Developing Strategies for Recruiting, Retaining and Training the Workforce of Tomorrow: A Blueprint for Action

A Final Report

submitted to the

Bristol Workforce Investment Board

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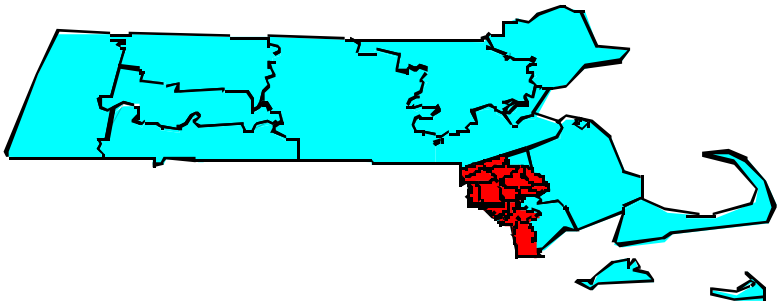
Description of the Area

The Bristol Workforce Investment Area (WIA) consists of the cities of Attleboro, Fall River, and Taunton and the towns of Berkley, Dighton, Mansfield, North Attleboro, Norton, Raynham, Rehoboth, Seekonk, Somerset, Swansea and Westport (see map below). The area occupies 381 square miles and has a population of 353,153 (U.S. Census Bureau, 2000). The WIA's three cities account for over one-half of the area's population (53.8%).

1. Bristol Workforce Investment Area



Recent Trends and Changing Economic Conditions

The Bristol WIA has a storied industrial history that spans from the early 1800's to the present. In 1811, Colonel Joseph Durfee opened the Globe Manufactory in Fall River, the first textile factory in the region. Two decades later, the city had seven textile mills and at its height was home to more than 100 cotton mills. Fall River dominated the textile manufacturing industry and at the end of the 19th century it was among the nation's top 25 manufacturing cities (Choosing to Compete, 1993).

Attleboro and Taunton were also large manufacturing centers. Attleboro became dominant in the jewelry making industry, and by 1855, there were 24 shops in the area with much of the growth spurred by medals ordered by the U.S. Army to honor its soldiers. Taunton's major industries in this era were the fabricated metals and jewelry industries, although the city also employed many workers in the textiles and apparel industries as well.

Manufacturing in these cities began a long decline in the late 19th century as industry owners failed to make use of new technologies and abandoned the innovative spirit that had made them kings of their trade. The increased competition of lower wages and cheaper production costs in the South resulted in Massachusetts losing 94,000 manufacturing jobs in the textile industries in the 1920's alone (Choosing to Compete, 1993). Because cities in the Bristol WIA were so dependent on these industries, this job loss was a significant blow to the area's economy.

The area's industrial decline continued through the Great Depression and World War II, although the area enjoyed a brief revival during the 1950's and 1960's as defense-related manufacturing expanded in response to the Cold War. Nevertheless, while other regions of the state were diversifying their economies, or nurturing high technology firms, new industries failed to emerge or locate in the Bristol WIA in significant numbers, while existing firms often failed to modernize their plant, equipment, and products. By the mid-1980s, economic globalization and the adoption of computer-assisted production by competing firms placed additional pressures on the area's manufacturing businesses. Since the region remained dependent on traditional manufacturing, technological displacement and continuing job losses to other states and nations had a crippling effect on the area's economy during the 1990-1991 recession.

Only gradually and belatedly has the opposite process of "post-industrialization" taken hold in the area's economy. The Bristol WIA's transition to a post-industrial economy is evident in the shift from "blue-collar" manufacturing to high-tech manufacturing and services (Bell 1972). While the area experienced an overall employment increase of 22 percent from 1985 to 1999, the manufacturing sector was in a steep decline during this same period. From 1985 to 1999, the Bristol WIA lost 6,782 manufacturing jobs, a 21 percent decline. In 1985, manufacturing accounted for 32 percent of the area's total employment compared to 24 percent in 1999. Fall River and Attleboro suffered the most significant manufacturing job losses. From 1985 to 1999, Fall River's manufacturing employment declined by 32 percent, while Attleboro's declined by 30 percent. Taunton's manufacturing employment increased by a modest 3 percent during this same period.

Conversely, employment in the service sector nearly doubled from 1985 to 1999. Allied health services and professional services are currently two of the most rapidly expanding employment sectors in the area and they are projected to remain at the forefront of the area's employment growth in the next decade (Regional Employment Boards 1996; Borges and Barrow 1997). Nevertheless, the Bristol WIA still relies on the manufacturing sector for a substantial portion of its employment. Manufacturing still accounts for 24 percent of the area's total employment and manufacturing jobs are still some of the highest paying jobs in the area. Importantly, however, high technology has finally become an important part of the area's manufacturing sector. Even "traditional" manufacturing firms are taking advantage of high technology and have introduced computer-assisted design and computer assisted manufacturing processes (CAD-CAM). The manufacturing sector is also shifting to more "postindustrial" forms of production and delivery, such as just-in-time inventory management. Although the area's manufacturing sector still faces stiff competition in the global market, the area's business firms are finally positioned to make productivity gains through the implementation of new technology that will help negate the wage and cost advantages of national and global competitors.

The area's overall economy is likely to be sustained in the future by a high-tech renewal of manufacturing (especially electronics, instrumentation, telecommunications, and textiles), while much of the area's new growth will continue developing around a mix of allied health services and professional services. However, the area remains more dependent on traditional manufacturing than the state as a whole, and has fewer of the export-based knowledge services that provide high wage jobs (Kennedy, 1995). Thus, if the area is to attract and retain these knowledge industries, must be able to produce workers who have the high skills required to fill the jobs created by these firms.

Southeastern Massachusetts: New Patterns Of Divergence?

The Southeastern Massachusetts Partnership sponsored the first comprehensive study of the Southeastern Massachusetts' economy in response to the region's employment crisis in the early 1990s. In late 1991, the Partnership released *The High Skills Path for Southeastern Massachusetts: A Framework for Decisionmakers* which drew explicitly on the framework developed by Michael Porter in *The Competitive Advantage of Massachusetts*. *The High Skills Path* defined Southeastern Massachusetts as five counties - Barnstable, Bristol, Plymouth, Dukes, and Nantucket – although it recognized that many other plausible definitions could be advanced based on regional planning districts, labor market areas, service delivery areas, and state administrative districts.

The main conclusion of *The High Skills Path* was that policy makers, business executives, and educators would "need to attend to underlying structural problems" in the regional economy before efforts to attract or retain businesses could be successful. The study identified the region's main structural problems as low adult educational attainment and a "modest base of higher education institutions" that was not adequate to support technological innovation. *The High Skills Path* called attention to "the critical importance of human capital" in economic development, which in Southeastern Massachusetts was not adequate to support the development of a post-industrial economy, whether based in knowledge-intensive service industries or high technology manufacturing.

The economic and fiscal crises of the early 1990s encouraged Massachusetts lawmakers to agree on a broad, bi-partisan policy consensus regarding economic development policy. Like the *High Skills Path*, the state's economic development policy owes a great deal to Michael Porter's, *The Competitive Advantage of Massachusetts*. Porter's work emphasizes that the main economic role of state government is to provide an environment that encourages private firms to achieve and maintain a competitive advantage in their particular industry. Porter's research suggests that macro-economic and fiscal policies alone cannot achieve this objective, since "clusters" of competitive industries tend to concentrate geographically to take advantage of natural resources, specialized research and development facilities, local concentrations of labor skills, industry-specific infrastructure, and inter-modal transportation networks offered by their preferred regions. For instance, health care, textiles and apparel, jewelry, and electronics manufacturing are important clusters in the Bristol WIA. The recognition by state lawmakers that clustering is important to the development of a region's economic base helped to inspire a new state economic development policy that was based on a detailed examination of the state's competitive position in individual industries and a

clear understanding of why they cluster in particular regions of the state (Porter 1991, 11).

In 1993 the University of Massachusetts and the Executive Office of Economic Affairs released *Choosing to Compete: A Statewide Strategy for Job Creation and Economic Growth*. Choosing to Compete was an analysis of the state economy that focused on seven regions: the Berkshires, Pioneer Valley, Central Massachusetts, Northeast Massachusetts, Greater Boston, Southeast Massachusetts, and the Cape and Islands. One of the report's main conclusions was that the state can best promote economic development by providing incentives and assistance to support regional competitiveness in targeted industries. Since these programs are most effective when implemented through partnerships with local and private organizations, the state's governing role is to provide strategic coordination of regional policy implementation.

The regional analysis of Southeastern Massachusetts in *Choosing to Compete* identified significant clusters in textiles and apparel, electronics and communications, marine science and technology, food processing, metals fabrication, fishing, and tourism. The report noted that despite its economic difficulties, the region has several competitive advantages. These include an extensive highway network, low business costs, low cost housing, and workforce availability in specialized industries and occupations. *Choosing to Compete* reinforced the Partnership's earlier findings in *The High Skills Path* concluding that new investment, education, workforce training, and technology transfer must be the main economic development priorities in Southeastern Massachusetts.

Not surprisingly, a central feature of the larger region's economic development strategy in the 1990s has been its focus on K-12 education, adult literacy, and the development of university research capacities. The passage of the Massachusetts Education Reform Act of 1993 reinforced this strategy, although the five cities and their adjacent communities report different degrees of success in implementing this strategy. The entry of the Dartmouth campus into an expanded University of Massachusetts System in 1993 has improved the region's long-term capacity for technology transfer and professional assistance, but the campus is still early in its development as a university-level research institution.

It is also important to keep in mind that "Southeastern Massachusetts" is a moving target not only because of differing administrative, planning, or data collection definitions, but also because the region is undergoing dramatic and uneven economic change that is blurring many previously accepted boundaries. Southeastern Massachusetts' regional economy contains a number of distinct sub-areas. This makes it difficult for any definition of Southeastern Massachusetts to fully reflect these sub-regional identities and to fully capture all of their corresponding economic geographies.

The U.S. Department of Labor identifies four labor market areas in Southeastern Massachusetts, including the Fall River, New Bedford, Brockton, and Boston labor market areas. Taunton and the Route 3 corridor are considered part of the Boston metropolitan statistical area, while Fall River and Attleboro are considered part of the Providence metropolitan statistical area. The Workforce Investment Boards identify four service delivery areas in Southeastern Massachusetts that are used to deliver employment and training services. The four service delivery areas are Greater Bristol

2. Historical Population of Bristol WIA Cities and Towns

Municipality	1970	1980	1990	2000
Attleboro	32,907	34,196	38,383	42,068
Berkley	2,027	2,731	4,237	5,749
Dighton	4,667	5,352	5,631	6,175
Fall River	96,898	92,574	92,703	91,938
Mansfield	9,939	13,453	16,568	22,414
N. Attleboro	18,665	21,095	25,038	27,143
Norton	9,487	12,690	14,265	18,036
Raynham	6,705	9,085	9,867	11,739
Rehoboth	6,512	7,570	8,656	10,172
Seekonk	11,116	12,269	13,046	13,425
Somerset	18,088	18,813	17,655	18,234
Swansea	12,640	15,461	15,411	15,901
Taunton	43,756	45,001	49,832	55,976
Westport	9,791	13,763	13,852	14,183
Total:	283,198	304,053	325,144	353,153

Source: U.S. Census Bureau

(Fall River-Taunton-Attleboro), Brockton, South Coastal (Route 3 corridor), and Greater New Bedford.

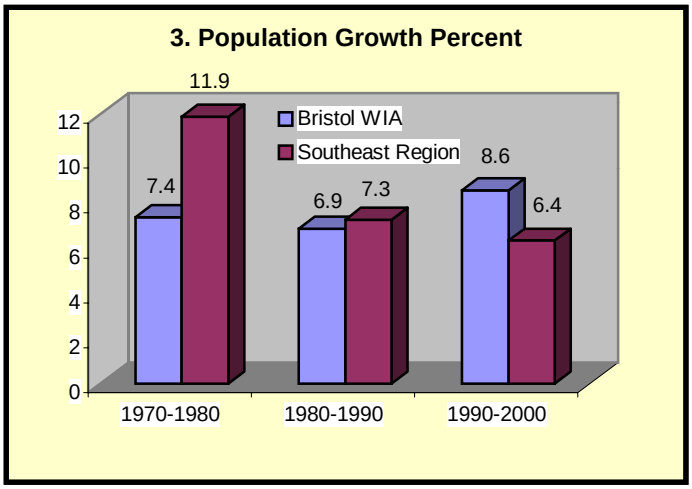
Demographic and Economic Characteristics

Population

The Bristol Workforce Investment Area had a population of 353,153 in 2000 (U.S. Census Bureau). The area municipalities with the largest populations are Fall River (91,938), Taunton (55,976), and Attleboro (42,068).

The area's population increased 24.7 percent from 1970 to 2000, while statewide population grew 11.6 percent. Since 1980, the area's population has increased 16.1 percent, compared to a 10.7 percent increase for the entire state. The area's population increased by 8.6 percent during the 1990's compared to 6.7% for the entire state.

