

***Building A World-Class Technical
Workforce: The Key to a Competitive
Greater Philadelphia***

A Report to:

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Executive Summary

A region that does not have a growing percentage of its non-professional workforce trained beyond the high school level will have increasing difficulty in supporting the competitiveness of high-value business.¹

Introduction

Two of Greater Philadelphia's leading economic development organizations—the Strategy 21 partnership of regional organizations² and Greater Philadelphia First—have sought in recent years to increase their understanding of the region's competitive economic position. Both have concluded that workforce quality and workforce development are issues central to economic competitiveness, and both are concerned that the region is not developing the competitive workforce that employers demand. This is particularly true with regard to developing a technical workforce—those skilled workers typically educated beyond high school but not necessarily at the baccalaureate level.

To better define and help seek solutions to the region's technical workforce problem, members of Strategy 21 and Greater Philadelphia First came to the Pennsylvania Economy League with the following question: How can the region's workforce development system offer a cutting-edge labor pool of sufficient quality and size to meet the demands of globally competitive businesses? This report seeks to answer that question by examining workforce issues from the perspective of the region's employers. This report is limited in scope to that portion of the workforce that Greater Philadelphia seems to lack—the technical workforce; it does not address disadvantaged or displaced workers, those targeted by welfare-to-work programs, or the upper tier of the workforce frequently referred to as “knowledge workers.”

The American Economy and the American Workforce

The U.S. economy is in the midst of its most significant transition since the industrial revolution. Fiercely competitive global markets, the drive for increased productivity, and the application of advanced technology have forced a critical change in employers' workforce needs and the role of the workforce as a key contributor to economic competitiveness. As industries have shifted away from labor-intensive operations toward high-value processes, there has been a shift in the way work is performed. Work is no longer organized hierarchically to perform rote tasks, and it is increasingly organized in more flexible structures. To compete in this world, employers are seeking workers with more education, higher skills, and a broader range of behavioral competencies.

National workforce statistics reflect the trend: since 1940, unskilled and semi-skilled blue-collar workers have declined as a portion of the workforce from 28 percent to 16 percent.³ Replacing these workers is a rapidly expanding category of higher-skilled labor force participants frequently referred to as “technical” workers. One category of these workers—“technicians and related support”—is the Department of Labor's fastest-growing occupational group—expanding

¹ SRI International, *Gaining the Lead in the Global Economy*, p. 24.

² For a list of Strategy 21 members, please see Appendix A.

³ Stephen R. Barley, *What do Technicians Do?*, p. 1.

57 percent from 1979 to 1992 and projected to grow 32 percent more by the year 2000.⁴ The specialized expertise of these technical workers—who today span occupations as diverse as CNC operators, computer-aided drafters, electronic technicians, medical laboratory technicians, and network engineers—is increasingly important to the global economic competitiveness of cutting-edge companies.

The shifts in employer demand for workers are mirrored by shifts in the educational attainment of the U.S. workforce. The proportion of workers with no more than a high school education dropped by a third from 1980 to 1995, while the portion of the workforce attaining higher education grew by 58 percent. These national statistics confirm what anecdotes and high school guidance counselors have long suggested—that a high school education no longer guarantees rewarding and secure employment in the new economy.

Forward-thinking regions that are growing and securing their place in the global economy recognize the importance of responding to these changes in employment and their impacts on the workforce. Such regions concentrate on developing a pipeline of technical workers and on providing opportunities for companies and employees to upgrade workforce skills. The sheer speed of technological change makes upgrading skills at least as important as preparing new workers. A leading site selection firm, PHH Fantus Consulting, notes that “trainability,” is a “crucial feature” of workforce competitiveness, and one which companies are coming to judge by the educational attainment of the available labor pool.⁵

Greater Philadelphia's Economy and Workforce

In recent years, Greater Philadelphia has missed out on the post-recession growth experienced by other regions. Despite a proud tradition of leadership in higher education, the region's workforce remains relatively undereducated, particularly for that portion of the workforce attaining an associate's degree or some other form of higher education below the baccalaureate degree. Indeed, an analysis of educational attainment across Greater Philadelphia and seven benchmark regions reveals that this region's workforce ranks last in its percentage of workers with postsecondary training below a baccalaureate degree.

