

# LESS-SKILLED WORKERS & THE HIGH-TECHNOLOGY ECONOMY:

## A REGIONAL JOBS STRATEGY FOR LAWRENCE, MA

by

**Tamar Kotelchuck**

B.A. History  
Oberlin College, 1993

Submitted to the Department of Urban Studies and Planning in Partial Fulfillment of  
the Requirements for the Degree of  
Master in City Planning  
at the  
Massachusetts Institute of Technology

© 1999 Tamar Kotelchuck. All rights reserved.

The author hereby grants to MIT permission to reproduce and to distribute publicly paper and  
electronic copies of this thesis document in whole or in part.

**Signature of Author:** \_\_\_\_\_

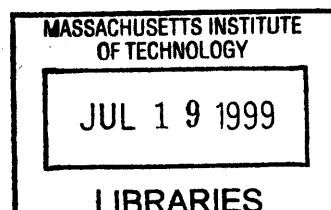
Department of Urban Studies and Planning  
May 20, 1999

**Certified by:** \_\_\_\_\_

Frank Levy  
Daniel Rose Professor of Urban Economics  
Thesis Supervisor

**Accepted by:** \_\_\_\_\_

Paul Smoke  
Chair, MCP Program  
Associate Professor, Department of Urban Studies and Planning



ROTCM



# **LESS-SKILLED WORKERS & THE HIGH-TECHNOLOGY ECONOMY: A REGIONAL JOBS STRATEGY FOR LAWRENCE, MA**

**by**

**Tamar Kotelchuck**

Submitted to the Department of Urban Studies and Planning on May 20, 1999  
in Partial Fulfillment of the Requirements for the Degree of  
Master of City Planning

## **ABSTRACT**

This research is designed to help job training and economic development practitioners think constructively about the nature of disconnects between low-wage cities and high-wage surrounding regions. Lawrence, MA is used as a case study to examine the unique employment structures and practices of local economies. The primary goal of this thesis is to use first-hand research with regional high-technology employers to address the questions: Does high-tech regional development create living-wage job opportunities for workers who do not have four-year college degrees? If so, what type of training and assistance would be necessary to help low-income workers access these opportunities?

This analysis is conducted in seven parts. It begins with analysis of the fundamental economic dynamics of the Northeastern Region of Massachusetts, which surrounds Lawrence, MA, with a particular focus on the high-tech development along the major regional thoroughfares of Routes 128 and 495. Employment and economic dynamics in Lawrence, MA are then compared and contrasted to those of the surrounding region, with a focus on local and regional job markets for low-income city residents. After describing the interview methodology used, and outlining the criteria for living-wage work, the major findings from interviews with regional employers are summarized. Next, a brief sketch of the strengths and weaknesses of the existing Lawrence job training system in serving the working poor is provided. The last chapter outlines the rationale for public intervention and draws together information about the employment needs and practices of regional living-wage employers and evidence about gaps in the local job training system to suggest ways that an innovative job training program might create value for the City and its residents. Finally, the conclusion recaps the importance of such efforts, their rationale, and briefly outlines some major issues in implementation.

Thesis Supervisor: Frank Levy  
Title: Daniel Rose Professor of Urban Economics

## ACKNOWLEDGEMENTS

I would like to thank my family for the many facets of their help throughout my two years here, and for giving me the tools and the constant support that moves me forward (and special thanks for the late-night proofreading). Thanks also my classmates, whose help in thinking this through has been invaluable, and whose values and intellect have made the last two years fun. Both my family and my classmates give me a wonderful standard to rise to, and love and perspective when I get stressed out trying to reach it. Special thanks to my professors for their encouragement, and for being available to help throughout this process, particularly Frank Levy and Lang Keyes. The highest of thanks, though, goes to the people of Lawrence, who have been tremendously generous with their time and insight, and always enthusiastic.

Thank you.

## TABLE OF CONTENTS

<b>INTRODUCTION</b>	<b>7</b>
Theoretical/Research Context.....	9
Incorporating Employment into the Conversation about Urban Revitalization.....	10
Building the Base of Knowledge About Local Employment Structures and Opportunities.....	11
Methodology.....	12
<b>CHAPTER 1: REGIONAL ECONOMIC DYNAMICS</b>	<b>15</b>
The Context: State and Regional Economic Growth.....	15
Economic Growth in Northeastern Massachusetts:	
The Importance of High-Technology Industry.....	19
Criteria for Targeting Promising Employment Sectors.....	21
Target Employment Sectors.....	23
Conclusion:.....	27
<b>CHAPTER 2: LAWRENCE: BACKGROUND, ECONOMY AND LABOR MARKET</b>	<b>29</b>
Lawrence: Setting the Stage.....	29
Local Demographics: A Picture of Economic Need.....	30
The Local Economic Base.....	33
Targeting the Working Poor.....	35
The Lawrence Labor Force.....	35
<b>CHAPTER 3: METHODOLOGY</b>	<b>39</b>
Interview Process.....	39
How Well Does This Sample Represent Regional Employment?.....	41
Research Biases.....	42
<b>CHAPTER 4: CRITERIA FOR LIVING-WAGE JOBS AND HIGH-QUALITY WORK</b>	<b>45</b>
Drawbacks of the Official Poverty Standard for Measuring Quality of Life.....	45
The Living Wage: Toward a Better Standard.....	46
<b>CHAPTER 5: KEY FINDINGS</b>	<b>51</b>
<b>CHAPTER 6: SCAN OF THE LAWRENCE JOB TRAINING SYSTEM</b>	<b>69</b>
The Jobs Training Partnership Act System in Lawrence.....	70
Northern Essex Community College.....	75
Is the Skills Training System In Lawrence Equipped to Meet the Needs of the Working Poor?.....	78

**CHAPTER 7:TOWARD AN EFFECTIVE JOB TRAINING PROGRAM**

**FOR LAWRENCE’S WORKING POOR** **81**

---

Skills and Experience Strategies..... 84  
Strategies for Increasing Access to Living-Wage Job Opportunity..... 92

**CONCLUSIONS & THOUGHTS ON IMPLEMENTATION** **95**

---

Accessing Living-Wage Jobs: The Role of Community Coalitions ..... 95  
Securing Program Funding: Traditional Federal Resources are Not Enough..... 98

**APPENDICES** **101**

---

Appendix 1: Research Participants..... 101  
Appendix 2: Interview Questionnaires ..... 103  
Appendix 3: Structure of the JTPA System..... 105

## INTRODUCTION

---

*“Lawrence is the sinkhole in the lawn that must stay wet  
so the rest of the region can stay dry.”*

*Economist, Merrimack College, 1998*

By many criteria, the late 1990s are a time of unparalleled economic prosperity for the Commonwealth of Massachusetts. Headlines in the regional press (though perhaps a bit overly optimistic) herald economic growth, the creation of high-skilled, high-technology jobs, and the promise of fair economic horizons for years to come.

The impacts of this economic upturn are widely felt across the state. Jobless rates are at record lows,<sup>1</sup> state residents have experienced real and significant gains in income, both in real terms and relative to the nation.<sup>2</sup> The average income of Massachusetts residents is the third highest in the nation.<sup>3</sup> However, while a rising tide may lift all boats, it does not, in fact, lift all boats equally. The channels through which this economic opportunity flows are unevenly distributed across the Commonwealth, both in terms of geography and demography.

The City of Lawrence is a poignant study in the failure of generalized regional economic growth to create real and stable improvements in the job quality of those in most economic need. Characterized by a local economist as *“the sinkhole in the lawn, which must stay wet so that the rest of the region can stay dry,”* Lawrence represents a low-wage, low-skill, high-poverty ghetto squarely in the middle of one of the nation’s most lauded examples of economic growth: the high-technology sector along Route 128, which rivals California’s Silicon Valley in technological innovation and job creation. Numerous demographic measures speak to the extent of the disconnect between these two economies: median income in Lawrence is 60% of state and

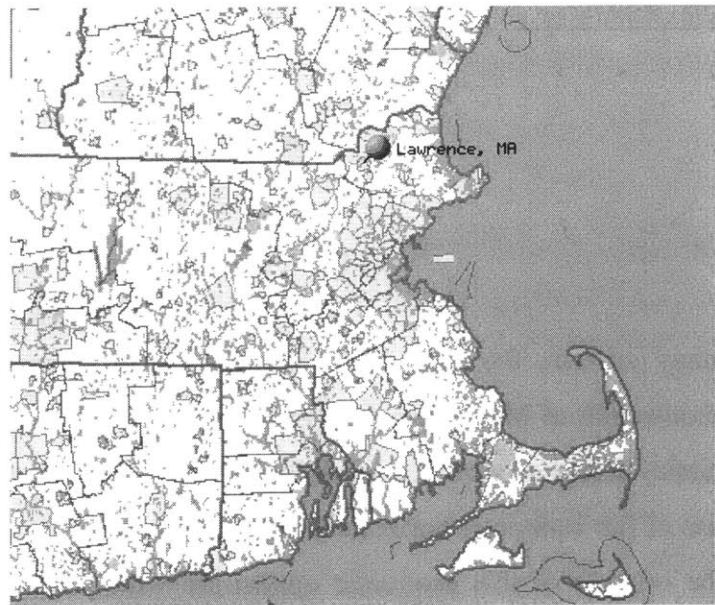
---

<sup>1</sup> Blanton, Kimberly. “Jobless Rate holds at 3.3% in Massachusetts, Total Employment Near Record in October.” *Boston Globe*, 21 Nov. 1998.

<sup>2</sup> Massachusetts Institute for a New Commonwealth. *The Road Ahead: Emerging Threats to Workers and the Massachusetts Economy*. Boston, MA: MassINC, 1998.

<sup>3</sup> Blanton, Kimberly. “Bay State jobless rate drops further in August; But report hints world economic woes could hit Mass. employment hard.” *Boston Globe*, 19 Sept. 1998: F1.

regional levels; and the city has the lowest family income and indicators of wealth in the Commonwealth.<sup>4</sup>



Lawrence consistently exhibits unemployment rates two to three times those of the state, regardless of the business cycle.<sup>5</sup> However, Lawrence's employment problems are not simply quantitative. With a large proportion of residents working at wages well below that

necessary to support a family, Lawrence finds itself facing the challenge of not simply finding work, but of finding work of sufficient quality to provide a living family wage, benefits and continued employment opportunities. For this reason, Lawrence ought to be squarely in the middle of our national debate about the decline in working class wages and the prevalence of working poverty.

The causes of Lawrentians' economic isolation are not solely, nor perhaps even primarily, geographic. The job structures of the Merrimack Valley are regional, fostering extensive economic and employment interaction between neighboring cities. For example, in 1990, fully 60% of Lawrence residents were employed outside the city, and 40% of the city's workforce lived in the surrounding region.<sup>6</sup> It is difficult to provide an exact accounting of who works where and for how much, due to disconnects between business and individual data sources.<sup>7</sup> Nonetheless, the stark contrast between wages and occupations of Lawrence residents and

---

<sup>4</sup> Municipal Data Bank. *Four Measures of Property and Income Wealth*. Department of Revenue, May 1999 <<http://www.magnet.state.ma.us/dls/allfiles.htm#socio>>

<sup>5</sup> Commonwealth of Massachusetts, Division of Employment and Training. *Local Area Unemployment Statistics 1980-1997*. 21 Dec. 1998 <<http://www.detma.org/local>>.

<sup>6</sup> Place of Work – Workers 16 Years and Over. *1990 Census of Population and Housing*. U.S. Bureau of the Census. 1990 <<http://www.census.gov>>.

<sup>7</sup> For example, individual data sources, namely the Decennial Census, indicate where people work, their annual income and occupation (though not by place of employment), and data collected by the Department of Employment and Training (Series ES-202) indicate average wages by industry and occupation by a variety of jurisdictions. However, no cross-correlating tools exist that would allow us to say equivocally what types of jobs and wages Lawrence residents working outside the city receive.



residents of the surrounding towns, when viewed together with information about the large percentages of Lawrentians working outside the city proper, suggests that Lawrence residents are a key source of low-wage labor for the region.

## **Theoretical/Research Context**

For those concerned with the enduring concentration of low-income families in urban America, the circumstances of Lawrence, MA should present a clear and compelling challenge. If, in fact, the benefits of generalized economic growth are inequitably distributed in a way that unfairly disadvantages urban residents – which would seem to be the case in Lawrence, and will be examined in more depth later in this thesis – we must think more explicitly about how to create mechanisms to better distribute the job opportunity created by this growth.

This examination of Lawrence takes place in the context of growing public concern for employment issues spurred by factors such as welfare reform and increasing media and public recognition of growing wage inequality. This conversation is made more urgent still by the continued decline of traditional manufacturing employment (a historical source of well-paid employment for the less-educated) and the simultaneous polarization of employment between high-paid knowledge-based employment and low-paid, low-skilled jobs in the service sector. All of these forces are at work in Lawrence, which presents an important opportunity for researchers to examine employment issues from a local perspective.

There are two fundamental reasons why locally-focused research about the nature of job opportunity for disadvantaged workers is important. First, the conversation about economic and community development has largely neglected the issue of employment quality, despite the importance of employment to any urban revitalization strategy. Second, it is crucially important that job-training practitioners, and those concerned with the job prospects of the less-advantaged, understand the economic context of job training interventions. Unfortunately, resources for this type of research are scarce, and so I hope that my work can add to the knowledge base of people facing the difficult issues of job training and placement first hand. I particularly hope that this can be of use to the people of Lawrence. Secondarily, I hope that readers will find it applicable to the many other communities facing similar challenges across the nation.

## **Incorporating Employment into the Conversation about Urban Revitalization**

Increasing conversation about the importance of employment in recent years belies the fact that urban anti-poverty and economic development efforts are only beginning to address issues of living-wage employment in any comprehensive way.

Despite its stated purpose of fortifying the economic bases of American cities, too often the calculus of economic development has excluded a dialogue about employment. And, where it has taken explicit account of the employment to be created, economic development efforts often fail to incorporate a meaningful consideration of the quality of jobs created. For example, flagship urban development projects intended to increase municipal tax bases and bring employment to surrounding low-income communities – such as current plans for the redevelopment of the South Boston waterfront – often end up creating only low-wage jobs in the tourism industry.

At a fundamental level, the institutional structure of American anti-poverty efforts has evolved in such a way that those organizations and agencies concerned with urban and neighborhood revitalization (such as municipal redevelopment authorities and community development corporations) and poverty issues (such as city welfare departments) are largely isolated each other and from organizations and agencies concerned with employment (such as regional employment boards and community colleges). The result is that, despite the need for a comprehensive focus on employment issues incorporating the broad expertise of all of these institutions, knowledge and resources are rarely shared or coordinated.

One source of this oversight can be found in the traditional separation of job training systems – often seen as a form of social service for the disadvantaged and thus marginalized from the economic decisionmaking of firms – from economic development, which is intended to be responsive to the needs of businesses<sup>8</sup>. This disconnect is manifest in the fact that the two systems are governed by entirely separate bureaucracies using independent sources of funds; economic development efforts are traditionally governed by municipal authorities using flexible federal block-grant funds and local tax revenue, while employment programs are governed by regional bureaucracies which receive their funding and many of their priorities from the federal government.

---

<sup>8</sup> Friedlander, Daniel and David H. Greenberg and Philip K. Robins. "Evaluating Government Training Programs for the Economically Disadvantaged." *Journal of Economic Literature*, Dec 1997: pp. 1809-1855.

In recent years, we see growing concern for employment creation as part of a national urban agenda, but little systematic attention has been given to the quality of this employment. For example, the Clinton Administration's Empowerment Zone initiative grants tax incentives to firms locating in "distressed areas," on the assumption that they will create jobs for local residents. However, this program sets few specific benchmarks regarding the quality of work (which often turns out to be low-wage). This oversight is based on the often-mistaken assumption that the benefits of attracting and developing local businesses will trickle down, necessarily creating opportunity for low-wage workers<sup>9</sup>.

Given this historic disconnect, it is my hope that the following research, which links place-based development strategies with employment issues, can add fuel to the discourse about bridging the gap between these forces with fundamentally similar visions of urban revitalization.

### **Building the Base of Knowledge About Local Employment Structures and Opportunities**

*There are few national problems that remain as intransigent and compelling as the need to find ways to connect residents of disadvantaged communities to good, stable jobs in the economic mainstream...As the gap between the disadvantaged and good jobs has widened, the need for sophisticated information about the labor market has grown...It is the view of the authors that creative information-gathering techniques can be enormously powerful in community-based work. While it is generally the exception rather than the rule, some pioneering techniques have been devised that can help practitioners and their participants to more clearly visualize the path out of poverty [and enable] community based practitioners to have clear and current information on occupation-specific industry trends – often even in advance of many employers in the industry.<sup>10</sup>*

Aspen Institute, Labor Market Profiling, 1997

In the context of welfare reform and increasing awareness of working poverty, many anti-poverty organizations and institutions are stepping up to the plate in attempts to alter the job prospects of lower-skilled workers. Within these professional communities, there is a growing consensus that employment efforts must be based in an accurate and economically sophisticated

---

<sup>9</sup> Clarke, Susan E. "Enterprise Zones: Seeking the Neighborhood Nexus." *Urban Affairs Quarterly*, 18.1(1982):53-71.

<sup>10</sup> Clark, Peggy and Kays, Amy. *Labor Market Profiling: Case Studies of Innovative Information-Gathering Techniques for Employment Projects*. Washington, DC: The Aspen Institute, 1997: Introduction.

understanding of the nature and needs of the local labor market. One approach to developing locally-specific jobs strategies that has become popularized in workforce training circles in recent years is the “sectoral employment strategy.” This approach, often spearheaded by community-based, non-profit organizations, is based on the belief that the most effective approach to employment training focuses on the needs and barriers to employment for specific populations in a promising part of the region’s economy (linked either by products, resources, markets or employment needs).<sup>11</sup> These strategies are advocated because they allow job training programs to leverage knowledge about specific industries and their employment needs, build stronger networks with participating employers, and marshal more specific training expertise. Practitioners hope that all of these factors will ultimately result in the development of job training programs which can train workers to be more useful to industry thus creating mutually beneficial partnerships between the training programs and employers, and increasing the possibility of job placement.

Despite the consensus about the need to craft employment efforts to local business and community needs, many communities lack the information necessary to create sectoral strategies effectively. There is little funding to support such time-intensive research by independent parties, and the need for employment services is so great in most low-income communities that investment in this research (with long-term benefit) would draw resources away from the provision of employment aid to those urgently and immediately in need.

Therefore, I am conducting this research in the hope that the content of my findings, and the process I use to arrive at them, can add to the base of knowledge underlying job training efforts in Lawrence and elsewhere.

## **Methodology**

There are many ways to examine the issue of how to improve the distribution of benefits from economic growth to less-advantaged areas. I have chosen to focus my examination on: a) how trends in working poverty and job quality play out in a specific economy – the city of Lawrence – and b) the nature of regional demand for labor and the opportunities that it might present for connecting Lawrence residents with living-wage jobs in the regional economy.

---

<sup>11</sup> Kazis, Richard. *New Labor Market Intermediaries: What’s Driving Them? Where Are They Headed?* Boston: Task Force on Reconstructing America’s Labor Market Institutions, Unpub. Working Paper #WP03, 1 Nov. 1998.

If, in fact, Lawrence residents do provide a low-wage labor force for the region, what would induce employers to raise their wages? The hypothesis that will be tested through this research is that:

- a) Employers experience skill shortages in certain entry level jobs that would make them willing to pay a premium for reliable, semi-skilled workers that could be developed through a high-quality training program.
- b) Hiring and recruitment practices of these firms, because of inadequate information about the skills and capacities of Lawrence workers, make it difficult for Lawrence residents to access higher-quality jobs.
- c) Public pressure could be brought to bear on large regional employers to dedicate training dollars and employment slots to disadvantaged workers, under the rationale that the distribution of living-wage non-college employment from these firms has excluded workers from Lawrence, and should be more equitable.

The following research aims to deepen the understanding of job structures in promising industries surrounding Lawrence; to understand what living-wage job opportunities these industries may hold for Lawrence residents; and to understand if and why there is a disconnect between Lawrence residents and these opportunities. Ultimately, this research is designed to give practitioners and policymakers the information necessary to think constructively and concretely about bridging the gap between the city and the regional economy. A crucial element in developing such strategies is a grounded understanding of the internal hiring and production dynamics of high-growth regional industries that ultimately determine what jobs exist and who gets chosen to fill them.

Specifically, this study attempts to identify living-wage jobs that could be filled by Lawrence's low- and semi-skilled workers, with the assistance of an education and job-training program designed to meet locally specific needs. This research is conducted through regional economic analysis, coupled with extensive interviews with regional employers. My primary focus is identifying employment opportunities; that is, the demand side of the employment equation. Secondly, and more briefly, I will examine the supply of labor, and mechanisms for bridging the two, addressing the questions: 1) What types of services might a particular subgroup of residents seeking living-wage employment need in order to successfully compete for

and retain these positions?, and 2) What do my findings about regional employment, when viewed in light of the local labor market, imply about how to design a successful job-training program?

