

Lehigh Valley Employment Forecast ... 2040

Industry and Occupational Employment Forecasts

Prepared by the
Lehigh Valley Planning Commission



Lehigh Valley Planning Commission

Matthew Glennon, <i>Chair</i>	Darlene Heller (alt.)
Kent H. Herman, <i>Vice Chair</i>	Benjamin F. Howells, Jr.
Liesel Dreisbach, <i>Treasurer</i>	Edward D. Hozza, Jr.
Norman E. Blatt	Robert A. Lammi
Becky Bradley (alt.)	Terry J. Lee
John B. Callahan	Earl B. Lynn
Gordon M. Campbell	Jeffrey D. Manzi
John Cusick	Ross Marcus (alt.)
John N. Diacogiannis	Kenneth M. McClain
Karen D. Dolan	Christina V. Morgan
Percy H. Dougherty	Thomas J. Nolan
Karen Duerholz	Salvatore J. Panto, Jr.
Charles W. Elliott	Edward Pawlowski
Charles L. Fraust	Stephen Repasch
George F. Gemmel	Michael Reph
Steven L. Glickman	Virginia Savage (alt.)
Armand V. Greco	Lisa Scheller
William Hansell	John Stoffa
Michael C. Hefele (alt.)	Donna Wright

**Lehigh Valley Planning Commission Staff
Project Report**

David P. Berryman, *Chief Planner, Project Manager*
 Alice J. Lipe, *Senior Planning Technician,*
Layout and Cover Design
 Susan L. Rockwell, *Senior Environmental Planner, Editor*

Michael N. Kaiser, AICP, Executive Director
 Geoffrey A. Reese, P.E., Assistant Director
 Joseph L. Gurinko, AICP, Chief Transportation Planner
 David E. Manhardt, AICP, GIS Manager
 Lynette E. Romig, Senior GIS Analyst
 Ngozi Obi, Senior Community Planner
 Michael S. Donchez, Senior Transportation Planner
 Teresa Mackey, Senior Planner
 Travis I. Bartholomew, P.E., Senior Engineer
 Christopher S. DiMenichi, Jr., EIT, Transportation Planner
 Anne L. Esser, MBA, Administrative Assistant
 Kathleen M. Sauerzopf, Secretary

Lehigh Valley Planning Commission
 961 Marcon Boulevard, Suite 310
 Allentown, Pennsylvania 18109
 Phone: 610-264-4544
 Fax: 610-264-2616
 E-mail: lvpc@lvpc.org
 Web: www.lvpc.org

Approved for release by the Lehigh Valley Planning Commission on October 25, 2012.

TABLE OF CONTENTS

Section One: Lehigh Valley Employment Analysis
 and Forecast 1
 Past and Present Trends..... 1
 How We Forecast Future Employment 4
 Future Population, Labor Participation and
 Employment..... 7
 Lehigh Valley Industry Sector Details 21
 Section Two: Lehigh Valley Occupational
 Forecast and Analysis..... 34
 Glossary 38

TABLES

1 Total Full Time and Part Time Employment
 by Industry from 2001 to 2010 - Lehigh Valley 2
 2 Comparison of Job Gain/Loss by Industry
 Lehigh Valley and the United States
 2001-2010 5
 3 Employment Projections by Sector for the
 Lehigh Valley - 2010-2040 11
 4 Employment Projections by Sector for the
 United States 2010-2040 12
 5 Comparison of Employment Diversity by
 Industry - Lehigh Valley and the United States
 2010 14
 6 Employment Projections by Sector for
 Lehigh County - 2010-2040 16
 7 Employment Projections by Sector for
 Northampton County - 2010-2040 17
 8 Change in Number of Jobs by Regional
 Geography - 2010-2040..... 19
 9 Percent Change in Jobs by Sector by
 Geography - 2010-2040..... 20
 10.01 - 10.23 Change in the Number of Jobs by
 Industry Segment 2010-2040 - Lehigh
 and Northampton Counties..... 21-33
 11 Top Ten Occupations by Change in Jobs
 Lehigh and Northampton Counties -
 2010-2040 35
 12 Job Gain/Loss by Occupation - Various
 Geographies - 2010-2040..... 36

GRAPHS

1 Job Loss/Gain 2001-2010 - Lehigh Valley 3
 2 Model Linkages..... 6
 3 Population, Employment and Labor Force
 Projections - 2010-2040 - Lehigh Valley 8
 4 Job Loss/Gain - 2010-2040 Lehigh and
 Northampton Counties..... 10
 5 Change in the Percentage of Employment
 Diversity by Industry - 2010-2040
 Lehigh Valley..... 13

The preparation of this report has been financed in part through grant(s) from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the Metropolitan Planning Program, Section 104(f) of Title 23, U.S. Code. The contents of this report reflect the views of the authors who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the U.S. Department of Transportation, Federal Highway Administration (FHWA), Federal Transit Administration (FTA) or the Commonwealth of Pennsylvania at the time of publication. This report does not constitute a standard, specification or regulation.

SECTION ONE: LEHIGH VALLEY EMPLOYMENT ANALYSIS AND FORECAST

The Lehigh Valley Planning Commission (LVPC) has developed a set of long-term industry and occupational employment forecasts for Lehigh and Northampton counties through 2040. The employment forecasts developed through this process are an extrapolation of historical and more current demographic and economic trends into the future. The forecasts show what the Lehigh Valley economy may look like at some future time if present trends continue. The LVPC needs the employment forecasts to update the region's travel demand model which uses population and employment data to calculate the expected demand for transportation facilities. We also will use the employment forecasts in the upcoming jobs/housing balance studies and other planning projects.

These forecasts are not goal or policy driven. Future forecasts may be altered by policy changes or initiatives which alter current and future business practices and employment trends. They are based on previous data, trends, and knowledge that are available at the time of forecast. Because the economy is constantly changing, they are unlikely to be exactly right. Instead, employment forecasts should be seen as the most likely employment growth out of many possible outcomes, given the knowledge and information available at the time of forecast. Forecasts on total employment and some larger, more stable, industries are likely to be more reliable detailed forecasts at the occupation level which may be subject to greater error but provide general insight into which occupations are expected to grow in the future.

In the Lehigh Valley, the long-term trend of employment growth will continue to occur in the service-providing industries. Service-providing industries in the Lehigh Valley are expected to add jobs between 2010 and 2040 while jobs in the goods-producing industries are expected to decline. The employment decline in goods-producing industries is the result of continuing declines in manufacturing.

PAST AND PRESENT TRENDS

Table 1 and Graph 1 show job growth and decline in Lehigh Valley industry sectors. Note that the tables go back to 2001 and not 2000. The North American Industry Classification System (NAICS) replaced the existing Standard Industrial Classification (SIC) system in the United States in 2000. NAICS consolidated some industries and separated out others.

The SIC coding system grouped companies and businesses by their primary type of activity. If a company's primary focus was making furniture, every activity in that company was given the SIC code for manufacturing. The NAICS coding system groups companies and businesses according to similar production process or activity. NAICS separates out the various functions within the same furniture company, giving management of the company its own NAICS code and the actual manufacturing of furniture a separate NAICS code.

The time from 2001-2010 was marked by a stagnant job market in the Lehigh Valley and the nation. The period began and ended with recessions (March-November 2001 and December 2007-June 2009 respectively), the latter of which was longer and more damaging than the former. The Lehigh Valley experienced an overall 7.7% increase in jobs between 2001 and 2010, but the loss of

TABLE 1
Total Full Time and Part Time Employment by Industry from 2001 to 2010
Lehigh Valley

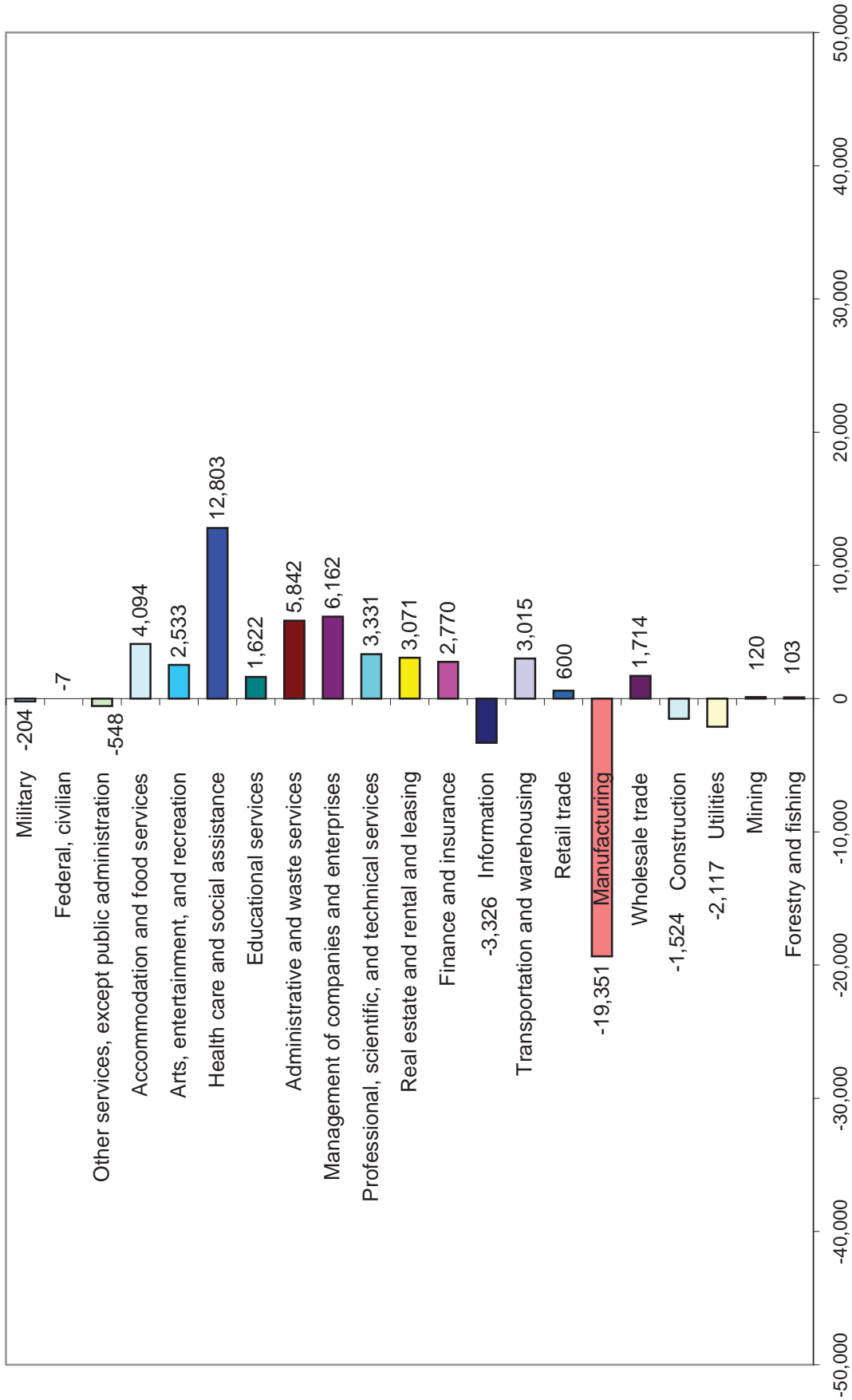
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	% Change	# Jobs/Time
Total employment	323,171	321,982	324,382	331,131	339,213	347,482	352,914	354,551	345,703	348,118	7.7%	24,947
Wage and salary employment	278,923	276,167	277,293	281,763	287,023	293,202	296,427	295,732	286,196	287,749	3.2%	8,826
Proprietors employment	44,247	45,209	46,867	48,787	51,064	55,631	55,408	58,819	59,507	59,768	35.1%	15,521
Farm proprietors employment	1,110	1,092	1,066	1,066	1,074	1,070	1,062	869	865	866	-22.0%	-244
Nonfarm proprietors employment	43,137	44,117	45,801	47,721	49,990	54,561	54,346	57,950	58,642	58,902	36.5%	15,765
Farm employment	1,579	1,461	1,383	1,381	1,375	1,387	1,366	1,176	1,163	1,199	-24.1%	-380
Nonfarm employment	321,591	320,418	322,980	329,808	337,954	346,271	351,709	353,375	344,540	346,318	7.7%	24,727
Private employment	290,504	288,723	290,392	296,808	304,593	312,574	317,447	318,390	309,277	310,855	7.0%	20,351
Forestry, fishing, related activities, and other	456	459	443	371	418	491	583	590	564	559	22.6%	103
Mining	422	380	439	520	520	547	517	535	522	542	28.4%	120
Utilities	3,051	3,290	1,665	1,825	1,121	1,010	982	970	951	934	-69.4%	-2,117
Construction	17,662	17,507	18,084	19,412	20,560	20,432	20,218	19,325	17,075	16,138	-8.6%	-1,524
Manufacturing	47,580	43,163	36,058	33,540	33,186	32,780	32,079	31,556	28,940	28,229	-40.7%	-19,351
Wholesale trade	11,381	11,242	11,194	11,670	12,509	13,216	13,603	13,781	13,215	13,095	15.1%	1,714
Retail trade	37,255	38,088	39,035	38,865	39,562	39,708	39,748	39,074	37,997	37,855	1.6%	600
Transportation and warehousing	11,041	11,256	11,708	11,547	12,766	14,319	14,790	14,426	13,912	14,057	27.3%	3,016
Information	8,470	7,243	7,281	7,145	7,112	6,924	7,011	7,067	6,560	5,144	-39.3%	-3,326
Finance and insurance	15,436	15,288	15,354	15,390	15,766	16,200	16,572	17,252	17,936	18,207	18.0%	2,771
Real estate and rental and leasing	9,708	10,398	10,234	10,682	11,911	12,286	12,448	13,234	12,885	12,779	31.6%	3,071
Professional, scientific, and technical services	14,081	14,649	14,683	16,653	16,480	17,127	17,714	17,933	17,556	17,412	23.7%	3,331
Management of companies and enterprises	3,601	3,151	4,912	4,917	10,459	10,077	10,379	10,105	9,703	9,763	171.1%	6,162
Administrative and waste services	18,740	18,307	18,262	20,288	20,843	22,281	23,468	22,502	21,055	24,582	31.2%	5,842
Educational services	10,050	9,821	9,731	9,907	10,218	10,568	11,392	11,053	11,303	11,672	16.1%	1,622
Health care and social assistance	38,828	39,934	41,523	43,192	44,275	46,433	48,130	49,701	50,398	51,631	33.0%	12,803
Arts, entertainment, and recreation	5,893	6,301	6,481	6,737	6,957	7,172	7,159	7,319	7,920	8,426	43.0%	2,533
Accommodation and food services	17,945	19,048	19,901	20,647	21,012	21,626	21,969	22,603	21,987	22,039	22.8%	4,094
Other services, except public administration	18,905	19,535	19,391	19,563	19,402	20,375	19,995	19,373	18,829	18,357	-2.9%	-548
Government and government enterprises	31,087	31,695	32,542	32,949	33,316	33,668	34,228	34,985	35,263	35,498	14.2%	4,411
Federal, civilian	2,253	2,216	2,246	2,161	2,190	2,146	2,190	2,150	2,087	2,246	-0.3%	-7
Military	1,933	1,953	2,032	1,893	1,875	1,915	1,806	1,751	1,719	1,729	-10.6%	-204
State and local	26,901	27,526	28,264	28,895	29,251	29,607	30,232	31,084	31,457	31,523	17.2%	4,622
State government	2,377	2,441	2,502	2,608	2,593	2,570	2,561	2,601	2,681	2,642	11.1%	265
Local government	24,524	25,085	25,754	26,270	26,701	27,077	27,724	28,483	28,776	28,881	17.8%	4,357

Source: Regional Economic Information System; Bureau of Economic Analysis; U.S. Department of Commerce, Table CA25N.