The analysis also reveals that Greater Philadelphia's workforce is polarized in its educational attainment, having a large pool of workers without any education beyond high school and an above-average sized pool of college-educated workers. Where the region comes up short is in workers who have pursued that middle ground of higher education and training available at community colleges and technical schools. Concerns about the underdevelopment of this portion of the workforce become more pronounced as employers here and across the nation raise the hiring stakes by demanding a new class of worker—one possessing a broad range of basic, technical, and other skills. What makes the region's underdevelopment in this area particularly troubling is that such talent is not efficiently imported from other regions. Greater Philadelphia has no choice but to grow its own technical workers.

Answering the Call to Compete

If Greater Philadelphia's economy were growing and if regional employers expressed satisfaction with the quality of the workforce, then workforce issues would be of little concern. Yet the regional economy is not growing at nearly the pace of the national economy, and existing

⁴ George T. Silvestri, “Occupational employment: wide variations in growth,” p. 59.

⁵ PHH Fantus Consulting, *Benchmarking Assessment for the Commonwealth of Pennsylvania*, p. 70.

survey data and PEL's interviews reveal that employers are frustrated with the workforce and concerned about its future competitiveness.

Will the "market"—interactions between employers, employees, and educational institutions—work to correct this imbalance between supply of skills and demand for skills? History suggests that it will not. The marketplace for workforce development needs and services in Greater Philadelphia has performed poorly to date. Except in those instances where a third party has emerged to help join supply and demand, the region's employers are left to fend for themselves, to settle for a less-than-qualified workforce, or to move operations to locations that have a workforce more attuned to employers' skill needs. There has been no strong voice articulating shared workforce needs across the employment spectrum, no clear "market makers" to bring educational institutions and employers into alignment.

One reason that market-making has been difficult in Greater Philadelphia is that the region lacks dominant employers who can by themselves create a constituency to be served. The process is also made more difficult by the diversity of the region's economy, by the distribution of employers across a geographic region that spans numerous political jurisdictions, and by the historically fragmented nature of public-sector leadership on workforce issues. Even as the community colleges in Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties have developed business and industry outreach programs, they have found it difficult to discern employers' workforce needs and meet their demands for training.

For Greater Philadelphia to meet the workforce development challenge it faces, it must learn from other regions that have gained a reputation for success in workforce development. While the workforce training market operates inefficiently in this region, other regions have demonstrated that joint private-public leadership can build strong and productive relationships between employers, economic development officials, and educators.

Advancing a Regional Response

To break out of its current economic stagnation, Greater Philadelphia's public- and private-sector leaders must demonstrate to companies here and around the world that the region is capable of providing the quantity and quality of workers they demand. Not until then can the region look forward to the economic benefits that accrue from meeting the immediate training and skill needs of companies and developing the long-term strategies that support a growing pool of technical workers.

How can Greater Philadelphia's business, education, and economic development leaders respond to the challenge? There are several choices—simply let the market work as best it can, respond ad hoc to threats and opportunities, look to the state for leadership, or develop new regional capacity to address workforce needs.

Let the Market Work: Frustration with the current workforce development system has led many in the business community to conclude that they will try to solve their workforce problems by themselves. In its interviews, PEL noted a healthy skepticism on the part of many employers about the ability of public policy and publicly funded programs to develop the innovative solutions that have become accepted practice in other regions.

History suggests that the region's diverse economy and lack of dominant employers have made it difficult for the market to bring the workforce into alignment with employer needs, and it seems unlikely that the market will work more efficiently in the future.

Respond to Threats and Opportunities: Over the past few years, the region has experienced several events—either threats or opportunities—that have spurred action and innovation in workforce development. The closing of the Philadelphia Naval Shipyard, for example, brought about the creation of the Shipyard College, a collaborative effort of regional community colleges and Drexel University to provide education and training to displaced Naval Yard workers. In somewhat similar fashion, current changes in the health care economy have motivated activity among hospital officials and labor unions to provide retraining to displaced workers.