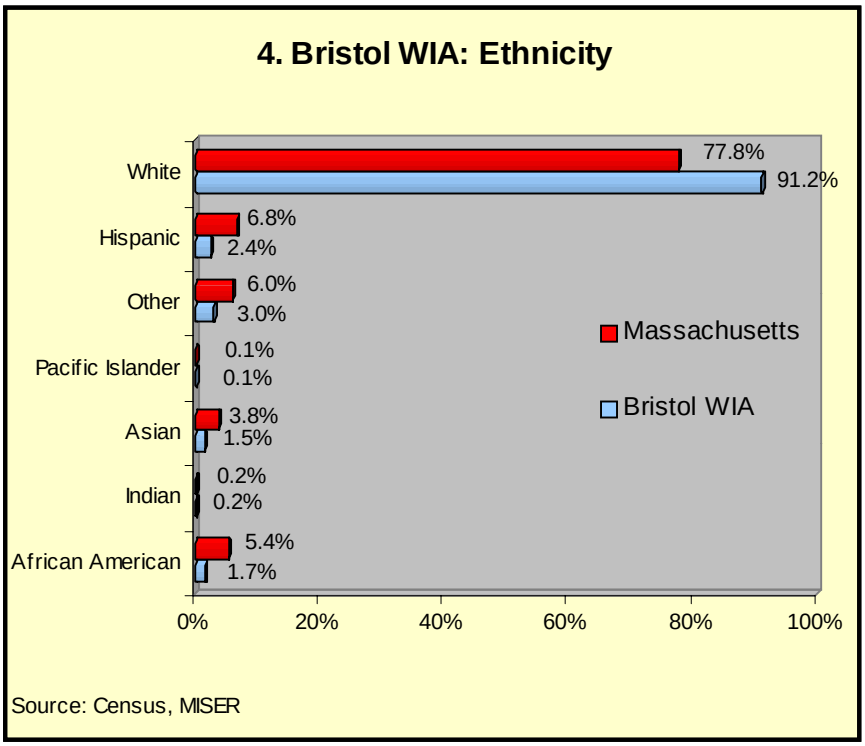
3. Population Growth Percent



Source: Census, MISER

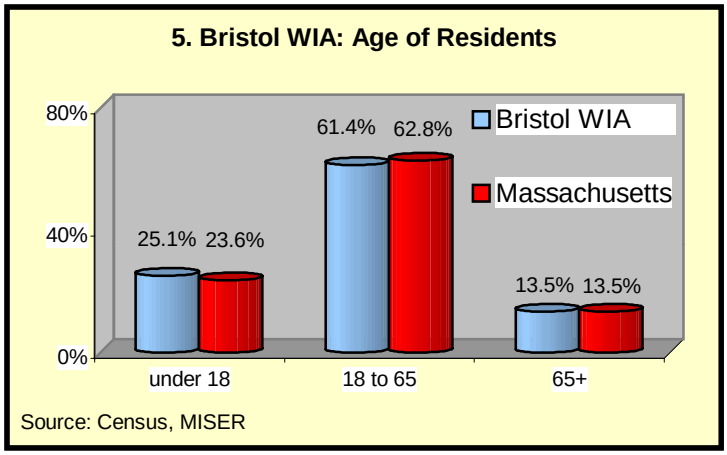
Ethnicity

More than ninety percent of residents in the Bristol WIA (91.2%) report that they are white (U.S. Census 2000). This compares to 77.8 percent statewide. In general, the population statewide is more diverse than in the Bristol WIA. Hispanics are the largest ethnic minority in the Bristol WIA at 2.4% of the population, followed by African Americans (1.7%) and Asians (1.5%).



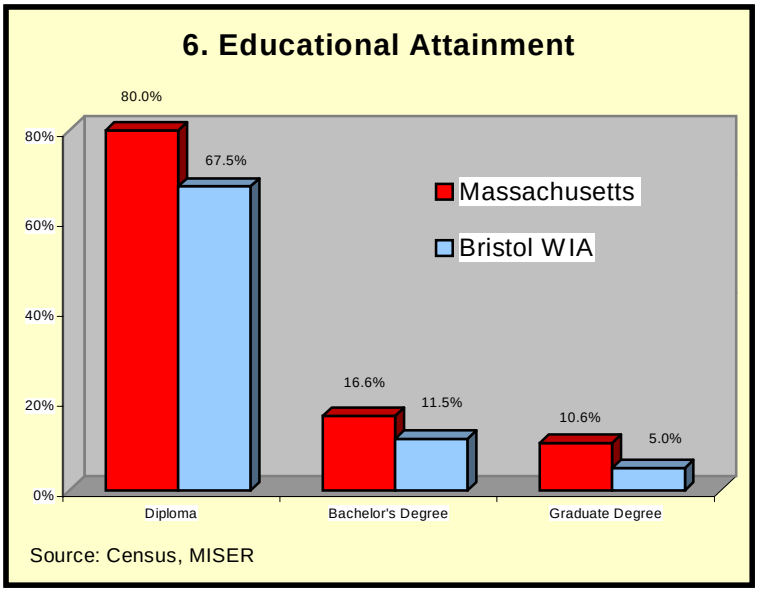
Age

The ages of the residents in the Bristol WIA are very similar to those of the state as a whole (U.S. Census 2000) with 61.4% aged 18 to 65, the years when most people are in the full time workforce.



Educational Attainment

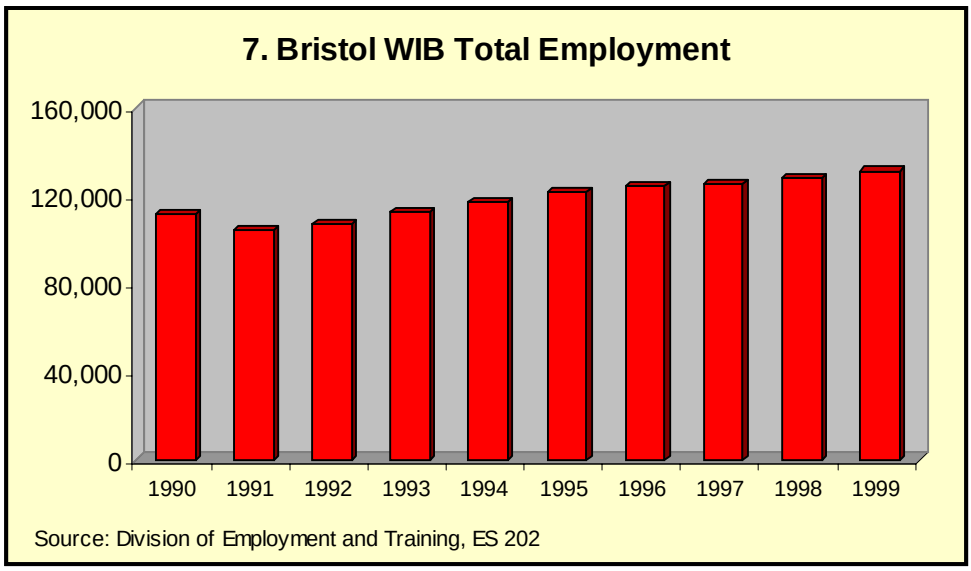
Nearly a third of residents (32.5%) in the Bristol Workforce Investment Area do not have a high school diploma as compared to 20.0 percent statewide. Only 16.5 percent of the area's residents have earned a bachelor's degree or higher compared to 27.2 percent statewide. Of the fourteen cities and towns that comprise the area, six have educational attainment levels at the state average or above. However, more than half of the WIA's labor force has educational attainment below the state average. This is particularly evident in Fall River where less than half of residents (46.7%) have a high school diploma.



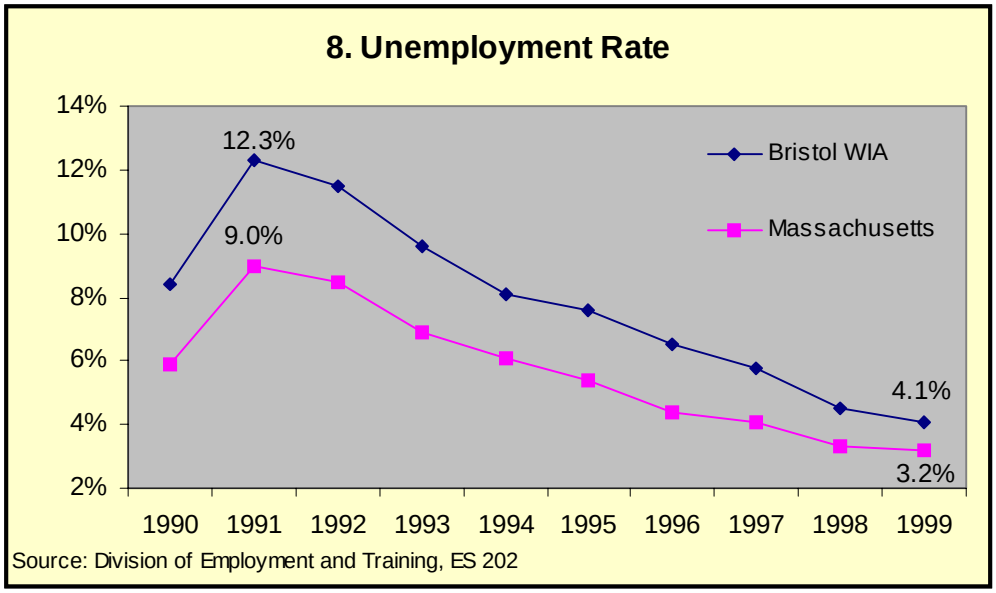
Employment and Income

The Bristol Workforce Investment Area has total employment of 147,315 (1999 ES-202). Total private sector employment is 131,331 (1999 ES-202). Annual average wages in the Bristol WIA are $29,465 (DET 1999). This continues a long-term pattern of area wage levels that are about 27% below the statewide average of $40,355.

The following chart displays the total annual private sector employment for the Bristol Workforce Investment Area from 1990 to 1999. Total employment dipped to its lowest level in 1991 (104,590) and reached its latest peak in 1999 (131,331).



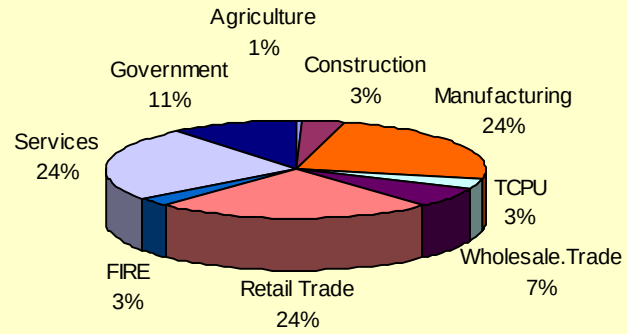
The 1999 annual average unemployment rate in the Bristol Workforce Investment Area was 4.1 percent (LAUS 1999). This compares to a statewide average unemployment rate of 3.2 percent. As the chart below demonstrates, average unemployment rates in the area have been consistently higher than the statewide average throughout the business cycle. However, the area's unemployment rate has declined steadily during the 1990s and is falling into line with statewide unemployment trends.



Largest Industries

The three largest employment sectors in the Bristol Workforce Investment Area are retail trade, services and manufacturing, which each account for 24 percent of total employment. Manufacturing continues to account for more than twice the percentage of employment in the WIA than in the state as a whole.

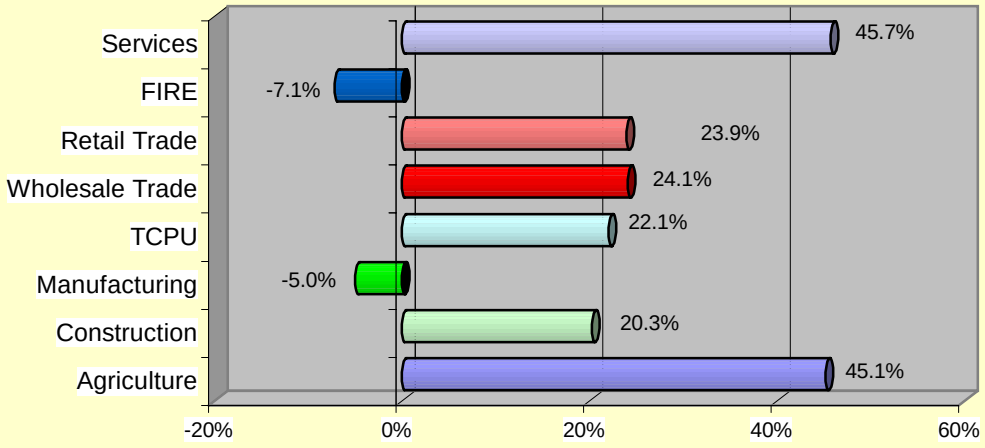
9. Bristol WIA - Employment By Sector: 1999



Source: Division of Employment and Training, ES 202

Between 1990 and 1999 there was substantial employment growth in nearly every sector of the Bristol WIA economy, including Services (+45.7%), Agriculture (+45.1%), Wholesale Trade (+24.1%), Retail Trade (+23.9%), Transportation, Communications and Public Utilities [TCPU] (+22.1%) and Construction (+20.3%). The only major sectors of the area's economy that lost employment during the 1990's were Finance, Insurance and Real Estate [FIRE] (-7.1%) and Manufacturing (-5%). The largest absolute increases in number of jobs were in Services, Retail Trade, and Wholesale Trade.

10. Bristol WIA
Employment Change By Sector: 1990 to 1999



Source: Division of Employment and Training, ES 202

Largest Industries by Employment

The following table lists the largest industries in the Bristol WIA by size of employment. Most of the largest industries are in the manufacturing, retail, and service sectors.

11. Bristol Workforce Investment Area Largest Industries by Employment

SIC CODE	Industry Name	Employment	Establishments
80	Health Services	13,453	511
36	Electronic Equipment & Components	7,584	41
51	Wholesale Trade - non-durable goods	5,338	177
50	Wholesale Trade - durable goods	4,659	408
22	Textile Mill Products	4,487	38
38	Measuring and Analyzing Equipment	3,169	41
23	Apparel	3,101	62
34	Fabricated Metal Products	2,330	85
60	Depository Institutions	1,985	146
35	Industrial and Commercial Machinery	1,939	89
87	Engineering, Acctng., Research, Mngt.	1,855	357
33	Primary Metal Industries	1,613	31
48	Telecommunications	1,407	27
42	Motor Freight Transportation	1,366	142
64	Insurance Agents	1,098	139

Source: Division of Employment and Training

Largest Employers

The majority of the fifty largest private employers in the Bristol Workforce Investment Area are in the manufacturing and health services sectors.

