

The Southern Essex Regional Labor Market: A Blueprint

**Prepared for the Southern Essex Workforce Investment Board
by the Center for Community Economic Development
University of Massachusetts Boston**

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The Center for Community Economic Development

The Center for Community Economic Development (CCED) at the University of Massachusetts Boston is a university – community collaboration comprising the Mauricio Gastón Institute for Latino Community Development and Public Policy, the Institute for Asian American Studies, the Doctoral Program in Public Policy, and more than 25 community based organizations in Boston including community development corporations, employment and training agencies, multi-service organizations and advocacy groups. The Center also conducts community development work outside of Boston with appropriate partners.

The CCED's goals are:

- To establish economic linkages between low-income communities of color and the regional economy;
- To create a multi-ethnic, multi-racial network of CBOs to gain greater access to public and private economic development resources;
- To identify community resources and to disseminate best practices in community economic development among local CBOs; and
- To develop ongoing linkages between communities – practitioners and residents -- and the faculty and students at the University.

The CCED conducts applied research and outreach projects designed and implemented in partnership with community and city organizations in the areas of workforce development, small business development, and neighborhood revitalization.

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EXECUTIVE SUMMARY

This Labor Market Blueprint, conducted during the first half of 2000, is intended to assist the Southern Essex Workforce Investment Board (WIB) in understanding the regional labor market, with a specific focus on identifying opportunities for low-skilled workers. It will enable the WIB to set priorities and make policy decisions regarding the use of public job training resources.

The Blueprint provides information and analysis in three, inter-connected arenas:

- ❑ Labor Market Supply: Which are the communities within the region – geographic, ethnic and linguistic -- most in need of assistance in connecting to the labor market?
- ❑ Labor Market Demand: What opportunities and challenges exist within particular industries in the region, and what are the requirements for actually securing employment within those industries?
- ❑ Labor Market Intermediaries: What resources exist in the region to help connect low-skilled residents and industry, meeting their mutual needs?

Labor Market Supply

Unemployment rates have declined over the past several years, mirroring state and national trends, though certain towns including Gloucester and Lynn continue to have greater portions of their residents searching for work than other towns.

Minority populations remain small, but are growing rapidly. Hispanics lead in growth rate, with an estimated increase of 4,549 or 34.3 percent between 1990 and 1997. 2000 Census figures will provide an even more accurate picture of these growth rates.

Disparities in educational attainment rates evident across the region, by town and by race and ethnicity gives the WIB a means to target its education and training resources. Towns including Lynn, Gloucester and Salem show the lowest high school and college completion rates, while Hispanics show the lowest rates of completion when compared to other groups.

According to a new measure of household income and poverty known as the “Self-Sufficiency Standard,” the estimated monthly and hourly wages required for a single parent with one pre-schooler in this region to support her/his family is \$15.42 per hour, or \$2,715 per month. By this set of standards, which includes a range of estimates based on family composition, towns including Lynn, Gloucester and Salem have a percentage of families unable to meet their basic needs at a rate three times greater than other locales.

Labor Market Demand

Five main industries, and, in turn, sub-sectors in the Southern Essex region stood out as being main sources of employment for residents, sustaining living wages, and, based on occupational structure, holding some promise of career advancement for workers:

- ❑ Construction – Special Trades Contractors

- ❑ Health Care -- Hospitals
- ❑ Manufacturing – Industrial Equipment
- ❑ Retail Trade – General Merchandise Stores
- ❑ Personnel Supply Services

A set of slightly different criteria revealed an additional three emerging industries:

- ❑ Software Services – Computer and Data Processing
- ❑ Telecommunications
- ❑ Financial Services – Web-based Banking

Across these industries, labor shortages are common. As a result, employers in many fields are relaxing their entrance requirements.

Retention is also a common problem, though it varies in severity from industry to industry. Lower skilled jobs that are particularly demanding -- such as patient care in a hospital or physical labor on a construction site -- as well as jobs that are lower paid and lower skilled -- such as customer service, assembly and temporary work – all lose workers at high rates.

Wages for the critical occupations in the manufacturing and software sectors are substantially higher than those in any of the other sectors included in the Blueprint. Wages for the occupations comprising retail are the lowest and wages for personnel supply services are also generally low.

In many cases, employers are responding to shortages by reaching out to and utilizing populations that they would have been ignored or given lower priority under slacker demand conditions. Some industries utilize temporary agencies both as a recruitment tool for permanent workers, and as a testing ground or probationary device to screen workers.

Employers and unions are also confronting deficits in basic skill attainment and work readiness.

There is a population of lower skill workers, particularly immigrants, who face obstacles entering the mainstream of North Shore employment. Language barriers, lack of connection to employer networks, and insufficient knowledge of work norms and culture are among the barriers they face.

There are differences in career advancement potential among the industries studied. Most employers (and industries studied) lack formal career ladders and structures. Most advancement depends on informal initiative of incumbents and managers. The unionized construction industry, with an apprenticeship program providing for formalized training for up to five years, is a noteworthy exception to this.

Manufacturing and construction appear to have the best career ladder possibilities. Hospitals offer substantial entry-level employment and some opportunities to advance as well. Retail trade occupations are highly concentrated at the entry level. Personnel supply services offers a slightly better mix of occupations. Software services offer a fair mix of occupations in the matrix, but the employment in pre-baccalaureate occupations is low.

Differences in career advancement potential among the industries suggest the need for different strategies by the WIB. Some strategies can promote the training of workers for industries that may already offer career pathways (formal or informal), while others promote employers to work collaboratively to develop pathways where they currently do not exist.

The Southern Essex region remains a largely white, non-Hispanic region, and the demographics of its workplaces reflect this. However, some employers (and their industries) employ substantial numbers of racial and linguistic minorities at a variety of skill levels.

The skill distribution of minorities in the industries studied appears to be bimodal. That is, racial and linguistic minorities are concentrated in either lower skilled labor or sales occupations and industries, such as light assembly, warehousing, and retail sales, or in highly skilled technical and professional jobs in software, telecommunications and related information industries.

Most employers and unions have worked with community colleges in the region, particularly North Shore Community College, and a smaller but substantial fraction have worked with community based organizations for recruitment and referral of trained candidates. A few have been involved in more complex efforts such as school-to-work or welfare-to-work efforts.

Most respondents who had worked with community colleges were positive about the experience. Nonprofit agencies were used by a smaller proportion of employers, typically for outreach to low income, minority, or other disadvantaged candidates, and for training services in some cases. Reviews of service from nonprofit and community based organizations were generally high, though some respondents (in construction trades and in telecommunications) were dissatisfied with the quality of candidate referrals.

With a few exceptions (particularly large and well-known employers, such as hospitals), there is a lack of awareness of the WIB and its programs. Employers did, however, have suggestions for a regional labor market intermediary. They included:

- ❑ Encourage and enhance training -- with greater emphases on reading, basic math skills, and general work readiness -- for new entrants to the labor market and incumbent workers.
- ❑ Increase resources for education and training, and provide assistance to employers to apply for public funds.
- ❑ Expand access to work for low-skilled, minority, and other disadvantaged workers, through improved transportation networks, child care and other supports.
- ❑ Encourage and support the development of youth.
- ❑ Assist employers to organize, both within and across industries, to meet common work force development needs such as purchasing training equipment; developing common entry level and advanced skill requirements, jointly promoting industries to youth; outplacement; sharing technologies, training, and referrals.

Labor Market Intermediaries

Labor market intermediaries include approximately 37 community colleges, community based organizations, and other public and private training programs in the Southern Essex region. The largest number is located in Lynn, with additional concentrations in Salem and Gloucester.

Nonprofit, community based organizations generally provide ESL, ESOL, and ABE training and entry-level health care training. Proprietary schools mainly provide computer office skills training and other types of entry to mid-level computer training. Community colleges and other higher education institutions provide, among their other curricula, advanced technical training in web development, networking, and computer programming. High schools and voc-tech schools generally provide training for construction trades occupations. In manufacturing, entities specifically created to meet the training needs of the industry, such as the Greater Boston Manufacturing Partnership, provide training.

Given the growth in several technical and computer-based occupations, there appears to be a significant gap in skills training programs available to Southern Essex residents. There is also a shortage of ESOL and ABE slots, and particularly in programs that train people to a level at which they can access higher level, technical training and employment.

Recommendations

The material provided by employers, unions and education and training providers, as well as secondary data sources, points to several specific areas that the WIB should prioritize. Certain communities need more education and training resources for their residents to succeed in the labor market. Industry needs, and the employment needs of workers in them, require customized strategies, including ones to support and expand career pathways, to improve skills, and to help make the labor market more transparent to workers. Finally, given the face of the workforce and the state of industries within the region, the environmental scan indicates the need for increased accessible technical training as well as contextual language and basic education. Further recommendations are included in final section of the report.

INTRODUCTION

Purpose

The Southern Essex Workforce Investment Board (WIB), one of 16 such entities in the State of Massachusetts, is responsible for setting policy and overseeing all federal and state funded workforce development programs across the 19 cities and towns in the north shore area. The mission of the WIB is to develop, support, maintain, and positively direct the workforce development system in the Southern Essex region¹ so that it meets the labor force needs of area residents and employers.

In late 1999, the WIB embarked upon a project to obtain new and updated information about the labor market needs with the region, in order to guide future policy decisions. The WIB selected the Center for Community Economic Development of the University of Massachusetts Boston to conduct an analysis of the labor market needs within area communities, and to publish a Labor Force Blueprint. The Blueprint was to include:

- ❑ An overview of the existing labor force;
- ❑ Analysis of eight critical and emerging industries in the region;
- ❑ Major occupations within these industries and skills required to obtain and retain employment therein;
- ❑ Human resource challenges and training needs within these industries;
- ❑ Current training capacity in the Southern Essex area to meet these needs;
- ❑ Analysis and guidance on how to increase training capacity where needs are not currently being met.

This report is the result of a five-month endeavor to gather and analyze both existing, published data as well as first-hand accounts from key labor market stakeholders in the region. In short, the Labor Market Blueprint is designed to assist the Southern Essex Workforce Investment Board in understanding the regional labor market, with a specific focus on identifying opportunities for low-skilled workers. It will enable the WIB to set priorities and make policy decisions regarding the use of public job training resources for the region.

Methodology

Research and analysis for this report took place across three arenas, each informing the other. First, on the Supply side: Which are the communities -- geographic, ethnic and linguistic -- that are most in need of assistance in connecting to the labor market, and how can we best understand their particular education and employment assets and needs? Second, on the Demand side of the labor market: What opportunities and challenges exist within particular industries in the region, and what are the requirements for actually securing employment within those industries? Third, bringing the two sides together -- Labor Market Intermediaries -- What resources exist in the region to help connect low-skilled residents and industry, meeting their mutual needs?

¹ We refer to the labor market and geographic area administered by the Southern Essex Workforce Investment Board as the “Southern Essex Region.” It was formerly known as a Service Delivery Area.

Labor Force Analysis

For the demographic analysis component, various and complementary sources were employed to examine the overall education and employment status of the Southern Essex regional labor market. Demographic data was gathered on all 19 communities within the workforce investment area, paying careful attention to unemployment rates, educational attainment levels, income, and linguistic isolation levels. Existing, published data was also supplemented with the experience of local education and training practitioners.

Population data obtained from Massachusetts Institute for Social and Economic Research (MISER) and the U.S. Census Bureau were analyzed in terms of growth rates and estimates and projections. Workforce data from MISER and the Department of Employment and Training were also analyzed to identify employment and unemployment rates for the period of 1994 to 1998.

U.S. Census and MISER data on race and ethnicity, as well as educational attainment to were used to assess the make-up of each town, and compare them to state and national levels. Similar data and processes were used to summarize educational attainment of specific ethnic groups and patterns of English proficiency.

The “Self Sufficiency Standard” was also used to look at basic household income requirements in the Southern Essex region, to compare how the region compares to others across the state, and how towns within the region compare to each other in terms of household self-sufficiency. The Self-Sufficiency Standard measures the amount of income required to cover basic costs in the regular “marketplace” without public or private subsidies, and are calculated as geographically specific as is possible given the data available. Some costs have no regional variation (such as food), so they are standardized, while costs such as housing and childcare, which vary greatly, are calculated at each geographic region. “The Self-Sufficiency Standard for Massachusetts,” by Diana Pierce and Jennifer Brooks with Laura Henze Russel, *Wider Opportunities for Women* 1998, and “The Self-Sufficiency Standard: Where Massachusetts Families Stand,” Massachusetts Self-Sufficiency Project (Women’s Educational and Industrial Union in collaboration with Wider Opportunities for Women) January 2000).

Industry Analysis

From the outset, greatest emphasis was placed on assessing industry demand since this was assumed to be the arena in which the WIB had the greatest need for information. Both quantitative and qualitative research tools were employed, in an iterative fashion, in order first to select industries most relevant to the communities’ employment needs and second, to analyze these industries for entry requirements, wages offered, promise of advancement opportunities. The industry selection criteria included: Size, level of growth relative to other industries and existence of career pathways leading to sustaining wages for entry-level workers. Five critical industries were selected: Health Care, Retail Trade, Manufacturing, Construction and Personnel Supply Services. Using slightly different criteria and a more qualitative data gathering and analysis process, three additional, emerging industries were also selected to provide a window into small yet growing areas of employment in the region: Telecommunications, Software Services and Financial Services. Within each of these eight industries, one main sub-sector was selected, based on further analysis of growth levels, wage data and occupational structure.

As final step to the quantitative labor market data, an occupational matrix was constructed, serving three main purposes (See Appendix II). First, an examination of the wages paid by the most important occupations in an industry gives an indication of whether or not investment in training programs for these occupations is likely to provide a payoff to workers. Second, the examination of the occupational mix in an industry allows one to focus on the largest and/or fastest growing occupations when developing programs to meet employer needs. Third, an analysis of the mix of jobs at different skills and training levels provides information on the likelihood of career ladder potential.

Career ladder potential is defined as having a mixture of level I, II, and III jobs in the occupational matrix. The determination of the number of jobs designated Level I, II, and III is based on the differentiation of jobs into levels, which is, of necessity, partially subjective. The levels are a qualitative measure that demonstrates the approximate location within an occupational pathway of particular occupations.

To construct these levels, the occupations were first grouped based on similar but progressive job functions and skill sets. Then, skill and educational requirements and wages were examined. Within an occupational pathway, Levels I, II, and III reflect increasing wages. However, the wage levels are not comparable across occupational pathways due to the inherent inequities of the labor market. Within an occupational pathway, increasing levels also generally require additional skills, experience, and/or educational attainment. The additional amount of increased skills, experience, or education required to advance from one level to another will vary among different occupational pathways. None of the positions in the occupational matrices generally require a Bachelor's Degree as a condition of hiring although some incumbents in these jobs may have one. Where this is the case for a particular industry, it is noted in the analysis.

The Bureau of Labor Statistics' Occupational Employment Statistics provided the information on educational requirements and wages. To determine the number of jobs of each of the three levels, employment matrices for firms in Standard Industrial Classification (SIC) codes developed by the Bureau of Labor Statistics and distributed in Massachusetts by the Department of Employment and Training were used.²

In order to gain a more in-depth look at employment within the selected industry sub-sectors, the research team conducted a series of interviews with key employers and union officials. A protocol was developed to solicit information on skill and employment needs, job mobility (career paths), human resource issues and responses, and prior use of public, private or nonprofit training providers. In addition, information on wage and educational requirements was solicited to provide "on-the-ground" information to supplement the occupational matrix described above.

² This method of employment level determination carries with it some potential biases. Because we are not aware of the ways in which the employment data were aggregated in the formation of the matrices we rely upon, we cannot be sure that one sub-sector did not predominate. One potential bias is the understatement or overstatement of the numbers of Level I, II, or III jobs in the study area. It seems likely, given the large numbers of jobs we are reporting, that any differences caused by the data issues described above are likely to be small. The other main issue that arises from this problem is the over-reporting or underreporting of particular jobs. We are not able to solve this problem directly. Therefore, the WIB and the programs it funds are advised to work closely with specific employers to determine their occupational mix as part of the program development process.

Interviews were conducted face-to-face and lasted approximately one hour. For some larger employers, certain response categories, such as job title, wages, and turnover, required some data collection outside of the interview proper. (See Appendix III for Industry Survey Tool).

Employers and union officials who served as key informants were identified through consultations with WIB members and staff, other employers and union officials, and providers of support services, including managers of shopping malls and industrial parks.

Education and Training Resource Analysis

Given the existing labor force strengths and weaknesses, together with the industry needs identified through this study, the final step was to assess capacity of the current regional adult education and training system. The goal was to assist the WIB in determining how well equipped the system currently is to match job seekers with jobs in the selected industries. Existing education and training resources were reviewed and surveyed to determine actual capacity, entry requirements, challenges, etc.

The research team first collected existing data on training resources from several sources, including MISER, the Massachusetts Occupational Information Coordinating Committee (MOICC), the Department of Employment and Training (DET), the Workforce Investment Association of Massachusetts, and the Southern Essex Workforce Investment Board's own vendor lists. Program and vendor information was organized by type of training provided and by industry, enabling us to make a cross-comparison the selected industries vs. applicable programs.

Concurrently, a protocol was developed to gather more in-depth information on program capacity and priorities, as well as a means of tapping training practitioner experience and perspective. The protocol queried program directors on types of education and training programs, numbers served, targeted industries, ethnic, racial and linguistic background of program participants, and their understanding of industry demand and existing skill mismatches. The survey was conducted with eight programs, covering all the industrial sectors selected for the blueprint. Selection priorities were based on vendors funded by the WIB and on those with the best matches with the industries under study.

LABOR MARKET SUPPLY: THE SOUTHERN ESSEX REGION WORKFORCE

The first step in assessing local labor market needs was to determine the education and training gaps as well as barriers to employment of the region's population. A review of available demographic data indicates some key findings that may help shape the Workforce Investment Board's decisions about the deployment of education and training resources.

Actual and projected population growth in the region, for example, is slower than the state overall. Some of the smallest towns continue to grow rapidly, while others post negative growth. Unemployment rates declined over the past several years, mirroring state and national trends, though certain towns including Gloucester and Lynn continue to have greater portions of their residents searching for work than other towns. Minority populations remain small, but are growing rapidly. Forthcoming data from the 2000 census will further verify these trends. Levels of educational attainment vary across the region, particularly by race and ethnicity, with Hispanics showing the lowest rates of high school and college degree attainment. Finally, according to a new measure of household income and poverty known as the "self-sufficiency standard,"³ some towns within the region have a percentage of families unable to meet their basic needs at a rate three times greater than other locales.

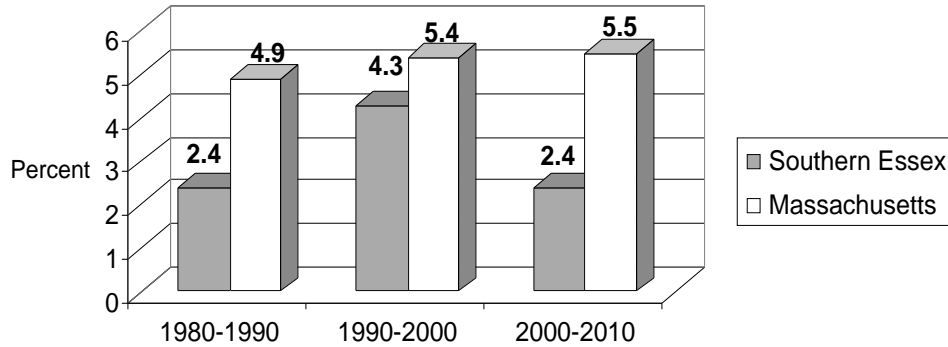
Population Growth

Population growth in the 19 towns composing the REB has been slower than in Massachusetts overall. The Southern Essex population from 1990 to 1980 grew by just 2.4% compared to the 4.8% in Massachusetts (Massachusetts Institute for Social and Economic Research (MISER)). Population growth projections estimate that between 2000 and 2010, the region will continue to grow more slowly than the state, at a rate of 2.4 % compared to 5.5% (Figure 1).

Appendix I, Table A1 also shows the estimated population growth for each of the towns. Of note is Gloucester's projected decline in size (-2.86%). Some of the smaller towns with population under 10,000 such as Rockport, Wenham and Middleton are expected to have a fast population growth such as (31.5%, 23.9%, and 17.42%, respectively), though actual numbers are modest. Lynn, the largest city in the WIB's catchment area, is expected to have a small increase (3.3%) in population.

³ The Self Sufficiency Standard measures the amount of income required to cover basic costs in the regular "marketplace" without public or private subsidies. The standards are calculated as geographically specific as is possible given the data available. Some costs have no regional variation (such as food), so they are standardized, while costs such as housing and childcare, which vary greatly, are calculated at each geographic region ("The Self-Sufficiency Standard for Massachusetts," by Diana Pierce and Jennifer Brooks with Laura Henze Russel, Wider Opportunities for Women 1998, and "The Self-Sufficiency Standard: Where Massachusetts Families Stand," Massachusetts Self-Sufficiency Project Women's Educational and Industrial Union in collaboration with Wider Opportunities for Women, January 2000).

**Figure 1: Population Growth Rates:
Southern Essex Region and Massachusetts***



*2000 and 2010 changes are based on estimates and projections.
Source: Massachusetts Institute for Social and Economic Research, and US Census Bureau

Labor Force Participation and Unemployment

As can be seen in Appendix Table A2, in 1994, 52.9% of the total population in the Southern Essex region was in the labor force, with a 6.0% unemployment rate. By 1998, the labor force had increased slightly to 53.4% of the total population in the labor force, and unemployment was nearly halved to just 3.3%. (U.S. Census estimates, Department of Employment and Training).

Of the towns with populations over 20,000, unemployment rates in 1998 were consistent with very low statewide trends: Saugus (3.0%), Salem (3.5%), and Peabody (3.1%). Beverly (2.6%) and Danvers (2.7%) were even lower. Marblehead had the lowest unemployment rate, at 2.0% in 1998 (Appendix A2).

Gloucester and Lynn, where unemployment has been the most stubborn in recent years, have managed to cut their unemployment rates along with the rest of the region and state: Gloucester's was cut from 9.6 in 1994 to 5.3 in 1998. Similarly, Lynn's unemployment rate decreased from 7.1% to 4.0% in the same years (Appendix Tables A2).



Source: Massachusetts Institute for Social and Economic Research

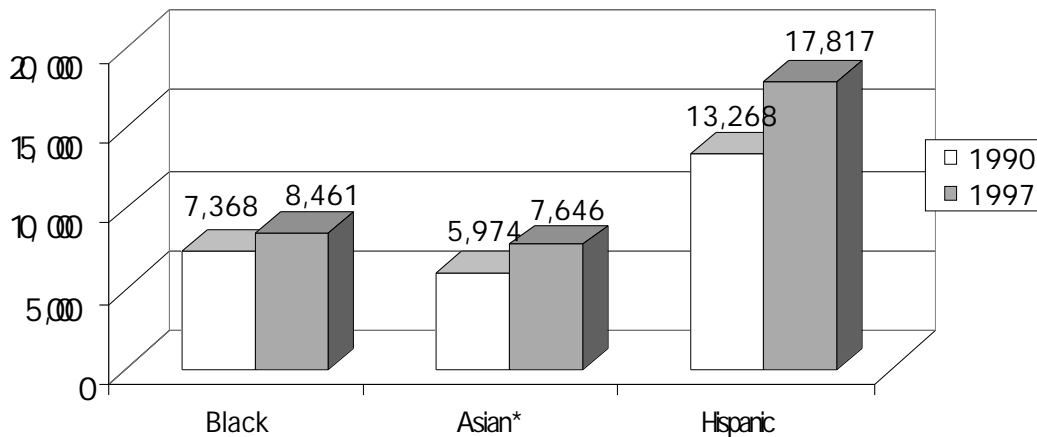
Race and Ethnicity

Minority populations in the Southern Essex region are small, but are estimated to have increased over the last decade. The availability of the 2000 U.S. Census will verify these estimates. According to MISER, the total minority population grew from 6.7% in 1990, to 8.6% in 1997. This was accounted for by increases in Blacks (1.9% of total population in 1990 to an estimated 2.1% in 1997); Asians (1.6% to 1.9%), and Hispanics (3.5% to 4.5%) (Appendix Tables A3-A5).

Hispanics are expected to have the highest percentage change (34.3% increase) of all groups. In real numbers the Hispanic population will increase from 13,268 to 17,817, a total of 4,549 persons. Other population changes by race and ethnicity can be seen in Appendix Tables A3-A5.

