natural resources).

Exhibit 9. Susquehanna Region Employment, Goods-Producing Industries, 2005 vs. 2011

Industry	**Average Annual Employment**							
	Susquehanna WIA				Harford		Cecil	
	2005	*% of 2005 Total**	*2011*	*% of 2011 Total**	*2005*	*2011*	*2005*	*2011*
Manufacturing	*9,422*	*8.6%*	*8,503*	*7.6%*	*5,086*	*4,419*	*4,336*	*4,084*
Nonmetallic mineral product manufacturing	183		245		164	196	19	49
Machinery manufacturing	295		347		281	303	14	44
Natural Resources, Mining & Construction	*9,441*	*8.6%*	*7,002*	*6.3%*	*7,235*	*5,382*	*2,206*	*1,620*
Crop production	197		385		70	79	127	306
Construction of buildings	2166		1167		1756	964	410	203
Specialty trade contractors	5232		3906		4215	3317	1017	589
Absolute and Percentage Change, 2005-2011								
Manufacturing	*-919*		*-9.7%*		*-667*	*-13.1%*	*-252*	*-5.8%*
Nonmetallic mineral product manufacturing	62		33.9%		32	19.5%	30	157.9%
Machinery manufacturing	52		17.6%		22	7.8%	30	214.3%
Natural Resources, Mining & Construction	*-2,439*		*-25.8%*		*-1,853*	*-25.6%*	*-586*	*-26.6%*
Crop production	188		95.4%		9	12.9%	179	140.9%
Construction of buildings	-999		-46.1%		-792	-45.1%	-207	-50.5%
Specialty trade contractors	-1,326		-25.3%		-898	-21.3%	-428	-42.1%

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages *Percentages of the total Susquehanna employment

Information and Financial Activities jointly represent less than 5 percent of regional employment. Information, which includes workers engaged in media and publishing businesses, has lost nearly 400 jobs or 39 percent of industry employment since 2005. This is part of a national phenomenon in which print media continues to hemorrhage jobs in the face of expanding Internet-based content delivery. Finance, which encompasses mortgage banking among many other segments like insurance and real estate, lost 12 percent of its employment during these years. Exhibit 10 provides relevant statistical detail.

Exhibit 10. Susquehanna Region Employment, Financial and Information, and Important Subsectors, 2005 vs. 2011

Industry	**Average Annual Employment**							
	Susquehanna WIA				Harford		Cecil	
	2005	*% of 2005 Total**	*2011*	*% of 2011 Total**	*2005*	*2011*	*2005*	*2011*
Financial Activities	*4,131*	*3.8%*	*3,646*	*3.3%*	*3,310*	*2,948*	*821*	*698*
Insurance carriers and related activities	751		562		620	441	131	121
Credit intermediation and related activities	2,095		1,893		1,662	1,523	433	370
Real Estate	793		725		624	588	169	137
Information	*947*	*0.9%*	*576*	*0.5%*	*689*	*396*	*258*	*180*
Absolute and Percentage Change, 2005-2011								
Financial Activities	*-485*		*-11.7%*		*-362*	*-10.9%*	*-138*	*-16.8%*
Insurance carriers and related activities	-189		-25.2%		-179	-28.9%	-10	-7.6%
Credit intermediation and related activities	-202		-9.6%		-139	-8.4%	-63	-14.5%
Real Estate	-68		-8.6%		-36	-5.8%	-32	-18.9
Information	*-371*		*-39.2%*		*-293*	*-42.5%*	*-78*	*-30.2%*

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages *Percentages of the total Susquehanna employment

In 2005, Professional & Business Services represented 11.4 percent of regional employment. By contracting 16.1 percent between 2005 and 2011, the industry pushed its employment share below 10 percent. The industry should expand briskly during the years ahead due to demand for professionals at local contractors related to base realignment at Aberdeen Proving Ground. However, formation of contracting jobs has been hampered by an uncertain budget environment and expectations of Department of Defense spending reductions in future fiscal years.

In a stark reversal of fortune, the segment known as administrative and support services experienced a 20.6 percent decline in employment between 2005 and 2011, thereby contributing 43 percent of the total decline in professional & business services. Administrative and support services was described as a 'top growth' subsector within the 2004 study, with employment in this sub-sector doubling between 1997 and 2002.[5] The economic downturn in conjunction with automation undoubtedly contributed significantly to the loss of administrative positions.

Exhibit 11. Susquehanna Region Employment, Professional& Business Services, and Important Subsectors, 2005 vs. 2011

Industry	**Average Annual Employment**							
	Susquehanna WIA				Harford		Cecil	
	2005	*% of 2005 Total**	*2011*	*% of 2011 Total**	*2005*	*2011*	*2005*	*2011*
Professional & Business Services	*12,552*	*11.4%*	*10,537*	*9.5%*	*10,830*	*9,224*	*1,722*	*1,313*
Administrative and support services	4165		3306		3386	2707	779	599
Absolute and Percentage Change, 2005-2011								
Professional & Business Services		-2,015		-16.1%	-1,606	-14.8%	-409	-23.8%
Administrative and support services		-859		-20.6%	-679	-20.1%	-180	-23.1%

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages *Percentages of the total Susquehanna employment

Wages by Industry and Occupational Category

As shown in Exhibit 12, the region's average weekly wage expanded 19 percent between 2005 and 2011. Weekly average wage encompasses bonuses, reimbursements, and various employee benefits such as stock options and employer's contribution to retirement accounts.[6] Presented numbers are not adjusted for inflation. Average wages rose 23.4 percent in Harford County over this period, which means that average wages more than kept pace with inflation. However, in Cecil County, average wage was up just 5.5 percent, which means that in inflation-adjusted real terms, average wages have declined in Cecil County.

The difference in average weekly wage is now quite large between the two jurisdictions. According to the 2004 study, the wage gap was just 5 percent (in Harford County's favor).[7] According to the most recent annual data, the wage gap now stands at more than 14 percent. Base realignment has much to do with this widening intra-regional gap.

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[5]The Jacob France Institute and the Maryland DLLR. (February 2004), p.6.
[6]Bureau of Labor Statistics, Quarter Census of Employment and Wages. (n.d.). *Frequently Asked Questions. (15)*. Retrieved on September 25th, 2012, from http://www.bls.gov/cew/cewfaq.htm#Q15
[7]The Jacob France Institute and the Maryland DLLR. (February 2004), p.9.

Exhibit 12. Average Weekly Wage by Industry Sector, 2011 vs. 2005

Industry	**Average Weekly Wage**					
	Susquehanna WIA		Harford		Cecil	
	2005	*2011*	*2005*	*2011*	*2005*	*2011*
Total Employment	$730	$867	$725	$895	$742	$783
Public Sector Total	$1,027	$1,295	$1,037	$1,395	$1,002	$922
Federal Government	$1,339	$1,646	$1,363	$1,695	$1,285	$1,236
State Government	$667	$708	$666	$681	$669	$737
Local Government	$757	$869	$760	$888	$748	$825
Private Sector Total	$649	$845	$646	$743	$659	$747
Goods-Producing	$833	$1,066	$785	$1,004	$922	$1,173
Natural Resources & Mining	$584	$601*	$463	$757	$622	$605*
Construction	$779	$863*	$756	$901	$615	$734*
Manufacturing	$948	$1,252	$837	$1,139	$1,078	$1,374
Service-Providing	$598	$671	$613	$694	$549	$599
Trade, Transportation & Utilities	$548	$601	$553	$594	$532	$620
Information	$899	$1,131	$927	$1,207	$825	$964
Financial Activities	$742	$831	$766	$852	$644	$743
Professional & Business Services	$912	$1,064	$918	$1,112	$875	$730
Education & Health Services	$666	$803	$654	$818	$702	$762
Leisure & Hospitality	$250	$293	$242	$276	$269	$334
Other Services	$481	$550	$507	$582	$409	$461
Unclassified	N/A	N/A	N/A	N/A	N/A	N/A

Source: Bureau of Labor Statistics; *2010 Data

Exhibit 13 reflects changes in average weekly wages by industry for the Susquehanna WIA, Harford County and Cecil County. Note that wages are up across the board, with particularly large gains in manufacturing, information, and federal government and education/health services. Many of these segments have lost jobs in past years, but the remaining labor force is better educated, more highly skilled and more generously compensated. This represents a key analytical finding of this study. Increasingly, job growth appears concentrated in industries that require elevated levels of human capital. Many of those who have been displaced from employment must be retooled in order to become relevant to these emerging segments that are associated with fierce competition for available positions.

Exhibit 13. Changes in Average Weekly Wage by Industry Sector

Industry	**Change in Average Weekly Wage (2005-2011)**					
	Susquehanna WIA		Harford		Cecil	
	Absolute	*%*	*Absolute*	*%*	*Absolute*	*%*
Total Employment	$137	18.8%	$170	23.4%	$41	5.5%
Public Sector Total	$268	26.1%	$358	34.5%	-$80	-8.0%
Federal Government	$307	22.9%	$332	24.4%	-$49	-3.8%
State Government	$41	6.1%	$15	2.3%	$68	10.2%
Local Government	$112	14.8%	$128	16.8%	$77	10.3%
Private Sector Total	$196	30.2%	$97	15.0%	$88	13.4%
Goods-Producing	$233	28.0%	$219	27.9%	$251	27.2%
Natural Resources, Mining & Construction	$17	2.9%	$294	63.5%	-$17	-2.7%
Manufacturing	$304	32.1%	$302	36.1%	$296	27.5%
Service-Providing	$73	12.2%	$81	13.2%	$50	9.1%
Trade, Transportation & Utilities	$53	9.7%	$41	7.4%	$88	16.5%
Information	$232	25.8%	$280	30.2%	$139	16.8%
Financial Activities	$89	12.0%	$86	11.2%	$99	15.4%
Professional & Business Services	$152	16.7%	$194	21.1%	-$145	-16.6%
Education & Health Services	$137	20.6%	$164	25.1%	$60	8.5%
Leisure & Hospitality	$43	17.2%	$34	14.0%	$65	24.2%
Other Services	$69	14.3%	$75	14.8%	$52	12.7%

Source: Bureau of Labor Statistics; *2010 Data

Average Business Size

Exhibits 14-16 reflect the number of businesses in the study area by size. The data reflect several interesting items. First, more than three-quarters of businesses in Cecil and Harford counties are classified as micro-enterprises, meaning that they have between zero and nine employees. Above all, many of these businesses require workers who are versatile and motivated – motivated enough to perform duties that may be beyond the four corners of a standard job description.

Only 1.8 percent of SWIA businesses are classified as large, meaning that they have more than 100 employees. However, this relatively small group of businesses represents 36 percent of total private employment in the Susquehanna WIA and more than 41 percent in Cecil County. Businesses of this size are more likely to be looking for certain specific credentials that help them screen out large numbers of applicants. This has serious ramifications for workforce development. Appropriate credentialing is important.

Exhibit 14. Susquehanna WIA Private Sector Establishments by Size, as of Q4 2011

Size	Establishments	% of Total Establishments	% of Total Employment
Micro (0-9)	5,490	76.1%	17.8%
Small (10-24)	1,073	14.9%	18.9%
Medium (25-99)	521	7.2%	27.4%
Large (>=100)	132	1.8%	36.0%
Total	*7,216*	*100.0%*	*100.0%*

Source: Maryland Department of Labor, Licensing and Regulation

Exhibit 15. Harford County Private Sector Establishments by Size, as of Q4 2011

Size	Establishments	% of Total Establishments	% of Total Employment
Micro (0-9)	4,084	75.9%	17.5%
Small (10-24)	797	14.8%	19.1%
Medium (25-99)	408	7.6%	29.4%
Large (>=100)	92	1.7%	34.1%
Total	*5,381*	*100.0%*	*100.0%*

Source: Maryland Department of Labor, Licensing and Regulation

Exhibit 16. Cecil County Private Sector Establishments by Size, as of Q4 2011

Size	Establishments	% of Total Establishments	% of Total Employment
Micro (0-9)	1,406	76.6%	18.4%
Small (10-24)	276	15.0%	18.4%
Medium (25-99)	113	6.2%	21.9%
Large (>=100)	40	2.2%	41.3%
Total	*1,835*	*100.0%*	*100.0%*

Source: Maryland Department of Labor, Licensing and Regulation

Educational Attainment

As Exhibit 17 reveals, high school graduates in Cecil and Harford counties are less likely to attend four-year colleges than students in other counties. This is possibly attributable to the absence of a 4-year college or university in the Susquehanna region though other factors are undoubtedly involved. Students are more likely to attend two-year colleges, however.

While a 4-year degree may represent an important credential, students at two-year colleges tend to be highly focused on the labor market and the development of compensable skill sets. This may help explain why students from both Cecil and Harford counties are more likely to enter full- or part-time employment upon graduation and/or pursue additional education relative to students from certain proximate counties. Another observation is that Cecil and Harford counties are associated with higher percentages of high-school students entering full-or part-time employment and/or school after graduation in comparison to many other proximate counties.

Exhibit 17. Educational Indicators for 2011 High School Graduates

2011 High-School Graduates	Cecil	Harford	Anne Arundel	Baltimore City	Baltimore County	Carroll	Howard
Percent attending a four-year college	36.7%	43%	47.9%	48.2%	50.3%	51.0%	68.3%
Percent attending a two-year college	35.7%	39.5%	33.9%	32.1%	32.1%	29.1%	24.9%
Percent attending a specialized school or specialized training	7.2%	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%
Percent entering employment related to high school program	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%
Percent entering employment unrelated to high school program	7.2%	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%
Percent entering the military	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%
Percent entering full-time employment and school	11.3%	11.0%	8.5%	13.8%	10.8%	9.4%	5.7%
Percent entering part-time employment and/or school	47.9%	42.8%	37.7%	44.4%	41.2%	41.1%	41.2%
Other and no response	≤ 5%	≤ 5%	5.8%	5.5%	5.1%	≤ 5%	≤ 5%
Dropout rate (percent) in 2011	3.13	≤ 3%	3.2	4.2%	3.6%	≤ 3%	≤ 3%
Graduation rate (percent) in 2011	86.6	89.7	87.4	71.9%	83.1%	≥ 95%	94.3%
Mean combined SAT score in 2011	1471	1499	1503	1132	1458	1556	1643
Public school student-teacher ratio in 2012	13.5	13.8	14.8	15.2	14.3	14.3	13.6
Public school expenditures per pupil in 2012	$11,939	$12,504	$12,635	$15,156	$12,939	$12,208	$14,692
Enrollment in 2012	15,827	38,224	76,303	84,212	105,153	27,082	51,555

Source: Maryland Department of Education, Maryland Report Card (www.mdreportcard.org); percentages will not add to 100 percent because of overlapping categories.