12. Bristol WIA Largest Employers: 2000

SIC CODE	Industry Name	Employment	City/Town
Quaker Fabric Corp.	Manufacturing	3,900	Fall River
Materials Controls Group	Manufacturing	3,800	Attleboro
Main St. Textiles	Manufacturing	2,820	Fall River
Charlton Memorial Hospital	Health Services	1,794	Fall River
Nortex Yarns	Manufacturing	1,500	Fall River
Motorola	Manufacturing	1,300	Mansfield
Sysco	Wholesale Trade	1,030	Norton
Communications Systems	Manufacturing	1,000	Taunton
St. Anne's Hospital	Health Services	876	Fall River
Morton Hospital	Health Services	850	Taunton
Depuy Acromed & Codman	Manufacturing	700	Raynham
Kendell Company	Manufacturing	700	Mansfield
Duro Finishing	Manufacturing	628	Fall River
Robert Allen Contract	Wholesale Trade	530	Mansfield
Lightolier	Manufacturing	500	Fall River
Swank, Inc.	Manufacturing	500	Attl/Taunton
Whaling Mfg. Co.	Manufacturing	490	Fall River
Ames Distrbution	Transportation	469	Mansfield
Robbins Awards	Manufacturing	438	Attleboro
Helix Technology Corp.	Manufacturing	430	Mansfield
Jostens, Inc.	Manufacturing	430	Attleboro
Aberdeen Manufacturing	Manufacturing	426	Fall River
Stern Metals	Manufacturing	400	N. Attleboro
General Findings	Manufacturing	400	N. Attleboro
Cookson America, Inc.	Manufacturing	400	Attleboro
Travelers Property Casualty	Insurance	400	Fall River
Taunton Nursing Home	Health Services	397	Taunton
Longmeadow of Taunton	Health Services	397	Taunton
Marian Monor of Taunton	Health Services	397	Taunton
Contemporary Classics	Manufacturing	370	Taunton
Robertson Factories Inc.	Manufacturing	370	Taunton
McGinnis Health Care Svcs.	Health Services	315	Fall River
Home Health Agency	Health Services	315	Fall River
Poland Spring Bottling	Wholesale Trade	300	Norton
Catholic Memorial Home	Health Services	300	Fall River
Arbour-Fuller Hospital	Health Services	300	Attleboro
Navix Diagnostix Inc.	Manufacturing	300	Taunton
American Dryer Corp.	Manufacturing	280	Fall River
Perkins Paper	Wholesale Trade	280	Taunton
Swan Finishing	Manufacturing	276	Fall River
Commty.Vistng Nrse. Agncy	Health Services	275	Attleboro
Clear-Vu	Manufacturing	257	Fall River
Eastern Container Companies	Wholesale Trade	250	Mansfield
NE Sportservice Group	Services	250	Mansfield
Crestwood Convalescent Hm	Health Services	233	Fall River
Zel-Mar Manufacturing	Manufacturing	230	Fall River
Jenson Manufacturing	Manufacturing	230	Fall River
Smith & Nephew Inc	Manufacturing	200	Mansfield
AMS	Financial	200	Swansea
Sara Brayton Nursing Home	Health Services	200	Fall River

Source: iMarket Database

Cluster And Sector Analysis

The cluster and sector analysis identifies trends in employment, business units, annual average wages, and average size of establishments at the 2-digit level of the Standard Industrial Classification (SIC) and, where possible, at the 3-digit SIC level. The cluster and sector analysis relies primarily on ES-202 data, but also draws on proprietary databases (iMarket) and U.S. Census data (County Business Patterns). All data is aggregated at the Bristol Service Delivery Area/Workforce Investment Area (WIA) level.

The Bristol Workforce Investment Area has several identifiable business clusters, which consist of firms in related industries that are linked together through customer, supplier or other relationships. Critical clusters are defined as related groups of businesses that employ 3 percent or more of the total private sector workforce in the Workforce Investment Area. An emerging industry could fall below the 3 percent threshold if it is showing rapid growth (e.g., from 1% to 2% of private sector employment over last 10 years). The area's critical and emerging industries are identified based on past and projected rates of growth in employment and number of business units. An industry may be both critical and emerging or it may be critical and declining.

In this report the term "declining industry" refers exclusively to numerical employment trends. It should not be interpreted as an assessment of the profitability and financial health of an industry, the demand for its products or services, or the condition of individual firms within an industry. An industry can be shedding total employment, while increasing annual output, sales, and profits through organizational restructuring or technological innovations that allow firms in the industry to produce greater volumes of a good or service with fewer employees. It is also possible for individual firms to be stable or expanding within a declining industry due to higher productivity, superior marketing, or the capture of niche markets where they face little competition from other firms in the industry. The term also does not describe the quality of the jobs created or lost in a particular industry, since an expanding employment sector can be creating low-wage jobs with few benefits, while a declining sector could be restructuring its workforce to rely more heavily on high-wage skilled employees that achieve higher rates of productivity due to their use of technology.

Our analysis identified seven industry clusters in the Bristol Workforce Investment Area:

13. Bristol WIA Industry Cluster Analysis

Critical and Emerging

Cluster	% Of 1999 Private Sector Employment
Allied Health Services	10.2%
High Technology	9.3%
Distribution	8.7%

Emerging

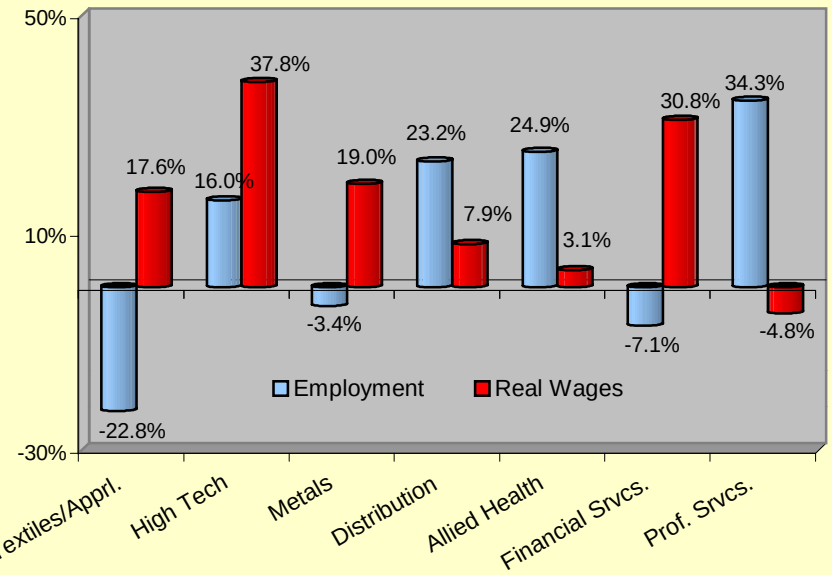
Cluster	% Of 1999 Private Sector Employment
Professional Services	2.2%

Critical and Declining

Cluster	% Of 1999 Private Sector Employment
Metals Manufacturing	7.8%
Textiles and Apparel	5.8%
Financial Services	3.6%

Six of the seven clusters employ more than three percent of the WIA's total private sector workforce and therefore are considered critical clusters. The Professional Services cluster employs less than three percent of the total private sector workforce, but it has been identified as an emerging industry because it has experienced rapid employment growth since 1990. Between 1990 and 1999 employment decreased in three of the seven clusters, while real wages declined in only one of the clusters.

14. Employment and Real Wage Change: 1990 to 1999



Sources: Division of Employment and Training; iMarket

Critical and Emerging Clusters

Allied Health Services
Offices and Clinics of Doctors of Medicine (SIC 801)
Offices and Clinics of Dentists (SIC 802)
Offices and Clinics of Doctors of Osteopathy (SIC 803)
Offices and Clinics of Other Health Practitioners (SIC 804)
Nursing and Personal Care Facilities (SIC 805)
Hospitals (SIC 806)
Medical and Dental Laboratories (SIC 807)
Home Health Care Services (SIC 808)
Miscellaneous Health and Allied Services (SIC 809)

Unlike the Boston Metro and Central Massachusetts regions, there are no major research hospitals or institutes located in the Bristol Workforce Investment Area. Consequently, the allied health services cluster primarily provides health services to the area's local residents. During the 1990's the cluster's expansion was being driven almost exclusively by population growth and by the availability of Medicare and Medicaid

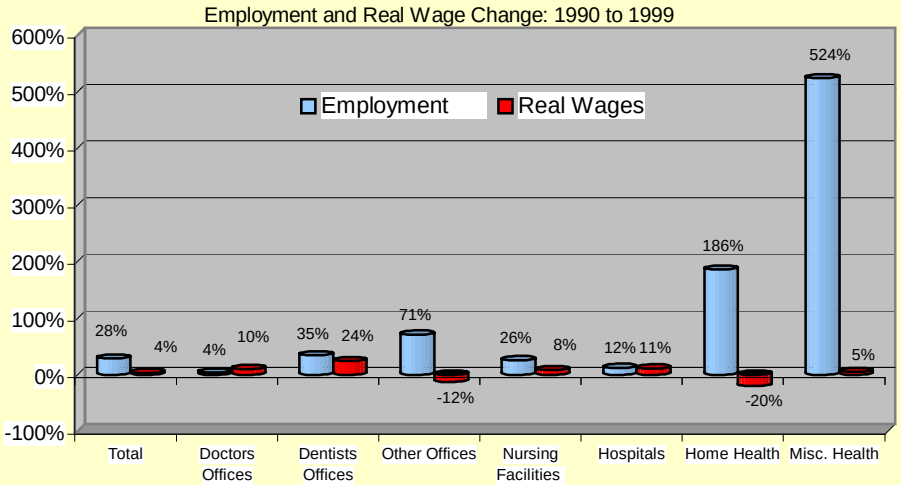
reimbursements for services to elderly and low-income residents (Bristol, Brockton, Greater New Bedford, and South Coastal Regional Employment Boards 1995). [PDS2].

The cluster accounts for 10.4 percent of the area's total employment or 13,601 jobs[1](1999). Most employment gains have been concentrated in the delivery of services such as nursing homes and home health care where average wages are well below the regional average. At the same time, restructuring and cost-cutting in the hospital industry, where average wages are significantly higher has restrained job growth over the last several years.

The largest employers in the cluster are hospitals (4,922) and nursing facilities (3,473). Employment increases have occurred in all of the cluster's industries with the largest employment increases in miscellaneous health and allied services (523.5 percent) and home health care services (185.7 percent).[2] However, real wages have increased by only 5.1 percent in miscellaneous health and allied services from 1990 to 1999 and real wages have actually declined by 19.6 percent in home health care services. Overall, real wages in the cluster increased by 3.4 percent during this period. Average annual wages in the cluster range from a low of $16,622 in home health care services to $53,865 in offices and clinics of doctors. The annual average wage for the state is $40,355.

The number of business units declined significantly in offices and clinics of doctors (252 in 1990 to 203 in 1999) and have increased most significantly in offices and

15. Allied Health Services



Sources: Division of Employment and Training; iMarket

clinics of other health practitioners (74 in 1990 to 102 in 1999) and miscellaneous health

[1] There was no employment in the area for offices and clinics of doctors of osteopathy. Data for medical and dental laboratories was confidential.

[2] Miscellaneous allied services includes kidney dialysis centers and other specialty outpatient facilities.

and allied services (6 in 1990 to 24 in 1999). The largest employers in the area are primarily hospitals, including Southcoast Hospitals Group and St. Anne's Hospital in Fall River, Morton Hospital in Taunton, and Sturdy Memorial Hospital in Attleboro.

High Technology[3]
Electronic Equipment and Components (SIC 36)
Measuring and Analyzing Equipment (SIC 38)
Computer and Office Equipment (SIC 357)
Drugs (SIC 283)
Telecommunications (SIC 48)

Electronic equipment and components includes establishments engaged in the manufacturing of electricity distribution equipment and other electrical equipment and supplies. Measuring and analyzing equipment includes establishments engaged in manufacturing instruments for measuring, testing, analyzing, and controlling. Computer and office equipment includes establishments that engage in the manufacturing of electronic computers, computer storage devices, and computer terminals. Drugs includes establishments primarily engaged in manufacturing, fabricating, or processing medicinal chemicals and pharmaceutical preparations, while telecommunications includes establishments supplying point-to-point communications services and radio and television broadcasting.

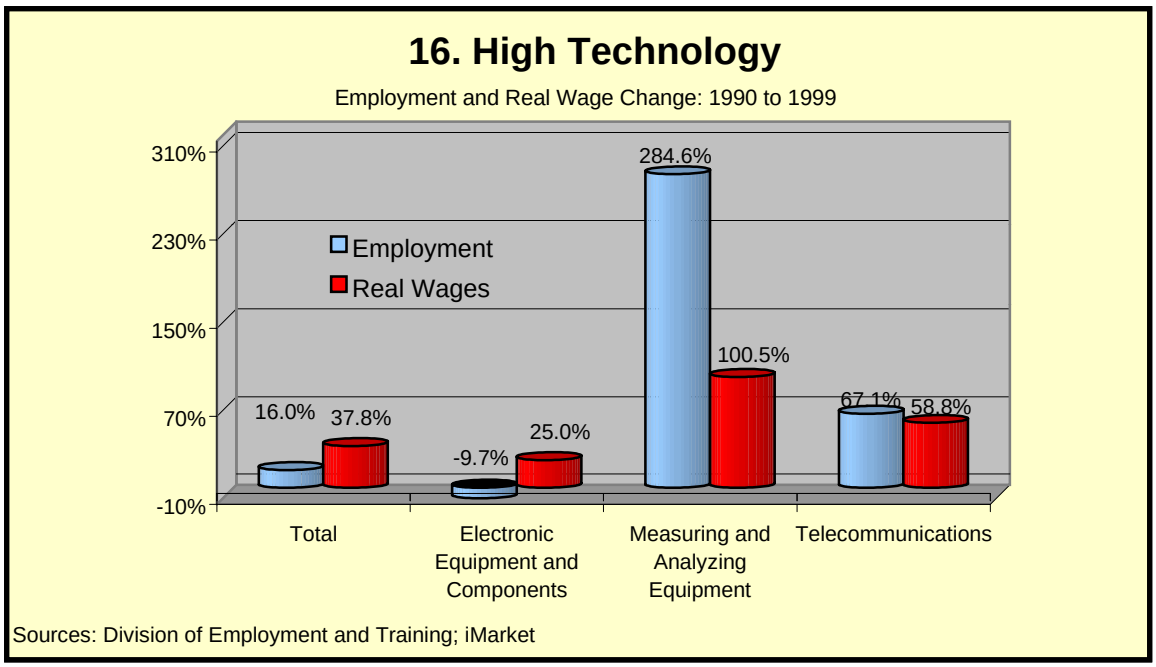
The high technology cluster accounted for 8.3 percent of the area's total employment in 1999 or 12,160 jobs. Total employment for the cluster increased by 16.0 percent from 1990 to 1999. The electronic equipment and components industry had the highest level of employment in the cluster (7,584), although employment in this industry declined by 9.7 percent from 1990 to 1999. Other industries in the cluster with significant employment are measuring and analyzing equipment (3,169) and telecommunications (1,407). Overall, employment in these two industries increased by 284.6 percent and 67.1 percent respectively during the 1990s.