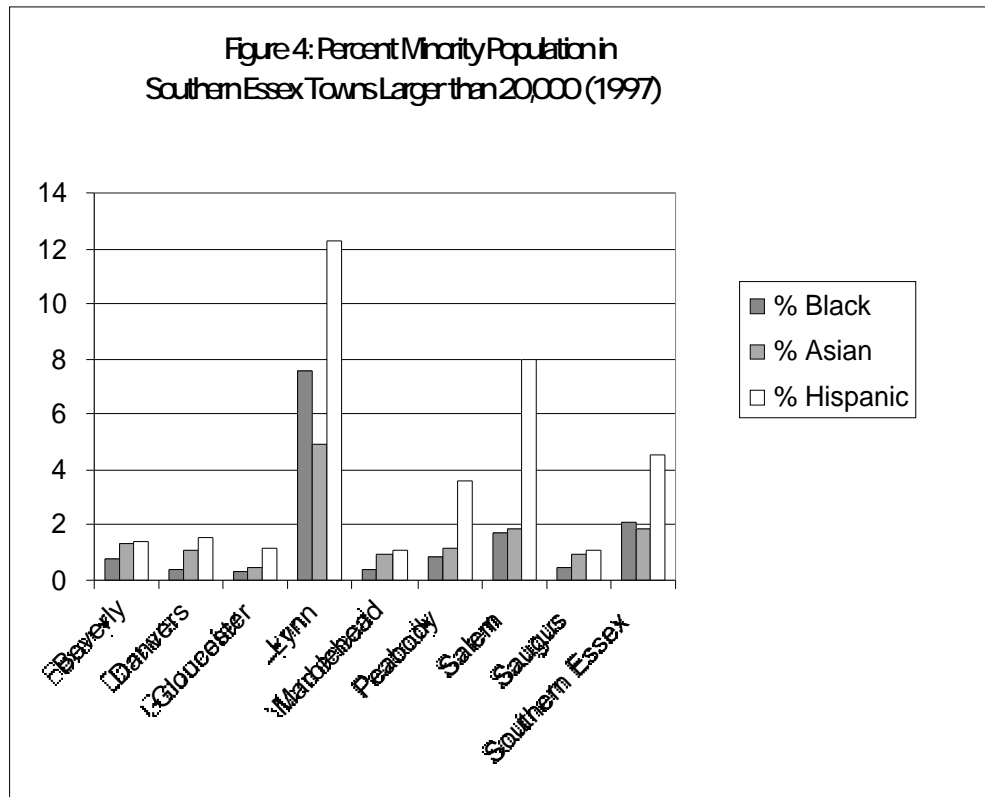
In 1997, of those towns with total populations over 20,000, Lynn had the largest Black percentage (and real numbers) of Blacks, accounting for 74.7% of all Blacks in the region. Lynn also had the largest Asian (4.9%) and Hispanic (12.3%) populations, followed by Salem (1.7 Black, 1.9 Asian and 8.0% Hispanic) and Peabody (.9% Black, 1.2% Asian and 3.6% Hispanic) (Appendix Table A4).

**Figure 3: Southern Essex Region
Minority Population Change: 1990-97**



*Includes Pacific Islanders, Native Americans

Source: US Census Data, Massachusetts Institute for Social and Economic Research



Source: Massachusetts Institute for Social and Economic Research

Educational Attainment

Compared to their counterparts statewide, residents of the Southern Essex region have similar educational attainments rates: 82% of persons 25 years or older obtained a high school diploma compared to 80% in Massachusetts as a whole; 26% Southern Essex residents held a Bachelor's degree or higher, versus 27% statewide (Appendix Table A6).

Within the region, there are local differences in educational attainment. Among towns with over 20,000 residents, for example, Marblehead had the highest percent of high school graduates 95.6%, Beverly had 87.1%, Saugus 80.6% and Danvers 86.8%, Salem had 78.2%, Gloucester, 75.6%, trailed by Lynn, which had the lowest percentage of residents completing high school at 72.2%. The trend for Bachelor's degrees is similar, with Marblehead the highest (53.7%), Beverly, Danvers, and Salem in the middle (25 – 28%), and Saugus and Lynn the lowest (16.2% and 14.3, respectively) (Appendix Table A6).

Education by Race and Ethnicity

In 1990 the level of education by ethnic group across the Southern Essex region differed in that Whites had the highest high school and college graduation rates of any group. For the Southern Essex region as a whole, Hispanics had the lowest percentage of high school graduates (43.1.0%) compared to Whites (81.7%), Asians (70.8%), and Blacks (61.0%). Hispanic residents had the lowest rate of Bachelor’s Degree completion (7.6%), trailing Asians (39.8), Whites (26.6%) and Blacks (14.9%). All ethnic groups in Lynn had lower levels of education than in any other town, followed by Gloucester and Salem (Appendix Table A6).

Data on English fluency among non-native English speakers is limited, but some insight can be gained from the 1990 Census. Linguistically isolated refers to the state of being set apart from a group because of not mastering the dominant language. In 1990, Peabody and Salem had the highest number of linguistically isolated Latino households (111 and 338, respectively) and Asian households (63 and 30, respectively) (1990 U.S. Census). These numbers have more than likely increased over the decade, given increases in these populations (Appendix Tables A6 and A7).

Household Income Levels

The Self-Sufficiency Standard estimates the amount of money working adults in Massachusetts need to meet their families’ basic needs for housing, food, transportation, childcare, miscellaneous expenses, and taxes. For Essex and Middlesex Counties, the standard for a family of one adult and one pre-schooler is \$15.42 per hour or \$2,715 per month, above the City of Boston/Suffolk County which has an estimated hourly wage requirement for the same family size of \$15.28. The standard varies based on number of income-earners and children and their ages. It is useful, in that it provides a gauge by which the WIB and others can assess particular industries, jobs and wages vis-à-vis the needs of local families. Given this standard, 28 percent of households in Essex County fall below it, roughly comparable to the statewide average.⁴ As Appendix Table A8 shows, some towns in the region clearly have more households in poverty, while other towns do quite well by this measure.

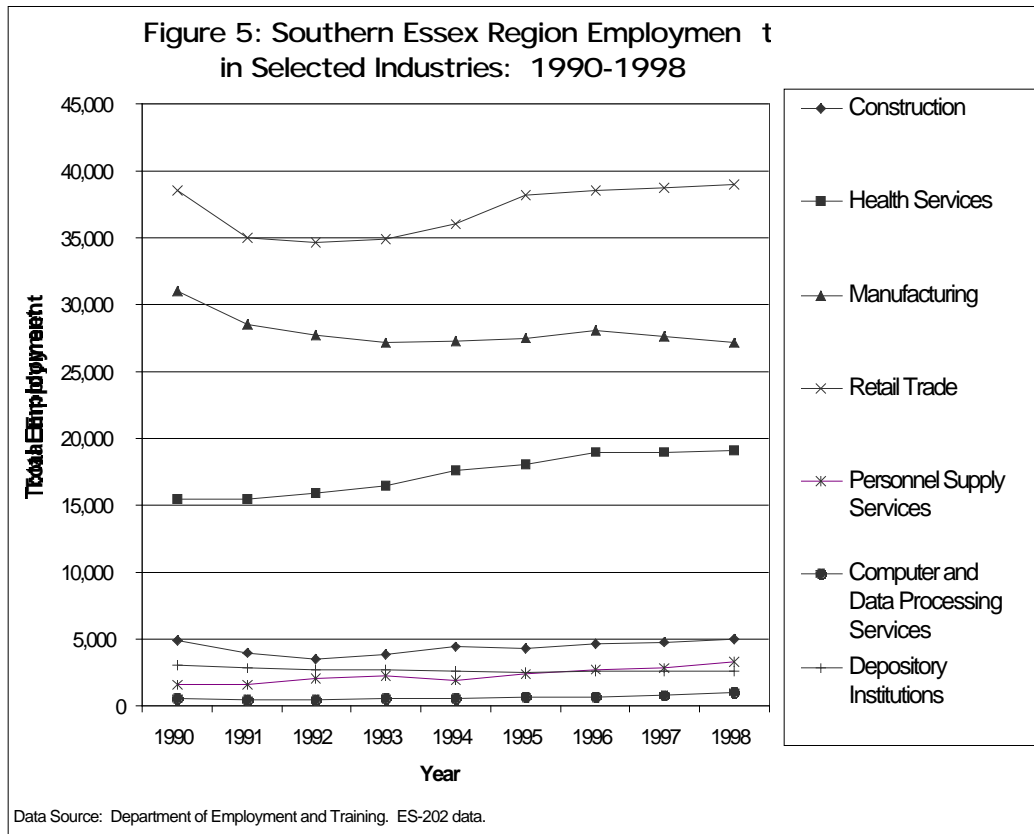
Table 1: Percent of Households Below the Self-Sufficiency Standard, by County	
	% Households Below Standard
Massachusetts	27
Selected Counties	
Suffolk	35
Bristol	31
Franklin	30
Essex	28
Norfolk	21
Middlesex	22
Source: "The Self-Sufficiency Std: Where Massachusetts Families Stand," by the Mass. Family Economic Self-Sufficiency Project (Women's Educ. and Industrialization Union with Wider Opportunities for Women), 2000.	

LABOR MARKET DEMAND: A LOOK ACROSS EIGHT REGIONAL INDUSTRIES

General Findings

Five main industries in the Southern Essex region stood out as being main sources of employment for residents, sustaining living wages, and, based on occupational structure, holding some promise of career advancement for workers: Health Care, Retail Trade, Manufacturing, Construction and Personnel Supply Services. A set of slightly different criteria revealed an additional three emerging industries: Telecommunications, Software Services, and Financial Services.

Figure 5 shows total employment in these five critical and three emerging industries in the Southern Essex region⁵. Retail trade, manufacturing, and health services have consistently been the three largest employers of Southern Essex residents from 1990 to 1998. Employment in each of these industries has either remained relatively level or declined between 1995 and 1998. Personnel supply services, construction, and computer and data processing (software) services, while employing substantially fewer people, have shown modest to substantial growth in employment from 1995 to 1998. Depository institutions employment is relatively small and has declined slightly from 1995 to 1998.



⁵ Note that Figure 1 shows trends for entire industries, not the specific sub-sectors within them that became the main focus of the study. Also, the third emerging industry, telecommunications, is not amenable to this form of analysis. See the telecommunications sector description for details.

Each of the industries analyzed contains a varied occupational mix, as can be seen in Appendix II. The hospital occupation matrix also shows a mixture of jobs with positive and negative growth projections. The personnel supply services industry also shows a relatively mixed occupation matrix, with most critical occupations showing positive projected growth. The retail trade industry shows a highly concentrated occupational structure with the majority of the employment concentrated in a few occupations that are projected to grow slowly. Manufacturing shows a concentration of employment in occupations that are projected to decline, but which pay high wages. Construction shows a fairly even mix of positions, many of which pay strong wages and are projected to grow modestly over the next six years. Software services employment is concentrated in occupations which require a Bachelor's degree or more advanced credential and so are not included in the occupational matrix.

Within each of the eight selected industries, a particular sub-sector was identified, based on further comparison of growth levels, wages and occupational structure. The remainder of this section conveys the view of employers, union officials, and training providers operating within these sub-sectors, as well as the results of further wage, job and occupational structure analysis.

Labor Shortages, Restructuring

Labor shortages are common across industries. This extends to both workers in general – “if they breathe, we’ll hire them,” joked one HR manager – and to candidates with industry-specific skills. As a result, employers in many fields are relaxing their entrance requirements. For example, one hospital reported that a sister institution was hiring 14 year olds for entry-level positions.

Retention is also a common problem, though it varies in severity from industry to industry. Today’s tight labor market conditions provide plentiful alternatives for those dissatisfied with their current employment. Thus lower skilled jobs that are particularly demanding, such as patient care in a hospital or physical labor on a construction site, lose workers to less onerous positions in other fields. Turnover is also high among lower paid, lower skilled workers such as customer service representatives, assemblers and temporary workers in general.

Mergers, acquisitions, and restructuring have made retention (and, in some cases, recruitment) harder, due to instability, stress, and uncertainty. Examples of this include hospitals and telecommunication service providers. Reimbursement arrangements in health care make it difficult to offer higher compensation as an incentive for retention as well as recruitment.

Wage differentials across industries

Wages for the critical occupations in the manufacturing and software sectors are substantially higher than those in any of the other sectors included in the Blueprint. Wages for the occupations comprising retail are the lowest and wages for personnel supply services are also generally low.⁶

⁶ It is important to note that wage data from the D.E.T. is specific to the occupation and is not differentiated across industries. It is possible and perhaps even likely that the same occupation may have different pay rates in different in different industries.

Recruitment, Skills Shortages

Youth and younger workers are not entering fields such as manufacturing – especially skilled machining, and the building trades-- in the same numbers as a generation ago; this aggravates labor shortages.

In many cases, employers are responding to shortages by reaching out to and utilizing populations that they would have been ignored or given lower priority under slacker demand conditions. Hospitals have hired young teenagers, while some retailers have reached out to senior citizens. Employers across industries perceived that standards for entry-level hires were lower due to the tight labor market.

Some industries utilize temporary agencies both as a recruitment tool for permanent workers, and as a testing ground or probationary device to screen workers.

Employers and unions are also confronting deficits in basic skill attainment and work readiness. The apprenticeship program for electricians had to build in 48 hours of remedial math coursework. Many candidates fail the entrance examination utilized by a telecommunication service provider.

There is a population of lower skill workers, particularly immigrants, who face obstacles entering the mainstream of North Shore employment. Language barriers, lack of connection to employer networks, and insufficient knowledge of work norms and culture are among the barriers they face.

Transportation Barriers

Poor transportation networks were widely recognized as an obstacle for some workers. While MBTA buses and commuter rail link individual communities with Boston, trips between destinations on the North Shore are far more difficult.

Career Pathways

The occupational matrices in Appendix II, together with the views expressed by industry representatives themselves, indicate differences in career advancement potential among the industries studied. Across the board, most employers (and industries studied) lack formal career ladders and structures. Most advancement depends on informal initiative of incumbents and managers. While most employers provide training informally (on the job) and some provide tuition reimbursement for off-site courses and credentials, formalized training is uncommon and has even been cut back by some organizations due to economic constraints. The unionized construction industry, with an apprenticeship program providing for formalized training for up to five years, is a noteworthy exception to this.

This suggests the need for different strategies by the Workforce Investment Board. Some strategies can promote the training of workers for industries that may already offer career pathways (formal or informal), while others promote employers to work collaboratively to develop pathways where they currently do not exist. Some employers are in the process of discussing or implementing more formal systems of career advancement, including several large manufacturing facilities.

The matrices show the potential for career ladders in each industry by estimating the number of Level I, II, and III jobs. By the career ladder standard employed for this study, manufacturing and

construction appear to have the best career ladder possibilities. Manufacturing has the greatest number and concentration of Level II and III jobs, with sufficient Level I jobs to support workers in employment while they pursue the training and experience required to obtain higher level jobs.

Construction offers a similar distribution of positions, but the more variegated nature of the employers and occupations make career ladder options more difficult to realize in this industry. Hospitals offer substantial entry-level employment and some opportunities to advance as well.

Retail trade occupations are highly concentrated at Level I. Personnel supply services offers a slightly better mix of occupations, but the top twelve occupations in the matrix are all level one. The sheer number of workers in these industries – particularly retail -- require that sectoral strategies target jobs in those portions of the industry that have the greatest possibility for leading to management positions. Further, workforce development policy and programs can promote cross-sectoral strategies that help workers develop and transport occupational skills from one industry to another. Customer service skills, for example, are transferable from retail to financial services and to some occupations within telecommunications.

Finally, software services offer a fair mix of occupations in the matrix, but the employment in pre-baccalaureate occupations is low.

Location

Employers' reasons for locating on the North Shore were less tied to labor supply and quality and more to other factors, such as history (founders were residents here), cheap land costs, or other reasons.

Employment and Hiring by Race and ethnicity

The North Shore remains a largely white, non-Hispanic region, and the demographics of its workplaces reflect this. However, some employers (and their industries) employ substantial numbers of racial and linguistic minorities at a variety of skill levels. The percentage of racial and ethnic minorities in the establishments surveyed ranges from five percent to over 50%. The range for those speaking languages other than English is similarly wide.

The skill distribution of minorities in the industries studied appears to be bimodal. That is, racial and linguistic minorities are concentrated in either lower skilled labor or sales occupations and industries, such as light assembly, warehousing, and retail sales, or in highly skilled technical and professional jobs in software, telecommunications and related information industries. Those working in the latter areas are typically foreign nationals from Asia, Africa, and other areas. In the middle of the skill distribution, the construction trades include several ethnic enclaves, including contractors of Irish, Greek, and Brazilian origin. Lower skilled warehouse and assembly work is increasingly the province of immigrants from Latin America.

Building trades unions use a number of means to reach out to nonwhite and Hispanic individuals for apprenticeship work. These include CBOs, community and ethnic newspapers, and speakers at urban schools. The Painters and Allied Trades District Council 35 were recognized by the state for their efforts in recruitment and retention of minorities and other special groups. Some of the unions are seeking to build bridges into immigrant communities, where non-union contractor work is common, particularly in painting and residential construction. Recruiting minority contractors, and

enlisting bilingual individuals to inform immigrant workers about union benefits and apprenticeship programs were seen as high priorities.

How Industries Could Work Together

Employers and unions had mixed reactions when asked how industries could work together to solve work force development issues. Most employers voiced skepticism that such cooperation was possible in today's tight labor conditions. As one explained (describing the software industry), "it's a war out there. Everyone's stealing" staff from one another. But nearly every respondent also offered thoughtful suggestions on how collaboration might be fostered. Some employers already cooperate informally by referring applicants to other employers who have openings.

One industry that departs from the norm regarding cooperation is the building trades. Historically, builders working with unionized labor have relied on apprentice programs to ratify skill attainment and supply trained workers. These programs rely on substantial cooperation among employers for funding, curriculum development and oversight (in conjunction with unions).

Among the suggestions for further cooperation were joint promotion of health careers among youth (for hospitals); consortiums to purchase training equipment for schools (manufacturing); informing workers and placement agencies about required skills (retail stores); outplacement for companies closing down (software); sharing of technologies, training, and referrals (telecommunications).

Experience with Training Providers

Most employers and unions had experience with community colleges in the region, particularly North Shore Community College, and a smaller but substantial fraction have worked with community based organizations for recruitment and referral of trained candidates. A few have been involved in more complex efforts such as school-to-work or welfare-to-work efforts.

Experience with government typically extended to postings and referrals of candidates (One Stop Career Centers; DET); obtaining funding (from the federal Department of Labor and from state agencies) for work force development; and working with welfare to work programs. Reactions were mixed. While some called their government contacts helpful and professional and were satisfied with referrals, others called the services received "fair" or "poor." With one exception, employers in disparate industries, such as retail, temporary services, and health care, had negative experiences with welfare to work. Candidates generally lacked work readiness and turned over rapidly.

Most respondents who had worked with community colleges were positive about the experience. Manufacturers, for instance, work closely with North Shore Community College to tailor curriculum, recruit test technicians, and articulate technical training with four-year engineering programs elsewhere. A majority of respondents posted jobs and got candidates from the community colleges (and from Salem State College).

Nonprofit agencies were used by a smaller proportion of employers, typically for outreach to low income, minority, or other disadvantaged candidates, and for training services in some cases. Both Operation Able and Operation Bootstrap were noted, as were Goodwill and ECCO. The latter group, a grassroots association based in area churches and unions, helped to boost wages in a number of work places and initiate training in machining and other areas. Reviews of service from nonprofit and community based organizations were generally high, though some respondents (in

construction trades and in telecommunications) were dissatisfied with the quality of candidate referrals.

Relatively few employers have worked with unions to fill positions or improve worker skills and education. Exceptions include fields with strong union representation, including construction trades, hospitals, and telecommunication services. Reactions were mixed, particularly for employers who deal with multiple unions, and ranged from poor or fair to excellent.

Awareness of the Workforce Investment Board

With a few exceptions (particularly large and well-known employers, such as hospitals), there is a lack of awareness of the WIB and its programs. The majority of employers interviewed were not aware of the Southern Essex WIB, or had only limited exposure to its programs. Several respondents had attended a WIB presentation, or sent job postings to the WIB. Some hospital representatives have worked with the WIB on school-to-career programs and were quite positive. A manufacturer has discussed pursuit of public work force development grants with the WIB.

What Should the WIB be doing?

While many of the suggestions for the Southern Essex WIB reflect specific needs of the industry or employer responding, there were a number of crosscutting themes. They included the following:

Encourage and enhance training. This extends both to preparing applicants for the work force and to improving the skills of incumbent workers. In the former category, several employers urged greater emphasis on reading, basic math skills, and general work readiness. Their concerns were directed both to the work force development system and to the public schools. Specific areas of skill development sought included:

- Skilled trades – improve the depth of preparation in trade schools and apprenticeships
- Health care – medical records and patient coding expertise (a shortage exists of workers conversant with the codes used by third party payers)
- Manufacturers – enhance basic assembly and mechanical skills
- Personnel supply services – computer skills for displaced workers
- Telecommunications – more in depth knowledge of computer systems

Increase resources for education and training. One respondent called on the WIB to leverage tuition reimbursement dollars through partnerships and seed money. It might also assist employers who now lack staff time to pursue public work force development funding. Others called for assistance to employers to apply for public funds.

Expand access to work for low-skilled, minority, and other disadvantaged workers. Several noted the need for better transportation access, between points on the North Shore in general and from Lynn to other points in particular. One retail manager stressed the need to promote quality childcare, especially for single women. A manager of a temporary services agency called on employers (and their representatives, such as the WIB) to “open their eyes to lower skilled workers,” particularly linguistic minorities such as immigrants.

Encourage and support the development of youth. As one hospital HR manager requested, “get younger people in schools excited about health care.” The WIB could build on existing school-to-

work programs in hospitals and other sectors, as well as organize outreach to schools and other sites to inform youth about career opportunities and requirements. A related suggestion was to enlist teachers for visits or placements in work places (such as manufacturing) – to learn better what employers need and expect from new workers and from work force development curricula.

Assist employers to organize, both within and across industries, to meet common work force development needs. Despite widespread skepticism about collaborating in today's cut-throat environment, several employers thought it important for companies to share expertise, pool funds to buy equipment for training and other needs, and develop common views about entry level and advanced skill requirements.

Help companies to improve the work place environment, including promotion of good employee relations. Provide tools to help recognize exemplary employees and involve staff in decision-making. This theme was stressed in both retail and telecommunication services, among other sectors.

Promote high standards for employment candidates and incumbents. A few respondents (including both employer and union representatives) complained of the poor quality of candidates referred by workforce development intermediaries. One even reported the perception that system members, including CBOs and WIBs, had contributed to an acceptance of lower standards in job preparation and performance. Whether or not this perception is true, it is important to demonstrate a strong commitment on the part of the WIB and its partners to high standards in the workforce.

Critical Industry: Construction--Special Trades Contractors Sub-Sector

This sector is comprised of building trades companies who specialize in one or more aspect of construction, repair, or maintenance. These range from plumbing, heating and air conditioning (the largest single trades group on the North Shore) to electrical work, roofing, painting, and carpentry. On larger projects, such firms function as subcontractors who are hired by a general contractor. Much of the work done by North Shore contractors and their crews actually occurs outside of the region, with much activity centered at Boston “mega-projects” such as the Big Dig and large commercial developments. North Shore projects are more likely to be smaller public projects, such as school building or repair, or modest commercial activity, such as restaurants.

Special trades firms may range in size from a single individual with a truck to a large organization employing hundreds of workers. The common denominator in this field is mastery of a specialized craft, typically through trade schools, union-governed apprenticeship, or both. Some occupations, including electricians, are regulated by government licensing requirements. The predominance of craft knowledge makes the organization of special trades labor markets distinctive. Unions (through apprenticeship programs and hiring halls) govern much of the recruitment, training and placement process. The line between employers and employees can sometimes blur, as craft workers – both union and non-union – sometimes leave the latter ranks to establish independent contracting businesses.

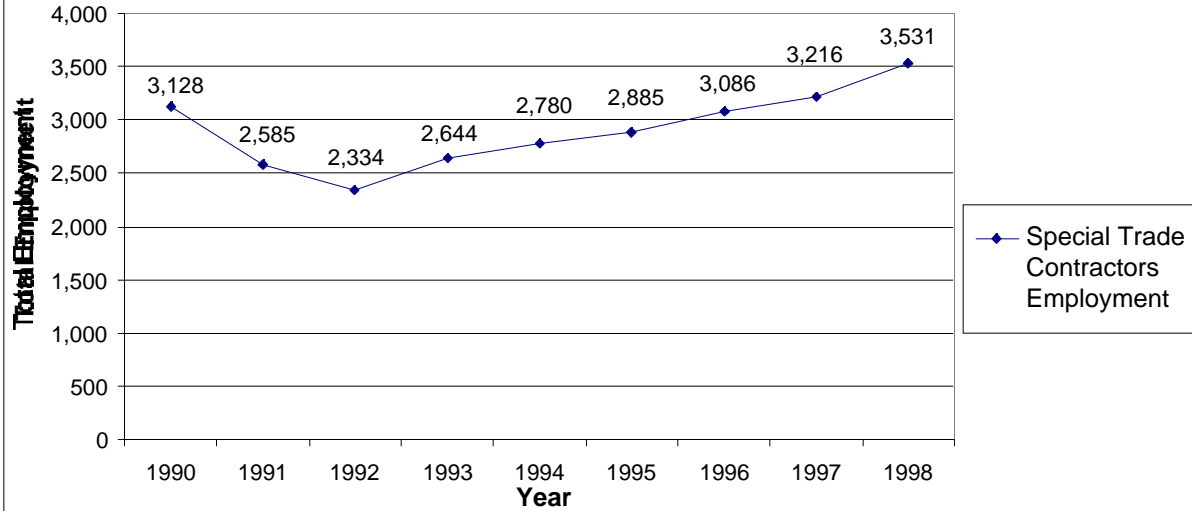
The other feature that distinguishes trades work (and makes it similar to the temporary services industry) is the contingent, project-specific character of the work. Trades men and women only work as long as there are projects to work on. Thus the unionized segment of the industry has sought and attained notably high wages, often \$20-30 hourly, and generous benefits, assuming that lean times are always on the horizon. Indeed, trades work (or that portion of it tied to construction projects) is highly cyclical, reflecting the ups and downs of private real estate investment as well as public budgeting.