Local Community Colleges & the HEAT Center

Despite the absence of a 4-year institution in the Susquehanna region, higher education opportunities abound in the SWIA. Both Cecil County and Harford County have a community college and transfer rates to 4-year institutions are relatively high from Harford Community

College. Additionally, the Colleges have made multiple articulations and transfer programs with 4-year institutions, some of which enable students to attain a 4-year degree without leaving their community college.

- Cecil College

A total of 2,426 students were enrolled at CC in the fall of 2010, 93 percent of whom were Maryland residents. In 2010-2011 Cecil College awarded 75 lower division degrees and 235 associate degrees. Fifty-seven percent of lower division degrees were awarded in visual communications. Nursing and business/commerce technology dominated the category of non-transfer associate degrees awarded. Exhibit 18 provides relevant statistical detail.

Exhibit 18. Cecil College Graduates by Program, 2011

	Number	**Percent of Total**
Total Lower Division Certificates	75	100%
Business and Commerce Tech	7	9%
Government Contracting	16	21%
Visual Communications (graphic design)	43	57%
Computer Info Systems	5	7%
Personal Trainer/Fitness Manager	1	1%
Instructional Design & Technology	2	3%
Law Enforcement & Corrections Tech	1	1%
Total Associate Degrees	235	100%
Arts & Sciences Transfer	27	11%
Healthcare Science	2	1%
General Studies Transfer	64	27%
Early Childhood Education	7	3%
Elementary Education (AAT)	8	3%
Secondary Education-Chemistry (AAT)	2	1%
Business & Commerce Tech	31	13%
Visual Communications	17	7%
Transportation and Logistics	4	2%
Computer Information Systems	5	2%
Equine Studies	1	0%
Nursing	59	25%
Emergency Medical Tech-Paramedic	2	1%
Law Enforcement & Corrections Tech	6	3%

Source: Maryland Higher Education Commission, 2011

- Harford Community College

Total enrollment at HCC in Fall 2010 surpassed 7,000 students (7,135), of whom 97 percent lived in-state. The school awarded 65 lower division degrees and 772 associate degrees in 2010-2011. Among community colleges in Maryland, Harford Community College reported one of the highest transfer rates, with more than 32 percent of its students moving on to 4-year institutions. This compares to a statewide average of 27 percent. Exhibit 19 summarizes pertinent institutional information.

Exhibit 19. Harford Community College Graduates by Program, 2011

	Number	Percent of Total
Total Lower Division Certificates	65	100%
Secondary Certificate- Education? (4960-20)	1	2%
Accounting	7	11%
Administrative Office Certificate	4	6%
Photography	3	5%
Interior Design	1	2%
Computer Information Systems	1	2%
Practical Nursing	10	15%
Medical Office Assistant	12	18%
Medical Assisting	10	15%
Computer-Aided Design & Drafting	13	20%
Paralegal Studies	3	5%
Total Associate Degrees	772	100%
Arts & Sciences Transfer	178	23%
Engineering Transfer	13	2%
General Studies Transfer	166	22%
Teacher Education Transfer	6	1%
Business Administration Transfer	96	12%
Computer Science Transfer	10	1%
Art & Design	26	3%
Performing Arts	5	1%
Early Childhood Education	15	2%
Elementary Education/General Spec. Ed. PreK-12	20	3%
Secondary Education-Mathematics	2	0%
Technical/Professional Studies	12	2%
Business Management	7	1%
Accounting	8	1%
Mass Communications	10	1%
Interior Design	12	2%
Visual Communications	5	1%
Computer Information Systems	12	2%

Information Systems Security	6	1%
Nursing	111	14%
Medical Assisting	21	3%
Electroneurodiagnostic Tech	4	1%
Engineering Technology	9	1%
Computer-Aided Design & Drafting	4	1%
Environmental Technology	1	0%
Science Lab Tech	3	0%
Legal Studies	10	1%

Source: Maryland Higher Education Commission, 2011

- The HEAT Center

The region is also home to the Higher Education and Applied Technology (HEAT) Center. Located in Harford County, the HEAT Center offers both bachelor's and masters' degree programs through institutions based outside of the region. A list of partnering schools is presented below. Students can earn degrees in a variety of disciplines, ranging from nursing and education to information technology and engineering. The HEAT Center also provides workforce development programs, business and industry training as well as a number of certification programs. Aside from education and training, the HEAT Center offers meeting and conference facilities, video conferencing technology, computer labs, a biochemistry lab, and other resources. By providing education, training, and high-tech business facilities, the HEAT Center is in a position to play a vital role in developing the region's workforce and economy and is implicated by the recommendations offered by the study team.

Exhibit 20. HEAT Center Participating Schools

Notre Dame of Maryland University
Johns Hopkins University - School of Arts & Sciences
Johns Hopkins University - School of Engineering
Johns Hopkins University - School of Education
Towson University
Morgan State University
University of Maryland College Park
University of Maryland University College
University of Phoenix

Source: heatcentermaryland.com

- Private Career Schools

Private career schools, sometimes referred to as trade or technical schools, offer career training primarily directed toward adults. There are 179 private career schools in Maryland offering training in a variety of disciplines, with allied health representing the area of greatest focus.

Exhibit 21. Private Career Schools in Maryland

School Type (1)	**# of Schools**
Allied Health	43
Computer	10
Cosmetology/Barber	37
Real Estate	34
Tax	21
Truck Driving/Mechanics	4
Other (2)	30
Total	*179*

Notes: (1) Some schools offer more than one type of program. Schools are categorized by the type of program with the majority enrollment (2) Includes bartending, broadcasting, cooking, dog grooming, dry cleaning, finance, maritime studies, massage, Montessori, mortgage, photography, polygraph, recording, travel, and trade schools.
Source: 2012 Data Book, Maryland Higher Education Commission

Within the Susquehanna region there are 5 private career schools, 1 located in Cecil County and the other 4 located in Harford County. Exhibit 22 provides some detail regarding these private career schools, some of which are very small. In fact, aggregate enrollment in 2010 was just 127 across seven separate disciplines. Cosmetology represented roughly two-thirds of this total.

Exhibit 22. Private Career Schools in the Susquehanna Region

Private Career School	**Number of Programs**	**2010 Enrollment**
Jackson Hewitt Tax School – Elkton	1	6
The Colorlab Academy of Hair/International Beauty School-Bel Air	2	81
Diana School of Real Estate	1	5
Joseph Mitzel Tax School (formerly Jackson Hewitt Tax School-Bel Air)	2	17
Liberty Tax Service Tax School – Abingdon	1	18
Total	*7*	*127*

Source: 2012 Data Book, Maryland Higher Education Commission

- Susquehanna Workforce Centers

The Susquehanna Workforce Network and the Division of Workforce Development operate three workforce centers in the region. These are located in Aberdeen, Bel Air and Elkton, respectively. The Susquehanna Workforce Centers have collectively served between 28,000 and 32,000 job seekers during each of the last four years and provide a variety of career services at no cost, including resources for job seekers, customized career services and specialized programs. Business services designed to help develop staffing strategies, identify resources, gather information, and facilitate relationships are also offered through the Susquehanna Workforce Network.

Customized Services:
- Career Assessment
- Employment Counseling
- Skill Enhancement and Training Services

Specialized Programs:
- Services for Professional, Managerial and Technical Job Seekers
- Veteran Services
- Migrant & Seasonal Farmworkers' Services
- Services for People with Disabilities
- Dislocated Worker Services

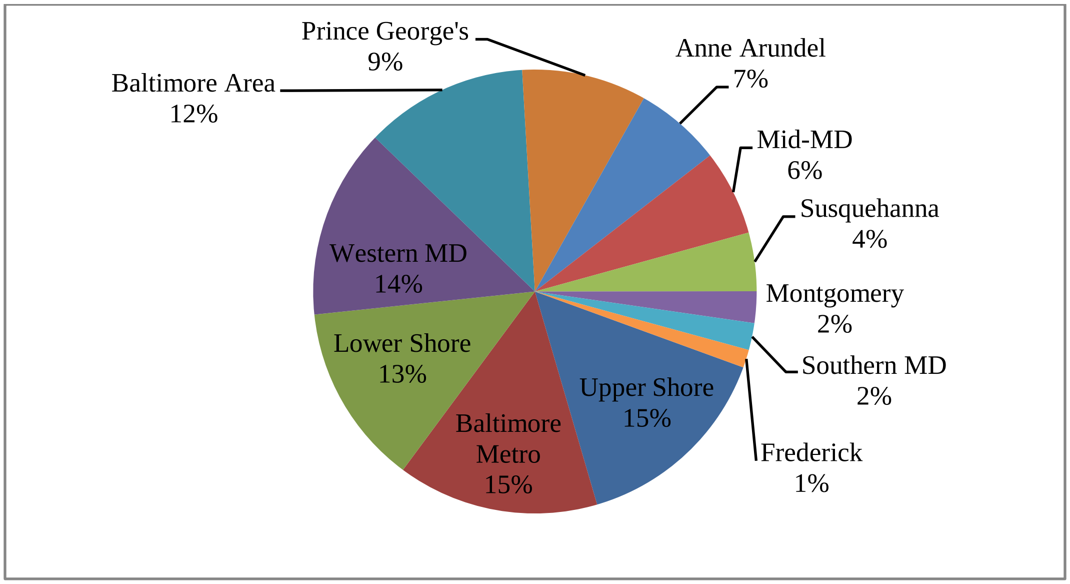
Business Services:
- Recruitment and labor force assistance (such as developing job postings, screening applications and job matching, providing representation at local and regional job fairs, and helping interpret resume banks jobseeker information)
- Training and testing support (through both administering skill/proficiency tests of candidates and working collaboratively with local education and training providers to identify or accomplish training objectives)
- Customized services (including providing meeting space, screening & interviewing support, grant guidance, and advice related to assisting employees affected by layoffs)
- Information services (including information on labor market and demographic statistics, tax credits and incentives, recruiting and training strategies, and coordinated networking)
- Occupational Training Funded via the Federal Workforce Investment Act (WIA):

With the help of funding from the Federal Workforce Investment Act (WIA), Maryland provides occupational training programs. The Maryland Higher Education Commission (MHEC) assists the Department of Labor, Licensing, and Regulation (DLLR) in implementing the WIA across the state. States receiving WIA funds are required to establish minimum performance levels for occupational programs to remain on the State's list. Maryland's minimum program standard is a 61 percent employment rate across all program completers.

In FY 2011, the State's list embodied 544 programs and 74 training providers. Programs in allied health, information technology, trades (including CDL training), and business, management, & administrative services comprised 70 percent of the eligible programs in FY 2011 (enrollment is also highest in these categories-92 percent of participants were enrolled in programs falling within these categories). The remaining programs were in a variety of occupational disciplines ranging from cosmetology and childcare to culinary arts. The bulk of training providers were community colleges (62%), public colleges & universities (16%), and private career schools (14%).

The number of WIA customers enrolled in occupational programs varies significantly across different regions in Maryland. This may be due in part to differences in the amount of funding allocated to each region. The quantity and type of training provided in local workforce areas may also be influenced by local service strategies. Many of the regions leverage other funding sources and acquire non-WIA resources from federal, state, local and private resources to fund their employment and training efforts. In FY2011, 67 percent of enrollment was concentrated in five of the twelve WIA regions across Maryland. A breakdown of each regions share of total state enrollment is provided in Exhibit 23 below. Please note that this data reflects only WIA-funded occupational programs and only occupational training that is performed by providers on the MHEC list. Relatively shorter-term training that does not produce an occupational certificate or degree (e.g. skills upgrade training) is not included.

Exhibit 23. WIA Enrollment by Region, FY 2011



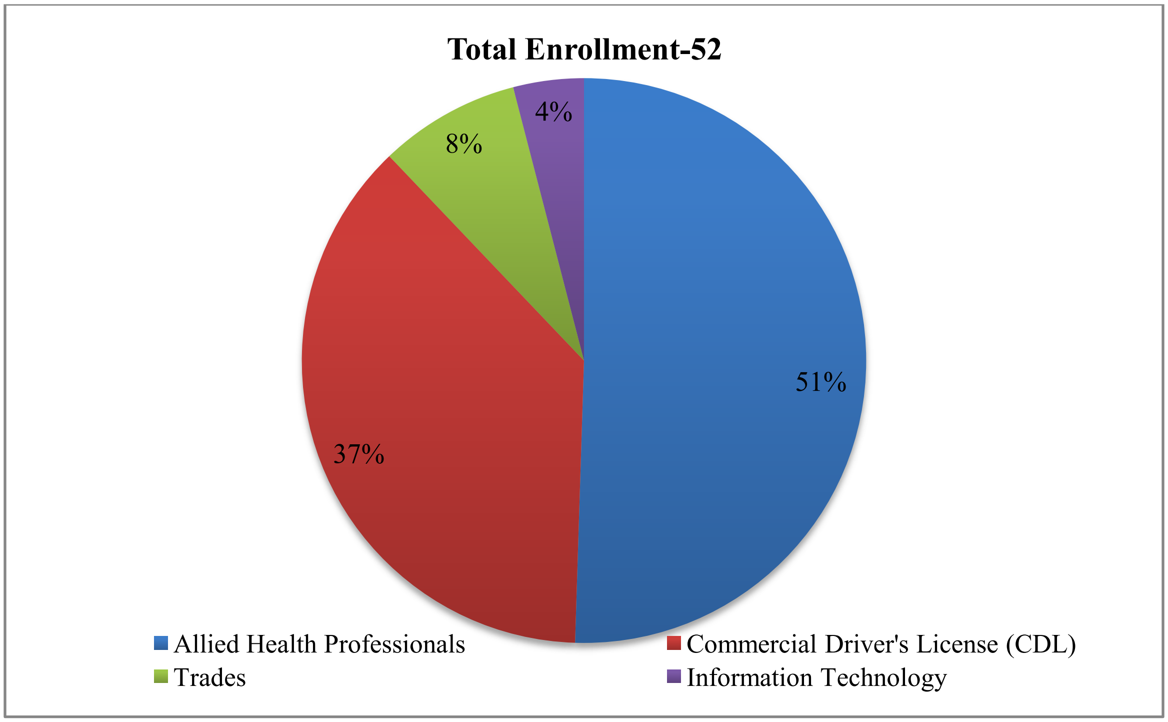
Source: FY 2007 - FY 2011 Report on Occupational Training Funded via the Federal Workforce Investment Act (WIA) in Maryland, June 2012.