Generally, the number of business units in each industry remained relatively the same from 1990 to 1999, although the number of measuring and analyzing equipment establishments increased from 28 units in 1990 to 41 units in 1999. The size of the establishments in this industry is also larger, increasing from 29 employees per unit in 1990 to 77 employees per unit in 1999. The cluster's largest employers in the area

[3] The high technology cluster is based on the latest definition from the U.S. Department of Labor. ES-202 employment data was confidential for the drug industry. Additionally, industrial chemicals – organic and inorganic - were defined as a high technology industry by the U.S. Department of Labor. However, there was either no employment in these industries or data was confidential so it was not included in the analysis. iMarket and County Business Patterns data confirm low levels of employment in these industries (less than 500) for the Workforce Investment Area.

include Motorola in Mansfield, Lightolier in Fall River, Communications Systems in Taunton, and Materials and Controls Group in Attleboro.

Average annual wages in the cluster are high in comparison to the area and state averages and range from a low of $50,526 in the telecommunications industry to $59,467 in the measuring and analyzing equipment industry, which in both cases is significantly higher than the statewide average annual wage of $40,355. Overall, real wages in the cluster increased by 37.8 percent from 1990 to 1999. This increase was led by the measuring and analyzing equipment sector where wages doubled during the 1990's. During this same period, real wages increased by 58.8 percent in telecommunications and 25.0 percent in electronic equipment and components.



Distribution
Motor freight transportation – (SIC 42)
Wholesale trade – durable goods (SIC 50)
Wholesale trade – nondurable goods (SIC 51)
Deep Sea Foreign Trans. Of Freight (SIC 441)
Water Trans. Of Freight not Elsewhere Classified (SIC 444)

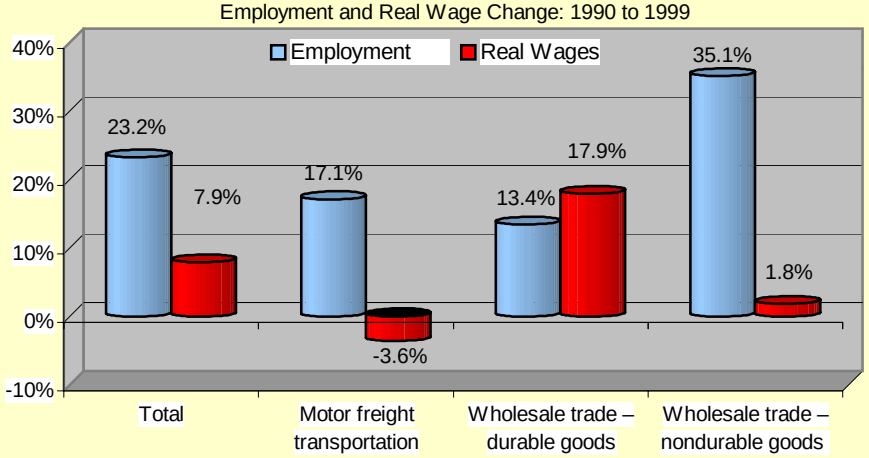
Motor freight transportation includes establishments furnishing local or long-distance trucking or transfer services. Wholesale trade - durable goods includes establishments primarily engaged in the wholesale distribution of durable goods, such as lumber and other construction materials. Wholesale trade - nondurable goods includes establishments engaged in the wholesale distribution of nondurable goods including drugs and drug proprietors; groceries; and other related products.

The distribution cluster accounts for 7.7 percent of the area's total employment or 11,363 jobs (1999). Total employment for the cluster increased by 23.2 percent between 1990 and 1999. Employment increases were most significant in the wholesale trade of non-durable goods (35.1 percent). This industry also has the highest level of employment (5,338), followed by wholesale trade – durable goods (4,659), and motor freight transportation (1,366). The number of business units has increased in each of the three industries for which data are available. The number of units in motor freight transportation increased from 133 units in 1990 to 142 units in 1999. The number of units in wholesale trade – durable goods increased from 377 units to 408 units, while wholesale trade – nondurable goods increased from 151 units to 177 units during the 1990s. Most of the businesses in the cluster are small (less than 30 employees) and the size of the businesses in the cluster remained relatively the same from 1990 to 1999. The largest employers in the cluster include SYSCO and Poland Spring Bottling in Norton, Perkins Paper and Swank in Taunton, Eastern Container Company and Ames Distribution in Mansfield, and Robert Allen Contract in Mansfield.

Average annual wages in the cluster range from a low of $35,804 in motor freight transportation to a high of $40,502 in wholesale trade – durable goods. This compares to a statewide annual average wage of $40,355. Real wages in the cluster increased by 7.9 percent from 1990 to 1999. Real wages rose most significantly in wholesale trade – durable goods (17.9 percent), while real wages decreased by 3.6 percent in motor freight transportation. Real wages increased by only 1.8 percent for wholesale trade – nondurable goods.

17. Distribution

Employment and Real Wage Change: 1990 to 1999



Sources: Division of Employment and Training; iMarket

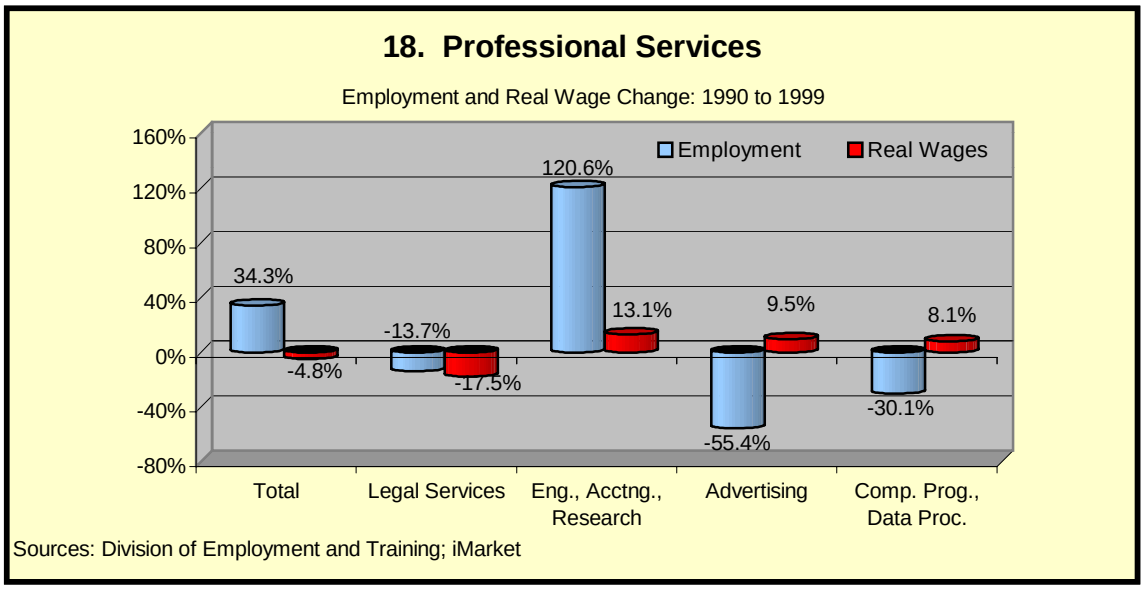
Emerging Clusters

Professional Services
Legal Services (SIC 81)
Engineering, Accounting, Research, Management (SIC 87)
Advertising (SIC 731)
Computer Programming, Data Processing, Other Computer (SIC 737)

Legal services include establishments that are headed by attorneys. Engineering, accounting, research, management include establishments primarily engaged in providing engineering, architectural, and surveying services; accounting, auditing, and bookkeeping services; research, development, and testing services; and management and public relations services. Advertising includes establishments primarily engaged in preparing advertisements and placing them in periodicals, newspapers, radio and television. Computer programming and data processing includes establishments primarily engaged in providing computer programming services, designing, developing, and producing prepackaged computer software, designing computer integrated systems, and on-line information retrieval services.

The professional services cluster accounts for only 2.2 percent of the Bristol WIA's employment (1999) and thus does not meet the definition of a critical cluster (3.0% or greater). However, the cluster meets the definition of an emerging industry, as employment increased by 34.3 percent from 1990 to 1999, for a total of 2,828 jobs. Employment gains are being fueled by the engineering, accounting, and research sector, which experienced an employment gain of 120.6 percent from 1990 to 1999. Other industries contained in the cluster lost employment during the 1990s, most significantly in the advertising industry.

The number of business units in the cluster increased significantly from 398 units in 1990 to 637 units in 1999. The engineering, accounting, research, and management industry gained 163 units over this period. Though employment is declining in the cluster's other industries, each had a higher number of units in 1999. For example, computer programming gained 58 units, legal services gained 17 units, and advertising gained 1 unit. Most of the businesses in the cluster are relatively small (less than 30 employees). The largest employers in the cluster are Compuware in North Attleboro and Interpay Corp in Mansfield.



Average annual wages in the cluster range from a low of $36,079 in advertising to a high of $62,010 in computer programming and data processing. This compares to a statewide annual average wage of $40,355. Real wages in the cluster decreased by 4.8 percent from 1990 to 1999. However, the overall wage decrease is due to the impact of the legal services industry (where wages declined by 17.5 percent), while the other industries in the cluster experienced a modest rise in real wages.

Critical and Declining Clusters

Metals Manufacturing
Primary Metal Industries (SIC 33)
Fabricated Metal Products (SIC 34)
Industrial and Commercial Machinery (SIC 35) (except 357)
Jewelry, Silverware, and Plated Ware (SIC 391)
Costume Jewelry, Costume Novelties (SIC 396)

Primary metals includes establishments engaged in smelting, alloying, and refining ferrous and nonferrous metals. Fabricated metal products includes establishments engaged in fabricating metal products such as metal cans, hand tools, and cutlery. Industrial and commercial machinery comprises establishments engaged in manufacturing engines and turbines and various machinery. Jewelry, silverware, and plated ware includes establishments primarily engaged in manufacturing jewelry and precious metal, silverware/plated/stainless steel ware, and natural or manmade stones

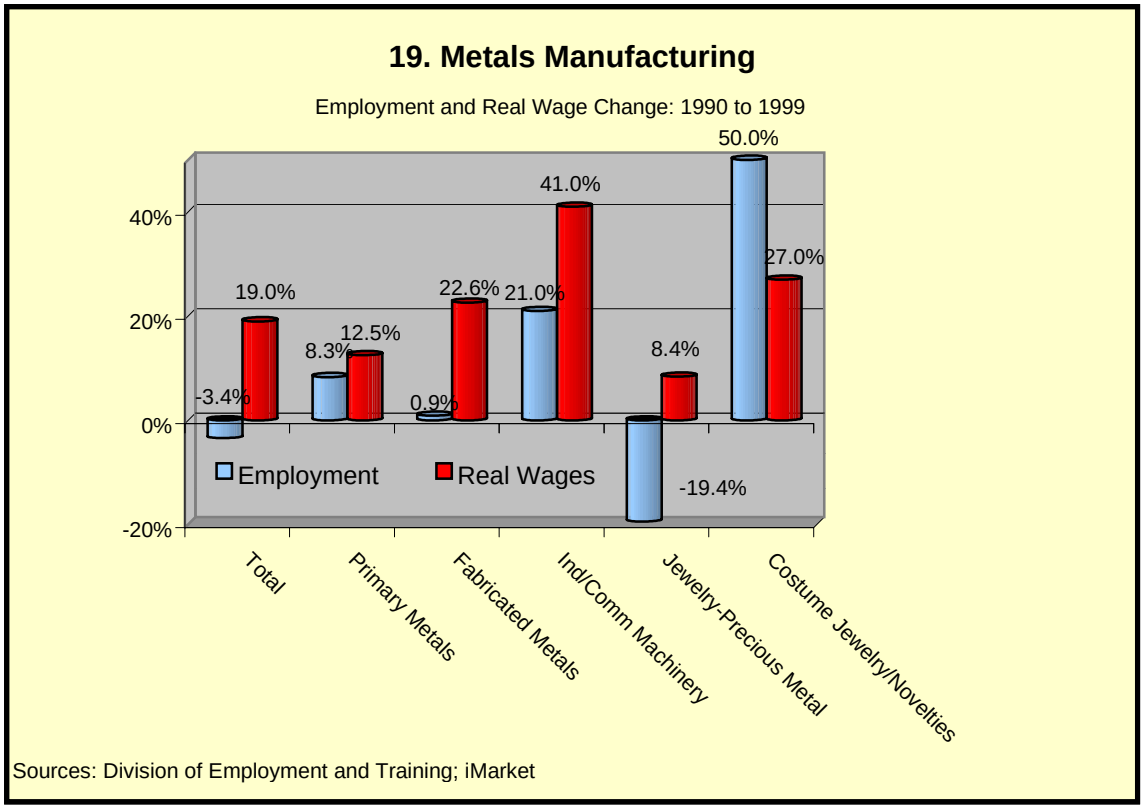
or gem raw materials. Costume jewelry includes establishments primarily engaged in manufacturing of jewelry, novelties, and ornaments made of all materials except precious metal.

The metals manufacturing cluster accounts for 7.8 percent of the area's total employment or 10,248 jobs. Total employment for the cluster decreased by 3.4 percent from 1990 to 1999. This was due in part to job losses in the jewelry/precious metal industry, which lost 19.4 percent of its job base between 1990 and 1999. During this period, two major employers in the industry, Balfour and Josten, moved to Mexico. However, Josten has since moved back to the area.

Significant employment gains were experienced in the industrial and commercial machinery industry (21.0 percent) and costume jewelry and novelties (50.0 percent). However, the costume jewelry industry only accounts for 4.0 percent of the cluster's employment and has the lowest average wage in the cluster ($29,533). Employment in the primary metals and fabricated metal products rose modestly at 8.3 percent and 0.9 percent respectively.

The number of business units dropped significantly in the jewelry industry, from 60 units in 1990 to 37 units in 1999. The number of units also decreased in the fabricated metal industry, from 95 units in 1990 to 85 units in 1999, while the costume jewelry industry gained five units during the 1990s. The number of business units in the primary metals and industrial machinery industries remained the same. The size of the firms in the cluster remain relatively the same from 1990 to 1999, although the average size of businesses in the jewelry industry increased from 83 employees in 1990 to 108 employees in 1999. The largest employers in the cluster include Jostens in Attleboro, Helix Technology Corporation in Taunton, Stern Metals and General Findings in North Attleboro, and Cookson America Inc. in Attleboro.