Jobs in special trades are generally highly skilled, with the exception of laborers. Even some laboring tasks have become relatively more skilled, such as environmental remediation of lead, asbestos, and other potentially hazardous substances. Typical trades positions include painting, paper hanging, sheet rocking, carpentry, bricklaying, and electrical installation and repair. Within each trade, each such position (within the unionized sector) is further divided among apprentices, journeymen, and foremen.

Overall Employment and Growth

Employment in the construction industry as a whole is roughly the same in 1998 as it was in 1990. During the early 1990s, the industry saw significant loss of employment, which is to be expected given the cyclical nature of the construction business. Employment gains as the economy has improved in the late 1990s have been modest. The sub-sector focused on here, special trades contractors, shows employment growth of 12% from 1990 to 1998 and 51% from its low in 1992 to 1998. The continued growth in employment in this sub-sector, as shown in Figure 6, provides hope for continued employment growth for the near future. However, given that this sector is reliant upon the macro-economy, one also needs to be aware that any significant economic decline in the region is likely to cause a decline in employment in this sector.

Figure 6: Southern Essex Region: Employment in Special Trade Contractors Sub-Sector: 1990-1998

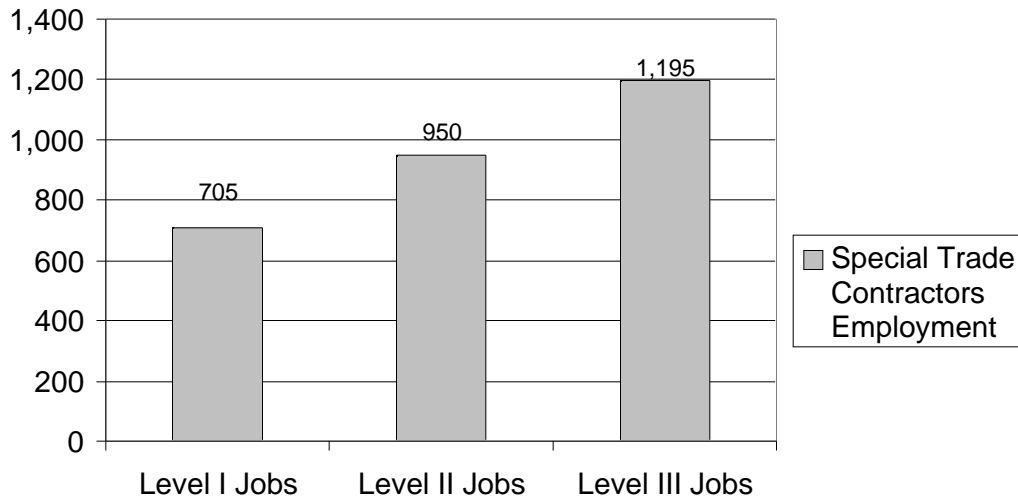


Data Source: Massachusetts Department of Employment and Training. ES-202 data.

Employment by Levels

Special trade contractors offer a substantial number of jobs at each of the three levels of pre-baccalaureate employment and a particularly strong set of high wage occupations as shown in Figure 7 and Appendix II.

Figure 7: Southern Essex Region Special Trade Contractors: Employment by Levels



Source: Massachusetts Department of Employment and Training, ES-202 employment in 1998. Analysis by the Center for Community Economic Development.

However, the opportunities for large-scale career ladders programs as shown in this data are tempered by the fact that there are eight separate classifications of firms that, in aggregate, make up this sub-sector. These classifications and the level of employment in each are shown in Table 2 below. Each of these classifications has a distinct occupational structure, which may make building cross-classification career ladders programs difficult. Furthermore, single classifications may not have sufficient employment to support such an initiative although some classifications may. Clearly the wage levels and the spread of employment opportunities across the three levels make this sector worthy of consideration for career ladders initiatives.

SIC Code	Title	Employment in 1998⁷
171	Plumbing, Heating, and Air Conditioning	995
172	Painting and Paper Hanging	250
173	Electrical Work	640
174	Masonry, Stonework, and Plastering	354
175	Carpentering and Floor Work	277
176	Roofing, Siding, and Sheet Metal Work	125
177	Concrete Work	151
179	Miscellaneous Special Trade Contractors	739

Key Job Descriptions

Laborers

- ❑ **Duties** Unload and distribute tools and materials; site clean up
- ❑ **Critical degrees, credentials, skills** No degree required. Need common sense, physical fitness, and strength. More skilled laborers associated with specific trades may need ability to read blueprints, set up lasers for pipe laying, or attain licensing for lead, asbestos, or other hazardous material abatement. High school degree, math and reading skills needed to enter apprenticeship program.
- ❑ **Wages** \$19.90/hour (prevailing union wage); \$21-22/hour in dry walling. Beginning apprentices earn 60% of regular wage (about \$12/hour).
- ❑ **Benefits** Full health plan, including medical, prescription, dental and vision coverage; pension plan and annuity; legal fund and assistance; training; health and safety fund.
- ❑ **Pathways** Apprentice Laborer → Journeyman Carpenter Tender, Cement Mason Tender, Environmental Remediation Worker, etc.
- ❑ **Requirements for advancement** Successfully complete 4000-hour trade apprenticeships in a number of skilled fields (usually two to five years)
- ❑ **Historical and projected demand:** Strong demand in past two years due to labor shortage (general across the building trades); expected to be strong in the next two years due to ongoing or planned projects that will employ laborers.

⁷ Data Source: Massachusetts Department of Employment and Training, ES-202 data.

Carpenters

- ❑ **Duties** Frame, construct, and repair buildings; in dry walling, apply drywall and perform rough carpentry. Foremen oversee layout and construction, and perform paperwork for jobs.
- ❑ **Critical degrees, credentials, skills** (On union jobs): serve four-year apprenticeship and pass union-administered test (including English aptitude)
- ❑ **Wages** \$25-26 hourly with a \$1.50-3.00 differential for carpenter foremen. Apprentices begin at 40% of the full wage and progress by increments over four years.
- ❑ **Benefits** Full medical benefits, pension, and annuities. In some cases, contractors provide vacation, holidays, and sick days for crewmembers that are permanent employees.
- ❑ **Pathways** Apprentice Carpenter → Journeyman carpenter → Carpenter foreman
- ❑ **Requirements for advancement** Complete apprenticeship (on the job) as well as two to three weeks of classroom training per year to attain journeyman status. Contractors select foremen on the basis of demonstrated skill and reliability.
- ❑ **Historical and projected demand** High over the past two years (labor shortages, with bidding wars among contractors for carpenters and foremen); anticipated to be equally high in the next two years.

Painters

- ❑ **Duties** Set up, estimate, mix, paint and clean up
- ❑ **Critical degrees, credentials, skills** Three-year apprenticeship program; English skills
- ❑ **Wages** (Prevailing union wage) \$28 per hour (Boston); North Shore approximately 90% or \$25/hour, but some contractors pay Boston wages to attract skilled workers. Apprentice painters start at 35% of prevailing wage. Foremen earn \$1 hour more.
- ❑ **Benefits** Medical care, pension plans; no paid vacation or sick leave.
- ❑ **Pathways** Apprentice painter (or sign painter or bridge painter) → Journeyman painter → Working foreman. (Managerial, non-union track continues into Supervisor and Manager jobs, or becoming an independent contractor oneself).
- ❑ **Requirements for advancement** Complete apprenticeship (800 hours classroom, 6000 hours on the job training); contractors choose foremen based on demonstrated skill, experience, and maturity.
- ❑ **Historical and projected demand** Growing constantly over past two years; expects slower growth or contraction in next two years, due to cyclical nature of the building industry.

Electricians

- ❑ **Duties** Install, test, and repair electrical power, communication, and security systems.
- ❑ **Critical degrees, credentials, skills** High school degree required for apprenticeship; demonstrated math and reading aptitude; completion of apprenticeship; ability to read blueprints and plans and execute them; use of hand and power tools; knowledge of electrical theory, circuitry, and National Electrical Code; attainment of electrician's license.
- ❑ **Wages** \$30.49/hour (union prevailing wage); apprentices begin at 30% (\$9.15/hour)/
- ❑ **Benefits** Pension, health, welfare
- ❑ **Pathways** Apprentice electrician → Journeyman electrician → Foreman → General Foreman (The latter two steps add about \$3.00 each to hourly pay).
- ❑ **Requirements for advancement** 10,000 hours on the job training (over five years apprenticeship), and about 1,000 hours of classroom and job site coursework.

- **Historical and projected demand** Consistently strong demand for the past two years; stable demand is expected for the next two years.

Potential for Career Advancement

Union representatives pointed to apprenticeship training programs (as well as continuing education courses for journeyman crafts workers) as an exemplary model of career advancement.

Recruitment Methods

Labor-management joint apprenticeship programs rely on:

- Word of mouth referrals from union members
- Advertisements in community and ethnic newspapers and on the Internet
- Outreach to community-based organizations, trade and vocational schools
- Job fairs; open houses
- Mailings
- Pre-apprenticeship programs.

Contractors recruit apprentice craft workers (and sometimes journeymen) by contacting union hiring halls; journeymen are also recruited through employee referrals, networking among other contractors, career centers, and advertising in some cases.

Main Human Resource Challenges

Both union and employer representatives noted general work readiness issues, such as low motivation and poor work habits. One believes that “kids today don’t care as much.” Specific skill deficits include poor mathematics and reading preparation, as well as knowledge of technological advances, such as computerized electrical systems.

Proportion of Staff from the North Shore

Hiring from the Southern Essex region varied widely among the skilled trades contacted. For painters, a little over one half of Boston area union members are drawn from the North Shore, while one third of electrical union members (IBEW) hail from the region. Less than four percent of the staff for a dry walling contractor were North Shore based, however.

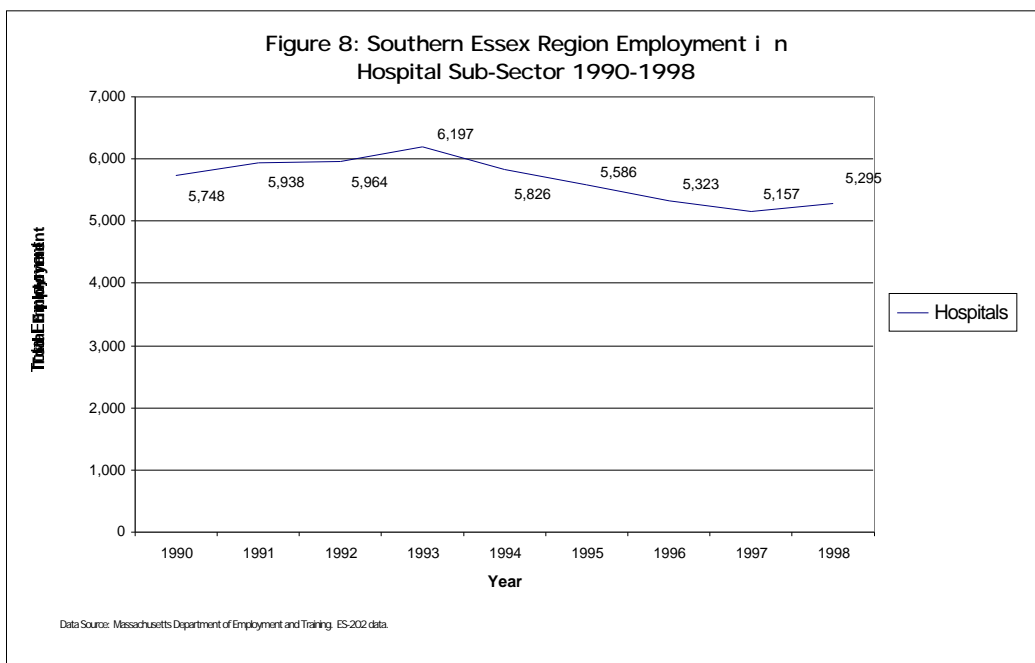
Critical Industry: Health Care – Hospitals Sub-Sector

Hospitals are keystone employers on the North Shore, representing some of the region’s largest and oldest employers. These establishments specialize in acute, in-patient care but also provide ambulatory or outpatient services. In some cases, this extends to home health services. Hospitals and their staff have undergone tremendous changes in recent years, consistent with nationwide trends. Institutions have merged, been acquired by other hospitals, or joined large alliances, such as Partners HealthCare System. Restructuring, led by managed care, new competitive pressures and shifting patient demographics, have led to lay-offs, changes in skill requirements, and new job definitions. In some cases, functions such as food services, laundry, and maintenance work are contracted out to private, for-profit companies.

The signal feature of hospital work is its diversity. These institutions employ large numbers of people at every skill level, ranging from those cleaning rooms and hallways to medical specialist positions requiring an MD and years of post-graduate training. A large middle tier exists between these extremes, of course, involving technical and para-professional workers who have attained one or more years of post-high school training. Their ranks include medical records technicians, licensed practical nurses, and radiological technologists and technicians. In some cases, job classifications and titles have shifted as once-specialized functions, such as room cleaning, feeding, patient transport, and replenishing supplies are merged into new jobs.

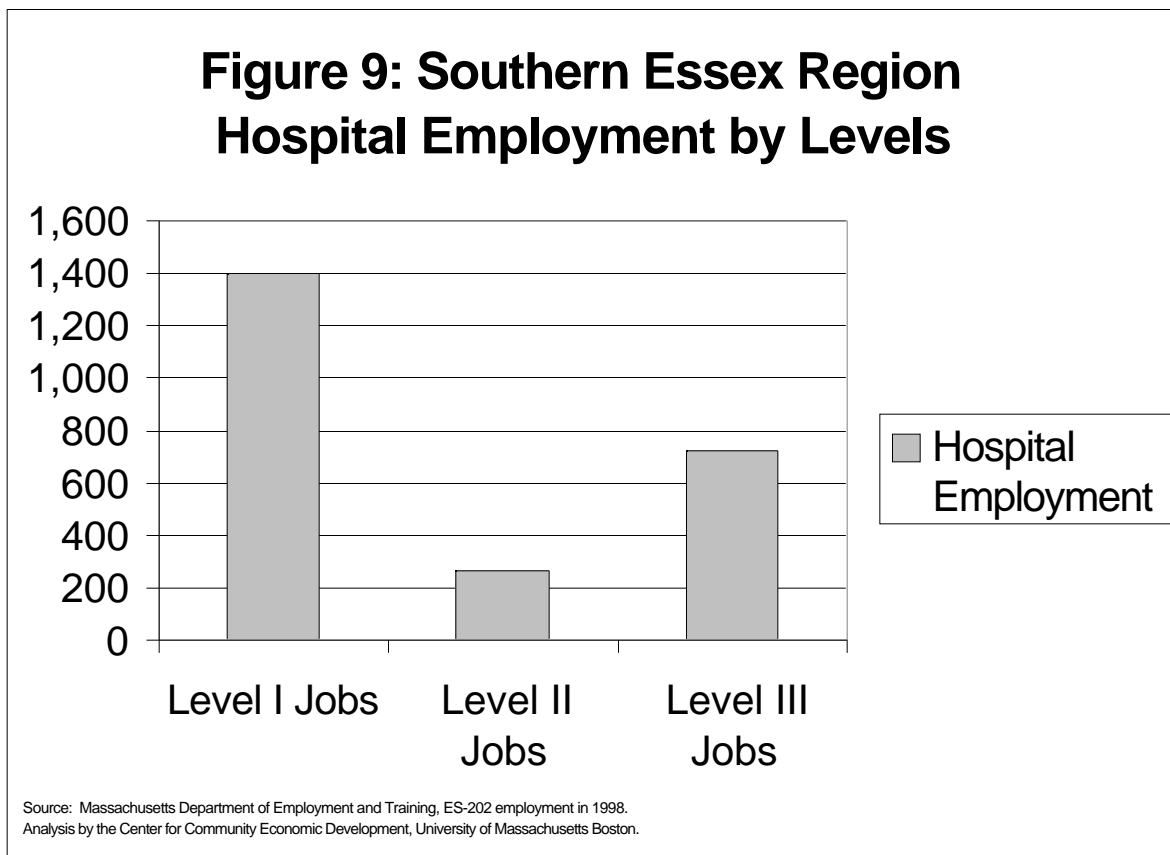
Overall Employment Growth

Total health care employment in the Southern Essex region has actually increased over the period from 1990 to 1998 (Figure 8). However, employment in the sub-sector of interest, hospitals, has declined by 7.8% over the same time frame. Over the years 1996, 1997, and 1998, the rate of decline has decreased and hospital employment in the area appears to be stabilized. Total employment in the sub-sector continues to make it a critical industry for the region going forward. While industry consolidation and managed care may result in loss of jobs for some institutions, significant replacement jobs are projected to continue to be present for the foreseeable future.



Employment by Level

The hospital sub-sector offers opportunities for career ladder advancement. As indicated in Figure 9, Level III jobs are more than one-third the total of Level I jobs. This is indicative of the possibility for career advancement for entry level workers to positions that provide higher wages and increased likelihood of receiving benefits, two of the keys to obtaining self-sufficiency. Of concern is the lack of Level II jobs that have the potential to provide bridges to Level III jobs and which also provide increases in wages during the process of meeting the skill and educational requirements of Level III jobs. Given the successful experience of other hospitals in developing career ladders, we continue to believe that opportunities for career ladder development exist if the necessary resources can be brought to bear.



Key Job Descriptions

Housekeepers (Environmental Service, Unit Service)

- ❑ **Duties** Change beds and rooms, clean floors, walls, and other surfaces, and perform other maintenance tasks as needed. In some cases, (Unit Service Aides) these duties are combined with patient feeding and obtaining supplies, among other tasks. In one hospital, these positions were provided by an outside service company on a contractual basis.
- ❑ **Critical degrees, credentials, skills** None; some hospitals do not require English skills for these positions, while others require basic fluency to communicate with patients and family members and read instructions.
- ❑ **Wages** \$7.50 – 11.00/hour
- ❑ **Benefits** Health coverage (medical, dental, vision in some cases); flexible benefits, including pre-tax dependent care accounts; life insurance; short and long term disability insurance; retirement plans; tuition reimbursement for related course work.
- ❑ **Pathways** Housekeeper → Certified Nursing Assistant
- ❑ **Requirements for Advancement** Complete C.N.A. training (75 hours); English as a Second Language; obtain skills through in-house courses (computers, medical terminology), or college programs
- ❑ **Historical and projected demand** Constant high demand (due to turnover) over the past two years; stable demand expected in the next two years

Certified Nursing Assistant

- ❑ **Duties** Dressing, cleaning, and feeding patients; taking vital signs (EKG, temperature, etc.) and drawing blood.
- ❑ **Critical degrees, credentials, skills** Certificate (75 hours outside training); fluency in English; interpersonal skills.
- ❑ **Wages** \$8.50 - \$12.50/hour
- ❑ **Benefits** see above.
- ❑ **Pathways** C.N.A. → Licensed Practical Nurse → Registered Nurse; C.N.A. → Medical Technician → Medical Technologist; C.N.A. → Surgical Orderly → Surgical Technician; C.N.A. → Receptionist → Medical Records Clerk
- ❑ **Requirements for Advancement** For LPN, RN, Medical Technician and Medical Technologist, two to four year degrees must be obtained. Surgical orderly and technician jobs require in-house training.
- ❑ **Historical and projected demand** Rapidly growing demand over the past two years; expected to continue over the next two years.

Administrative Assistant (Secretary)

- ❑ **Duties** Word processing and other secretarial functions; scheduling of patient appointments; follow-up with patients; in some cases, staff support for a particular physician, manager or group
- ❑ **Critical degrees, credentials, skills** High school degree minimum and secretarial degree required in some cases; personal computer skills, presentation skills
- ❑ **Wages** \$10-18/hourly
- ❑ **Benefits** See above.

- **Pathways** AA → Access Services Secretary → Senior Secretary → Training and Program Coordinator
- **Requirements for Advancement** Demonstrated ability and interest; acquisition of on the job skills and competencies; four years college preferred in some cases
- **Historical and projected demand** Strong and growing for the past two years (due to labor shortage); expected to be constant

Potential for Career Advancement

Without further outside education, significant career paths are extremely limited in patient care due to strict licensing requirements and high skill requirements. Hospitals also lack structured promotional paths and guidance mechanisms to inform workers about career prospects, and managers feel constrained by current reimbursement levels from implementing such systems. However, the diverse nature of work in hospitals, particularly outside of direct patient care, offers many informal opportunities for advancing entry-level workers. School-to-work programs are in place or under discussion in several institutions, including one innovative model that forgives all tuition for employees pledging to work for this employer for a specified period.

Recruitment Methods

- Promotion from within
- Word of mouth/employee referrals (bonuses offered in some cases)
- Newspaper advertising (North Shore and Boston papers; some hospitals are reducing their use of this medium)
- Internet advertising (used by some hospitals but not all)
- Career centers (less utilized)
- High school and college recruiting
- Job fairs (less utilized)
- Nursing and other specialized journals
- Community based organizations (students in ESL and work readiness courses)
- Search firms (less utilized)

Main Human Resource Challenges

The biggest challenges faced by hospitals today are recruitment and retention. This is abetted by lower revenues and reduced staff loads engendered by managed care and restructuring. Maintaining employee morale and satisfaction was also emphasized. Meeting pay expectations in this environment is difficult, as is building in career ladders tied to work rather than outside education. Problems of general skills, such as work ethic, and specific technical competences, including computer skills, were also noted.

Proportion of Staff from the North Shore

One major hospital estimated “at least three quarters,” while another employer guessed that it was a “good proportion.”

Critical Industry: Manufacturing-- Industrial Equipment Sub-Sector

Manufacturing has long been central to the North Shore economy, from the vast shoe factories of Lynn and Beverly to fish processing on Cape Ann. While some giants of industry, such as the G.E jet engine works in Lynn, have tapered down their work force, folded, or moved elsewhere, the industry remains vital. One large and growing sector is industrial equipment. Historically, machine shops serving GE, its suppliers, and other aerospace firms comprised much of the industrial equipment group. However, firms making precision machines for other high technology sectors, such as semiconductor or optical electronic manufacturing, have also been pivotal to North Shore manufacturing. Demand for work has not always been steady in these establishments, given the rise and fall of defense contracting and the cyclical nature of the semiconductor industry. Today, new civilian markets and renewed demand for cheaper chips – driven by increased use of digital devices – have swelled the ranks in this segment of industrial machining.

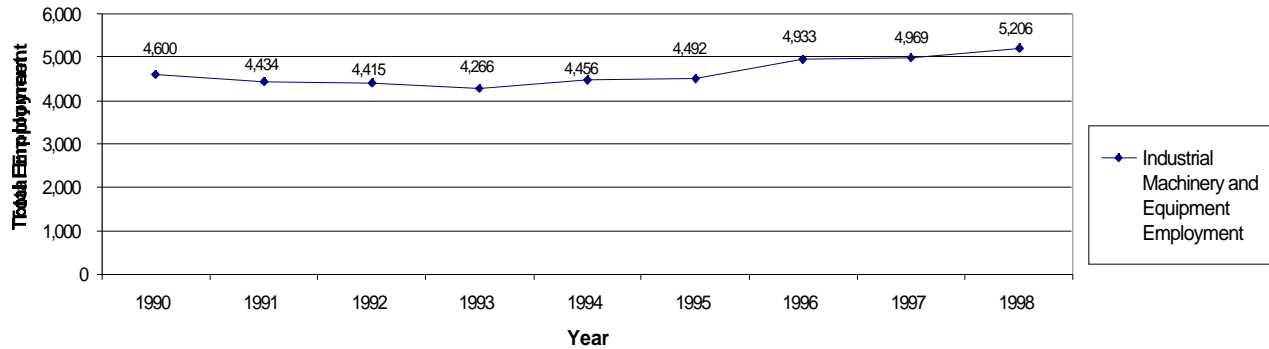
As in other manufacturing areas, production jobs dominate the occupational profile. These are generally not the semi-skilled assembly jobs associated with “blue collar employment” in the public mind. Assemblers often need the ability to read and interpret blueprints, use precision tools, and test products in some cases. Only a handful of positions in these firms, mainly in maintenance and food service, require less than high school degrees or equivalent. The proportion of jobs that do not require college degrees ranges from one-third to two-thirds of the work force. Besides assemblers, these include technicians, shipping clerks, assistant buyers, and various clerical positions.

Overall Employment Growth

As is well known, manufacturing employment has declined significantly in the 1990s. From 1990 to 1998, manufacturing employment overall declined 12.4% in the Southern Essex region. However, in the sub-sector selected here for close analysis, industrial machinery and equipment, employment has actually risen slightly between 1990 and 1998. Furthermore, as Figure 10 shows, employment over the past three years in this sub-sector has shown a steady year-to-year increase. This may indicate that at least for this portion of manufacturing, the loss of employment has ended for the near term. Also encouraging is the fact that the total employment of 5,205⁸ in 1998 for this sub-sector is divided among 153 firms for an average employment per firm of 34 (1998 ES-202 data). Manufacturing employment in the region is clearly diversifying away from the dominance of a few large firms such as General Electric towards a greater number of small firms that may be better able to respond to new market opportunities and lessen the impact on workers of future economic downturns.

⁸ Total employment in the industrial machinery and equipment sub-sector of manufacturing in 1998 was 5205. However, due to data suppression of two three digit SIC codes, 351 Engines and Turbines and 357 Computer and Office Equipment, only 4032 jobs were available at the three digit SIC level which is required for our analysis by Levels. Therefore, the number of positions shown in Figure 11 are less than the total number of jobs in the region. We continue to provide the figure because the most important aspect is the percentage breakdown by levels which would remain consistent with the information we report if suppressed data were available to us.