This thesis is divided into seven parts. The first chapter based on extensive economic analysis, is meant to convey sources of growth in the regional economy -- with an eye towards sources of living-wage employment growth -- and outlines the sectors I have chosen for further research. The second chapter, on Lawrence's history, demographics and labor force, is intended to give the reader an understanding of the level and sources of economic distress facing residents of the City of Lawrence, as well as some of the characteristics of Lawrence's working poor. The third chapter briefly describes the interview methodology used to gather primary data, and notes some of its pitfalls. The fourth chapter outlines the criteria for judging living-wage jobs, and the need for such a measure. The fifth chapter describes the findings of extensive primary research with employers in regional growth industries about the existence of living-wage jobs, their requirements, hiring practices and the outlook for the future of this work. The sixth chapter provides a sketch of the strengths and weaknesses of Lawrence's job training system in connecting the working poor to job opportunities in the regional economy. The seventh chapter conveys the implications of these findings for the creation of a job training program capable of effectively connecting the working poor in Lawrence with living-wage work opportunities in the surrounding region. Finally, the conclusion discusses the rationale for public involvement in job training, and some of the challenges to implementing such a program.

## **CHAPTER 1**

### **REGIONAL ECONOMIC DYNAMICS**

---

#### **The Context: State and Regional Economic Growth**

Lawrence's economic distress occurs at a time of nearly unparalleled economic growth in the state of Massachusetts. In 1997 the Commonwealth had the third-highest level of per-capita income in the United States (23% higher than the national average) and the second-fastest growth rate in income. Unemployment is at historically low levels, nearly 30% below the national average, with unprecedented levels of labor force participation.<sup>12</sup>

The Massachusetts economy has recovered from the early 1990s recession to perform better than almost any other state in the nation, according to many economic indicators. The Commonwealth has outperformed the nation in employment growth, showing employment gains in almost every major economic sector, led by high-tech and service employment. The state has shown solid growth in business services, private services, engineering and management services, health services and high-technology manufacturing (office equipment, electronics and computer manufacturing).<sup>13</sup> The state also has the third highest concentration of fastest-growing companies in the nation and the second highest in high-technology fastest-growing companies.

Similar to regions across the country over the last 40 years, much of this new growth and development has occurred along major transportation routes surrounding large metropolitan areas. Much of the high-technology growth in the Boston Metropolitan Region has centered along Route 128, along the northern border of the metro area, passing through the towns: Wayland, Woburn, Bedford, Burlington, Concord, Lexington, and Lincoln. This development has rippled outward so that it now encompasses much of the northern region of Route 495, including: Acton, Andover, Billerica, Boxborough, Chelmsford, Littleton, Lowell, North Andover, Tewksbury, Westford, and Wilmington. Both of these routes span Essex and Middlesex Counties.

---

<sup>12</sup> Department of Economic Development. *Massachusetts Economic Highlights*. November 1998  
<<http://www.magnet.state.ma.us/econ/keyindic.htm>>.

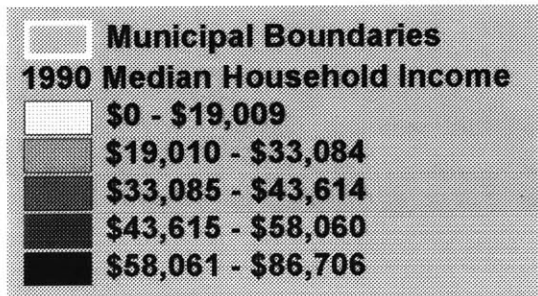
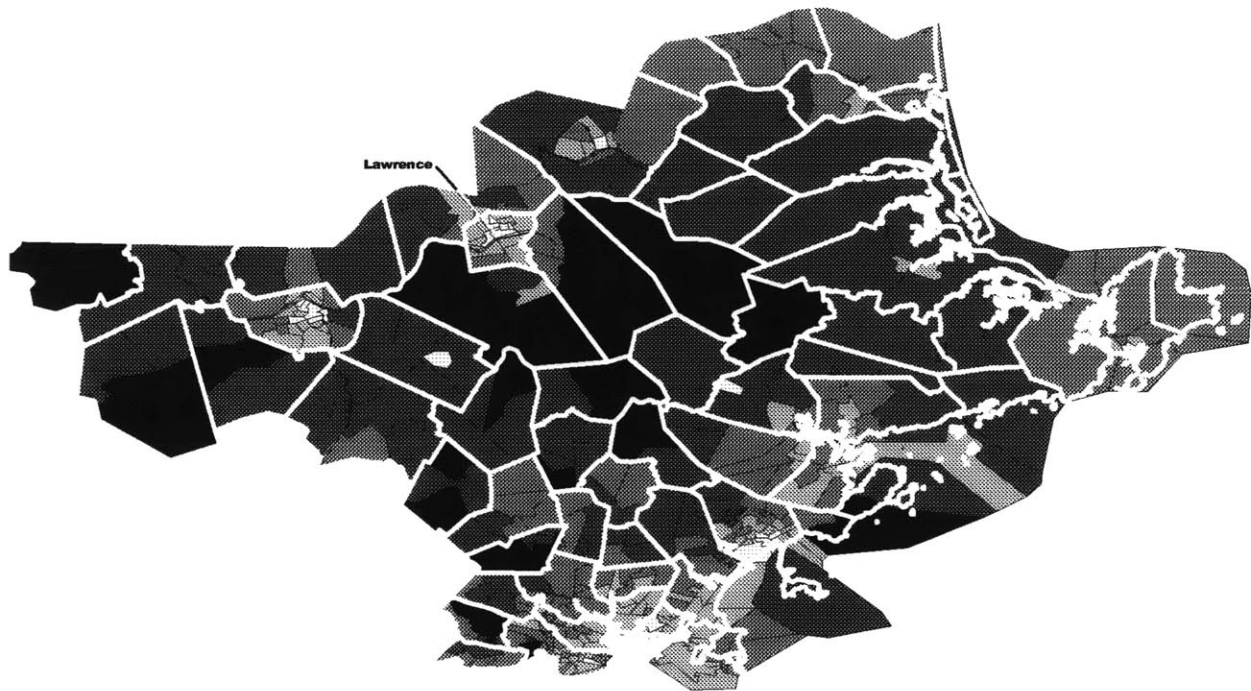
<sup>13</sup> Liu, Jenny. "The Economic Performance of the New England States in 1997." *New England Economic Indicators*. Boston: Federal Reserve Bank of Boston, June 1998.







# 1990 Median Household Income in the Merrimack Valley



Because the boundaries of this economic region do not correspond with standard data classifications, it is difficult to provide a good deal of evidence to support widely-accepted claims of the economic vitality of this region. However, by many counts the Northeast region has mirrored or surpassed the state's economic growth, showing the same level of new business creation (10%) as the Commonwealth, and a slightly higher level of job creation (9% vs. Massachusetts 8% from 1995 to 1998).<sup>14</sup>

Another strong proxy for business growth and profitability, though, is the demand for office space. Using these data, we can see steady and strong business growth over the past two years, particularly along the Route 128 corridor, where rents are only slightly lower than within the City of Boston. The outlook for continued employment growth is improving with recent additions to regional employment from major software, communications and business machine corporations, which have recently committed to relocation along these two routes.<sup>15</sup>

### **Economic Growth in Northeastern Massachusetts: The Importance of High-Technology Industry**

The two economic mainstays of Northeast Massachusetts are the manufacturing and service industries. Manufacturing comprises approximately 25% of regional employment, a figure significantly higher than the state average of 15%, and services composes approximately 37% of employment, a few points lower than the state average of 41%. Retail trade, employing close to 20% of the regional workforce (almost 130,000 people) is also an increasingly important, though low-wage, sector. Wholesale trade, employing almost 7% of the regional workforce, is relatively strong in the region and seems to be holding steady, due to the region's strategic location vis-à-vis major highway systems and ports.

Alternatively, the finance, insurance and real estate industry (FIRE) in Northeastern Massachusetts has never been as strong as other parts of the state. The region has not shared in the growth of this cluster in Boston – centered around security and commodity brokerage and mutual fund management – and, consequently, FIRE only employs less than 5% of the regional workforce, generally in lower-quality and lower-prestige jobs than the Metro Boston area.

---

<sup>14</sup> Farrant, Robert. "The Northeast Region: Geography and Brief Economic History." Amherst: forthcoming in *Massachusetts Benchmarks*, Spring 1999.

<sup>15</sup> Meredith & Grew, Inc./ONCOR International. *Greater Boston Market Report*. Boston, MA. Second Quarter 1998.

As in Massachusetts, the competitive edge of economy of the Northeast region is highly dependent on what many have termed “the innovation economy” – which is defined as the “*intellectual capital and the ability to translate new ideas into competitive products faster than the competition can.*”<sup>16</sup> These firms are often concentrated in technical areas, and focus largely on the design and development and custom-production activities, rather than mass-production (which can often be conducted less expensively in lower-cost states). These cutting-edge businesses often seek to proximity to research universities, and other high-tech firms, which allow them easier access to new technology and ideas. As a result of the high concentration of high-tech firms and of universities, Massachusetts is one of the leading states in the nation for innovation businesses (second only to California).

The link to innovation is particularly important in the high-technology services – such as software development and sales, telecommunications technology and consulting – and in high-technology manufacturing sectors – such as medical instruments and internet technology production. Both sectors represent significant engines of growth in the larger regional economy. Lucent Technologies, one of the nation’s leading telecommunications firms, for example, is located in Northeastern Massachusetts because of its stated desire to be in close contact with its high-technology suppliers so that it can maximize interfirm communication and minimize the time needed to resolve production problems.<sup>17</sup> Because these firms have a strong competitive advantage in the region, they are the chief target of my primary research with employers.

The technology and skills needs of high-tech industry should also make it central to regional employment efforts. Specifically, in this sector of the economy the pace of technological change means that this is a quickly-changing industry with firms that are constantly in search of new skills. This trend has mixed impacts for less-skilled workers. Clearly, this constant change has accelerated this industry sector’s need for highly-educated professionals, particularly in technical specialties. One interesting example of the demand which high-tech industry creates for high-skilled workers can be found in the recent tug-of-war over increasing immigration quotas of highly-skilled professionals to Massachusetts, advanced in

---

<sup>16</sup> Massachusetts Technology Collaborative. *Index of the Massachusetts Innovation Economy, 1998*. Westborough, MA: Massachusetts Technology Collaborative, 1998.

<sup>17</sup> Unpublished Interview conducted by Robert Farrant, University of Massachusetts - Lowell, 1999.

large part by high-tech industry leaders.<sup>18</sup> While many speculate that growth in this sector has ripple effects across the economy, little research has been done on how this trend directly impacts less-skilled workers. Whether high-technology industry provides any significant number of well-paying jobs for people who are not highly-skilled is, therefore, also the focus of this research.

## **Criteria for Targeting Promising Employment Sectors**

As previously stated, I believe it is important to focus on specific employment sectors when designing a jobs strategy because it allows job training developers to leverage their technical expertise and to maximize their networks within the employer community. To this end, for purposes of primary employment research, I chose to focus on two “promising” sectors of the regional economy. Economists hold differing views on what constitutes a “promising” employment sector because of the difficulties in reliably projecting economic trends. Ultimately, I posit that choosing “promising” sectors is a judgement call in which one must balance a range of criteria including:

1. ***Positive employment growth:*** Some economists would posit that “promising” sectors are those which experience growth rates equal to or higher than state or national average job creation rates.<sup>19</sup> While positive growth is certainly an important indicator of a sector’s economic prospects, it cannot be the sole criteria for good employment targets because high employment growth may be short-lived or occur only in relatively low-employment sectors.
2. ***Large proportion of regional employment:*** To offset the shortfalls of choosing sectors based only on their growth rates, I chose to examine and rank employment sectors also by the absolute numbers of people they employ. This is an important consideration because, for example, some sectors may demonstrate low growth but may also represent a large number jobs in the region. Sectors such as these may hold real and important employment opportunities due solely to job turnover, despite low growth rates.

---

<sup>18</sup> Rosenberg, Ronald. “Half a world away, a high-tech SOS is heeded; As firms and unions bicker over visa program, foreign workers make a home in Greater Boston.” Boston: *Boston Globe*, 7 March 1999: p.G1.

<sup>19</sup> Interview with Richard Lester, Director, Industrial Performance Center, April 26, 1999.

3. ***Moderate average wages:*** Clearly, wages are a central consideration in targeting sectors of the economy that might present good employment opportunities for the less-skilled. However, it is difficult to get a strong handle on wages by industry sector because these data are generally kept in the form of average wages, encompassing both high- and low-paying occupations within a given industry. As a result these data must be used cautiously because a high average wage in an industrial sector may reflect widely different realities for less-skilled workers depending on the range of wages within the industry. However, average wage data is equivocal on the downside, which is to say that low average wages can only mean that either everyone gets paid poorly, or some get paid well, and many get paid very poorly. To this end, I chose to exempt from my consideration industrial sectors, such as retail, which have low regional average wages.<sup>20</sup>
4. ***Balanced Occupational Distribution:*** Another consideration in targeting possible employment sectors is the degree to which they utilize non-college labor. Unfortunately, again, the lack of available information on industry occupational profiles prohibits a sophisticated analysis of these employment patterns based solely on secondary data. This information is, however, at least capable of telling us which sectors do not employ non-professional workers<sup>21</sup>.

---

<sup>20</sup> Despite the fact that low average-wage sectors may possess higher-paying subsectors.

<sup>21</sup> The main source of information on this topic can be found in the Occupation by Industry Calculations of the 1990 Census, which can be extracted only to a state level.

## Target Employment Sectors

### Manufacturing

As stated earlier, the Northeast Region is more dependent on manufacturing than the state as a whole. This is at once a disadvantage and an advantage. Most people are by now well-acquainted with the dangers of over-dependence on manufacturing. Manufacturing, particularly low-technology, low-cost manufacturing, has proven quite vulnerable to international and domestic cost pressures and has hence been an unstable source of jobs through the 1980s and 90s. However, this sector is also a source of relatively high-wage jobs for people who lack a college education.

Economic theory would suggest that as business mobility grows, low-technology, labor-intensive industries will seek out sites where they can minimize their labor costs. This would seem to suggest that, over time, this type of manufacturing will leave Massachusetts, which is a relatively high-cost, high-wage state. A number of regional economists, interviewed by the author, confirm that this trend is in fact occurring at a significant level in Massachusetts. That is, low-technology manufacturing jobs – exemplified by the decline of the textile industry in Lawrence in the 1980s – have steeply declined in recent decades (though this trend is slightly eased by recent economic upturns) due to international competition, cost pressures and relocation. In fact, Massachusetts was severely (and perhaps disproportionately) impacted by declines in low-technology manufacturing across the nation in the early '90s due to the relatively high cost of doing business (that is, the cost of production inputs such as land and labor) in the Commonwealth.

It is less clear that relocation pressures will negatively affect high-technology manufacturing in the region, for a number of reasons. On the surface, high-technology manufacturing – after the recession and decline of the micro-computer industry in the early 1990s – had been adding jobs across the region at a fairly good clip, until turbulence in the international economy reduced the demand for exports in the latter part of 1998.

Why might we expect different trends in the high-technology production sector than in other, more traditional, manufacturing sectors? First, these firms are fairly capital-intensive and sophisticated, which reduces their labor costs and increases the skill requirements which their

manufacturing workforce must possess. Second, many of these firms are involved in cutting-edge technology design as well as production, which makes it necessary for them to be located near skilled engineers and university thought-centers. While it may become easier over time to move production of these high-technology goods farther from the place where the ideas originate, it is likely that their production will always require significant input from skilled engineers, and thus more proximity to this workforce than in other manufacturing sectors.<sup>22</sup>

This competitive edge would seem to explain a good deal of the growth in high-technology manufacturing in the Northeast Region in the mid- to late- 1990s. This growth is manifest in the following sub-industries:<sup>23</sup>

Manufacturing Sector	Total Regional Employment	% of Total Regional Employment	Average Annual Wage	Employment Growth Rate 1995-97
Electronic & Other Electrical Equipment (SIC 36)	27,335	4.10%	\$ 47,101	5.24%
Industrial Machinery & Equipment (SIC 35)	21,029	3.15%	\$ 54,704	7.92%
Instruments & Related Products (SIC 38)	15,173	2.28%	\$ 50,087	-3.49%

### The Service Industry:

The single term “the Service Industry,” as defined by the Standard Industrial Classification system masks the complexity of firms in this category which range from universities to movie theaters, containing both janitors and CEO’s of international management consulting conglomerates. In reality, this category is an outdated “catch-all” for firms other than traditional SIC-code defined industries (including: agriculture, mining, trade, FIRE, transportation, retail and manufacturing). Notwithstanding their diversity, these firms are key players in the Massachusetts economy and are only slightly less important in the Northeast region. Top service employment sectors in the Northeast include:<sup>24</sup>

<sup>22</sup> Interviews with Yolanda Kodrycki, Assistant Vice President and Economist, Federal Reserve Bank of Boston, and Bob Forrant, Economist and Historian, Department of Regional Social and Economic Development, University of Massachusetts at Lowell.

<sup>23</sup> Source: Authors calculations, based on: Department of Employment and Training. *Series ES-202, 3-digit SIC Code Level, Service Delivery Areas: Northern Middlesex, Lower Merrimack Valley, Southern Essex, Metro North*. Boston: Department of Employment and Training, 1997.

<sup>24</sup> Source: Ibid. Department of Employment and Training.



<b>Service Sector</b>	<b>Total Regional Employment</b>	<b>% of Total Regional Employment</b>	<b>Average Annual Wage</b>	<b>Employment Growth Rate 1995-97</b>
Health Services (SIC 80)	74,539	11.18%	\$ 31,007	1.91%
Business Services (SIC 73)	73,629	11.04%	\$ 42,250	23.14%
Engineering and Management Services (SIC 87)	36,888	5.53%	\$ 64,512	8.02%

Given the sheer size of this sector and its increasing prominence in the nation, state and region, it is important that those concerned with less-skilled employment understand how growth in this sector is likely to impact people without college degrees. The diversity of the sector, however, makes meaningful or accurate generalizations quite difficult. Given the limited scope of my research, I settled for examining only one of these sectors – the Business Services Sector – due primarily to drawbacks in health services and engineering and management services as employment sectors for the less skilled.

Health Services, the top service employer in the region, is a good source of employment for non-college workers, and is growing rapidly across the U.S. However, in the Northeast region growth has been less dramatic, and much of it is due to the rise in nursing home and home care employment, which are often poor-quality, low-wage, limited-advancement jobs for people who lack medical training. Hospitals, alternatively, tend to be higher-quality employers; they pay relatively high wages, are often unionized, and have fairly complex job ladders which allow for internal advancement. However, trends in health care in the region and across the US – including increasing outpatient and home care, as well as mergers and acquisitions of major hospital centers – mean that hospital employment in Massachusetts has decreased significantly over the past three to five years. While hospital employment may have stabilized in the past year, there is little information that indicates any employment growth. Thus, we can extrapolate that the growth in this sector is largely due to the increase in poor-quality jobs. As a result, I have chosen not to examine the health services sector for purposes of this study. Nonetheless, the importance of the health sector for employment efforts should not be overlooked, because even replacement needs created by staff turnover in hospitals are a fairly significant source of non-degree employment. Furthermore, Lawrence is home to two large regional health

employers, Lawrence General Hospital and the Greater Lawrence Family Health Clinic, both of which struggle to locate Spanish-speaking health professionals.

Management and Engineering Services is at this point a relatively small employer compared to other parts of the service economy, but it has shown relatively rapid growth in the region and the state over the past decade. Nonetheless, a cursory analysis of occupational employment patterns shows that management and engineering services employ primarily high-skilled workers, with between 56% and 81% of occupations in this area requiring a college degree.<sup>25</sup> Thus, it seemed advisable to look elsewhere for large quantities of high quality jobs for non-college graduates.

As the only remaining of the three leading service sector employers, I chose to examine the business services sector. Business services is a complex and interesting sector for anyone concerned with employment in the Commonwealth. One of the larger, and certainly the fastest-growing, areas of the service industry, this sector defies easy explanation, and captures a range of industries and occupations from janitors to database managers. Taking a closer look at this sector we see that it is composed of the following diverse sub-sectors<sup>26</sup>:

<b>Business Services Subsectors</b>	<b>Total Regional Employment</b>	<b>% of Sectoral Employment</b>	<b>Average Annual Wage</b>
Computer and data processing services (SIC 737)	29,889	41%	\$ 69,753
Personnel supply services (SIC 736)	19,558	27%	\$ 23,148
Services to buildings (SIC 734)	8,847	12%	\$ 13,466
Misc. Business services (SIC 738)	8,537	12%	\$ 25,369
Mailing, reproduction and stenographic (SIC 733)	3,300	5%	\$ 35,090
Misc. Equipment rental and leasing (SIC 735)	1,080	1%	\$ 33,970
Advertising (SIC 731)	851	1%	\$ 53,698
Credit reporting and collection (SIC 732)	611	1%	\$ 33,128

My research has focused on large employers in all of these sectors, despite their diversity, because I thought it important to better understand the composition of these businesses, their

<sup>25</sup> Author's calculations based on: Employment by Occupation: Massachusetts Cities, Towns and Selected Other Areas. 1990 Census of Population and Housing. U.S. Bureau of the Census. CD-ROM. 1990.

<sup>26</sup> Author's calculations based on: Ibid. Department of Employment and Training.

diversity, and their evolving labor needs so as to be able to speak with more certainty about how growth in this sector might impact less-skilled employment opportunity in the region.