Average annual wages in the cluster range from a low of $29,533 in the costume jewelry/novelties industry to a high of $42,445 in the industrial and commercial machinery industry. This compares to a statewide annual average wage of $40,355. Real wages in the cluster increased by 19.0 percent from 1990 to 1999. Real wages rose most significantly in industrial and commercial machinery (41.0 percent) and costume jewelry (27.0 percent). Overall, real wages increased by 8.4 percent in the jewelry/precious metal industry over this period.



Textiles and Apparel
Textile Mill Products (SIC 22)
Apparel Products (SIC 23)

Textiles consists of firms that manufacture fabrics, yarn, and thread, as well as those that dye and finish fabric and knit apparel. Apparel includes firms that produce clothing or other fabricated products that involve cutting and sewing woven or knit textile fabrics and related materials such as leather, rubberized fabrics, plastics and furs. The textile and apparel cluster accounts for 5.8 percent of the Bristol Workforce Investment Area's total employment, or 7,588 jobs (1999). Total employment for the cluster declined by 22.8% from 1990 to 1999. However, the cluster's job losses were confined to the apparel industry, which lost 2,707 jobs from 1990 to 1999, while the textile industry added 472 jobs.

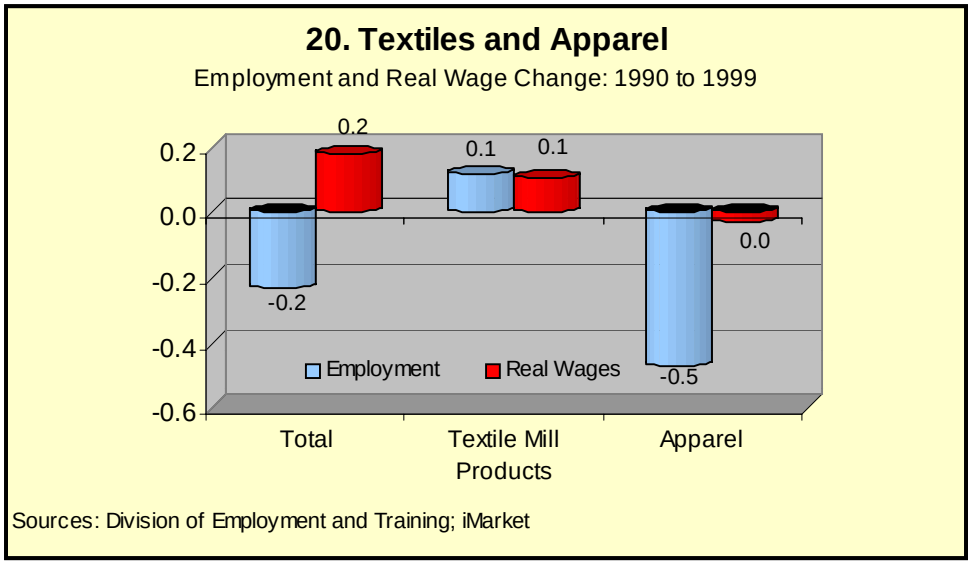
The number of establishments in the textile industry declined from 41 in 1990 to 38 in 1999, while the number of establishments in the apparel industry declined from 79 to 62. The size of textile firms increased from 98 employees in 1990 to 118 employees in 1999 primarily because successful textile firms who make significant capital

investments must sell in high volumes to remain competitive (Barrow 2000). Conversely, the number of employees in apparel firms decreased in size from 73 employees to 50 employees per firm. Unlike the textile industry, smaller apparel firms that are able to enter niche markets and are able to quickly respond to changing demand have been more successful than many large apparel firms, which produce standardized commodities.

Textile and apparel are considered low-wage industries, although this is less true of textiles than for apparel (Barrow 2000). Average annual wages in the cluster range from a low of $18,456 in the apparel industry to a high of $31,957 in the textile industry. This compares to a statewide annual average wage of $40,355. Real wages in the cluster increased by 17.6 percent from 1990 to 1999, although the apparel industry actually experienced a decline in real wages of 3.1 percent over this period.

The textile and apparel industries have also been moving apart in terms of technological levels and productivity. The textile industry is meeting the threat of foreign competition with sustained capital investment in technological innovation. Textile manufacturing has become a capital-intensive “medium-tech” industry that employees a great deal of automated machinery to achieve high productivity and unit costs. The restructuring of the textile industry means that educational and skill requirements are being elevated in the industry (Barrow 2000). Thus, what was once considered a low skill job is increasingly requiring higher levels of skill. While apparel employment continues to decline and wages remain below statewide averages, these jobs provide a critical entry point for the area’s least skilled and least educated immigrant population (Barrow 2000).

Most of the economic activity in the Bristol WIA's textiles and apparel cluster is concentrated in the City of Fall River, where approximately 25 percent of the City’s total employment still depends on the textile and apparel industry. Importantly, many of the textiles produced in the WIA are for non-apparel uses such as automotive interiors and home furnishings. The largest textile and apparel companies in the area include Quaker Fabrics, Main Street Textiles, and Whaling City Manufacturing in Fall River. Overall, more than a third (34.2 percent) of the state’s textile employment is concentrated in the Bristol WIA. For apparel employment, 33.1 percent is concentrated in the Bristol WIA. Importantly, the latest annual ES-202 data is from 1999. Since then, several companies in the area have closed or cut their workforces. For example, Globe Manufacturing and Pioneer Finishing in Fall River have closed and several other large employers have instituted lay-offs.



Financial Services
60 Depository Institutions
61 Non-Depository Institutions
62 Securities & Commodities Brokers
63 Insurance Carriers
64 Insurance Agents
65 Real Estate
67 Holding & Other Investment Cos.

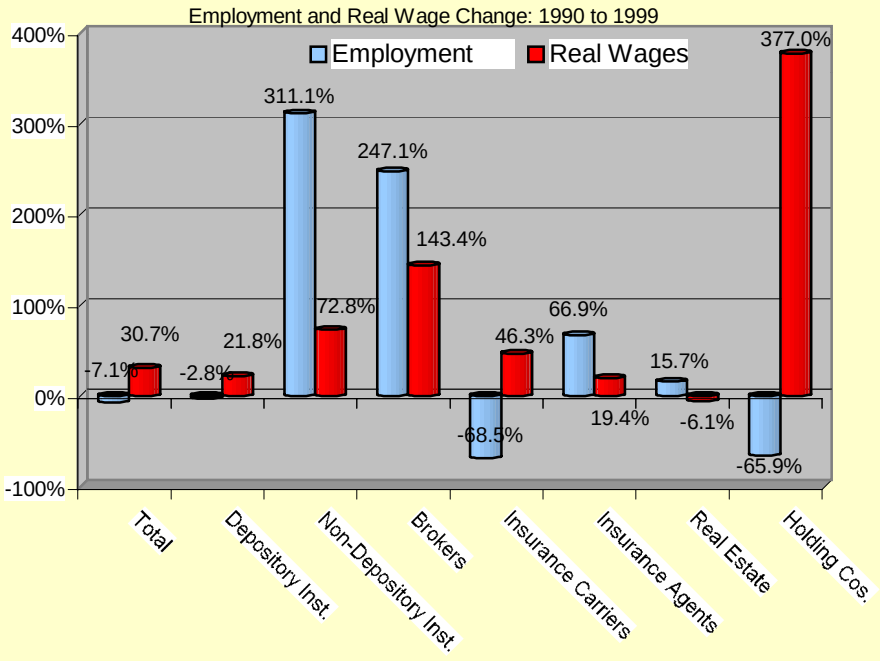
Depository institutions include establishments such as commercial banks and savings institutions. Non-depository institutions include establishments engaged in extending credit in the form of loans, but not engaged in deposit banking. Security and commodity brokers includes establishments engaged in the underwriting, purchase, sale, or brokerage of securities. Insurance carriers include carriers of insurance of all types, while insurance agents include agents and brokers dealing in insurance, and organizations offering services to insurance companies and to policyholders. Real estate includes real estate operators, and owners and lessors of real property, as well as buyers, sellers, developers, agents, and brokers. Holding and other investment offices include investment trusts, investment companies, holding companies, and miscellaneous investment offices.

The financial services cluster accounts for 3.6 percent of the area's total employment or 4,749 jobs (1999). The largest employers in the cluster are depository

institutions (1,985) and insurance agents (1,098). Total employment in the cluster decreased by 7.1 percent from 1990 to 1999. This decrease was primarily due to employment declines among insurance carriers (68.5 percent) and depository institutions (2.8 percent). Much of the decline in the insurance industry is due to consolidation and downsizing. While employment in the holding companies sector has also declined significantly, this industry only had 42 employees in 1999. Significant employment gains were experienced in the non-depository institutions (311.1 percent) and securities and commodities brokers (247.1 percent), although this industry accounted for only 59 jobs. Employment in the insurance agents sector increased by 66.9 percent during this period. Overall, the number of units in the cluster has increased from 524 in 1990 to 567 in 1999. The most significant gains in business units were found in securities and commodities brokers, insurance agents, and non-depository institutions. Most of the businesses in the cluster tend to be small (less than 50 employees). The largest employers in the cluster are Travelers Property Casualty, Fleet Bank, First Federal Savings Bank of America and Gatehouse Group Inc.

Average annual wages in the cluster range from a low of $27,949 in depository institutions to a high of $91,504 in holding and investment companies. This compares to a statewide annual average wage of $40,355. Real wages in the cluster increased by 30.6 percent from 1990 to 1999. Real wages rose most significantly in higher-end financial services such as holding and investment companies (377.0 percent), securities and commodities brokers (143.3 percent), and non-depository institutions (72.8 percent).

21. Financial Services



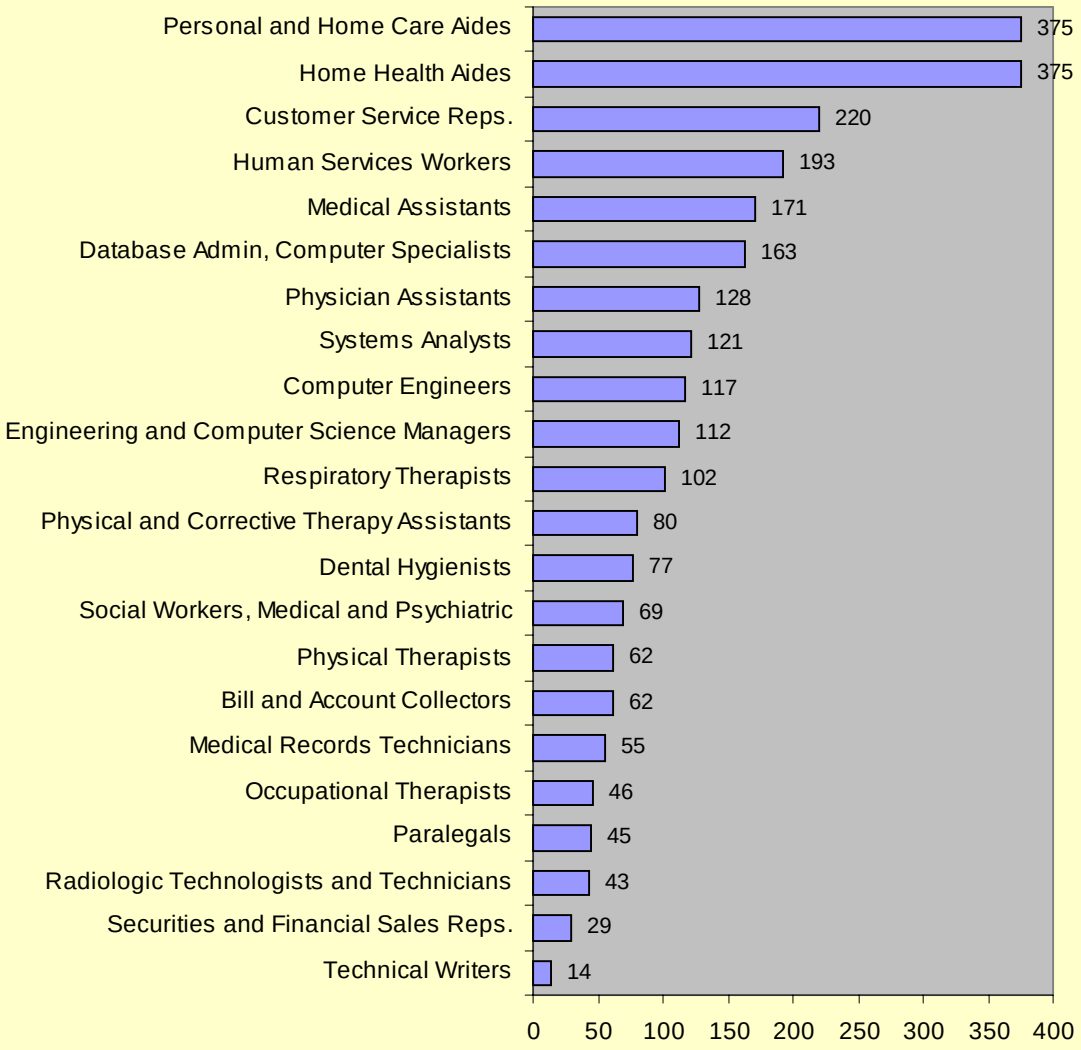
Sources: Division of Employment and Training; iMarket

Occupational Analysis

An occupational analysis was conducted to determine the projected net job increase of the fastest growing occupations in the Bristol WIA. These occupations were selected from the twenty-five fastest growing occupations identified in "Regional Reports: Profile of Projected Job Growth" (Massachusetts Division of Employment and Training, 1996). The occupations include only those found in clusters that have been identified as critical and emerging industries or as emerging industries. In other words, the identified occupations are projected to grow significantly over the next ten years. They are also in demand for one or more industry groups projected to expand over the next ten years. Consequently, the identified occupations are expected to be among the most critical to the economic vitality of the Bristol WIA in the coming decade.

The net job increase for each of the twenty-two occupations was calculated using occupational and industry matrices from the U.S. Bureau of Labor Statistics, but these national matrices were applied to the Bristol WIA's current occupational structure. The following table shows the projected net job increase for the area's fastest growing occupations. It is important to keep in mind that the table shows the number of net new jobs created and does not include vacancies created by retirement, relocation, and other forms of job turnover.