Exhibit 24. WIA Enrollment in Occupational Training, Maryland & Susquehanna Region, FY 2007-FY2011

Enrollment	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**
Susquehanna	25	27	30	40	52
All Maryland WIA Regions	1,396	1,912	1,757	2,422	1,255

Source: FY 2007 - FY 2011 Report on Occupational Training Funded via the Federal Workforce Investment Act (WIA) in Maryland, June 2012

Exhibit 25. WIA Enrollments in the Susquehanna Region by Occupational Type, FY 2011



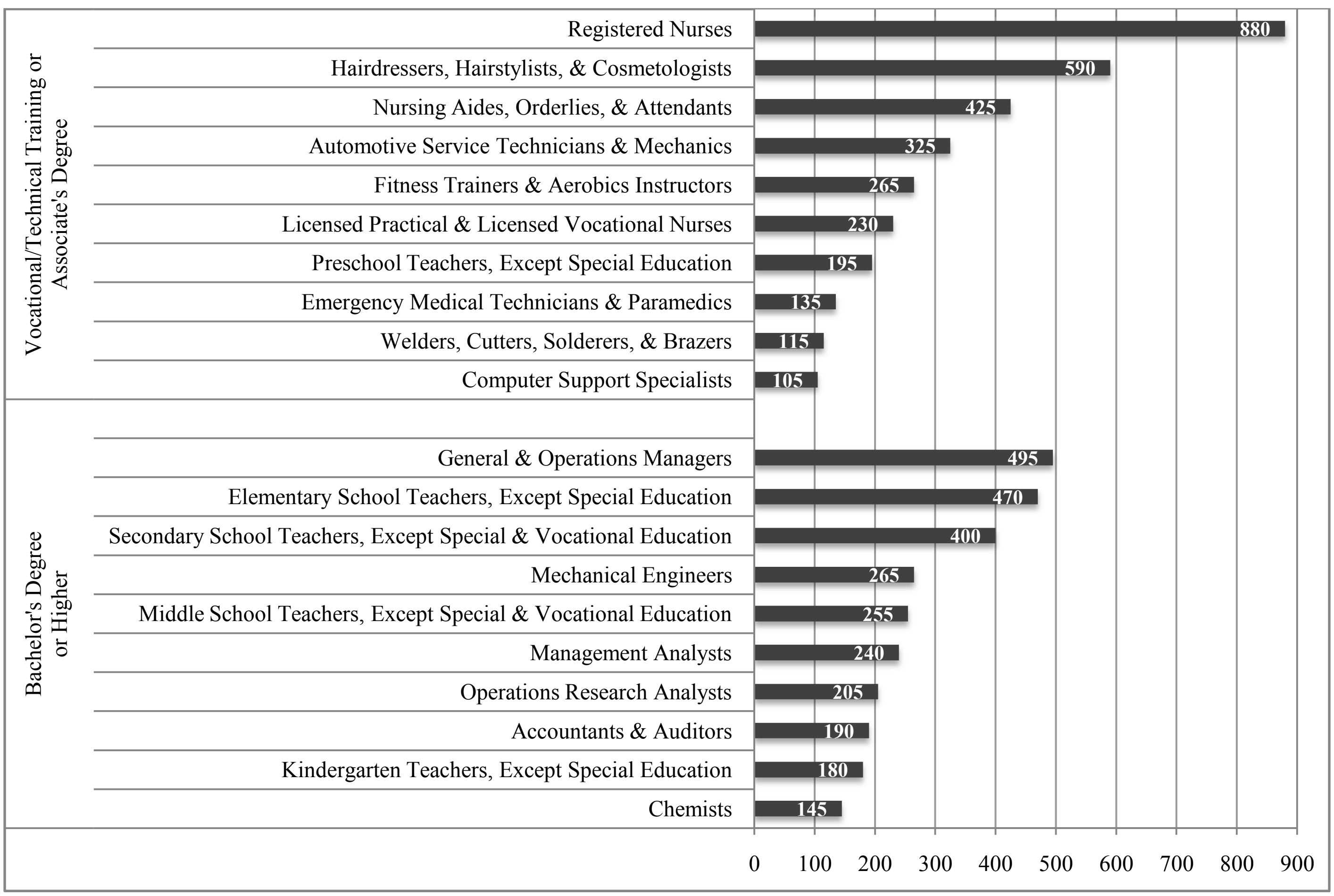
Source: FY 2007 - FY 2011 Report on Occupational Training Funded via the Federal Workforce Investment Act (WIA) in Maryland, June 2012.

III. Occupational Demand of Susquehanna Higher Education Graduates

Much of this report has focused upon issues related to labor supply. One of the overarching goals of workforce development is to attempt to create a tighter fit between supply and demand. This often involves striving to produce workers ready to participate in rapidly expanding occupational segments. This section of the report focuses upon occupation segments expected to expand rapidly in the SWIA going forward either through associated industry expansion and/or through retirement.

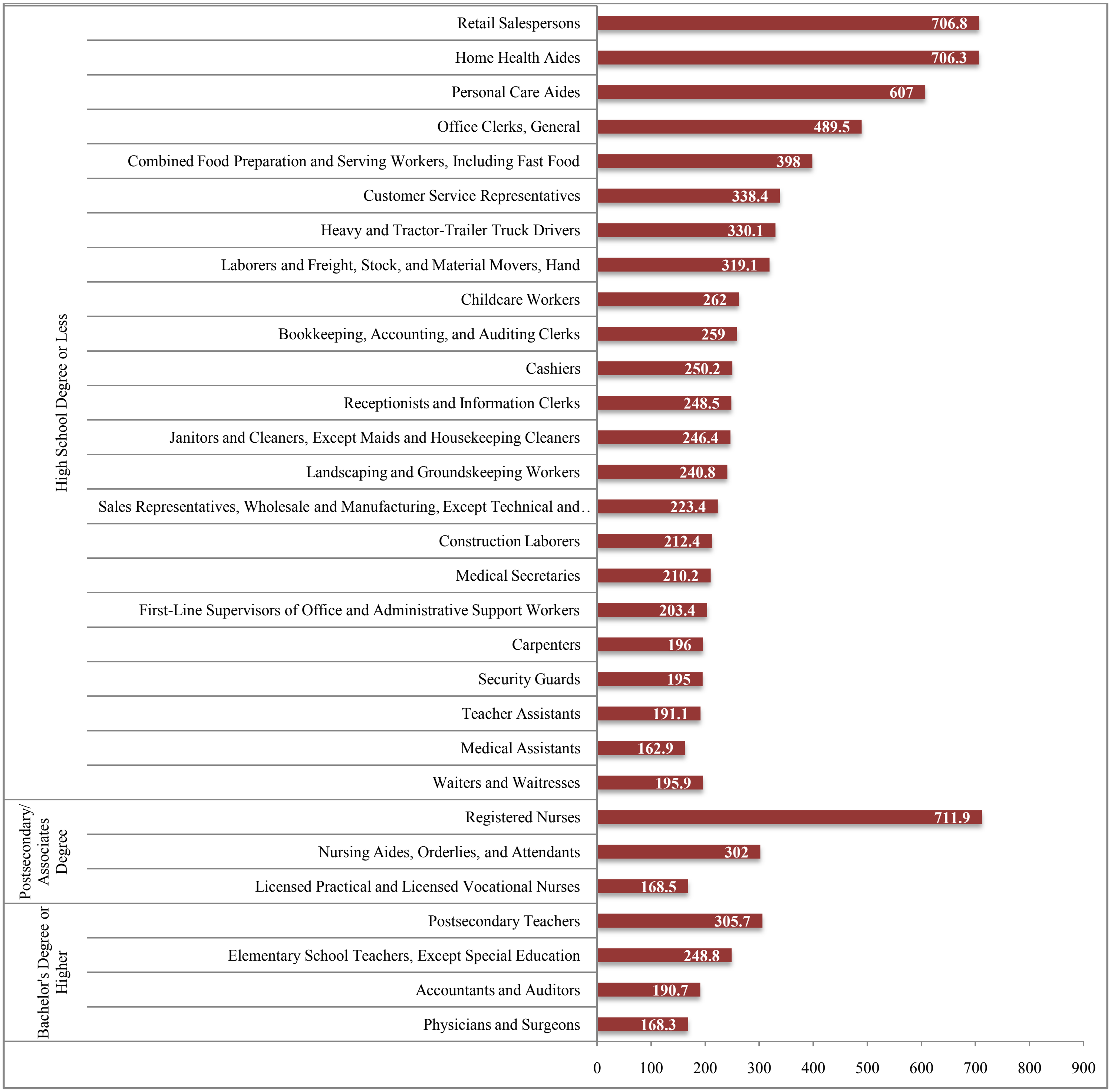
Exhibit 26 provides projections of employee demand through 2018 disaggregated by highest level of educational accomplishment required. Many of these jobs can be characterized as middle-wage, though some of the managerial jobs are likely to be high-wage and certain services categories are more likely to be classified as low-wage. In absolute terms, registered nursing leads the way, a testament to the overwhelming demographics of aging.

Exhibit 26. Occupational Demand for Workers in the Susquehanna Region by Education Level, 2008-2018



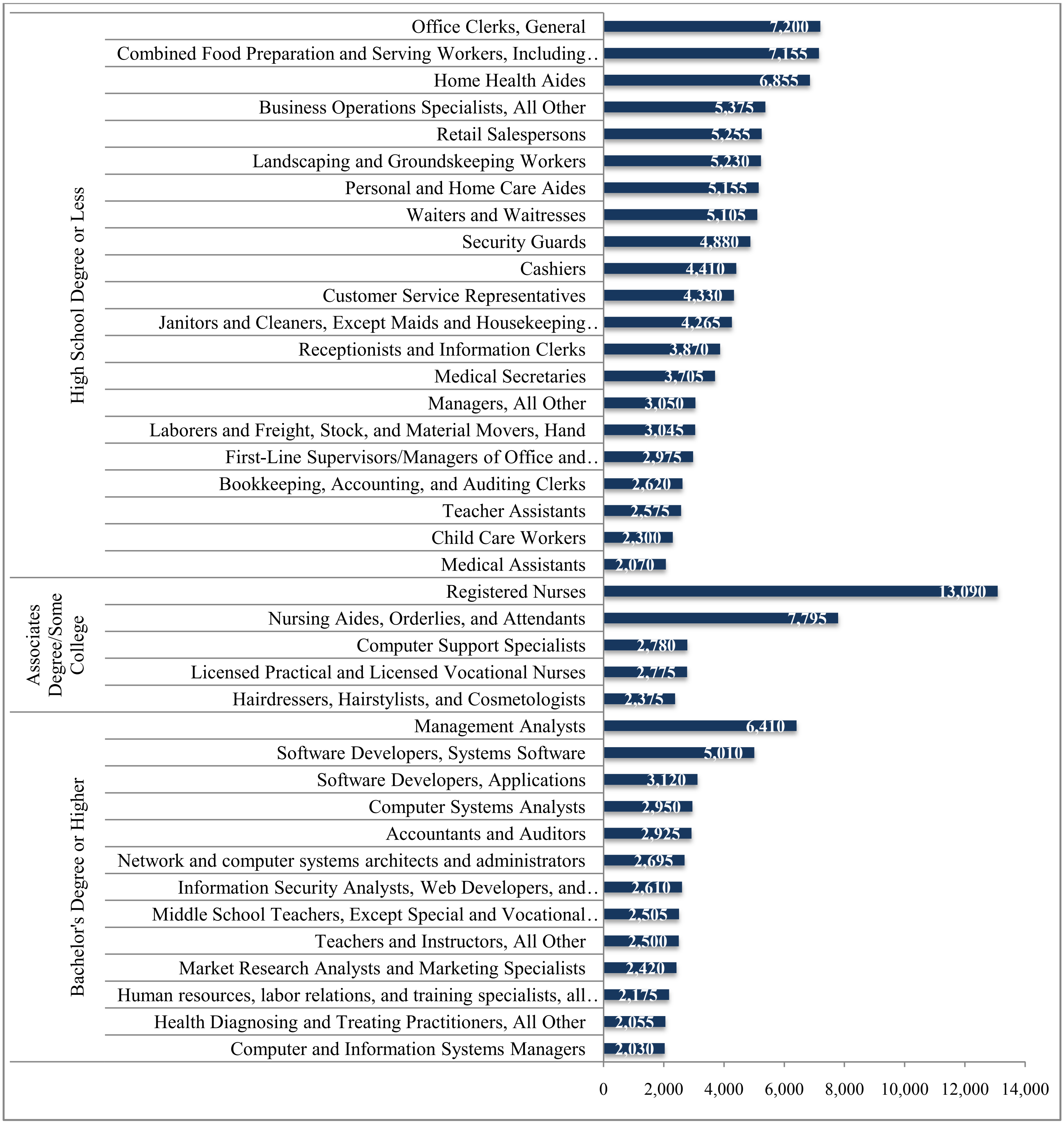
Source: Maryland Department of Labor, Licensing, and Registration

Exhibit 27. Fastest-growing Occupations Nationwide, 2010 and projected 2020 (Numbers in thousands)



Source: Bureau of Labor Statistics, Employment Projection

Exhibit 28. Fastest-growing Occupations in Maryland, 2010 and projected 2020



Source: Maryland Department of Labor, Licensing, and Regulation

Industry and Occupation of Employment

Exhibit 29 indicates the breakdown of population 16 years and over by occupational type as of 2010. When compared to the entirety of the Baltimore metropolitan area, what most differentiates Susquehanna's occupational breakdown is a relatively smaller proportion employed in management, business, science and arts. Another observation is the relatively large proportion of working individuals in the SWIA involved in production, transportation, & material moving occupations.