**Conclusion:**

Analysis of secondary employment and wage data for the region surrounding Lawrence suggests that high-tech manufacturing and business services may be good sources of employment for less skilled workers in the region. However, secondary economic data is very limited in its ability to provide detail about the quality or quantity of non-college work opportunity in today's economy. As a result, I supplemented secondary economic analysis with extensive primary research on non-college employment trends in these two sectors, which is used to confirm and inform the analysis in this chapter.



## CHAPTER 2

### **LAWRENCE: BACKGROUND, ECONOMY AND LABOR MARKET**

---

#### **Lawrence: Setting the Stage**

Founded in 1847, Lawrence, Massachusetts was the first planned industrial city in the nation, created by the Essex Company as a company town to serve the garment manufacturing industry. The city's economy was built on the textile mills that line the Merrimack River passing through Lawrence. These mills have been fueled by waves of immigrant labor, creating an ethnic city which at different points in its history has been dominated by Eastern European Jews, Irish, and Italian immigrants. The most recent wave of immigrants, which began 30 years ago and has accelerated until the present, is Latino, dominated primarily by immigrants from the Dominican Republic and secondarily by Puerto Ricans. These immigrants have continued to come to the city, drawn largely by ethnic and kinship ties, despite the fact that the once-strong textile industry has foundered in the age of global competition. Over the years, the city has hemorrhaged jobs — losing 5,000 jobs, or 20% of its industrial base in the recession of the early-1990s alone — as a result of the decline of manufacturing generally and garment trades specifically.

Though Lawrence was the home of the Bread & Roses strike in 1912, a hallmark in American labor history, the city currently has few strong local unions that represent its workforce. In fact, the lack of unionization, combined with still-plentiful sources of inexpensive, reliable immigrant labor, is one of the key attractions for many of the businesses who have located in the city over the past 40 years.<sup>27</sup>

Lawrence was most recently made famous as an example of corporate responsibility by Aaron Feuerstein, CEO of Malden Mills, one of the City's largest manufacturing employers and a major provider of stable, high-wage factory jobs, who pledged not to lay off any workers after 1995 Christmas-time fire at Malden Mills. While Mr. Feuerstein is not alone in his sense of responsibility to the workers of Lawrence,<sup>28</sup> cooperative relationships between labor and

---

<sup>27</sup> Interviews with Chet Sidell, Owner and CEO, KGR Industries, Spring 1998 and Robert Luongo, Director of Economic Development, City of Lawrence, Fall 1998.

<sup>28</sup> As many Lawrence employers are quick to note (Source: 22 business owner interviews by the author, Spring 1998).

management in the city are still relatively unusual, particularly as the city's dependence on temporary labor has grown.

### **Local Demographics: A Picture of Economic Need**

The City of Lawrence is a picture of economic need and is facing some of the most troubling demographic trends in the Commonwealth. Accurate and current population data are scarce, due to the obsolescence of the 1990 Census and the fact that the Current Population Survey cannot be parsed to the municipal level. However, 1990 Census and current employment data, when coupled with anecdotal evidence from economic and social services practitioners, tell a fairly convincing story; while the economic conditions of Lawrence have improved with the fortunes of the state, the factors creating poverty, unemployment and other socio-economic challenges are not fundamentally altered. Highlights of these data include:

- In 1990, 27% of Lawrence's population lived in poverty, in comparison to 8.9% poverty statewide.
- In 1990, Lawrence residents had the lowest per-capita and family income in the Commonwealth.
- In 1990, the per-capita median income of Lawrence residents was 56% of the state per capita income, or \$9,686 versus \$17,224.<sup>29</sup> Family and household median incomes were only marginally better, at approximately 60% of state income levels.
- In 1990, the Lawrence population was 41% Latino. State population forecasts estimate that the 1998 Latino population is approximately 70%,<sup>30</sup> though anecdotal evidence suggests that immigration has increased since these estimates were made, so the actual percentage may be even larger.<sup>31</sup> A growing Latino population does not necessarily indicate economic need. However, a number of demographics associated with immigrant and Latino status – lower average earnings, lower educational attainment, lower levels of English fluency and limited access to established hiring networks – suggest that many of these residents may need assistance securing quality work.<sup>32</sup>

---

<sup>29</sup> Ibid. 1990 Census.

<sup>30</sup> Massachusetts Population Projections. *Massachusetts Institute for Social and Economic Research (MISER)*. Amherst, MA: University of Massachusetts at Amherst, Fall 1998.

<sup>31</sup> For example, the public school system is now 90% Latino. (*Source: Lawrence Public Education Data, 1996*)

<sup>32</sup> Ibid. 1990 Census.

- Despite historically low unemployment across the state, Lawrence consistently demonstrates unemployment rates two to three times state levels. The result is an unemployment rate that, in the best of times, would be troubling for any municipality. For example, in the third quarter of 1998 Lawrence had an unemployment rate of 9.3% compared to Massachusetts' rate of 3.4%.<sup>33</sup>



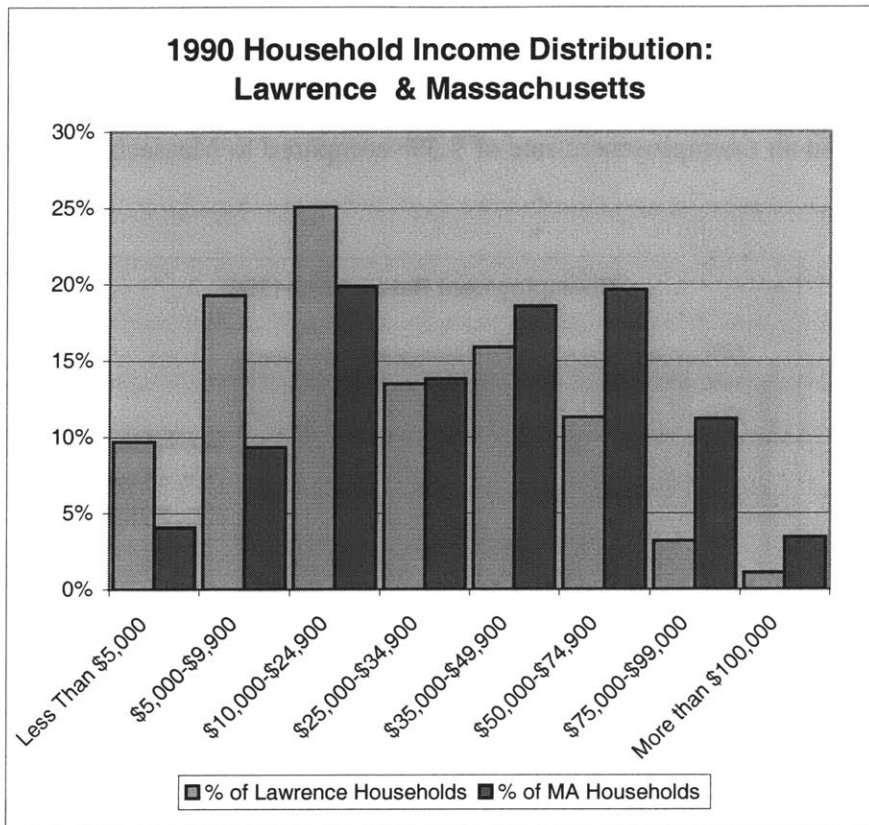
The majority of poverty in Lawrence is working poverty. By “working poverty” I refer to people working full time at below the wage level necessary to support a family.<sup>34</sup> In 1990, over 90% of families in Lawrence were not primarily dependent on public assistance,<sup>35</sup> but the majority had fairly low incomes, between \$5,000 and \$25,000 per year, suggesting the prevalence of low-wage work (median family income for a family of four Massachusetts in 1990 was \$44,336). To give the reader a sense of what this means for family income in 1998 dollars, I have inflated this income distribution by statewide income growth over the past eight years.<sup>36</sup> Using this very rough methodology, we see that approximately 54% of the Lawrence population

<sup>33</sup> Commonwealth of Massachusetts, Division of Employment and Training. *Local Area Unemployment Statistics: Monthly File, 1998*. Boston: Division of Employment and Training. Dec. 1998 <<http://www.detma.gov/lmi98.htm>>.

<sup>34</sup> By working poverty I wish to indicate people who are employed and meet the definition of “very low-income,” according to the definition of the Department of Housing and Urban Development, that is, making less than 50% of state median family income. “Very-low-income” level in Massachusetts in 1998 was \$27,100 per year. (Source: Office of Policy Development & Research. *FY 1998 Median Family Incomes for States, Metropolitan and Nonmetropolitan Portions of States*. Washington, DC: Department of Housing and Urban Development, 1998 <[www.huduser.gov](http://www.huduser.gov)>).

<sup>35</sup> In 1990, average household income for families receiving only public assistance income was \$4,896. (Source: Ibid. 1990 Census)

<sup>36</sup> 22% growth in Massachusetts median family income between 1989 and 1998, or 2.46%/year, based on HUD median family income statistics (Source: Ibid. Office of Policy Development & Research).



is very low-income and an additional 14% is low-income despite the fact that the vast majority depend on wages as their primary source of income.

#### 1998 Lawrence Family Income Estimates<sup>37</sup>

% of Lawrence Households by Income Category	HUD Income Categories	Estimated Annual Household Income
10%	<b>Very Low Income</b>	Less than \$5,986
29%		Less than \$12,094
54%	<b>Low Income</b>	Less than \$30,419
68%		Less than \$42,636
84%		Less than \$60,961
95%		Less than \$ 91,502
98%		Less than \$122,043
100%		More than \$122,043

<sup>37</sup> HUD defines income categories in the following way: Very low-income families earn less than 50% of the area median income, and low-income families earn less than 80% of the area median income, which was \$60,000 for a family of four in this part of Massachusetts in 1998.



## The Local Economic Base

In essence, the City of Lawrence remains an island of low-technology industry in a sea of surrounding high-tech employment. Lawrence has, in large part, failed to tap into this state and regional prosperity in two fundamental ways. First, Lawrence's local economy is substantially different from that of the surrounding region, and second, Lawrence residents do not receive the wages paid to residents of other more prosperous regions. Analyzing the local economic base, we see substantial and troubling differences between the city and the larger regional economy. While the Commonwealth and the region are closely tied to the evolving information and high-tech economies, with strengths in engineering, management, and educational services, such employers lack a presence in Lawrence. Low-technology manufacturing, despite job losses in the early 1990s, represents a much stronger presence in the Lawrence economy than in the Commonwealth<sup>38</sup>, making the City extremely vulnerable to the pressures of a competitive global economy for manufactured goods which have been causing continued job losses in the manufacturing sector.

While the service sector is growing in Lawrence, it does not offer nearly the same proportion of skilled, high-paying jobs as in other parts of the Commonwealth. Business services in the city provide predominantly low-wage, low-tech jobs such as janitorial and security services while business services in the region tend to be high-tech employers linked to the information economy.<sup>39</sup>

Occupational wage data highlight the concentration of low-wage, low-tech jobs in Lawrence, and the absence of the region's leading industries. Lawrence posts significantly lower wages than the county in many of the highest-wage and largest employment-growth industries in the region. For example, employees in the business services sector in Lawrence, the leading employment growth sector in the Commonwealth, made a mere 51% of the county average wage, and only 56% of the county average wage in Engineering, Accounting, Research, Management, and Related Services, another important growth area in the Commonwealth. Alternatively, Lawrence posts higher wages than the region in a variety of manufacturing and

---

<sup>38</sup> Borges-Mendez, Ramon. "The Use of Latino Immigrant Labor in Massachusetts Manufacturing: Evidence from Lowell, Lawrence, and Holyoke." *Latino Poverty and Economic Development in Massachusetts*. Ed. Edwin Melendez. Boston: Mauricio Gaston Institute, 1993: p 104-123.

<sup>39</sup> Ibid. Borges-Mendez and Andors, Jessica et al. *Lawrence: Laying the Groundwork for Economic Revitalization*. Cambridge, MA: Submitted to Mayor Patricia Dowling by Massachusetts Institute of Technology, Jun 1998.

personal service occupations, as well as social services, but average wages in these industries are much lower than those in regionally-strong industries.<sup>40</sup>

<b>The Difference Between City and County Wages, 1997 High Growth Industries</b>			
<b>Industry</b>	<b>Average Wages</b>		
	Essex County	Lawrence	<b>Lawrence Avg. Wage as % of County Avg. Wage</b>
Business Services	\$ 29,838	\$ 15,070	<b>51%</b>
Engineering, Accounting, Research, Management, and Related Services	\$ 63,901	\$ 35,800	<b>56%</b>
Electronic and Other Electrical Equipment and Components	\$ 49,025	\$ 30,960	<b>63%</b>
Measuring, Analyzing and Controlling Instruments	\$ 48,547	\$ 31,252	<b>64%</b>

However, Lawrence residents do not necessarily work in the city, so we cannot assume that low city wages translate into low incomes for city residents. In fact, significant evidence suggests that Lawrence residents do not, primarily, work in the city of Lawrence. In 1990, 60% of Lawrence residents worked in the surrounding region, outside of the city proper. Additionally, the 1990s have seen a proliferation of temporary employment agencies in Lawrence, local employers that supply labor to firms across the region. This evidence, when coupled with information about the low incomes of Lawrentians, seems to support observations that Lawrence residents are, in fact, a low-wage labor force for the region, an understanding shared by many Lawrence residents and professional. Unfortunately, due to disconnects between business and individual data sources, it is impossible to determine with certainty the types of firms that employ Lawrence residents or the positions which they fill.

---

<sup>40</sup> Author's Calculations based on: Massachusetts Division of Employment and Training. *Covered Employment and Wages for 1997 by Sector and Two-Digit SIC Code, Essex County and Lawrence*. Boston: Division of Employment and Training, Winter 1998 <<http://www.detma.org/lmi/es-202>>.

## **Targeting the Working Poor**

In order to develop constructive strategies to improve the quality of work and the income of Lawrence residents it is crucial to understand the role that this labor force plays in larger regional economies; different causes of Lawrence's working poverty problem suggest radically different interventions. Whether Lawrence workers are employed locally or regionally should dictate which firms employment efforts target. Furthermore, strategies should differ depending on the economic characteristics of the companies employing these workers, insofar as they have distinct needs and growth patterns. For example, employment training would look very different for low-wage, low-skill employers, than it would for firms employing people with a range of skill levels.

Again, lack of current population data impedes an unequivocal answer to this question. Insofar as there may be multiple causes of this problem, I have chosen one population – the working poor – as the primary focus for my research. For purposes of my research, “working poor” is defined as very-low-income people who are working full time, have significant work histories, and are currently employed in low- to semi-skilled jobs. This definition excludes a number of “hard to employ” groups such as people with criminal records or with no work history, who have significant barriers with work and so would require extensive and specifically-targeted support programs, in addition to as skills training.

## **The Lawrence Labor Force**

The employment skills and training needs of Lawrence residents are not the primary focus of this study. While it is crucial to understand these dynamics when planning possible labor market interventions, I do not to focus on these needs because: 1) accurate data on this topic simply does not exist at this point, a situation highlighted by the fact that the principal job training agency in the region itself does not possess these data, and 2) I posit that there is deep and broad enough need for employment skills upgrading that there would be demand for job training programs serving a variety of populations with widely different background.

The data that do exist on this topic, and observations from numerous job-training practitioners, suggest the following:

- The problem in Lawrence is not that people do not want to work, or are not suited to work, as the media sometimes suggest. Rather, the challenge facing residents is securing both remedial skills (particularly English-language skills) and more advanced occupational skills<sup>41</sup>. The 1990 U.S. Census attests to the fact that, despite widespread unemployment, the majority of Lawrence residents at that time possessed a fairly significant work history. Furthermore, many Lawrence employers are quite happy with, and remain located in Lawrence because of, the dependability and quality of the workforce<sup>42</sup>.
- Educational attainment indicators present a picture of a population that is also in significant need of adult basic education services. Specifically, in 1990, 43% of Lawrence residents over age 25 did not possess a high school degree and 47% of Lawrence residents possessed only a high school degree. In this age of increasing returns to education, and a rapidly growing supply of educated workers statewide, these statistics present a very troubling picture of Lawrentians' employment horizons.
- There is a significant need for English-as-a-Second-Language assistance: Job training and placement professionals, as well as local employers attest to the fact that a large percentage of Lawrence's workers, particularly low-wage workers, have very limited English skills, and significant problems with basic literacy.<sup>43</sup> However, it also worth noting that many Lawrence residents and professionals feel that the media overstates the percentage of people in Lawrence who cannot speak English, particularly given the significant portion of the immigrant community which has lived in Lawrence between ten and thirty years.
- There is a need for services to support single parents: 1990 Census data also indicate that Lawrence has a very high prevalence of single mothers with children under the age of 18. In fact, 44% of people with children in Lawrence are single mothers, compared to 19% in the Commonwealth. This fact suggests that childcare is likely to be a very important issue for Lawrence workers, an observation upheld by many job-training and social-services professionals.<sup>44</sup>

---

<sup>41</sup> Interviews with Ross Comeau, Senior Employment Planner, and Peter Vanier, Executive Director, Lower Merrimack Valley Regional Employment Board, Winter 1998.

<sup>42</sup> 22 Interviews with Lawrence Employers, conducted by Author, Spring 1998.

<sup>43</sup> In 1990, when 41% of the population was of Hispanic heritage, 35% of the population was linguistically isolated. Estimates put current Latino population at 70%, suggesting a rate of linguistic isolation in the realm of 50-65%. (Source: Ibid. 1990 US Census).

<sup>44</sup> Ibid., 1990 US Census.

- A significant portion of Lawrentians' have limited access to transportation: While difficult to tease out using Census statistics, anecdotally many professionals and residents of Lawrence acknowledge that limited access to transportation is a tremendously issue for many of the working poor in the city. Many must take jobs that they can walk to, and twice as many people carpool to work or take taxis than they do in the rest of the state. A widely acknowledged problem, important in this context, is that the public transit system (which is fairly good for a small city), is not connected with other cities in the region (a situation that is fairly common in cities across the nation), making intercity travel quite difficult and time-consuming. . For example, officials at the Regional Employment Board cite the situation of people working in neighboring Andover, which has a fair amount of employment opportunity and is located only 3.5 miles away from the center of Lawrence. For Lawrence workers, getting to Andover can often represent a 1 ½ hour commute by public transportation, because it requires taking three separate buses. Needless to say, this trip is even more difficult if people work non-traditional hours. Another testament to this problem is that employers often locate in Lawrence to be within walking distance of a large and inexpensive labor force, understanding the competitive advantage this gives them in hiring.<sup>45</sup>

## **Conclusion**

Lawrence has not benefited proportionally from the significant economic growth of the surrounding region. This problem is has spatial elements: local businesses do not offer well-paying job opportunities, and local residents seem to serve primarily as low-wage labor for the surrounding region, failing to access the higher paying jobs created by regional growth industries. However, the problems of low-wage employment is also related to obstacles facing the Lawrence workforce, particularly limited education, and limited English proficiency, though not problems with the desire to work or basic work skills, such as dependability.

---

<sup>45</sup> Interview with Bob Luongo, Director of Economic Development, City of Lawrence, Winter 1998.



## **CHAPTER 3**

### **METHODOLOGY**

---

As stated previously, any strategy to improve the quality of work for Lawrence residents must be grounded in a firm understanding of employment in the region. To think constructively about finding good jobs for Lawrence residents, it is crucial to understand where living-wage jobs exist, what it takes to be hired, and how people are recruited. The best source of information on this topic is the people responsible for hiring. To this end, I conducted a series of interviews with directors of human resource departments at firms across the region, which were intended to provide an in-depth qualitative understanding of trends in the regional non-college labor market.

Before outlining my findings in the following chapter, I want to discuss in more detail my methodology. Specifically, I outline how this research was conducted, who participated, how they reflect the composition of regional employers, and some of the biases that may be inherent in the design and implementation of the study.

I will state at the outset that the qualitative data derived from this research are an order of magnitude better than the quantitative data. However, I believe that it is important to draw quantitative implications nonetheless. Also the findings, as the reader will see in the following section, are significant for developing a strategy for the working poor in Lawrence, even if my projections overstate the existence of living-wage jobs by an order of two to three times.

#### **Interview Process**

My primary research consisted of interviews with Human Resources Directors at firms in the business services and high-technology manufacturing sectors. In total, I conducted approximately 30 hours of primarily telephone interviews with 22 firms, in addition to interviews with approximately 17 regional economists, trade association executives and members of the job training community. Employer contacts were chosen from Dun & Bradstreet's Massachusetts Business Directory. Together, these firms hold approximately 10,005 jobs in the Northeast region, which comprises 7.3% of all employment in these sectors.

These interviews were designed to help the author understand:

- The products and services sold by the firms;
- The quantity of non-college employees being hired;
- The job responsibilities of non-college workers;
- Entry level wages and benefits;
- Training and experience requirements for these positions;
- Whether or not employers find it difficult to hire for these positions, and if so, why<sup>46</sup>;
- Annual turnover of employees in these positions;
- Training provided by the employer to newly hired employees;
- Recruitment mechanisms;
- Use of temporary help agencies (hereafter temp firms) and the nature of their involvement in hiring and staffing;
- Key trends affecting hiring for these positions over the past few years and into the near future; and
- Whether employers believe that training or education could increase the prospects of applicants for these positions and if so, what training would be required.