Figure 10: Southern Essex Region Employment in Industrial Machinery and Equipment Sub-Sector: 1990-1998

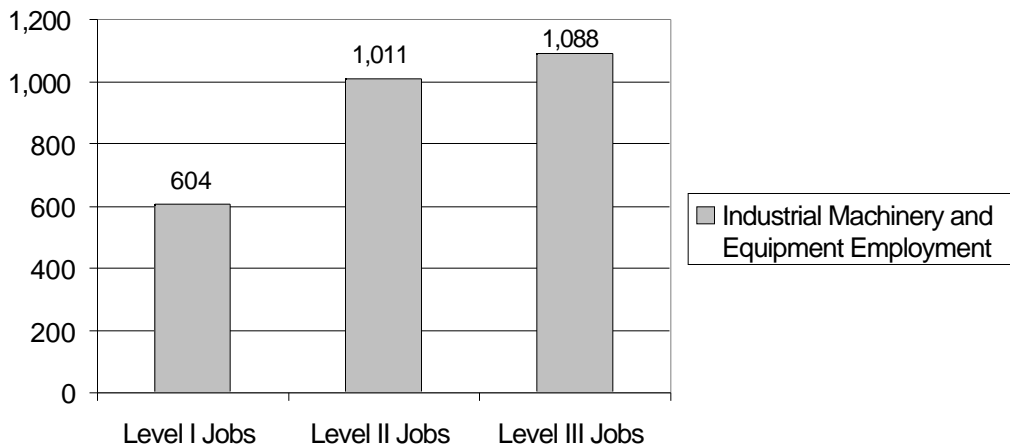


Data Source: Massachusetts Department of Employment and Training, ES-202 data.

Employment by Level

The manufacturing industry offers one of the best opportunities for career ladder development of the industries we studied. As shown in Figure 11, there are substantial numbers of jobs at each of the three levels of pre-baccalaureate employment. In addition, as shown in the occupational matrix in Appendix II, many of the jobs in manufacturing pay substantial wages. In addition, there are many examples from Massachusetts and from across the country of unions, employers, and industry clusters working together to develop career ladders that allow workers to gain additional skills and career advancement while providing employers with the competitive advantage of a more productive workforce. The Southern Essex Workforce Investment Board, in developing their future programmatic initiatives, should vigorously explore these opportunities.

Figure 11: Southern Essex Region Industrial Machinery and Equipment: Employment by Levels



Source: Massachusetts Department of Employment and Training, ES-202 employment in 1998. Analysis by the Center for Community Economic Development, University of Massachusetts Boston.

Key Job Descriptions

Assembler (Mechanical assembler, Electrical assembler)

- ❑ **Duties** Assemble mechanical, electromechanical, and/or electronic equipment, using hand tools, soldering irons, and sometimes microscopes; may involve some testing and troubleshooting of components.
- ❑ **Critical degrees, credentials, skills** High school degree; mechanical ability; familiarity with blueprints and schematics; assembly experience preferred. Associates degrees and/or equivalent experience, such as military electronics, required for more complex assembly positions.
- ❑ **Wages** \$9.00 to \$18/hour, depending on prior experience and position
- ❑ **Benefits** (for permanent, versus temporary, employees): medical and dental care plans with varying levels of employee contribution; life insurance option; long and short term disability insurance; stock options; pension and 401(k) savings plans; tuition reimbursement; holidays, vacation, sick leave, and personal days.
- ❑ **Pathways** Assembler 1 → 2 → 3; (involves more electromechanical assembly and precision work); Assembler → Technician → Senior Technician → Engineer; Assembler → Supervisor (Cell Coach, Group Leader)
- ❑ **Requirements for Advancement** Demonstrated performance and initiative; for technician positions and above, acquisition of trade school certificate, Associates degree, Bachelors degree or equivalent training;
- ❑ **Historical and projected demand** Growing demand over the past two years, due both to turnover and to increased hiring; modest to strong demand (as high as 20-30% for at least one firm surveyed) over the next two years.

Technician (Test Technician, Mechanical or Electrical Technician)

- ❑ **Duties** Test, troubleshoot, and in some cases repair components, using microscopes and other precision instruments; work with engineers to rectify problems; in some cases, prepare graphs, charts, and tabulations of data
- ❑ **Critical degrees, credentials, skills** Associates degrees, particularly in Electrical Engineering, (ASEE) in some cases; demonstrated skills, acquired on-the-job, in testing and maintaining electronic, mechanical, and/or optic equipment. Specialized knowledge may be required in some positions, including experience with vacuum or lighting systems.
- ❑ **Wages:** \$15-20/hour
- ❑ **Benefits** See above
- ❑ **Pathways** Technician → Senior Technician → Engineer; Assembly Technician → Senior Technician → Senior Mechanical Technician or Electrical Technician; Technician → Senior Technician → Supervisor
- ❑ **Requirements for Advancement** Acquisition and demonstration of technical skills on the job, through on-site courses or through acquisition of two or four year college degrees.
- ❑ **Historical and projected demand** Similar to assemblers, though smaller in magnitude.

Potential for Career Advancement

Career advancement prospects are now largely informal in this sector, and closely tied to acquisition of technical skills and knowledge both on the job and through college coursework. Two out of three of the organizations surveyed are developing more formal career path programs, involving more formal performance requirements for promotion, specification of on-site and off-site training needed for particular jobs, and use of proficiency exams and monitoring to certify progress in skill development.

Recruitment Methods

- Promotion from within
- Word of mouth/employee referrals (bonuses offered in some cases)
- Newspaper advertising (North Shore and Boston papers; some reported low response)
- Internet advertising (both company web sites and outside “direct sourcing” sites)
- Career centers
- College recruiting
- Job fairs
- Temporary employment agencies (one firm relies on a temporary agency, which maintains an on-site office, to handle all initial screening and hiring of lower skilled workers through a specified probationary period)
- Permanent employment agencies (“headhunters”)

Main Human Resource Challenges

Finding qualified staff, particularly assemblers with good mechanical skills and technicians with hands-on electrical experience, is the chief challenge for North Shore employers in this sector. The shortage of basic assemblers with such aptitudes is so severe, noted one human resource manager, that “if they breathe, we’ll hire them.” This firm has gone as far afield as New York, Virginia, and South Carolina to recruit assemblers, citing shortages on the North Shore. They are also considering outreach to former fishermen, service station workers, and others to hire and train in basic assembly skills. The high housing costs and relative isolation of the North Shore, particularly Cape Ann, also makes recruitment harder. Managers also cited work readiness problems, such as poor attendance and work ethic.

Proportion of Staff from the North Shore

About three-quarters of all staff from these firms live on the North Shore.

Critical Industry: Retail Trade--General Merchandise Stores Sub-Sector

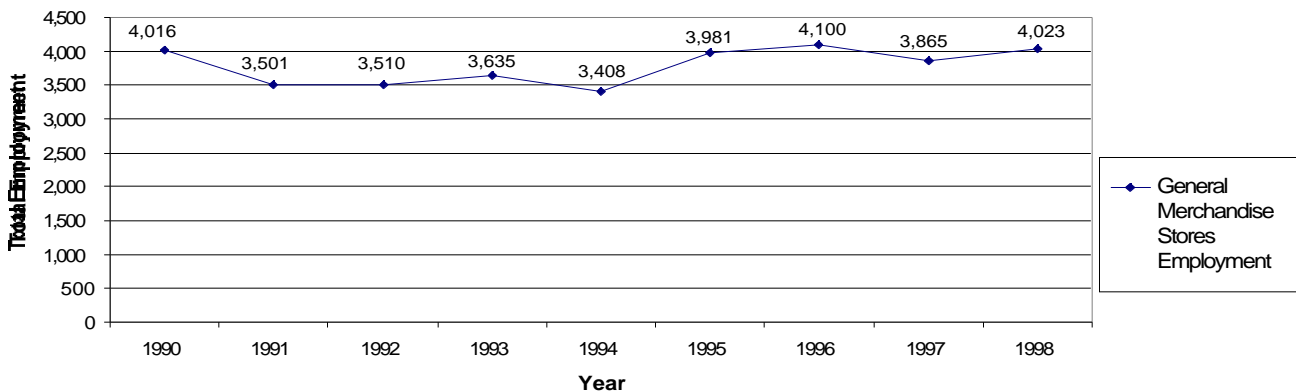
Retail trade is one of the North Shore’s largest industries in terms of employment levels. It encompasses a wide variety of goods, services, and establishments, ranging from eating and drinking places and service stations to furniture and food stores. This section focuses on general merchandise stores, represented in the survey by several large, chain department stores that specialize in clothing, home furnishings and other goods. They were chosen because they represent a large slice of the region’s retail employment, and because individual stores are large enough to support both entry-level opportunities and some degree of advancement.

Department store work is “people” work, to a large degree. While some positions, such as housekeeping, stocking and merchandise handling, do not involve direct customer interaction, sales and customer service jobs comprise the majority of merchandising employment. Nearly all such jobs are open to candidates without four-year college degrees, though some employ college-educated workers. At the store level, even managerial positions – often restricted to degreed candidates in other fields – are potentially open to those without Bachelors degrees. Indeed, most positions are open to candidates lacking even a high school diploma. On the other hand, department stores (like other retail employers) pay relatively low wages and rely more heavily on part-time and seasonal workers than do other industries.

Overall Employment Growth

Employment in the retail trade industry and the general merchandise stores sub-sector has fluctuated with the economy. As the economy weakened in the early 1990s, employment levels decreased by approximately 10%. Beginning in 1995, employment in this industry began to rebound. Employment in 1998 for both the industry and the sub-sector is almost the same as it was in 1990 (Figure 12). Currently, the employers interviewed for this study spoke of labor shortages and that they are looking to hire additional workers. However, the danger of this industry from an employment and training perspective is that workers who access employment in this industry during good economic times will be at risk of unemployment when the economy declines. Currently, however, substantial employment opportunities appear to exist.

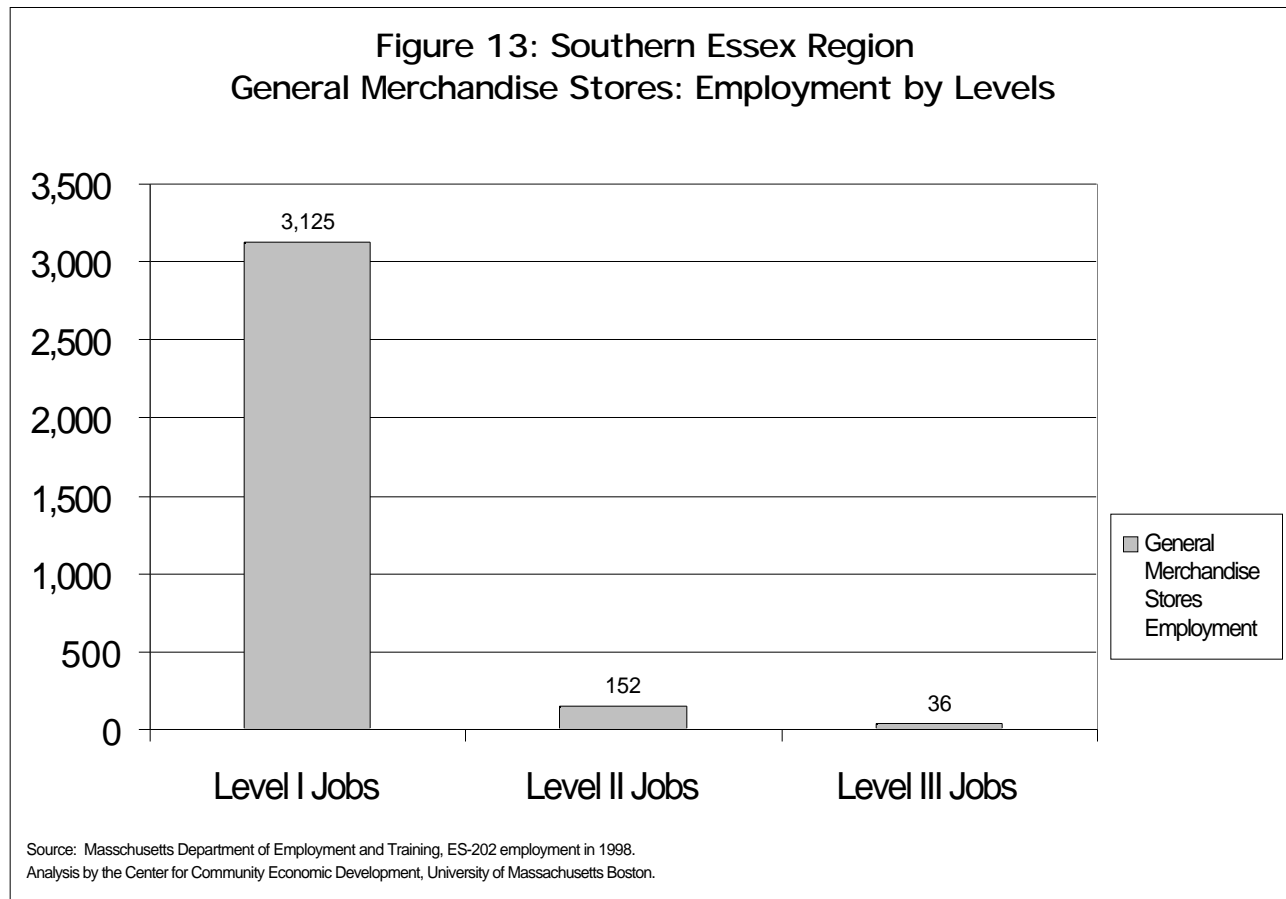
Figure 12: Southern Essex Region Employment in General Merchandise Stores Sub-Sector: 1990-1998



Data Source: Massachusetts Department of Employment and Training. ES-202 data.

Employment by Level

As Figure 13 shows, more than 90% of the jobs that do not require the Bachelor's degree in the general merchandise stores sub-sector are Level I jobs. The career ladders options derived from the quantitative data appear to be severely truncated. Very few level II and III positions exist to move up to from level I jobs. Information from the employer interviews, while generally in line with this finding, does offer a few possibilities for career advancement for entry-level workers. These possibilities are discussed below.



Key Job Descriptions

Sales Associate (non-commission)

- ❑ **Duties** Greet customers, discover their needs, respond to questions about products, and ring up sales; solicit credit applications. May also help with stocking, cleaning, and marking down products. More advanced associates (called merchandise assistants in some cases) also help train sales associates, correct prices, and review sales for their area.
- ❑ **Critical degrees, credentials, skills** Basic communication and customer service abilities; capacity to count money accurately, use a cash register, and take directions; product knowledge. Prior customer service and/or sales experience required in some cases.
- ❑ **Wages** \$6-6.50/hour (part-time) and \$7-8.50/hour (full-time) to about \$12/hour.

- **Benefits** (usually limited to full time employees, typically 25-30 hours/week or more): medical and dental coverage; short and long term disability insurance; life insurance; stock purchase options and profit sharing (in some cases); pension and 401(k) plans; flexible spending accounts for dependent care; merchandise discounts; paid holidays, personal days, sick time, and vacation.
- **Pathways** Sales Associate → Commissioned Sales; Sales Associate → Department Supervisor → Assistant Sales Manager → Sales Manager; Sales → Merchandise Assistant → Customer Service
- **Requirements for Advancement** On the job experience and positive supervisory reviews; in some cases, becoming chosen for Sales Manager Trainee programs; demonstrated customer service ability and productivity; for commissioned sales, product knowledge and the ability to prospect potential sales.
- **Historical and projected demand** Constant or growing demand over the past two years, owing to turnover, store expansion, and customer desire for faster service; continued growth (or stability, in one case) is projected for the next two years.

Stock replenishment (Support Associate, Stockers)

- **Duties** Placing goods on store shelves and displays, tagging prices
- **Critical degrees, credentials, skills** Safety practices, customer service skills, communication skills; dependability; ability to work independently and to follow directions.
- **Wages** \$6-7.50 to start, ranging up to \$9-12/hour.
- **Benefits** See above
- **Pathways** Support Associate → Support Associate Supervisor; Stock replenishment → Merchandise handling; Stock Replenishment → Sales Associate
- **Requirements for Advancement** Training for supervisory and training duties; attain pricing, in-store advertising, and inventory skills; understand
- **Historical and projected demand** Constant or growing for the past two years; continued growth (at least 10%) projected for next two years.

Potential for Career Advancement

Entry-level workers in retail have modest prospects for career advancement. As noted, the industry is far more likely than others to train and promote non-degreed candidates into managerial positions. Advancing to positions beyond the level of one store, however, is difficult without a college degree. And managers believed that formalizing career structures – beyond managerial training now in place – is unlikely, given the wide and changing variety of tasks faced by retail workers from day to day.

Recruitment Methods

- Promotion from within (managerial training programs)
- Word of mouth/employee referrals
- Newspaper advertising
- Internet advertising
- Career centers (less utilized)
- High School and College recruiting
- Job fairs

- Community based organizations (including homeless shelters, multiservice agencies, housing authorities)
- Fraternal organizations
- Senior centers

Main Human Resource Challenges

Reducing high turnover and increasing employee longevity is the most critical challenge, both to reduce costs and to enhance customer service. Improving customer and communication skills, particularly English speaking abilities, was also cited. A final problem noted was the need for more reliable support services, including transportation access and reliable child care.

Proportion of Staff from the North Shore

Nearly every employee in the department stores lives on the North Shore (85-100%).

Critical Industry: Personnel Supply Services

Personnel Supply Service firms recruit, screen, place and sometimes develop employees who are then placed out to temporary or permanent positions with employers who pay a fee to the placing agency. Personnel Supply is one of the nation's fastest growing industries; staffing companies over the past five years created one million new jobs.⁹

The sector's growth reflects several trends. The tightness of the labor market causes employers to rely on personnel supply firms to find staff, both temporary and permanent. High turnover contributes to this need. Further, some employers, in fields ranging from health care to manufacturing to retail trade, maintain a portion of their work force as temporary to reduce costs (such as benefits) and to manage fluctuations in demand. This reflects broader, even global, patterns of competition and restructuring that have reduced the stability and security of employment throughout the economy.

While the scope of this study did not permit the gathering of reliable statistics on the employment patterns of "temp" workers, national data is somewhat useful. According to the American Staffing Association, approximately 20 percent of "temps" are workers who are unable or unwilling to make a permanent commitment to a single employer and thus work for staffing agencies on a short-term or intermittent basis. For another 55 percent, temporary work serves as a bridge to permanent employment, including first-time employment. These workers may include individuals exiting a Welfare-to-Work or School-to-Work program, moving to a new job from a lay-off, or quitting a previous job. Indeed, the Department of Labor found that use of temp agencies to screen candidates first is the "fastest growing segment of the staffing industry, reflecting the desires by employers to observe candidates for a trial period before deciding whether they are the right fit for the job."¹⁰ Another 25 percent are long-term temporary workers, who are better educated, higher paid, more likely to have benefits and prefer the flexibility and independence of temping.¹¹

Most likely it is the first two groups described above with whom the WIB would be concerned. In particular, lower skilled workers trying to get a foothold in the labor market may be in most need of services such as on-site job coaching, skill development and other supports. A critical intervention period, during which the temporary worker is still employed by the staffing agency, lasts an average of 10 weeks.¹²

The findings presented hereafter refer not to the staff of personnel supply firms, but to the workers and the workplaces where they are placed. The firms responding specialize in temporary assignments, though a portion of those placed are retained as permanent employees, or "temp-to-hire." The work assignments of temporary workers are highly varied, but can be broadly characterized as either "blue collar" (manufacturing, warehousing, construction labor) or "white

⁹ "Staffing Facts," on the American Staffing Association Website (<http://www.natss.org/staffstats/staffingfacts.shtml>), July 2000; Sources American Staffing Association, US. Bureau of Labor Statistics, The Conference Board.

¹⁰ "Report on the American Workforce," US Department of Labor, 1995, cited in "The Staffing Services Industry: Myth and Reality," by Edward A. Lenz, on the American Staffing Association Website (<http://www.nats.org>).

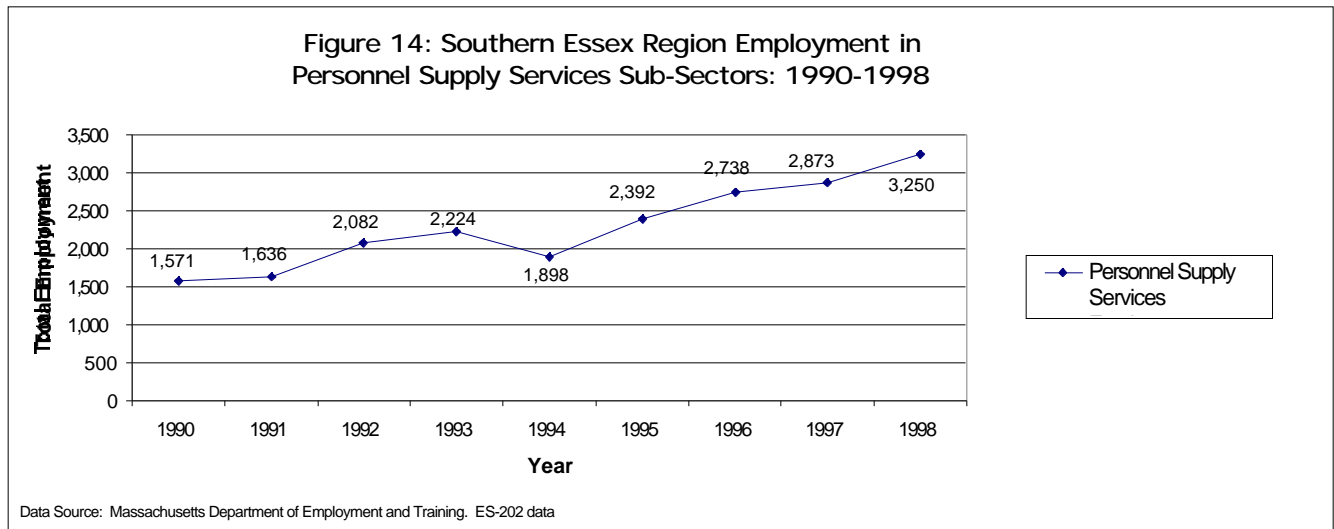
¹¹ Edward A. Lenz, "The Staffing Services Industry: Myth and Reality," on the American Staffing Association Website (<http://www.nats.org>).

¹² American Staffing Association press release, March 16, 2000, on the American Staffing Association Website (<http://www.nats.org>).

collar” (primarily clerical, though the region’s employment agencies also place professionals such as accountants and engineers). Many “temps” also work in stores as merchandisers (handing out samples, setting up displays), checking in attendees at corporate conventions, and in other settings. Educational requirements vary with the work performed and the standards of the employer. As a rule of thumb, industrial or “blue collar” positions do not require a high school degree, while office or “white collar” jobs typically do; some employers prefer some college or secretarial school training as well.

Overall Employment Growth

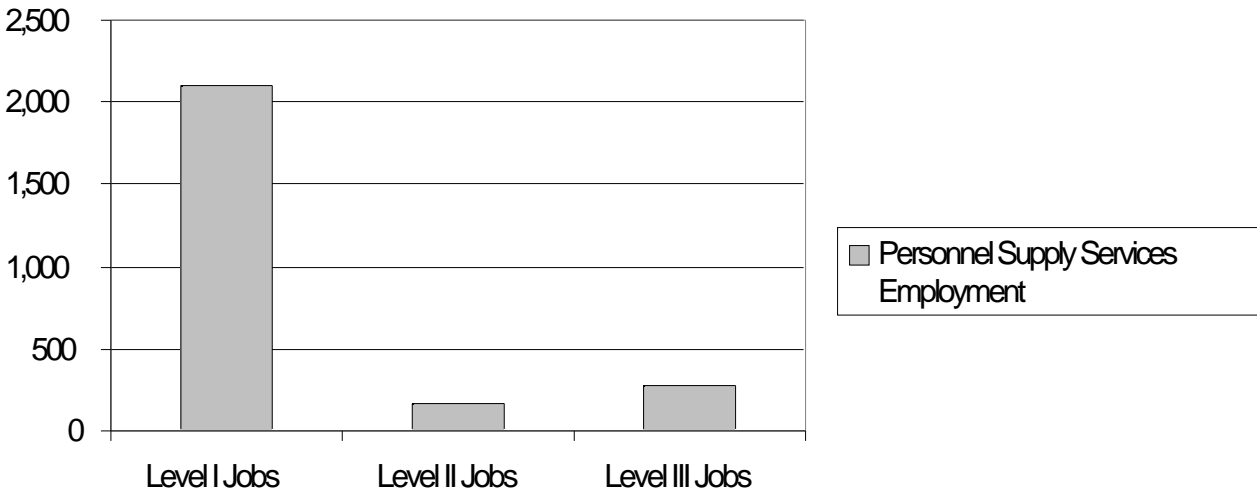
Total employment in the Personnel Supply Services industry has grown dramatically in the Southern Essex region, from 1,571 in 1990 to 3,250 in 1998. This reflects a broad trend effecting the rest of the country and both industry projections and the steep upward slope of the graph in Figure 14 give one confidence that this trend is likely to continue in the near future. It is particularly interesting to note that employment in this sector grew in every year except one (1994) between 1990 and 1998. This growth in both strong and weak periods of unemployment may indicate that this industry is less susceptible than most to changes in the economy. This potential finding is bolstered by the fact that employers interviewed in this industry stated that they could fill even more positions than they have if they could find additional quality workers.