Exhibit 29. Percentage of Employed 16 years and over by Occupation, 2010

	Cecil	Harford	Anne Arundel	Baltimore County	Baltimore City	Carroll	Howard
Total	100%	100%	100%	100%	100%	100%	100%
Management, business, science and arts	34.8%	42.4%	43.6%	43.7%	35.0%	44.8%	60.1%
Service	20.0%	13.1%	14.0%	15.9%	22.1%	16.6%	10.8%
Sales and office	22.4%	26.8%	27.1%	25.6%	23.8%	22.6%	20.7%
Natural resources, construction, & maintenance	9.4%	9.3%	8.8%	6.4%	7.3%	9.4%	4.7%
Production, transportation & material moving	13.3%	8.4%	6.5%	8.4%	11.7%	6.6%	3.8%

Source: U.S. Census Bureau, 2010 American Community Survey 1 year estimates

Exhibit 30. Percentage of Employed 16 years and over by Industry, 2010

	Cecil	Harford	Anne Arundel	Baltimore County	Baltimore City	Carroll	Howard
Total	100%	100%	100%	100%	100%	100%	100%
Agriculture, forestry, fishing and hunting, and mining	1.0%	0.5%	0.3%	0.3%	0.1%	0.6%	0.4%
Construction	8.3%	7.6%	6.9%	5.4%	5.4%	9.9%	5.2%
Manufacturing	11.5%	8.4%	6.3%	5.5%	6.3%	7.5%	4.5%
Wholesale trade	2.1%	3.0%	2.8%	2.3%	1.8%	2.8%	2.7%
Retail trade	12.2%	12.2%	11.1%	10.5%	8.1%	13.1%	8.4%
Transportation and warehousing, and utilities	5.9%	3.9%	4.1%	4.9%	5.6%	2.9%	2.9%
Information	1.3%	2.3%	2.3%	2.3%	2.2%	2.8%	2.6%
Financial activities (1)	4.7%	6.5%	6.5%	9.3%	5.9%	6.3%	6.7%
Professional services (2)	7.7%	12.5%	14.3%	11.2%	11.1%	11.1%	21.0%
Educational services, and health care (3)	24.1%	23.7%	19.5%	27.9%	30.1%	24.1%	21.7%
Leisure, hospitality (4)	8.2%	4.8%	7.2%	7.1%	9.0%	5.9%	7.0%
Other services, except public administration	4.5%	3.9%	5.2%	4.5%	4.7%	5.7%	3.8%
Public administration	8.4%	10.8%	13.6%	8.6%	9.7%	7.1%	13.3%

Source: U.S. Census Bureau, 2010 American Community Survey 1 year estimates: (1) Finance and insurance, and real estate and rental and leasing; (2) Professional, scientific, and management, and administrative and waste management services; (3) Includes social assistance services; (4) Includes arts, entertainment, and recreation, accommodation and food services

Workforce Demographics

The SWIA is expanding. Population in the region expanded 13 percent during the past decade, faster than the state average of 9 percent. In absolute terms, the region added a population equivalent to that of Queen Anne's County's 2005 population.

Exhibit 31. Percentage Change in Population, 2000 vs. 2010

	2000	2010	Percent Change
Maryland	5,296,486	5,773,552	9.0%
Susquehanna WIA	304,541	345,934	13.6%
Cecil County	85,951	101,108	17.6%
Harford County	218,590	244,826	12.0%
Anne Arundel County	489,656	537,656	9.8%
Baltimore City	651,154	620,961	-4.6%
Baltimore County	754,292	805,029	6.7%
Carroll County	150,897	167,134	10.8%
Howard County	247,842	287,085	15.8%
Queen Anne's County	40,563	47,798	17.8%

Source: Census Bureau, 2000 & 2010 Decennial Census

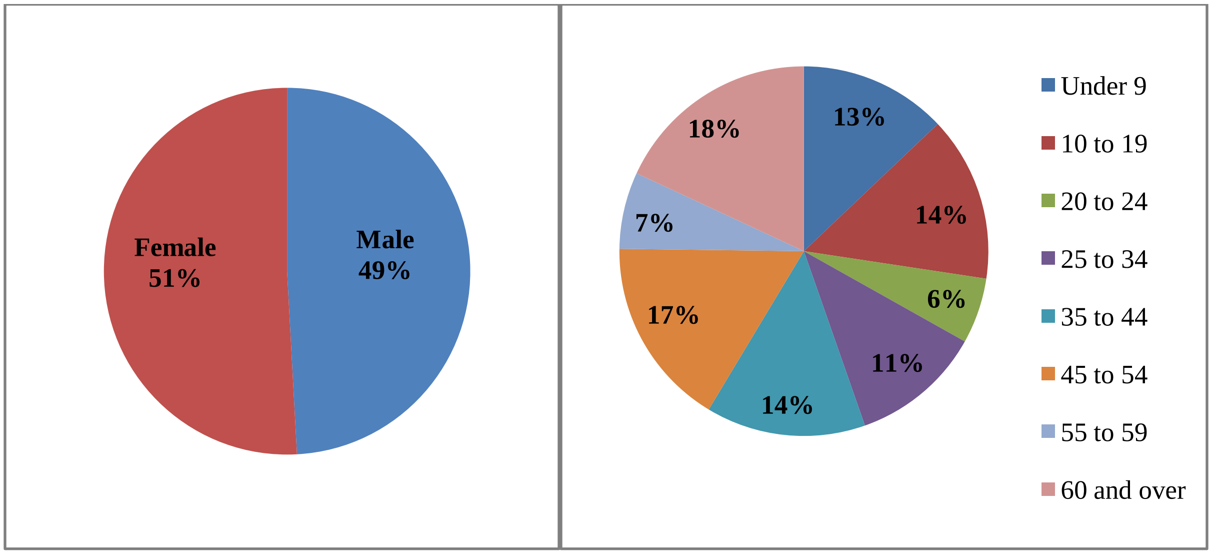
Exhibit 32 examines the workforce region along the dimensions of age and gender. Predictably, the most rapid population growth has been in age categories associated with people above the age of 45. A significant exception is the 20-24 age category, in which population expanded 38.4 percent between 2000 and 2010. This group is now between the ages of 22 and 26, which means that many have been in the workforce for several years (generally lean years) and others recently graduated from college. As Exhibit 33 indicates, 31 percent of the Susquehanna region's population is between the ages of 20 and 44 while 52 percent are aged 45 or older.

Exhibit 32. Population of Susquehanna WIA by Gender and Age, 2000 vs. 2010

	2000	2010	Absolute Change	Percent Change
Population	**304,541**	**345,934**	**+41,393**	**+13.6%**
Male	149,675	169,994	+20,319	+13.6%
Female	154,866	175,940	+21,074	+13.6%
Age				
Under 9	46,092	44,678	-1,414	-3.1%
10 to 19	45,473	50,048	+4,575	+10.1%
20 to 24	14,362	19,879	+5,517	+38.4%
25 to 34	40,657	39,812	-845	-2.1%
35 to 44	55,127	48,360	-6,767	-12.3%
45 to 54	44,257	57,372	+13,115	+29.6%
55 to 59	15,967	23,262	+7,295	+45.7%
60 and over	42,606	62,523	+19,917	+46.7%

Source: Census Bureau

Exhibit 33. Population of Susquehanna WIA by Gender and by Age Group,2010



Source: Census Bureau

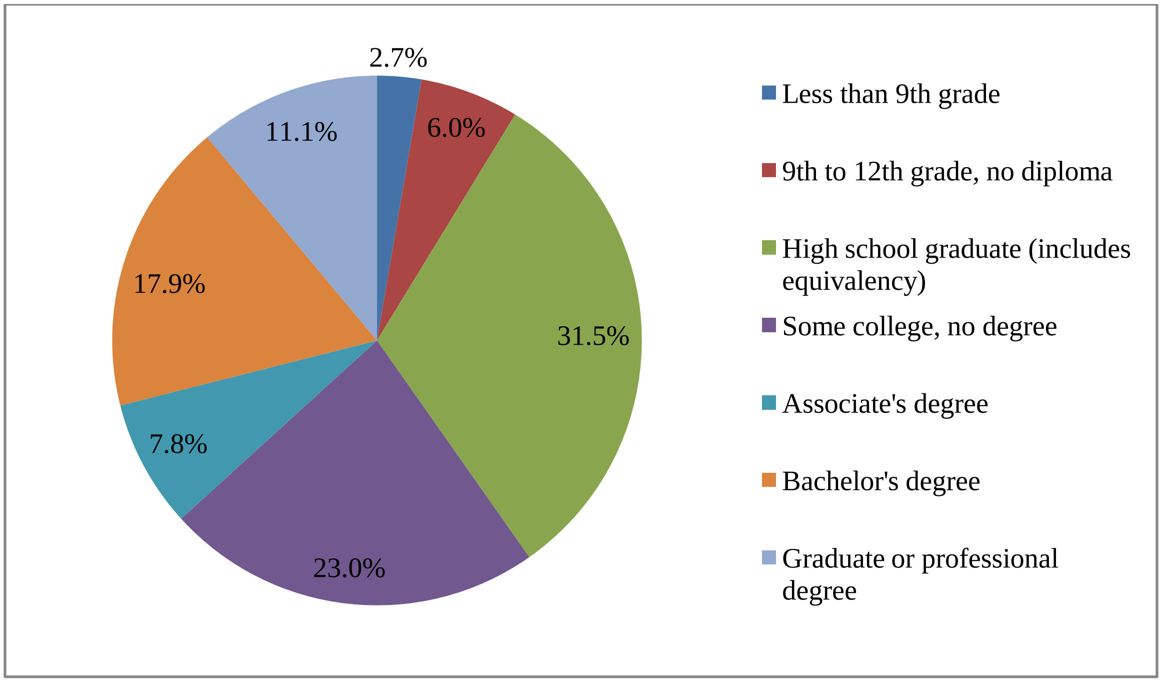
Exhibits 34 and 35 provide critical data regarding educational attainment in the Susquehanna region. The population of educated people has expanded in recent years, with the number of people with a high school degree or more rising by roughly 10 percent and the number with a bachelor's degree or higher rising 12.8 percent between 2005 and 2010.

Exhibit 34. Highest Level of Educational Attainment of Susquehanna WIA Residents, Age 25 and over

	2005	**2010**	**Absolute Change**	**Percent Change**
Population 25 and over	*216,882*	*231,031*	*14,149*	*6.5%*
Less than 9th grade	6,759	6,227	-532	-7.9%
9th to 12th grade, no diploma	18,422	13,969	-4,453	-24.2%
High school graduate	67,964	72,780	4,816	7.1%
Some college, no degree	47,219	53,155	5,936	12.6%
Associates degree	17,207	18,024	817	4.7%
Bachelor's degree	38,869	41,270	2,401	6.2%
Graduate or professional degree	20,442	25,606	5,164	25.3%
High School or more	*191,701*	*210,835*	*19,134*	*9.98%*
Bachelor's degree or more	*59,311*	*66,876*	*7,565*	*12.75%*

Source: U.S. Census Bureau American Community Survey, 2005 &2010**Note that population changed.

Exhibit 35. Highest Educational Attainment of Susquehanna WIA Residents 25 and over, 2010



Source: U.S. Census Bureau, 2010 American Community Survey

Despite the ongoing expansion of educated population with the SWIA, the proportion of those with elevated levels of educational attainment in the region is generally lower when compared with other Maryland communities. Howard County represents the Baltimore area's educational attainment behemoth, with roughly four times the proportion of population aged 25 or older with a graduate or professional degree compared to Cecil County. In fact, with the exception of Baltimore City, Cecil and Harford counties have the lowest proportions of graduate or professional degree holders in the peer group profiled in the exhibit below. Baltimore City's proportion is higher than Cecil County's, but lower than Harford County's.

Exhibit 36. Percentage of Population 25 years and over by Educational Attainment, 2010

	Cecil	**Harford**	**Anne Arundel**	**Baltimore County**	**Baltimore City**	**Carroll**	**Howard**	**Queen Anne's**	**Maryland-Statewide**
Less than 9th grade	3.3%	2.4%	3.0%	3.3%	8.2%	2.2%	3.3%	3.0%	4.7%
9th to 12th grade, no diploma	7.7%	5.4%	7.7%	6.6%	14.9%	5.9%	2.3%	7.7%	7.2%
High school graduate	36.2%	29.6%	24.5%	27.0%	29.5%	30.8%	14.2%	24.5%	25.9%
Some college, no degree	24.0%	22.6%	22.2%	21.1%	19.4%	18.9%	14.0%	22.2%	19.7%
Associates degree	6.5%	8.3%	7.0%	6.3%	3.7%	7.2%	7.1%	7.0%	6.3%
Bachelor's degree	14.6%	19.2%	21.6%	20.3%	13.2%	20.0%	30.2%	21.6%	19.7%
Graduate or professional degree	7.6%	12.5%	14.0%	15.3%	11.0%	14.9%	28.9%	14.0%	16.4%
Percent high school graduate or higher	*88.9%*	*92.2%*	*89.3%*	*90.1%*	*76.9%*	*91.8%*	*94.3%*	*89.3%*	*88.1%*
Percent bachelor's degree or higher	*22.2%*	*31.7%*	*35.5%*	*35.6%*	*24.2%*	*34.9%*	*59.1%*	*35.5%*	*36.1%*

Source: U.S. Census Bureau, 2010 American Community Survey 1 year estimates

Exhibit 37 provides data regarding the educational attainment in and around the SWIA jurisdictions among those aged 25 to 44. Note that educational attainment is higher among these younger workers. For instance, in Cecil County, 22.2 percent of all people aged 25 or older possess a bachelor's degree or higher. But among 25-44 year olds, this proportion is 27.5 percent. Similarly, in Harford County, the percentage of population with a bachelor's degree or higher is 31.7 percent. The analogous percentage for those aged 25-44 is almost precisely 36 percent. The implication is that the labor force is becoming more educated. This doesn't necessarily imply that they are more skilled, competent, reliable or hardworking, however. That said, there is an implication in the data that the emerging labor force is at least as able to learn new skills and to adjust to innovations as prior generations, and perhaps more so.