While this strategy has resulted in some notable innovations, it remains a fragmented and sporadic approach, and it does not build long-term capacity. Indeed, it is typically focused on meeting the needs of displaced employees rather than existing and future employers. If the region is to build a reputation for the quality of its workforce and its workforce development infrastructure, it must build capacity in a more comprehensive fashion. Trying to create that capacity piecemeal to respond to a crisis or an opportunity is an incomplete solution.

Look to Harrisburg: Throughout the country, state governments have become the leaders in using workforce development to improve economic competitiveness. In recent years, Pennsylvania's state government has begun to focus on workforce issues. The 1996-97 state budget contained a significant increase in funding for Customized Job Training, an employer-focused skills development program created in the early 1980s, and it funded two new workforce development pilot programs. Pennsylvania's long tradition of local autonomy, however, will make it difficult to pursue strategies like those that have helped other states succeed. In states like the Carolinas, the government directly employs community colleges in workforce and economic development; Pennsylvania, on the other hand, does not currently have in place the structural and financial levers to effect sweeping change in its community college system.

Create New Regional Capacity: Workforce competitiveness transcends political boundaries—few companies draw all of their workforce from one county or city, and many workers travel across county and even state borders to find employment. Regions that have successfully integrated workforce development with economic development have forged strong alliances between the business community, the economic development community, and the educational community to create policies and strategies that work across geographic boundaries.

Given employers' skepticism about existing programs, the fragmentation of the existing training infrastructure, and the slow pace of change in state workforce policy, building new regional capacity to address workforce issues comprehensively may be the most effective way to build a world-class workforce. From this perspective, what is needed is a new regional body solely focused on meeting the current and future workforce needs of a competitive economy. This new entity must be a partnership of public- and private-sector entities and must become the region's leader in workforce development.

A framework in which such a partnership could create a regional approach to workforce development follows.

Creating a Partnership for Workforce Competitiveness

Crafting a workforce development strategy that identifies both long- and short-term initiatives, that bridges the geographic boundaries of a regional economy, and that is responsive to the needs and concerns of both employers and educational providers requires a new way of thinking for the region's economic development leaders. First and foremost, the agenda of a new partnership for technical workforce development must be driven by employer needs and private-sector standards. In addition, it must be an equal partner with existing economic development

organizations, and it must engage the region's education and training institutions in a performance-oriented relationship with private-sector employers.

A workforce development partnership, operating under the principles outlined above, must then provide the leadership necessary to:

- integrate workforce and economic development policy and practices;
- develop a flexible education and training system to address short-term workforce needs;
- facilitate business partnerships and access to education/training resources; and
- develop a long-term strategy for improving regional workforce competitiveness.

Looking forward, it is important to recognize that the quality of the region's workforce cannot be improved overnight—it will require a long-term commitment. Greater Philadelphia must also recognize that workforce development is not something you fix once and then let be. All members of the region's economic development community—private and public leaders, educators, and the workers themselves—must be committed to ongoing investments and continuous improvements in workforce development.

I. Introduction

Scope of Project

Two of Greater Philadelphia's leading economic development organizations—the Strategy 21 partnership of regional economic development organizations⁶ and Greater Philadelphia First—have sought in recent years to increase their understanding of the region's competitive economic position. Both have concluded that workforce quality and workforce development are issues central to economic competitiveness, and both are concerned that Greater Philadelphia is not developing the competitive workforce that employers demand. This is particularly true with regard to developing a technical workforce—those skilled workers typically educated beyond high school but not necessarily at the baccalaureate level.

To help define and seek solutions to the region's technical workforce concerns, members of Strategy 21 and Greater Philadelphia First came to the Pennsylvania Economy League with the following question: How can Greater Philadelphia's workforce development system offer a cutting-edge labor pool of sufficient quality and size to meet the demands of globally competitive businesses? This report seeks to answer that question by examining workforce issues from the perspective of the region's employers.