Notes: Some employment in the utilities sector was reclassified to management of companies and enterprises with the 2002 NAICS update and explains the significant employment decline in utilities and significant increase in management of companies and enterprises employment in 2003.

Local government employment includes employees of public school districts.

GRAPH 1
Job Loss/Gain
2001-2010
Lehigh Valley



Source: Bureau of Economic Analysis; U.S. Department of Commerce, Table CA25N, Lehigh Valley Planning Commission

6,428 jobs or 1.8% decrease between 2008 to 2010 offset years of strong job growth in the middle of the decade. Manufacturing, construction and the information industries experienced sizeable declines in jobs during the time period between 2001-2010.

According to Table 2 the Lehigh Valley job growth of 7.7% outpaced the national job growth of 4.6%. This is substantially less than the job growth experienced during the 1990s when the Lehigh Valley and the nation posted double digit percentages in job growth. Table 2 also shows which Lehigh Valley industries did better and worse the last decade in job loss and gain compared to the rest of the nation. The Lehigh Valley lost more manufacturing jobs than the nation as a whole, but has several industries such as arts, healthcare and management of companies that added more jobs than the nation. This may suggest the Lehigh Valley has a niche in those industries. Service industries such as health care, arts and recreation and warehousing saw sizeable increases in the number of jobs which support the continued transition from the 20th century goods based Lehigh Valley economy to a 21st century service-oriented economy.

HOW WE FORECAST FUTURE EMPLOYMENT

The Lehigh Valley Planning Commission used an econometric model to forecast future employment in Lehigh and Northampton counties.

The REMI PI+ Model, published by Regional Economic Models, Inc. is a large econometric model of the Lehigh Valley region that has been built with data that is specific to Lehigh and Northampton counties and includes national but not state data. Models of this type have been used in every state in the nation. The database consists of data obtained from reliable sources such as the United States Department of Commerce, and Bureaus of Labor Statistics and Census. The primary national, state, and county data source for REMI PI+ is the Bureau of Economic Analysis (BEA) State Personal Income (SPI) and Local Area Personal Income (REIS) series (which also include employment and total population). Industries covered in the model reflect the 2007 North American Industrial Classification System (NAICS). The model forecasts the number of jobs, full-time plus part-time, by place of work. Employees, sole proprietors, and active partners are included, but unpaid family workers and volunteers are not included. The REMI PI+ model is reasonably transparent in its structure and data. Its equations in general are well documented, and the LVPC has the ability to focus on specific components of the model, such as industries and occupations, as we do in this report.

The REMI model is a structural model, meaning that it clearly includes cause-and-effect relationships. In the model, businesses produce goods to sell to other firms, consumers, investors, governments, and purchasers outside the region. The output is produced using labor, capital, fuel, and intermediate inputs. The demand for labor, capital, and fuel per unit of output depends on their relative costs. The supply of labor in the model depends on the number of people in the population and the proportion of those people who participate in the labor force. Economic migration affects the population size. More people will move into an area if the real after-tax wage rates or the likelihood of being employed increases in a region. Every input and component of the local economy is connected to one another, as shown in Graph 2. There is cause and effect from changing one or more inputs.

The REMI PI+ Model has a two year history lag. The current REMI PI+ Model's last year of history is 2010. However, adjustments were made to the demographic module of the REMI PI+

TABLE 2
Comparison of Job Gain/Loss by Industry
Lehigh Valley and the United States
2001-2010

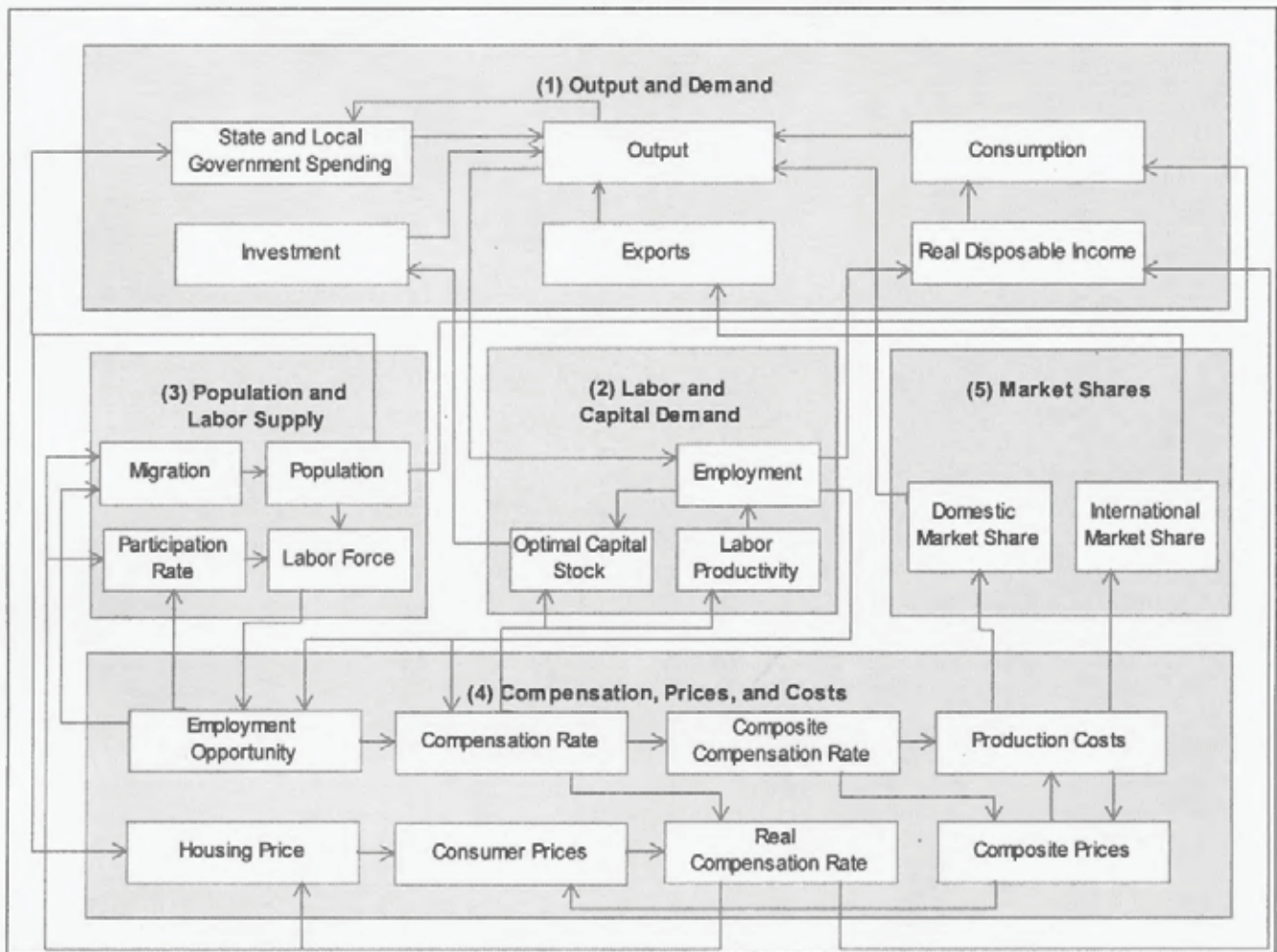
Industry	Lehigh Valley			United States		
	2001	2010	% Change	2001	2010	% Change
Forestry, Fishing, Related Activities, and Other	456	559	22.6%	801,499	827,518	3.2%
Mining	422	542	28.4%	806,400	943,522	17.0%
Utilities	3,051	934	-69.4%	6,15,800	548,682	-10.9%
Construction	17,662	16,138	-8.6%	9,817,700	9,083,442	-7.5%
Manufacturing	47,580	28,229	-40.7%	16,913,600	12,470,843	-26.3%
Wholesale Trade	11,381	13,095	15.1%	6,231,400	6,060,263	-2.7%
Retail Trade	37,255	37,855	1.6%	18,256,801	17,637,039	-3.4%
Transportation and Warehousing	11,041	14,057	27.3%	5,478,000	5,705,062	4.1%
Information	8,470	5,144	-39.3%	4,047,800	3,075,461	-24.0%
Finance and Insurance	15,436	18,207	18.0%	7,805,600	8,533,034	9.3%
Real Estate and Rental and Leasing	9,708	12,779	31.6%	5,547,401	8,135,089	46.6%
Professional and Technical Services	14,081	17,412	23.7%	10,272,800	12,226,777	19.0%
Management of Companies and Enterprises	3,601	9,763	171.1%	1,786,300	1,888,482	5.7%
Administrative and Waste Services	18,740	24,582	31.2%	9,604,500	10,650,283	10.9%
Educational Services	10,050	11,672	16.1%	3,019,300	4,041,522	33.9%
Health Care and Social Assistance	38,828	51,631	33.0%	15,247,400	18,361,332	20.4%
Arts, Entertainment, and Recreation	5,893	8,426	43.0%	3,165,100	3,754,200	18.6%
Accommodation and Food Services	17,945	22,039	22.8%	10,807,200	12,172,432	12.6%
Other Services, except Public Administration	18,905	18,357	-2.9%	9,074,600	10,172,530	12.1%
State and Local Government	26,901	31,523	17.2%	18,351,000	19,179,244	4.5%
Federal Civilian	2,253	2,246	-0.3%	2,729,000	2,965,646	8.7%
Federal Military	1,933	1,729	-10.6%	2,071,000	2,213,384	6.9%
Farm	1,579	1,199	-24.1%	3,060,000	2,518,079	-17.7%
	323,171	348,118	7.7%	165,510,201	173,163,866	4.6%

1990	2000
138,330,906	165,370,797
	27,039,891

1990	2000
286,922	323,171
	36,249

Source: Lehigh Valley Planning Commission, REMI Pi+ Model, June 2012

**GRAPH 2
Model Linkages**



Source: *Regional Economic Models, Inc.*

Model to further increase accuracy and precision by calibrating it to the updated LVPC population forecasts, released in July 2012.

The REMI PI+ Model can quantify the response of the regional economy to specific shocks and also detail how these impacts are distributed over time. For this employment forecast, no “shocks” to the regional economy were assumed to occur during the forecast period. This means that the LVPC did not assume events such as recessions or natural disasters or major companies moving into or out of the Lehigh Valley would occur. While the LVPC is aware that unexpected shocks to the economy and movements in the business cycle will have an impact on the Lehigh Valley economy, there is no objective way to predict such unexpected events. However, the LVPC will continue to update and revise its long-term regional economic forecasts as more data become available and as significant events occur that may impact the long term future.

The reader should be aware that forecasting future demographic and economic trends is a difficult task. The REMI PI+ Model has been used in the Lehigh Valley to forecast employment through 2040. The LVPC uses this forecasting capability because we believe it provides valuable insight

into what industries will emerge in the local economy and this knowledge can help guide local decision making.

FUTURE POPULATION, LABOR PARTICIPATION AND EMPLOYMENT

The 2007 recession has changed employment in the Lehigh Valley. Shifting demographics and technology will change it even more. The jobs with the fastest growth over the next decade are largely the jobs that will relate to the needs of elderly baby boomers, namely health care and those to meet the continuing rise in population, such as construction.

Population

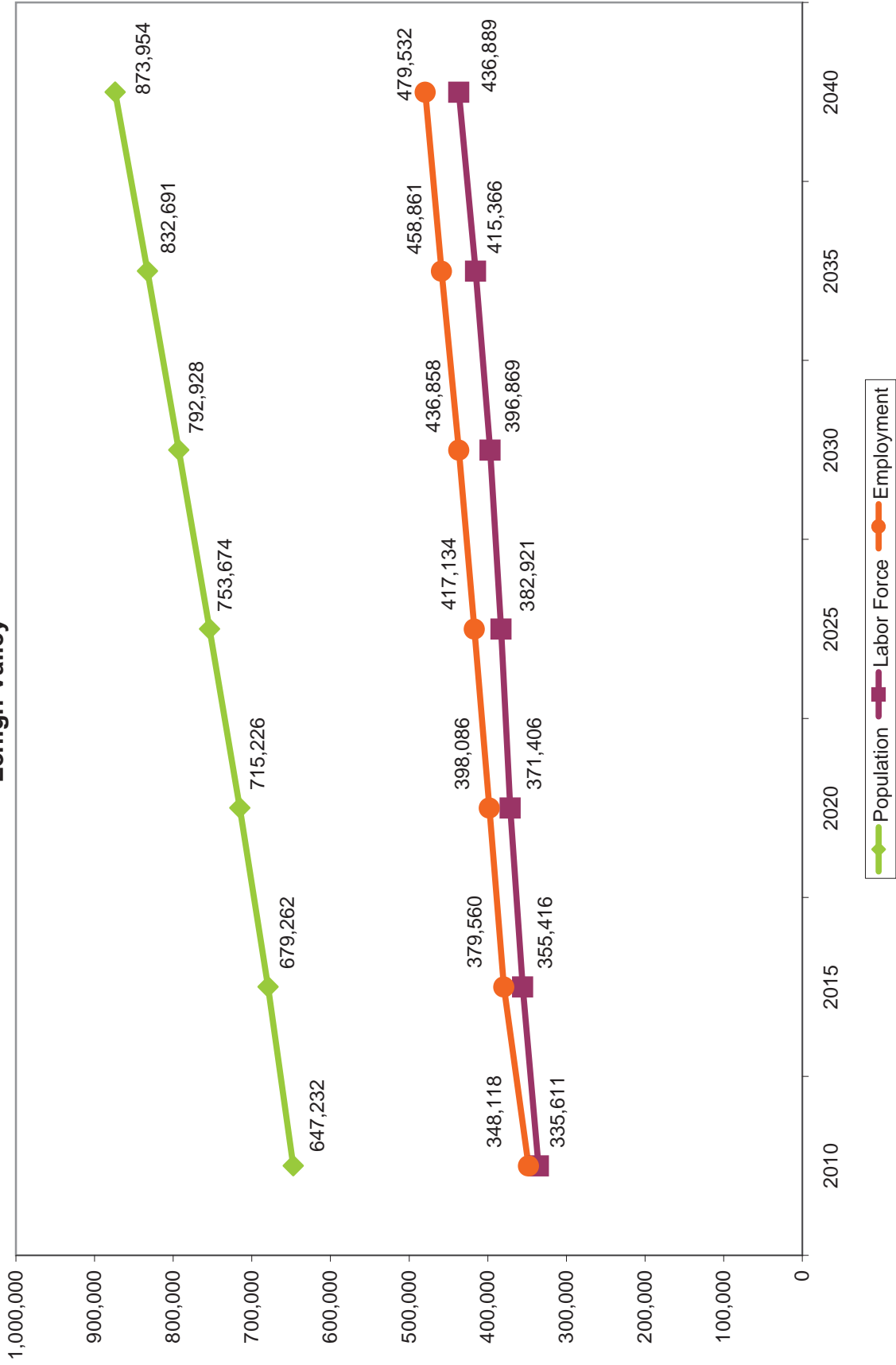
Jobs result from the relationship that exists among the population, the labor force, and the demand for goods and services. The population restricts the size of the labor force, which consists of working individuals and those looking for work. The population of the Lehigh Valley is expected to grow significantly between now and 2040. The size and productivity of the labor force limits the quantity of goods and services that can be produced. Changes in the demand for goods and services influence which industries expand or contract. Industries respond by hiring the workers necessary to produce goods and provide services.