Exhibit 37. Educational Attainment among Population Aged 25 to 44, 2010

	Cecil County	**Harford County**	**Anne Arundel County**	**Baltimore County**	**Carroll County**	**Howard County**	**Montgomery County**
Total 25 to 44	**25,816**	**62,366**	**147,615**	**206,307**	**38,350**	**79,856**	**274,484**
Less than 9th grade	1.88%	0.47%	3.12%	2.30%	0.73%	3.87%	5.60%
9th to 12th grade, no diploma	4.21%	3.33%	7.89%	4.72%	3.68%	1.47%	4.54%
High school graduate, GED, or alternative	31.05%	24.89%	19.81%	24.07%	29.27%	11.57%	14.28%
Some college, no degree	26.17%	25.64%	22.72%	23.14%	21.16%	13.31%	15.20%
Associate's degree	9.18%	9.68%	8.80%	6.68%	6.51%	6.86%	5.39%
Bachelor's degree	18.55%	23.08%	25.37%	25.27%	24.42%	34.02%	28.66%
Graduate or professional degree	8.97%	12.91%	12.28%	13.83%	14.23%	28.89%	26.33%
Up to High School Diploma	*37.13%*	*28.69%*	*30.83%*	*31.09%*	*33.68%*	*16.90%*	*24.42%*
More than Bachelor's degree	*27.52%*	*35.99%*	*37.65%*	*39.09%*	*38.65%*	*62.92%*	*54.99%*

Source: U.S. Census Bureau

Workforce Participation

Just because someone is of working age and has achieved a certain level of educational attainment does not mean that they will be members of the labor force. Exhibit 35 provides information regarding labor force participation in the Susquehanna region and in adjacent/proximate communities. In the 2010 Census, the labor force participation rate stood at 67 percent in Cecil County and at 70.9 percent in Harford County. Compared with counties of the Baltimore metropolitan areas, participation rates in the Susquehanna region are relatively low. For instance, only Baltimore City has a higher "not in labor force" percentage among these communities than Cecil County. Howard County boasts the highest labor force participation rate among the communities reflected in Exhibit 38.

Exhibit 38. Employment Status of Workers, 2010

	Cecil	**Harford**	**Anne Arundel**	**Baltimore County**	**Baltimore City**	**Carroll**	**Howard**
Population 16 years and over	79,901	190,651	428,292	649,234	503,114	132,234	223,985
In labor force	67.0%	70.9%	71.5%	67.9%	61.4%	70.1%	72.5%
Civilian labor force	67.0%	70.3%	68.8%	67.7%	61.3%	70.0%	72.2%
Employed	60.2%	64.3%	63.4%	62.0%	52.4%	67.0%	68.6%
Unemployed	6.8%	6.0%	5.4%	5.7%	8.8%	3.0%	3.6%
Armed forces	0.0%	0.6%	2.7%	0.3%	0.1%	0.1%	0.2%
Not in labor force	33.0%	29.1%	28.5%	32.1%	38.6%	29.9%	27.5%

Source: U.S. Census Bureau, 2010 American Community Survey 1 year estimates

As reflected in Exhibit 39, men still represent a majority of labor force participants in Maryland and in most jurisdictions. Baltimore City represents an interesting exception, with 53 percent of labor force participants in the city represented by women. In Baltimore County, the labor force is split between men and women. In both Cecil and Harford counties, men represent 52 percent of the local labor force (defined by place of residence), a bit higher than the statewide average of 51 percent.

Exhibit 39. Labor Force Participation Rate by Gender, 2010

	Total	**Male**	**Female**
Maryland	69.5%	51%	49%
Cecil	67.0%	52%	48%
Harford	70.9%	52%	48%
Anne Arundel	71.5%	52%	48%
Baltimore City	61.4%	47%	53%
Baltimore County	67.9%	50%	50%
Carroll	70.1%	53%	47%
Howard	72.5%	52%	48%

Source: U.S. Census Bureau, 2010 American Community Survey 1 year estimates

Commuting Patterns/Labor Shed

As stated earlier, Cecil County forms part of the Philadelphia metropolitan area while Harford County is part of the Baltimore metropolitan area. Together, these two metropolitan areas are home to more than 14 million people. In a market area this massive, it is little surprise that residents of more rural communities like Cecil and Harford counties would have a high propensity to work outside of their jurisdictions of domicile. As indicated in Exhibits 40-42, roughly 1 in 8 members of the Susquehanna workforce works out-of-state. In Cecil County, more than 1 in 3 workforce participants work out of state, with the bulk of that population working in Delaware (many presumably in the Wilmington metropolitan area).

Exhibit 40. States where Susquehanna WIA Residents are Employed, 2010

	Count	Share
Total Workers	145,813	100.0%
Maryland	126,973	87.1%
Delaware	11,514	7.9%
Pennsylvania	3,480	2.4%
Virginia	1,145	0.8%
District of Columbia	1,011	0.7%
Other	1,690	1.2%

Source: U.S. Census Bureau, OnTheMap;** Based on 2010 estimates, Primary jobs, not total; total workers= resident workers

Exhibit 41. States Where Cecil County Residents are Employed, 2010

	Count	Share
Total Workers	40,325	100.0%
Maryland	26,437	65.6%
Delaware	10,802	26.8%
Pennsylvania	1,947	4.8%
New Jersey	406	1.0%
Virginia	280	0.7%
District of Columbia	189	0.5%
New York	104	0.3%
North Carolina	28	0.1%
Florida	21	0.1%
Ohio	14	0.0%
Other	97	0.2%

Source: U.S. Census Bureau, OnTheMap

Exhibit 42. States Where Harford County Residents are Employed, 2010

	Count	Share
Total Workers (residents)	105,488	100.0%
Maryland	100,536	95.3%
Pennsylvania	1,533	1.5%
Virginia	865	0.8%
District of Columbia	822	0.8%
Delaware	712	0.7%
New York	293	0.3%
New Jersey	250	0.2%
North Carolina	57	0.1%
West Virginia	52	0.0%
Florida	43	0.0%
Other	325	0.3%

Source: U.S. Census Bureau, OnTheMap

Among SWIA labor force participants, fewer than 40 percent work in Cecil or Harford counties. The proportion of SWIA labor force members working in Baltimore County is twice the level working in Harford County. There are many implications from this, including the fact that the people of the Susquehanna are associated with lengthy commutes on average. Exhibits 43-45 provide relevant statistical detail.

Exhibit 43. Counties where Susquehanna WIA Residents are Employed, 2010

	Count	Share
Total Workers	*145,813*	*100.0%*
Harford County	39,242	26.9%
Baltimore County	29,521	20.2%
Baltimore City	15,635	10.7%
Cecil County	14,759	10.1%
New Castle County, DE	10,642	7.3%
Anne Arundel County	7,889	5.4%
Montgomery County	5,487	3.8%
Howard County	3,684	2.5%
Prince George's County	3,537	2.4%
Washington County	1,417	1.0%
Other	14,000	9.6%

Source: U.S. Census Bureau, OnTheMap

Exhibit 44. Counties Where Cecil County Residents are Employed, 2010

	Count	Share
Total Workers	*40,325*	*100.0%*
Cecil County	12,583	31.2%
New Castle County, DE	10,008	24.8%
Harford County	4,213	10.4%
Baltimore County	2,577	6.4%
Montgomery County	1,440	3.6%
Baltimore City	1,277	3.2%
Anne Arundel County	1,191	3.0%
Chester County, PA	997	2.5%
Prince George's County	624	1.5%
Kent County, DE	593	1.5%
Other	4,822	12.0%

Source: U.S. Census Bureau, OnTheMap

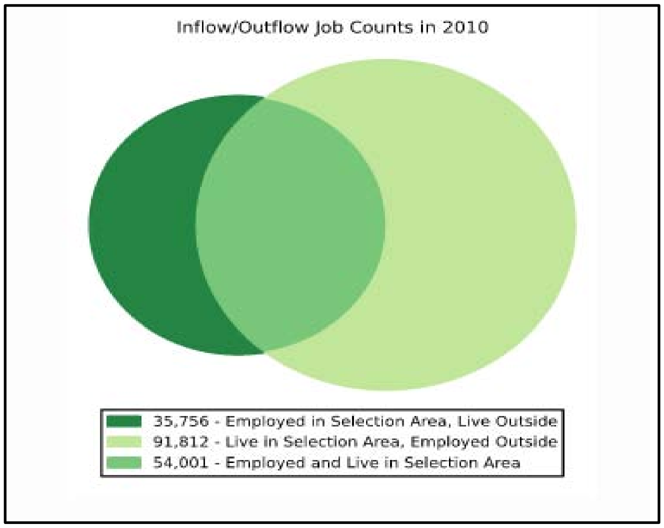
Exhibit 45. Counties Where Harford County Residents are Employed, 2010

	Count	Share
Total Workers	*105,488*	*100.0%*
Harford County	35,029	33.2%
Baltimore County	26,944	25.5%
Baltimore City	14,358	13.6%
Anne Arundel County	6,698	6.3%
Montgomery County	4,047	3.8%
Howard County	3,195	3.0%
Prince George's County	2,913	2.8%
Cecil County	2,176	2.1%
Washington County	1,053	1.0%
Frederick County	930	0.9%
Other	8,145	7.7%

Source: U.S. Census Bureau, OnTheMap

The Venn diagram below shows how rampant commuting in and out of the Susquehanna region is. The light green section in the middle represents the proportion of people who both live and work in the region. The largest group is represented by those who live in the Susquehanna area, but work outside the region. Exhibit 47 indicates that 54,001 people live and work in the area. Nearly 92,000 people live in the area but are employed outside. Roughly 36,000 work in the area but live outside. The net job outflow is therefore in the range of 56,000. In other words, the Susquehanna region represents a massive net exporter of labor force participants, a hallmark of largely bedroom communities.

Exhibit 46. Susquehanna Inflow/Outflow, 2010



*The relative size of the Venn diagram circles represents the number of workers living and working in the Susquehanna region. The size of the intersection area represents the count of workers that live and work in Susquehanna.

Exhibit 47. Susquehanna Workforce Investment Area Labor Market Details, 2010

Area Labor Market Size (Primary Jobs)	***Count***	***Share***
Employed in area	89,757	
Living in area	145,813	
Net job outflow	-56,056	
In-Area Labor Force Efficiency		
Total living in area	145,813	100.0%
Living and employed in area	54,001	37.0%
Living in area but employed outside	91,812	63.0%
In-Area Employment Efficiency		
Employed in area	89,757	100.0%
Employed and living in area	54,001	60.2%
Employed in area but living outside	35,756	39.8%

Source: U.S. Census Bureau, OnTheMap

Exhibit 48 reflects average commute times. Harford County is associated with relatively lengthy commutes; more than 31 minutes on average. Commutes in Cecil County are a bit shorter, perhaps a reflection of less dense traffic flows between Cecil and New Castle counties. Average commute times in Maryland are well above the national average of 25.3 minutes. In fact, only New York State reported lengthier commutes than Maryland in 2010.[8]

Exhibit 48. Average Travel Time to Work, 2010

Community	Average travel time to work (minutes)
Cecil	29.8
Harford	31.2
Anne Arundel	29.3
Baltimore County	28.5
Baltimore City	30.3
Carroll	35.5
Howard	30.5

Source: U.S. Census Bureau, American Community Survey

<u>Retirement and Aging</u>

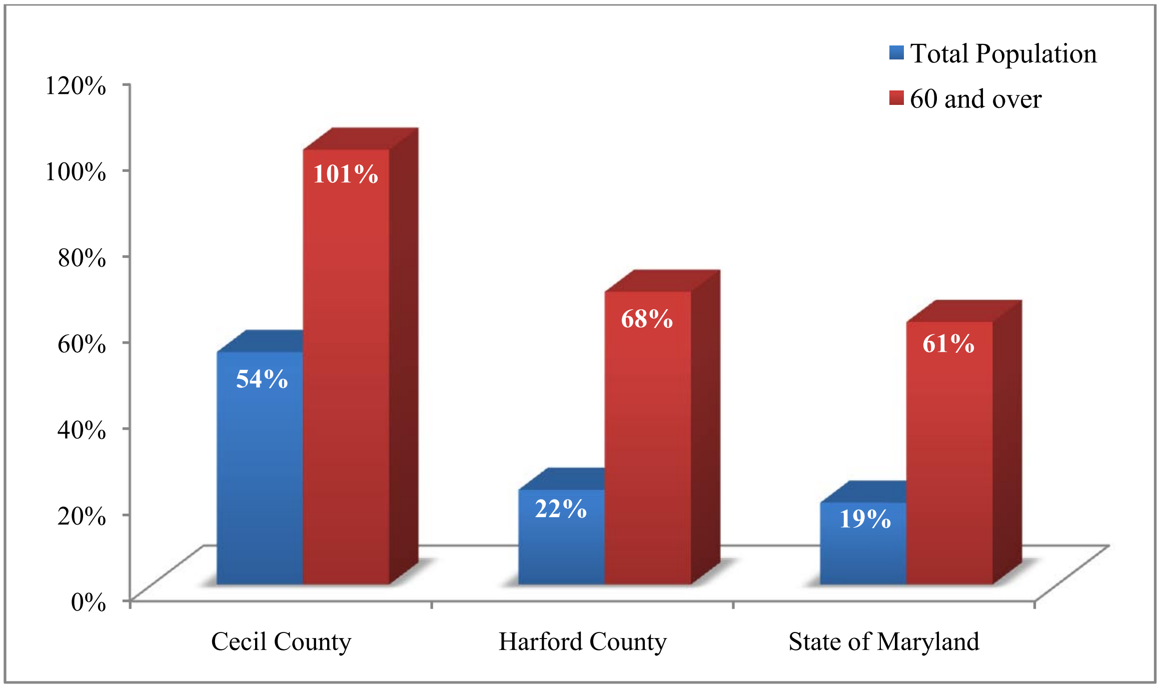
- Aging Workforce

One of the reasons for optimism regarding the outlook for younger workers is anticipated retirement among large numbers of Baby Boomers going forward. In the context of workforce development, one of the primary implications of this is that even in the absence of significant economic growth, the upcoming retirement cycle will be associated with the creation of many job openings for younger workers. Of course, with retirement comes a loss of experience and technical acumen. One of the objectives of workforce development is to provide workers with at least as much skill as those departing the workforce.