While every economy depends upon a mix of workers covering the entire spectrum of skills and educational attainment, this report focuses on what might currently be the most compelling segment of the evolving workforce, due both to its rapid expansion and the sense it may hold a key to a thriving business environment: that brand of employees known as "technical workers." In focusing on the technical workforce, this report does not address disadvantaged or displaced workers, those targeted by welfare-to-work programs, or the upper tier of the workforce frequently referred to as "knowledge workers." Technical workers are neither white collar nor blue collar, as the terms traditionally have been used. They have advanced skills; they have received formal education and training beyond high school, they combine theoretical and applied knowledge in their jobs, and they span occupations as diverse as computer-aided designers, computer network engineers, and medical laboratory technicians. Secretary of Labor Robert Reich and others have referred to this emerging group of workers as America's "new middle class."

To develop a better sense of how Greater Philadelphia's labor force competes in this middle portion of the workforce, and how the region is positioned to compete in the global economy, a group of concerned organizations came together. Their goal was to examine regional employers' demand for technical workers, the characteristics of the available labor pool, what strategies are being pursued here and elsewhere to cultivate a world-class workforce, and how lessons from those strategies might be applied to workforce development in Greater Philadelphia. To understand and address these issues requires: 1) understanding employers' workforce needs; 2) understanding the role of the region's educational institutions; 3) identifying innovative workforce development strategies that have been implemented around the country; and 4) using the lessons learned from other regions to focus on opportunities for regional workforce development initiatives.

⁶ For a list of Strategy 21 members, please see Appendix A.

Research Approach

The research presented in this report was conducted by the Pennsylvania Economy League, Inc.—Eastern Division (PEL), a 60-year old, nonprofit, public policy research organization. PEL's mission is to identify, analyze, and seek solutions to important issues of economic competitiveness and government performance affecting Pennsylvania. PEL comprises four divisions, each led by a corporate Board of Governors and focused on the challenges facing a particular region of the state; the Eastern Division focuses on issues affecting the five counties of Southeastern Pennsylvania.

The organizations that drove the development of this report, *Building a World-Class Technical Workforce: The Key to a Competitive Greater Philadelphia*, are the Ben Franklin Technology Center of Southeastern Pennsylvania, the Delaware Valley Industrial Resource Center, Greater Philadelphia First, the Pennsylvania Economy League, and the Wharton Small Business Development Center. To ensure private-sector input into the development of this report, PEL formed an advisory task force comprising representatives of the aforementioned organizations, and of the Council for Adult and Experiential Learning. The task force was led by PEL Board member Shirley Dennis, whose expertise on workforce issues is based on a distinguished career of service in positions such as Secretary of the Pennsylvania Department of Community Affairs and Director of the Women's Bureau in the federal Department of Labor. Under Ms. Dennis's leadership, the task force proved instrumental in shaping paths of inquiry and in honing the findings reflected herein. The members of the advisory task force are:

Shirley M. Dennis, Task Force Chair and PEL Board Member

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Acting President, Ben Franklin Technology Center of Southeastern Pennsylvania

The research and analysis presented within were conducted by PEL staff, most notably Associate Kerry Ann Williams and Research Associate Gary W. Ritter, under the guidance of Research Director Steven T. Wray and Executive Director David B. Thornburgh. Associate Brett H. Mandel, Research Associate Sue Y. Kim, and Research Assistants Ericke S. Schulze and Ryan Traversari played critical roles in carrying out the research.

Acknowledgment

The project task force and PEL staff extend their appreciation to the many people who assisted in the development of this report, including the 75 individuals who gave of their time and expertise

in agreeing to be interviewed;⁷ Dr. Helen Richardson, consultant to the Delaware Valley Industrial Resource Center, who facilitated meetings with employers in the manufacturing industry; and Dr. Robert Zemsky, of the University of Pennsylvania, and Dr. Peter H. Garland, of Pennsylvania's State Board of Education, for collaborating with PEL on a roundtable discussion between employers and educators that furthered PEL's understanding of workforce issues and contributed to the State Board's assessment of postsecondary technical and occupational education in the Commonwealth.