Employment by Level

The possibilities for career ladders as indicated by the quantitative data are quite limited in this industry. As shown in Figure 15, the vast majority of employment in this industry is at the first level of employment. These jobs require little or no technical skill or education for entry and the wages they pay are generally low as well. The limited number of level two and three jobs, which require additional skills or education and pay progressively higher wages indicate that possibilities for workers to advance to jobs that pay good wages and offer benefits are not likely to be found in this industry. One possible hope for optimism in this regard is that some employers indicated that going from temporary employment at a firm to permanent employment happens on occasion and offers a possibility for career advancement.

Figure 15: Southern Essex Region Personnel Supply Service Employment by Levels



Source: Massachusetts Department of Employment Training ES-2002 employment in 1998.
 Analysis by Center for Community Economic Development, University of Massachusetts Boston

Key Job Descriptions

Picker/packer

- ❑ **Duties** Ready goods for shipping from warehouses; entering information and ordering goods, often with a proprietary software program
- ❑ **Critical degrees, credentials, skills** Good physical condition; detail oriented; sufficient reading and writing skills to identify and record merchandise correctly
- ❑ **Wages** \$8.00 - \$10/hour
- ❑ **Benefits** Generally available only after a specified period of continuous employment, such as 800-1200 hours. May include medical/dental, paid holidays and vacations, and training.
- ❑ **Pathways** Temporary → permanent employment; a picker/packer might learn more complex inventory or shipping/receiving skills on the job and advance; picker/packer → assembler or technician (need)
- ❑ **Requirements for Advancement** Demonstrate positive work ethic, participate in on-the-job training, take on additional responsibilities informally; to move into more skilled electro or mechanical assembly work, may need course work or experience with soldering, microscope and blueprint-reading.
- ❑ **Historical and projected demand** High for the past two years, with very high turnover and expanding employment; expected to be higher in the next two years.

Administrative Assistant (Secretary)

- ❑ **Duties:** varied office functions, including word processing, data entry, presentations, and telephone work; higher level staff may handle scheduling and other duties for one or several executives
- ❑ **Critical degrees, credentials, skills** High school degree required, but Associates degree preferred in some cases; good personal computer skills, including MS Office functions (Word, Excel, PowerPoint, Access); multilane telephone and customer service and interpersonal skills
- ❑ **Wages** \$12-14/hour
- ❑ **Benefits** (See above)
- ❑ **Pathways** Temporary AA → permanent; AA → Executive Assistant. Some temporary agencies offer free training in computer applications and typing to help employees advance.
- ❑ **Requirements for Advancement** Demonstrate positive work ethic, participate in on-the-job training, take on additional responsibilities informally; attain secretarial or Associates degree
- ❑ **Historical and projected demand** Stable to high for the past two years, with very high turnover and expanding employment in some cases; stable or increasing next two years.

Potential for Career Advancement

Some advancement is possible, particularly if employers provide more skills training and identify and promote promising candidates. At the same time, employees must be encouraged to use existing opportunities for training and advancement. The growing use of personnel agencies for “temp-to-hire” probationary periods could mean more opportunities for quality permanent jobs, as opposed to casual and contingent ones.

Recruitment Methods

- Promotion from within (in one case)
- Word of mouth/employee referrals
- Newspaper advertising
- Internet advertising
- Career centers; DET and unemployment offices
- Department of Transitional Assistance, welfare-to-work
- College recruiting
- Job fairs (in one case)
- Community based and nonprofit organizations, including Goodwill and ethnic associations
- Employers anticipating lay-offs

Main Human Resource Challenges

Finding and recruiting qualified people is a huge challenge, matched by retention problems; low reliability, particularly among welfare to work referrals, was noted by several agencies. Specific skill deficits include higher level software skills, such as spreadsheet manipulation, and the ability to handle switchboards and multilane phones.

Proportion of Staff from the North Shore

North Shore residents ranged from one half to virtually all employees.

Emerging Industry: Computer and Data Processing

Companies in this sector are typically small and rapidly growing organizations, including start-ups and those maturing from the research and development stage to sales of an actual product or service. They produce the programs or instructions that make computers useful, and may also assist clients with acquisition and use of computer hardware, software, and network infrastructure. While the sector is not as concentrated here as in Cambridge or Boston, hundreds of software and kindred information technology specialists have emerged on the North Shore in the past decade. Many of them congregate in Beverly's Cummings Center, formerly home to the nation's largest shoe-making works.

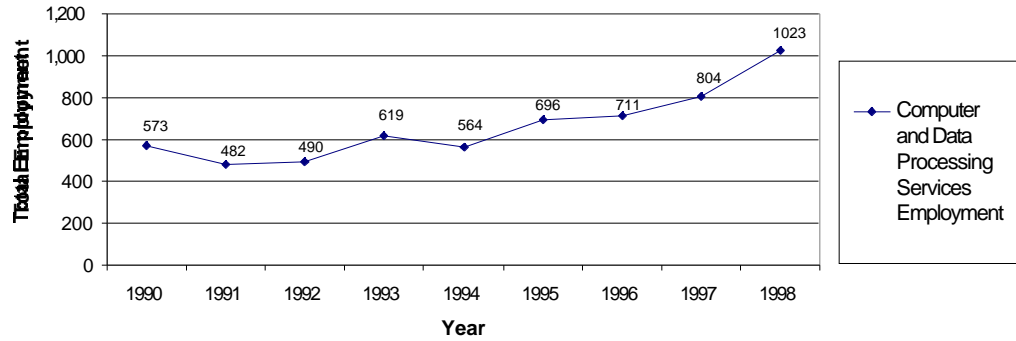
Employment in the computer and data processing sector is heavily biased towards the technical. One company responding counts software engineers as fully half of all staff; nearly all positions there have "engineer" in their title. While writing and repairing computer code is an essential activity in these firms, equally important is working with customers to put the code to work, and troubleshoot problems that arise. Thus technical specialists also need strong communication and interpersonal skills, just as customer service staff need some technical sophistication. Formal credentials (beyond skill based certification) are less important in this field than demonstration of competence and knowledge.

As start-ups in a highly competitive and rapidly changing field, software and related firms often lack internal human resource staff or capacity. Some contract this function out, while others make do with a small HR staff but little formal system for employee supervision, review, or promotion. This culture appeals to self-starting professionals who disdain "bureaucracy," but respondents also note its drawbacks: poor matches between hires and their jobs, a sense of impersonality in the hiring process (where HR is out-sourced), and missed opportunities to assess and promote promising candidates. Software firms at these early stages also lack specialized clerical or administrative staff, and low skilled functions such as cleaning are typically contracted out.

Overall Employment Growth

Figure 16 clearly shows why computer and data processing was selected for this study as an emerging industry. Employment in this industry nearly doubled from 1990 to 1998. While total employment remains relatively small compared to some of the critical industries studied, employment in this industry is clearly growing. Both the quantitative data and information from the interviews support this finding. This industry is also likely to be of increasing importance to the region because of the degree to which the functions of this industry are often subsumed into other industries. For example, network administrator firms are included in this sector but many firms in other industries hire substantial numbers of network administrators. This opens up additional opportunities for employment for workers who gain the skills necessary for employment in the computer and data processing services industry.

Figure 16: Southern Essex Region Employment in Computer and Data Processing Services Sub-Sector: 1990-1998

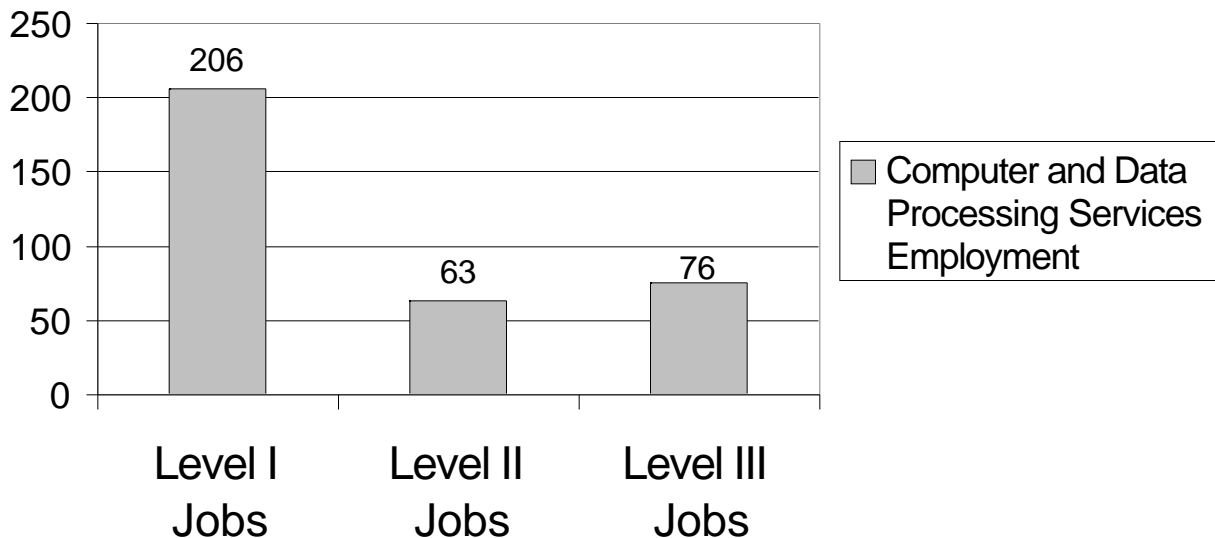


Data Source: Massachusetts Department of Employment and Training. ES-202 data.

Employment by Level

Less pre-baccalaureate employment is available in the computer and data processing services industry than any of the others we studied, approximately 34% (Figure 17). However, the relative youth of this industry means that rapid changes in the educational requirements for positions are still occurring. The tight labor market that currently exists is aiding this trend. Employers interviewed in this sector indicated that educational requirements were highly fluid for applicants with needed skills. One employer went even further to state, “you hire for attitude and train for skills.” In addition, as described below, certification programs such as the Microsoft Certified Software Engineer (MCSE) and the Cisco Certified Software Engineer (CCNE) have taken the place of the Bachelor’s degree in signaling the presence of needed skills to employers. Such certificate programs allow employees to advance rapidly to positions paying much higher wages than are usually available at the pre-baccalaureate level.

Figure 17: Southern Essex Region Computer and Data Processing Services: Employment by Level



Source: Massachusetts Department of Employment and Training, ES-202 employment in 1998. Analysis by the Center for Community Economic Development, University of Massachusetts Boston.

Key Job Descriptions

Call Center/Help Desk Staff (Technical support engineer)

- ❑ **Duties** Handle all support calls and e-mails from customers, working with software engineers and quality assurance staff as needed to resolve problems
- ❑ **Critical degrees, credentials, skills** Software skills and technical background helpful; good social skills, professionalism and patience; customer support background, with one to two years background minimum supporting a commercial product preferred. The employer may train bright candidates from other industries.
- ❑ **Wages** Range widely, from \$10-25/hour (higher end if working offsite with clients)
- ❑ **Benefits** Medical, dental, life insurance, long and short term disability, savings plans; flexible spending accounts; paid vacation, holidays.
- ❑ **Pathways** Promotion from within is fairly limited, given the small size of firms and the hurdle of attaining technical skills. In firms employing network engineers, call center workers might obtain certifications as Microsoft Certified Software Engineers (MCSE) or Cisco Certified Network Engineers (CCNE) and bid on such openings.
- ❑ **Requirements for Advancement** (See above)
- ❑ **Historical and projected demand** Increased over the past two years; projected to be constant for the next two years.

Network Engineer

- ❑ **Duties:** work on-site at client companies to implement networking solutions to business problems.
- ❑ **Critical degrees, credentials, skills** Certification as Microsoft Certified Software Engineers (MCSE) or Cisco Certified Network Engineers (CCNE)
- ❑ **Wages** Typical entry salary is \$40-45,000 annually, but may be much higher with experience
- ❑ **Benefits** (See above)
- ❑ **Pathways** Network Engineer → Quality Assurance Engineer, Software Engineer, other skilled professional positions
- ❑ **Requirements for Advancement** Attainment and demonstration of technical skills and knowledge
- ❑ **Historical and projected demand** Constant over the last two years, with constant demand predicted for the next two years

Web Designer

- ❑ **Duties:** Design, troubleshoot web pages and related web-based applications for clients.
- ❑ **Critical degrees, credentials, skills** Demonstrated ability and/or certification in a variety of software platforms related to web development, including HTML, Java and Javascript; for entry-level candidates, knowledge of Visual Basic and XML.
- ❑ **Wages** If employed directly by a firm, entry-level salary ranges from \$30-40,000; if billed to clients of the firm, hourly wages run from \$25 to \$70, depending on the project.
- ❑ **Benefits** No information provided.
- ❑ **Pathways** Career ladders are not the norm in this industry; workers typically advance by acquiring technical skills and knowledge, such as mastery of new software applications.
- ❑ **Requirements for Advancement** Attainment of formal certificates (six months to one year) in Java, HTML, and other software languages.

- **Historical and projected demand** Demand for web developers has increased over the past two years and is expected to increase in the next two years. Upcoming growth areas include web security, customer relations management (CRM) and XML.

Potential for Career Advancement

Formal career ladders are uncommon in this sector, both because of the size and orientation of the employers, and today's market conditions for skilled workers. As one manager said, "everyone's in a head-down mode" trying to bring a product to market. Workers with highly specialized skills may be more likely to seek higher pay and greater challenges by moving to another firm than to ascend an internal ladder, depending on the depth and size of their employer. Still, the skills bias of this industry opens doors to non-college degreed candidates with strong technical skills and initiative. Employers noted that managers could inform staff about promotion and training possibilities.

Recruitment Methods

- Promotion from within (moderate)
- Word of mouth/employee referrals (most important source; reward offered)
- Internet advertising (heavily utilized)
- College recruiting (in one case)
- Job fairs
- Technical agencies

Main Human Resource Challenges

The rapid maturing of organizations presents the greatest HR challenge. Growing effectively and putting "big company" systems in place, while retaining staff that prefer a more informal start-up culture, is difficult. For those without internal HR capacity, it is hard to make good matches between prospective employees and their jobs, as well as with the firm's organizational culture. Managers also noted specific shortages in such areas as strong managers and engineers, particularly those with strong C++ programming skills. Difficulties in finding qualified people in many areas on the North Shore can discourage expansion here.

Proportion of Staff from the North Shore

The percentage of North Shore residents ranges (roughly) from 25% to 40%.

Emerging Industry: Telecommunications

The telecommunications sector provides the means to move information, be it voice, data, or other transmissions. It straddles industries, encompassing communications services such as telephone, wireless, cable, and the Internet; manufacturing of telecommunications equipment; and research and consulting services that help users integrate and utilize various media. To represent a part of this broad spectrum, the survey focused on two subsectors: telephone services and Internet service providers, the latter an area that has been small yet growing steadily on the North Shore. These areas bookend the largest and smallest employers in the sector. Our respondents range in size from 14 to about 140,000. Their common denominator is rapid change, as various media and infrastructure merge and spin off, and disparate providers compete to control the “pipe” for delivering information services to home and business.

Most employment in telecommunications breaks, roughly, into customer contact positions and technical positions. The former, as in the software sector, involve telephone and/or e-mail contact with customers to answer questions, address problems and explain and sell services. The latter involve developing, installing, or maintaining systems for telecommunication users. Such systems could be based on telephone lines, the Internet, or on any number of emerging technologies for moving information, such as Digital Subscriber Lines (DSL). Technical staff in internet service firms are more likely to be programmers, network administrators or systems engineers, while telecommunication service providers employ large crews of “outside” technicians who splice cables, test lines, and repair broken equipment.

As in other technology and skill-based industries, human resource managers and CEOs downplay the importance of college degrees. One web hosting firm responding explained that they have hired people who “barely got out of high school,” but had the interest, the knowledge base, and the self-starting abilities to succeed in the field. The support desk (and in some cases, sales work) are the most common gateway for applicants starting out with Internet Service Providers, web hosting firms, and similar organizations.

Overall Employment Growth

The telecommunications industry is not amenable to the same method of quantitative analysis used in the other industries included in the study. Telecommunications, and particularly the portions of it that are most likely to be important emerging employers in the region, are widely spread across a variety of Standard Industrial Classification (SIC) categories and each one occupies only a portion of its category. For example, telephone companies are located in SIC category 481 telephone communications and employment in this category has been remaining stagnant or decreasing slightly. However, there are fast growing parts of this business, particularly those relating to the installation and maintenance of broadband Internet access for businesses and home consumers. The fastest growing broadband access method over telephone lines is DSL (Digital Subscriber Line) technology. Internet Service Providers (ISPs) and web hosting firms, each of which are subsumed in other SIC categories, were also included in this sector for the purposes of the study.

Key Job Descriptions

Customer Service Representative 13 (Technical Support)

- ❑ **Duties** Respond to questions from customers about service options, billing, and technical problems with service. In telephone and cable companies, CSRs receive constant incoming calls through a call center.
- ❑ **Critical degrees, credentials, skills** Some telephone candidates must pass a series of exams to be considered and placed in one of several areas. Also needed: competency in spoken English; strong interpersonal and customer skills; basic computer skills; in some internet firms, certification in Microsoft or other network platforms is preferred, as is prior knowledge of and interest in the internet.
- ❑ **Wages** Telephone service providers: start at \$308/week (\$8.23/hr), rising to \$854/week (about \$23/hour) after three years; Internet firms: varies from \$10 to \$20/hour, depending on the complexity of questions and systems tackled
- ❑ **Benefits** Medical/dental and vision coverage; pension plan; life insurance; flexible spending accounts; long and short term disability; paid vacation, holidays, and sick leave; tuition reimbursement; for some internet firms, stock options are also available. Telephone service employees also receive a considerable amount of internal training, and the employer fully pays for health benefits.
- ❑ **Pathways** CSR → Supervisor → Manager (in telephone services); CSR → Instructor (of other CSRs); for Technical Support (internet services), advancement from Level I → II → III, or lateral move from Tech Support/Internet Service to Tech Support/Web Hosting; Tech Support → Database Administrator
- ❑ **Requirements for Advancement** Highly rated performance in current job; demonstrated willingness to take on greater responsibility or special projects; acquiring knowledge of new technical areas.
- ❑ **Historical and projected demand** Telephone services: “demand has skyrocketed” in the last two years; continued heavy demand is expected.

Splice Service Technician (Installer, Telecommunication service companies)

- ❑ **Duties** Install or add telecommunications services at residences or businesses; test and repair equipment
- ❑ **Critical degrees, credentials, skills** Pass initial examination (see above); prior background or aptitude in related areas, including cabling or electronics, through work, military service, trade school or community college
- ❑ **Wages** Start at \$298/week (\$7.45/hour), rising to \$993/week (\$24.83/hour) after 4.5 years.
- ❑ **Benefits** (See above)
- ❑ **Pathways** Job moves most likely to be from “outdoor” to “indoor” positions, managing networks (CSR → Inside Technician) that are on the same pay scale but are sheltered from the weather.
- ❑ **Requirements for Advancement** Highly rated performance in current job; demonstrated willingness to take on greater responsibility

13 The telecommunications service provider responding does not utilize this position on the North Shore, but maintains a substantial staff (600) nearby in Andover, as well as in Lowell. It does employ a group of directory assistance operators in Salem (a position not described here).

- **Historical and projected demand** Increased demand (though not to the same extent as for customer service staff) for the past two years; steady for the coming two years

Potential for Career Advancement

Advancement potential in this field is enhanced by openness to candidates without formal college degrees. On the Internet side, it is limited for those without strong technical backgrounds or aptitudes, however, and by the small size of these firms. As start-up firms grow, the volume of entry level jobs in sales and customer service will likely increase, as will the number of specialized, higher level positions in administration and management. Individuals attracted to this industry, according to our respondents, may be less interested in such positions, though. A parallel problem exists in the unionized sector of telecommunications services: supervisory and management jobs require leaving the union bargaining unit, its benefits, and its culture – a disincentive to promotion, according to our informant.

Recruitment Methods

- Promotion from within
- Word of mouth/employee referrals (bonuses offered in some cases)
- Newspaper advertising (mainly used by telephone services)
- Internet advertising (website and online recruitment sites)
- Career centers (used only by telephone services)
- College recruiting (used by some)
- Job fairs (telephone services only)
- Community based organizations (telephone services only)
- Personnel supply services

Main Human Resource Challenges

Recruitment and retention pose equally serious challenges to telecommunications firms. These problems differ among the sub-sectors presented here. For telephone services, the pool of recruits includes many lacking the general skills necessary to pass the entrance examination, such as math, reading, and attention to detail. Managers also note a lack of work readiness, interpersonal skills, and willingness to adapt to the corporate culture. And low initial wages for both customer serving and technical staff also frustrate recruiters. Internet firms face a shortage of more specialized talent, such as midlevel systems and database administrators and programmers.

Retention in telephone services is in part a matter of improving “quality of life in a highly bureaucratic organization,” particularly under conditions of mergers and restructuring. For Internet firms, it is more a matter of identifying incentives that outweigh competing offers for staff with scarce technical skills.

Proportion of Staff from the North Shore

North Shore residents comprise between 25% and 75% of staff in these establishments.

Emerging Industry: Financial Services/Web-based Banking

Employment in banking as a whole has declined in the Southern Essex region from 3,039 in 1990 to 2,576 in 1998, a decline of over 15%. However, the level of total employment in the banking industry in the region is still sufficiently high to demand attention from workforce development planners and professionals. Also, the loss of employment appears to have leveled off with a slight employment gain since 1994 (See Figure 5). When looking at an industry whose employment has leveled off, one strategy for making employment training interventions is to focus on occupations within the industry that may be growing in the future and have received little previous attention within the employment training community. One such group of occupations within the banking industry is the web-based banking functions. Actual numbers of jobs in these functions are impossible to obtain, given the newness of the positions.

The use of the Internet to enable bank customers to access information and conduct transactions is a new and growing phenomenon. It is less an industry in itself than a set of services and practices within an existing industry (financial services and, specifically, banking). As new technologies – grounded in the previous industries discussed, software and telecommunications – are applied to the banking industry, new employment demand may occur. This may involve wholly new occupations, bridging technical and financial skills, while changing the nature of existing positions, such as customer service. These changes could take years (or even decades) to have their full impact.

Since this discussion focuses on a specific service (and associated occupations) that is emerging within an industry, some of the information is presented below in a slightly different format. The broader human resource challenges, for example, are presented included to provide context to the web-based banking employment; the skill specifications provide insight as to how incumbent workers in the banking industry might expand their skill portfolio to maintain their own marketability and advance. Discussions with employers were geared toward understanding the current nature and potential future impacts of web-based banking on the region's financial institutions and their employees.

Key Job Description

Product Manager (Technical Consultant, Systems Architect)

- ❑ **Duties** Work with web page designers (usually contractors) and financial and technical staff to develop, implement, and modify Internet-based banking products and services. In more technical positions, ensure compatibility of web applications with computer systems and networks in use. Work with customer service staff to respond to customer questions and feedback about web applications. Study applications in use by other banks; anticipate customer needs and adopt or develop new web-based products and services accordingly.
- ❑ **Critical degrees, credentials, skills** Technical staff need to know how to make efficient and cost-effective computer connections, as well as knowledge of network architecture and a sense of which web applications will run smoothly on the bank's computers. Certification in the relevant network application (Novell, Microsoft, Cisco, etc.) can be a plus in some cases. Equally important is an understanding of banking regulations, procedures, and emerging products and services.
- ❑ **Wages** Skilled candidates can command high salaries, from the \$60's up.

- **Benefits** Not available.
- **Pathways** Web-based banking is too new to have formally structured career paths, but it represents a small but expanding area for staff in lower-skilled banking positions to enter.
- **Requirements for Advancement** Attainment and demonstration of technical and financial skills and knowledge.
- **Historical and projected demand** Currently, the direct staffing impacts of web banking on regional banks are small. The technical functions of web design and implementation are contracted out to specialists by each of the regional banks contacted. None of them needed internal staff with HTML or similar programming skills for the web.

Those interviewed followed one of two paths, each with distinct staffing requirements. In the first case, web banking is a discrete function, with an organizational structure distinct from the bank itself. Banks who follow this path will likely require greater numbers of staff as they scale up their web banking operations. In the second path, web banking is viewed as “another distribution channel” for banking, an adjunct rather than a separate entity in the bank. In this case, staffing needs are more modest – usually a small number of specialized “e-commerce” employees meet the bank’s needs. Staff in general, however, need to be familiar with what the customer sees on his or her computer. In this model, web banking is seen as one of a number of products and services (including in-person and telephone access).

Future demand will depend on the extent to which web-based banking expands in the region’s banks, and whether the web design function continues to be contracted out or provided internally. As more customers turn to the Internet to make routine transactions (deposits, transfers, account balances), demand for tellers and entry level customer service staff may correspondingly decrease. Such impacts may take as much as ten to fifteen years to emerge.

Potential for Career Advancement

While current staffing appears to be from the ranks of Bachelor’s degree holders (or higher degrees, such as MBAs), those interviewed believed that with training, stronger teller and CSR candidates with lower educational attainment could be promoted into web banking positions. Respondents emphasized the need for business and finance courses, the ability to write and speak articulately, and to interact productively with clients. Candidates can be trained internally for specialized roles (such as web banking), provided they have strong basic skills (math, interpersonal skills, detail orientation), and a willingness to learn.

Recruitment Methods

(This applies to other areas of banking besides Internet-based occupations). Promotion from within, newspaper advertising, Internet advertising; recruitment at colleges and high schools; school-to-work and welfare-to-work programs.

Main Human Resource Challenges

The banks contacted did not face serious challenges in the web-banking area. Though they noted that the ideal combination of technical and banking knowledge was fairly rare, there were sufficient outside candidates, and/or internal staff, to meet current needs. Instead, they emphasized labor shortages and retention problems among tellers, particularly ones willing to work part-time hours

year round. Turnover at branch banks among such staff is reportedly about 25%, with some jobs vacant for three or four months. Customer service representatives are also in short supply.