Exhibit 49 reflects the expected percentage growth in the number of people aged 60 and above relative to overall population. Cecil County is expected to produce the fourth highest rate of 60+ population growth over the next three decades among Maryland's 24 jurisdictions.

[8] U.S. Census Bureau. (2010). American Community Survey (DP 03: Selected Economic Characteristics). Data downloadable from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_1YR_DP03&prodType=table

Exhibit 49. Projected Increase in Population 60 and over versus Overall Population, 2010-2040



Source: U.S. Census, Maryland Department of Planning, Revised December 2010

- Working Past Expected Retirement

Of course, the retirement cycle was supposed to be underway by now. While some Baby Boomers have retired, many continue to work beyond their expectations. Accordingly, it is expected that seniors will represent an increasing fraction of SWIA's labor force. Expected shifts in Social Security retirement age will merely cement ongoing trends. Financial markets have yet to recover fully from the 2008 catastrophe and the average home is still worth about 30 percent less than it was in 2006 during the cyclical peak of the housing market. As a result, many Boomers have concluded that they will need to work longer.

According to a recent Gallup study, the average U.S retirement age is currently 67, up from 60 since 1996. Only 38 percent of those surveyed are confident that they can live comfortably after retirement, indicating that current non-retirees are pressured to keep working to secure additional financial resources pre-retirement.[9] Exhibit 50 indicates that the labor force participation rate among those aged 60 and older is more than 30 percent in both Cecil and Harford counties. Ten years ago, the corresponding proportion in the Susquehanna region was 18.2 percent.[10]

[9]Jones, Jeffrey, M. (April 2012). *Expected Retirement Age in U.S. Up to 67*. Retrieved on October 5th, 2012, from http://www.gallup.com/poll/154178/expected-retirement-age.aspx?version=print
[10](2000). 2000 Census (PCT035: Census 2000 Summary File 3). Data downloadable fromhttp://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_00_SF3_PCT035&prodType=table

Exhibit 50. Labor Force Participation among Senior Population in Susquehanna WIA, 2011 Estimate

	Susquehanna	**Harford**	**Cecil**
60 years and over:	64,043	18,247	45,796
In labor force:	19,656	5,813	13,843
Labor force participation rate:	*30.7%*	*30.2%*	*31.9%*
Employed	18,751	5,564	13,187
Unemployed	905	249	656
Unemployment rate:	*4.6%*	*4.7%*	*4.3%*

Source: U.S. Census

Exhibit 51 reflects the industries in which many older workers are employed. As it turns out, this group is employed in many industries, some service producing, some goods producing; some high-wage and some lower-wage; and some technology intensive and some not nearly as much.

Exhibit 51. Percentage of Senior Employees (Aged 55+) by Selected Industry, Cecil and Harford Counties, Q3 2011

Cecil County	*% Employed*	*Harford County*	*% Employed*
Mining, Quarrying, and Oil and Gas Extraction	25.3%	Information	29.1%
Public Administration	25.2%	Educational Services	27.0%
Educational Services	25.0%	Agriculture, Forestry, Fishing and Hunting	26.8%
Finance and Insurance	24.4%	Real Estate and Rental and Leasing	26.8%
Information	24.3%	Public Administration	26.8%
Arts, Entertainment, and Recreation	23.4%	Finance and Insurance	26.7%
Real Estate and Rental and Leasing	21.6%	Mining, Quarrying, and Oil and Gas Extraction	25.9%
Health Care and Social Assistance	21.3%	Transportation and Warehousing	22.5%
Other Services (except Public Administration)	20.2%	Manufacturing	21.3%
Professional, Scientific, and Technical Services	19.7%	Professional, Scientific, and Technical Services	20.6%
Agriculture, Forestry, Fishing and Hunting	19.2%	Other Services (except Public Administration)	20.0%
Retail Trade	18.8%	Health Care and Social Assistance	19.6%
Manufacturing	17.7%	Wholesale Trade	19.3%
Wholesale Trade	17.4%	Management of Companies and Enterprises	18.3%
Administrative and Support and Waste Management and Remediation Services	16.5%	Retail Trade	17.0%
Transportation and Warehousing	16.4%	Arts, Entertainment, and Recreation	17.0%
Construction	14.2%	Construction	16.6%
Accommodation and Food Services	10.8%	Administrative and Support and Waste Management and Remediation Services	16.2%
		Accommodation and Food Services	8.4%

Source: U.S. Census Bureau, Local Employment Dynamics

IV. SWOT Analysis (Economic Assets, Advantages and Opportunities)

In order to provide another organizing framework for the analysis, the study team conducted a SWOT analysis. The following SWOT diagram categorizes identified strengths, weaknesses, opportunities, and threat.

Exhibit 52. Susquehanna WIA SWOT Analysis Summary

Strengths	Weaknesses
✓ Highway/mass transit infrastructure ✓ Proximity to major metropolitan areas ✓ Workforce programs ✓ Community colleges and HEAT Center ✓ State Economic Enterprise Zone and availability of industrial space ✓ Significant manufacturing and distribution presence ✓ Aberdeen Proving Ground ✓ Lower cost of living than in adjacent metropolitan jurisdictions	✓ Ongoing deindustrialization ✓ State tax climate ✓ Lack of regional identity and associated challenges in recruiting top-level personnel ✓ Below average educational attainment of the local workforce
✓ Expanding higher education ✓ Accelerated job openings via retirement ✓ Leveraging Aberdeen Proving Ground and existing defense contractors into more rapid technology diffusion and industry clustering ✓ Leveraging public research and testing facilities to attract private commercial enterprises ✓ Health care and retirement ✓ Casino and related entertainment ✓ Waterfront development/redevelopment ✓ More focus on STEM disciplines at two-year college and secondary levels	✓ Expiration of the State Enterprise Zone and associated capacity to retain and attract businesses ✓ Next round of base realignment ✓ Departure of large business enterprises ✓ Environmental restrictions ✓ Retirement of current professionals
Opportunities	**Threats**

Some Interesting SWOT Insights

- Strengths

Cecil and Harford Counties have established a total of eleven enterprise zones (9 in Cecil and 2 in Harford). These enterprise zones collectively encompass more than 17,000 acres and offer tax credits to businesses, helping to offset some of the state's business tax disadvantages. Moreover, these zones benefit from proximity to the I-95 Corridor, Amtrak service and access to labor sheds in Baltimore and Philadelphia. In other words, the Susquehanna region has the potential to be an economic development powerhouse, attracting large enterprises seeking industrially-zoned land served by a large local labor force.

- Weaknesses

The SWIA has been subject to considerable deindustrialization, at least from the perspective of employment totals. The 2004 workforce study indicated that nearly 22 percent of the local labor forced worked in goods producing industries at that time. Today, goods-producing industries account only for less than 14 percent of total private sector employment in the Susquehanna region.

- Opportunities

The presence of an existing higher education sector in conjunction with several rapidly growing industries represents an opportunity to create better matches between skills demand and supply going forward. This would have the impact of accelerating income growth, expanding the local tax base and permitting greater investment in regional quality of life.

- Threats

An empirical study conducted by Hu et.al. (2008) finds that the availability of skilled labor, local tax structures, and lower relative labor costs represent significant determinants in a firm's decision to relocate/expand its business in a particular community.[11] Several adjacent/proximate communities offer tax rates competitive with the Susquehanna region (including State of Maryland taxes), offer more educated workforces and reasonably similar labor costs. Going forward, the Susquehanna region will need to elevate its level of competitiveness along these dimensions in order to become more prosperous. When one factors in global competitive forces, the stakes become even higher.

[11] Hu, Wuyang, Linda J. Cox, Joan Wright, & Harris. (2008). Understanding Firms' Relocation and Expansion Decisions Using Self-Reported factor Importance Rating. *Review of Regional Studies*, Vol. 38, No. 1, 67-88. Retrieved on October 15th, 2012, from journal.srsa.org/ojs/index.php/RRS/article/download/169/124

V. Recommendations

The study team recommends that the following categories represent focal points for future regional workforce development efforts. Five of these focal points represent industry/occupational categories worthy of focus (recommendations 1-5). The other two represent more tactical approaches (6 and 7).

1. Pursue logistics

The Susquehanna region is a natural fit for the logistics industry. The two counties have abundant developable land, benefit from intermodal transportation, and the wage rates associated with distribution/logistics are often high enough to represent a significant opportunity at upward mobility.

Industry wages vary broadly depending upon occupational category. Predictably, managerial-level staff earns the highest salary. A general operational manager within the trucking industry earns \$98,490 annually on average while managers in training and development earn \$67,350. Transportation storage/distribution managers earn \$84,710 annually on average. Computer technology-related positions within the industry are also associated with lofty wages, including computer and information system managers (\$97,130) and computer programmers (\$69,350). Middle-wage occupations include driver/sales workers (\$32,210), couriers and messengers (\$27,630), and packers and packagers (\$25,020). Many of these positions do not require college degrees, though two-year degrees likely increase prospects for attaining employment.[12]

The minimum credentials for a truck driver are typically a high-school diploma and driver's license[13] or Commercial Driver's License (CDL) for trailer truck drivers.[14] On the other hand, managerial level occupations frequently require a minimum of a bachelors' degree.[15]

There are certifications in logistics that can accelerate promotion. These certifications can be obtained through trade associations, including the American Society of Transportation and

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[12]Bureau of Labor Statistics, Occupational Employment Statistics. Retrieved from, http://data.bls.gov/oes/occupation.do

[13]Bureau of Labor Statistics, Occupational Employment Statistics. *Delivery Truck Driver/Sales Workers*. Retrieved from http://www.bls.gov/ooh/transportation-and-material-moving/delivery-truck-drivers-and-driver-sales-workers.htm#tab-4

[14]Bureau of Labor Statistics, Occupational Employment Statistics. *Heavy & Tractor Trailer Truck Drivers*. Retrieved from, http://www.bls.gov/ooh/transportation-and-material-moving/heavy-and-tractor-trailer-truck-drivers.htm

[15]Bureau of Labor Statistics, Occupational Outlook Handbook. *Logisticians*. Retrieved from, http://www.bls.gov/ooh/business-and-financial/logisticians.htm#tab-4

Logistics (ASTL) and the International Society of Logistics (SOLE).[16] The industry has become more complex with the emergence of advanced planning and schedules (APS) software, which addresses problems in optimizing the integration of logistic components.[17] Correspondingly, gaining advanced computer skills arguably represents one of the fastest ways to attain a high-wage occupation within the industry.

2. Train for primary and preventative healthcare, including lab work

Health care and educational services expanded more rapidly than any other industry in the Susquehanna region between 2005 and 2011. The Department of Labor, Licensing and Regulation projects that the number of healthcare practitioners and related technical workers will expand by more than 5,700 jobs or 3.5 percent by 2013 relative to 2011.

Of course, the number of new healthcare workers could fall short of expectations if labor supply falls short of demand (unfilled positions). A study by a consulting firm CSC indicates that there will be a national shortage of approximately 124,000 physicians and 500,000 nurses by 2025. Certain portions of the Susquehanna region are already designated as Health Care Professional Shortage Areas (HPSA) in primary medical care by the Health Resources and Services Administration. An area or health care organization is designated as an HPSA if the proportion of the geographic population to the number of physicians is greater than 2,000 to 1.[18]

Thanks in part to healthcare reform, there will be growing demand for nurses and primary care practitioners. Some of these occupations are classified as high-wage. According to the Bureau of Labor Statistics, the median annual wage for registered nurses is $64,690 and is $166,400 for physicians (including general practitioners). To become a registered nurse, a candidate must have either a Bachelor's of Science degree or an Associate's degree in nursing or a diploma from an approved nursing program.[19,20]

While medical knowledge is of course a prerequisite of participation in this field, healthcare employers also indicate that they seek elevated levels of soft skills mastery. According to the Bureau of Labor Statistics, important qualities include both hard and soft skills mastery including:

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[16]Bureau of Labor Statistics, Occupational Outlook Handbook. *Logisticians*. Retrieved from, http://www.bls.gov/ooh/business-and-financial/logisticians.htm#tab-4

[17] Georgia Tech Supply Chain & Logistics Institute. *Evolution of the supply chain and logistics institute*. Retrieved fromhttp://www.scl.gatech.edu/scl-evolution.php

[18]Health Resources and Services Administration. Retrieved from http://bhpr.hrsa.gov/shortage/

[19]Bureau of Labor Statistics, Occupational Outlook Handbook. *Registered Nurse*http://www.bls.gov/ooh/healthcare/registered-nurses.htm

[20]Bureau of Labor Statistics, Occupational Outlook Handbook. *Physicians and Surgeons*. Retrieved from http://www.bls.gov/ooh/healthcare/physicians-and-surgeons.htm

- *Critical-thinking skills*. Nurses must be able to assess changes in the health state of patients, including when to take corrective action and when to make referrals.
- *Compassion.* According to varying sources, healthcare workers should be caring and sympathetic, characteristics that are valuable when treating patients.
- *Detail oriented*. Registered nurses must be responsible and detail oriented because they must make sure that patients get the correct treatments and medicines at the right time.
- *Organized*. Nurses often work with multiple patients with various health needs and organizational skills are therefore critical.
- *Communication skills.* Health workers must be able to communicate effectively with patients and other healthcare providers to correctly assess treatment requirements. Nurses need to clearly explain how to take medication or give other instructions. They must also be able to work in teams.[21]

Both hard and soft healthcare-related skills are lacking in the Susquehanna region according to employers. During the focus group, local healthcare management professionals articulated a deficiency of workers who possess both technical skills in conjunction with customer service/ communication skills.