For those interested in further detail, a sample questionnaire can be found in Appendix Two.

There are a number of relevant areas that I was unable to address in my interviews. Of particular concern may be my decision not to ask directly whether firms employ Lawrence residents. This decision was made because, in my first few interviews inquiring directly about Lawrence residents seemed to lead respondents to focus their answers on a particular population (seemingly, one which is low-skilled and cannot speak English), which does not accurately represent the job seekers with which I am concerned. In the interest of getting full information on other topics, I chose to broach this subject only indirectly, by inquiring into the demographic and educational characteristics of employees.

Due to time constraints, I also felt it necessary to accept certain assumptions made by the human resources directors I interviewed, which other researchers might reasonably choose to

---

<sup>46</sup> Note: The concept of employment shortages is problematic. Neo-classical economists posit that if wages are set so that demand for workers equals their supply, there will not be significant, long-lasting shortages of workers. As a result, I measured “difficulty” in hiring workers by the following proxies: excessive search time, a recent history of having to significantly raise wages to attract qualified workers, and a history of increasing recruitment bonuses.



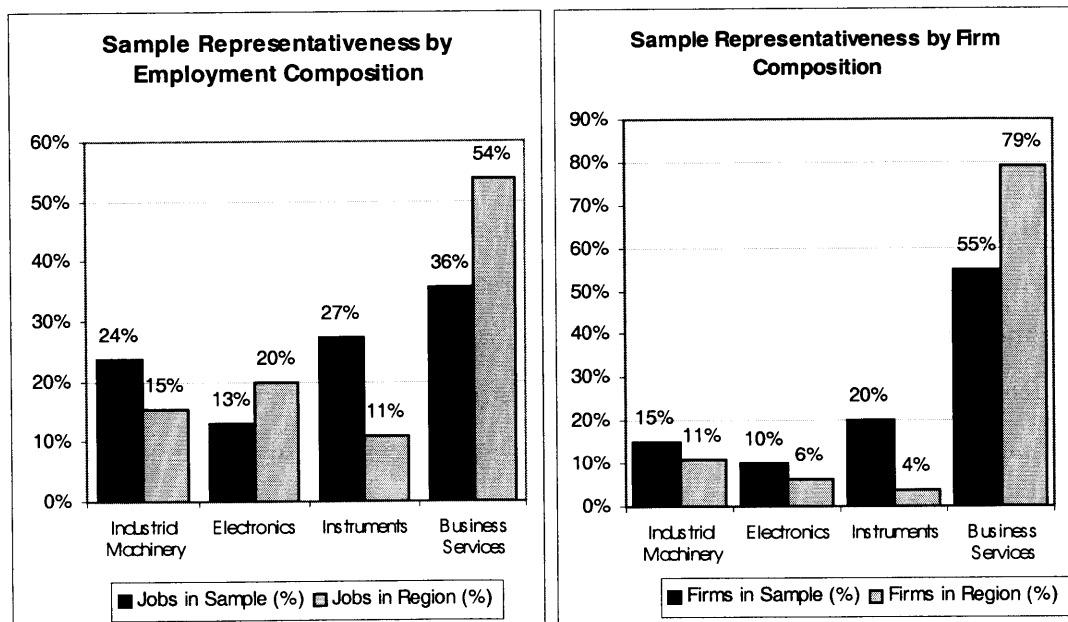
question. For example, I chose to accept the assertion that jobs which require a bachelor's degree cannot be performed by non-college graduates. However, in other situations, another researcher might wish to delve more deeply into the specifics of the job responsibilities before accepting such an assertion.

### How Well Does This Sample Represent Regional Employment?

Because only approximately 30% of employers contacted returned my calls, and only approximately 15% ultimately participated in interviews, self-selection strongly influenced the composition of the sample. Nonetheless, the sample seems fairly representative of both the composition of firms and the composition of employment in high-tech manufacturing (composed of SIC 35: Industrial Machinery; SIC 36: Electronic and Electrical Equipment; and SIC 38: Instruments and Related Products) and business services (SIC 73).

The following charts demonstrate how my sample corresponds to employment in the region. Briefly, they show that the sample will tend to:

- Slightly overstate both the employment and the number of firms in industrial machinery and equipment.
- Slightly overstate the number of firms, but understate the employment in electrical equipment manufacturing.
- Significantly overstate both firms and employment in instruments manufacturing.
- Significantly understate both employment and firms in business services.



## **Research Biases**

In choosing which firms to target, it was necessary to make some crucial choices, all of which would present drawbacks for my final outcomes. These choices, and the possible biases that they are outlined below.

### **Geographic Focus**

Because my primary concern is employment opportunities for people living in Lawrence, I chose as my geographical focus all areas that are “commutable-to” from Lawrence, by which I mean within a 15-mile radius of Lawrence. All of these areas represent a relatively short commute by car from Lawrence, but many would be a near-impossible commute by public transportation. As mentioned in the previous chapter, this may pose a severe obstacle to employment for the unusually high proportion of people in Lawrence who do not own cars.

### **Firm Size**

In order to get information about the highest number of jobs through my interviews, I chose to focus on relatively large employers, that is, firms employing more than 100 people. As it became clear in survey implementation, this creates significant bias in my results. On average, regional firms in these four industries are on average ten times smaller than the firms in my sample (perhaps due to the fact that larger firms have more human resources staff). This bias is robust across all industrial areas, though it is particularly severe in the fields of industrial machinery and business services. Ultimately, I believe the choice is justified by the number of jobs (over 10,000) which I was able to examine with relatively few interviews, but it is important to note the significant impact which this may have on my findings.

There are two ways to view this bias toward large firms. First, many job training programs choose to target large firms, because you can train more people for the same unit of effort in teaching or preparation, and because it is difficult to gear training programs to multiple firms with different production processes. However, there are also a number of hiring and staffing problems specific to small firms that my analysis is likely to overlook.

<b>Firm Size: Sample Compared to Region</b>			
<b>Industrial Sector</b>	<b>Average Sample Firm Size</b>	<b>Average Regional Firm Size</b>	<b>Sample Firm Size Compared to Region Firm Size</b>
SIC 35: Industrial Machinery	793	42	<b>19x</b>
SIC 36: Electronic & Electrical Equipment	660	96	<b>7x</b>
SIC 38: Instruments & Related Products	683	87	<b>8x</b>
SIC 73: Business Services	325	20	<b>16x</b>
Average	615	61	<b>10x</b>

### **Self Selection Bias**

Another type of bias worth discussion is self-selection bias. Approximately 20% of all firms that I contacted returned my calls, and ultimately, I only interviewed 10% of all firms contacted. The employers who selected to participate, thus, may not represent a random sample. However, it is unclear how this affects the results of my research. Perhaps firms experiencing difficulty locating qualified non-college workers were more likely to participate in the study because they wanted to communicate the difficulties they are experiencing. Alternatively, perhaps those firms experiencing the most severe shortages did not have time to participate.

### **Dependence on Self Reporting**

An additional possible in study design is my reliance on the firms' candor in reporting of wages, positions, work conditions and amount of employment they provide to non-college graduates. Unfortunately, there are few ways to confirm the reports of human resources directors on this front, due to limited, public, firm-level data. All human resources directors were informed of that the study was concerned with living-wage work in the new Massachusetts economy, and so may have been motivated to overrepresent their role as high-quality employers of this population.

### **Effects of the Business Cycle**

As many people – economists, laypeople and employers – were quick to point out, employment conditions are fairly unusual in Massachusetts at the current moment, due to historically low unemployment rates. The result of this tight labor market (though it is, by all measures, less tight for people lacking a college degree) is that workers may be receiving higher

pay and/or better positions for the same skills than they would in a weaker economy. Thus, it is reasonable to expect that the picture of living-wage employment presented through this research is brighter, in terms of wages and job opportunities, than it has been or will be in the future. However, it would be prohibitively time consuming, within the confines of this study, to develop mechanisms for controlling for changes in employment as the business cycle fluctuates.

## **Employment Projections**

A final, serious problem which may result in overstating the number of living-wage jobs in the region relates to my method of creating employment projections. As mentioned earlier, I believe that this is an important exercise, despite being fraught with quantitative danger and inaccuracy. To which end, I believe it is important to point out the assumptions on which my projections are based, which include:

- That all non-college jobs at firms offering a living-wage employment for more than 10% of the workforce, are, in fact, living-wage jobs. This assumption probably creates overstatement in my results, since intuitively one suspects that firms that offer entry-level, living-wage job opportunities may also offer a portion of low-wage, low-skill jobs. However, it was necessary to make this assumption in order to pursue other forms of inquiry.
- Applying sample averages to the regional workforce assumes that the sample is representative of this workforce, despite the types of error already noted. Thus, if living-wage job opportunity is overstated in the sample, it will also be overstated in the region.

## CHAPTER 4

### CRITERIA FOR LIVING-WAGE JOBS AND HIGH-QUALITY WORK

---

As mentioned previously, the subject of this research is living-wage jobs to people who lack four-year college degrees. What constitutes a living-wage job? And why is it important to use this standard rather than more common, official poverty measures?

#### **Drawbacks of the Official Poverty Standard for Measuring Quality of Life**

The official poverty threshold was established by the U.S. Bureau of the Census in 1967, and the federal definition of poverty has not changed significantly since (except for annual increases to account for inflation). The poverty threshold represents the cost of a nutritionally acceptable diet multiplied by three – since families are estimated to spend a maximum of one third of their income on food – adjusted for family size.

In recent years, this measure has become the target of much criticism among researchers and public policy makers who note a number of ways in which a poverty level income does not represent the income necessary to support a family. Among the most convincing criticisms are:<sup>47</sup>

- ***The official poverty measure does not account for changing consumption patterns:*** For example, costly technologies now viewed as essential to the lives of modern Americans, such as cars and washing machines, have not been incorporated into the poverty standard.
- ***The federal poverty measure ignores the costs of earning income and related changes in family lifestyle:*** For example, as two-earner families have become increasingly common, the official poverty threshold has not accounted for new types of items and services which families must purchase, such as childcare.
- ***The official poverty measure does not account for regional variation:*** The same poverty standard is applied across the country, in North and South, urban and rural areas, despite widely different wages and costs across regions.

---

<sup>47</sup> Various Articles, University of Wisconsin-Madison, Institute for Research on Poverty, *Focus: Revising the Poverty Measure*, Volume 19, Number 2, Spring 1998.

- ***The official poverty measure does not account for family composition:*** While the poverty rate is adjusted for family size, it does not take into account the different costs of supporting infant or teenage children, both of which influence the minimum necessary family income.

In short, to say that a family does not live in poverty does not indicate that they earn enough to support themselves to a decent standard of living in today's America. For example, a single earner making the Massachusetts minimum wage of \$5.25 per hour would earn an annual income of \$10,920 before tax credits, and \$14,107 after tax credits<sup>48</sup> – not nearly enough to support children or guarantee a decent quality of life in a city such as Boston in which the HUD-Defined Fair Market Rent for a family of three is \$10,872.<sup>49</sup>

### **The Living Wage: Toward a Better Standard**

Under the premise that two incomes from full-time work should be sufficient to support a family of four, I focus on identifying living-wage jobs. For purposes of calculating this wage, I base my criteria on those established in the 1998 Self-Sufficiency Standard for Massachusetts, published by Wider Opportunities for Women. Important attributes of this standard include:

- It assumes that all adults work full time, and therefore includes costs associated with work, such as childcare and transportation.
- It differentiates costs for children by age, so that, for example, health care costs are slightly higher for older children, and child-care costs are higher for children too young to attend school.
- It differentiates costs by region, based on indexes of housing and food costs within Massachusetts.
- It includes the impact of taxes and tax credits, such as the Earned Income Tax Credit and the Child Care Tax Credit; and
- It calculates necessary wages based on family size, age and number of earners.

According to these calculations, applied to the cost of living in the Lawrence area, the Self-Sufficiency Standard lays out a range of self-sufficiency wages for Lawrence residents, (see

---

<sup>48</sup> Pearce, Diana, et al. *The Self Sufficiency Standard for Massachusetts*. Boston: Wider Opportunities for Women, Sept. 1998.

chart on following page). Given that the “living-wage” rate varies according to family size, in order to derive a single standard, I make the generous assumption that families are composed of two children and two working adults. In this case, each adult would, according to this standard, need to earn \$11.46, plus health benefits, to support a family (not amassing any savings for college or major purchases, etc.). For purposes of this research, this wage should be used as a guideline for judging wage levels, rather than a strict criteria. As a result, I assume that jobs paying in the range of \$10-\$12/hour and above are “living-wage jobs.”

Throughout this thesis I have used the term “high-quality work” as a phrase meant to capture the concept that wages are not the only factor in the quality of employment. High-quality work, while certainly including living-wage standards, is also meant to imply that:

- Workers receive health benefits.
- There is a reasonable employment stability.
- There are reasonable opportunities to increase wages and responsibility either through internal or inter-firm advancement.

---

<sup>49</sup> U.S. Department of Housing and Urban Development. *HOME Program Rents: State of Massachusetts, February 1999*, Washington, D.C.: U.S. Department of Housing and Urban Development, Feb. 1999  
<<http://www.hud.gov:80/cpd/home/limits/rent/rnt-ma.pdf>>.





**Self Sufficiency Standard for the Lawrence Area, 1997**

Monthly Costs	Adult	Adult + preschooler	Adult + infant + preschooler	Adult + preschooler + schoolage	Adult + schoolage + teenager	Adult + infant + preschooler + schoolage	2 Adults + infant + preschooler	2 Adults + preschooler + schoolage
Housing	\$ 537	\$ 675	\$ 675	\$ 675	\$ 675	\$ 843	\$ 675	\$ 675
Child Care	\$ -	\$ 614	\$ 1,353	\$ 944	\$ 330	\$ 1,683	\$ 1,353	\$ 944
Food	\$ 157	\$ 238	\$ 310	\$ 355	\$ 409	\$ 416	\$ 444	\$ 488
Transportation	\$ 113	\$ 117	\$ 117	\$ 117	\$ 117	\$ 117	\$ 227	\$ 227
Health Care	\$ 89	\$ 163	\$ 204	\$ 183	\$ 209	\$ 224	\$ 256	\$ 235
Miscellaneous	\$ 90	\$ 181	\$ 266	\$ 227	\$ 174	\$ 328	\$ 295	\$ 257
Taxes	\$ 239	\$ 513	\$ 806	\$ 634	\$ 407	\$ 1,032	\$ 863	\$ 693
Earned Income Tax Credit (-)	\$ -	\$ -	\$ -	\$ -	\$ (49)	\$ -	\$ -	\$ -
Child Care Tax Credit (-)	\$ -	\$ (40)	\$ (80)	\$ (80)	\$ (42)	\$ (80)	\$ (80)	\$ (80)
<b>Monthly Self-Sufficiency Wage</b>	<b>\$ 1,225</b>	<b>\$ 2,461</b>	<b>\$ 3,651</b>	<b>\$ 3,055</b>	<b>\$ 2,230</b>	<b>\$ 4,563</b>	<b>\$ 4,033</b>	<b>\$ 3,439</b>
<b>Hourly Self-Sufficiency Wage</b>	<b>\$ 6.96</b>	<b>\$ 13.99</b>	<b>\$ 20.74</b>	<b>\$ 17.37</b>	<b>\$ 12.67</b>	<b>\$ 25.93</b>	<b>\$ 11.46</b>	<b>\$ 9.77</b>
						per adult	per adult	

Source: Pearce, Diana, et. Al. The Self Sufficiency Standard for Massachusetts, September, 1998, Wider Opportunities for Women, Washington, DC.



## **CHAPTER 5**

### **KEY FINDINGS**

---

At first glance, the experience of Lawrence workers in the late 1990s would seem to suggest that the cards are stacked against less-skilled workers in Massachusetts' high technology economy. Despite being surrounded on many sides by high-wage, high-technology development, Lawrence continues to have a high concentration of low-skilled jobs and low-wage workers.

It is clear that, on the whole, job growth in high-technology development heightens the demand for well-educated workers relative to lower-skill workers.<sup>50</sup> The need for more college-educated workers with technical degrees created by these industries has begun to be recognized and has entered into the public policy dialogue.

While jobs strategies focused on producing highly-skilled professionals are a necessary part of economic planning for the Commonwealth, strategies such as these are generally long-term and targeted toward a relatively young, college-bound population. What can be done to help the part of the state's population that is unlikely to be reached by these efforts, such as older workers? What can be done in the shorter run for working families who do not earn the wage necessary to fully support a family?

My research suggests the high-technology economy is, in fact, creating a niche of living-wage jobs for people who do not have college degrees. These jobs share certain attributes that we should take into account when considering job interventions on behalf of the working poor. The key findings, to be examined in more depth later in this chapter and borne out in brief firm profiles, are:

- ***The highest proportion of living-wage jobs seems to be found in high technology manufacturing.***
- ***The jobs in high technology manufacturing which offer the highest wages to non-college workers are those jobs that are most complex, and require the most technical aptitude, flexibility and/or judgement of their workers. Specifically, this seems to create a niche for electro-mechanical and computer technicians in local manufacturing industry.***

---

<sup>50</sup> Ibid. Massachusetts Technology Collaborative.

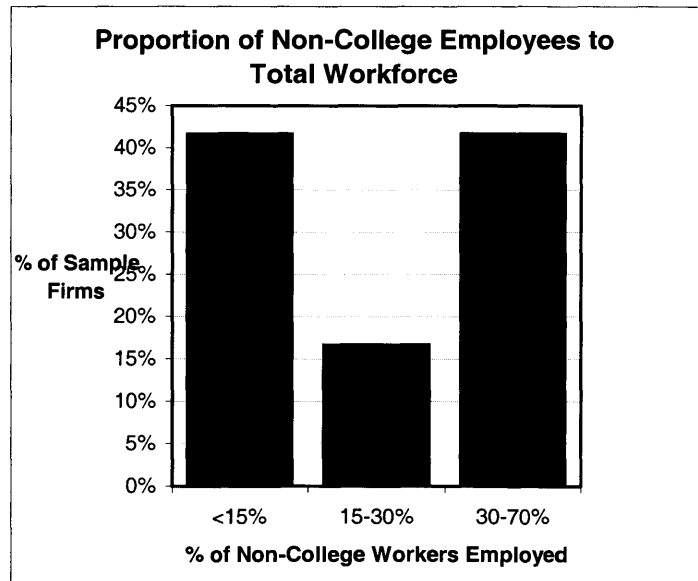
- *In many living-wage firms, there is a fairly high premium on directly relevant work experience and aptitudes, rather than specific skills per se.*
- *Temporary staffing agencies are a major source of recruitment for firms experiencing shortages of qualified non-college workers.*
- *The firms which are not experiencing shortages of qualified workers by and large recruit workers through methods that would tend to disadvantage Lawrence residents.*

**Finding:** The high-tech economy contains a niche of direct, living-wage employment for non-college workers.

**Implication:** There may be as many as 1,800 annual non-college living-wage job openings within 15 miles of Lawrence each year.

Despite widely held perceptions about the deteriorating quality of work for people without college degrees, my research suggests that there is still a significant pool of good jobs to be had for this population in the region. At the very least, the high-tech manufacturing and business services sectors continue to provide significant (though perhaps not sufficient) living-wage job opportunities for non-college workers in Massachusetts.

As mentioned in the previous chapter, this sample represents over 10,000 jobs in the three manufacturing sectors (SIC 36: Electronic & Electrical Equipment, SIC 35: Industrial Machinery & Equipment, and SIC 38: Instruments and Related Products), and the business services sector (SIC 73) in the Northeast Region. Among the sample, non-college workers represent more than 30% of the total workforce, with average firm non-



college employment at a comparable 28%. In total, these firms employ approximately 2,980 workers who lack four-year college degrees.

The majority of non-college employment in these two sectors in fact pays a living-wage (or slightly less, that is, between \$9.50 and \$12/hour), according to the standards outlined in the previous chapter. Of the firms interviewed who employ non-college workers, 46% pay \$12/hour or more, with benefits, for entry-level positions for non-college workers. This translates into roughly \$24,600 yearly before tax income, which compares favorably to the living-wage outlined in the previous chapter. An additional 23% pay between \$10 and \$12/hour with benefits for entry level work. This translates into between \$21,000 and \$24,600 before taxes, which would represent a significant increase in income for the large portion of Lawrence residents with high-school degrees earning less than \$17,000/year. Thus, living-wage non-college jobs represent 21% of all jobs (regardless of educational background) held by these firms.

At a conservative annual turnover rate of 8%,<sup>51</sup> this level of employment translates into 165 non-college job openings per year in the sample alone. (For additional detail on employment opportunity by industry sectors, see graph below).

The primary purpose of this research is to give the author a qualitative sense of employment trends and requirements in the above-mentioned sectors. As mentioned in the methodology chapter, I do not claim that these results can be used to compose reliable estimates of employment opportunity in these sectors across the region. However, I do think these figures can be important indicators of trends and directions so that, despite their statistical inadequacy, it is important to extrapolate them to regional employment. If this is done, applying percentages of living-wage employment (by SIC Code to capture differences across industry sectors) to total regional employment (also by SIC Code) the findings are striking.