Banks are addressing these shortages through more aggressive recruitment in the channels noted above (particularly the Internet), as well as more formal encouragement of internal candidates. The latter includes promotion from teller to account representative (a CSR-type position) or Operations manager, and ultimately, to higher skill positions such as loan officer or assistant branch manager. Some are also relying more on bi-lingual employees to reach out to new communities, particularly those where the banks have a strong customer base (e.g. Latino, Russian, Laotian, Vietnamese, etc.)

Another challenge is presented by current and expected growth in skill requirements for tellers and customer service representatives, including basic computer and web skills, and the ability to interact with and support staff who work directly with web-based customer inquiries. Associates and Bachelor degrees could become more common for customer service staff. As technologies mature, even call center CSR staff will need to have higher skill levels, in both customer service and banking. This is part of a trend much wider than web-based banking, as banks compete with other financial service sectors (securities and insurance firms) to provide investment products and services to customers.

MAKING THE MATCH: TRAINING RESOURCES

The environmental scan of training programs was conducted at two levels, first to assess the full universe of programs in the region, and second, to examine in greater depth existing programs in the region geared toward helping residents obtain skills in the health care, retail trade, industrial machinery and construction industries, as well as software and telecommunications industries. The scan included community-based organizations, community colleges and for-profit providers funded over the past several years by the Workforce Investment Board under the Job Training Partnership Act, the Department of Transitional Assistance, the Department of Education, and private fees. A phone survey was conducted of eight providers that prepare individuals in each of the eight industrial sectors included in the Blueprint study. The following providers were surveyed:

- ❑ **Operation Bootstrap** provides ESOL programs as well as the PRIMO (Prevocational Resource for Improvement Motivating & Opportunity) for *Machinists* program.
- ❑ **Salem Harbor Community Development Corporation** provides an ESL and ESOL training programs geared toward both the *health care, and the computer and software industries*.
- ❑ **American Red Cross** provides a wide range of vocational and skills training in *health care* such as the Certified Nursing Assistant program.
- ❑ **North Shore Community College** is one of the largest training providers, with satellite campuses in Danvers, Lynn and Beverly. The college offers associate's degrees and certificate programs in the *computer and telecommunications* industries, and also provides ESL and GED Programs.
- ❑ **Marian Court College**, a private college, offers *health care and computer training* certificate programs including a Medical Office Administration Certificate for Adults, and a Technical Certificate Computer Program.
- ❑ **Endicott College** offers relevant *computer* certificates as well as *customer service* training.
- ❑ **Greater Boston Manufacturing Partnership** offers workforce training services such as training assessments, *machinist* Training, and ABE & ESOL for manufacturing.
- ❑ **Lynn Public Schools** offers relevant apprenticeship programs for individuals in the *construction industry*.

Overall, there are approximately 37 education and training providers including community colleges, community-based organizations, and other public and private training programs in the Southern Essex region. The largest number is located in Lynn, with additional concentrations in Salem and Gloucester (See Appendix IV).

English as a Second or Other Language, Adult Basic Education, and General Education Diploma programs are the most common training services in the Southern Essex region. Community based organizations are the main providers of these services, followed by community colleges and one for-profit provider identified by the scan. Most providers reported having waiting lists for their ESOL, ABE and GED programs.

Different types of providers generally performed different types of training. Nonprofit, community based organizations were most likely to provide ESL, ESOL, and ABE training and entry-level health care training for occupations such as home health aide. Proprietary schools were most likely

to provide computer office skills training and other types of entry to mid-level computer training. Community colleges, particularly North Shore Community College, and other higher education institutions were most likely to provide advanced technical training in web development, networking, and computer programming. High schools and vocational technical schools were most likely to provide training focused on careers in the construction industry, particularly the trades. Finally, manufacturing was generally the provenance of entities designed specifically to meet the training needs of manufacturing, such as the Greater Boston Manufacturing Partnership.

Due to sheer size of the health care industry and the abundance of jobs with minimal entry requirements, there is a wide range of specific training programs focused only on health care. The Workforce Investment Board has supported several health care certification programs provided by the American Red Cross in Peabody and Beverly; ABE training with a health care focus by Operation Bootstrap, and a number of other training programs focused on the health care industry.

There are also a number of programs geared toward the manufacturing industry. The Greater Boston Manufacturing Partnership, the Massachusetts Manufacturing Partnership, and Essex County Community Organization (ECCO) all provide training for the manufacturing industry. The North Shore Community College provides basic manufacturing training, as well as computer instruction, and customer service training. In addition, a number of the vocational and technical high schools provide training programs aimed at developing the skills needed to enter the manufacturing industry.

Most of the training programs that focused on computer skills were aimed at the development of office skills, using the Windows operating system and basic word processing, spreadsheet, and presentation programs. However, given the growth in several technical and computer-based occupations, there appears to be a significant gap in skills training programs available to Southern Essex residents. North Shore Community College, for example, cited long waiting lists for very specific technical computer programs such as Web Design and Oracle courses that are critical to entry and progression in the Software Services and Telecommunications industries. An increase in funded technical skills training programs in sectors including telecommunications, software services, and manufacturing should be a critical priority for the WIB.

In addition to funding technical skills training, the WIB must also expand funding to ensure that low-income workers in the region can meet entry requirements for advanced technical training. This means funding ESOL and ESL programs that train people beyond the minimum level to function in an entry-level job towards the level needed to succeed in technical training. Since the required English level varies by type of training and by training provider, it will be important for the WIB to work closely with providers of technical training to ensure that pre-qualification standards are being supported by other publicly funded training.

Lack of social support was also seen as a barrier to success by many of the training providers (and employers) interviewed. One of the most critical needs is affordable, quality childcare. Many of the participants in the training programs surveyed were women for whom lack of childcare is a significant barrier to training and ultimately to employment success. The WIB can act as a catalyst to bring together childcare providers and other funding entities to increase the availability of this critical resource.

RECOMMENDATIONS

- ❑ Direct more funding to basic work readiness and other ABE, ESL, combined with skills training. Trainings should have clear connections to actual jobs; encourage/fund ABE/ESL for incumbent workers.
- ❑ Promote development and cost accessibility of skilled, technical training programs at community based organizations (CBOs), community colleges and schools for individuals of low economic means. Increase capacity for training in computer skills and certifications, blueprint and schematic reading and other technical specialties.
- ❑ Promote case management, job coaching and internships of new entrants to workforce, including former welfare recipients and youth.
- ❑ Encourage close employer collaboration with training programs, through program and curriculum design, internships, visits to employer sites, job shadowing, etc.
- ❑ Ensure that residents of towns with lowest educational attainment and highest levels of unemployment (Lynn, Peabody, Saugus, and Gloucester, for example) are adequately served.
- ❑ Support existing systems of formalized career ladders, and promote the training of workers for those industries that already offer career pathways (formal or informal).
- ❑ Convene employers in those industries where career pathways are less formal or non-existent to work collaboratively to define entry-level skill requirements and create progressive steps upward. Encourage them to adapt new training and promotion practices where feasible. Seek out and disseminate best practices in work organization, training, recruiting, etc.
- ❑ Support training providers to work with employers and participants to on sector-specific and cross-sector career pathways for new entrants to the labor force.
- ❑ Encourage more adaptations to bridge entry-level workers with poor English skills to better skilled work (beyond ESL, use of foreign language training videos, instructions, labeling).
- ❑ Encourage employers to offer more training in-house, by leveraging funds from state and federal sources, etc.
- ❑ Encourage employer consortia that would help individual companies assess skill/training needs, apply for funds to increase employment and advancement opportunities for low-skilled workers.
- ❑ Take advantage of strong economy to support formation and implementation of pre-apprenticeship programs for women and minorities to enter construction trades. Model programs in other cities and states can serve as an example.

- ❑ Improve transportation networks among towns for residents through public transit, van pools, etc. Work with employers and community groups to identify needs, solutions and resources.
- ❑ Increase visibility of the Workforce Investment Board by holding public events, meeting individually and in small groups with employers, using media to note successes, etc.
- ❑ Address the perception that the workforce development community (CBOS, One Stop Career Centers, Workforce Investment Boards, etc.) seeks to lower employer standards and expectations for their work force.
- ❑ Convene working groups within/across industries to present “Blueprint” findings; validate or correct them, and solicit views on priority areas and possible solutions.

APPENDICES

- I. Additional Demographics Data**
- II. Occupational Matrices**
- III. Industry Survey Protocol**
- IV. List of Education and Training Providers**
- V. Environmental Scan Protocol**

**Appendix I:
Additional Demographics Data**

**Table A1: Population Growth and Projections for
the Southern Essex Region, Towns and Massachusetts**

Town	Population 1980	Population 1990	Projection 2000	Projection 2010	Pop. Growth 1980-1990	Proj. Growth 1990-2000	Proj. Growth 2000-2010
Beverly	37,655	38,195	40,957	42,054	1.4%	7.2%	2.7%
Danvers	24,100	24,174	25,399	25,751	0.3%	5.1%	1.4%
Essex	2,998	3,260	3,471	3,720	8.7%	6.5%	7.2%
Gloucester	27,768	28,716	27,898	27,359	3.4%	-2.8%	-1.9%
Hamilton	6,960	7,280	7,739	7,758	4.6%	6.3%	0.2%
Ipswich	11,158	11,873	11,948	11,898	6.4%	0.6%	-0.4%
Lynn	78,471	81,245	80,053	82,705	3.5%	-1.5%	3.3%
Lynnfield	11,267	11,274	12,275	12,530	0.1%	8.9%	2.1%
Manchester	5,424	5,286	5,427	5,240	-2.5%	2.7%	-3.4%
Marblehead	20,126	19,971	21,320	21,165	-0.8%	6.8%	-0.7%
Middleton	4,135	4,921	5,499	6,059	19.0%	11.7%	10.2%
Nahant	3,947	3,828	4,064	4,077	-3.0%	6.2%	0.3%
Peabody	45,976	47,039	51,129	52,119	2.3%	8.7%	1.9%
Rockport	6,345	7,482	8,834	10,657	17.9%	18.1%	20.6%
Salem	38,220	38,091	40,371	41,434	-0.3%	6.0%	2.6%
Saugus	24,746	25,549	25,771	25,532	3.2%	0.9%	-0.9%
Swampscott	13,837	13,650	15,012	15,472	-1.4%	10.0%	3.1%
Topsfield	5,709	5,754	6,400	6,605	0.8%	11.2%	3.2%
Wenham	3,897	4,212	4,701	5,538	8.1%	11.6%	17.8%
Southern Essex Region	372,739	381,800	398,268	407,673	2.4%	4.3%	2.4%
Massachusetts	5,737,037	6,016,425	6,340,843	6,690,740	4.9%	5.4%	5.5%

Population over 20,000

Source: Massachusetts Institute for Social and Economic Research, U.S. Census

**Table A2: Southern Essex Labor Force Participation
and Unemployment: 1994 and 1998**

1994				1998		
TOWNS	1994 Population	Labor Force Participation Rate	Unempl. Rate	1998 Population	Labor Force Participation Rate	Unempl. Rate
Beverly	38,190	54.9	4.5	39,037	55.3	2.6
Danvers	24,049	56.7	4.4	25,188	55.9	2.7
Essex	3,311	59.2	4.3	3,407	56.8	3.1
Gloucester	28,949	54.6	9.6	29,657	54.0	5.3
Hamilton	7,382	50.7	4.0	7,545	50.8	2.2
Ipswich	12,053	55.6	4.3	12,656	54.8	2.9
Lynn	80,352	45.3	7.1	81,075	47.2	4.0
Lynnfield	11,045	54.2	4.1	11,359	54.3	2.0
Manchester	5,301	54.8	3.3	5,465	54.4	2.1
Marblehead	19,787	60.0	3.6	20,103	59.1	2.0
Middleton	5,217	58.5	5.7	6,040	54.4	3.3
Nahant	3,771	53.7	5.2	3,797	55.4	2.8
Peabody	47,684	54.8	5.5	49,204	55.1	3.1
Rockport	7,481	55.2	6.4	7,644	53.6	3.9
Salem	37,846	53.5	5.5	38,351	55.3	3.5
Saugus	25,850	54.6	5.7	26,576	55.2	3.0
Swampscott	13,535	53.0	4.8	13,868	53.1	2.4
Topsfield	5,816	50.9	3.7	6,257	50.5	2.0
Wenham	4,356	53.8	2.5	4,473	54.8	1.5
Total Southern Essex Region	381,975	52.9	5.6	391,702	53.4	3.2

Population over 20,000

Sources: Massachusetts Institute for Social and Economic Research,
1990 Census Count and Census Bureau Estimates July 1, 1990 to July 1, 1998, and
Department of Employment and Training

Table A3: Southern Essex Population by Race/Ethnicity 1990

Town	Total Population	White	Percent White	Black	Percent Black	Asian*	Percent Asian	Hispanic	Percent Hispanic
Beverly	38,195	37,016	96.9	306	0.8	434	1.1	439	1.1
Danvers	24,174	23,563	97.5	112	0.5	240	1.0	259	1.1
Essex	3,260	3,228	99.0	1	0.0	16	0.5	15	0.5
Gloucester	28,716	28,281	98.5	65	0.2	98	0.3	272	0.9
Hamilton	7,280	7,050	96.8	35	0.5	108	1.5	87	1.2
Ipswich	11,873	11,699	98.5	39	0.3	58	0.5	77	0.6
Lynn	81,245	65,325	80.4	5,452	6.7	3,036	3.7	7,432	9.1
Lynnfield	11,274	11,004	97.6	11	0.1	186	1.6	73	0.6
Manchester	5,286	5,237	99.1	2	0.0	28	0.5	19	0.4
Marblehead	19,971	19,549	97.9	80	0.4	182	0.9	160	0.8
Middleton	4,921	4,818	97.9	38	0.8	45	0.9	20	0.4
Nahant	3,828	3,758	98.2	6	0.2	27	0.7	37	1.0
Peabody	47,039	44,763	95.2	409	0.9	521	1.1	1,346	2.9
Rockport	7,482	7,395	98.8	17	0.2	35	0.5	35	0.5
Salem	38,091	34,403	90.3	566	1.5	574	1.5	2,548	6.7
Saugus	25,549	24,995	97.8	124	0.5	198	0.8	232	0.9
Swampscott	13,650	13,366	97.9	59	0.4	90	0.7	135	1.0
Topsfield	5,754	5,635	97.9	25	0.4	48	0.8	46	0.8
Wenham	4,212	4,105	97.5	21	0.5	50	1.2	36	0.9
Southern Essex Region	381,800	355,190	93.0	7,368	1.9	5,974	1.6	13,268	3.5
Massachusetts	6,016,417	5,297,974	88.1	279,156	4.6	151,726	2.5	287,561	4.8

Populations of more than 20,000

*Includes Pacific Islanders, American Indians, Eskimos & Aleuts

Source: MISER, U.S. Census

Table A4: Southern Essex Population by Race/Ethnicity 1997 Estimates

Town	Total Population	White	Percent White	Black	Percent Black	Asian*	Percent Asian	Hispanic	Percent Hispanic
Beverly	39,549	38,165	96.5	314	0.8	525	1.3	545	1.4
Danvers	25,564	24,759	96.9	111	0.4	291	1.1	403	1.6
Essex	3,113	3,083	99.0	1	0.0	14	0.4	15	0.5
Gloucester	29,288	28,715	98.0	75	0.3	147	0.5	351	1.2
Hamilton	8,255	7,942	96.2	46	0.6	148	1.8	119	1.4
Ipswich	11,992	11,756	98.0	41	0.3	83	0.7	112	0.9
Lynn	83,295	62,620	75.2	6,323	7.6	4,098	4.9	10,254	12.3
Lynnfield	11,846	11,563	97.6	15	0.1	199	1.7	69	0.6
Manchester	5,482	5,434	99.1	0	0.0	27	0.5	21	0.4
Marblehead	20,949	20,449	97.6	85	0.4	188	0.9	227	1.1
Middleton	5,989	5,863	97.9	47	0.8	53	0.9	26	0.4
Nahant	3,802	3,690	97.1	6	0.2	32	0.8	74	1.9
Peabody	49,995	47,105	94.2	461	0.9	606	1.2	1,823	3.6
Rockport	8,135	8,019	98.6	26	0.3	41	0.5	49	0.6
Salem	38,974	34,453	88.4	656	1.7	745	1.9	3,120	8.0
Saugus	25,412	24,777	97.5	127	0.5	232	0.9	276	1.1
Swampscott	14,742	14,372	97.5	66	0.4	98	0.7	206	1.4
Topsfield	6,339	6,174	97.4	30	0.5	54	0.9	81	1.3
Wenham	5,167	5,025	97.3	31	0.6	65	1.3	46	0.9
Southern Essex Region	397,888	363,964	91.5	8,461	2.1	7,646	1.9	17,817	4.5
Massachusetts	6,227,622	5,422,602	87.1	277,970	4.5	184,790	3.0	342,260	5.5
Populations of more than 20,000									
*Includes Pacific Islanders, American Indians, Eskimos & Aleuts									
Source: MISER, U.S. Census									

**Table A5: Southern Essex Population by Race/Ethnicity
1990-97 Percent Changes**

Town	White	Black	Asian*	Hispanic	All Races/ Ethnicities
Beverly	3.1%	2.6%	21.0%	24.1%	3.5%
Danvers	5.1%	-0.9%	21.3%	55.6%	5.7%
Essex	-4.5%	0.0%	-12.5%	0.0%	-4.5%
Gloucester	1.5%	15.4%	50.0%	29.0%	2.0%
Hamilton	12.7%	31.4%	37.0%	36.8%	13.4%
Ipswich	0.5%	5.1%	43.1%	45.5%	1.0%
Lynn	-4.1%	16.0%	35.0%	38.0%	2.5%
Lynnfield	5.1%	36.4%	7.0%	-5.5%	5.1%
Manchester	3.8%	-100.0%	-3.6%	10.5%	3.7%
Marblehead	4.6%	6.3%	3.3%	41.9%	4.9%
Middleton	21.7%	23.7%	17.8%	30.0%	21.7%
Nahant	-1.8%	0.0%	18.5%	100.0%	-0.7%
Peabody	5.2%	12.7%	16.3%	35.4%	6.3%
Rockport	8.4%	52.9%	17.1%	40.0%	8.7%
Salem	0.1%	15.9%	29.8%	22.4%	2.3%
Saugus	-0.9%	2.4%	17.2%	19.0%	-0.5%
Swampscott	7.5%	11.9%	8.9%	52.6%	8.0%
Topsfield	9.6%	20.0%	12.5%	76.1%	10.2%
Wenham	22.4%	47.6%	30.0%	27.8%	22.7%
Southern Essex Region	2.5%	14.8%	28.0%	34.3%	4.2%
Massachusetts	2.4%	-0.4%	21.8%	19.0%	3.5%

Populations of more than 20,000

*Includes Pacific Islanders, American Indians, Eskimos & Aleuts

Source: MISER, U.S. Census

Table A6: Educational Attainment by Race and Ethnicity in the Southern Essex Region (1990)

TOWN	Percent of persons 25 years and older											
	White		Black		Amer Ind,Eskimo,Aleut		Asian,Pacific Islander		Hispanic		All Races	
	H.S. Grad or higher	Bachelor's or higher	H.S. Grad or higher	Bachelor's or higher	H.S. Grad or higher	Bachelor's or higher	H.S. Grad or higher	Bachelor's or higher	H.S. Grad or higher	Bachelor's or higher	H.S. Grad or Higher	Bachelor's or Higher
Beverly	87.2%	27.8%	75.9%	42.6%	100.0%	19.4%	86.7%	46.7%	81.9%	32.8%	87.1	28.0
Danvers	87.0%	26.3%	78.1%	21.9%	0.0%	0.0%	81.5%	56.0%	66.3%	42.3%	86.8	26.6
Essex	84.8%	27.5%	100.0%	100.0%	100.0%	100.0%	100.0%	31.6%	0.0%	0.0%	85.1	28.1
Gloucester	75.5%	20.5%	50.0%	50.0%	100.0%	0.0%	100.0%	45.0%	68.3%	12.2%	75.6	20.4
Hamilton	90.9%	44.3%	0.0%	0.0%	100.0%	50.0%	100.0%	67.9%	21.1%	0.0%	90.3	44.4
Ipswich	86.7%	33.7%	100.0%	0.0%	0.0%	0.0%	100.0%	12.9%	100.0%	82.8%	86.8	33.6
Lynn	75.3%	14.8%	70.3%	12.2%	46.8%	13.5%	41.3%	12.5%	44.6%	5.8%	73.2	14.3
Lynnfield	94.9%	40.6%	0.0%	0.0%	0.0%	0.0%	100.0%	78.3%	68.6%	47.1%	94.9	40.9
Manchester	94.4%	49.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	94.4	49.3
Marblehead	95.7%	53.5%	100.0%	90.4%	0.0%	0.0%	70.0%	50.0%	94.2%	48.8%	95.6	53.7
Middleton	84.8%	23.4%	100.0%	55.2%	100.0%	0.0%	81.3%	0.0%	100.0%	100.0%	85.0	23.3
Nahant	92.3%	39.3%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	72.0%	92.4	39.0
Peabody	79.5%	20.7%	65.3%	17.5%	100.0%	40.7%	74.4%	45.7%	60.2%	18.4%	79.2	20.9
Rockport	90.4%	36.2%	100.0%	50.0%	0.0%	0.0%	0.0%	0.0%	100.0%	21.4%	90.4	36.3
Salem	79.2%	24.7%	68.1%	15.3%	20.4%	10.2%	92.5%	54.4%	50.2%	15.9%	78.2	24.5
Saugus	80.6%	16.0%	73.0%	28.1%	100.0%	0.0%	80.2%	37.1%	52.9%	35.7%	80.6	16.2
Swampscott	91.6%	43.9%	100.0%	0.0%	0.0%	0.0%	100.0%	44.4%	80.4%	45.1%	91.6	43.8
Topsfield	90.9%	47.1%	0.0%	0.0%	0.0%	0.0%	100.0%	50.0%	77.8%	63.0%	90.5	46.9
Wenham	93.4%	48.9%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	93.4	48.8
S. Essex Region	81.7%	26.6%	61.0%	14.9%	54.7%	13.3%	70.8%	39.8%	43.1%	7.6%	82.0	25.9
Massachusetts	81.2%	27.7%	70.0%	17.0%	71.1%	14.9%	74.1%	44.9%	52.0%	13.6%	80.0	27.0

Population Over 20,000

Source: 1990 Census of Population and Housing, Summary Tape File 3

Note: Some of these percents are based on very small numbers. In particular, if a town has no adults of a given race/ethnic group, percents are shown as "0.0%."

**Table A7: Ethnicity and Linguistic Isolation
in Southern Essex Region Households**

Town	Total Households	English Speaking	Spanish Language		Asian Language		Other Language	
			Ling. Isol.	Not Ling. Isol.	Ling. Isol.	Not Ling. Isol.	Ling. Isol.	Not Ling. Isol.
Beverly	14,774	13,051	44	239	24	67	109	1240
Danvers	9,791	7,939	15	132	10	78	37	580
Essex	620	558	0	24	0	0	9	29
Gloucester	11,550	9,668	3	120	0	16	333	1410
Hamilton	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ipswich	1,778	1,529	0	26	0	9	25	189
Lynn	31,390	24,706	829	1389	366	259	702	3139
Lynnfield	3,934	3,454	0	83	5	9	20	363
Manchester	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Marblehead	8,227	7,582	0	58	0	34	57	496
Middleton	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Nahant	1,535	1,382	0	20	0	17	0	116
Peabody	17,475	13,779	111	363	63	75	611	2473
Rockport	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Salem	15,810	12,277	338	509	30	43	334	2279
Saugus	9,357	8,176	5	122	0	68	132	854
Swampscott	5,286	4,565	0	93	0	29	45	554
Topsfield	919	850	6	14	0	0	0	49
Wenham	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Populations of more than 20,000

1990 Census of Population and Housing, Summary Tape File 3.

Table A8: Percent of Southern Essex Households with Incomes Below the Self-Sufficiency Standard (1990)

Towns	Number Households below SSS	Percentage Households below SSS
Over 30% below Standard		
Lynn	12,381	39
Gloucester	3,878	34
Salem	5,079	32
Between 26%-30%		
Rockport	897	27
Peabody	4,623	26
Beverly	3,890	26
Between 21%-25%		
Saugus	2,204	24
Ipswich	1,106	24
Hamilton	557	23
Essex	276	22
Danvers	411	21
Middleton	377	21
Between 16%-20%		
Swampscott	1,040	20
Manchester	393	19
Wenham	214	18
Nahant	273	18
Marblehead	1,322	16
Under 16%		
Lynnfield	544	14
Topsfield	249	13

Source: "The Self-Sufficiency Standard: Where Massachusetts Families Stand" by The Massachusetts Family Economic Self-Sufficiency Project (Women's Educational and Industrial Union with Wider Opportunities for Women)

Appendix II: Occupational Matrices

OCCUPATIONAL MATRICES

This matrix contains data on the occupations in the five critical industries and one of the three emerging industries surveyed. For each occupation, mean and median wage data for 1998 are reported. Wage data is for the Southern Essex (SE) Region, or for Massachusetts (MA), as noted in column five. The employment numbers listed in column six for the Southern Essex Region are based on matrices developed by the Department of Employment and Training which contain the percentage of employment in each occupation for specific industries. The levels are estimates based on career ladders which contain trainable steps and salary increases within occupational pathways. Finally, growth projections are reported for each occupation. The time frame for these projections is 1996-2006.