According to the July 2012 report *Population Forecasts for Lehigh and Northampton Counties: 2010-2040* published by the LVPC, the Lehigh Valley population will increase by 226,722 people from 2010 to 2040. This is an increase of 35% over three decades. This projected increase in population represents faster growth than experienced over the previous three decades (1980-2010) which was 30%. Lehigh County's population will increase by 120,478 people from 2010 to 2040, 11.5% per decade. In comparison, the population grew at a rate of 9.4% per decade over the previous 30 years. Northampton County's population will increase by 106,244 people from 2010 to 2040, 11.9% per decade. In comparison, the population grew at a rate of 10.7% per decade over the previous 30 years.

Labor Force

The REMI model also forecasts future labor force. The civilian labor force includes all people over 16 who are working or actively seeking work. An expanding labor force is necessary to supply businesses with a pool of workers. The labor force forecast is based on the forecast of the future size and composition of the Lehigh Valley population. Compared with the labor force of the past decades, today's regional labor force is older, more racially and ethnically diverse, and composed of more women. These trends are expected to continue to shape the future of the workforce. The Lehigh Valley labor force will increase 30.2% from 335,611 people in 2010 to 436,889 people in 2040. However, labor force growth per decade will be lower than previous decades due to changing demographics. Labor force growth between 2000-2010 was 14.9%. The labor force growth between 2010-2020 is forecast to be 10.7%; 2020-2030, 6.9%; 2030-2040, 10.1%. In the future, businesses in the region may have to rely on increasing numbers of commuters coming into the Lehigh Valley to work from surrounding areas.

GRAPH 3
Population, Employment and Labor Force Projections
2010-2040
Lehigh Valley



Source: Lehigh Valley Planning Commission, REMI Pi+ Model, June 2012

Lehigh Valley Employment Growth

Graph 4 and Table 3 show probable job growth and decline in Lehigh Valley industry sectors out to the year 2040. Overall employment will grow 37.7% in the time period, adding 131,410 jobs to the local economy. The majority of industries in the Lehigh Valley will see gains in employment. The health care and social assistance sector is projected to gain the most jobs (38,817), followed by professional and business services (14,834), and construction (13,866).

Recessions impact industries differently. The 2007-2009 recession substantially affected the construction industry, whereas health care was largely untouched by it. Rapid growth rates for some sectors like construction reflect projected recovery from the recession whereas growth rates for industries like health care show continued growth and expansion due to other factors, particularly changing demographics.

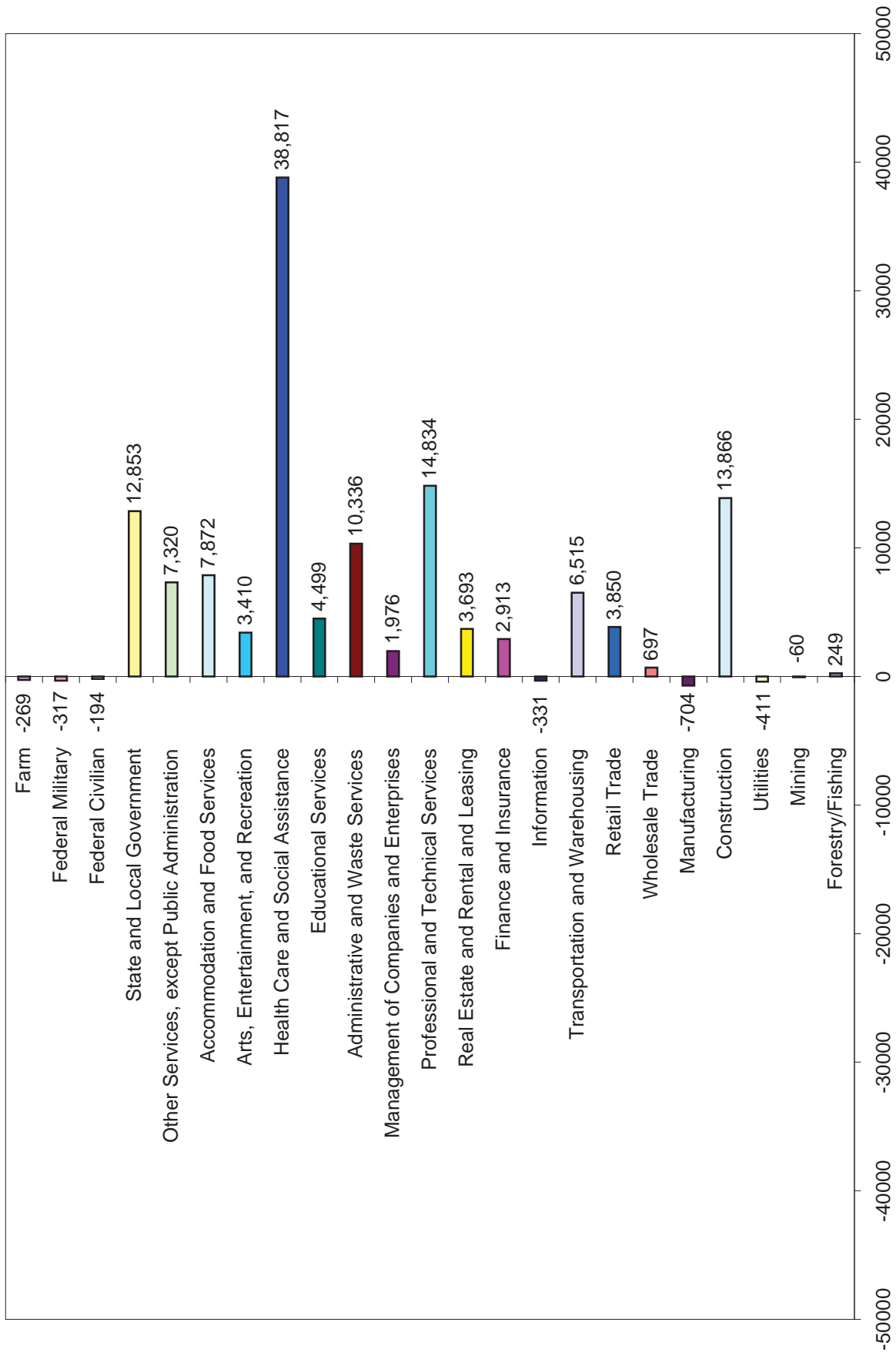
Overall employment in the Lehigh Valley in 2020 will be 14.4% higher than employment in 2010. The 2007-09 recession represented a sharp downturn in the economy and the economy, especially the labor market, has been slow to recover. The 2010 base year began from a relatively low point and if keeping with past trends, the rebound out of a recessionary period will be with significant addition of jobs to the local economy. The 2010-2020 decade will see better job growth than the decade of 1990-2000 and 2000-2010, with robust job growth to 2020.

Employment growth in the Lehigh Valley will outpace employment growth nationally (Table 4) in future years. This suggests that the Lehigh Valley will remain an economically competitive region due to a variety of factors ranging from proximity to major markets, robust population growth, a growing labor force, and lower costs of production and labor in comparison to other markets.

Employment in the Lehigh Valley will exhibit diversity. Diversity is the level of distribution of economic activity across a range of sectors. Within this framework, an ideally diversified economy would have equal levels of activity across industries. The greater the concentration of activity in a few industries, the less diversified, or more specialized, the economy. Generally, higher levels of diversity promote both economic stability and overall levels of economic activity. The Lehigh Valley economy of the past was less of a diversified service economy and more of a goods-production one with cement, steel and apparel manufacturing employing thousands of people. The regional service economy of today is a diverse group of economic activities not directly associated with the manufacture of goods, mining or agriculture. Today's growing service industries typically involve the provision of human value added in the form of labor, advice, managerial skill, entertainment, teaching, selling, health care, etc. This is in marked contrast with manufactured products, a tangible item that can be stored, distributed widely and consumed without direct interaction with the business that produced the good. Graph 5 shows that the Lehigh Valley economy both in the present and in the future shows this employment diversity.

Table 5 shows a comparison of the employment diversity between the Lehigh Valley and the United States in 2010. Generally the diversity of jobs at the local level will closely mirror the diversity at the national level. However there are areas of the local economy that will outpace the national economy. For example, the health care industry contributed 14.8% of local jobs in 2010 while nationally, health care jobs only made up 10.6% of jobs.

GRAPH 4
Job Loss/Gain - 2010-2040
Lehigh and Northampton Counties



Source: Lehigh Valley Planning Commission, REMI Pi+ Model, June 2012

TABLE 3
Employment Projections by Sector for the Lehigh Valley
2010-2040

	2010	%	2015	%	2020	%	2025	%	2030	%	2035	%	2040	%	% Change/Time	Change in Jobs/Time
Lehigh Valley																
Forestry, Fishing, Related Activities, and Other	559	0.2%	585	0.2%	609	0.2%	665	0.2%	717	0.2%	765	0.2%	808	0.2%	44.5%	249
Mining	542	0.2%	531	0.1%	492	0.1%	468	0.1%	471	0.1%	479	0.1%	482	0.1%	-11.1%	-60
Utilities	934	0.3%	877	0.2%	778	0.2%	691	0.2%	624	0.1%	573	0.1%	523	0.1%	-44.0%	-411
Construction	16,138	4.6%	21,833	5.8%	24,000	6.0%	26,327	6.3%	28,147	6.4%	29,211	6.4%	30,004	6.3%	85.9%	13,866
Manufacturing	28,229	8.1%	28,989	7.6%	28,257	7.1%	27,582	6.6%	27,429	6.3%	27,524	6.0%	27,525	5.7%	-2.5%	-704
Wholesale Trade	13,095	3.8%	13,472	3.5%	13,336	3.4%	13,512	3.2%	13,660	3.1%	13,805	3.0%	13,792	2.9%	5.3%	697
Retail Trade	37,855	10.9%	38,137	10.0%	37,774	9.5%	38,808	9.3%	39,675	9.1%	40,895	8.9%	41,705	8.7%	10.2%	3,850
Transportation and Warehousing	14,057	4.0%	15,306	4.0%	15,815	4.0%	16,674	4.0%	17,778	4.1%	19,136	4.2%	20,572	4.3%	46.3%	6,515
Information	5,144	1.5%	5,326	1.4%	5,612	1.4%	5,490	1.3%	5,280	1.2%	5,067	1.1%	4,813	1.0%	-6.4%	-331
Finance and Insurance	18,207	5.2%	19,009	5.0%	19,463	4.9%	19,991	4.8%	20,391	4.7%	20,822	4.5%	21,120	4.4%	16.0%	2,913
Real Estate and Rental and Leasing	12,779	3.7%	14,195	3.7%	14,777	3.7%	15,221	3.6%	15,622	3.6%	16,053	3.5%	16,472	3.4%	28.9%	3,693
Professional and Technical Services	17,412	5.0%	21,184	5.6%	23,594	5.9%	25,241	6.1%	27,256	6.2%	29,648	6.5%	32,246	6.7%	85.2%	14,834
Management of Companies and Enterprises	9,763	2.8%	10,193	2.7%	10,202	2.6%	10,542	2.5%	10,976	2.5%	11,413	2.5%	11,739	2.4%	20.2%	1,976
Administrative and Waste Services	24,582	7.1%	26,907	7.1%	28,314	7.1%	29,802	7.1%	31,425	7.2%	33,241	7.2%	34,918	7.3%	42.0%	10,336
Educational Services	11,672	3.4%	13,576	3.6%	14,605	3.7%	14,957	3.6%	15,300	3.5%	15,777	3.4%	16,171	3.4%	38.5%	4,499
Health Care and Social Assistance	51,631	14.8%	58,650	15.5%	65,687	16.5%	71,672	17.2%	77,535	17.7%	84,038	18.3%	90,448	18.9%	75.2%	38,817
Arts, Entertainment, and Recreation	8,426	2.4%	9,128	2.4%	9,393	2.4%	9,831	2.4%	10,382	2.4%	11,082	2.4%	11,836	2.5%	40.5%	3,410
Accommodation and Food Services	22,039	6.3%	23,403	6.2%	23,686	5.9%	25,023	6.0%	26,475	6.1%	28,191	6.1%	29,911	6.2%	35.7%	7,872
Other Services, except Public Administration	18,357	5.3%	20,311	5.4%	21,393	5.4%	22,412	5.4%	23,450	5.4%	24,590	5.4%	25,677	5.4%	39.9%	7,320
State and Local Government	31,523	9.1%	32,865	8.7%	35,257	8.9%	37,387	9.0%	39,601	9.1%	42,027	9.2%	44,376	9.3%	40.8%	12,853
Federal Civilian	2,246	0.6%	2,210	0.6%	2,153	0.5%	2,114	0.5%	2,084	0.5%	2,069	0.5%	2,052	0.4%	-8.6%	-194
Federal Military	1,729	0.5%	1,720	0.5%	1,793	0.5%	1,694	0.4%	1,596	0.4%	1,502	0.3%	1,412	0.3%	-18.3%	-317
Farm	1,199	0.3%	1,153	0.3%	1,096	0.3%	1,030	0.2%	984	0.2%	953	0.2%	930	0.2%	-22.4%	-269
348,118			379,560		398,086		417,134		436,858		458,861		479,532		37.7%	131,414
			14.4% Job Growth				9.7% Job Growth				9.8% Job Growth					
			49,968 jobs				38,772 jobs				42,674 jobs					

Historical Comparison of Employment Growth			
	1990	2000	2010
	286,922	321,676	348,118
		12.1%	8.2%
		34,754	26,442