In short, we find that there may be as many as 21,170 living-wage job opportunities in these three sectors in the region (which together represent over 137,000 jobs). At an annual turnover of 8%, this may mean that the over 4,100 regional employers in these sectors are hiring 1,793 people for living-wage jobs each year. This number is fairly significant, particularly given that it does not represent all employment, but only a few sub-sectors, and may represent an

---

<sup>51</sup> Most firms interviewed cited annual turnover rates of 8-10%. One outlying firm, with an annual turnover of 65%, has been eliminated from this estimate.

important opportunity for a jobs intervention that could train and match a few hundred Lawrence residents with these jobs each year.

**Employment Findings for Sample Firms by Industrial Sector**

	Total Emp.	Total Non College Emp.	Avg. Non College Emp. Per Firm	Avg. Non College Emp. Across Sample	Total Living-Wage Jobs	Avg. Living-Wage As % of Total Emp.	% Non College Jobs Which Pay Living wage	Annual Living-wage Job Openings @ 8% Turnover
Total	10,005	2,980	28%	30%	2,059	21%	69%	165
SIC 35: Industrial Machinery	2,380	425	11%	18%	425	18%	100%	34
SIC 36: Electronic & Electrical Equip.	1,320	313	38%	24%	313	24%	100%	25
SIC 38: Instruments	2,730	1,445	64%	53%	1,321	48%	91%	106
SIC 73: Business Services	3,575	797	17%	22%	234	7%	29%	19

What is perhaps most striking about the different living-wage employment rates within industries is the prominence of Instruments and Related Products as a living-wage employer. This sector is relatively small compared to the other two manufacturing sectors (2.28% of regional employment vs. 4.10% and 3.15% respectively) and has a very low growth rate compared to all other industries in the sample (-3.49% from 1995 to 1997).

**Employment Projections for Regional Industry**  
(based on employment findings above)

Industrial Sector	Total Jobs In Region	Projected Non College Jobs	Projected Non College Living-wage Jobs	Projected Annual Non College Living-wage Job Opportunities @ 8% Turnover
Total	137,166	34,680	22,410	1,793
SIC 35: Industrial Machinery	21,029	3,755	3,755	300
SIC 36: Electronic & Electrical Equip.	27,335	6,489	6,489	519
SIC 38: Instruments	15,173	8,028	7,339	587
SIC 73: Business Services	73,629	16,408	4,827	386

This finding suggests important directions for further research into less skilled employment in instruments manufacturing, but should be treated with caution for methodological as well as substantive reasons. Substantively, the quantity of living-wage employment opportunities in this field may imply a number of things: perhaps absolute employment in this sector is declining while semi-skilled work increases or, alternatively, perhaps all work in this sector is declining and less-skilled work is for some reason slowest to respond. Either would have distinct implications for using this sector for an employment intervention. Methodologically, my findings may substantially overstate employment opportunities because of the small size of the sample.

**Finding:** Of the two sectors examined – High-Tech Manufacturing and Business Services – the majority of high-quality, non-college employment can be found in manufacturing occupations. There seem to be few living-wage opportunities in the business service sector.

**Implication:** *Job training programs should target high-technology manufacturing.*

My interviews seem to indicate that the majority of high-quality employment opportunities for non-college workers are in manufacturing jobs. For example, all of the firms interviewed with a significant (more than 10%) non-college workforce employ those workers in manufacturing. The fact that non-college jobs continue to be predominantly in manufacturing is a bit surprising given the proliferation of service sector jobs in the region. This fact may be obscured when using standard economic indicators to examine the regional economy because, in many cases the manufacturing jobs I encountered are housed in firms that are formally classified as “service” businesses. For example, one business service firm in the sample splits its operations between service provision (such as software programming) and manufacturing of related devices (such as software systems). Another example of the pitfalls of using SIC Code information to project changes in the workforce is that temporary firms are always classified as service firms, despite the fact that many temp firms in MA place the majority of their workers into manufacturing situations.

The flip side of this finding is that, despite very high employment in the region, the business services sector seems to offer a relatively low proportion of living-wage job opportunities (as demonstrated above, only 7% of all jobs and 29% of non-college jobs pay

living wages, significantly lower than any manufacturing sector). This finding is upheld qualitatively by my interviews, which reveal significant segmentation by skill and wage at a firm level in the business services sector. Two examples serve to illustrate this trend:

- a) A number of computer and data processing firms provide software and computer technical assistance to large regional corporations, but employ almost no people without college degrees.
- b) Alternatively, subcontractors such as security providers employ a vast majority of non-degreed workers who provide security to nearby corporations, but the wages are fairly low.

Nonetheless, due to the sheer numbers of people employed in the business services sector, and the tremendously high 1995-97 growth rate of 23.14% even a low proportion of living-wage non-college jobs creates more jobs annually than, for example, smaller sectors with higher proportions of living-wage jobs.

My findings about the business services sector seem to suggest an important area for further research, insofar as the dramatic growth of this sector may have troubling implications for the employment of people without college degrees.

**Finding:** Higher wages for entry-level positions are correlated with non-traditional manufacturing work.

**Implication:** Target complex electro-mechanical assembly and technician positions.

Why would high technology manufacturers pay living wages to any segment of their non-college workforce, given the relative abundance of people lacking college degrees? First we should look at the nature of the jobs which are well paying, which seem to be primarily in the following areas: electronics assemblers and technicians, and secondarily computer operators. Perhaps unsurprisingly, these seem to be the most complex of the range of non-college positions that I encountered in my research (see cases in text boxes for further detail). Specifically, high quality employment in these sectors seems to be most likely in:

1. ***Jobs that require workers to monitor and troubleshoot high-technology production systems***, insofar as employers feel that this requires a higher level of mechanical and technical skill, as well as responsibility and flexibility. For example, in discussing with one temporary staffing agency the difference between assemblers positions (which pay on



average \$9-10/hour) and technician positions (which pay \$12-\$14/hour) – a differential that held in a number of other manufacturing firms as well – the recruiter noted that the fundamental difference was the ability to “identify and fix bugs.” He noted that in some cases the job title is a bit fungible – for example, he encounters a number of “assembly technician” jobs, which require workers to be able to identify bugs in the product but not be able to fix them – but it is basically organized around the concept that workers are capable of preventing faulty products from moving through the production cycle and out to the customer.

2. ***Manufacturing jobs for products with short life cycles:*** short product life cycles mean constant change in the workplace, which can be encountered in any variety of industries, including firms that make customized products, such as laboratory instruments, and/or that serve a quickly changing market (such as software firms). Constant change in the workplace makes it necessary for employers to hire workers who: a) are capable of learning, including the ability to read, critically reason, and do basic mathematical calculations, and b) have some understanding of the concepts underlying the production process, which can guide them as their work responsibilities change.

For example, one bio-technical supply firm provides processing instruments to laboratories in the region. Because these instruments must be customized to the specific use of the lab (according to the process and materials they employ), they are made in small lots, which change often. As a result, this human resources director needs workers who are capable of reading the specifications he receives from clients and re-calibrating their machines on a regular basis.

3. ***Jobs based on the use of complex, highly firm specific technologies and/or very specialized skills:*** According to human resources directors, there are a number of jobs which require an “intuitive feel” for unusual and complex technologies which they believe job seekers cannot develop solely through training. For jobs such as these, firms are in the difficult position of having to locate workers with direct experience in the technologies that they use, which is often quite rare. As a result, the labor market available to these firms is quite narrow, and necessitates a higher wage in order to attract qualified candidates. In many cases, this translates into a wage premium being placed on job experience in specific and relatively narrow fields, a finding that seemed robust across high-technology firms.

For example, the human resources director at one manufacturer of telecommunications equipment states that college degrees are almost irrelevant in her hiring decisions. She, and company management, feels that they can only hire people who have one to two years experience working directly with their product because the technology used is new and extremely complex. They believe that the skills needed are so specialized that they cannot be effectively taught, and must be learned through use.

Formally, most of the living-wage jobs identified in this study are classified as electronic and bio-technical assembly or technician positions. Alternatively, the poorer quality jobs seem to be characterized primarily by the fact that the skills and judgement required are fairly standardized and slow to change. For example, a number of the lower-paying firms are engaged in types of production or service provision that cannot be automated economically. Similarly, many functions of building maintenance staff would be excessively expensive to automate at this point in technological development. For these jobs, training is easier for the firm and fewer baseline competencies are required.

## **Promising Job Descriptions for Non-College Workers**

### **Technicians**

The position of technician for computer, electronics or biotechnology firms accounts for a large portion of the higher-wage jobs available to workers who do not have college degrees. The firms interviewed attest to the difficulty in finding people with this level of skills in the external labor market and temp firms confirm that they too are experiencing fairly severe shortages of technicians.

Technician positions fall into two basic categories: manufacturing and testing. In the companies interviewed, the bulk of manufacturing technicians are responsible for monitoring and troubleshooting automated production and/or assisting in computer aided manufacturing of software and hardware. Testing technicians, on the other hand are responsible for testing products and correcting production errors, primarily in software and hardware, though secondarily in biotechnology. At many of the companies there is much overlap between the skills and attributes of trained engineers and technicians. In some cases, as one Human Resources Director indicated, the only difference between engineering and technician positions is the four - year college degree itself.

In almost all cases, technician is not an entry-level job. Firms either seek people with two years related experience from outside, or promote technicians internally from the ranks of assemblers. Generally the firms using internal promotion to fill these positions find this method effective, even in the cases that require currently employed assemblers to obtain associates degrees in technical fields in order to be promoted. In these cases, the firms encourage employees to obtain this training through full tuition reimbursement and are generally successful in using this mechanism to encourage people to upgrade their skills.

### ***Assemblers***

There seems to be a split in the requirements and corresponding wages of assembler positions. A number of firms employ fairly low-skilled assemblers for jobs requiring high levels of precision, jobs which tend to be fairly low-paid. However, a segment of firms in the electronics, computer and biotechnology fields employ electro-mechanical assemblers who receive between \$10 and \$12/hour with benefits. These firms tend either to: a) organize production in teams, thus requiring that workers be cross trained in a number of workplace functions, or b) use the assembler to monitoring highly-automated production, rather than to conduct manual assembly, such as welding or soldering.

While these seem to be good jobs, with relatively little training requirement, employers do not on the whole report any difficulty finding adequate candidates to fill their assembly openings. In

**Finding:** Living-wage firms with certain job requirements are having moderate difficulty recruiting qualified non-college employees.

**Implication:** *Some living-wage worker shortages can be filled by an appropriate job training program, particularly in firms with the complex work structures described above.*

The evidence from these interviews suggests that there may be a limited shortage of non-college workers qualified in technical fields. On the whole, employers that pay living-wages to non-college workers are not experiencing difficulty finding and retaining employees, even given the tightness of the Massachusetts labor market in early 1999. Nevertheless, approximately 20% of the firms report hiring and retaining non-college workers to be challenging. Given my estimate that firms in these sectors in the region hire more than 1,790 workers for living-wage jobs each year, this may indicate significant difficulty in filling approximately 360. They might therefore welcome the assistance of a job training program in preparing people for this work.

**Finding:** Firms report difficulty finding workers with necessary aptitudes, rather than skills per se.

**Implication:** *Shortage of necessary aptitudes implies that an effective job-training program should emphasize broad-based technically relevant education rather than the development of specific skills.*

Aside from the fact that they are high-technology manufacturers, living-wage employers who are having difficulty finding qualified non-college workers have little in common in terms of the products they produce (in this case, telecommunications software, products for the biotechnology industry and temporary staffing services serving a range of high-tech industry), and the specific responsibilities entailed in the work.

Rather, what these firms share is a need for similar aptitudes in their prospective employees. For the firms that are not temporary agencies (for which it is hard to generalize about the work requirements) these aptitudes include:

- **“High Technical Aptitude:”** The firms hiring non-college workers for living-wage jobs, particularly those experiencing difficulties securing qualified candidates, are seeking employees who have an ability to grasp the principals underlying the technologies they use, which employers termed “high technical aptitude.” Firms cite this aptitude as necessary because their products change often and their work requires troubleshooting, both of which require the worker to understand the functions of the technology used. (See Case Two in this chapter for an in-depth example.)
- **Ability to read blueprints and instructions.** Firms need their workers to conduct basic calculations and read instructions and blueprints because of frequent changes in the work. Workers must be able to read accurately process new information, according to human resources directors. While some of positions require facility with math, this is less frequent.
- **Ability to troubleshoot:** Across the board employers placed value on the ability to fix problems in production when they occur, although this is especially true for technicians who have primary responsibility for testing. This ability appears highly correlated with wages in this sample.
- **Dependability:** When asked what they seek in job applicants almost all employers (perhaps unsurprisingly) cited dependability as a key factor in the hiring decision. When asked how they identify this trait, most reported seeking applicants with long and relatively stable work histories.

**Finding:** Employers place a premium on community college training or directly applicable experience.

**Implication:** Jobs training program should, primarily, help people access community college training and, secondarily, build base of relevant experience.

If higher-wage non-college employers are seeking aptitudes rather than skills, per se: how do they screen job applicants for an aptitude? To measure job candidates’ aptitudes and technical proficiencies, the employers I spoke with all look first and foremost for one to two years of related experience. This desire on the part of employers translates into a wage premium on experience. Unfortunately for those seeking to enter these fields, many employers seem to feel that there are few training and education interventions which can be substituted for necessary

experience. Furthermore, it is not clear from my interviews where one enters this ladder, that is, what entry-level positions exist that do not require experience.

When asked what training (short of a bachelor's degree) could be substituted for direct job experience, employers most often cited associates degrees in technical fields from community colleges. The cited reason for this is that these technical degrees provide people with a broad range of supporting courses that help them understand a variety of facets of their work. Employers were particularly positive about programs that include strong coop or internship elements, and in some cases are even willing to substitute it for the two-year experience requirement, because of their difficulty finding the necessary experience at the wages they are offering. However, the ability of coop programs to help people gain access to jobs requiring experience should not be overstated – in many cases employers view it as a distant, but necessary, substitute because of the tight labor market in Massachusetts right now.

**Finding:** Temporary staffing firms are a major source of full-time recruitment for living-wage companies experiencing worker shortages, who wish to “try-before-you-buy.”

**Implication:** Job training could incorporate similar screening mechanism, without some of the drawbacks for employees using this system to locate full-time employment.

Examining how these firms recruit job applicants provides insight into their employment needs. Perhaps most striking, all of the firms which are experiencing shortages of non-college workers use temporary staffing firms as their primary source of recruitment. When asked about the services these temp firms provide, all cited the importance of being able to “try-before-you-buy.” Insofar as they value aptitudes which are not readily measured through existing standards – such as “the ability to work in teams” or “technological facility” – these firms place a premium on observing job candidates’ capacities prior to making a permanent commitment to the employee. In other words, these firms are paying a premium to learn more about their workers prior to hiring them. (However, the trend toward increasing use of temp firms for permanent recruitment is true across industries in the U.S., and is likely to be particularly true in tight labor markets. Thus, it may be a bit exaggerated to establish a causal association between work that requires technical aptitudes.)

This need is mirrored in the demand for temp company services. For example, in the case of one temporary firm interviewed for this research, approximately 30% of its business (it normally employs between 65 and 70 non-college workers at any given time) is “temp-to-perm.” The remaining 70% is “truly temporary” which is to say, workers who the firm does not have any intention of hiring permanently, who are employed to meet temporary fluctuations in demand.

**Finding:** Employee referral and Internet recruitment are the major sources of recruiting for living-wage firms not experiencing shortages of workers, a fact which would tend to disadvantage workers from Lawrence.

**Implication:** *Lawrence residents may need assistance in accessing these job opportunities.*

The use of temp firms for recruitment seems to be much less prevalent among living-wage firms not experiencing shortages of workers. In almost all cases these firms recruit primarily through employee referral programs and Internet employment advertising. One can only speculate about the reasons for this difference: temp firms may only be used by firms for which other recruitment networks are not adequate; alternatively, firms experiencing shortages may require unusually high levels of skills and aptitudes from entry-level workers.

Unfortunately for job seekers wishing to access these jobs, hiring through employee referral tends reproduce the social and demographic make-up of the workforce. In this case, because Lawrence residents are not fully tapped into social networks of employees at living-wage firms in the region, finding out about employment opportunity at these firms will be significantly more difficult.<sup>52</sup>

---

<sup>52</sup> Wilson, William Julius. *When Work Disappears: The World of the New Urban Poor*. New York: Alfred A. Knopf, 1996.

### **Case 1: Telecommunications Equipment: Regional Premiums for Experience in the High Tech Sector**

This firm is a leader in network telecommunications – including data, video and audio systems, as well as integration of telecommunications systems – and conducts manufacturing, sales and customer service for all of its products. The firm's competitive edge comes from its large market share and its ability to continually introduce new technological innovation faster than its competitors. Approximately 15% of its Massachusetts workforce of 200 is in non-degree positions, which are composed mostly of assemblers and manufacturing technicians, though secondarily of shipping and receiving personnel and administrative assistants.

Hiring is difficult across the board for this firm, not only because the industry is relatively new but also because direct experience in network communications (for example, wide area networking and large area networking) is an absolute prerequisite for employment. The two non-college positions for which recruiting experienced job applicants are assemblers and manufacturing technicians.

Assemblers, who are paid \$10-\$12 per hour with benefits, are responsible for assembly and computerized testing of telecommunications equipment. Manufacturing technicians, paid \$12-14, are responsible for troubleshooting software systems to a component level, requiring previous systems level experience with computers.

Perhaps unfortunately for the firm, the human resources director feels that there is really no type of training that can substitute for experience, thus helping job applicants improve their prospects for employment. Consequently, there are few steps this firm can take to prepare new workers for these jobs. They have started doing recruiting from private colleges and state schools, however, as well as instituting college cooperative programs that place candidates in the workplace part time while still in school. To date, the firm has not worked with community colleges, though it does not particularly object to the quality or type of education.

The firm's primary recruitment mechanism for manufacturing jobs is temporary staffing firms, which it uses for recruiting expertise and the ability to "try before you buy." Additionally, the firm has been aggressive in recruiting people laid off from other firms in the industry.



## **Case 2: Security Services: Low-wage Business Services Serving High-Tech Industry**

This firm, a leader in the security services industry, employs over 2,500 people in Massachusetts, including 250 in Northeastern Mass, and serves upper-tier corporate clients such as universities, laboratories and high-tech office parks in the Greater Boston region. This is a high-growth industry, with such firms experiencing annual growth rates in the range of 22 to 30%. Furthermore, with 65% annual turnover, it generates an abundance of job opportunities in the region. The increasing demand for these services is directly tied to the development boom along the Routes 495 and 128.

The vast majority of employees (roughly 95%) serve as uniformed security officers, with starting salaries of \$7 to \$9/hour (the most common starting salary this year is \$8.50), compensation for 60% of health benefits and no holidays or paid sick days. Employees receive 3-4% pay increases with each level of advancement, and can advance to approximately \$23,000/year in about three years. Training, such as an associates degree or military experience, increases entry-level wages by about \$.50/hour (to an average of \$9/hour, though this premium may decrease when the economy cools off), and tends to speed the rate of advancement, but does not fundamentally alter employment opportunities. Work hours are often non-traditional – including nighttime, weekends and holidays – until workers gain seniority.

The hiring criteria for entry-level security officers are fairly basic – the firm's primary concern is that applicants have a clean police record and a steady work history and that they pass credit and drug tests. Secondly, successful applicants need to speak basic English (to communicate with clients) and be able to fill out reports on suspicious activities. As security systems become more computerized, the firm also needs people with basic computer literacy. However, the firm provides training in both communications, report writing, and computers, so these abilities are not a primary concern.

This firm is having tremendous difficulty attracting qualified candidates because of current tightness of the labor market. They perceive that virtually everyone in the region who is employable has been employed, leaving them only candidates who have serious barriers to work, such as problems holding a job and/or criminal histories. The firm does not use temp services to for recruitment because, as the vice president for human resources put it “essentially, we are a temp firm.”

Interestingly, this firm is much more creative than most in its recruiting practices, perhaps out of necessity. For example, it provides van transportation to the workplace from various cities around the region for people lacking cars, and it secures approximately 30% of its hires through community recruiting, particularly through civic clubs, veterans associations and associations targeting ethnic and immigrant communities. However, it does not recruit through welfare offices or other programs targeting “disadvantaged” communities because the recruiting agents perceive that these populations are likely to have problems “dealing with work” or gaps in their employment history, causing the firm high screening costs and low applicant/hire ratios. This is the cited reason why the firm employs few people from Lawrence.

### **Case 3: Biotechnology Manufacturing: Living Wage Jobs in the High Tech Manufacturing Sector**

This firm, which employs 2,000 people in Massachusetts, in addition to its international production operations, specializes in producing materials for use in bio-technology laboratories, a number of which are centralized in and around the Boston area. Approximately 20% of its US workforce does not have a college degree, and is composed primarily of quality control and manufacturing technicians, in addition to materials handlers and administrative assistants.

This firm scrambles to find an adequate pool of job candidates, despite the fact that it hires only approximately 30 people per year. Specifically, the human resource director cites difficulty finding recruits with high technical aptitudes and necessary experience, despite paying relatively high entry level wages of \$10-12/hour plus benefits for manufacturing technicians, and \$12-14/hour for quality control technicians. He believes that most candidates with the requisite one to two years of experience in biotechnology or electronics assembly are unwilling to accept even the firm's relatively high entry-level wages.