Hospitals, public and private SIC Code 806

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
66008	Nursing Aides, Orderlies, and Attendants	\$9.66	\$9.63	SE	334	I	22.7%
32505	Licensed Practical Nurses	\$16.21	\$16.01	SE	286	III	15.5%
67005	Janitors and Cleaners	\$9.55	\$8.94	MA	191	I	1.9%
55347	General Office Clerks	\$10.67	\$10.30	SE	169	I	4.5%
-	Clinical Laboratory Technologists and Technicians	Not in Database		N/A	164	III	12%
55108	Secretaries, except Legal and Medical	\$14.06	\$13.52	SE	106	I	-3.7%
-	Radiologic Technologists and Technicians	Not in Database		N/A	106	III	48%
66099	All Other Health Service Workers	\$10.95	\$10.71	MA	85	I	NA
32302	Respiratory Therapists	\$18.47	\$18.22	SE	74	III	38.7%
65038	Food Preparation Workers	\$8.03	\$7.71	SE	69	I	10.7%
66014	Psychiatric Aides	\$12.09	\$12.13	MA	64	I	4.3%
55332	Interviewing Clerks, except Personnel and Social Welfare	\$11.04	\$10.77	SE	58	I	5.2%
55105	Medical Secretaries	\$13.01	\$12.55	MA	58	II	25.3%

Hospitals, public and private		SIC code 806	(continued)				
OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
65017	Counter Attendants Lunchroom, Coffee Shop, or Cafeteria	\$7.04	\$6.61	SE	53	I	11.3%
55344	Billing, Cost, and Rate Clerks	\$12.59	\$12.17	SE	48	I	14.7%
-	Pharmacy Assistants	Not in Database		N/A	42	II	6.1%
55305	Receptionists and Information Clerks	\$9.95	\$10.10	SE	42	I	26.3%
63047	Guards and Watch Guards	\$9.15	\$8.57	SE	37	I	18.3%
32911	Medical Records Technicians	\$11.56	\$11.01	SE	37	II	45.7%
58023	Stock Clerks, Stockroom, Warehouse or Stockyard	\$11.33	\$10.55	SE	37	I	10%
65028	Cooks, Institution or Cafeteria	\$10.86	\$10.57	MA	37	II	2.1%
57102	Switchboard Operators	\$10.46	\$10.32	SE	37	I	2.3%
55307	Typists, including Word Processing	\$12.26	\$11.91	MA	37	I	-22.9%
69999	All Other Service Workers	\$9.79	\$8.73	MA	32	I	NA
32508	Emergency Medical Technicians	\$12.42	\$11.33	SE	32	III	29.3%
21999	All Other Manage- ment Support Workers	\$21.18	\$18.87	MA	32	III	11.9%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	32	II	-4.8%
59999	All Other Clerical and Administrative Support Workers	\$13.00	\$12.41	MA	32	II	NA
55302	Stenographers and/or Court Reporters	\$14.24	\$13.34	SE	26	II	1%
85132	Maintenance Repairers, General Utility	\$13.25	\$12.75	SE	26	III	17.3%

Personnel Supply Services—SIC Code 736

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
98999	All Other Helpers, Laborers, and Material Movers, Hand	\$11.63	\$10.78	MA	267	I	N/A
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	237	I	-3.7%
55347	General Office Clerks	\$10.67	\$10.30	SE	214	I	4.5%
55307	Typists, Including Word Processing	\$12.26	\$11.99	MA	163	I	-22.9%
98902	Hand Packers and Packagers	\$9.13	\$7.81	SE	133	I	23.7%
98779	All Other Freight, Stock, and Material Movers, Hand	\$11.34	\$10.63	MA	127	I	3.3%
55305	Receptionists and Information Clerks	\$9.95	\$10.10	SE	127	I	26.3%
66011	Home Health Aides	\$9.56	\$9.51	SE	94	I	73.7%
55321	File Clerks	\$9.79	\$9.48	SE	94	I	-2.8%
56017	Data Entry Keyers, except Composing	\$10.71	\$10.16	SE	85	I	2.0%
49999	Sales and Related Workers, All Others	\$15.91	\$14.32	MA	85	I	7.8%
21508	Employment Interviewers, Private or Public	\$20.99	\$17.66	MA	72	III	17.3%
59999	Clerical and Administrative Support Workers, All Others	\$13.00	\$12.41	MA	72	I	N/A
-	Assemblers, Fabricators and Hand Workers, All Others	Not in Database		N/A	65	I	N/A
69999	All Other Service Workers	\$9.79	\$8.73	MA	62	I	NA
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	57	II	-4.8%
32505	Licensed Practical Nurses	\$16.21	\$16.01	SE	57	III	15.5%

Personnel Supply Services		SIC Code 736 (continued)					
OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
66008	Nursing Aides, Orderlies, and Attendants	\$9.66	\$9.63	SE	49	I	22.7%
32999	Health Professionals, and Paraprofessionals, All Others	\$16.78	\$14.00	MA	49	III	20.4%
58023	Stock Clerks, Stockroom, Warehouse or Stockyard	\$11.33	\$10.55	SE	46	I	10%
65099	Food Preparation and Service Workers, All Others	\$8.64	\$8.35	MA	46	I	14.7%
67005	Janitors and Cleaners	\$8.85	\$8.23	MA	42	I	1.9%
83002	Inspectors, Testers, and Graders, Precision	\$16.28	\$15.17	MA	39	III	-12%
-	Truck Drivers, Light and Heavy	Not in Database		N/A	32	II	N/A
97989	Material Moving Equipment Operators, All Others	\$15.07	\$13.78	MA	29	I	6.7%
85132	Maintenance Repairers General Utility	\$13.25	\$12.75	SE	29	III	17.3%
-	Machine Operators, Tenders, Setters, & Set-up	Not in Database		N/A	29	II	N/A
97497	Industrial Truck and Tractor Operators	\$14.18	\$14.48	SE	23	III	10.2%
91321	Machine Forming Operators and Tenders, Metal and Plastic	\$10.50	\$9.82	SE	23	II	-19.1%
92974	Packaging and Filling Machine Operators and Tenders	\$10.47	\$10.23	MA	23	II	6.7%
49023	Cashiers	\$7.56	\$7.04	SE	23	I	13.1%
57102	Switchboard Operators	\$10.46	\$10.32	SE	20	I	2.3%
38023	Shipping, Receiving, and Traffic Clerks	\$11.74	\$11.51	SE	20	I	4.6%
56011	Computer Operators, Except Peripheral Equipment	\$19.16	\$16.32	SE	16	III	-31.6%

Retail Trade-General Merchandise Stores—SIC Code 531

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
49011	Salespersons, Retail	\$9.55	\$8.07	SE	1742	I	8.0%
58023	Stock Clerks, Stockroom, Warehouse or Stockyard	\$11.33	\$10.55	SE	326	I	10%
49023	Cashiers	\$7.56	\$7.04	SE	318	I	13.1%
49999	Sales and Related Workers, All Others	\$15.91	\$14.32	MA	149	I	7.8%
38023	Shipping, Receiving, and Traffic Clerks	\$11.74	\$11.51	SE	137	I	4.6%
55347	General Office Clerks	\$10.67	\$10.30	SE	117	I	4.5%
68005	Hairdressers, Hair-Stylists, and Cosmetologists	\$9.01	\$7.69	MA	64	II	10.3%
53123	Adjustment Clerks	\$12.96	\$12.05	MA	48	I	44.7%
-	Home Appliance and Power Tool Repairers	Not in Database		N/A	40	II	
98779	All Other Freight, Stock, and Material Movers, Hand	\$11.34	\$10.63	MA	40	I	3.3%
67005	Janitors and Cleaners	\$8.85	\$8.23	MA	36	I	1.9%
85302	Automotive Mechanics	\$15.06	\$14.81	SE	36	III	5.4%
-	Material Recording, Scheduling and Distribution Clerks	Not in Database		N/A	36	I	N/A
63047	Guards and Watch Guards	\$9.15	\$8.57	SE	32	I	18.3%
63035	Detectives, except Public	\$9.17	\$8.61	SE	28	II	10.2%
49017	Counter and Rental Clerks	\$8.17	\$7.59	MA	28	I	18.2%
85953	Tire Repairers and Changers	\$8.45	\$8.31	SE	28	I	5.4%
55326	Procurement Clerks	\$11.97	\$10.97	SE	24	I	-8.2%

Retail Trade-General Merchandise Stores**SIC Code 531 (continued)**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
98902	Hand Packers and Packagers	\$9.13	\$7.18	SE	24	I	23.7%
53508	Bill and Account Collectors	\$12.85	\$12.28	SE	20	II	41.6%
69999	All Other Service Workers	\$9.90	\$9.83	MA	20	I	N/A
59999	Clerical and Administrative Support Workers, All Others	\$13.00	\$12.41	MA	20	I	N/A

Manufacturing—Metalworking Machinery SIC Code 354

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
89108	Machinists	\$16.80	\$17.16	SE	34	III	-7.8%
89102	Tool and Die Makers	\$20.50	\$20.90	SE	33	III	-15.4%
91117	Machine Tool Cutting Operators and Tenders, Metal and Plastic	\$11.00	\$10.46	MA	9	II	-23.1%
91502	Numerical Control Machine Tool Operators And Tenders, Metal and Plastic	\$15.27	\$15.02	SE	8	III	11.4%
91114	Grinding Machine Tool Setters and Set-up Operators	\$13.61	\$13.23	SE	8	II	-18%
49999	Sales and Related Workers, All Others	\$15.91	\$14.32	MA	8	I	7.8%
-	Assemblers, Fabricators and Hand Workers, All Others	Not in database		N/A	7	I	N/A
91105	Lathe and Turning Tool Setters and Set-up Operators, Metal and Plastic	\$16.22	\$16.89	SE	7	II	-15%
-	Machine Tool Cutting and Forming, etc., All Others	Not in database		N/A	7	II	N/A
93105	Machine Builders and Other Precision Machine Assemblers	\$14.68	\$14.54	MA	6	III	-9.6%
91505	Combination Machine Tool Setters and Set-up Operators, Metal and Plastic	\$15.00	\$15.80	MA	6	II	3.5%
-	Precision Metal Workers, All Others	Not in Database		N/A	6	II	N/A
83002	Inspectors, Testers, and Graders, Precision	\$16.28	\$15.17	MA	6	III	-12%
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	6	I	-3.7%
22514	Drafters	\$23.44	\$22.89	SE	6	III	-2.7%
55347	General Office Clerks	\$10.67	\$10.30	SE	6	I	4.5%

Manufacturing-Metalworking Machinery**SIC CODE 354 (continued)**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
91321	Machine Forming Operators and Tenders, Metal and Plastic	\$10.50	\$9.82	SE	4	II	-19.1%
91108	Drilling and Boring Machine Tool Setters and Operators, Metal and Plastic	\$17.32	\$15.99	SE	4	II	-24%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	4	II	-4.8%
38023	Shipping, Receiving, and Traffic Clerks	\$11.74	\$11.51	SE	4	I	4.6%
89399	Woodworkers, All Other Precision	\$10.76	\$9.73	MA	4	II	N/A
67005	Janitors and Cleaners	\$8.85	\$8.23	MA	4	I	1.9%
-	Metal and Plastic Machine Setters, Operators, and Tenders	Not in Database		N/A	3	II	N/A
-	Industrial Machinery Mechanics	Not in Database		MA	3	III	N/A
93953	Grinding and Polishing Workers, Hand	\$11.17	\$11.19	SE	3	II	-10%
93914	Welders and Cutters	\$15.38	\$14.89	MA	3	II	4.9%
91302	Punching Machine Setters and Set-up Operators, Metal and Plastic	\$17.00	\$15.84	SE	3	II	-16.8%
85132	Maintenance Repairers General Utility	\$13.25	\$12.75	SE	3	III	17.3%
-	Machine Operators, Tenders, Setters, and Set-up	Not in Database		MA	3	II	N/A
58008	Production, Planning, and Expediting Clerks	\$19.65	\$19.40	MA	2	II	-4%
93114	Electric and Electronic Equipment Assemblers, Precision	\$12.79	\$12.58	MA	2	II	-8.3%

Manufacturing-Metalworking Machinery**SIC CODE 354 (continued)**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
58023	Stock Clerks, Stockroom, Warehouse or Stockyard	\$11.33	\$10.55	MA	2	I	10%
98999	Helpers, Laborers, and Material Movers, Hand, All Others	\$11.63	\$10.78	MA	2	I	12.2%
93902	Machine Assemblers	\$13.60	\$12.59	MA	2	II	-9.2%
22505	Electrical and Electronic Engineering Technicians and Technologists	\$20.21	\$18.54	MA	2	III	12.3%
93905	Electrical and Electronic Assemblers	\$11.06	\$11.01	MA	2	II	-4.6%
-	Welding Machine Setters, Operators, and Tenders	Not in Database		N/A	2	II	N/A
98902	Hand Packers and Packagers	\$9.13	\$7.18	SE	2	I	23.7%
-	Sheet Metal Workers and Duct Installers	Not in Database		N/A	2	II	N/A
89999	Precision Workers, All Others	\$14.50	\$13.13	MA	2	II	15.9%

Manufacturing—Special Industry Machinery SIC Code 355

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
89108	Machinists	\$16.80	\$17.16	SE	139	III	-7.8%
93105	Machine Builders and Other Precision Machine Assemblers	\$14.68	\$14.54	MA	72	III	-9.6%
49999	Sales and Related Workers, All Others	\$15.91	\$14.32	MA	70	I	7.8%
-	Assemblers, Fabricators and Hand Workers, All Others	Not in database		N/A	65	I	N/A
93914	Welders and Cutters	\$15.38	\$14.89	MA	44	II	4.9%
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	42	I	-3.7%
22514	Drafters	\$23.44	\$22.89	SE	39	III	-2.7%
93902	Machine Assemblers	\$13.60	\$12.59	MA	35	II	-9.2%
-	Sheet Metal Workers and Duct Installers	Not in Database		N/A	34	II	N/A
-	Machine Tool Cutting and Forming etc., All Others	Not in Database		N/A	29	II	N/A
83002	Inspectors, Testers, and Graders, Precision	\$16.28	\$15.17	MA	27	III	-12%
38023	Shipping, Receiving, and Traffic Clerks	\$11.74	\$11.51	SE	27	I	4.6%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	25	II	-4.8%
-	Welding Machine Setters, Operators and Tenders	Not in Database		N/A	25	II	N/A
91105	Lathe and Turning Machine Tool Setters and Set-up Operators, Metal and Plastic	\$16.22	\$16.89	SE	23	II	-15%
22599	Engineering Technicians and Technologists, All Others	\$20.86	\$18.51	MA	23	III	-0.3%

Manufacturing-Special Industry Machinery
SIC CODE 355 (continued)

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
91117	Machine Tool Cutting Operators and Tenders, Metal and Plastic	\$11.00	\$10.46	SE	22	II	-23.1%
93114	Electrical and Electronic Equipment Assemblers, Precision	\$12.79	\$12.58	MA	22	II	-8.3%
91502	Numerical Control Machine Tool Operators And Tenders, Metal and Plastic	\$15.27	\$15.02	SE	22	III	11.4%
55347	General Office Clerks	\$10.67	\$10.30	SE	22	I	4.5%
58023	Stock Clerks, Stockroom, Warehouse or Stockyard	\$11.33	\$10.55	SE	22	I	10%
-	Industrial Machinery Mechanics	Not in Database		N/A	22	III	N/A
58008	Production, Planning, and Expediting Clerks	\$19.65	\$19.40	MA	17	II	-4%
93905	Electrical and Electronic Assemblers	\$11.06	\$11.01	MA	17	II	-4.6%
-	Electrical and Electronic Technicians and Technologists	Not in Database		N/A	17	II	N/A
93111	Electromechanical Equipment Assemblers, Precision	\$12.37	\$12.07	MA	15	II	-1.2%
89102	Tool and Die Makers	\$20.50	\$20.90	SE	15	III	-15.4%
91108	Drilling and Boring Machine Tool Setters and Operators, Metal and Plastic	\$17.32	\$15.99	SE	13	II	-24%
91505	Combination Machine Tool Setters and Set-up Operators, Metal and Plastic	\$15.00	\$15.80	MA	13	II	3.5%
67005	Janitors and Cleaners	\$8.85	\$8.23	MA	13	I	1.9%

Manufacturing-Special Industry Machinery

SIC CODE 355 (continued)

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
55323	Order Clerks, Materials, Merchandise and Service	\$12.74	\$12.23	MA	12	I	0.1%
92953	Coating, Painting, and Spraying Machine Operators and Tenders	\$11.15	\$10.91	MA	12	II	-3.8%
91114	Grinding Machine Tool Setters and Set-up Operators	\$13.61	\$13.23	SE	12	II	-18%
89999	Precision Workers, All Others	\$14.50	\$13.13	MA	10	II	15.9%
85132	Maintenance Repairers General Utility	\$13.25	\$12.75	SE	10	III	17.3%
93953	Grinding And Polishing Workers, Hand	\$11.17	\$11.19	SE	10	II	-10%
98779	All Other Freight, Stock, and Material Movers, Hand	\$11.34	\$10.63	MA	10	I	3.3%
-	Machine Operators, Tenders Setters, and Set-up	Not in Database		N/A	10	II	N/A
87202	Electricians	\$20.41	\$19.75	MA	10	III	12%
85123	Millwrights	\$16.25	\$16.09	MA	10	III	4%
21999	All Other Management Support Workers	\$21.18	\$18.87	MA	10	III	11.9%
98999	Helpers, Laborers, and Material Movers, Hand, All Others	\$11.63	\$10.78	MA	8	I	12.2%

Manufacturing—General Industrial Machinery**SIC Code 356**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
-	Assemblers, Fabricators and Hand Workers, All Others	Not in database		N/A	54	I	N/A
89108	Machinists	\$16.80	\$17.16	SE	33	III	-7.8%
49999	Sales and Related Workers, All Others	\$15.91	\$14.32	MA	26	I	7.8%
83002	Inspectors, Testers, and Graders, Precision	\$16.28	\$15.17	MA	21	III	-12%
93914	Welders and Cutters	\$15.38	\$14.89	MA	19	II	4.9%
91502	Numerical Control Machine Tool Operators And Tenders, Metal and Plastic	\$15.27	\$15.02	SE	16	III	11.4%
93105	Machine Builders and Other Precision Machine Assemblers	\$14.68	\$14.54	MA	16	III	-9.6%
91105	Lathe and Turning Machine Tool Setters and Set-up Operators, Metal and Plastic	\$16.22	\$16.89	SE	15	II	-15%
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	14	I	-3.7%
91114	Grinding Machine Tool Setters and Set-up Operators	\$13.61	\$13.23	SE	14	II	-18%
22514	Drafters	\$23.44	\$22.89	SE	14	III	-2.7%
91117	Machine Tool Cutting Operators and Tenders, Metal and Plastic	\$11.00	\$10.46	SE	12	II	-23.1%
-	Sheet Metal Workers and Duct Installers	Not in Database		N/A	11	II	N/A
-	Industrial Machinery Mechanics	Not in Database		N/A	11	III	N/A
-	Machine Tool Cutting and Forming, etc., All Others	Not in Database		N/A	10	II	N/A
93902	Machine Assemblers	\$13.60	\$12.59	MA	10	II	-9.2%

Manufacturing—General Industrial Machinery SIC Code 356 (continued)

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
38023	Shipping, Receiving, and Traffic Clerks	\$11.74	\$11.51	SE	10	I	4.6%
91505	Combination Machine Tool Setters and Set-up Operators, Metal and Plastic	\$15.00	\$15.80	MA	10	II	3.5%
-	Welding Machine Setters, Operators, and Tenders	Not in Database		N/A	8	II	N/A
-	Machine Operators, Tenders, Setters, and Set-up	Not in Database		N/A	8	II	N/A
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	8	II	-4.8%
58023	Stock Clerks, Stockroom, Warehouse or Stockyard	\$11.33	\$10.55	SE	7	I	10%
22599	Engineering Technicians and Technologists, All Others	\$20.86	\$18.51	MA	7	III	-0.3%
-	Machine Tool Cutting and Forming, etc., All Others	Not in Database		N/A	7	II	N/A
55347	General Office Clerks	\$10.67	\$10.30	SE	7	I	4.5%
58008	Production, Planning, and Expediting Clerks	\$19.65	\$19.40	MA	7	II	-4%
98999	Helpers, Laborers, and Material Movers, Hand, All Others	\$11.63	\$10.78	MA	7	I	12.2%
91108	Drilling and Boring Machine Tool Setters and Operators, Metal and Plastic	\$17.32	\$15.99	SE	7	II	-24%
89102	Tool and Die Makers	\$20.50	\$20.90	SE	7	III	-15.4%
-	Metal and Plastic Machine Setters, Operators, and Tenders	Not in Database		N/A	6	II	N/A

Manufacturing—General Industrial Machinery SIC Code 356 (continued)

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
98779	All Other Freight, Stock, and Material Movers, Hand	\$11.34	\$10.63	MA	6	I	3.3%
89999	Precision Workers, All Others	\$14.50	\$13.13	MA	6	II	15.9%
85132	Maintenance Repairers General Utility	\$13.25	\$12.75	SE	5	III	17.3%
55323	Order Clerks, Materials, Merchandise and Service	\$12.74	\$12.23	MA	5	I	0.1%
93111	Electromechanical Equipment Assemblers, Precision	\$12.37	\$12.07	MA	5	II	-1.2%
93905	Electrical and Electronic Assemblers	\$11.06	\$11.01	MA	5	II	-4.6%
67005	Janitors and Cleaners	\$8.85	\$8.23	MA	5	I	1.9%
93114	Electrical and Electronic Equipment Assemblers, Precision	\$12.79	\$12.58	MA	4	II	-8.3%
98902	Hand Packers and Packagers	\$9.13	\$7.18	SE	4	I	23.7%
92953	Coating, Painting, and Spraying Machine Operators and Tenders	\$11.15	\$10.91	MA	4	II	-3.8%
-	Electrical and Electronic Technicians and Technologists	Not in Database		N/A	3	II	N/A
87202	Electricians	\$20.41	\$19.75	MA	3	III	12%
93953	Grinding and Polishing Workers, Hand	\$11.17	\$11.19	SE	3	II	-10%
97497	Industrial Truck and Tractor Operators	\$14.18	\$14.48	SE	3	III	10.2%
93197	Assemblers, All Other Precision	\$11.65	\$10.58	MA	3	II	16.4%

Manufacturing—Industrial Machinery, NEC SIC Code 359

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
89108	Machinists	\$16.80	\$17.16	SE	276	III	-7.8%
91502	Numerical Control Machine Tool Operators And Tenders, Metal and Plastic	\$15.27	\$15.02	SE	67	III	11.4%
-	Assemblers, Fabricators and Hand Workers, All Others	Not in database		N/A	48	I	N/A
91117	Machine Tool Cutting Operators and Tenders, Metal and Plastic	\$11.00	\$10.46	SE	48	II	-23.1%
83002	Inspectors, Testers, and Graders, Precision	\$16.28	\$15.17	MA	37	III	-12%
93914	Welders and Cutters	\$15.38	\$14.89	MA	36	II	4.9%
91105	Lathe and Turning Machine Tool Setters And Set-up Operators, Metal and Plastic	\$16.22	\$16.89	SE	36	II	-15%
91505	Combination Machine Tool Setters and Set-up Operators, Metal and Plastic	\$15.00	\$15.80	MA	34	II	3.5%
91114	Grinding Machine Tool Setters and Set-up Operators	\$13.61	\$13.23	SE	30	II	-18%
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	27	I	-3.7%
55347	General Office Clerks	\$10.67	\$10.30	SE	27	I	4.5%
-	Machine Tool Cutting and Forming, etc., All Others	Not in Database		N/A	26	II	N/A
49999	Sales and Related Workers, all others	\$15.91	\$14.32	MA	25	I	7.8%
89102	Tool and Die Makers	\$20.50	\$20.90	SE	22	III	-15.4%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	22	II	-4.8%
-	Welding Machine, Setters, Operators and Tenders	Not in Database		N/A	22	II	N/A

Manufacturing—Industrial Machinery, NEC

SIC Code 359 (continued)

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
91108	Drilling and Boring Machine Tool Setters and Operators, Metal and Plastic	\$17.32	\$15.99	SE	19	II	-24%
38023	Shipping, Receiving, and Traffic Clerks	\$11.74	\$11.51	SE	18	I	4.6%
67005	Janitors and Cleaners	\$8.85	\$8.23	MA	16	I	1.9%
-	Industrial Machinery Mechanics	Not in Database		N/A	16	III	N/A
93105	Machine Builders and Other Precision Machine Assemblers	\$14.68	\$14.54	MA	15	III	-9.6%
93953	Grinding and Polishing Workers, Hand	\$11.17	\$11.19	SE	14	II	-10%
-	Sheet Metal Workers and Duct Installers	Not in Database		N/A	14	II	N/A
89199	Precision Metal Workers All Others	\$13.89	\$14.12	SE	11	II	-7.6%
85132	Maintenance Repairers General Utility	\$13.25	\$12.75	SE	11	III	17.3%
91321	Machine Forming Operators and Tenders, Metal and Plastic	\$10.50	\$9.82	SE	10	II	-19.1%
58008	Production, Planning, and Expediting Clerks	\$19.65	\$19.40	MA	10	II	-4%
98502	Machine Feeders and	\$10.06	\$10.65	SE	10	I	-10%
22514	Drafters	\$23.44	\$22.89	SE	8	III	-2.7%
58023	Stock Clerks, Stockroom, Warehouse or Stockyard	\$11.33	\$10.55	SE	8	I	10%
93902	Machine Assemblers	\$13.60	\$12.59	MA	8	II	-9.2%
98999	Helpers, Laborers, and Material Movers, Hand, All Others	\$11.63	\$10.78	MA	8	I	12.2%