Source: Lehigh Valley Planning Commission, REMI Plus Model, June 2012

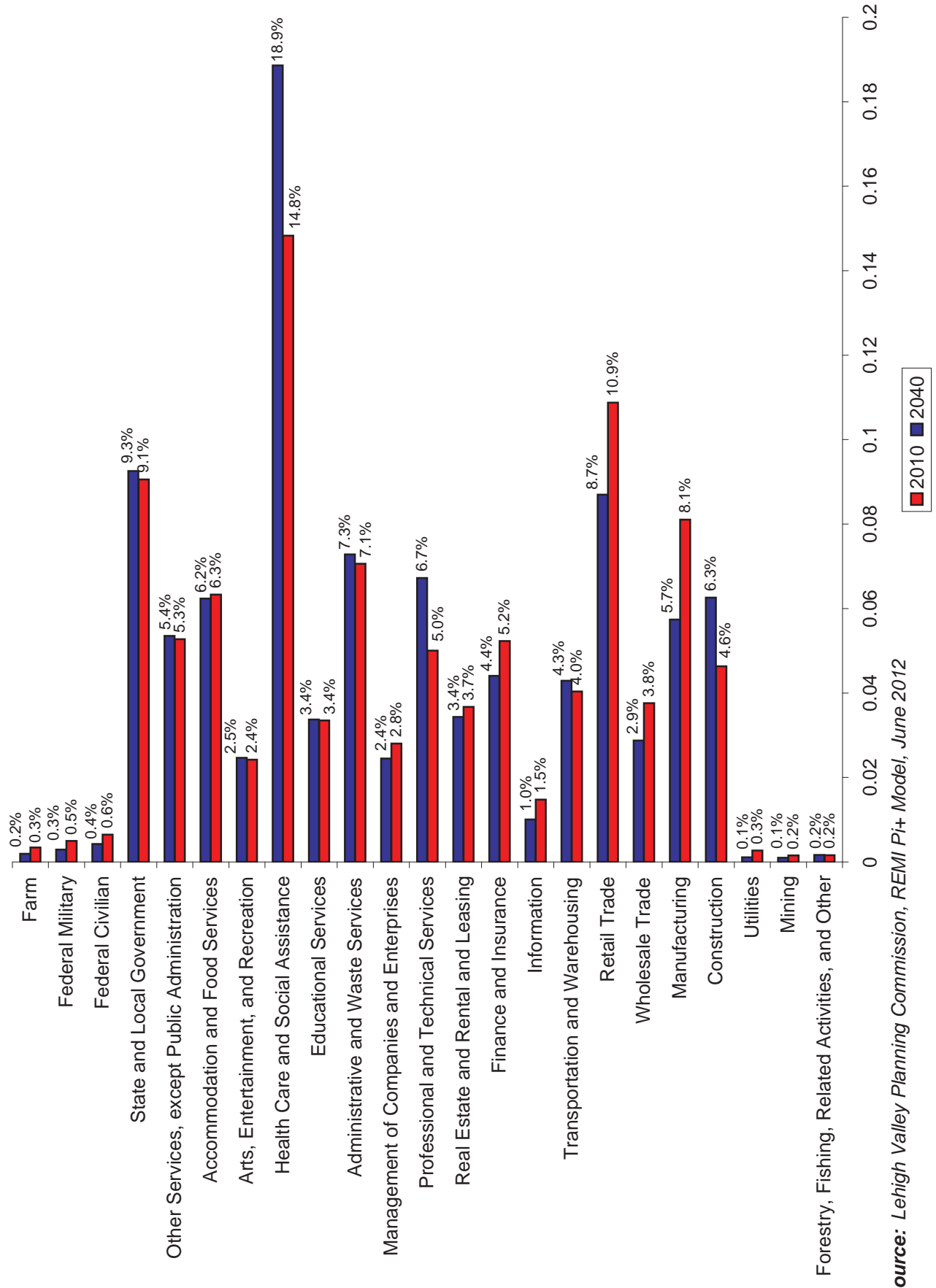
**TABLE 4
Employment Projections by Sector for the United States
2010-2040**

United States	2010	%	2015	%	2020	%	2025	%	2030	%	2035	%	2040	%	% Change/Time	Change in Jobs/Time
Forestry, Fishing, Related Activities, and Other	827,518	0.6%	882,946	0.6%	913,649	0.5%	972,334	0.5%	1,033,394	0.5%	1,093,050	0.5%	1,160,536	0.5%	40.2%	333,018
Mining	943,522	0.7%	918,496	0.7%	854,074	0.4%	753,199	0.4%	740,380	0.3%	751,542	0.3%	762,624	0.3%	-19.2%	-180,898
Utilities	548,682	0.4%	534,095	0.4%	492,192	0.2%	448,230	0.2%	414,953	0.2%	390,320	0.2%	368,596	0.2%	-32.8%	-180,086
Construction	9,083,442	6.9%	12,129,555	8.7%	13,326,439	6.7%	14,273,954	6.9%	15,042,368	7.0%	15,531,103	6.9%	15,957,864	6.8%	75.7%	6,874,422
Manufacturing	12,470,843	9.5%	12,520,909	9.0%	12,163,848	6.1%	11,809,276	5.7%	11,668,225	5.4%	11,639,593	5.2%	11,601,493	5.0%	-7.0%	-869,350
Wholesale Trade	6,060,263	4.6%	6,274,467	4.5%	6,273,422	3.2%	6,332,638	3.1%	6,382,703	3.0%	6,445,796	2.9%	6,450,721	2.8%	6.4%	390,458
Retail Trade	17,637,039	13.5%	18,068,107	13.0%	18,067,316	9.1%	18,402,490	8.9%	18,711,143	8.7%	19,267,988	8.6%	19,700,975	8.4%	11.7%	2,063,936
Transportation and Warehousing	5,705,062	4.4%	6,248,815	4.5%	6,477,132	3.3%	6,818,857	3.3%	7,243,551	3.4%	7,761,869	3.5%	8,312,342	3.6%	45.7%	2,607,280
Information	3,075,461	2.3%	3,234,680	2.3%	3,438,844	1.7%	3,351,618	1.6%	3,235,932	1.5%	3,152,112	1.4%	3,051,888	1.3%	-0.8%	-23,573
Finance and Insurance	8,533,034	6.5%	9,057,459	6.5%	9,418,262	4.7%	9,684,829	4.7%	9,851,559	4.6%	9,996,526	4.5%	10,038,527	4.3%	17.6%	1,505,493
Real Estate and Rental and Leasing	8,135,089	6.2%	9,119,783	6.6%	9,534,410	4.8%	9,760,762	4.7%	10,006,751	4.7%	10,312,753	4.6%	10,588,773	4.5%	30.2%	2,453,684
Professional and Technical Services	12,226,777	9.3%	14,638,225	10.5%	16,273,881	8.2%	17,252,756	8.4%	18,399,293	8.6%	19,723,719	8.8%	21,071,240	9.0%	72.3%	8,844,463
Management of Companies and Enterprises	1,888,482	1.4%	1,988,173	1.4%	1,964,157	1.0%	2,023,505	1.0%	2,107,680	1.0%	2,197,602	1.0%	2,270,144	1.0%	20.2%	381,662
Administrative and Waste Services	10,650,283	8.1%	11,757,938	8.5%	12,469,629	6.3%	13,083,861	6.3%	13,768,075	6.4%	14,548,312	6.5%	15,279,032	6.6%	43.5%	4,628,749
Educational Services	4,041,522	3.1%	4,703,836	3.4%	5,067,285	2.5%	5,192,778	2.5%	5,313,382	2.5%	5,464,797	2.4%	5,588,844	2.4%	38.3%	1,547,322
Health Care and Social Assistance	18,361,332	14.0%	21,190,525	15.2%	23,959,607	12.1%	26,046,309	12.8%	28,139,531	13.1%	30,483,514	13.6%	32,881,734	14.1%	79.1%	14,520,402
Arts, Entertainment, and Recreation	3,754,200	2.9%	4,024,733	2.9%	4,142,605	2.1%	4,318,434	2.1%	4,549,613	2.1%	4,856,440	2.2%	5,185,524	2.2%	38.1%	1,431,324
Accommodation and Food Services	12,172,432	9.3%	12,944,277	9.3%	13,132,905	6.6%	13,764,412	6.7%	14,461,373	6.7%	15,313,593	6.8%	16,161,979	6.9%	32.8%	3,889,547
Other Services, except Public Administration	10,172,530	7.8%	11,234,314	8.1%	11,807,595	5.9%	12,233,037	5.9%	12,688,266	5.9%	13,296,461	5.9%	13,901,352	6.0%	36.7%	3,728,822
State and Local Government	19,179,244	14.6%	19,987,799	14.4%	21,510,902	10.8%	22,642,154	11.0%	23,819,781	11.1%	25,136,750	11.2%	26,419,154	11.3%	37.7%	7,239,910
Federal Civilian	2,965,646	2.3%	2,917,977	2.1%	2,841,944	1.4%	2,790,368	1.4%	2,751,606	1.3%	2,731,726	1.2%	2,709,683	1.2%	-8.6%	-255,963
Federal Military	2,213,384	1.7%	2,201,157	1.6%	2,295,762	1.2%	2,169,185	1.1%	2,042,691	1.0%	1,922,245	0.9%	1,807,576	0.8%	-18.3%	-405,808
Farm	2,518,079	1.9%	2,420,909	1.7%	2,300,401	1.2%	2,164,170	1.0%	2,065,560	1.0%	2,002,104	0.9%	1,953,467	0.8%	-22.4%	-564,612
	173,163,866		188,969,175		198,726,261		206,289,156		214,447,810		224,018,915		233,224,068		34.7%	60,060,202
		14.8% Job Growth		25,562,395 jobs				7.9% Job Growth						8.8% Job Growth		
																18,776,258 jobs

Historical Comparison of Employment Growth			
	1990	2000	2010
	138,330,906	165,370,797	173,163,891
		27,039,891	7,793,094
		19.5%	4.7%

Source: Lehigh Valley Planning Commission, REMI Plus Model, June 2012

GRAPH 5
Change in the Percentage of Employment Diversity by Industry - 2010-2040
Lehigh Valley



Source: Lehigh Valley Planning Commission, REMI Pi+ Model, June 2012

TABLE 5
Comparison of Employment Diversity by Industry
Lehigh Valley and the United States
2010

Lehigh Valley	2010	% of employment market	United States	2010	% of employment market
Forestry, Fishing, Related Activities, and Other	559	0.2%	827,518		0.5%
Mining	542	0.2%	943,522		0.5%
Utilities	934	0.3%	548,682		0.3%
Construction	16,138	4.6%	9,083,442		5.2%
Manufacturing	28,229	8.1%	12,470,843		7.2%
Wholesale Trade	13,095	3.8%	6,060,263		3.5%
Retail Trade	37,855	10.9%	17,637,039		10.2%
Transportation and Warehousing	14,057	4.0%	5,705,062		3.3%
Information	5,144	1.5%	3,075,461		1.8%
Finance and Insurance	18,207	5.2%	8,533,034		4.9%
Real Estate and Rental and Leasing	12,779	3.7%	8,135,089		4.7%
Professional and Technical Services	17,412	5.0%	12,226,777		7.1%
Management of Companies and Enterprises	9,763	2.8%	1,888,482		1.1%
Administrative and Waste Services	24,582	7.1%	10,650,283		6.2%
Educational Services	11,672	3.4%	4,041,522		2.3%
Health Care and Social Assistance	51,631	14.8%	18,361,332		10.6%
Arts, Entertainment, and Recreation	8,426	2.4%	3,754,200		2.2%
Accommodation and Food Services	22,039	6.3%	12,172,432		7.0%
Other Services, except Public Administration	18,357	5.3%	10,172,530		5.9%
State and Local Government	31,523	9.1%	19,179,244		11.1%
Federal Civilian	2,246	0.6%	2,965,646		1.7%
Federal Military	1,729	0.5%	2,213,384		1.3%
Farm	1,199	0.3%	2,518,079		1.5%
	348,118	100.0%	173,163,866		100.0%

Source: Lehigh Valley Planning Commission, REMI Pi+ Model, June 2012

Note the low diversity percentages for goods producing industries. Goods include the following: agriculture, mining, construction and manufacturing. Economic modeling suggests the local economy will be similar to the national economy, with the continued focus on employment in the service industries. The service-providing industries are comprised of transportation and warehousing, wholesale trade, retail trade, information, finance and insurance, real estate and rental and leasing, professional, scientific and technical services, management of companies and enterprises, administrative and support and waste management and remediation services, educational services, health care and social assistance, arts, entertainment and recreation, services, and government.

While manufacturing is on the list with 704 jobs lost, the majority of the manufacturing jobs in the Lehigh Valley left decades ago due to competition overseas or increased usage of technology. The model suggests that while state and local government employment will gain jobs over the next 30 years in response to growing population, local jobs in the federal government will shrink due to budgetary and fiscal concerns. Following the hiring trends of the last two decades, federal employment reductions are done without layoffs. When workers quit or retire, the government hires fewer replacements. Relative to the farming sector, increased use of technology and machines requires fewer employees to operate farms and harvest crops.

Employment Growth by County

Tables 6 and 7 show the industry sectors in each county. Note that each county has its own strengths and weaknesses when it comes to job gains and losses in industry sectors. Each county experienced job growth in different decades, with Northampton County seeing considerable job growth in the 2000s and Lehigh County's job growth occurring in the 1990s.

In Lehigh County, the 2010-2020 decade will experience a 14.2% increase in jobs which is better than the growth experienced between 2000 and 2010 but lower than the growth experienced during the 1990s when Lehigh County had a 15.9% increase in jobs. Table 6 shows job growth will decline in coming decades but will remain higher than 2000-2010 levels.

In Northampton County, the trend in job growth will differ from Lehigh County. The 2010-2020 decade will see a 9.4% increase in jobs which will be less than the growth experienced between 2000-2010 but higher than the growth experienced in the 1990s. Also, Northampton County will experience a relatively stable pattern of job growth between decades with no significant decreases as forecasted for Lehigh County. Northampton County will see employment growth in the same industries as Lehigh County, i.e.: health care, professional and technical services, local government and construction

The total number of new jobs in Lehigh County (84,264) will be 44% higher than the number of new jobs than Northampton County (47,150) largely because in 2010, it employs significantly more people in the health care and retail sectors and Lehigh County population will increase by more people over the forecast period. The reasons for the significant growth in health care employment are well documented: an aging baby boom population, increasing life expectancies combined with continuing advances in health care technology. Lehigh County will have more population due to more births than in Northampton County. From 2010 to 2040, there are projected to be 154,284 births in Lehigh County and only 117,153 deaths leading to a population growth of 37,131 persons. In the same period in Northampton County there are projected to be only 105,871 births and