As a result, the firm has broadened its recruitment mechanisms in recent years. It has begun to recruit directly out of community college electronics and biotechnology associates programs. Despite the lack of hands-on experience, this employer is quite satisfied with the ability of the students he receives to navigate the necessary technologies (he cites the fact that they get trained in a range of related fields, including math, basic science, and assembly and testing technology). However these programs cannot produce workers quickly enough to meet the firm's hiring needs, and he faces significant competition for graduates, who have placement rates of 95 to 100%.

In addition, the firm depends heavily on recruitment through temporary firms. The temp agency is responsible for all recruiting, testing and screening, and the firm has the opportunity to experience the quality of new employees work during a six month "try-before-you-buy-probation period." However, given the tight labor market in Massachusetts, the human resources director notes that even the temp firms are having difficulty finding qualified candidates.

#### **Case 4: Limited Non-College Employment in Computer Services Firms**

As mentioned previously, my interviews reveal relatively little non-college hiring in the burgeoning regional “computer and data processing services” field. One good example of this phenomenon is a software maintenance firm, which provides outsourcing services to regional corporations, and focuses on defect correction, testing and firm-specific software enhancement. This firm employs 125 people in Massachusetts, with annual transactions of \$31 million in 1998. This firm is a relatively new, formed in 1991, and is considered a high-growth company, which in many ways characterizes the high-technology entrepreneurship associated with Massachusetts high-tech development.

Almost all the firm’s employees have four-year college degrees with the exception of a few administrative staff. The human resources director, who is active with a regional recruitment initiative, sees this as the norm for small to midsize software firms, for the following reasons:

- 1) Smaller and startup firms like hers cannot afford to invest in training and so must hire people with relatively high skills.
- 2) Firms like hers are also very dependent on informal hiring networks that tend to limit their contact with candidates lacking college degrees.
- 3) Many of the entry level functions – such as data entry, administrative and payroll work – have been automated, eliminating less-skilled staff positions.
- 4) As a supplier of outsourcing services, their work is relatively specialized and peripheral. Therefore many related services (such as some portion of administration) are performed by the company purchasing their services rather than the outsourcing firm.



**CHAPTER 6**  
**SCAN OF THE LAWRENCE JOB TRAINING SYSTEM:**  
**AN INSTITUTIONAL ANALYSIS**

---

So far, through my research I have attempted to shed some light on: why the working poor should be an object of concern for public policy makers, the lack of access to living-wage jobs of the working poor in Lawrence, and where living-wage jobs exist in high-tech industry in the region. According to neoclassical economic theory, rational people, on the whole, will make investment decisions which will maximize their lifetime earnings (or maximize their utility, of which earnings is a primary, though not sole, component). The case of Lawrence is then somewhat of an anomaly: Lawrence workers are not making the necessary investment in skills that would allow them to access high-quality non-college jobs in the region. What is the source of this disconnect? The answers to this question will yield some important information upon which to base thoughts about a more effective training system for this population.

Given the importance of institutions in education and training, it is important to consider the institutional context in Lawrence. The purpose of this section, therefore, is to consider what structures already exist to bridge the gap between supply and demand, or between living-wage employers and workers in Lawrence. Specifically, I will use this information to consider the questions: does the current employment training system in Lawrence serve the working poor and if so, how well?

The answers to these questions should give us important insight into the reasons why working-poor Lawrentians are not currently investing in the skills that would help them access living-wage jobs. These answers also have important implications for the creation of new skills training programs, because an extensive job training system, funded by the federal government, is already in place in Lawrence. How well this system functions vis-a-vis the working poor should determine the nature of any new program: If this system is doing an adequate job, it would be wasteful to create a new and parallel system. Also, given the scarcity of public funding and the wide range of expertise necessary to create job-training programs, it is wise to fully leverage existing strengths and assets in the local environment.

In the following section, I will examine the shape and quality of services provided by the two principal adult job skills training systems in Lawrence: efforts funded by the Jobs Training Partnership Act (JTPA) of the Department of Labor, composed of a range of agencies and

training subcontractors supported through federal funding administered by the Lower Merrimack Valley Regional Employment Board, and the community college system, represented by the Lawrence campus of the Northern Essex Community College.

## **The Jobs Training Partnership Act System in Lawrence**

### **Who Does It serve? What Programs Does It provide?**

The Jobs Training Partnership Act (JTPA) system, overseen by the Lower Merrimack Valley Regional Employment Board (REB) is the primary provider of job training services to the people of the Lower Merrimack Valley. This system is supported by federal JTPA funds that it uses to provide training to approximately 1500 people per year in the fifteen cities and towns in the region.

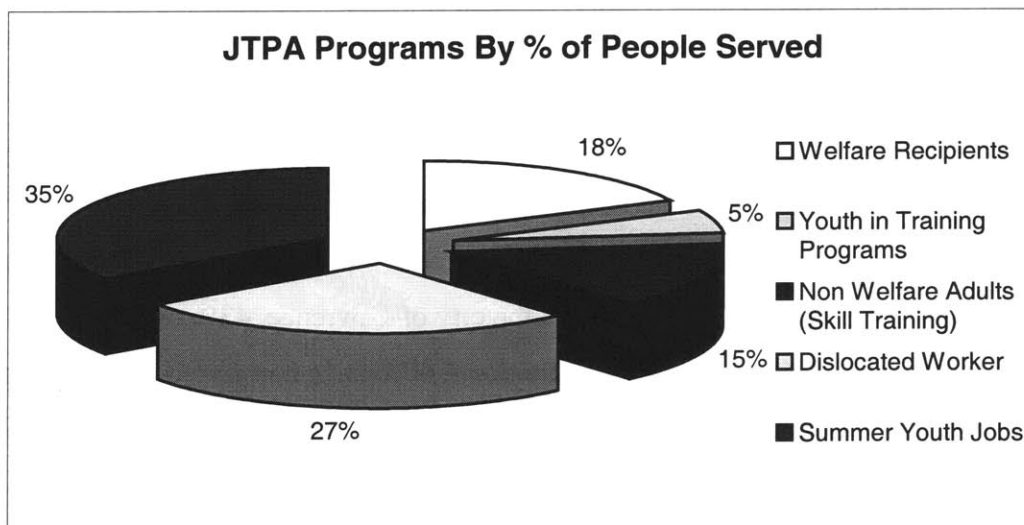
The REB offers a fairly broad range of programs, targeted both to specific job-seeking populations as well as to specific sectors of the regional employer community. Programs that are offered by the REB to job seekers include:

- ***Welfare to Work:*** Serving 18% of all job training recipients, or approximately 225 people per year, this initiative emphasizes a “work-first” model, whereby participants receive limited pre-employment training (usually for approximately 4 weeks) accompanied by aggressive job search assistance and post-placement support. To qualify for this type of training applicants must receive public assistance as their primary form of income. The program offers a four to eight week course in job readiness prior to job placement, and adult basic education and skills training only after recipients have been placed in jobs. This training lasts an average of 17 weeks.
- ***Dislocated Worker Training:*** Serving 27% of all job training recipients, or approximately 400 people annually, this program is designed to serve people laid off from their jobs due to industrial change and plant closings. This program is perhaps closest to the training necessary for the working poor, insofar as it targets people with solid work histories, and is significantly longer and more in-depth than all other JTPA training (36 weeks versus a JTPA-average of 19 weeks). However, it is not clear that this program is serving Lawrence residents. While the REB does not maintain data of the place of residents of its job-training

participants, the demographics of people participating in this program suggests that they are not likely to be Lawrence residents: 80% of participants are White, and only 13% of participants are basic skills deficient.

- **Youth Programs:** Serving 40% of all job training recipients, youth programs are composed of summer job programs (35%) and full-time training for non-college bound youth (5%).

How does the REB decide which populations to target? A perhaps unfortunate fact of the job training system across the nation is that there is relatively little funding for local priorities, such as the working poor in Lawrence. As the principal agency administering federal workforce training priorities, the REB's programmatic focus is dictated to a fair degree by the federal government, through the Department of Labor (DOL), which has the power to determine for which populations training money is made available. The REB does receive some amount of annual discretionary funds from the DOL that can be used to administer programs geared toward unique local needs. However, this discretionary funding is inadequate to create local programs of any significant scale because it is given in relatively small amounts and must be spread across a variety of programmatic efforts and agency administrative costs.



The structure of the job training system in Lawrence is only important to this research insofar as it affects the quality of programming for the working poor. Perhaps the most significant point on this topic is that the structure of the programs is fairly decentralized and diffuse: the REB administers and monitors funds and sets local priorities, and funds are then funneled to

subcontractors (based on their placement records) that provide direct training, and who are responsible for job placement, training content and relationships with employers. For those interested in additional detail on the structure of this system, please see Appendix Three.

How well does this system serve the needs of the working poor in Lawrence who would like to upgrade the quality of their work? The REB claims that Lawrence residents are its primary target group. This assertion is difficult to measure directly, because the JTPA system does not maintain data on the place of residence of job training participants. However, basing our conclusions on how well the population served by JTPA mirrors the population of the City of Lawrence, a cursory analysis indicates that Lawrence residents are fairly likely to be served by this program. For example, the educational attainment of people in the JTPA system roughly mirrors that of the City of Lawrence.<sup>53</sup>

Currently, recipients of JTPA programs demonstrate the following characteristics:

- **15% of participants have limited English speaking abilities.**<sup>54</sup> This suggests that the JTPA system is not serving a large portion of Lawrence's working poor, between 35 to 60% of whom have limited English speaking ability.
- **73% of participants are economically disadvantaged.**<sup>55</sup> This statistic does suggest that Lawrence residents are being, or could be, served by the JTPA's programs.
- **34% of all non-welfare adult participants are basic-skills deficient**, possessing less than an 8<sup>th</sup> grade proficiency level in either math or reading. (Note: this indicator is not tracked for other participating populations.) This number suggests that the population served by JTPA may not be as disadvantaged as the residents of Lawrence, in terms of basic reading and math skills. Unfortunately, data does not exist which would allow us to make this claim with certainty. However, we can say that within the city of Lawrence, 43% of people older than 25 have not completed high school, and an additional 40% have completed only high school. Thus it is fair to expect that significantly over half of these people – or 40 to 65% of the City's population – lack basic math and English skills.

---

<sup>53</sup> JTPA participants are slightly more likely to have completed high-school than city residents, but not dramatically so.

<sup>54</sup> This excludes participants in the summer jobs program, who do not receive job skills training, per se

<sup>55</sup> This percentage excludes dislocated workers, for whom income data is not tracked.



## How Well Does the JTPA System Serve the Working Poor?

Perhaps the largest shortfall which I have identified with this system is the fact that it seems to have very limited services available for low-income adults interested in upgrading their quality of work if they do not either receive public assistance or have been dislocated from their jobs. This population represents only 15% of the 1500 people trained annually, and participants come from across the labor market area's 15 towns and cities. Furthermore, no social service supports, such as childcare, transportation assistance or stipends, which would make training more accessible to low-income workers are available for participants in this program.

The gap in services for this population is also attested to by the Executive Director of the Lower Merrimack Valley REB, who expresses frustration at being unable to meet this need for training due to a lack of federal funding earmarked for this population. More often than not, he states, workers who do not fit the federally defined categories for welfare to work or dislocated worker training, are funneled directly into job placement, rather than training services. It is his best estimate that there are 3 potential clients seeking to secure these services for every one slot that the REB can make available. It is also important to note that the nature of funding for this system makes it difficult to target services specifically to local needs, such as creating strategies to combat working poverty in Lawrence, a need recognized and acknowledged by local job trainers.

Additional attributes which may reduce the effectiveness of the local JTPA-funded job training system for the working poor include:

***A reliance on anecdotal evidence about the skills needs of clients:*** Currently, the REB has no mechanism for gathering general data about the skills which the labor force and job seeking population do and do not possess, aside from the intake which is conducted with clients at the outset of their training. However, this intake speaks only to the needs of people who have formally entered the JTPA system, rather than the needs of the population/workforce as a whole. Administrators, such as the REB Executive Director, are aware of the difficulties associated with this lack of solid information, and are currently taking steps to remedy it (for example, a consultant has been hired to conduct a skills inventory of Lawrence residents in 1999). However, this lack of information does limit the system's ability to plan effective intervention strategies for the labor market area.

***Employer participation is uneven in quality and quantity:*** It is generally accepted within the literature about job training that employer participation in planning curricula and implementing training is crucial to the ability of the job training system to provide valued services to employers, and thus to secure good jobs for its participants. In fact, the REB realizes the importance of this element, and speaks amply in its promotional literature about the quality and quantity of employer participation in their programs. However, while the REB certainly has strong local employer representation on its board, and on the board of the associated Private Industry Council, it is unclear how this participation translates into higher-quality, more employer-responsive services at the training level. The only employer participation required by the REB in the actual provision of training is that training subcontractors provide letters from employers attesting to their need for workers of the type being trained by the subcontractor. While this provision would certainly seem to encourage more ongoing employer participation, it seems that this type of involvement varies greatly from subcontractor to subcontractor.

***Job placement criteria are minimal:*** While the REB realizes the importance of helping people secure high-quality jobs, the actual criteria which they use to track the success of their trainers are fairly minimal and are dictated by federal, rather than local, standards. A successful placement consists of helping a participant secure a job paying at least \$7 per hour, with benefits, and which they retain for at least 13 weeks. This wage translates into an annual before-tax income of at least \$14,560, just above the federal poverty threshold of \$12,931 for a parent with two children<sup>56</sup>, and certainly far short of a living-wage. Above and beyond these criteria (which the REB has been fairly successful at meeting) it is difficult for any of the job-training professionals I interviewed to speak knowledgeably about the quality of jobs which job-training recipients are securing.

***Shortage of English as a Second Language (ESL) Assistance:*** By all counts, one of the greatest job-skills needs of the population of Lawrence, whether working or unemployed, is English-language skills. As mentioned earlier, census estimates assert that as much as 70% of the City's population in 1998 is Latino, a large portion of which is immigrant, and has limited English speaking ability. Furthermore, interviews conducted with over 50 local employers in the Spring of 1998 attest to the fact that limited English skills are one of the major barriers to promotion for working Latinos in the City. While the REB and the adult basic education system do offer

---

<sup>56</sup> *1997 Poverty Threshold*. Washington, D.C.: U.S. Bureau of Census, 3 Feb. 1999: <<http://www.census.gov>>.

English as a Second Language services, available slots for the year fill up within the first two months of most years, attesting to the heavy local demand and scant supply.

***Shortage of Transportation Assistance:*** Most of the job training professionals interviewed attested to the need for transportation assistance as a crucial facet of any job strategy for Lawrence residents. Lawrence is a city that has very low rates of car ownership, and limited public transportation to many parts of the surrounding region, making it difficult for many to access job opportunities outside of the city proper. Indeed, temporary employment firms and informal car services have thrived in recent years in large part because they provide van transportation to job opportunities for Lawrence residents. Neither the REB nor other agencies currently provide this type of specialized transportation assistance. The REB, working jointly with the regional transportation board, has secured a welfare-to-work transportation grant to create these services, but it has yet to be implemented and it is unclear how successful it will be in meeting this need.

### **Northern Essex Community College**

The second important component in the adult skill training system in Lawrence, MA is the community college system, represented by the Lawrence campus of the Northern Essex Community College (NECC). NECC established this campus in 1992 in response to civil unrest in Lawrence, and the campus initially had an entirely remedial-education and job-training focus. Since 1992 it has grown to into a major, and more mainstream, community college campus, serving 1700 people per year and offering a range of remedial, certificate-, and two-year programs, as well as employer-contracted training. The community college, while only marginally connected to the JTPA-funded job training system, is a critical mechanism by which Lawrence residents obtain and strengthen skills necessary for employment. While the school is funded with approximately 50% student fees, public support in the form of state and federal education funding, as well as student use of public education loans and grants, mean that the school should be understood in part as a publicly supported educational and training service.

## Who Does NECC Serve? What Services Does It Provide?

NECC's educational specialties include Liberal Arts and Liberal Arts/English-as-a-Second-Language programs, the two highest-enrolled programs offered by the college. Two-year vocational training specialties include business management, health services (including training for registered nurses, practical nurses and nurse's aides) and criminal justice training. The last two areas represent strong occupational growth fields in both Lawrence and the surrounding region, and all are among the top 10 enrolled programs for the entire NECC system. Other popular programs include accounting, computer science, and electronics. NECC also offers a few job training and basic education programs aimed at disadvantaged populations, such as its JTPA-funded welfare-to-work program. However, these programs are relatively small and isolated from mainstream community college services, and hence are not a major focus of my research.

A survey of local employers in the Spring of 1998 revealed that school graduates have a good reputation locally,<sup>57</sup> an observation which is supported by the college's robust business in employer-contracted training. This is particularly true for the health professions program, which has a direct recruiting relationship with many local health care providers, including Lawrence General Hospital, the city's largest employer.

NECC, like many other community colleges around the nation, serves a relatively "non-traditional" college population. Over two thirds of college students attend college part time while employed, a percentage which has been increasing steadily (though slowly) over recent years. The average age for nighttime students is 31 and the average age for daytime students is 26. Furthermore, the college currently serves 24% non-white students, and the non-white population has been growing by approximately two to four percent per year for the last 5 years.<sup>58</sup> Lawrence residents compose close to 40% of NECC's total enrollment.

---

<sup>57</sup> 23 out of 51 respondents had opinions about the quality of NECC training. Of those with opinions, 21 (or 91%) felt that NECC prepared its students well or very well for entry-level jobs. This compares favorably with all other educational and training systems listed, and comes in a close 2<sup>nd</sup> to the University of Massachusetts- Lowell in popularity among employers (Source: Author's Calculations, Business Survey Results, Andors, et al. 1998).

<sup>58</sup> Northern Essex Community College. *1997 Enrollment Facts*. Haverhill, MA: Northern Essex Community College Webpage, Apr. 1999: <<http://www.necc.mass.edu>>.

## **How Well Does NECC Serve the Working Poor?**

What does this evidence imply about how well the college is serving the adult working poor in Lawrence? The results are mixed. On one hand, NECC has made significant inroads in serving older workers and minority populations, both of which are important sectors of the working poor in Lawrence. Income and other demographic statistics for students are not tracked, making it difficult to extrapolate about which sectors of this population they are serving, and the nature of their employment difficulties. On the other hand, even the Lawrence campus serves a primarily White student body, not in sync with the increasingly Latino population nor the working poor. Additionally, people who lack a high school degree or a GED are not admitted to certificate or 2-year college programs, which means that NECC's services are not available to at least the 43% of adult Lawrence residents who are not high-school educated.

NECC is increasingly successful at serving non-traditional students. The college has made an effort to support these students through a fairly broad range of programs. NECC provides on-site day and evening child care, extensive tuition support (utilized by 40% of students, 40% of whom report a high rate of satisfaction with NECC's financial aid services), and a range of remedial and English-as-a-Second-Language programs (utilized by over 20% of all college attendees).

Furthermore, in its 1998 strategic plan, NECC prioritized recruiting students with more employment difficulties, namely lower-income, Spanish-speaking Lawrence residents. Specifically, their goals include increasing retention in developmental and ESL courses, better linking remedial courses to college enrollment, better understanding and meeting the needs of ethnic communities, expanding outreach for ESL and basic literacy programs, and establishing college-wide mechanisms for assisting students with career searches and placement.

However, upon closer examination, there are real and important gaps in the services which NECC offers non-traditional students, which make it difficult to characterize the community college as a wholly supportive environment for the working poor population. Despite progress on this front over recent years, staff and administration at NECC cite an ongoing struggle between forces within the college that want it to pursue a focus on the more traditional community college role of preparing students for transfer to 4 year institutions (primarily younger students) and other forces which would like the college to focus on skills

training (primarily for adults). Put bluntly by one NECC administrator: “The administration is trying to keep this from becoming a little brown campus.”

This struggle over who NECC will serve manifests itself in the college’s program offerings and its admissions criteria. The result has been that while more non-traditional students are enrolling at NECC, the college shows less than a whole-hearted commitment to serving adults not bound for four-year college programs, which manifests itself in barriers to enrollment and study for non-traditional students. Deficiencies on this front include spotty support services for adults, little job placement assistance, and a requirement that all participants in non-remedial programs possess a high school degree. This last problem makes it very difficult for NECC to serve the working poor in Lawrence, since 43% of Lawrence adult residents do not possess a high school diploma. Furthermore, vis-à-vis developing its role as an engine for workforce training and development, the college still has very limited employer participation in curriculum planning and system-wide networks for job placement.

One issue particularly draws attention as an opportunity for NECC to further its role as an institution that helps Lawrence’s working poor upgrade their employment prospects. Local demand for remedial services and English as a Second Language is quite strong. However, there is an apparent disconnect between these services and the mainstream, vocational training tracks of the community college. For example, only 18% of ESL students go on to enroll in professional training through NECC. This disconnect suggests that there may be an important role for feeder programs from remedial to professional education within the college, a need acknowledged by the Dean of the Lawrence Campus.