Notes on Methodology

To answer the questions that the project sponsors and the project task force identified, PEL: 1) analyzed state and federal data on employers, workforce, and education/training; 2) interviewed or conducted discussion groups with 75 representatives of industry and education; and 3) reviewed innovations and best practices from other states.

Workforce and education data for Greater Philadelphia were gathered for the Primary Metropolitan Statistical Area (PMSA)⁸—comprising parts of Southeastern Pennsylvania and South Jersey—but discussion of public-sector policies and actions is limited to Pennsylvania, in keeping with PEL's mission. Using the federally designated region of the PMSA demonstrates a recognition that the business community in Southeastern Pennsylvania draws a significant portion of its workforce from the New Jersey counties identified. Not included in the scope of this research are other areas from which the region draws a small portion of its workforce, such as Delaware and parts of Pennsylvania such as Lancaster or Berks Counties.

Using data aggregated at the PMSA level also permits comparison of Greater Philadelphia's data to that of other regions around the nation. Where statistics are available, Greater Philadelphia has been compared to the following regions: Baltimore, Boston, Chicago, Cleveland, Detroit, Raleigh-Durham, and Phoenix. Baltimore and Boston were selected on the basis of their positions as East Coast competitors to Greater Philadelphia; Phoenix and Raleigh-Durham were chosen for their recognized status as growing and vibrant economies; Chicago, Cleveland, and Detroit were chosen as older industrial cities that, despite that legacy, appear to be outperforming Greater Philadelphia in some measure of workforce-related economic vitality.

⁷ For a complete list of interviewees, please see Appendix B.

⁸ Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties in Pennsylvania, and Burlington, Camden, Gloucester, and Salem Counties in New Jersey.

II. The American Economy and the American Workforce

Changing Realities of the Workplace

A Time of Change

Newspaper headlines present a murky picture of the state of the U.S. economy: employment is up but wages are flat; job opportunity abounds but job security has evaporated; productivity is up but global competition threatens. Indeed, the economic state of the country appears to be seesawing from good news to bad news and back. Consider the following:

- a 1996 report from the Council of Economic Advisors heralded the creation of 8.5 million net new jobs since 1993, yet noted that real wages stagnated into the 1990s and job displacement has resulted in significant and persistent real wage loss;⁹
- in March 1996, *The New York Times* ran a week-long series called "The Downsizing of America", highlighting layoffs at corporate giants like AT&T, while one month later, *Nation's Business* ran a cover story on small businesses titled "Help Wanted Desperately";
- all indicators suggest that a worker with a high school diploma is not adequately prepared to find a family-sustaining job, yet as many young people set their sights on a bachelor's degree, the Bureau of Labor Statistics forecasts that one quarter of those who attain the degree will not find college-level jobs.¹⁰

While the transitions unfolding in the marketplace of jobs and work can appear contradictory, two clear trends have accompanied job creation in the U.S. over the last 25 years: 1) there has been a shift in industry away from heavy manufacturing and labor-intensive operations and toward high-performance businesses that emphasize advanced technology and added value; and 2) there has been a shift in the way work is performed away from hierarchical structures and rote processes and toward flexible work environments and high-skilled functions. While such change brings with it economic anxiety, it also creates opportunity for flexible and dynamic businesses that can attract and retain a skilled workforce.

These trends are most apparent in manufacturing. Throughout the 1980s, those U.S. manufacturers who could not adapt to higher quality requirements, shorter production runs, and more flexible manufacturing did not survive. Those firms that survived and indeed thrived discovered that to increase productivity required higher-skilled, broadly competent and flexible workers, as well as new work environments. The result has been a rise in the proportion of the manufacturing workforce that has attained some higher education. In 1985, for example, 75 percent of those employed in precision production had no more than a high school education. By 1995, that figure had dropped 11 percent, and the proportion of workers with some higher education rose accordingly.