**TABLE 6
Employment Projections by Sector for Lehigh County
2010-2040**

Lehigh County	2010	%	2015	%	2020	%	2025	%	2030	%	2035	%	2040	%	% Change/Time	Change in Jobs/Time
Forestry, Fishing, Related Activities, and Other	457	0.2%	478	0.2%	497	0.2%	543	0.2%	586	0.2%	625	0.2%	660	0.2%	44.4%	203
Mining	349	0.2%	333	0.1%	300	0.1%	267	0.1%	262	0.1%	266	0.1%	268	0.1%	-23.2%	-81
Utilities	531	0.2%	503	0.2%	450	0.2%	404	0.2%	368	0.1%	340	0.1%	313	0.1%	-41.1%	-218
Construction	9,333	4.3%	12,463	5.2%	13,691	5.5%	15,053	5.7%	16,116	5.9%	16,732	5.8%	17,186	5.7%	84.1%	7,853
Manufacturing	15,667	7.2%	15,940	6.7%	15,460	6.2%	15,174	5.8%	15,117	5.5%	15,162	5.2%	15,124	5.0%	-3.5%	-543
Wholesale Trade	9,450	4.3%	9,721	4.1%	9,612	3.9%	9,752	3.7%	9,866	3.6%	9,969	3.4%	9,954	3.3%	5.3%	504
Retail Trade	23,308	10.7%	23,416	9.8%	23,172	9.3%	23,848	9.1%	24,395	8.9%	25,119	8.7%	25,575	8.4%	9.7%	2,267
Transportation and Warehousing	8,415	3.9%	9,207	3.9%	9,537	3.8%	10,035	3.8%	10,670	3.9%	11,448	4.0%	12,265	4.1%	45.8%	3,850
Information	3,397	1.6%	3,392	1.4%	3,479	1.4%	3,364	1.3%	3,221	1.2%	3,088	1.1%	2,936	1.0%	-13.6%	-461
Finance and Insurance	11,257	5.2%	11,781	5.0%	12,093	4.8%	12,431	4.7%	12,680	4.6%	12,942	4.5%	13,117	4.3%	16.5%	1,860
Real Estate and Rental and Leasing	7,821	3.6%	8,696	3.7%	9,070	3.6%	9,365	3.6%	9,627	3.5%	9,899	3.4%	10,150	3.4%	29.8%	2,329
Professional and Technical Services	10,944	5.0%	13,371	5.6%	14,880	6.0%	15,945	6.1%	17,276	6.3%	18,863	6.5%	20,593	6.8%	86.2%	9,649
Management of Companies and Enterprises	8,445	3.9%	8,826	3.7%	8,839	3.5%	9,137	3.5%	9,513	3.5%	9,890	3.4%	10,168	3.4%	20.4%	1,723
Administrative and Waste Services	16,772	7.7%	18,371	7.7%	19,358	7.8%	20,473	7.8%	21,687	7.9%	23,031	8.0%	24,270	8.0%	44.7%	7,498
Educational Services	4,925	2.3%	5,727	2.4%	6,156	2.5%	6,303	2.4%	6,445	2.3%	6,641	2.3%	6,807	2.2%	36.2%	1,882
Health Care and Social Assistance	38,410	17.6%	43,473	18.3%	48,591	19.5%	52,904	20.2%	57,113	20.8%	61,756	21.3%	66,340	21.9%	72.7%	27,930
Arts, Entertainment, and Recreation	5,039	2.3%	5,454	2.3%	5,609	2.2%	5,864	2.2%	6,184	2.2%	6,590	2.3%	7,025	2.3%	39.4%	1,986
Accommodation and Food Services	13,313	6.1%	14,154	6.0%	14,329	5.7%	15,164	5.8%	16,069	5.8%	17,119	5.9%	18,158	6.0%	36.4%	4,845
Other Services, except Public Administration	10,646	4.9%	11,702	4.9%	12,329	4.9%	12,949	4.9%	13,579	4.9%	14,272	4.9%	14,931	4.9%	40.2%	4,285
State and Local Government	17,363	7.9%	18,127	7.6%	19,460	7.8%	20,691	7.9%	21,966	8.0%	23,350	8.1%	24,682	8.2%	42.2%	7,319
Federal Civilian	1,039	0.5%	1,022	0.4%	986	0.4%	978	0.4%	964	0.4%	957	0.3%	949	0.3%	-8.7%	-90
Federal Military	950	0.4%	945	0.4%	985	0.4%	931	0.4%	877	0.3%	825	0.3%	776	0.3%	-16.3%	-174
Farm	676	0.3%	650	0.3%	618	0.2%	581	0.2%	555	0.2%	537	0.2%	524	0.2%	-22.5%	-152
	218,507		237,752		249,511		262,156		275,136		289,421		302,771		38.6%	84,264
	14.2% Job Growth			10.3% Job Growth			10% Job Growth									
	31,044 jobs			25,625 jobs			27,635 jobs									

Historical Comparison			
1990	2000	2010	2020
179,696	208,260	208,260	218,507
		28,564	10,247
		15.9%	4.9%

Source: Lehigh Valley Planning Commission, REMI Pt+ Model, June 2012

TABLE 7
Employment Projections by Sector for Northampton County
2010-2040

Northampton County	2010	%	2015	%	2020	%	2025	%	2030	%	2035	%	2040	%	% Change/Time	Change in Jobs/Time		
Forestry, Fishing, Related Activities, and Other	102	0.1%	107	0.1%	112	0.1%	122	0.1%	131	0.1%	140	0.1%	148	0.1%	45.1%	46		
Mining	193	0.1%	198	0.1%	192	0.1%	201	0.1%	209	0.1%	213	0.1%	214	0.1%	10.9%	21		
Utilities	403	0.3%	374	0.3%	328	0.2%	287	0.2%	256	0.2%	233	0.1%	210	0.1%	-47.9%	-193		
Construction	6,805	5.3%	9,370	6.6%	10,309	6.9%	11,274	7.3%	12,031	7.4%	12,479	7.4%	12,818	7.3%	88.4%	6,013		
Manufacturing	12,562	9.7%	13,049	9.2%	12,797	8.6%	12,408	8.0%	12,312	7.6%	12,362	7.3%	12,401	7.0%	-1.3%	-161		
Wholesale Trade	3,645	2.8%	3,751	2.6%	3,724	2.5%	3,760	2.4%	3,794	2.3%	3,836	2.3%	3,838	2.2%	5.3%	193		
Retail Trade	14,547	11.2%	14,721	10.4%	14,602	9.8%	14,960	9.7%	15,280	9.4%	15,776	9.3%	16,130	9.1%	10.9%	1,583		
Transportation and Warehousing	5,642	4.4%	6,099	4.3%	6,278	4.2%	6,639	4.3%	7,108	4.4%	7,688	4.5%	8,307	4.7%	47.2%	2,665		
Information	1,747	1.3%	1,934	1.4%	2,133	1.4%	2,126	1.4%	2,059	1.3%	1,979	1.2%	1,877	1.1%	7.4%	130		
Finance and Insurance	6,950	5.4%	7,228	5.1%	7,370	5.0%	7,560	4.9%	7,711	4.8%	7,880	4.7%	8,003	4.5%	15.2%	1,053		
Real Estate and Rental and Leasing	4,958	3.8%	5,499	3.9%	5,707	3.8%	5,856	3.8%	5,995	3.7%	6,154	3.6%	6,322	3.6%	27.5%	1,364		
Professional and Technical Services	6,468	5.0%	7,813	5.5%	8,714	5.9%	9,296	6.0%	9,980	6.2%	10,785	6.4%	11,653	6.6%	80.2%	5,185		
Management of Companies and Enterprises	1,318	1.0%	1,367	1.0%	1,363	0.9%	1,406	0.9%	1,463	0.9%	1,523	0.9%	1,571	0.9%	19.2%	253		
Administrative and Waste Services	7,811	6.0%	8,535	6.0%	8,956	6.0%	9,329	6.0%	9,738	6.0%	10,210	6.0%	10,648	6.0%	36.3%	2,837		
Educational Services	6,747	5.2%	7,849	5.5%	8,449	5.7%	8,654	5.6%	8,855	5.5%	9,136	5.4%	9,364	5.3%	38.8%	2,617		
Health Care and Social Assistance	13,220	10.2%	15,178	10.7%	17,096	11.5%	18,767	12.1%	20,422	12.6%	22,282	13.2%	24,108	13.6%	82.4%	10,888		
Arts, Entertainment, and Recreation	3,387	2.6%	3,674	2.6%	3,784	2.5%	3,967	2.6%	4,198	2.6%	4,492	2.7%	4,811	2.7%	42.0%	1,424		
Accommodation and Food Services	8,726	6.7%	9,249	6.5%	9,357	6.3%	9,859	6.4%	10,406	6.4%	11,072	6.5%	11,753	6.6%	34.7%	3,027		
Other Services, except Public Administration	7,711	5.9%	8,609	6.1%	9,064	6.1%	9,463	6.1%	9,871	6.1%	10,318	6.1%	10,746	6.1%	39.4%	3,035		
State and Local Government	14,160	10.9%	14,738	10.4%	15,797	10.6%	16,696	10.8%	17,635	10.9%	18,677	11.0%	19,694	11.1%	39.1%	5,534		
Federal Civilian	1,207	0.9%	1,188	0.8%	1,157	0.8%	1,136	0.7%	1,120	0.7%	1,112	0.7%	1,103	0.6%	-8.6%	-104		
Federal Military	779	0.6%	775	0.5%	808	0.5%	763	0.5%	719	0.4%	677	0.4%	636	0.4%	-18.4%	-143		
Farm	523	0.4%	503	0.4%	478	0.3%	449	0.3%	429	0.3%	416	0.2%	406	0.2%	-22.4%	-117		
	129,611		141,808		148,575		154,978		161,722		169,440		176,761		36.4%	47,150		
	9.4% Job Growth			9.9% Job Growth			10.4% Job Growth			10.9% Job Growth			11.4% Job Growth			11.9% Job Growth		
	18,964 jobs			20,000 jobs			21,147 jobs			22,396 jobs			23,749 jobs			25,206 jobs		
	8.9% Job Growth			9.4% Job Growth			9.9% Job Growth			10.4% Job Growth			10.9% Job Growth			11.4% Job Growth		
	13,147 jobs			14,314 jobs			15,581 jobs			16,948 jobs			18,415 jobs			19,982 jobs		
	9.3% Job Growth			9.8% Job Growth			10.3% Job Growth			10.8% Job Growth			11.3% Job Growth			11.8% Job Growth		
	15,039 jobs			16,376 jobs			17,813 jobs			19,350 jobs			20,987 jobs			22,724 jobs		

Historical Comparison			
1990	2000	2010	2019
107,226	113,412	129,611	161,199
	5.8%	6.1%	14.3%

Source: Lehigh Valley Planning Commission, REMI P+ Model, June 2012

109,666 deaths leading to a population decrease of 3,795 persons. However, since migration into Northampton County is greater than migration into Lehigh County, the difference in net growth is not as large. Lehigh County's net growth is projected to be 119,935 compared to Northampton County's 106,238; a difference of 13,697.

Table 8 shows the change in the number of jobs by sector by county. Both counties gain thousands of jobs in various sectors but the health care sector will see the most robust growth.

Table 9 shows the comparison of the percentage change in job growth between 2010 and 2040 between counties, the Lehigh Valley and the United States. Generally, the Lehigh Valley economy will follow the trends of the national economy. However, in 11 of the 23 sectors, the percentage growth in the Lehigh Valley will be higher between now and 2040 than the United States. The rate of decline for manufacturing jobs in the Lehigh Valley (-2.5%) will be lower than the rate nationally (-7%).

**TABLE 8
Change in Number of Jobs by Regional Geography
2010-2040**

Lehigh Valley		Lehigh County		Northampton County	
Health Care and Social Assistance	38,817	Health Care and Social Assistance	27,930	Health Care and Social Assistance	10,888
Professional and Technical Services	14,834	Professional and Technical Services	9,649	Construction	6,013
Construction	13,866	Construction	7,853	State and Local Government	5,534
State and Local Government	12,853	Administrative and Waste Services	7,498	Professional and Technical Services	5,185
Administrative and Waste Services	10,336	State and Local Government	7,319	Other Services, except Public Administration	3,035
Accommodation and Food Services	7,872	Accommodation and Food Services	4,845	Accommodation and Food Services	3,027
Other Services, except Public Administration	7,320	Other Services, except Public Administration	4,285	Administrative and Waste Services	2,837
Transportation and Warehousing	6,515	Transportation and Warehousing	3,850	Transportation and Warehousing	2,665
Educational Services	4,499	Real Estate and Rental and Leasing	2,329	Educational Services	2,617
Retail Trade	3,850	Retail Trade	2,267	Retail Trade	1,583
Real Estate and Rental and Leasing	3,693	Arts, Entertainment, and Recreation	1,986	Arts, Entertainment, and Recreation	1,424
Arts, Entertainment, and Recreation	3,410	Educational Services	1,882	Real Estate and Rental and Leasing	1,364
Finance and Insurance	2,913	Finance and Insurance	1,860	Finance and Insurance	1,053
Management of Companies and Enterprises	1,976	Management of Companies and Enterprises	1,723	Management of Companies and Enterprises	253
Wholesale Trade	697	Wholesale Trade	504	Wholesale Trade	193
Forestry/Fishing	249	Forestry/Fishing	203	Information	130
Mining	-60	Mining	-81	Forestry/Fishing	46
Federal Civilian	-194	Federal Civilian	-90	Mining	21
Farm	-269	Farm	-152	Federal Civilian	-104
Federal Military	-317	Federal Military	-174	Farm	-117
Information	-331	Utilities	-218	Federal Military	-143
Utilities	-411	Information	-461	Manufacturing	-161
Manufacturing	-704	Manufacturing	-543	Utilities	-193
Total Job Change	131,414	Total Job Change	84,264	Total Job Change	47,150

Source: Lehigh Valley Planning Commission, REMI Plus Model, June 2012

TABLE 9
Percent Change in Jobs by Sector by Geography
2010-2040

	Lehigh County	Northampton County	Lehigh Valley	United States
Forestry, Fishing, Related Activities, and Other	44.2%	45.1%	44.5%	40.2%
Mining	-23.5%	10.9%	-11.3%	-19.2%
Utilities	-41.1%	-47.9%	-44.0%	-32.8%
Construction	84.1%	88.4%	85.9%	75.7%
Manufacturing	-3.5%	-1.3%	-2.5%	-7.0%
Wholesale Trade	5.3%	5.3%	5.3%	6.4%
Retail Trade	9.7%	10.9%	10.2%	11.7%
Transportation and Warehousing	45.7%	47.3%	46.3%	45.7%
Information	-13.5%	7.4%	-6.4%	-0.8%
Finance and Insurance	16.5%	15.2%	16.0%	17.6%
Real Estate and Rental and Leasing	29.8%	27.5%	28.9%	30.2%
Professional and Technical Services	88.2%	80.2%	85.2%	72.3%
Management of Companies and Enterprises	20.4%	19.2%	20.2%	20.2%
Administrative and Waste Services	44.7%	36.3%	42.0%	43.5%
Educational Services	38.2%	38.8%	38.5%	38.3%
Health Care and Social Assistance	72.7%	82.3%	75.2%	79.1%
Arts, Entertainment, and Recreation	39.4%	42.1%	40.5%	38.1%
Accommodation and Food Services	36.4%	34.7%	35.7%	32.8%
Other Services, except Public Administration	40.2%	39.4%	39.9%	36.7%
State and Local Government	42.2%	39.1%	40.8%	37.7%
Federal Civilian	-8.7%	-8.6%	-8.6%	-8.6%
Federal Military	-18.3%	-18.4%	-18.3%	-18.3%
Farm	-22.5%	-22.4%	-22.4%	-22.4%

Source: Lehigh Valley Planning Commission, REMI Pi+ Model, June 2012

LEHIGH VALLEY INDUSTRY SECTOR DETAILS

Listed below are the summaries for the 70 industry segments of the Lehigh Valley shown on Table 10.1 through 10.23. Analyzing industries by segment provides even greater detail in which specific segments of the Lehigh Valley economy will gain and lose jobs between 2010 and 2040. Historical data by industry is provided from 2001-2010 to illustrate whether trends of job loss or gain will continue over time.

Forestry, Fishing, Related Activities, and Other

The Agriculture, Forestry, Fishing and Hunting sector is comprised of establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats. The establishments in this sector are often described as farms, ranches, dairies, greenhouses, nurseries, orchards, or hatcheries.