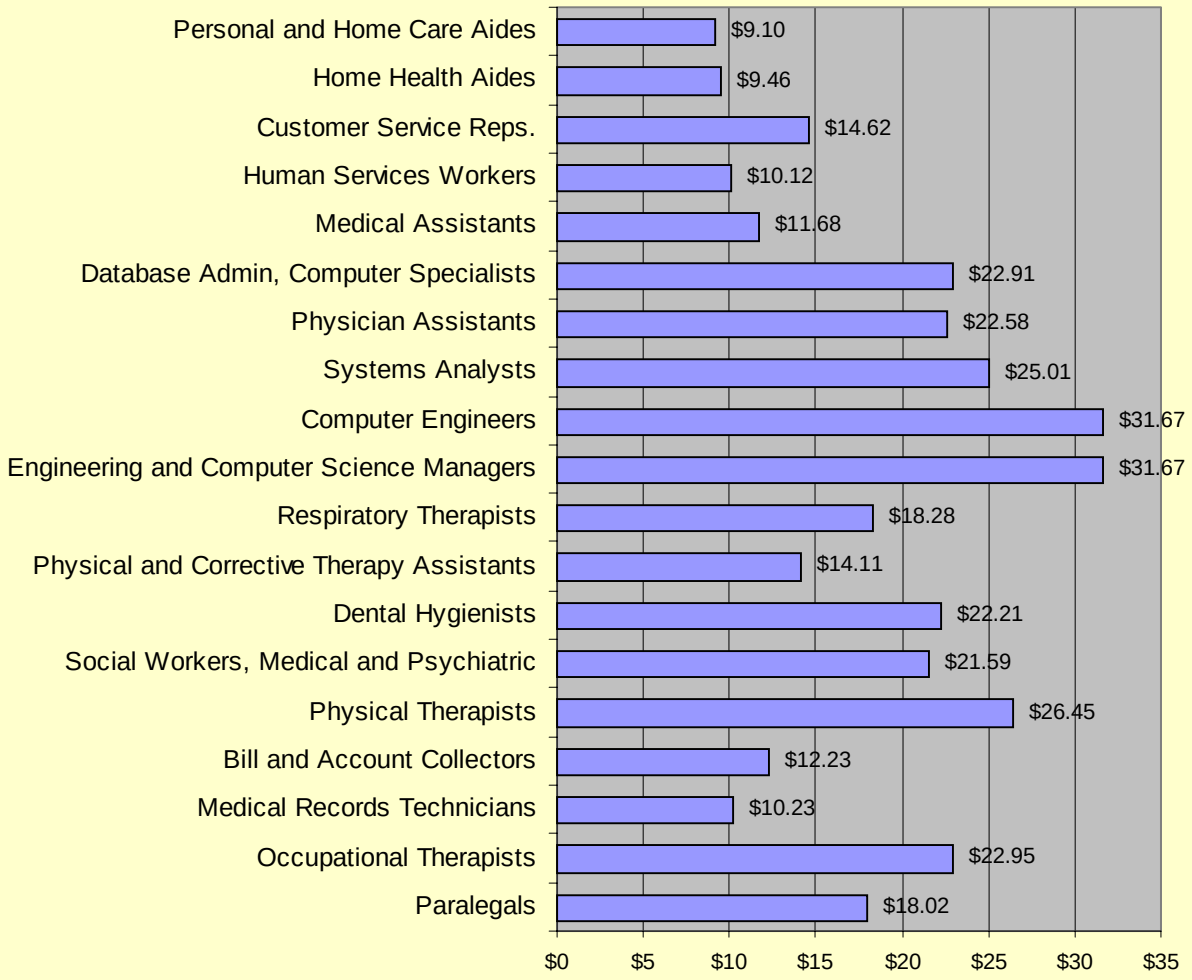
22. Projected Net Job Increase in Bristol WIA Clusters: 1998-2008



Source: Division of Employment and Training

The following table shows the median hourly wages for the high growth occupations of the future. Wage data was obtained from the Massachusetts Division of Employment and Training. These are statewide averages (wage data for Southeastern Massachusetts was not available for all occupations). The wages range from a low of $9.10 for Personal and Home Care Aides to $31.67 for Computer Engineers and Engineering and Computer Science Managers.

23. Massachusetts' Median Hourly Wages



Source: Division of Employment and Training

The following table shows the area's fastest growing occupations by the level of education required for entry into the occupation. Seven of the twenty-two occupations do not require a college degree. However nearly two-thirds require some level of college education; six require an Associate's degree, while nine require a Bachelor's degree or higher.

24. Educational Requirements of High Growth Occupations

Occupation	On the Job Training		Post-Secondary Degree		
	Short Term	Moderate Term	Assoc- iates	B.A.	M.A.
Bill and Account Collectors	X				
Customer Service Reps.	X				
Home Health Aides	X				
Personal and Home Care Aides	X				
Physical and Corrective Therapy Assistants		X			
Human Services Workers		X			
Medical Assistants		X			
Medical Records Technicians			X		
Dental Hygienists			X		
Radiologic Technologists and Technicians			X		
Respiratory Therapists			X		
Paralegals			X		
Technical Writers			X		
Computer Engineers				X	
Database Admin, Computer Specialists				X	
Engineering and Computer Science Managers				X	
Occupational Therapists				X	
Physical Therapists				X	
Physician Assistants				X	
Securities and Financial Sales Representatives				X	
Systems Analysts				X	
Social Workers, Medical and Psychiatric					X

Source: Massachusetts Division of Employment and Training

It is clear from the economic base and occupational analysis of the Bristol Workforce Investment Area that the high growth, high wage jobs of the future will require a well-trained and well-educated workforce. Even the region's most traditional manufacturing firms, which have historically provided jobs to more moderately skilled and less well-educated workers, are increasingly employing technology in an effort to remain competitive in the global marketplace. Designing and implementing effective programs and policies to better prepare the comparatively large numbers of less well-educated workers in the area is a major challenge facing the Bristol Workforce Investment Board in the years ahead. In order to develop clear recommendations on how the Bristol Workforce Investment Board (BWIB) can best meet this challenge, a more detailed understanding of job vacancies in the region's critical and emerging industry clusters is presented below. In the pages that follow we examine vacancy

trends in the region's labor market and describe the ways in which the area's high growth occupations and industries of the future recruit and train their employees.

Vacancy Analysis

The Bristol Career Centers, located in Fall River, Taunton and Attleboro, represent one window on the area's labor market. In Fiscal Year 2001, the Bristol Career Centers received notification of 18,056 vacant jobs and were able fill 1,065 or 5.9% of these positions (MOSES data).

However, MOSES data need to be interpreted with some caution. There is reason to believe that for a variety of reasons some employers inform Career Centers that they have more positions open than they can currently fill. This is more likely to be the case for temporary agencies (e.g., Account Temps) and may help to explain why certain occupational categories in business and financial operations appear to have unusually large numbers of available positions (see Table 25). Additionally, larger employers with locations both within and outside of the region may report their total job postings to local career centers thus making it appear that there are more vacancies in the region than actually exist. Accordingly, MOSES data should be viewed as one indicator of larger trends in the local labor market rather than a precise count of local job vacancies or an evaluation of Career Center performance.

25. Occupations with >100 Vacancies Handled by the Career Centers of Bristol County, FY01				
SOC	**Job Title**	**Posted**	**Filled**	**% Filled**
	Management Occupations			
113011	Administrative Services Managers	108	9	8.3
	Business and Financial Operations Occupations			
131071	Employment, Recruitment and Placement Specialists	111	5	4.5
132011	Accountants and Auditors	151	2	1.3
132051	Financial Analysts	222	2	0.9
	Computer and Mathematical Occupations			
151061	Database Administrators	207	3	1.4
	Architecture and Engineering Occupations			
172071	Electrical Engineers	101	0	0.0
173023	Electrical and Electronic Engineering Technicians	202	2	1.0
173026	Industrial Engineering Technicians	501	0	0.0
173027	Mechanical Engineering Technicians	200	1	0.5
	Healthcare Support Occupations			
311011	Home Health Aides	291	4	1.4
311012	Nursing Aides, Orderlies and Attendants	448	52	11.6
	Protective Service Occupations			
339032	Security Guards	132	5	3.8
	Food Preparation and Serving Related Occupations			
353041	Food Servers-Nonrestaurant	103	0	0.0
	Building and Grounds Cleaning and Maintenance Occupations			
372011	Janitors and Cleaners-Except Maids and Houskeeping Cleaners	103	7	6.8
373011	Landscaping and Groundskeeping Workers	106	8	7.5
	Personal Care and Service Occupations			
399041	Residential Advisors	214	8	3.7
	Sales and Related Occupations			
412011	Cashiers	440	86	19.5
412031	Retail Salespersons	627	17	2.7
413011	Advertising Sales Agents	100	0	0.0

As the preceding table indicates, 15,067 or 83% of these vacant jobs were in occupations for which the Career Centers reported more than 100 vacancies. Overall, Bristol area Career Centers filled less than 6% of the positions with over 100 vacancies in FY01. Many of these reported vacancies were in occupations requiring the educational background and transferable skills sought by the critical and emerging industry clusters identified in the economic base analysis. As can be seen in table 26, these positions also tend to pay higher wages.

25. Occupations with >100 Vacancies Handled by the Career Centers of Bristol County, FY01, continued.				
SOC	**Job Title**	**Posted**	**Filled**	**% Filled**
	Office and Administrative Support Occupations			
431011	First-Line Supervisors, Office and Administrative Support	516	6	1.2
432011	Switchboard Operators, Including Answering Service	253	2	0.8
433011	Bill and Account Collectors	376	2	0.5
433031	Bookeeping, Accounting and Auditing Clerks	345	3	0.9
433051	Payroll and Timekeeping Clerks	542	0	0.0
434051	Customer Service Representatives	339	27	8.0
434071	File Clerks	264	17	6.4
434141	New Accounts Clerks	762	1	0.1
434151	Order Clerks	136	2	1.5
434171	Receptionists and Information Clerks	712	31	3.2
435071	Shipping,Receiving and Traffic Clerks	246	11	4.5
435081	Stock Clerks and Order Fillers	883	60	6.8
436011	Executive Secretaries and Administrative Assistants	205	10	4.9
439021	Data Entry Keyers	346	15	4.3
439051	Mail Clerks and Mail Machine Operators, Except Postal Service	208	1	0.5
439061	Office Clerks, General	710	35	4.9
	Installation, Maintenance, and Repair Occupations			
499042	Maintenance and Repair Workers, General	130	6	4.6
	Production Occupations			
512022	Electrical and Electronic Equipment Assemblers	198	13	6.6
512023	Electrmechanical Equipment Assemblers	104	1	1.0
512092	Team Assemblers	753	51	6.8
516061	Textile Bleaching and Dyeing Machine Operators and Tenders	378	212	56.1
519061	Inspectors, Testers,Sorters,Samplers and Weighers	466	6	1.3
519198	Helpers-Production Workers	295	38	12.9
	Transportation and Material Moving Occupations			
531021	First-Line Supervisors, Helpers, Laborers and Material Movers-Hand	303	2	0.7
533032	Truck Drivers, Heavy and Tractor Trailer	122	7	5.7
533033	Truck Drivers, Light or Delivery Services	108	3	2.8
537051	Industrial Truck and Tractor Operators	540	2	0.4
537064	Packers and Packagers, Hand	460	29	6.3
	Grand Total	**15,067**	**804**	**5.3**
Sources: FY01 MOSES data, Standard Occupational Classification Manual				

26. Employment and Wages, Fall River MSA for Occupations with > 100 Vacancies, FY01					
SOC	Job Title	Employ-ment	Median Hourly	Mean Hourly	Mean Annual
	Management Occupations				
113011	Administrative Services Managers	1,270	$25.76	$26.81	55,760
	Business and Financial Operations Occupations				
131071	Employment, Recruitment and Placement Specialists	710	$18.47	$18.74	38,990
132011	Accountants and Auditors	4,050	$21.45	$23.11	48,070
132051	Financial Analysts	910	$22.44	$26.81	55,770
	Computer and Mathematical Occupations				
151061	Database Administrators	130	$25.87	$26.99	56,140
	Architecture and Engineering Occupations				
172071	Electrical Engineers	160	$27.16	$27.67	57,550
173023	Electrical and Electronic Engineering Technicians	470	$15.95	$17.41	36,220
173026	Industrial Engineering Technicians	180	$16.24	$17.41	36,220
173027	Mechanical Engineering Technicians	50	$20.13	$20.75	43,150
	Healthcare Support Occupations				
311011	Home Health Aides	2,060	$9.06	$9.04	18,800
311012	Nursing Aides, Orderlies and Attendants	6,500	$9.21	$9.36	19,470
	Protective Service Occupations				
339032	Security Guards	3,840	$7.78	$8.77	18,240
	Food Preparation and Serving Related Occupations				
353041	Food Servers-Nonrestaurant	340	$8.03	$8.39	17,440
	Building and Grounds Cleaning and Maintenance Occupations				
372011	Janitors & Cleaners-Except Maids & Houskeeping Cleaners	9,080	$8.73	$9.38	19,500
373011	Landscaping and Groundskeeping Workers	2,710	$9.74	$9.92	20,630
	Personal Care and Service Occupations				
399041	Residential Advisors	120	$11.07	$12.38	25,760
	Sales and Related Occupations				
412011	Cashiers	14,350	$6.69	$7.40	15,400
412031	Retail Salespersons	16,910	$7.88	$9.46	19,670
413011	Advertising Sales Agents	Not available	$14.04	$18.22	37,900

Vacancy Survey

In an effort to identify vacancies in the regional labor market that were not captured by our analysis of Career Center data, an employers survey was developed and administered. A copy of this instrument is included as Appendix A. This survey was mailed to a 2-tiered sample of 501 firms from the critical and emerging industry clusters identified by the economic base analysis. The sample was developed as follows:

- 100% of firms w/ 100 or more employees
- 10% of firms below 100 employees, selected to be geographically representative of the region.

Using these criteria, firms to be surveyed were identified, using iMarket data (March, 2001), in the Bristol WIB's service territory.