### **Is the Skills Training System In Lawrence Equipped to Meet the Needs of the Working Poor?**

Lawrence faces hefty challenges to improving the employment prospects of the large number of working poor living in the city. The job training system, in its current configuration, appears poorly prepared to meet the depth and breadth of these challenges. While both the JTPA system and the community college are relatively successful on a number of fronts, both lack critical elements that would enable them to serve this population. The JTPA system lacks the funding to serve low-income adults who fall outside of federally mandated priority populations,

which represents a large portion of the working poor in Lawrence. Furthermore, it is not clear that the JTPA system has been particularly creative in attracting new sources of funding nor in working with their current sources to create services for these people. The community college, while it has many strengths, lacks a systemic commitment to serving low-income adults, which is expressed through failure to outreach to and support these populations, and most importantly to ensure that they move from remedial services into mainstream college vocational training. Additionally, both systems lack the quality, system-wide relationships with employers that would enable them to provide services responsive to local labor market needs. However, both have real strengths, which should be incorporated into any plan to serve the working poor in Lawrence. If skills training is to be a major engine for improving employment for the working poor, Lawrence will need a job training system which is capable of providing comprehensive and seamless support and services to clients, and integrating itself into the higher-wage regional employer communities.





**CHAPTER 7**  
**TOWARD AN EFFECTIVE JOB TRAINING PROGRAM**  
**FOR LAWRENCE'S WORKING POOR**

---

The previous sections have demonstrated that the working poor in Lawrence are not getting the full advantage of high-quality, non-college jobs created in high-technology industries along the 495 and 128 Corridors.

One useful lens for analyzing this disconnect is the spatial/skills mismatch theory,<sup>59</sup> popularized in recent years by urban economists and sociologists in their efforts to better understand widespread unemployment problems in urban neighborhoods in the context of regional economic growth. According to this concept, the mismatch between employers and urban job seekers is due to either one, or some combination, of the following:

- *Spatial elements:* Workers in certain areas are located far from employment opportunities and/or do not have access to hiring networks.
- *Skill elements:* Despite the fact that low-wage workers are spatially concentrated, the primary barrier to employment is that local workers do not possess the skills sought by regional employers.

Ultimately, the shape and content of an effective intervention depend greatly on which effect is dominant in blocking job opportunity for Lawrence residents and how these dynamics play out in this particular environment. Unemployment and underemployment problems caused by spatial mismatch are best addressed through “access strategies” that help residents learn about job opportunities and find viable ways to commute to jobs in other parts of the region. Alternatively, skills mismatch problems require more involved efforts to help residents develop the skills needed by local industry.

I believe that the construct of a spatial/skills mismatch is helpful in guiding our thoughts as to the causes of employment problems, insofar as it suggests different types of interventions. As a result, this concept is used to frame the strategies outlined in the following chapter. However, Lawrence’s reality is a bit more complex than this dichotomy would suggest. In fact, Lawrence, like many other neighborhoods and cities across the nation, faces significant obstacles

on both spatial and skills fronts, so that any effective intervention must address both facets of this dual problem. For example, there is evidence that many Lawrence residents lack the community college training and direct job experience that employers value. However, the prevalence of employee referral as a recruitment mechanism also means that qualified residents may not learn of living-wage jobs for which they are qualified.

Based on the information presented in prior chapters, I present the rough outline of a job training program which could at once improve the skill match between Lawrentians and regional high-tech employers, while also enhancing their access to job opportunities, either pre- or post-training depending on their qualifications.

Before suggesting what should be done, however, I briefly address the question of who should do it. Specifically, it is important to determine a need and a rationale for public or non-profit involvement, in order to avoid replicating services that would be created by the private sector of its own accord.

### **Economic Rationale for Public Job Training in Lawrence**

One of the primary functions of the public sector is to serve as a vehicle for citizens to invest their funds in joint priorities that would not be created independently by the private market. That is, a major rationale for the public sector in a capitalist economy is to remedy market failure, the inability of a market economy to reach certain desirable outcomes in resource use.<sup>60</sup> By applying this concept, it is possible to identify circumstances under which government action is unwarranted, and would duplicate the efforts of private citizens and entrepreneurs. In the case of job training, neo-classical economic theory predicts that, since training enables people to increase their earnings, they will be willing to pay for these services (if they have access to credit markets that enable them to take out financing loans).

In the context of job training in Lawrence, the concept of market failure raises a number of questions. If Lawrence residents can increase their lifetime earnings through education and job training, why is it necessary for the public sector to invest scarce public funds? Why won't the private sector step in to provide these services?

---

<sup>59</sup> Kasarda, John D. "Entry-Level Jobs, Mobility and Urban Minority Unemployment." Washington, DC: *Urban Affairs Quarterly*, 1983: 19:21-40.

<sup>60</sup> Datta-Chaudhuri, Mrinal. "Market Failure and Government Failure." *Journal of Economic Perspectives*, Volume 4, Number 3, Summer 1990, pp. 25-39.

Essentially, public involvement in job training in Lawrence is warranted because there are obstacles in the job market that make an efficient outcome unlikely. In this case, the efficient outcome is the profit-maximizing outcome in which everyone is able to choose the occupation that will provide their desired level of lifetime earnings, and finance the training necessary to obtain this job. Obstacles to this outcome in Lawrence include:

- ***Credit Market Problems:*** In order to invest in training, people must be able to borrow funds. However, many of the working-poor do not have sufficient collateral to obtain a loan, and the American financing system by and large does have mechanisms by which people can take out loans against future wages, since wages cannot be guaranteed<sup>61</sup>. The result is that many workers, particularly low-income workers, face liquidity constraints that prevent them taking out loans to finance their education. This situation is particularly difficult for very low-income families that must dedicate large portions of their income to basic living expenses.
- ***Two-Sided Information Problems:*** As demonstrated in previous chapters, there are significant barriers to job opportunity between regional employers – who, for various reasons, do not have full information about the skills and capabilities of Lawrence residents - - and Lawrence residents, who rarely have access to the recruitment networks for living-wage jobs. As a result, both parties will be hesitant to invest in building relationships with the other. Employers will not hire Lawrence residents because they fear they are unqualified, and Lawrence residents will not invest in training because they may not be able to secure higher-paying work as a result. In this case, a job training program run by an independent party – either public or non-profit – could reduce both parties’ uncertainties by facilitating the flow of accurate information, which should increase their willingness to invest in each other.

The above factors will act to prevent many job-seekers from investing in the training necessary to secure living-wage work, one of the necessary conditions for public intervention. However, in order for the public to intervene, there must also be significant public support for the goal of increasing the income of the working poor. Unfortunately, it is far from clear whether this public support exists, despite increasing concern for the working poor. I would argue however, that training for living-wage jobs is a worthy public-policy goal because there is

significant public benefit to family self-sufficiency, and because the continuing concentration of poverty in inner-cities like Lawrence ultimately creates high costs for society.

It is also important to note, though, one economic drawback to public intervention in training, which relates to the dangers of substitution. That is, a program aimed at placing low-income Lawrence residents in living-wage jobs might displace other low-income workers from these jobs, either currently or in the future. Such a program can still be supported on the grounds that it increases regional equity, or improves the distribution of jobs, because workers in Lawrence fill a disproportionate share of low-wage regional employment. Furthermore, one can argue that special assistance is warranted for groups that traditionally lack access to hiring networks for these jobs despite their qualifications.

### **Skills and Experience Strategies**

As mentioned previously, the two primary ways that job seekers can gain access to living-wage regional employment is through a) a two-year associate degree in a technical fields from a community college, and b) directly relevant job experience in high-tech manufacturing, particularly in bio-technical and electronics manufacturing. In combination, employers believe that these two forms of education give employees a competitive edge in terms of their ability to understand and manipulate quickly changing, sophisticated production technology. To this end, a successful job training intervention should:

### **Increase Access to and Use of Community College Technical Training Through Population-Targeted Financial and Educational Support Initiatives.**

In today's extremely tight labor market, many technical certificate programs at local community colleges, such as the electronics assembly program at Middlesex Community College, have graduate placement rates in the range of 95 to 100%.<sup>62</sup> Employers repeatedly attest to the quality of graduates from these programs. Additionally, one very-high quality

---

<sup>61</sup> Though some government programs exist that have less stringent requirements, such as the Stafford Loan, they often require initial investments by the student and/or are not able to reimburse the student for the full cost of their training (including the opportunity cost of time that could be spent working).

<sup>62</sup> For example, the biotechnology program at Middlesex Community College has a placement rate of 99% since its inception in 1990. Source: Middlesex College Biotechnology Program Homepage. Lowell: Middlesex Community College, May 1999: <[www.middlesex.cc.ma.us/mst/BIOTECH/EmpOutLook.html](http://www.middlesex.cc.ma.us/mst/BIOTECH/EmpOutLook.html)>.

(though relatively small) employer makes it a practice to hire directly out of these technical programs, and says: “they can’t produce them [graduates] fast enough” for his purposes.

Given the relatively high quality of Lawrence’s Northern Essex Community College, and its stated desire to better serve non-traditional students and residents of Lawrence, NECC should be a central part of any job improvement strategy for the working poor in Lawrence.

The fact that good and applicable training resources currently exist in the City of Lawrence begs the question: why don’t the working poor already take advantage of this opportunity? This question has two important answers, each of which suggests a possible role of a public or non-profit job training program to smooth the way and encourage increased use of this resource.

**Problem: People in Community College Remedial Training Do Not Progress onto Technical Training Programs.**

***Implication: Build links between remedial programs and technical training***

Currently, NECC operates two fairly separate tracks serving distinct populations – those seeking remedial training and those seeking a technical education. As mentioned earlier, there is a strong demand for the school’s remedial programs, particularly English as a Second Language, the second most popular program at the school, serving approximately 600 students annually. NECC’s strength on this front should be viewed as an opportunity because many of the working poor in Lawrence will need remedial training in order to be able to participate in more-advanced technical training, due to the fact that this population often has limited formal education and limited English fluency. This would seem to suggest a strategy of explicitly building connections between the remedial and technical programs, to encourage students to continue on to advanced study, and to give these students an added level of guidance and support during the process. The nature of such connections depends on the specific barriers to training of this population, which is not examined in-depth in this research, but could be gained relatively easily through one-on-one interviews and focus groups with this population. Possible support mechanisms might include:

- A separate program geared toward this population which garners up front commitment from students to complete both remedial and technical training, and strives to integrate the special needs of this population;

- Academic and life/job skills counseling (assuming that this population will have more difficulties managing school, work and family than most, and that they are unaccustomed to college environments);
- Targeted financing packages, including accommodations for, or compensation of, child-care costs;
- Separate eligibility requirements to encourage participation by non-traditional students; and
- Institutional support and advocacy within the community college for the mission and resources of such a program, insofar as it would require a special, unusual effort on the part of the college.

**Problem:** Community College tuition, as well as support costs, is prohibitively expensive for many of the working poor, and is likely to be a tremendous obstacle to participation in a long and comprehensive program.

**Implication:** *Provide targeted financial support.*

In many cases undergoing remedial and then technical training will be between a two- and three-year commitment for participants, who also need to juggle this training with earning a living and managing a family. To this end, students are likely to need a great deal of support, both with managing the cost of tuition and with the financial and support strains that this puts on a family, including the need for increased childcare. This is particularly true for the high number of Lawrence residents who work in very low-quality jobs, for instance with temp firms, which are often unstable and carry minimal benefits, such as health insurance.

A number of successful job training programs have demonstrated the importance of non-tuition, as well as tuition, financial support in retaining older students in training programs. For example, Project QUEST, which has an unusually high program completion rate in a community-college-centered program, provides a range of financial support to participants. This support includes assistance with the following costs: tuition, books, childcare, transportation funds and limited emergency aid for living expenses (including occasional help with rent, utilities, and some medical services). What projects such as QUEST demonstrate is that

investment in these services – which may seem incidental to many – significantly increases program completion and job placement rates.<sup>63</sup>

## Link Jobs and Training

According to neo-classical labor economics theory, rational people will tend to invest in the amount of training which maximizes their lifetime earnings, if they have full and complete information about job opportunities, and access to financing.<sup>64</sup> This theory's validity, though, is contingent on the fact that those making investment decisions have full information about the range of jobs available to them, and the increase in wages this would represent over a lifetime.

In Lawrence, a history of limited access to living-wage jobs in high-tech industry makes it likely that people are not fully aware of the employment opportunities available in the regional economy. This would seem to suggest that Lawrentians' investment in training would increase in correspondence with the certainty of securing higher-wage employment when the training is complete. In these circumstances, a truly successful job training program would strive to secure up-front, credible commitments from employers to hire its graduates. Additionally, this occupational-information-gathering role (i.e./what job opportunities exist in the regional economy, and how they can be accessed) could be particularly important in the context of Lawrence, where working-poor adults have few institutions which can help people systematically assess their job potential.

While this strategy is likely to increase investment in training by students, it will only work if employers are willing to commit jobs to graduates with some certainty, which requires that participation have concrete benefits for the employer. Often, this benefit is far from clear to employers, who take a significant risk by making an up-front commitment to hire potentially-underqualified people. As a result, the jobs training system is wrought with difficulty in engendering participation, a deficit which has severely limited the potential of the traditional jobs training system.<sup>65</sup> Perhaps the gravest consequence of this disconnect is that it has limited the

---

<sup>63</sup> Osterman, Paul and Lautsch, Brenda. *Project QUEST: A Report to the Ford Foundation*. Cambridge: MIT Sloan School of Management, January 1996.

<sup>64</sup> Acemoglu, Daron and Pischke, Steve. "Why Do Firms Train?" *Quarterly Journal of Economics*, Volume 113, No. 1, pp. 79-119.

<sup>65</sup> Osterman, Paul. "Involving Employers in School-to-Work Programs." Ed. Thomas Bailey. *Learning to Work: Employer Involvement in School-to-Work Transition Programs*. Washington, D.C.: The Brookings Institute, 1995: pp.75-87.

system's ability to secure employment for its graduates. However, another serious consequence is that employers are not active in shaping the training curriculum, heightening the risk that students will be trained in skills that are not useful in practice.

A successful job training program, if it wishes to establish strong links between work and training, must have active employer participation. This means that there must be a strong rationale for employers to participate. From my point of view, there are three plausible arguments that could be advanced convincingly to employers by an interested coalition (see conclusion for further discussion of coalition involvement).

1. ***Opportunities to fill job shortages:*** If it is true that firms in the region are experiencing shortages of qualified non-college workers for living-wage jobs, there would be a strong rationale for a job training program from the employer's perspective. This is perhaps the ideal scenario for instituting a job-training program, because under these circumstances we expect that the business community would have a strong and self-interested incentive to participate in the design and implementation of the program, and to commit jobs to graduates.
2. ***Opportunities to improve the geographic and demographic distribution of living-wage jobs:*** Even if employers are not experiencing the above-mentioned shortages, advocates of such a program could make a case that employers should hire Lawrence residents because these residents bear an unfair proportion of poor-quality jobs relative to people with comparable skills in other parts of the region. Using a regional strategy it might be possible to get firms to commit to increasing the number of people they hire from the city in the name of regional equity (though this strategy would probably be less effective than the one mentioned above insofar as it is not clearly driven by economic self-interest).
3. ***Opportunities to shape relevant training, and have people trained for free:*** Another plausible rationale for employers to commit to hire people from such a program is if the program design could give them influence in shaping training to their needs. This may be particularly persuasive given employers spotty institutional connections to the relatively high-quality community college system. However, this strategy for garnering employer participation has some drawbacks as well. First, the job training system currently offers this

---

Osterman, Paul and Rosemary Batt. "Employer Centered Training For International Competitiveness: Lessons from State Programs." *Journal of Policy Analysis and Management*, Vol. 12, No. 3, 1993: pp. 456-477.



same incentive, but nonetheless has problems attracting interested high-quality employers (perhaps because they view employment training programs as last-resort options for the hard-to-employ). Second, this incentive has a monetary benefit for employers, insofar as it may replace training they would have to provide themselves in the absence of such a program. That said, it would be important for a program using this employer-participation strategy to be cautious that the program maintain a balance between the training that specific employers desire, and the broader training and basic education that a student can use in any number of jobs.<sup>66</sup>

### **Link Training and Work Experience**

The importance of directly-relevant work experience was repeatedly expressed by the employers interviewed, and it is clear that many are willing to pay a premium for people with this experience. Employers' opinions vary about how crucial this experience is in the workers' abilities to complete the functions of the workplace, according to the nature of the work and what the firm produces. In some cases, firms with very sophisticated and unusual technology feel that education and training cannot in any way compensate for the value of experience, and will not compromise their two-year experience requirement. It is questionable what value a job-training intervention could provide in cases such as these. Alternatively, a number of firms interviewed have recently begun hiring people with formal training supplemented by internship or coop experience to substitute for people with the full-time relevant work experience they would prefer. At any rate, it is clear that employers place a premium on experience, so that experience gives job applicants a competitive edge.

This experience requirement is a double-edged sword for job seekers: on one hand, it makes it difficult for newcomers to enter the field; on the other hand, it seems to increase salary and internal promotion opportunities, since it is difficult and expensive for the firm to locate replacements.

Given how much employers seem to value experience, a job program would be offering significant value-added to participants if it incorporated a structure for gaining such experience. Two possible mechanisms for incorporating this feature (which could be employed separately or in combination) are:

---

<sup>66</sup> Ibid. Acemoglu.

**Problem:** Employers value directly-relevant job experience, which is normally gained through full-time work. However, Lawrence residents have difficulty securing the full-time work which would give them this competitive edge.

**Implication:** *Create a Job Training Program with Internships or Coop Elements:*

Incorporating internships into an academic training program, or creating a coop program, has three strong elements in its favor. First, this structure would allow students to complement classroom learning with concrete experience, which benefits job applicants because it demonstrates that they have had hands-on experience with relevant technology. Second, if multiple internships are encouraged throughout the training program, they can be used to help participants understand the range of job opportunities and workplaces available to them, thus increasing the chances of a good first match. Third, they can help job applicants gain entree into firms in the field, which is a particular problem for Lawrence residents, while also giving them a track record and references in the chosen occupation.

There are drawbacks to this structure as well, particularly because it increases the length of the program, and because it may be hard for students to juggle internship and coop positions in conjunction with school and full- or part-time work (particularly if the internships are unpaid).

**Problem:** Temporary firms are doing a large portion of the recruiting and hiring for permanent living-wage jobs in the region – because they supply a service that employers value – at the expense of workers who receive lower wages and benefits during the probation period.

**Implication:** *Structure a non-profit, job training program to provide this same service, while reinvesting profits in worker education and/or training.*

Another interesting possibility for incorporating work experience into a training program is to attempt a temp-to-perm structure, similar to the one being used by a number of contract staffing services. As this structure is currently utilized in private contract staffing firms, employers use the temp firm as an intermediary for recruiting, screening and hiring workers, who are then placed with the employer for a probationary period, before the employer decides whether to offer the worker full-time employment. During this period, the temp firm earns a fee for their services normally equal to between 30 and 43% of the workers annual wage. Because

this fee is roughly comparable to the overhead and benefits that firms pay to their full-time employees, the arrangement is relatively seamless for the employer. This premium is paid to temp firms, according to the firms interviewed, primarily so that the firm can “try before you buy,” or witness the worker’s ability directly before making a long term commitment, though also to pay for the temp firm’s efforts in recruiting and screening.

However, there is little structural reason why it must be private-sector temp firms that provide these services. If a training program could take over any portion of the “temp-to-perm” business, there would be a two-fold benefit. On one hand, the program could capture the 30-43% overhead which temp firms are being paid for their services and use these proceeds to either reduce the cost of training to participants, or to provide participants with health insurance and other benefits before they are permanently placed. On the other hand, this would also give participants the opportunity to acquire concrete experience in the field, which would benefit them in applying for future jobs. Finally, employers are paying temp firms for their help in recruitment and screening – or, in short, they are paying them to develop knowledge about job applicants – much of which would be possessed in an institution that also provided training and had a long term relationship with the worker.

Finally, insofar as the surplus from this arrangement goes entirely to the temp firm, redirecting it toward workers could be a fairly persuasive argument with regional employers, particularly if a non-profit job training program could provide the same services.

The principal pitfall of substituting a non-profit for a profit-making firm in this scenario, however, is that temp firms are often quite selective about people they will and will not place. It is to their economic advantage not to place someone in a job for which they are not qualified, insofar as the temp firm’s ongoing relationship with the employer is damaged by doing so. In other words, temp firms are paid to “cream;” to choose the best candidates from any given pool of job applicants. However, non-profits are rarely in a position to be equally selective; a fact that employers know and makes them disinclined to use non-profits for screening purposes. In order to substitute these services, a non-profit would have to convince employers that they would not place unqualified employees. However, this may be difficult for a program aiming to serve the disadvantaged, which makes a commitment to the student before they are fully aware of the student’s ability to learn necessary job skills.

## Strategies for Increasing Access to Living-Wage Job Opportunity

An effective job training intervention on behalf of the working poor in Lawrence would also have to address sources of spatial mismatch, or the disconnect between qualified workers and available job opportunities. The causes of spatial mismatch in Lawrence/Regional labor market relations are quite complex, and were not the primary interest of this research, limiting my suggestions for useful strategies in combating it. A more in-depth analysis of spatial mismatch would collect more information from job seekers on their experiences of looking for work at high-tech regional firms, and would devote more energy to understanding the details of firms' recruitment methods. While not exhaustive, my research has brought to attention two very large obstacles which a job training and placement program should attempt to help Lawrence residents overcome: a) knowledge of job opportunities, b) transportation barriers

**Problem:** Many firms' primary recruitment methods – employee referral and Internet advertising – make it difficult for Lawrence job seekers to learn about employment opportunities.