TABLE 10.01

LEHIGH VALLEY - Historical				
	2001	2010	# Change	% Change
Forestry	456	559	103	22.6%
Forestry and logging; Fishing, hunting, and trapping	269	31	-238	-88.5%
Agriculture and forestry support activities; Other	187	528	341	182.4%
LEHIGH VALLEY - Forecast				
	2010	2040	# Change	% Change
Forestry	559	808	249	44.5%
Forestry and logging; Fishing, hunting, and trapping	31	39	8	25.8%
Agriculture and forestry support activities; Other	528	769	241	45.6%

Mining

The Mining sector is comprised of establishments that extract naturally occurring mineral solids, such as coal and ores; liquid minerals, such as crude petroleum; and gases, such as natural gas. The term mining is used in the broad sense to include quarrying, well operations, beneficiating (e.g., crushing, screening, washing, and flotation), and other preparation customarily performed at the mine site, or as a part of mining activity. The Lehigh Valley has an existing concentration of gravel and quarrying operations. Demand will increase for nonmetallic minerals such as granite and gravel and other materials used in residential and nonresidential construction as construction activity increases during the forecast period.

TABLE 10.02

LEHIGH VALLEY - Historical				
	2001	2010	# Change	% Change
Mining	422	542	120	28.4%
Oil and gas extraction	144	154	10	6.9%
Mining (except oil and gas)	278	364	86	30.9%
Support activities for mining	0	24	24	0.0%
LEHIGH VALLEY - Forecast				
	2010	2040	# Change	% Change
Mining	542	482	-60	-11.1%
Oil and gas extraction	154	36	-118	-76.6%
Mining (except oil and gas)	364	409	45	12.4%
Support activities for mining	24	37	13	54.2%

Utilities

The Utilities sector is comprised of establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal. Within this sector, the specific activities associated with the utility services provided vary by utility: electric power includes generation, transmission, and distribution; natural gas includes distribution; steam supply includes provision and/or distribution; water supply includes treatment and distribution; and sewage removal includes collection, treatment, and disposal of waste through sewer systems and sewage treatment facilities.

Please note that this sector does not include the employees involved in the management of utility companies as those employees are allocated in the management of companies and enterprises industry sector. The utility sector includes only the employees involved in the production or provision of a utility such as power line repair and installation, meter readers, and mechanics and technicians that maintain the specific utility, regardless of power source (electricity or gas) or function (water, sewer or energy production).

According to the Bureau of Labor Statistics, increased competition, conservation, improved equipment and appliances, technological advancements and more efficient power plants will require fewer employees in this industry in the future.

TABLE 10.03

<i>LEHIGH VALLEY - Historical</i>				
	2001	2010	# Change	% Change
Utilities	3,051	934	-2,117	-69.4%
<i>LEHIGH VALLEY - Forecast</i>				
	2010	2040	# Change	% Change
Utilities	934	523	-411	-44.0%

Construction

The Construction sector is comprised of establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems). Establishments primarily engaged in the preparation of sites for new construction and establishments primarily engaged in subdividing land for sale as building sites also are included in this sector. The expansive growth of construction trade jobs is forecast in part due to the rise in population. It should be noted that while there is expansive growth in this sector it does not immediately reveal future housing bubbles that the Lehigh Valley has experienced in the mid 2000s as shown in Table 1 when the local economy added and then sharply decreased the number of construction jobs. A housing bubble would be readily identified examining the diversity of jobs in Table 5, looking at the percentage of share the construction sector had of all jobs. The model suggests the market share will fluctuate between 4.6-6.3% of all jobs in the local economy which is in line with BEA data that states in a “normal” economy, construction jobs nationally account for 5.7% of all jobs in the economy. The model suggests that the growth and number of construction jobs will outpace national estimates but is not forecasting any emerging housing bubbles.

TABLE 10.04

<i>LEHIGH VALLEY - Historical</i>				
	2001	2010	# Change	% Change
Construction	17,662	16,139	-1,523	-8.6%
<i>LEHIGH VALLEY - Forecast</i>				
	2010	2040	# Change	% Change
Construction	16,138	30,004	13,866	85.9%

Manufacturing

The Manufacturing sector is comprised of establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. Establishments in the manufacturing sector are often described as plants, factories, or mills and characteristically use power-driven machines and materials-handling equipment. However, establishments that

TABLE 10.05

<i>LEHIGH VALLEY - Historical</i>	2001	2010	# Change	% Change
Manufacturing	47,580	28,229	-19,351	-40.7%
Wood product manufacturing	872	421	-451	-51.7%
Nonmetallic mineral product manufacturing	2,033	1,917	-116	-5.7%
Primary metal manufacturing	1,909	1,279	-630	-33.0%
Fabricated metal product manufacturing	3,219	2,834	-385	-12.0%
Machinery manufacturing	2,731	2,224	-507	-18.6%
Computer and electronic product manufacturing	5,519	945	-4,574	-82.9%
Electrical equipment and appliance manufacturing	1,736	1,911	175	10.1%
Motor vehicles, bodies & trailers, and parts manufacturing	1,249	658	-591	-47.3%
Other transportation equipment manufacturing	1,001	722	-279	-27.9%
Furniture and related product manufacturing	983	791	-192	-19.5%
Miscellaneous manufacturing	4,473	3,257	-1,216	-27.2%
Food manufacturing	3,236	2,572	-664	-20.5%
Beverage and tobacco product manufacturing	1,315	1,594	279	21.2%
Textile mills	827	181	-646	-78.1%
Textile product mills	1,020	270	-750	-73.5%
Apparel manufacturing	2,819	1,384	-1,435	-50.9%
Leather and allied product manufacturing	0	0	0	0.0%
Paper manufacturing	890	710	-180	-20.2%
Printing and related support activities	2,094	1,181	-913	-43.6%
Petroleum and coal product manufacturing	220	85	-135	-61.4%
Chemical manufacturing	7,084	1,647	-5,437	-76.8%
Plastics and rubber product manufacturing	2,350	1,646	-704	-30.0%
<i>LEHIGH VALLEY - Forecast</i>	2010	2040	# Change	% Change
Manufacturing	28,229	27,524	-705	-2.5%
Wood product manufacturing	421	370	-51	-12.1%
Nonmetallic mineral product manufacturing	1,917	2,531	614	32.0%
Primary metal manufacturing	1,279	774	-505	-39.5%
Fabricated metal product manufacturing	2,834	2,926	92	3.2%
Machinery manufacturing	2,224	2,219	-5	-0.2%
Computer and electronic product manufacturing	945	825	-120	-12.7%
Electrical equipment and appliance manufacturing	1,911	1,997	86	4.5%
Motor vehicles, bodies & trailers, and parts manufacturing	658	348	-310	-47.1%
Other transportation equipment manufacturing	722	771	49	6.8%
Furniture and related product manufacturing	791	471	-320	-40.5%
Miscellaneous manufacturing	3,257	3,758	501	15.4%
Food manufacturing	2,572	2,429	-143	-5.6%
Beverage and tobacco product manufacturing	1,594	1,787	193	12.1%
Textile mills	181	85	-96	-53.0%
Textile product mills	270	263	-7	-2.6%
Apparel manufacturing	1,384	1,395	11	0.8%
Leather and allied product manufacturing	0	0	0	0.0%
Paper manufacturing	710	513	-197	-27.7%
Printing and related support activities	1,181	653	-528	-44.7%
Petroleum and coal product manufacturing	85	64	-21	-24.7%
Chemical manufacturing	1,647	1,667	20	1.2%
Plastics and rubber product manufacturing	1,646	1,678	32	1.9%

transform materials or substances into new products by hand or in the worker's home and those engaged in selling to the general public products made on the same premises from which they are sold, such as bakeries, candy stores, and custom tailors, may also be included in this sector. Manufacturing establishments may process materials or may contract with other establishments to process their materials for them. Both types of establishments are included in manufacturing.

The area has already shed a large number of jobs in primary metal, computer, motor vehicle manufacturing and printing and this is a trend that is likely to continue due to foreign competition and technological advancements that require less people locally to manufacture products. This sector will see big gains in nonmetallic mineral product and beverage and food manufacturing that will offset other losses.

An explanation for the small amount of job loss is that the majority of local manufacturing jobs left the area over the last forty years, with considerable losses in the last decade (Table 1), which follows a national trend. The United States lost 41 percent of its manufacturing jobs between June 1979 when manufacturing employment peaked, and December 2009 when it reached its recent low point. Nationally, between 2000 and 2010, manufacturing's share of total employment fell from 13.2 percent in January 2000 to 8.9 percent in December 2009.

Wholesale Trade

The Wholesale Trade sector is comprised of establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The merchandise described in this sector includes the outputs of agriculture, mining, manufacturing, and certain information industries, such as publishing. The wholesaling process is an intermediate step in the distribution of merchandise. Wholesalers are organized to sell or arrange the purchase or sale of (a) goods for resale (i.e., goods sold to other wholesalers or retailers), (b) capital or durable non-consumer goods, and (c) raw and intermediate materials and supplies used in production. Wholesalers sell merchandise to other businesses and normally operate from a warehouse or office. These warehouses and offices are characterized by having little or no display of merchandise. In addition, neither the design nor the location of the premises is intended to solicit walk-in traffic.

TABLE 10.06

<i>LEHIGH VALLEY - Historical</i>	2001	2010	# Change	% Change
Wholesale Trade	11,381	13,095	1,714	15.1%
<i>LEHIGH VALLEY - Forecast</i>	2010	2040	# Change	% Change
Wholesale Trade	13,095	13,792	697	5.3%

Retail Trade

The Retail Trade sector is comprised of establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The retailing process is the final step in the distribution of merchandise; retailers are, therefore, organized to sell merchandise in small quantities to the general public. This sector comprises two main types of retailers: store and non-store retailers.

Store retailers operate fixed point-of-sale locations, located and designed to attract a high volume of walk-in customers. In general, retail stores have extensive displays of merchandise and use mass-media advertising to attract customers. They typically sell merchandise to the general public for personal or household consumption, but some also serve business and institutional clients. In addition to retailing merchandise, some types of store retailers are also engaged in the provision of after-sales services, such as repair and installation.

Non-store retailers, like store retailers, are organized to serve the general public, but their retailing methods differ. The establishments of this subsector reach customers and market merchandise with methods such as the broadcasting of “infomercials,” the broadcasting and publishing of direct-response advertising, the publishing of paper and electronic catalogs, door-to-door solicitation, in-home demonstration, selling from portable stalls (street vendors, except food), and distribution through vending machines. This industry sees plenty of turnover with workers entering and leaving the industry, which means there will be a large number of job openings. This job growth combined with the large size of the occupation should result in employment opportunities.

TABLE 10.07

<i>LEHIGH VALLEY - Historical</i>		2001	2010	# Change	% Change
Retail Trade		37,255	37,855	600	1.6%
<i>LEHIGH VALLEY - Forecast</i>		2010	2040	# Change	% Change
Retail Trade		37,855	41,705	3,850	10.2%

Transportation and Warehousing

The Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. The type of equipment depends on the mode of transportation. The modes of transportation are air, rail,

TABLE 10.08

<i>LEHIGH VALLEY - Historical</i>		2001	2010	# Change	% Change
Transportation and Warehousing		11,042	14,057	3,015	27.3%
Air transportation		512	235	-277	-54.1%
Rail transportation		390	310	-80	-20.5%
Water transportation		7	0	-7	0.0%
Truck transportation; Couriers and messengers		4,651	5,777	1,126	24.2%
Transit and ground passenger transportation		1,805	2,007	202	11.2%
Pipeline transportation		155	161	6	3.9%
Scenic and sightseeing transportation; support activities		221	633	412	186.4%
Warehousing and storage		3,301	4,934	1,633	49.5%
<i>LEHIGH VALLEY - Forecast</i>		2010	2040	# Change	% Change
Transportation and Warehousing		14,057	20,573	6,516	46.4%
Air transportation		235	279	44	18.7%
Rail transportation		310	338	28	9.0%
Water transportation		0	0	0	0.0%
Truck transportation; Couriers and messengers		5,777	8,207	2,430	42.1%
Transit and ground passenger transportation		2,007	2,688	681	33.9%
Pipeline transportation		161	109	-52	-32.3%
Scenic and sightseeing transportation; support activities		633	1,181	548	86.6%
Warehousing and storage		4,934	7,771	2,837	57.5%

water, road, and pipeline. Truck transportation is the most widely used method of hauling freight within the United States and trucks transport nearly all components and finished goods during some point in the supply chain of a product. Further, the Lehigh Valley already has a sizeable transportation and warehousing industry sector employing thousands of people along Interstate 78, Route 33 and in the cities of Allentown and Bethlehem. The region is within a one-day truck drive of one-third of the U.S. market and one-half of the Canadian market. Norfolk Southern provides mainline railroad freight service in the country. A major classification yard is located in Allentown. Intermodal terminals in Salisbury Township and Bethlehem serve the Lehigh Valley area. Employment in trucking generally follows the larger business cycle. As orders for goods and shipments fluctuate, there will be accompanying gains and losses in the demand for freight services.

Information

The Information sector is comprised of establishments engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data. The main components of this sector are the publishing industries, including software publishing, and both traditional publishing and publishing exclusively on the Internet; the motion picture and sound recording industries; the broadcasting industries, including traditional broadcasting and those broadcasting exclusively over the Internet; the telecommunications industries; Web search portals, data processing industries, and the information services industries.

TABLE 10.09

<i>LEHIGH VALLEY - Historical</i>	2001	2010	# Change	% Change
Information	8,470	5,142	-3,328	-39.3%
Publishing industries, except Internet	2,837	1,610	-1,227	-43.2%
Motion picture, video, and sound recording industries	341	265	-76	-22.3%
Internet publishing and broadcasting	1,434	1,301	-133	-9.3%
Broadcasting, except Internet; Telecommunications	3,858	1,966	-1,892	-49.0%
<i>LEHIGH VALLEY - Forecast</i>	2010	2040	# Change	% Change
Information	5,142	4,814	-328	-6.4%
Publishing industries, except Internet	1,610	1,356	-254	-15.8%
Motion picture, video, and sound recording industries	265	347	82	30.9%
Internet publishing and broadcasting	1,301	1,635	334	25.7%
Broadcasting, except Internet; Telecommunications	1,966	1,476	-490	-24.9%

Finance and Insurance

The Finance and Insurance sector is comprised of establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions. Three principal types of activities are identified:

- Raising funds by taking deposits and/or issuing securities and, in the process, incurring liabilities. Establishments engaged in this activity use raised funds to acquire financial assets by making loans and/or purchasing securities. Putting themselves at risk, they channel funds from lenders to borrowers and transform or repackage the funds with respect to maturity, scale, and risk. This activity is known as financial intermediation.

- Pooling of risk by underwriting insurance and annuities. Establishments engaged in this activity collect fees, insurance premiums, or annuity considerations; build up reserves; invest those reserves; and make contractual payments. Fees are based on the expected incidence of the insured risk and the expected return on investment.
- Providing specialized services facilitating or supporting financial intermediation, insurance, and employee benefit programs. In addition, monetary authorities charged with monetary control are included in this sector. Demand in the industry will rise as the number of people reaching retirement age seek advice on retirement and health care options.