Computer and Data Processing Services**SIC Code 737**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
49999	Sales and Related Workers, all others	\$15.91	\$14.32	MA	60	I	7.8%
56017	Data Entry Keyers, except Composing	\$10.71	\$10.16	SE	43	I	2.0%
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	31	I	-3.7%
56011	Computer Operators, Except Peripheral Equipment	\$19.16	\$16.32	SE	30	III	-31.6%
85705	Data Processing Equipment Repairers	\$14.74	\$13.57	MA	24	II	32.9%
55347	General Office Clerks	\$10.67	\$10.30	SE	20	I	4.5%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	20	II	-4.8%
21999	All Other Management Support Workers	\$21.18	\$18.87	MA	18	III	11.9%
34002	Writers and Editors	\$19.71	\$18.37	SE	15	III	N/A
55305	Receptionists and Information Clerks	\$9.95	\$10.10	SE	13	I	26.3%
22505	Electrical and Electronic Engineering Technicians and Technologists	\$20.21	\$18.54	MA	13	III	12.3%
59999	Clerical and Administrative Support Workers, All Others	\$13.00	\$12.41	MA	11	I	N/A
53123	Adjustment Clerks	\$12.96	\$12.05	SE	11	I	44.7%
58008	Production, Planning, and Expediting Clerks	\$19.65	\$19.40	MA	8	II	-4%
38023	Shipping, Receiving, and Traffic Clerks	\$11.74	\$11.51	SE	7	I	4.6%
56014	Peripheral EDP Equipment Operators	\$15.16	\$13.72	MA	6	II	-49.2%

Computer and Data Processing Services**SIC Code 737 (continued)**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
57302	Mail Clerks, except Mail Machine Operators and Postal Service	\$10.07	\$9.91	MA	5	I	5.1%
55307	Typists, Including Word Processing	\$12.26	\$11.99	MA	5	I	-22.9%
85999	All Other Mechanics, Installers, and Repairers	\$15.54	\$14.93	MA	5	II	15.2

Plumbing, Heating and Air Conditioning**SIC Code 171**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
87502	Plumbers, Pipefitters, and Steamfitters	\$20.65	\$19.46	SE	251	III	5.7%
85902	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$18.02	\$17.45	MA	175	III	17.8%
-	Sheet Metal Workers and Duct Installers	Not in Database		N/A	108	II	N/A
98319	Helpers, All Other Construction Trade Workers	\$13.84	\$13.18	MA	81	I	1.8%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	40	II	-4.8%
55347	General Office Clerks	\$10.67	\$10.30	SE	36	I	4.5%
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	34	I	-3.7%
49999	Sales and Related Workers, All Others	\$15.91	\$14.32	MA	18	I	7.8%
58023	Stock Clerks, Stockroom, Warehouse or Stockyard	\$11.33	\$10.55	SE	15	I	10%
87202	Electricians	\$20.41	\$19.75	MA	13	III	12%
85132	Maintenance Repairers General Utility	\$13.25	\$12.75	SE	12	III	17.3%
-	Truck Drivers, Light and Heavy	Not in Database		N/A	12	II	N/A
22514	Drafters	\$23.44	\$22.89	SE	8	III	-2.7%
87102	Carpenters	\$19.65	\$19.13	SE	7	III	10.1%
98999	Helpers, Laborers, and Material Movers, Hand, All Others	\$11.63	\$10.78	MA	6	I	12.2%

Painting and Paper Hanging SIC Code 172

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
87402	Painters and Paper-hangers, Construction and Maintenance	\$14.81	\$14.11	SE	164	II	13.9%
98319	Helpers, All Other Construction Trade Workers	\$13.84	\$13.18	MA	21	I	1.8%
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	6	I	-3.7%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	6	II	-4.8%
55347	General Office Clerks	\$10.67	\$10.30	SE	6	I	4.5%
87102	Carpenters	\$19.65	\$19.13	SE	3	III	10.1%
-	Drywall Installers and Finishers	Not in Database		N/A	3	II	N/A

Electrical Work**SIC Code 173**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
87202	Electricians	\$20.41	\$19.75	MA	297	III	12%
98319	Helpers, All Other Construction Trade Workers	\$13.84	\$13.18	MA	65	I	1.8%
85702	Telephone and Cable Television Line Installers and Repairers	\$20.40	\$21.61	MA	28	II	30.2%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	22	II	-4.8%
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	20	I	-3.7%
55347	General Office Clerks	\$10.67	\$10.30	SE	19	I	4.5%
85723	Electrical Power-Line Installers and Repairers	\$20.65	\$21.79	MA	12	III	-5.2%
49999	Sales and Related Workers, All Others	\$15.91	\$14.32	MA	12	I	7.8%
85132	Maintenance Repairers General Utility	\$13.25	\$12.75	SE	8	III	17.3%
85999	All Other Mechanics, Installers, and Repairers	\$15.54	\$14.93	MA	8	II	15.2
-	Electrical and Electronic Technicians and Technologists	Not in Database		N/A	8	II	N/A
58023	Stock Clerks, Stockroom, Warehouse or Stockyard	\$11.33	\$10.55	SE	6	I	10%
87502	Plumbers, Pipefitters, and Steamfitters	\$20.65	\$19.46	SE	4	III	5.7%
-	Truck Drivers, Light and Heavy	Not in Database		N/A	4	II	N/A
85902	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$18.02	\$17.45	MA	4	III	17.8%

Masonry, Stonework, and Plastering SIC Code 174

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
-	Drywall Installers and Finishers	Not in Database		N/A	67	II	N/A
-	Bricklayers and Stonemasons	Not in Database		N/A	62	III	N/A
98319	Helpers, All Other Construction Trade Workers	\$13.84	\$13.18	MA	59	I	1.8%
87802	Insulation Workers	\$16.84	\$14.27	MA	27	II	25.7%
87317	Plasterers and Stucco Masons	\$22.68	\$20.81	MA	16	III	20.0%
87102	Carpenters	\$19.65	\$19.13	SE	15	III	10.1%
87105	Ceiling Tile Installers and Acoustical Carpenters	\$19.76	\$20.91	MA	12	III	12.5%
87308	Hard Tile Setters	\$20.65	\$17.60	MA	10	II	8.0%
55347	General Office Clerks	\$10.67	\$10.30	SE	5	I	4.5%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	5	II	-4.8%
87311	Concrete and Terrazzo Finishers	\$18.01	\$16.94	MA	4	II	11.5%
-	Truck Drivers, Light and Heavy	Not in Database		N/A	4	II	N/A
87402	Painters and Paperhangers, Construction and Maintenance	\$14.81	\$14.11	SE	4	II	13.9%
49999	Sales and Related Workers, All Others	\$15.91	\$14.32	MA	2	I	7.8%
98999	Helpers, Laborers, and Material Movers, Hand, All Others	\$11.63	\$10.78	MA	2	I	12.2%
87899	All Other Construction Trades Workers	\$24.46	\$28.04	MA	2	III	10.8%

Carpentering and Floor Work**SIC Code 175**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
87102	Carpenters	\$19.65	\$19.13	SE	104	III	10.1%
98319	Helpers, All Other Construction Trade Workers	\$13.84	\$13.18	MA	22	I	1.8%
87899	All Other Construction Trades Workers	\$24.46	\$28.04	MA	17	III	10.8%
87602	Carpet Installers	\$16.09	\$16.82	MA	16	II	16.8%
49999	Sales and Related Workers, All Others	\$15.91	\$14.32	MA	10	I	7.8%
89311	Cabinetmakers and Bench Carpenters	\$14.09	\$14.39	SE	10	II	3.6%
55347	General Office Clerks	\$10.67	\$10.30	SE	9	I	4.5%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	8	II	-4.8%
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	7	I	-3.7%
85132	Maintenance Repairers General Utility	\$13.25	\$12.75	SE	4	III	17.3%
87308	Hard Tile Setters	\$20.65	\$17.60	MA	3	II	8.0%
58023	Stock Clerks, Stockroom, Warehouse or Stockyard	\$11.33	\$10.55	SE	3	I	10%
98999	Helpers, Laborers, and Material Movers, Hand, All Others	\$11.63	\$10.78	MA	2	I	12.2%
87402	Painters and Paper-hangers, Construction and Maintenance	\$14.81	\$14.11	SE	2	II	13.9%
87311	Concrete and Terrazzo Finishers	\$18.01	\$16.94	MA	2	II	11.5%
-	Truck Drivers, Light and Heavy	Not in Database		N/A	2	II	N/A
-	Drywall Installers and Finishers	Not in Database		N/A	2	II	N/A

Carpentering and Floor Work SIC CODE 175 (continued)

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
-	Assemblers, Fabricators Hand and Workers, All Others	Not in Database		N/A	2	I	N/A
-	Structural and Reinforcing Metal Workers	Not in Database		N/A	2	II	N/A

Roofing, Siding, and Sheet Metal Work**SIC Code 176**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
87808	Roofers	\$16.81	\$16.18	MA	50	II	8.3%
98319	Helpers, All Other Construction Trade Workers	\$13.84	\$13.18	MA	16	I	1.8%
-	Sheet Metal Workers and Duct Installers	Not in Database		N/A	12	II	N/A
87102	Carpenters	\$19.65	\$19.13	SE	5	III	10.1%
55347	General Office Clerks	\$10.67	\$10.30	SE	4	I	4.5%
49999	Sales and Related Workers, All Others	\$15.91	\$14.32	MA	3	I	7.8%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	3	II	-4.8%
-	Truck Drivers, Light and Heavy	Not in Database		N/A	2	II	N/A
87899	All Other Construction Trades Workers	\$24.46	\$28.04	MA	2	III	10.8%
91714	Metal Fabricators, Structural Metal Products	\$14.34	\$13.95	MA	1	II	7.8%
98999	Helpers, Laborers, and Material Movers, Hand, All Others	\$11.63	\$10.78	MA	1	I	12.2%
-	Structural and Reinforcing Metal Workers	Not in Database		N/A	1	II	N/A
55341	Payroll and Time-keeping Clerks	\$14.14	\$14.01	SE	1	I	-8.3%

Concrete Work**SIC Code 177**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
87311	Concrete and Terrazzo Finishers	\$18.01	\$16.94	MA	38	II	11.5%
98319	Helpers, All Other Construction Trade Workers	\$13.84	\$13.18	MA	16	I	1.8%
87708	Paving, Surfacing, and Tamping Equipment Operators	\$12.45	\$12.66	MA	14	II	40.2%
98999	Helpers, Laborers, and Material Movers, Hand, All Others	\$11.63	\$10.78	MA	13	I	12.2%
87102	Carpenters	\$19.65	\$19.13	SE	7	III	10.1%
-	Bricklayers and Stonemasons	Not in Database		N/A	4	III	N/A
87899	All Other Construction Trades Workers	\$24.46	\$28.04	MA	3	III	10.8%
55347	General Office Clerks	\$10.67	\$10.30	SE	3	I	4.5%
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	3	I	-3.7%
97938	Grader, Bulldozer, and Scraper Operators	\$17.51	\$16.22	MA	3	II	15.2%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	3	II	-4.8%
-	Structural and Reinforcing Metal Workers	Not in Database		N/A	2	II	N/A
87317	Plasterers and Stucco Masons	\$22.68	\$20.81	MA	2	III	20.0%
49999	Sales and Related Workers, all others	\$15.91	\$14.32	MA	2	I	7.8%

Miscellaneous Special Trades Contractors**SIC Code 179**

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
98999	Helpers, Laborers, and Material Movers, Hand, All Others	\$11.63	\$10.78	MA	50	I	12.2%
87899	All Other Construction Trades Workers	\$24.46	\$28.04	MA	50	III	10.8%
-	Structural and Reinforcing Metal Workers	Not in Database		N/A	42	II	N/A
-	Truck Drivers, Light and Heavy	Not in Database		N/A	35	II	N/A
97923	Excavating and Loading Machine Operators	\$19.50	\$17.47	MA	30	II	19.3%
98319	Helpers, All Other Construction Trade Workers	\$13.84	\$13.18	MA	30	I	1.8%
87802	Insulation Workers	\$16.84	\$14.27	MA	24	II	25.7%
87811	Glaziers	\$18.05	\$16.80	MA	24	II	8.2%
55347	General Office Clerks	\$10.67	\$10.30	SE	23	I	4.5%
55108	Secretaries, except Legal and Medical	\$14.00	\$13.48	SE	21	I	-3.7%
85932	Elevator Installers and Repairers	\$27.14	\$29.72	MA	21	III	10.9%
85132	Maintenance Repairers General Utility	\$13.25	\$12.75	SE	19	III	17.3%
97938	Grader, Bulldozer, and Scraper Operators	\$17.51	\$16.22	MA	18	II	15.2%
55338	Bookkeeping, Accounting, and Auditing Clerks	\$13.11	\$12.66	SE	18	II	-4.8%
85123	Millwrights	\$16.25	\$16.09	MA	18	III	4%
87102	Carpenters	\$19.65	\$19.13	SE	18	III	10.1%
49999	Sales and Related Workers, All Others	\$15.91	\$14.32	MA	17	I	7.8%
93914	Welders and Cutters	\$15.38	\$14.89	MA	16	II	4.9%

Miscellaneous Special Trades Contractors (continued)

OES Code	Job Title	Mean Wage	Median Wage	Area for Wage Data	Employment Southern Essex Region	Level	Growth Projections
87502	Plumbers, Pipefitters, and Steamfitters	\$20.65	\$19.46	SE	11	III	5.7%
-	Extraction and Related Workers, All Others	Not in Database		N/A	11	I	N/A
-	Pipelayers and Pipelaying Fitters	Not in Database		N/A	10	II	N/A
87311	Concrete and Terrazzo Finishers	\$18.01	\$16.94	MA	9	II	11.5%
91714	Metal Fabricators, Structural Metal Products	\$14.34	\$13.95	MA	9	II	7.8%
87402	Painters and Paper-hangers, Construction and Maintenance	\$14.81	\$14.11	SE	7	II	13.9%
85314	Mobile Heavy Equipment Mechanics	\$16.99	\$16.13	MA	5	III	10.3%
85999	All Other Mechanics, Installers, and Repairers	\$15.54	\$14.93	MA	5	II	15.2
98779	All Other Freight, Stock, and Material Movers, Hand	\$11.34	\$10.63	MA	5	I	3.3%
58023	Stock Clerks, Stockroom, Warehouse or Stockyard	\$11.33	\$10.55	SE	4	I	10%
55341	Payroll and Time-keeping Clerks	\$14.14	\$14.01	SE	4	I	-8.3%
-	Bricklayers and Stonemasons	Not in Database		N/A	4	III	N/A

Technical Notes

Wage data is for 1998, the latest year for which information is available. Wage data is from the Occupational Employment Statistics Wage Survey Program, conducted by the U. S. Bureau of Labor Statistics.

The employment estimates for the Southern Essex Workforce Investment Area are derived as follows: Total employment in the SDA for each industry sub-sector is from 1998 ES-202 wage and employment survey. The breakdown of occupations for each industry is from Department of Employment Training's "Industry-Occupation Matrix for the United States, 1994, Volume 11, Part B." For retail trade, we are focussing on the general merchandise stores sector (SIC Code 53). For the purposes of the occupational matrix, we have used the data for SIC Code 531, Department Stores, because it is the only sub-sector for which the occupational matrix is not aggregated.

For manufacturing, occupational matrices for four sub-sectors of Industrial Machinery and Equipment are provided. Data are suppressed for two sub-sectors, SIC 351 Engines and Turbines, and SIC 357 Computer and Office Equipment. Total data suppressed are 1174 jobs in a total of 6 firms.

The levels are estimated based on entry-level requirements and career ladder potential, which includes trainable steps and salary increases. This methodology is further described in the methodology section at the beginning of this report.

The growth projections are for the time period 1996-2006 and are from the Division of Employment Training's "Employment Projections for Industries and Occupations, 1996-2006."

**Appendix III:
Industry Survey Protocol**

**Southern Essex Regional Employment Board
Labor Force Blueprint
Center for Community Economic Development
University of Massachusetts Boston
Protocol for Key Informant Interviews**

Introduction. [Identify the REB; purpose of the Labor Force Blueprint project; how the information will be used; assurance of confidentiality.]

1. When was this company established? _____

2. What is this company's primary activity? [Was it the same activity five years ago? [IF NOT] What was your primary activity then?]

3. About how many people are employed here today? [if distinct branches or divisions, prompt for employment at North Shore area location(s)] _____

4. What percentage of all positions are open to candidates with the following educational levels?
 - a. Less than high school degree or GED _____
 - b. High school degree or GED only _____
 - c. Associates (2 year) degree _____
 - d. Bachelors (4 year) degree _____
 - e. Masters degree or higher _____

For the next questions, we would like to get some information on the most typical positions that don't require a four year college degree. [INDICATE CHART] For each of these positions, could you help us complete the job descriptions in this chart?

5. Job Title	6. Basic Duties	7. Critical Degrees, Credentials, or Skills	8. Wages	9. Benefits	10. Turnover

11. What are the typical paths for advancement from this position to higher level jobs?	12. What is required (such as training) to move from this position to higher level jobs?

13. Has demand for these jobs grown, declined, or stayed the same in the past two years?	14. Do you expect that demand for these jobs will grow, decline or stay the same in the next two years?

15. How do you fill openings in these positions? [Check all that apply:]

- Promotion from within _____
- Word of mouth/employee referrals _____
- Newspaper advertisements _____
- Internet/Web advertisements _____
- Career centers _____
- College recruiting _____
- Job fairs _____
- Other (describe:) _____

16. What is the most critical human resource issue facing your industry, and why?

17. Describe any difficulties you may have in finding workers with particular skills or qualifications.

18. What have you done to address human resource problems, such as labor shortage, low skills, and turnover?

19. How important is labor quality and supply to your decision to locate and expand in this area?

20. About what proportion of your staff live on the North Shore?

21. About what proportion are racial or ethnic minorities? [IF NECESSARY: NON-WHITE OR HISPANIC] What proportion use languages other than English?

22. What is the most important thing that employers could do to help entry level workers advance in your industry? Could more formal career ladders be built? How? What would be the obstacles?

23. How might companies be able to work together to address work force development issues in your industry?

24. Have you worked with the South Essex Regional Employment Board? (if yes) In what capacity?

25. What issues do you think the Regional Employment Board should be working on?

26. Have you worked with any of these other types of organizations to fill positions or improve worker skills and education? [IF YES], Whom have you worked with?

a. Government agencies _____

- b. Community colleges _____
- c. Nonprofit agencies _____
- d. Unions _____

27. [If yes] How would you assess the services you received from these organizations?

- Excellent _____
- Good _____
- Fair _____
- Poor _____

Please comment [If necessary, prompt: were they relevant to your needs? Were they responsive?]

28. Could you suggest some additional contacts in your industry that might be helpful to speak to?

Thank you very much for your time.

Appendix IV:
List of Education and Training Providers

Southern Essex Region Education and Training Resources*

	Provider Name	Location	Main Industry Focus
1	Action Fisherman's Family Assistance Center, Inc.	Gloucester	
2	Advanced Education Center for Nursing	Salem	Health Care
3	American Red Cross	Peabody Beverly	Health Care
4	All Care Resources	Lynn	Health Care
5	Catholic Charities	Lynn	Computer Office Skills
6	Community Health and Alternative Opportunities Svcs.	Beverly	Post Placement Services
7	Computer Career Center	Lynn	Computer Office Skills
8	Computer Learning Center	Lynn	Computer Office Skills
9	Danvers Public Schools	Danvers	Retail Trade
10	Endicott College	Beverly	Retail Trade, Software Services, Health Care, Administrative and Office Skills
11	Essex Agricultural and Technical Institute		Health Care
12	Essex County Community Organization (ECCO)	Lynn	Manufacturing
13	Gloucester Public Schools	Gloucester	Construction
14	Gordon College	Wenham	Software Services
15	Greater Boston Manufacturing Partnership	Lynn	Manufacturing
16	Health Force of Boston	Danvers	Health Care
17	Innovative Computer Courses, Inc.	Lynn	Computer Office Skills
18	Lynn Housing Authority	Lynn	Computer Office Skills

* Includes programs listed by the Southern Essex Region Workforce Investment Board, Massachusetts Workforce Investment Association, Massachusetts Occupational Information Coordinating Committee and MISER

	Provider Name	Location	Main Industry Focus
19	Lynn Public Schools	Lynn	Construction, Manufacturing, Software Services, Telecommunications
20	Lynn Vocational and Technical Institute	Lynn	Health Care, Construction, Manufacturing
21	Marian Court Junior College	Swampscott	Health Care, Administrative Assistant
22	Massachusetts Manufacturing Partnership		Manufacturing
23	Mass. Job Training, Inc.	Lynn Salem	Computer Office Skills
24	Networks	Lynn	Retail Trade, Computer Office Skills
25	North Shore Community College	Beverly Danvers Lynn	Health Care, Telecommunications, Software Services, Manufacturing
26	North Shore PRN	Gloucester South Hamilton	Health Care
27	North Shore Technical High School		Construction, Manufacturing, Health Care, Software Services
28	Operation Bootstrap	Lynn	Health Care, Manufacturing
29	Peabody Public Schools	Peabody	General Business Management
30	Project COPE		Post Placement Services
31	Salem Family Investment Center	Salem	Post Placement Services
32	Salem Harbor CDC	Salem	Health Care
33	Salem Hospital	Salem	Health Care
34	Salem State College	Salem	Health Care, Software Services
35	Saugus Computer City Training	Saugus	Computer Office Skills
36	Saugus Educational Training Institute	Saugus	Data Processing Technology
37	Wellspring House	Gloucester	Computer Office Skills

* Includes programs listed by the Southern Essex Region Workforce Investment Board, Massachusetts Workforce Investment Association, Massachusetts Occupational Information Coordinating Committee and MISER

**Appendix V:
Environmental Scan Protocol**

**Southern Essex Regional Employment Board
Labor Force Blueprint**

**Protocol for Existing Education and Training Resources
by the Center for Community Economic Development
University of Massachusetts Boston**

Name of Interviewer: _____	Length of Interview: _____	Date: _____
Company Name: _____		
Address: _____		Telephone/Fax: _____
Geographic Service Area: _____		
Name of Interviewee(s): _____		Title: _____

Introduction: [I'm calling from UMass Boston on behalf of the Southern Essex Regional Employment Board as part of a survey of the region's labor market, the types of jobs, and skills most in demand in the area. We're also looking the overall capacity among existing training and education resources to prepare area residents for those jobs. The emphasis is on preparation of unemployed and low-income workers. As one of the important institutions serving the Southern Essex County's low-income community, you have rich and valuable information to contribute to this project. So can I ask you a few questions about your training programs? This survey will take no more than 25 minutes.

1. Please indicate how would you describe your organization?
 - a. Secondary or Post-Secondary Academic Institution (Community College or High School Division)
 - b. Non-profit community-based training or adult education provider
 - c. Community Development Corporation or Community Based Organization.
 - d. Private Training Company
 - e. Other: (Please describe) _____

2. What is the full range of Employment and Training Programs your organization provides? Please note all that apply, and list the name of the programs.

	Type of Program	Name of Programs
	a. Adult Basic or Remedial Education, (ESL, GED, etc.)	
	b. Occupational training,	
	i. Vocational and Technical training	
	ii. Customized training for business	
	c. Job readiness training programs,	
	d. Job search and post-placement support	

4. If you provide skills, is it geared toward placing individuals in particular industries?

_____ Yes _____ No

(Prompt with the list of selected industries if necessary)

_____ Health _____ Construction
 _____ Retail Trade _____ Personal Services
 _____ Industrial Machinery & Equipment _____ Software & Telecommunications

For the next questions we would like to get some general information about educational, requirements, cost, duration of the programs, and schedule. (Interviewer will use extra grid space as necessary for additional programs)

Program	5. Min. Educational Requirements (GED, High School, College Diploma)	6. Income Requirements	7. Cost
Adult Basic or Remedial Education			
Occupational Training			
Job Readiness Training			
Job Search and Post-placement			
Others			

Program	8. Duration of program				9. Daytime or Evening
	1-12 wks	4-6 mo.	7-12 mo.	1 yr +	
Adult Basic or Remedial Education					
Occupational Training					
Job Readiness Training					
Job Search and Post-placement					
Others					

For each of the following programs, please indicate how many students do you enroll each program year, and if skills training, how many students do you place each year?

Training Programs	10. Number of Students enrolled Per program year	11. Number of Students placed Per program year	12. Number of Persons on Waiting lists
Adult Basic or Remedial Education			
Occupational Training			
Technical Training			
Job Readiness Training program			
Job search and post-placement			
Other			

13. Can you give a percentage breakdown by ethnic or racial background of the population you serve?

White Latino
 African American Asian American
 Other (Please describe) _____

14. Percentage by gender?

Male Female

15. What percentage of the population you serve is not proficient in English? _____

16. In what towns do your participants live? _____

17. Does your agency offer day care? Yes No

Other support services (Please describe) _____

18. Are there any additional employment-related or employment support services that your organization offers? _____

19. Based on your experience, in which industries do you think there is strong labor market demand for low and semi-skilled workers? _____

20. Are you aware of particular difficulties placing particular groups of low-income people due to skills mismatches, gender or other reasons? _____