3. Consider construction, including skills related to green construction and infrastructure build-out

Given the older demographics of today's construction workforce and the relative lack of expressed instruction in construction-related occupations among younger workers, the construction industry faces major worker shortages. The lack of interest among the young is not simply a function of construction's recent downturn and associated job losses. The emphasis of the U.S. educational apparatus on standardized testing and college readiness has reduced exposure to construction-related activities like shop class. In many communities, there has also been diminished access to vocational training, or as it is typically referred to today, career and technical education. As a result, many young people lack opportunities to develop an interest in working in occupations that simultaneously require the use of hands and head.

Technological shifts in construction – in particular, developments in construction software (e.g., BIM), green construction mandates, and digitization – will create many high-wage opportunities for young Americans and older cohorts alike. The question is whether or not the workforce will be ready to take advantage of these opportunities or whether purchasers of services will increasingly turn to modular builders located in other parts of the world.

[21]Bureau of Labor Statistics, Occupational Outlook Handbook. *Registered Nurse*
http://www.bls.gov/ooh/healthcare/registered-nurses.htm

Thanks in part to public policy and rising energy prices, one of the emerging trends in construction is going green. As a prominent and relevant example, the State of Maryland has created tax credits provisions to incentivize Maryland businesses to implement environmentally-friendly facility designs and energy efficient systems. The State initiated Clean Energy Incentive Tax Credits in January 2006. These will be effective until 2016.[22] With support from Harford County's Department of Economic Development, the Harford County Green Business Network was initiated to foster networking and collaboration among businesses to discover innovative sustainable business practices.[23]

Green industry occupations are associated with certain skills sets. An Ohio survey provides insight into the specific skills demanded by green industry employers.[24] These skill sets are relevant to occupations in building maintenance, retro-commissioning, energy auditing, engineering, building construction, and other professions.[25]

Exhibit 53. Skills that Employees Will Need to Perform Green Activities

New skills or knowledge	Percentage of importance (for current/future employees)
How to use green materials	65.5
Knowledge of environmental policies/regulations	58.7
Principles of energy conservation	56.1
Energy auditing	56.1
Innovative clean technologies and processes	53.7
Entrepreneurial Skills	52.5
Life cycle costing	47.4
Waste minimization	46.9
Energy efficiency skills	41.2
Pollution reduction and control	35.1
Alternative Energy	34.6
Green Information technology	34.3
System for collecting, analyzing & interpreting environmental data	27.0
Other	8.2

Source: Ohio Department of Job and Family Services

[22]Comptroller of Maryland. (n.d.) *Green Building Tax Credit*. Retrieved on November 1st, 2012, from http://business.marylandtaxes.com/taxinfo/taxcredit/cleanenergy/default.asp
[23]Harford County Economic Development. (n.d.) *Harford County Green Business Network*. Retrieved on November 8th, 2012, from http://www.harfordbusiness.org/index.cfm?ID=406
[24]*The Workforce Skills and Training Ohio Green Industries Need*. Retrieved onNovember1st, 2012, fromhttp://ohiolmi.com/green/reports/Pt3SkillsTraining.pdf
[25]Retrieved onNovember1st, 2012, from http://www.imt.org/files/FileUpload/files/Commercial%20Energy%20Policy%20Fact%20Sheet%20-%20Green%20Workforce%20Development.pdf

According to *Maryland's Construction Industry Workforce Report*, one of the opportunities and challenges faced by today's construction industry is technological advancement and application of new devices. In particular, Building Information Modeling (BIM) and Sensitive Compartmented Information Facility (SCIF) building technologies are increasingly deployed by professionals and consulting firms.[26] SWIA stakeholders would be wise to ensure that training opportunities in these categories are readily available.

4. Promote manufacturing and assembly

Some have given up on America's manufacturing industry and there has been cause for despair. A study conducted by Boston Consulting Group estimates that China's share of global exports rose from 3.9 percent to 9.7 percent between 2000 and 2009. At the same time, approximately 6 million manufacturing jobs were lost in America. That said, there is evidence of reshoring production back to the U.S., with companies such as Whirlpool, Chesapeake Bay Candle (Glen Burnie, MD), Caterpillar, and NCR bringing back manufacturing activities to the U.S. A weak U.S. dollar, plentiful availability of cheap natural gas and increasingly supportive public policy represent a few of the reasons behind manufacturing's nascent resurgence in the U.S.

According to another study by Boston Consulting Group, the U.S. is on track to create 5 million manufacturing jobs by 2020 as a result of shifting manufacturing production from China. More importantly, the study suggests that the U.S. manufacturers will suffer shortages of skilled-labor. The study estimates that the shortage of highly skilled workers could rise to 875,000 from the current level of 80,000-100,000 nationally.

According to the National Association of Manufacturers, manufacturers in Maryland account for 6.5 percent of total state output in the state and employ 4.4 percent of the workforce. Manufacturing compensation is more than $27,000/annum higher than in other non-farm Maryland industries. Marylanders exported nearly $10 billion of output in 2011.

According to the Governor's Workforce Investment Board, employers in the manufacturing industry demand a comprehensive foundation in basic employability skills (data indicates that 70 percent of applicants are rejected from employment opportunities because they lack basic skills), relevant technical skills, and a commitment to life-long learning to keep pace with the rate of industry innovation. Workforce challenges include:

[26] Governor's Workforce Investment Board. (September, 2009). *Maryland's Construction Industry Workforce Report*. http://www.positivelyminnesota.com/JobSeekers/Discover_Green_Jobs/Green_Your_Education/Green_Construction_Training.aspx, p.7

- Improving the image of manufacturing through a coordinated and multi-phased marketing campaign; and
- Identifying, developing, and providing technical and educational pathways to prepare students to become workers of the future while upgrading the skills of incumbent workers.

Exhibit 54. Major Manufacturing Employers in the Susquehanna Region of Maryland

Harford County	**Size Class**
Alcore Acquisition Corp	250-499
Constar	100-249
Cytec Engineered Material	100-249
Frito-Lay	250-499
Independent Can Company	100-249
Safenet Inc.	250-499
Smiths Detection Inc.	100-249
Washington Armstrong Venture	100-249
Cecil County	
Alliant Techsystems Inc.	250-499
Terumo Cardiovascular Systems	250-499
Terumo Medical Corporation	250-499
Tim Plastic Inc.	Less than 100
W L Gore & Associates	1000 and over

Source: Maryland Department of Labor, Licensing, and Regulation

5. Supply human capital to the information technology sector

While expansion of the Department of Defense and its contractors increased the need for computer programmers and software developers in the region, what many employers seemingly require are people who are able to use software with high levels of competence. Computer-assisted design in manufacturing, Building Information Management (BIM) software in construction and basic Microsoft Office in the service sector are associated with skills sets in demand.

As an example of a powerful partnership with business that SWIA stakeholders may want to emulate, the Northwest Workforce Council (NWC) in Washington state partnered with Microsoft to establish the NW Computer Literacy Instruction Corps (CLIC). The CLIC organizes free computer classes. With financial support from Microsoft and the energies of fourteen volunteer instructors, the CLIC delivered more than 2,000 hours of instruction in basic computer skills, including email and Microsoft Office applications. Approximately 450 individuals have testified on behalf of the program's capacity to empower.[27]

There are programs already available at the two regional community colleges and the HEAT Center that pertain to the development of these skills. The key is to accelerate student interest in these curricula. As indicated by the focus group, there is a need to make young people aware of the opportunities in IT fields. According to a survey conducted by National Association of Colleges and Employers (NACE), computer science undergraduate majors earned an average of $60,639 (2012) as a starting salary, second highest among eight core. Starting salaries were rising even during the recession, though the number of people hired declined during that time.[28]

Higher compensation inevitably correlates with longer training and educational requirement. Most of the occupations related to computer science require a bachelor's degree at a minimum. Technical assistants require only two-year degrees or perhaps some college, but median salary for this occupation is much lower.[29]

According to Maryland's Department of Labor Licensing and Regulation, the Susquehanna region will add 345 computer specialist jobs through 2018, representing an increase of 17.4 percent over the 2008 level.[30] In recent years, the state of Maryland actually lost IT jobs while the Susquehanna region added them.[31]

Though certain companies demand workers who are broadly trained in information technology, certain specialized local technology businesses have indicated that the Susquehanna region falls short in terms of supplying enough computer programmers and software developers. Accordingly, local educational institutions probably should direct additional resources in this direction. In order to better assist the IT professionals, local community colleges could offer more courses or seminars to permit students to obtain certifications in vendor-specific programming languages. Based on a survey conducted by TIOBE, a software research firm, C, C++, and Java have been among the most popular programming languages over the past decade.[32]

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[27] Northwest Workforce Council. (2010). *Creating a robust, sustainable, regional economy*. Retrieved on November 2nd, 2012, from www.nwboard.org/documents/2010-REPORT-WEB.pdf

[28] National Association of Colleges and Employers (NACE). (2012). *NACE Salary Survey* (Executive Summary). Retrieved on November 9th, 2012, from http://www.naceweb.org/uploadedFiles/NACEWeb/Research/Salary_Survey/Reports/SS_ExecSummary_Sept2012.pdf

[29]

[30] Department of Labor Licensing and Regulation. (n.d.) *Computer and Mathematical Occupations: Susquehanna WIA Occupational Projections*. Retrieve on November 2nd, 2012, from http://www.dllr.state.md.us/lmi/iandoproj/susquehanna/occgroup15.shtml

[31] Department of Labor Licensing and Regulation.

[32] TIOBE Software. (November 2012). *TIOBE Programming Community Index for November 2012.* Retrieved on November 2nd, 2012, from http://www.tiobe.com/index.php/content/paperinfo/tpci/index.html

6. Implement an innovative credentialing strategy

Large employers in particular seek to streamline the hiring process. This results in fewer interviews and increased use of checklists focused upon a set of credentials to identify the most qualified job candidates. While many jobseekers may long for the personalized interviews of the past, credentialing is key. It is important to understand the types of credentials most commonly sought by employers.

It is important to note that any credentialing strategy should consider more than simply younger workers. Many mid-career workers have been displaced or surpassed due to shifts in the global economy, automation, or the creation of knowledge not available when they were younger workers.

According to a Sacramento Employment and Training Agency report, the top workforce skill sets as rated by 15 top industries are as follows:

1. Mathematics
2. Speaking
3. Problem Solving
4. Time Management
5. English Language
6. Reading Comprehension
7. Writing
8. Decision Making
9. Work Ethic
10. Active Listening
11. Critical Thinking
12. Attitude and
13. Interpersonal Skills [33]

Training programs cultivate these skill sets by helping less skilled workers expand their knowledge. Note that many of these skill sets have not historically been associated with specific credentials. That is changing. There has been an effort to "credentialize" these skill sets to support the interests of employees and employers alike. For instance, JA Worldwide in conjunction with six communities (the District of Columbia, Florida, New Jersey, New York, Rhode Island, and Washington) created a "National Work Readiness Credential", which measures an individual's preparedness for entry-level work as defined by the National Institute for Literacy. Imagine the power of such a credential in the hands of a worker who has not yet had the opportunity to demonstrate their capabilities and work ethic. It is recommended that the SWIA implement or create such a credential.

[33] "Image Makeover and Training Basics Expand the Pipeline to Dynamic Construction Careers." Accessed May 7, 2012. http://www.coeccc.net/Environmental_Scans/Const_Scan_NFN_05.pdf

It is important to note that in prior years, the SWIA and its workforce development partners have pursued and implemented focused initiatives on workplace readiness skills and experienced marginal success. A new and expanded initiative is in an exploratory/planning phase.

7. Aggressively advocate for career and technical education at local high schools

Maryland leads the nation in the redesign of CTE programs as called for in the Federal Carl D. Perkins Career and Technical Education Improvement Act of 2006. The Maryland State Department of Education (MSDE) works closely with the Governors Workforce Investment Board (GWIB) to identify new programs in response to Maryland's workforce development need and to ensure all CTE programs of study keep pace with industry expectations and prepare students for college and starting their careers.

Maryland's CTE Programs of Study include work-based learning opportunities (e.g., internships, clinical experiences, or industry-mentored projects) tied to students' areas of interest. High school CTE programs of study give students electing to complete a CTE program as part of the high school program beginning in Grade 10. Upon completion of a Maryland CTE program of study, students also have the option to earn college credits and/or industry-recognized credentials such as certifications and licenses. In collaboration with industry advisory committees, the Department of Education identified 10 career clusters and formulated customized educational curriculum for students who elect to pursue certain career paths. Maryland's career clusters concentrating on a range of industry segments, including arts, communication/media, information technology; business, and finance.

Perhaps most importantly, entry into CTE programs provides high school juniors and seniors with early focus. This can alleviate aimlessness and may help students identify a passion prior to graduation.

Of course, CTE programming cannot be static. Just as community colleges and other institutions are required to continue to shift their programming in conjunction with emerging technologies and industry requirements, so too are CTE programs.

VI. Conclusion

Workforce Development in the SWIA: Promise and Peril

The Susquehanna region's labor market has experienced seismic and often negative shifts in recent years. The Great Recession was unkind to Maryland and to the Susquehanna Workforce Investment Area, though many other communities fared worse. Between December 2007 and December 2009, more than 109,000 jobs were lost in Maryland. Although the impact of recession was not as severe in the SWIA as in other parts of the state, more than 4,000 jobs (approximately 3.5 percent of total employment) disappeared.

Predictably, circumstances have improved recently in concert with the national and global economies. Between 2009 and 2011, more than 800 jobs were added in the Susquehanna region and the community is now home to more jobs than it was in 2005. However, this still represents disappointing performance both because of the mildness of the pace of employment recovery and because base realignment's impact was expected to be a bit more profound.