TABLE 10.10

<i>LEHIGH VALLEY - Historical</i>	2001	2010	# Change	% Change
Finance and Insurance	15,437	18,207	2,770	17.9%
Monetary authorities	3,862	4,798	936	24.2%
Securities, commodity contracts, investments	1,891	2,951	1,060	56.1%
Insurance carriers and related activities	9,684	10,458	774	8.0%
<i>LEHIGH VALLEY - Forecast</i>	2010	2040	# Change	% Change
Finance and Insurance	18,207	21,119	2,912	16.0%
Monetary authorities	4,798	5,162	364	7.6%
Securities, commodity contracts, investments	2,951	4,251	1,300	44.1%
Insurance carriers and related activities	10,458	11,706	1,248	11.9%

Real Estate and Rental and Leasing

The Real Estate and Rental and Leasing sector is comprised of establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services. The major portion of this sector is comprised of establishments that rent, lease, or otherwise allow the use of their own assets by others. The assets may be tangible, as is the case of real estate and equipment, or intangible, as is the case with patents and trademarks.

This sector also includes establishments primarily engaged in managing real estate for others, selling, renting and/or buying real estate for others, and appraising real estate.

TABLE 10.11

<i>LEHIGH VALLEY - Historical</i>	2001	2010	# Change	% Change
Real Estate	9,708	12,779	3,071	31.6%
Real estate	8,252	11,602	3,350	40.6%
Rental and leasing services	1,456	1,177	-279	-19.2%
<i>LEHIGH VALLEY - Forecast</i>	2010	2040	# Change	% Change
Real Estate	12,779	16,473	3,694	28.9%
Real estate	11,602	15,181	3,579	30.8%
Rental and leasing services	1,177	1,292	115	9.8%

Professional and Technical Services

The Professional, Scientific, and Technical Services sector is comprised of establishments that specialize in performing professional, scientific, and technical activities for others. These activities require a high degree of expertise and training. The establishments in this sector specialize

according to expertise and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: legal advice and representation; accounting, bookkeeping, and payroll services; architectural, engineering, and specialized design services; computer services; consulting services; research services; advertising services; photographic services; translation and interpretation services; veterinary services; and other professional, scientific, and technical services.

TABLE 10.12

LEHIGH VALLEY - Historical	2001	2010	# Change	% Change
Professional and Technical Services	14,081	17,412	3,331	23.7%
LEHIGH VALLEY - Forecast	2010	2040	# Change	% Change
Professional and Technical Services	17,412	32,246	14,834	85.2%

Management of Companies and Enterprises

The Management of Companies and Enterprises sector is comprised of (1) establishments that hold the securities of (or other equity interests in) companies and enterprises for the purpose of owning a controlling interest or influencing management decisions or (2) establishments (except government establishments) that administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decision making role of the company or enterprise. Establishments that administer, oversee, and manage may hold the securities of the company or enterprise.

TABLE 10.13

LEHIGH VALLEY - Historical	2001	2010	# Change	% Change
Management of Companies and Enterprises	3,601	9,763	6,162	171.1%
LEHIGH VALLEY - Forecast	2010	2040	# Change	% Change
Management of Companies and Enterprises	9,763	11,739	1,976	20.2%

Administrative and Waste Services

The Administrative and Support and Waste Management and Remediation Services sector is comprised of establishments performing routine support activities for the day-to-day operations of other organizations. These essential activities are often undertaken in-house by establishments in many sectors of the economy. The establishments in this sector specialize in one or more of these support activities and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services.

TABLE 10.14

LEHIGH VALLEY - Historical	2001	2010	# Change	% Change
Administrative and Waste Services	18,740	24,582	5,842	31.2%
Administrative and support services	17,772	23,603	5,831	32.8%
Waste management and remediation services	968	979	11	1.1%
LEHIGH VALLEY - Forecast	2010	2040	# Change	% Change
Administrative and Waste Services	24,582	34,919	10,337	42.1%
Administrative and support services	23,603	33,581	9,978	42.3%
Waste management and remediation services	979	1,338	359	36.7%

Educational Services

The Educational Services sector is comprised of establishments that provide instruction and training in a wide variety of subjects. This instruction and training is provided by specialized establishments, such as trade schools, colleges, universities, and training centers. These establishments may be privately owned and operated for profit or not for profit. They may also offer food and/or accommodation services to their students. Educational services are usually delivered by teachers or instructors. Instruction is imparted in diverse settings, such as educational institutions, the workplace, or the home, and through diverse means, such as correspondence, television, the Internet, or other electronic and distance-learning methods. This industry does not include employees of public school districts.

TABLE 10.15

<i>LEHIGH VALLEY - Historical</i>	2001	2010	# Change	% Change
Educational Services	10,050	11,672	1,622	16.1%
<i>LEHIGH VALLEY - Forecast</i>	2010	2040	# Change	% Change
Educational Services	11,672	16,171	4,499	38.5%

Health Care and Social Assistance

The Health Care and Social Assistance sector is comprised of establishments providing health care and social assistance for individuals. The sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. The industries in this sector are arranged on a continuum starting with those establishments providing medical care exclusively, continuing with those providing health care and social assistance, and finally finishing with those providing only social assistance.

Due to the aging of the region's population, advances in medical technologies and the extension of life expectancies, health care and social assistance employment will be in very strong demand. The Lehigh Valley's aging population will play a major role in shaping health care employment in coming decades. Health care use varies by age and gender, and as the Lehigh Valley's demographics begin to shift, the health care demands of the region's population will reflect those changes. Consider the following population forecasts:

- In 2010, 27.7% of the Lehigh Valley population was 55 or older. It is projected that in 2040, 32.5% of the regional population will be 55 or older.
- The number of people in the Lehigh Valley that are 55 or older will increase by 58.3% from 179,097 in 2010 to 283,648 in 2040.
- In 2010, 15.2% of the Lehigh Valley population was 65 or older. It is projected that in 2040, 21.7% of the regional population will be 65 or older.
- The number of people in the Lehigh Valley that are 65 or older will increase by 92.9% from 98,210 in 2010 to 189,444 in 2040.

- In 2010, 7.8% of the Lehigh Valley population was 75 or older. It is projected that in 2040, 12.0% of the regional population will be 75 or older. However, the number of people in the Lehigh Valley that are 75 or older will more than double, increasing by 107.6% from 50,439 in 2010 to 104,704 in 2040.

Ambulatory health care service includes offices of health practitioners, which can include offices of physicians, dentists, chiropractors, optometrists, etc., and is expected to be one of the industries with the largest employment gains in the health care industry. Technological advances, cost pressures, and the increased number of people 65 years and older seeking medical care will shift services from inpatient facilities to the offices of health practitioners.

The increasing population of elderly people seeking to maintain some level of independence and improvements in technology allowing younger patients shorter rehabilitation stays will drive growth in the nursing and residential care facilities industry.

Hospitals have a large employment base, however, so the growth in jobs remains significant. The shift of services from hospitals, which are more expensive, to lower cost outpatient or home health services will slow the growth rate in hospital employment relative to other health care services.

TABLE 10.16

<i>LEHIGH VALLEY - Historical</i>	2001	2010	# Change	% Change
Health Care and Social Assistance	38,828	51,631	12,803	33.0%
Ambulatory health care services	14,764	20,232	5,468	37.0%
Hospitals	11,441	14,621	3,180	27.8%
Nursing and residential care facilities	8,405	9,797	1,392	16.6%
Social assistance	4,218	6,981	2,763	65.5%
<i>LEHIGH VALLEY - Forecast</i>	2010	2040	# Change	% Change
Health Care and Social Assistance	51,631	90,448	38,817	75.2%
Ambulatory health care services	20,232	41,465	21,233	104.9%
Hospitals	14,621	19,817	5,196	35.5%
Nursing and residential care facilities	9,797	17,616	7,819	79.8%
Social assistance	6,981	11,550	4,569	65.4%

Arts, Entertainment and Recreation

The Arts, Entertainment, and Recreation sector includes a wide range of establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons. This sector is comprised of (1) establishments that are involved in producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; (2) establishments that preserve and exhibit objects and sites of historical, cultural, or educational interest; and (3) establishments that operate facilities or provide services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests. Dorney Park, the Lehigh Valley Iron Pigs and the Sands Casino/Resort already contribute jobs to this industry sector of the local economy. With the arena in Allentown currently under construction that will be home to a minor league hockey franchise and also serve as a performing arts facility, the regional economy will have at least four major employers in this industry sector in the future.

TABLE 10.17

<i>LEHIGH VALLEY - Historical</i>	2001	2010	# Change	% Change
Arts, Entertainment and Recreation	5,893	8,426	2,533	43.0%
Performing arts and spectator sports	2,076	3,805	1,729	83.3%
Museums, historical sites, zoos, and parks	320	459	139	43.4%
Amusement, gambling, and recreation	3,497	4,162	665	19.0%
<i>LEHIGH VALLEY - Forecast</i>	2010	2040	# Change	% Change
Arts, Entertainment and Recreation	8,426	11,837	3,411	40.5%
Performing arts and spectator sports	3,805	5,723	1,918	50.4%
Museums, historical sites, zoos, and parks	459	797	338	73.6%
Amusement, gambling, and recreation	4,162	5,317	1,155	27.8%

Accommodation and Food Services

The Accommodation and Food Services sector is comprised of establishments providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption. The sector includes both accommodation and food services establishments because the two activities are often combined at the same establishment. Job growth is expected to be concentrated in food services and drinking places, reflecting an increase in the population and the growing trend of income being spent on food away from the home, i.e. people dining out more often.

TABLE 10.18

<i>LEHIGH VALLEY - Historical</i>	2001	2010	# Change	% Change
Accommodation and Food Services	17,945	22,039	4,094	22.8%
Accommodation	1,222	1,688	466	38.1%
Food services and drinking places	16,723	20,351	3,628	21.7%
<i>LEHIGH VALLEY - Forecast</i>	2010	2040	# Change	% Change
Accommodation and Food Services	22,039	29,911	7,872	35.7%
Accommodation	1,688	1,953	265	15.7%
Food services and drinking places	20,351	27,958	7,607	37.4%

Other Services (except Public Administration)

The Other Services (except Public Administration) sector is comprised of establishments engaged in providing services not specifically provided for elsewhere in the classification system. Establishments in this sector are primarily engaged in activities such as equipment and machinery repairing, promoting or administering religious activities, providing dry cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, etc.

TABLE 10.19

<i>LEHIGH VALLEY - Historical</i>	2001	2010	# Change	% Change
Other services (except Public Administration)	18,905	18,357	-548	-2.9%
Repair and maintenance	5,137	5,156	19	0.4%
Personal and laundry services	6,028	5,034	-994	-16.5%
Membership associations and organizations	5,936	6,067	131	2.2%
Private households	1,804	2,100	296	16.4%
<i>LEHIGH VALLEY - Forecast</i>	2010	2040	# Change	% Change
Other services (except Public Administration)	18,357	25,677	7,320	39.9%
Repair and maintenance	5,156	6,534	1,378	26.7%
Personal and laundry services	5,034	7,809	2,775	55.1%
Membership associations and organizations	6,067	8,600	2,533	41.8%
Private households	2,100	2,734	634	30.2%

Local and State Government

The local and state government sector includes state and municipal employees (borough, township, city and all municipal authorities) and employees of public school districts. Decreasing revenue streams and budget shortfalls have led to hiring freezes, unpaid furloughs, and in many cases, layoffs of local and state government employees locally and across the country. How the continued economic downturn affects projected growth in local and state government jobs is unknown. The largest factors affecting state and local government employment historically are population growth and the health of the underlying economies that produce the government revenues.

TABLE 10.20

<i>LEHIGH VALLEY - Historical</i>		2001	2010	# Change	% Change
Government		26,901	31,523	4,622	17.2%
State and Local		26,901	31,523	4,622	17.2%
<i>LEHIGH VALLEY - Forecast</i>		2010	2040	# Change	% Change
Government		31,523	44,376	12,853	40.8%
State and Local		31,523	44,376	12,853	40.8%

Federal Civilian Government

Federal government employment, including jobs in the Postal Service, is expected to decline as officials work to reduce the budget deficits and curb government spending. The widespread use of the Internet and a decrease in the circulation of advertisements and magazines require customers to use fewer services provided by the Postal Service.

TABLE 10.21

<i>LEHIGH VALLEY - Historical</i>		2001	2010	# Change	% Change
Government		2,253	2,246	-7	-0.3%
Federal Civilian		2,253	2,246	-7	-0.3%
<i>LEHIGH VALLEY - Forecast</i>		2010	2040	# Change	% Change
Government		2,246	2,052	-194	-8.6%
Federal Civilian		2,246	2,052	-194	-8.6%

Federal Military

This sector is comprised of government establishments of the Armed Forces, including the National Guard, primarily engaged in national security and related activities.

TABLE 10.22

<i>LEHIGH VALLEY - Historical</i>		2001	2010	# Change	% Change
Government		1,933	1,729	-204	-10.6%
Federal Military		1,933	1,729	-204	-10.6%
<i>LEHIGH VALLEY - Forecast</i>		2010	2040	# Change	% Change
Government		1,729	1,412	-317	-18.3%
Federal Military		1,729	1,412	-317	-18.3%

Farming

The Farming sector is comprised of 1) establishments, such as farms, orchards, groves, greenhouses, and nurseries, primarily engaged in growing crops, plants, vines, or trees and their seeds and 2) establishments, such as ranches, farms, and feedlots primarily engaged in keeping, grazing, breeding, or feeding animals. These animals are kept for the products they produce or for eventual sale. Technological and mechanical advancements provide farmers with the continuing ability to produce more output with fewer workers required.

TABLE 10.23

<i>LEHIGH VALLEY - Historical</i>				
	2001	2010	# Change	% Change
Farm	1,579	1,199	-380	-24.1%
<i>LEHIGH VALLEY - Forecast</i>				
	2010	2040	# Change	% Change
Farm	1,199	930	-269	-22.4%

SECTION TWO: LEHIGH VALLEY OCCUPATIONAL FORECAST AND ANALYSIS

The REMI model not only forecasts employment by industry but also by specific occupation. Table 11 shows the top ten occupations by change in jobs for the Lehigh Valley. Occupations that normally grow with the population in general, such as social workers, retail clerks and police officers, usually grow at the average rate for all occupations. By contrast, occupations that meet the demand of changing demographics will grow or shrink on the basis of population forecasts for that group. The demand for teachers, for example, is correlated with forecasts of enrollments of school-age children and the demand for police officers is correlated with population growth

In the coming decade, the trend with the most implications for occupational change is the aging of the population. The 55-years-and-older age group consumes significantly more health care and social assistance services than any other age group. The aging population that will require more health care and continued advances in medical technology are the major causes of rapid growth among health-related occupations. Job growth, however, may be limited by efforts to control the growth of spending on health care to restrict increases in Medicare and Medicaid reimbursements. These efforts to control health care costs may stimulate the growth of some health care occupations (aides, assistants and technicians), as they assume some duties formerly performed by highly paid health care workers, such as dentists, physicians and therapists. As a result, these occupations will grow even more than overall health care employment and other highly paid health care occupations. Occupations that will experience loss are in industry sectors that will experience overall job loss due to continued foreign competition and technological advancements.