**Implication:** *An effective job training and placement program should do its best to penetrate these networks as an institution on behalf of Lawrence job-seekers, serving as a single point of contact with regional employers and a clearinghouse of information on available job opportunities.*

As mentioned earlier, the primary methods of recruitment for the living-wage firms interviewed – employee referral and Internet recruiting – create barriers to employment for Lawrence workers, because of their limited access to these networks. To this end, a successful job training and placement strategy should seek to help Lawrence resident penetrate these networks. In the case of employee referral, a case could be made by proponents of such a strategy that information about available jobs be shared with the job-training program at the same time that it is posted for employee referral purposes.

This may be a bit of a hard sell to corporations, depending on why the firms use this form of recruitment. For example, if firms use employee referral because the recommendations of their current employees save them time or money in the screening process, then it would be necessary for a job training and placement program such as the one I propose to gain the trust of employers. As mentioned earlier, employers are typically reluctant to trust job-training

organizations to play this recruitment role, because they believe that these organizations exist to find jobs for the “hard-to-employ” and put their own interest in making job referrals ahead of the firms interests in meeting only highly qualified candidates. The firms often feel that a high percentage of referrals from these programs cannot ultimately be hired for available positions. Nonetheless, a high-quality program serving a population that is less disadvantaged than those of typical job training programs (such as one targeting the working poor) might be able to make some headway on this front. In addition, firms are likely to be more open to this idea when they are experiencing shortages of qualified workers.

The obstacles created for Lawrence residents by the prevalence of Internet recruiting should be somewhat easier to tackle, since this information is public. In this case, the main task for a job placement program would be to give training participants access to this resource and teach them how to use it effectively, possibly with additional assistance (such as daily downloading of relevant job opportunities, and assistance with resume creation and interview skills) if needed.

**Problem:** Many Lawrence residents lack the transportation necessary to access jobs in the regional economy.

**Solution:** *Provide flexible and creative transportation assistance.*

As noted earlier, the physical distance of many jobs in the regional economy is a major obstacle for the many Lawrentians who lack cars. While the REB and the regional transportation board are attempting to improve the bus service (the primary form of public transit in the region), in all likelihood it will be impossible for the system to serve the needs of many Lawrence workers. Therefore, it may be necessary for a job training and placement service to provide more flexible and creative transportation assistance, perhaps using popular forms which have developed in response to this need in Lawrence – such as vans and carpools – as an example.



**CHAPTER 8**  
**CONCLUSIONS**  
**& THOUGHTS ON IMPLEMENTATION**

---

The previous chapter outlines the elements of a job training program which holds the potential to begin bridging the gap between the working poor in Lawrence and living-wage jobs in regional high-tech industries. These program components respond directly to the specific circumstances of regional industry, and secondarily to local workers (insofar as the primary focus of this thesis is on labor market demand). However, these suggestions do not do justice to the institutional and organizational constraints faced by job trainers. In fact, the existing job training system in Lawrence has not incorporated many of these strategies not because it lacks desire or understanding of labor market issues facing the working poor. Rather, it has not incorporated these elements because resources for such efforts are scarce and forging long-term relationships with the private sector is difficult and time consuming. Alternatively, the needs of people in the job training system, often the most disadvantaged city residents, are deep and immediate, and long-term planning, while important, would divert resources from these agencies' short-term but vital missions.

In recognition of the hard work of people in the local job training system, it is important to acknowledge the difficulties of launching such a program, and, at the very least suggest, some ideas for implementation drawn from best practices around the nation. While these suggestions fall far short of making such an ambitious program easy to implement, I believe that two strategies – related to accessing living-wage jobs and to finding the significant funding necessary to support such a long-term program – are particularly worth mentioning.

**Accessing Living-Wage Jobs: The Role of Community Coalitions**

As mentioned previously, having largely accepted the assertion that employers must be involved in the design and implementation of successful training programs, policymakers and researchers in this field are currently investing significant attention to answering the question: What would make employers wish to participate in job training? This question has been answered in practice, through a number of different strategies to elicit employer involvement, ranging from altruistic, emphasizing corporate citizenship, to monetary, such as lowered training

wages and subsidies to employers who hire trainees, to self-interest, such as providing employees for hard-to-fill positions. Although each of these approaches may work in limited circumstances, none have shown broad, systematic success at motivating and maintaining employer participation.<sup>67</sup>

An alternative, and promising, strategy is being employed by programs such as Project QUEST, a job training initiative run by the Industrial Areas Foundation in San Antonio, TX. This “coalition advocacy” model focuses on garnering employer participation in job training, and securing up-front job commitments for trainees.<sup>68</sup> This model attempts to build broad-based institutional and community support for the equitable distribution of jobs to low-income communities, and then uses public campaigns around these issues to motivate employers to join the effort. In short, absent monetary benefits to participating, many firms will not feel it is in their self-interest to make a long-term commitment to hiring disadvantaged workers. However, public campaigns have the capacity to make it in their self-interest to participate, by publicly emphasizing the fact they do not employ disadvantaged residents, and stressing their responsibility to do so. While this approach certainly has pitfalls (such as the risk of diminishing job commitments when public interest in the issue abates), it has been employed successfully through projects like QUEST, which elicited 650 decent-wage job commitments from regional employers prior to initiating its first job training effort.

There are real and compelling benefits to using such an approach in the case of Lawrence, if an interested and dedicated coalition of community institutions can be mobilized around the issue of living-wage work. Specifically, there are persuasive equity-related reasons for employers to participate, but such reasons can only be advanced convincingly by a coalition large and powerful enough to be able to represent a public relations risk to non-cooperating corporations. Possible arguments to catalyze participation include:

- ***Regional employers (particularly large employers) benefit both directly and indirectly from the low-wage labor provided by Lawrence residents***, and should therefore be willing to participate in a program designed to remedy the hardships caused by working-poverty employment.

---

<sup>67</sup> Ibid. Osterman 1995, Ibid., Osterman and Batt, 1993.

<sup>68</sup> Ibid. Osterman 1996.



- ***Widespread regional use of temporary help firms***, which are profitable to employers, creates less than optimal working conditions, and in the worst case working-poverty conditions, for less-skilled workers, who are overwhelmingly concentrated in Lawrence. The profit from this employment choice goes largely to temporary firms at the expense of the workers. A powerful coalition might be able to successfully make an argument, in the public realm, that in return employers should invest in the long-term upskilling of the less-skilled populations whose work conditions are deteriorating as a result.
- ***Participation would ultimately benefit employers***. Advanced by program staff alone, corporations are often wary of hiring job training participants, because of the “low-income, hard-to-employ” stigma associated with these programs.<sup>69</sup> While a jobs program targeted toward the working poor is significantly different than this traditional model, this argument is more likely to seem credible when advanced by a broad-based coalition than when advanced by an individual program (which might reasonably be suspected to overstate its own potential).
- ***Receipt of regional subsidies***: A final possible argument that could be advanced by a coalition, but less successfully by an individual program, is that a number of large regional employers receive state and local tax and infrastructure subsidies that might, arguably, create a public imperative for them to provide employment opportunities for less-advantaged local residents. Many of these subsidies were granted under economic development programs on the premise that development would create needed jobs for local residents. However, if these firms only provide low-wage or otherwise poor quality jobs for less skilled local residents, a savvy coalition could make the argument that they should invest in training and upskilling for this same population.

---

<sup>69</sup> Weir, Margaret. *Politics and Jobs: The Boundaries of Employment Policy in the United States*. Princeton, NJ: Princeton University Press, 1992.

### **Project QUEST's Creation: Unique Local Circumstances?**

Because it is one of the nation's most promising job training programs, a number of successful elements of the San Antonio's Project QUEST have been highlighted in this research. However, in examining this example it is also important to point out some of the circumstances of QUEST's success and how these are similar to, or differ from, Lawrence, MA.

When QUEST was founded, San Antonio, like Lawrence, was experiencing the loss of living wage low-technology manufacturing jobs. Simultaneously, city residents were seeing the growth of high-paid high-skilled work for the well-educated and low-skilled, low-wage jobs for the less-educated.

Local leaders and activists, catalyzed by plant closings, came together to discuss and unite an effort around job training and creation. Rather than leaping into implementation, these activists -- led by the Industrial Areas Foundation and two active, well-established local community groups with strong ties in the religious community -- decided to structure their effort around building a broad public mandate for, and involvement in, these job training efforts.

The time spent building this broad-based coalition proved well spent, insofar as the group's public presence was key to engendering the cooperation of government, employers and the community college. By emphasizing employer responsibility to hire local residents, QUEST was able to secure commitments to hire its participants into living-wage jobs when the program was completed, which was an important motivation for both participants and supporters as well as being tremendously unusual. This public presence, and the voter strength that it implied (not accidentally) were also critical to attracting funds for this unusually comprehensive, and therefore expensive, job-training effort. Many years later, independent evaluators attribute much of the program's success to these early, tone-setting successes that gave the program the fundamental financial and political support necessary to make long-term investments in participants, and in program development.

One interpretation of QUEST's success is that when a jobs crisis hit San Antonio, critical community networks that could be mobilized around the issue already existed, and had practice in advocating for public support for other projects (such as roads, infrastructure and education reform). Though advocacy networks may be evolving in Lawrence through electoral activism, it is certain that no network with comparable resources, practice and power currently exists in the city. According to Paul Osterman's analysis of QUEST's unusual success, a similarly comprehensive effort is almost impossible without these networks, although it could be argued that strong networks could develop in the process of launching such a campaign.

Another factor that makes San Antonio's situation distinct from Lawrence's, and that was central to the QUEST's success, is that when QUEST was founded, the health sector in San Antonio was experiencing a labor shortage so severe that they were recruiting nurses from other countries. As a result, QUEST was able to make the successful argument that it was in the hospitals' self-interest to invest in training local residents in nursing, in order to save long-term recruitment costs. This research has not unearthed any labor shortages of comparable severity in the Merrimack Valley. One can expect, therefore, that it would be significantly more difficult to motivate employer participation in a comprehensive training program in Lawrence.

## **Securing Program Funding: Traditional Federal Resources are Not Enough**

A two-to-three year job training program that includes community-college tuition, childcare, living expense support and administrative costs is tremendously expensive. The fundamental reason why programs like this have not been implemented more frequently in the history of the job-training system is the following: the public job training system is funded rily through the federal government, which does not allocate the resources necessary to provide such costly training, in part due to lack of legislative commitment to the cause and to the population it serves.

That said, in the current federal climate, despite increased funding for job training resulting from welfare reform, any institution or group wishing to institute such a program needs to rely on multiple sources of funding in addition to federal monies. This is the key to many of the more creative and successful job-training programs across the nation, such as the Center for Employment Training in San Jose, CA, Project QUEST in San Antonio, TX, and One-with-One, an immigrant job training program in Boston, MA. While it is a fairly able administrator of federal funds and federal priorities, the REB has not been particularly creative in tapping these non-traditional resources to support local training priorities. Rather, the system has allowed its training agenda to be set, and its budget to be decided, at a federal level. It should be noted that this entrepreneurial role is rare among even the best of publicly funded agencies; it is more typically the domain of non-profit corporations, which tend to be better tied in to their surrounding neighborhoods and cities, and are better able to navigate the private philanthropic community.

Furthermore, if interested practitioners agree with the author about the promise of a strategy requiring the application of public pressure to regional corporations, this role would be almost impossible for a public agency, such as the REB, whose political ties severely limit its ability to risk upsetting local and regional balances of power. If there exists in Lawrence a community of stakeholders, institutions and residents interested in launching such a program in the name of improving the fortunes of the working poor it would almost necessarily need to take shape in the form of a non-profit organization. And not just any non-profit – many of which are as bureaucratic, rigid and institutionally risk-averse as the public sector – but a broad-based non-profit with a strong public mandate, founded in a consensus among City residents about the importance of improving the fortunes of the working poor in Lawrence.



**Appendix 1: Research Participants**

**Employers:**

AGFA  
Alpha Software  
Avid Technologies  
CMG Information Services  
Communication and Power Industries, Inc.  
Comverse Network Systems  
DCI Massachusetts Business Trust  
Dynamics Research Corporation  
Entegee Engineering Technical Group  
First Security Corporation  
General Computer Resources  
Graphic Controls  
Harte Hancks Technologies  
Infotech Contract Services  
Millipore Technologies  
MKS Instruments, Inc.  
Opus Telecom  
Peritus Software Services  
Schneider Automation  
Sullivan and Cogliano Staffing Services  
VideoServer, Inc.  
Xionics, Inc.

**Other:**

David Autor, National Bureau of Economic Research

Ross Comeau, Chief Planner, Lower Merrimack Valley Regional Employment Board

Howard Feldstein, Associate Director, Lower Merrimack Valley Regional Employment Board

Bob Farrant, Professor, Department of Regional Social and Economic Development, University of Massachusetts-Lowell

Tom Holler, Employment Organizer, Industrial Areas Foundation

Yolanda Kodryski, Chief Economist, Federal Reserve Bank of Boston

Danny Leblanc, Executive Director, Merrimack Valley Project

Richard Lester, Industrial Performance Center, MIT

Alex Lon, Employment Assistance Director, Department of Employment and Training, City of Lawrence

Bob Luongo, Director of Economic Development, City of Lawrence

Myrta Maldonado, President, Merrimack Minority Employment, Lawrence

Hugh McCabe, Welfare to Work Supervisor, Department of Transitional Assistance, City of Lawrence

Kelly Osmer, Director, Center for Business and Industry, Northern Essex Community College

Kathy Rodger, Dean, Lawrence Campus, Northern Essex Community College

Tom Sommer, Executive Director, MASSMedic

Chris Tilly, Economist, University of Massachusetts-Lowell

Charles Tontar, Urban Resource Institute, Merrimack College

Peter Vanier, Executive Director, Lower Merrimack Valley Regional Employment Board

## **Appendix 2: Interview Questionnaires**

### **A) Questionnaire for Regional Employers**

- What are the jobs for which you hire entry level workers with less than a bachelor's degree?
- For each job:
  - What is the starting salary? What benefits?
  - What are the job responsibilities?
  - What experience and qualifications are required?
  - How do you recruit for these jobs?
  - How long does it take you to hire for these jobs? How much does the hiring process cost? Is this what you expect for a job like this, or is it problematic?
  - Have you ever had to raise wages in order to attract qualified applicants?
  - What type of education or training would be necessary for you to hire someone without experience for this position?
  - To your knowledge, do you hire Lawrence residents for these positions? Why or why not?
- For all jobs:
  - Have you ever filled jobs like these through temporary agencies?
  - Do subcontractors do any significant portion of entry level work for your firm? If so, for what type of work? Are subcontractors located in this region?
  - Do you intend people to move up in the firm from these entry level positions? If so, into what positions? How fast?

## **B) Interview Questionnaire for Temporary Firm Interviews**

1. Roughly, what portion of your workforce DOES NOT have a four year college degree?
2. Roughly, how much of your business is “temp-to-perm”?
3. What are the basic categories of jobs for which you hire workers with less than a bachelor’s degree?
4. For each job category:
  - What are the job responsibilities?
  - What experience and qualifications do you require?
  - How do you recruit for these jobs?
  - How long does it take you to hire for these jobs? How much does the hiring process cost? Is this what you expect for a job like this, or is it problematic?
  - Have you ever had to raise wages or employee referral bonuses in order to attract qualified applicants?
  - What type and amount of education or training would be necessary for you to hire someone without directly applicable experience for this position?
  - What is the range of starting salaries for these positions? What benefits?
  - Do you provide training for your employees? If so, how much and of what type?
5. What types of firms do you place non-college employees with? How long is the average contract? How much of the work is temp to perm? How much purely temporary?
6. What types of skills do you perceive as being in shortage in the fields you are working in?
7. Looking forward, do you see anything on the horizon that will cause changes either in the number of non-college workers which you employ or in the skills you need them to have? How might this change in a recession?



### **Appendix 3: Structure of the JTPA System**

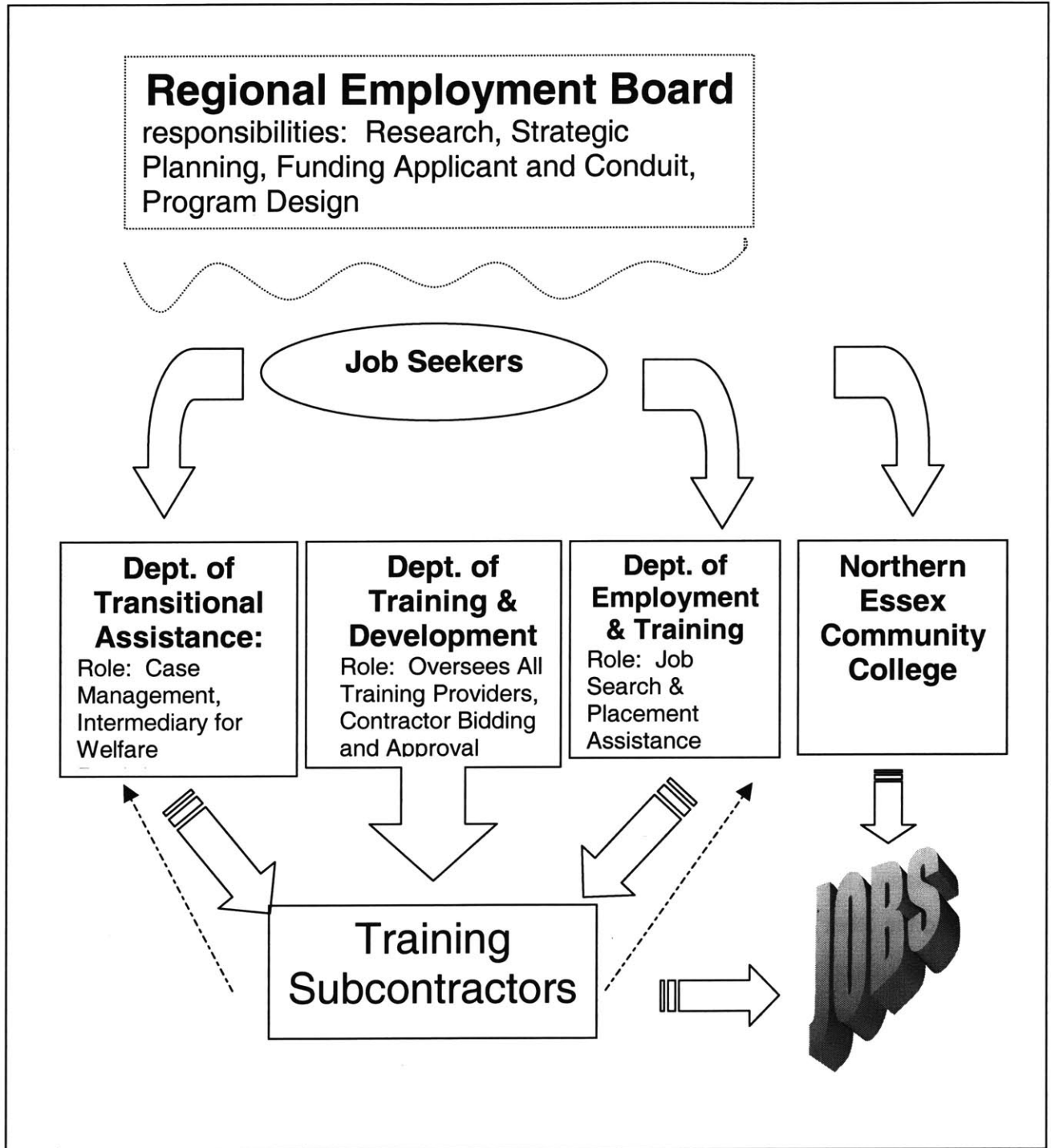
The structure by which job training is administered is as follows: . The REB serves as a conduit for the vast majority of all federal training funds into the labor market area. After setting programmatic and area goals, the REB then selects contractors – including community organizations, proprietary training organizations and local educational institutions – to administer the training<sup>70</sup>. In some cases, the contractors are overseen by an intermediary public agency. For example, in the case of welfare to work training, the REB funnels money to the Department of Transitional Assistance, which is then responsible for choosing and overseeing training contractors.

From the client perspective, the process looks like this: Job seekers enter the system either through the Department of Employment and Training (which also administers unemployment insurance) if they are not recipients of public assistance, or through the Department of Transitional Assistance, if they receive public assistance. An intake is then conducted with a counselor who recommends either training or placement services, based on the clients occupational needs & history, their eligibility for job training funding, and the slots available with each training agency.

If clients are eligible for, and choose, job training services, the job training subcontractor is then responsible for all aspects of the client's training and placement. Special placement assistance is available through both agencies, though it is expected that placement is primarily the responsibility of the subcontractor. The success of subcontractors is judged according to the percent of enrolled students who are placed in jobs which pay more than \$7/hour and in which they are retained for 13 weeks. Subcontractors receive half of their payment when these clients enroll, and the other half when they are determined to have been placed successfully.

All practitioners who I interviewed agreed that this is a fairly contrived structure, in part because existing institutions have had to be restructured many times in response to changing federal mandates and priorities. However, according to many, the Lower Merrimack Valley REB is fairly successful in promoting the flow of information and clients through a variety of team structures, and because all of the agencies are located in the same building.

## Structure of the Lawrence Jobs Training System



<sup>70</sup> This system is currently under transition to a voucher structure, whereby recipients of job training services are responsible for choosing trainers based on their individual preferences, in consultation with a counselor working for the REB.