27. Survey Sample.

Code	Cluster Group	100+ Emps (100% sampled)	Less than 100 Emps (10% sampled)	# of firms
TA	Textile & Apparel	30	8	80
HT	High Tech	7	6	58
MM	Metals Mfg	24	30	298
DB	Distribution	22	80	808
TC	Telecommunications	4	10	100
HS	Health Services	29	63	631
FS	Financial Services	6	88	887
PS	Professional Services	7	87	870
	Total Possible Firms	129	372	3732
	Number of Firms Surveyed	129 +	372 =	501

The initial mailing of the survey took place in May, 2001. This was proceeded by a second mailing and follow-up telephone calls. As a result we have attained a 9 percent response rate (46 valid responses). This response rate is the result of a number of factors. Of our original sample of 501 firms, 30 questionnaires were returned due to the lack of a forwarding address or the closure of the business. Due to the modest response, the results of the survey must be interpreted cautiously. However, these survey responses provide some useful insights into the recruitment methods and hiring needs of employers in the Bristol WIB service area. To supplement the survey, we also met with selected firms and small groups of firms in similar industries in order to probe further where firms are having difficulty filling positions and the requirements they are seeking.

Survey Respondent Profile

In total, the responding firms employ 7,687 full time equivalents. Of the responding firms, 59% report that they are stable in their employment levels, 30% report plans to add new employees while 11% are downsizing. Additionally:

- More the one third (36%) of survey respondents have 3 or more shifts. These operations tend to be either manufacturing or in-patient health care institutions.

- 42% of respondents come from the manufacturing sector; the remainder are from service sector firms.

- Over 30 % of respondents expressed an interest in having an opportunity to further discuss their workforce needs.

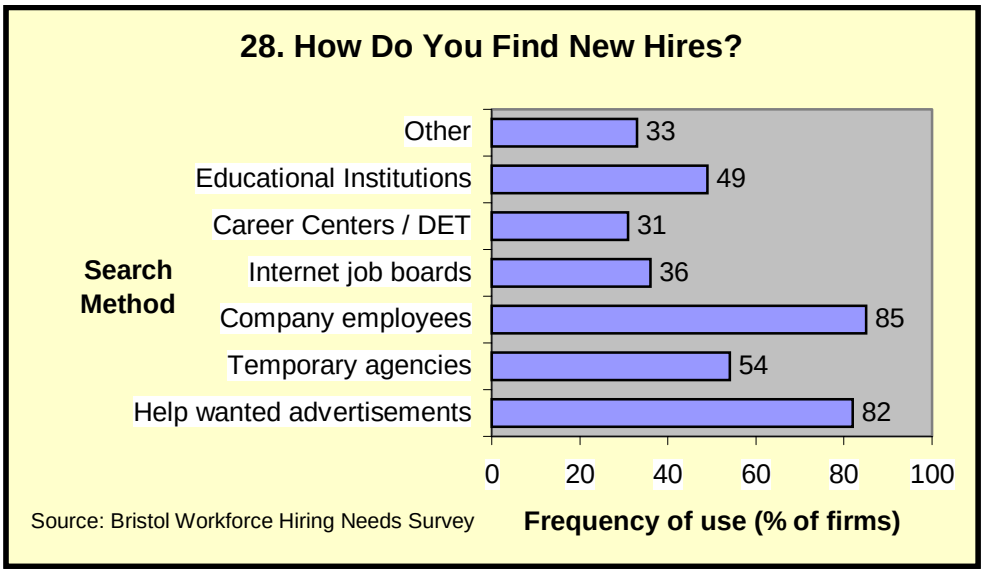
Hiring Patterns

Despite recent patterns of lower unemployment and tighter labor markets in the region, it is notable that respondents reported that their replacement hiring is nearly two and one-half times that of new position hiring (1,975 vs. 802). We believe replacement hiring is actually greater than this, due to the higher turnover that accompanied the tight labor market.

Overall respondent firms reported that they have experienced a 26% annual turnover rate over last 2 years. Among the responding firms there has been 4% annual growth in new positions over last 2 years. Current vacancies (open positions) in respondent firms are substantial (5% of the currently employed base).

Recruitment Methods

Since one of the key functions of the publicly funded workforce system is to connect individuals with employment opportunities, the survey asked firms about their recruitment methods.



Survey respondents reported that their two leading recruitment methods are employee referrals, which many firms report as one of the most cost effective recruitment methods, and traditional newspaper advertising. There is also a growing use of Job Fairs, including those recently sponsored e Bristol WIB. Respondents reported that the Career Centers are their least common method of recruitment. In

follow-up interviews, 15% firms contacted reported dissatisfaction with the quality and fit of these Centers to their specific recruiting needs. The most common concern expressed was that applicants referred by or available through these Centers may not be qualified for the positions open. This experience, coupled with a relatively low profile of the Career Centers among the employer community, may help to explain why these firms do not currently take full advantage of the services offered by the Career Centers.

29. Difficult to Fill Positions

Position Type	Number of Positions	Share of Total
Frontline Workers	155	39 %
Professional/Technical	186	47 %
Sales and Marketing	28	7 %
Management/Supervisory	8	3 %
Other	18	5 %
TOTALS	395	100 %

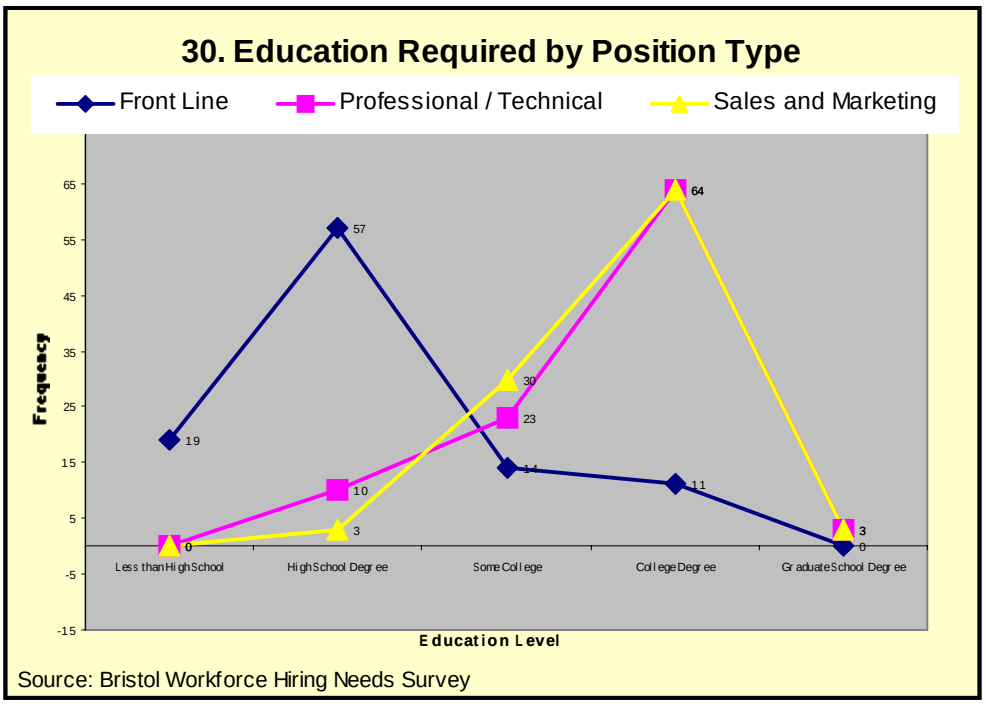
Source: Bristol Vacancy Survey

Hiring Difficulties

We defined a hiring difficulty as a situation where a firm took longer than three months to fill an available position. More than half of the respondents (57%) reported difficulty filling certain positions.

Generally, there appear to be two areas where firms are experiencing the greatest difficulties: Frontline positions (non-managerial), and professional/technical positions. Additionally, sales and marketing positions are the third most frequent types of positions, which firms are having difficulty filling. Notably, while the front line positions appear evenly distributed across sectors, difficulties filling professional/technical positions are concentrated in the high tech, telecommunications and health care clusters.

While the survey was not able to probe for causes of the above, it is likely that firms are experiencing difficulty filling Frontline positions for a variety of reasons. These reasons likely include: a tightened labor market and shorter pool of qualified people, less interest in these positions within the workforce due to their relatively low wages, and declining labor force participation as more and more workers in these positions retire and need to be replaced. Given the historical emphasis of the public workforce system on short term training and placement, this appears to be a significant area of need and opportunity for the WIB in the near term.



Source: Bristol Workforce Hiring Needs Survey

In contrast, most professional and technical positions require two to four years of post-secondary education with additional licensing or certification required. This is borne out by the responses of surveyed firms as shown in the chart below. This chart clearly demonstrates that there are distinctly different requirements for frontline versus professional and technical positions.

In positions where there are more extensive educational requirements it is clear that the WIB's role must be different. In many of the professional and technical areas there is an inadequate supply of qualified or available professionals in such areas as nurses, radiologists and laboratory technicians in the rapidly growing health care cluster. Some of these shortages are systemic and national in scope. The challenge for the WIB will be to determine what local actions could potentially mitigate these gaps on a regional or local labor market level, while working to influence changes in the larger educational system. A recently released report by the American Hospital Association has found that hospitals are experiencing chronic vacancies in a number of positions beyond the well publicized issues surrounding nurses, as shown below.

Figure 31 - Leading Hospital Vacancies by Position.	
Position	**Vacancy Rate (%)**
Pharmacists	21
Radiological Technicians	18
Billing / Coders	18
Laboratory Technologist	12
Registered Nurses	11
Housekeeping / Maintenance	9
Source: National Advisory Council on Nurse Education and Practice Report	

Cluster Specific Shortages Among Area Employers

Beyond the generic needs already cited, many of which are frequently cited first by cluster firms, we have identified certain recurring shortages that are industry specific.

Health Care: In the course of convening groups of companies around this issue, we have confirmed that this area represents a long term need for relatively well paying jobs, where 10 to 20 percent of the jobs currently go unfilled due to lack of qualified workers. These findings are also consistent with the occupational trends reported above in the cluster analysis. In addition to these shortages, there are also shortages for patient care positions and home health aid positions that are chronic and likely to increase as the region's population continues to age. Unlike the other clinical shortages, pay scales for these lower-skilled occupations are relatively low and can mean that turnover and supply will continue to be issues until compensation can be increased.

Metalworking Manufacturing: While the slowing economy has dampened the appetite for new hires, metalworking firms continue to have difficulty recruiting and attracting qualified machinists. As a variant of this, in the jewelry industry sub-cluster in the Attleboro area, the leading concern and constraint to future competitiveness is a shrinking and aging pool of toolmakers and model makers. In this area, Leach and Garner's Workforce Training Program should be of broader interest, since it focuses on developing a multi-year apprenticeship program for these skilled positions that are critical to new product development.

Textiles and Apparel Manufacturing: As reflected in the cluster analysis, the textile industry has invested in new automation and migrated to other markets beyond apparel, such as automotive and home furnishings. As a result, the hiring needs of these firms reflect the need for math and communication skills that are the foundation for continuous improvement and world class manufacturing. In this arena, the Bristol WIB should encourage and facilitate more linkages with the Textile and Engineering capacities of UMass Dartmouth and the Advanced Technology and Manufacturing Center (ATMC) now coming on line in Fall River. There will be opportunities to utilize the ATMC to deliver more industry training in a cost effective, technologically advanced manner.

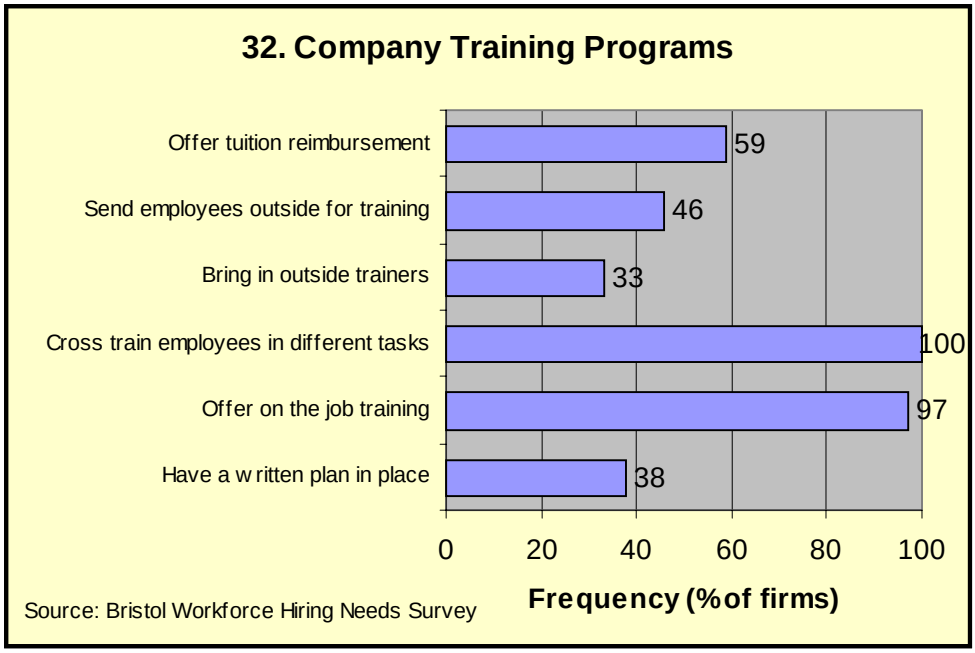
High Tech Manufacturing and Telecommunications. Again, despite the recent economic slowdown, there continues to be more demand than supply for information specialists, including network administrators, programmers and technicians. These positions are needed in many firms with internal management information departments as well as among firms in this cluster as well.

Financial and Professional Services: Consolidation and increased competition have put additional pressure on firms to increase productivity and to automate and computerize their business processes. Consequently firms in these industries cited shortages in recruiting information technology workers to support and maintain the systems which support these new processes. Secondly, customer service representatives and sales positions were also cited as hard to fill in the financial services cluster.

Distribution: Warehousing and distribution has been a growing sector, particularly in the Taunton area. Through the survey, the activities of JobSource (a job development and placement service based in the Myles Standish Industrial Park) as well as other discussions with area firms, we have confirmed a recurring and unmet demand for licensed truck drivers, reflecting a national shortage. Additionally, there are chronic vacancies among front line positions such as order pickers and customer service representatives and telemarketers. In these latter cases, some of the shortages are attributable to more modest compensation available and opportunities for higher paying jobs in other firms and industries.