The retirement of people in the baby boomer generation will not only have a substantial impact on growth oriented job openings in industries such as health care but also replacing them across the entire job market as they retire.

Employers with older, retiring workforces will also have to replace baby-boomers exiting occupations critical to their business operations. From 2010-2040, there is expected high demand for replacement employees in occupations such as business operations specialists (5,097 jobs), computer specialists (4,402 jobs), financial specialists (3,307 jobs) and management (2,223 jobs). Nationally, according to the BLS, there are expected to be numerous industries that may require such replacement workers over a number of occupations. Sectors of manufacturing, utilities, wholesale trade, transportation and warehousing, insurance, real estate, educational services, health care and public administration are industries that employed a significantly above-average share of baby-boomer employees nationally in 2010.

Table 12 lists a sample of 91 occupations contained in the REMI model with the changes in those occupations for both counties and the Lehigh Valley. This list is not inclusive of all possible occupations that are in the local economy. Red text denotes occupations with 50% or more growth during the forecast period.

TABLE 11
Top Ten Occupations by Change in Jobs
Lehigh and Northampton Counties
2010-2040

Largest Percentage Increase in Number of Jobs		Largest Increase in Number of Jobs	
Occupation	% Change	Occupation	# Change
Occupational and physical therapist assistants and aides	110.2%	Health diagnosing and treating practitioners	9,189
Nursing, psychiatric, and home health aides	99.1%	Construction trades and related workers	7,804
Helpers, construction trades	89.1%	Nursing, psychiatric, and home health aides	7,670
Other healthcare support occupations	86.0%	Food and beverage serving workers	5,466
Personal appearance workers	83.9%	Health technologists and technicians	5,317
Supervisors, construction and extraction workers	79.3%	Business operations specialists	5,097
Other personal care and service workers	73.6%	Other personal care and service workers	4,746
Health diagnosing and treating practitioners	72.7%	Information and record clerks	4,679
Construction trades and related workers	70.1%	Secretaries and administrative assistants	4,576
Life scientists	69.7%	Computer specialists	4,402

Largest Percentage Decrease in Number of Jobs		Largest Decrease in Number of Jobs	
Occupation	% Change	Occupation	# Change
Printing occupations	-22.3%	Printing occupations	-167
Communications equipment operators	-16.6%	Communications equipment operators	-80
Woodworkers	-7.9%	Woodworkers	-35
Metal workers and plastic workers	-0.6%	Metal workers and plastic workers	-25
Agricultural workers	-0.1%	Agricultural workers	-1
Fishing and hunting workers	0.0%	Fishing and hunting workers	0
Textile, apparel, and furnishings occupations	2.7%	Supervisors, farming, fishing, and forestry workers	11
Supervisors, production workers	5.3%	Forest, conservation, and logging workers	17
Food processing occupations	6.4%	Water transportation occupations	43
Top executives	10.6%	Extraction workers	48

Source: Lehigh Valley Planning Commission, REMI Pi+ Model, June 2012

TABLE 12
Job Gain/Loss by Occupation
Regional Geographies
2010-2040

Occupation	Lehigh County			Northampton County			Lehigh Valley			
	2010	2040	% Change	2010	2040	% Change	2010	2040	% Change	
Top executives	3,572	3,963	10.9%	2,087	2,296	209	10.0%	5,659	6,259	10.6%
Advertising, marketing, promotions, public relations, and sales managers	1,098	1,494	36.1%	540	727	187	34.6%	1,638	2,221	35.6%
Operations specialties managers	2,657	3,441	29.5%	1,411	1,798	387	27.4%	4,068	5,239	28.8%
Other management occupations	3,582	4,996	41.4%	2,143	2,952	809	37.8%	5,725	7,948	38.8%
Business operations specialists	6,550	9,781	49.3%	3,862	5,728	1,866	48.3%	10,412	15,509	49.0%
Financial specialists	4,619	6,788	47.0%	2,567	3,705	1,138	44.3%	7,186	10,493	46.0%
Computer specialists	5,268	8,123	54.2%	2,892	4,439	1,547	53.5%	8,160	12,562	53.9%
Mathematical science occupations	213	313	46.9%	123	177	54	43.9%	336	490	45.8%
Architects, surveyors, and cartographers	291	437	50.2%	178	258	80	44.9%	469	695	48.2%
Engineers	2,017	2,914	44.5%	1,204	1,691	487	40.4%	3,221	4,605	43.0%
Drafters, engineering, and mapping technicians	1,090	1,425	30.7%	680	864	184	27.1%	1,770	2,289	29.3%
Life scientists	365	643	76.2%	235	375	140	59.6%	600	1,018	69.7%
Physical scientists	382	570	49.2%	257	357	100	38.9%	639	927	45.1%
Social scientists and related occupations	781	1,302	66.7%	445	714	269	60.4%	1,226	2,016	64.4%
Life, physical, and social science technicians	424	604	42.5%	303	405	102	33.7%	727	1,009	38.8%
Counselors, Social workers	1,555	2,494	60.4%	804	1,286	482	60.0%	2,359	3,780	60.2%
Miscellaneous community and social service specialists	713	1,165	63.4%	382	635	253	66.2%	1,095	1,800	64.4%
Religious workers	903	1,290	38.7%	697	977	280	40.2%	1,600	2,267	41.7%
Lawyers, judges, and related workers	1,012	1,454	44.2%	654	933	279	42.7%	1,666	2,387	43.3%
Legal support workers	685	1,045	36.0%	433	632	199	46.0%	1,118	1,677	50.0%
Postsecondary teachers	664	955	43.8%	853	1,237	384	45.0%	1,517	2,192	44.5%
Primary, secondary, and special education teachers	2,212	3,144	42.1%	2,484	3,525	1,041	41.9%	4,696	6,669	42.0%
Other teachers and instructors	584	907	55.3%	576	906	330	57.3%	1,160	1,813	56.3%
Librarians, curators, and archivists	384	539	40.4%	358	484	126	35.2%	742	1,023	37.9%
Other education, training, and library occupations	939	1,267	34.9%	956	1,291	335	35.0%	1,895	2,558	35.0%
Art and design occupations	881	1,184	34.4%	512	700	188	36.7%	1,393	1,884	35.2%
Entertainers and performers, sports and related occupations	836	1,181	41.3%	643	929	286	44.5%	1,479	2,110	42.7%
Media and communication occupations	961	1,317	37.0%	533	786	253	47.5%	1,494	2,103	40.8%
Media and communication equipment occupations	294	364	23.8%	171	228	57	33.3%	465	592	27.3%
Health diagnosing and treating practitioners	9,795	16,809	71.6%	2,839	5,014	2,175	76.6%	12,634	21,823	72.7%
Health technologists and technicians	5,952	9,761	64.0%	2,104	3,612	1,508	71.7%	8,056	13,373	66.0%
Other healthcare practitioners and technical occupations	252	394	56.3%	123	188	65	52.8%	375	582	55.2%
Nursing, psychiatric, and home health aides	5,238	10,334	97.3%	2,499	5,073	2,574	103.0%	7,737	15,407	99.1%
Occupational and physical therapist assistants and aides	340	706	107.6%	112	244	132	117.9%	452	950	110.2%
Other healthcare support occupations	3,024	5,621	85.9%	1,067	1,989	922	86.4%	4,091	7,610	86.0%
First-line supervisors/managers, protective service workers	488	686	40.6%	389	536	147	37.8%	877	1,222	39.3%
Fire fighting and prevention workers	740	1,231	66.4%	599	976	377	62.9%	1,339	2,207	64.8%
Law enforcement workers	2,812	3,997	42.1%	2,287	3,174	887	38.8%	5,099	7,171	40.6%
Other protective service workers	2,727	3,885	42.5%	1,517	2,083	566	37.3%	4,244	5,968	40.6%
Supervisors, food preparation and serving workers	1,178	1,545	30.7%	746	976	230	30.8%	1,924	2,521	31.0%
Cooks and food preparation workers	3,877	5,169	33.3%	2,439	3,242	803	32.9%	6,316	8,411	20.9%
Food and beverage serving workers	8,121	11,484	41.4%	5,138	7,241	2,103	40.9%	13,259	18,725	41.2%
Other food preparation and serving related workers	1,706	2,345	37.5%	1,081	1,474	393	36.4%	2,787	3,819	37.0%
Supervisors, building and grounds cleaning and maintenance workers	457	624	36.5%	246	319	73	29.7%	703	943	34.1%
Building cleaning and pest control workers	5,676	6,759	19.1%	3,396	3,991	595	17.5%	9,072	10,750	18.5%
Grounds maintenance workers	1,808	2,771	53.3%	920	1,334	414	45.0%	2,728	4,105	50.5%
Supervisors, personal care and service workers	320	490	53.1%	200	303	103	51.5%	520	793	52.5%

Source: Lehigh Valley Planning Commission, REMI P+H Model, June 2012

TABLE 12 (cont.)
Job Gain/Loss by Occupation
Regional Geographies
2010-2040

	Lehigh County			Northampton County			Lehigh Valley		
	315	520	205	172	287	115	487	807	320
Animal care and service workers	871	1,207	336	569	794	225	1,440	2,001	561
Entertainment attendants and related workers	111	174	63	48	82	34	159	256	97
Funeral service workers	1,199	2,166	967	535	1,022	487	1,734	3,188	1,454
Personal appearance workers	230	314	84	107	147	40	337	461	124
Transportation, tourism, and lodging attendants	3,948	7,018	3,070	2,497	4,173	1,676	6,445	11,191	4,746
Other personal care and service workers	2,285	2,587	302	1,331	1,519	188	3,616	4,106	490
Supervisors, sales workers	13,239	15,157	1,918	8,064	9,313	1,249	21,303	24,470	3,167
Retail sales workers	2,765	3,629	864	1,557	2,082	525	4,322	5,711	1,389
Sales representatives, services	3,046	3,585	539	1,399	1,657	258	4,445	5,242	797
Sales representatives, wholesale and manufacturing	2,033	2,453	420	1,137	1,406	269	3,170	3,859	689
Other sales and related workers	2,376	3,308	932	1,297	1,771	474	3,673	5,079	1,406
Supervisors, office and administrative support workers	336	281	-55	147	122	-25	483	403	-80
Communications equipment operators	6,458	8,597	2,139	3,425	4,518	1,093	9,883	13,115	3,232
Financial clerks	10,074	13,179	3,105	5,417	6,991	1,574	15,491	20,170	4,679
Information and record clerks	6,154	7,006	852	3,856	4,311	455	10,010	11,317	1,307
Material recording, scheduling, dispatching, and distributing occupations	7,765	9,603	1,838	4,161	5,632	1,471	11,698	16,274	4,576
Secretaries and administrative assistants	44	52	8	24	27	3	68	79	11
Other office and administrative support workers	816	846	30	462	431	-31	1,278	1,277	-1
Supervisors, farming, fishing, and forestry workers	5	5	0	2	2	0	7	7	0
Agricultural workers	46	58	12	28	33	5	74	91	17
Fishing and hunting workers	763	1,360	597	563	1,018	455	1,326	2,378	1,052
Forest, conservation, and logging workers	6,461	10,925	4,464	4,679	8,019	3,340	11,140	18,944	7,804
Supervisors, construction and extraction workers	483	904	421	349	669	320	832	1,573	741
Construction trades and related workers	781	1,159	378	624	899	275	1,405	2,058	653
Helpers, construction trades	112	136	24	72	96	24	184	232	48
Other construction and related workers	745	928	183	501	630	129	1,246	1,558	312
Extraction workers	878	1,035	157	474	601	127	1,352	1,636	284
Supervisors of installation, maintenance, and repair workers	2,550	3,099	549	1,832	2,283	451	4,382	5,382	1,000
Electrical and electronic equipment mechanics, installers, and repairers	4,986	7,009	2,023	3,250	4,584	1,334	8,236	11,593	3,357
Vehicle and mobile equipment mechanics, installers, and repairers	862	907	45	636	671	35	1,498	1,578	80
Other installation, maintenance, and repair occupations	2,628	3,013	385	1,479	1,701	222	4,107	4,714	607
Supervisors, production workers	891	913	22	507	575	68	1,398	1,488	90
Assemblers and fabricators	2,490	2,556	66	1,992	1,901	-91	4,482	4,457	-25
Metal workers and plastic workers	488	371	-117	260	210	-50	748	581	-167
Food processing occupations	1,173	1,204	31	1,116	1,147	31	2,289	2,351	62
Printing occupations	233	199	-34	208	207	-1	441	406	-35
Textile, apparel, and furnishings occupations	502	640	138	348	448	100	850	1,088	238
Plant and system operators	3,918	4,552	634	2,877	3,285	408	6,795	7,837	1,042
Other production occupations	709	821	112	472	561	89	1,181	1,382	201
Supervisors, transportation and material moving workers	116	155	39	48	63	15	164	218	54
Air transportation occupations	6,567	8,958	2,391	4,253	6,008	1,755	10,820	14,966	4,146
Motor vehicle operators	126	163	37	94	119	25	220	282	62
Rail transportation occupations	48	80	32	23	34	11	71	114	43
Water transportation occupations	564	688	124	338	413	75	902	1,101	199
Other transportation workers	7,748	8,899	1,151	5,028	5,803	775	12,776	14,702	1,926
Material moving occupations									

Source: Lehigh Valley Planning Commission, REMI P+ Model, June 2012

GLOSSARY

Employment: Total number of persons 16 years and older, on establishment payrolls employed full-or part-time who received pay for any part of the pay period that includes the 12th day of the month. Temporary and intermittent employees are included, as are any employees who are on paid sick leave, on paid holiday, or who work during only part of the specified pay period.

Goods-producing industries: Businesses and enterprises that include manufacturing, construction, and natural resources and mining.

Industry: A group of establishments that produce similar products or provide similar services. For example, all establishments that manufacture automobiles are in the same industry. A given industry, or even a particular establishment in that industry, might have employees in dozens of occupations. The North American Industry Classification System (NAICS) groups similar establishments into industries. NAICS is replacing the former Standard Industrial Classification (SIC) system.

Labor force: The labor force includes all persons classified as employed or unemployed.

Labor force participation rate: The labor force as a percent of the civilian noninstitutional population.

Lehigh Valley: An area composed of Lehigh and Northampton counties, Pennsylvania.

LVPC: Lehigh Valley Planning Commission. The official planning commission for Lehigh County and Northampton County and the regional planning commission for the Lehigh Valley.

Not in the labor force: Persons aged 16 years and older in the civilian non-institutional population who are neither employed nor unemployed and not seeking employment.

Occupation: A set of activities or tasks that employees are paid to perform. Employees that perform essentially the same tasks are in the same occupation, whether or not they work in the same industry. Some occupations are concentrated in a few particular industries; other occupations are found in many industries.

REMI PI+: An econometric model produced by Regional Economic Models, Inc.

Service-providing industries: Businesses and establishments in trade, transportation, and utilities; information; financial activities; professional and business services; education and health services; leisure and hospitality; other services.

Shortages: An event where the demand for workers for a particular occupation is greater than the supply of workers who are qualified, available, and willing to do that job.

Unemployed: Persons are classified as unemployed if they do not have a job, have actively looked for work in the prior 4 weeks, and are currently available for work.

Unemployment rate: The unemployment rate represents the number unemployed as a percent of the labor force.