Based upon the assertions of employers, some adjustments in the spheres of workforce and economic development are required in northeast Maryland. Despite still elevated unemployment rates, many employers claim that they cannot suitably fill many available positions, an indication of structural skills mismatches that the region will need to address if it is to achieve its potential. The specter of imminent retirement among many of the region's most experienced and often most skilled workers also represents another challenge with which the region will need to contend.

Fortunately, the Susquehanna region possess a number of strengths, including its proximity to major metropolitan areas and highway/mass transit infrastructure, the presence of community colleges and the HEAT Center, and a significant manufacturing and distribution presence, among other things. The presence of an existing higher education sector in conjunction with several rapidly growing industries represents an opportunity to create better matches between skills demand and supply going forward. This would have the impact of accelerating income growth, expanding the local tax base and permitting greater investment in regional quality of life. The key challenge will be to identify and equip workers with the tools necessary to participate in the region's fastest-growing industries.

In Summation

This report has provided seven recommendations designed to focus workforce development on addressing and taking advantage of key growth industries, expanding occupations, shifts in the way hiring processes are conducted and opportunities to focus young people upon promising career paths while they are still in high school. Given Maryland's reliance on federal spending and associated vulnerability to federal downsizing, it is likely that the state's labor force will need to adjust more quickly to rapidly changing economic realities. Globalization and automation are also likely to create circumstances that require a nimble and ready workforce. The SWIA has an opportunity to prepare for a very promising, but likely turbulent future. Ultimately, the key is to create a more focused labor force; one determined to master both hard and soft skills alike and to engage in lifelong learning.

APPENDIX

Exhibit A1. Employment by Industry Sector, by 2-digit NAICS, 2005-2011

Industry	Average Annual Employment							
	Susquehanna WIA				Harford		Cecil	
	2005	*% of 2011 Total*	*2011*	*% of 2011 Total*	*2005*	*2011*	*2005*	*2011*
Total Employment	109,720	100.0%	111,231	100.0%	80,527	83,286	29,193	27,945
Public Sector Total	23,321	*21.3%*	27,234	*24.5%*	16,253	21,495	7,068	5,739
Federal Government	10,924	*10.0%*	13,416	*12.1%*	7,533	11,992	3,391	1,424
State Government	799	*0.7%*	781	*0.7%*	475	467	324	314
Local Government	11,598	*10.6%*	13,037	*11.7%*	8,245	9,036	3,353	4,001
Private Sector Total	86,399	*78.7%*	83,997	*75.5%*	64,273	61,791	22,126	22,206
Goods-Producing	18,862	*17.2%*	15,506	*13.9%*	12,320	9,801	6,542	5,705
Natural Resources, Mining & Construction	9,441	*8.6%*	7,002	*6.3%*	7,235	5,382	2,206	1,620
Manufacturing	9,422	*8.6%*	8,503	*7.6%*	5,086	4,419	4,336	4,084
Service-Providing	67,536	*61.6%*	68,491	*61.6%*	51,952	51,990	15,584	16,501
Trade, Transportation & Utilities	24,155	*22.0%*	24,504	*22.0%*	18,371	18,265	5,784	6,239
Information	947	*0.9%*	576	*0.5%*	689	396	258	180
Financial Activities	4,131	*3.8%*	3,646	*3.3%*	3,310	2,948	821	698
Professional & Business Services	12,552	*11.4%*	10,537	*9.5%*	10,830	9,224	1,722	1,313
Education & Health Services	10,879	*9.9%*	13,449	*12.1%*	8,070	9,816	2,809	3,633
Leisure & Hospitality	11,159	*10.2%*	12,209	*11.0%*	7,936	8,717	3,223	3,492
Other Services	3,697	*3.4%*	3,571	*3.2%*	2,730	2,624	967	947
Unclassified	17	*0.0%*	0	*0.0%*	17	0	0	0

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

*Numbers may not add up due to rounding

Exhibit A2. Employment Changes by Industry Sector by 2-digit NAICS, 2011 vs. 2005

Industry	**Average Annual Employment**					
	Susquehanna WIA		Harford		Cecil	
	Absolute	*%*	*Absolute*	*%*	*Absolute*	*%*
Total Employment	+1,511	1.4%	2,759	3.4%	-1,248	-4.3%
Public Sector Total	+3,913	16.8%	5,242	32.3%	-1,329	-18.8%
Federal Government	+2,492	22.8%	4,459	59.1%	-1,967	-58.0%
State Government	-19	-2.4%	-8	-1.7%	-10	-3.1%
Local Government	+1,439	12.4%	791	9.6%	648	19.3%
Private Sector Total	-2,402	-2.8%	-2,482	-3.9%	80	0.4%
Goods-Producing	-3,356	-17.8%	-2,519	-20.4%	-837	-12.8%
Natural Resources, Mining & Construction	-2,439	-25.8%	-1,853	-25.6%	-586	-26.6%
Manufacturing	-919	-9.7%	-667	-13.1%	-252	-5.8%
Service-Providing	955	1.4%	38	0.0%	917	5.9%
Trade, Transportation, & Utilities	349	1.4%	-106	-0.6%	445	7.7%
Information	-371	-39.2%	-293	-42.5%	-78	-30.2%
Financial Activities	-485	-11.7%	-362	-10.9%	-138	-16.8%
Professional & Business Services	-2,015	-16.1%	-1,606	-14.8%	-409	-23.8%
Education & Health Services	2,570	23.6%	1,746	21.6%	824	29.4%
Leisure & Hospitality	1,050	9.4%	781	9.8%	269	8.3%
Other Services	-126	-3.4%	-106	-3.9%	-20	-2.1%
Unclassified	-17	-100.0%	-17	-100.0%	0	0.0%

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Exhibit A3a. Susquehanna Fastest Growing Industries by 3-Digit NAICS

	2005	2011	Absolute Change
Ambulatory health care services	3271	4149	878
Food services and drinking places	8506	9246	740
Warehousing and storage	2295	2790	495
Educational services	872	1109	237
Amusements, gambling, and recreation	1587	1797	240
Crop production	197	385	188
Personal and laundry services	1269	1409	140
Nonmetallic mineral product manufacturing	183	245	62
Machinery manufacturing	295	347	52
Accommodation	787	825	38

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Exhibit A3b. Harford County Fastest Growing Industries by 3-Digit NAICS

	2005	2011	Absolute Change
Food services and drinking places	6142	6911	769
Ambulatory health care services	2520	3121	601
Educational services	585	695	110
Personal and laundry services	1042	1114	72
Nonmetallic mineral product manufacturing	164	196	32
Machinery manufacturing	281	303	22
Crop production	70	79	9
Electronic markets and agents and brokers	194	200	6
Accommodation	499	503	4
Chemical manufacturing	595	597	2

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Exhibit A3c. Cecil County Fastest Growing Industries by 3-Digit NAICS

	2005	2011	Absolute Change
Warehousing and storage	17	836	819
Ambulatory health care services	751	1028	277
Amusements, gambling, and recreation	361	601	240
Crop production	127	306	179
Educational services	287	414	127
Personal and laundry services	227	295	68
Utilities	71	114	43
Accommodation	288	322	34
Nonmetallic mineral product manufacturing	19	49	30
Machinery manufacturing	14	44	30

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Exhibit A4a. Susquehanna Declining Industries by 3-Digit NAICS

	2005	2011	Absolute Change
Membership associations and organizations	816	655	-161
Wood product manufacturing	222	50	-172
Miscellaneous manufacturing	875	696	-179
Insurance carriers and related activities	751	562	-189
Credit intermediation and related activities	2095	1893	-202
Merchant wholesalers, durable goods	1283	1068	-215
Merchant wholesalers, nondurable goods	1982	1584	-398
Administrative and support services	4165	3306	-859
Construction of buildings	2166	1167	-999
Specialty trade contractors	5232	3906	-1326

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Exhibit A4b. Harford County Declining Industries by 3-Digit NAICS

	2005	2011	Absolute Change
Membership associations and organizations	445	357	-88
Credit intermediation and related activities	1662	1523	-139
Insurance carriers and related activities	620	441	-179
Wood product manufacturing	193	13	-180
Merchant wholesalers, durable goods	1002	803	-199
Warehousing and storage	2278	1954	-324
Merchant wholesalers, nondurable goods	1462	1131	-331
Administrative and support services	3386	2707	-679
Construction of buildings	1756	964	-792
Specialty trade contractors	4215	3317	-898

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Exhibit A4c. Cecil County Declining Industries by 3-Digit NAICS

	2005	2011	Absolute Change
Food services and drinking places	2364	2335	-29
Real estate	169	137	-32
Chemical manufacturing	154	121	-33
Credit intermediation and related activities	433	370	-63
Merchant wholesalers, nondurable goods	520	453	-67
Membership associations and organizations	371	298	-73
Miscellaneous manufacturing	756	624	-132
Administrative and support services	779	599	-180
Construction of buildings	410	203	-207
Specialty trade contractors	1017	589	-428

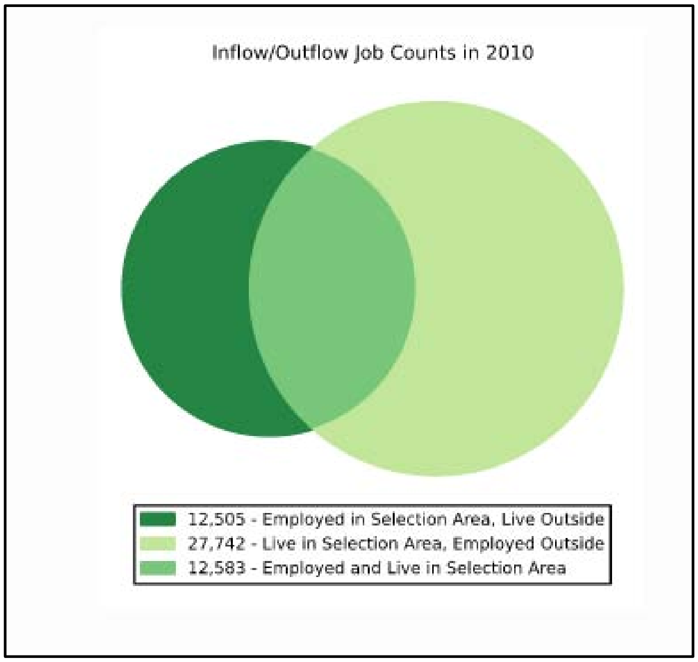
Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Exhibit A5. State Enterprise Zone (EZ) located in Susquehanna, as of 2012

Harford	**12,857 acres**
Aberdeen/Havre De Grace	8,936 acres
Edgewood	3,921 acres
Cecil	**4,389 acres**
Chesapeake Corporate Ctr., Elkton	
Broadlands Business Park	
Triumph Industrial Park, Elkton	
NE Commerce Center, North East	
Peninsula Industrial Park	
Principio Business Park, Perryville	
Perryville Industrial Park	
Vantage Point, Elkton	
Bainbridge Property, Port Deposit	

Source: Maryland Department of Business Development, Cecil County Office of Economic Development

Exhibit A6. Cecil County Inflow/Outflow, 2010



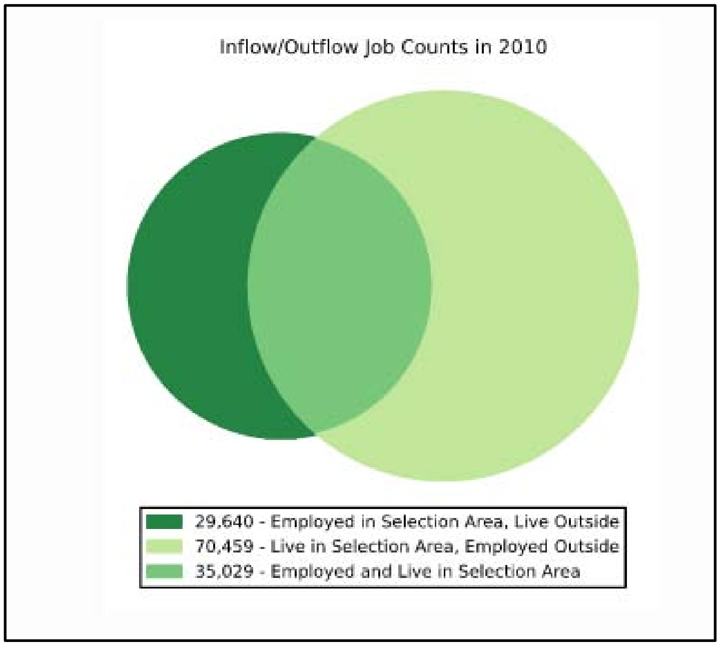
*In Cecil County, 31.2 percent of Cecil County's residents also work in Cecil County, and 50.2 percent of the county's workers live in Cecil.

Exhibit A7. Cecil County Labor Market Details, 2010

Area Labor Market Size (Primary Jobs)	***Count***	***Share***
Employed in area	25,088	
Living in area	40,325	
Net job outflow	-15,237	
In-Area Labor Force Efficiency		
Total living in area	40,325	100.0%
Living and employed in area	12,583	31.2%
Living in area but employed outside	27,742	68.8%
In-Area Employment Efficiency		
Employed in area	25,088	100.0%
Employed and living in area	12,583	50.2%
Employed in area but living outside	12,505	49.8%

Source: U.S. Census Bureau, OnTheMap

Exhibit A8. Harford County Inflow/Outflow, 2010



*In Harford County, 33.2 percent of the County's residents also work in Harford, and 54.2 percent of the county's workers live in Harford.

Exhibit A9. Harford County Labor Market Details, 2010

Area Labor Market Size (Primary Jobs)	***Count***	***Share***
Employed in area	64,669	
Living in area	105,488	
Net job outflow	-40,819	
In-Area Labor Force Efficiency		
Total living in area	105,488	100.0%
Living and employed in area	35,029	33.2%
Living in area but employed outside	70,459	66.8%
In-Area Employment Efficiency		
Employed in area	64,669	100.0%
Employed and living in area	35,029	54.2%
Employed in area but living outside	29,640	45.8%

Source: U.S. Census Bureau, OnTheMap