Company Sponsored Training

While traditionally focused on incumbent workers, company training programs also have a bearing on the hiring and retention of workers. The surveyed firms reported that on the job training, particularly cross training, and tuition reimbursement programs are the most common ways they address the training needs of their employees. This suggests that there is an opportunity for the WIB to leverage its limited resources by establishing linkages between programs providing initial training for new entrants with the in-house training companies are providing once these employees are on the job. Also, since many companies tend to use temporary agencies as part of their recruitment and screening process, the WIB should also focus on working with temporary agencies to help expand the pipeline for front line workers coming through this avenue -- and in so doing help to create permanent full-time opportunities for these "temp workers".



One of the best ways to determine the qualifications needed for new hires is to assess what training companies undertake to increase the skills and performance of current employees. Training activities funded through the Massachusetts Workforce Training Fund (WTF) are indicative of what participating companies are seeking. An analysis of WTF projects funded in the Bristol region since early 1999 provides some notable patterns for those clusters represented.

Manufacturing firms, particularly in the textiles, metalworking and high technology industry clusters have been actively involved. Of the 27 company training programs funded through July, 2001, over 70 % were in one of the industry clusters. However, the vast majority of projects (80%) were in manufacturing firms. Notably absent from funded projects were professional services firms, and there was only one project each representing health care, distribution and financial services respectively.

While there have been no group projects funded in the Bristol WIB area, many company projects focus on similar, generic requirements, transferable across companies and industries. These include: various continuous improvement programs including ISO 9000 and QS 9000 preparation, basic skills in English, math and communication skills, teambuilding and supervisory skills are also frequent training elements. Other recurring elements include on-site computer courses to enable more people in a company to utilize and apply the computer in their jobs. In computer training, there are generic training on office applications such as word processing, spreadsheets and presentation packages, as well as more focused, customized training on company specific enterprise systems as well as industry specific packages, such as computer aided drafting and manufacturing for machine shops and metalworking firms.

Recommendations for the Bristol Workforce Investment Board

The preceding research and analysis points out opportunity areas for the Bristol WIB to become more engaged with employers in addressing hiring and recruitment needs. In proceeding, it is important for the WIB to build its capacity to work with industry, both directly as well as through its own programs such as the Career Centers. In doing so, the WIB will be better positioned to respond to company needs both for replacement hiring and well as the filling of new positions.

- Increase Career Center focus on Company as Customers: Outreach & services, response time, management reports are key issues for the Centers in dealing with firms. While the Career Centers indicate they have two customers: job seekers and employers, it evident from a review of the "MOSES system" that the emphasis is on collecting information about job seekers. To illustrate, there are over 100 fields about the job applicant, while there are less than half a dozen about the company in the reports we have reviewed. This limits the WIB's ability to use the Career Centers as "listening posts" to changing employer demands and patterns in "real time." In addition, as unemployment funds being paid out are curtailed in good economic times, job developer positions are often curtailed at a time when company demand is higher. In other words, when employers are growing and hiring, the resources in the Career Centers available to do outreach, job development develop relationships and provide other services to employers are decreased. We therefore recommend that the Bristol WIB look at ways to compensate for this cycle and to leverage other resources in doing so.

- In addition, awareness and utilization of the Career Centers appears limited across key clusters in the WIB service area. Less than 35% of the employers responding to the survey indicated that they have used the Career Centers in their recruitment efforts; the least frequently used method identified in the survey. The Career Centers could benefit from a more aggressive marketing and outreach program to key employers, as well as more systematically assessing the requirements and customer satisfaction of those employers who use the Centers for recruitment.

- The Bristol WIB needs to determine how to respond to national and systemic skill shortages: What is the role of the WIB beyond short term training? The vacancy survey and subsequent discussions with employers have confirmed that certain regional employers are experiencing chronic difficulties in filling certain types of positions, particularly in the professional and technical areas. Specifically in the health care cluster, area hospitals are seeing chronic shortages for nurses, technologists, pharmacists, radiologists and the like. The process of educating, training and certifying individuals for these types of positions is a long-term multi-year process. The Bristol WIB needs to decide how it can best leverage its resources to contribute to the development of a pipeline of skilled workers to fill these relatively high paying occupations of the future.

- Similarly, the national shortage of machinists and tool makers persists in the manufacturing arena. Given the WIB's historic focus on short term training

programs, is this an issue in which the WIB is prepared to become engaged? And if so, which role is the WIB prepared to play? In addition, if the issues effecting these types of shortages go beyond the geographic area of the Bristol WIB, what part of the problem can be addressed locally? Are issues which the WIB should address, perhaps initially with pilot projects seeking to recruit students into promising career paths. By taking a "career ladder" approach in working with firms and educational institutions, as reflected in programs such as Bristol Community College's Tech Prep, as well as its new Computer Integrated Manufacturing Project, the WIB could make a difference in these more difficult arenas.

- Develop Resources to Develop Group Training Projects. There are ways to build relationships, create opportunities but these take time and resources. Our initial meetings with companies in various industry clusters indicate some common needs and interests in collaborative training and development programs. However, experience in this region and elsewhere has shown that this process is multi-stepped, and requires additional resources to properly facilitate the coming together of competitors in an industry cluster to address shared needs. In this regard, we recommend that the WIB, possibly in collaboration with adjacent WIBs, look at opportunities to develop a regional skills alliance where there are clear and substantial skill shortages in technology based employment areas. From this analysis, the most dramatic opportunity in this arena appears to be in the health care arena, where as much as half of the chronic shortages are in technology-related positions, such as surgical technicians, radiologists, pharmacists, etc. Funding for this type of initiative is available on a competitive basis from US Department of Labor, and would likely leverage private investment from the key stakeholders such as area hospitals, diagnostic and laboratory services providers, equipment vendors and other firms with a stake in these issues. Also, the recent efforts of the Metro South Chamber of Commerce and the Brockton Area WIB make provide another example of how to go about building collaboratives and transferring best practices among area firms.

Conclusion

With the information generated by the research described in this report in hand, the Bristol Workforce Investment Board is now well positioned to develop new strategies to help regional employers find the workers they need and to assist local residents in attaining the skill levels that employers in the region's expanding industry clusters demand. While recent changes in the economy and the tragic events of September 11th may result in reduced demand for new workers in the near term, the growth of the critical and emerging industry clusters identified in this report, in particular the Allied health services cluster, offers the Bristol Workforce Investment Board an important opportunity to play a critical role in an effort to help recruit, retain and train the local workforce of tomorrow.

Appendix A

Vacancy Survey Instrument

Bristol Workforce Hiring Needs Survey. May, 2001

Background.

The purpose of this brief survey is to identify needs and plans which your company has in filling positions. On behalf of the Bristol Workforce Investment Board, the Southeastern Massachusetts Manufacturing Partnership is conducting a study of new hiring needs for both replacement and new positions in collaboration with UMass. The data we are gathering will be used to identify and formulate strategies to address new hiring and related workforce needs for companies in your industry and those of other key industries in the region. Your individual response will be kept confidential. The information you provide will be combined with other responses to develop an overall picture of issues in your industry cluster. Should you have any questions, please contact Joyce Graham or Steve Andrade at the Partnership at 508 824-3600. At your earliest convenience, please:

- fax back this completed survey to us at (508) 824-3232 , OR
- mail to: SE Mass. Manufacturing Partnership , 125 John Hancock Rd., Myles Standish Industrial Park, Taunton, MA 02780.

1. Your Company: Please make any corrections to the label below as needed:

[Mailing Label]

2. Contact Information:

Name: _____ Title:_____

Telephone_____Ext._____

3. In recruiting new employees, which sources has your company used in the last two years? (check as many as apply):

[ ] Help wanted ads

[ ] Temp. agencies

[ ] Company employees

[ ] Internet job boards (e.g., monsterjobs.com)

[ ] Career Centers/ DET

[ ] Educational institutions

[ ] Other (specify)_____

4. Your Company's Workforce:

Current number of employees based at this location _____

(full time equivalent):

Number of hires in the last two years:

Number of hires to fill existing position: _____

Number of hires for newly created positions: _____

Number of vacancies (open positions) that now exist: _____

5. How many shifts does your company have? [ ] One [ ] Two [ ] three [ ] Four

6. Is your workforce: [ ] Increasing [ ] Decreasing [ ] Stable

7. What percentage of your workforce turns over (leaves the company) each year?

[ ] 0-5% [ ] 6-10% [ ] 11-20% [ ] 21-30% [ ] over 30%

8. What is the most common educational level of your employees?

	Less than High School	High School	Some College	College grad	Grad School	Not App.
Front line employees	o	o	o	o	o	o
Supervisors	o	o	o	o	o	o
Professional/ Technical	o	o	o	o	o	o
Sales & Marketing	o	o	o	o	o	o
Middle Managers	o	o	o	o	o	o
Senior Managers	o	o	o	o	o	o

9. Does your company?

Have a written training plan in place?	[ ] Yes	[ ] No
Offer on the job training?	[ ] Yes	[ ] No
Cross train employees in different tasks?	[ ] Yes	[ ] No
Bring in outside trainers?	[ ] Yes	[ ] No
Send employees outside for training?	[ ] Yes	[ ] No
Offer tuition reimbursement?	[ ] Yes	[ ] No

10. Have you had difficulty filling certain positions in the past 12 months?

[ ] Yes, it takes longer than 3 months to fill the position(s)

[ ] No (If no, skip to question #12)

11. For which and how many positions has it been difficult to find and hire qualified people?

(check all that apply)

C*heck if*	*and provide Number*
having difficulty filling	*of positions involved*
[ ] Front line employees	_____
[ ] Supervisors	_____
[ ] Professional/ Technical	_____
[ ] Sales & Marketing	_____
[ ] Middle Managers	_____
[ ] Senior Managers	_____

12. Please provide any comments, special circumstances about your hiring needs?

_____

_____

13. Would you like someone contact you to discuss your needs further? [ ] Yes [ ] No.

THANK YOU FOR YOUR PARTICIPATION

Appendix B

Workforce Training Fund Activity Among Clusters

					Workers by Type						
Industry Cluster	**Company**	**$WTF Funds Awarded**	**Workers to be trained**	**$WTF per worker**	**Mgr & Admin**	**Prof & Tech**	**Sales & Mktg**	**Cler & Ad Support**	**Service**	**Prod & Const**	**Summary of Training Activities**
Textiles & Apparel	Quaker Fabrics	$250,000	1,074	$232.77	120	25				929	Conduct six qtrly skill building workshops to increase the productivity & effectiveness of the co.'s technical & management staff.
Metals Mfg	Polymetallurgical	$107,720	80	$1,346.50	5	6	9			60	Comprehensive program designed to achieve quality improvement, cost reductions and/or customer satisfaction enhancement.
Metals Mfg	Reed & Barton	$103,250	46	$2,244.57							Co. recently made and investment of $1,000,000 in new MIS system (hardware, software & basic training). This new system is critical to co.'s productivity, ability to compete and to retain jobs in MA. Investment in training employees to appropriately utilize this system is beyond co.'s current budget.
Financial Services	Lapointe Insurance	$11,625	10	$1,162.50	10			10			Computer skills & internet commerce training and technical insurance training.
Metals Mfg	Leach & Garner	$49,960	143	$349.37	25	15	10	46		47	Apprenticeship training for employees to be qualified as toolmakers. Computer upgrade training for all levels of the organization.
Hi Tech Mfg	Rika Denshi	$53,800	40	$1,345.00	4	6	7	2		21	Three training tracks that support company goals and include most employees.
Metals Mfg	Gladding Hearn	$126,300	44	$2,870.45	1					43	Basic shop skills program (ship fabrication), Advanced shop skills program (ship fabricaton), "Train the Trainer" to provide trainers with skills to provide effective training
Metals Mfg	TracRac	$61,765	42	$1,470.60	6	3	2	6		23	Welder Training & Certification, QS9000 training, Information Technology (IT) training covering Material Requirements Planning (MRP) & Computer Aided Design (CAD).
Textiles & Apparel	Main Street Textiles	$201,324	364	$553.09	22	58		41		243	Manager & Supervisory Training, Advanced Fixer Training, Technical & Maintenance Training, Operator Training and Computer Skills Training
Textiles & Apparel	Harodite Industries	$16,968	34	$499.06	3	5	1	2		23	Preparation for QS9000 registration; training to include: internal auditing, failure mode and effects analysis, advanced product quality planning & production part approval process, statistical process control (in the automotive industry).
Textiles & Apparel	Griffin Mfg	$14,000	18	$777.78	2	10				6	Train Quality Auditors in the recognition & classification of fabric, sewing and specification defects. Train auditors in automated dat entry and analysis
Metals Mfg	Larson Tool	$26,189	83	$315.53	7	8	4	7	5	52	Quality control techniques, press operation, software & programming, workskills
Health Care	Adsum	$43,585	31	$1,405.97	5	24		2			Computer technology training
Health Care	People	$51,875	50	$1,037.50	5	38		7			Microsoft Word, Excel, Advanced Word, Advanced Excel, keyboard, word processing, software specific to assembly production and customized accounting package
Textiles & Apparel	Quaker Fabrics	$46,485	1,562	$29.76	103	64				1395	
Hi Tech Mfg	Barry Industries	$111,500	100	$1,115.00	4	5	6	25		60	Implement an inventory control system, an ISO9000 system and cross-train employees in select departments
Hi Tech Mfg	General Dynamics	$95,000	30	$3,166.67		30					Advanced technical training for Operations technicians (Unix, A++, Cisco); nationally recognized training & certifications. This will give a specifici gourp of employees high tech skills which will improve their potential for promotion and increased earnings capability.
Hi Tech Mfg	Saint Gobain	$72,420	64	$1,131.56	5			5		54	Quality control techniques, including SPC, auditing, Kaizen (continous improvement through team problem solving, production skills cross training, material requirements planning system, & management development
Metals Mfg	Larson Tool	$5,400	83	$65.06	7	8	4	7	5	52	Training programs will provide "workskills" to employees so they will be able to understand and solve production problems and learn to conduct action plans.
Metals Mfg	Automatic Machine Products	$39,460	35	$1,127.43	9	5	1			20	Manufacturing management training program, single minute exchange of die program (SMED), CNC programmer training, automatic screw machine job planning course/workshop
Electronics	Lightolier (Genlyte Div)	$46,293	130	$356.10	9	24				97	Three training tracks that support ISO 9000 Registration: internal auditor training; root cause analysis and basic PC skills for set-up operators
		$1,534,919	4,063		352	334	44	160	10	3,125	
				$ 377.78							
					9%	8%	1%	4%	0%	78%	