The Rise of Technical Workers

The education and employment trends in manufacturing are indicative of the critical change in employers' demand for human capital—that basic building block of economic

⁹ Council of Economic Advisors, "Job Creation and Employment Opportunities," Executive Summary.

¹⁰ Kristina J. Shelley, "More Job Openings—Even More New Entrants: The Outlook for College Graduates, 1992-2005," p. 9.

competitiveness—across all industries. A 1994 national employer survey revealed that skill requirements for 56 percent of business respondents across industries rose over the preceding three years.¹¹ This increase in skills and the education that creates those skills pay off: a research effort sponsored by the U.S. Department of Education found that increasing the educational attainment of a manufacturing plant's employees by one year increases productivity by 5 to 8 percent.¹² Flexibility and skills are key—businesses can no longer afford to employ large numbers of unskilled workers assigned to rigid tasks. Instead, they are demanding workers from a rapidly expanding category of higher-skilled labor force participants frequently referred to as technical workers.

Who are these technical workers—the workers that U.S. Secretary of Labor Robert Reich refers to as “the new middle class?” They are the CNC operators who produce custom parts in a job shop; they are the computer-aided drafters who develop designs for manufacture; they are the electronic technicians who assess and repair the telecommunications infrastructure; they are the network engineers who plan, install, and support computer systems and networks; they are the medical laboratory technicians who run diagnostic tests on the blood samples drawn in a doctor's office; they are the associates who handle your travel arrangements; they are the customer support representatives at your insurance company or your bank.

Available evidence suggests that this segment of the workforce is growing rapidly in response to employers' demands. Since 1940, unskilled and semi-skilled blue-collar workers have declined as a portion of the workforce from 28 percent to 16 percent.¹³ One category of these technical workers—“technicians and related support,” as defined by the U.S. Department of Labor, has grown faster than any other occupational group, expanding 57 percent from 1979 to 1992, and is projected to grow 32 percent more by the year 2000.¹⁴

Changes in the educational attainment of the workforce mirror changing employer requirements for skills. Data from the Bureau of Labor Statistics (BLS) demonstrate a clear trend toward higher educational achievement: over the 15-year period from 1980 to 1995, the percentage of the workforce with a high school education or less dropped by a third while the percentage that had some level of higher education grew by close to 60 percent.

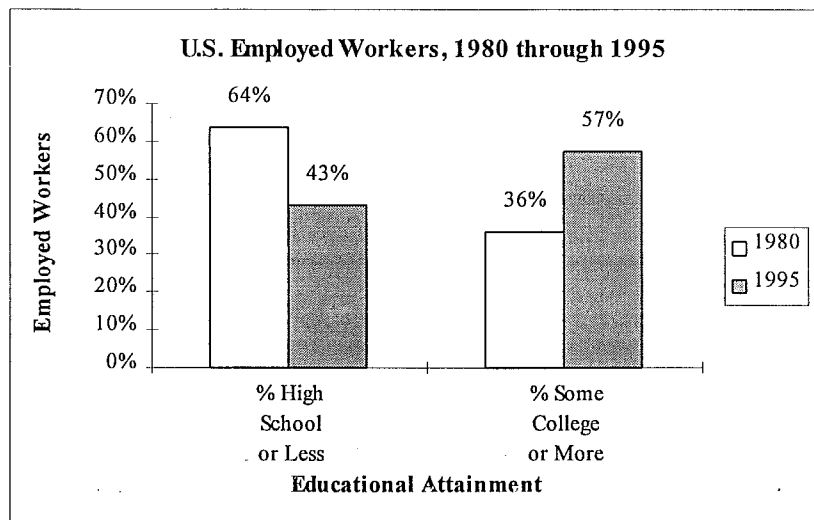
¹¹ Robert Zemsky, “Skills and the Economy: An Employer Context for Understanding the School-to-Work Transition,” p. 9.

¹² Sandra E. Black and Lisa M. Lynch, “How to Compete: The Impact of Workplace Practices and Information Technology on Productivity,” p. 23.

¹³ Barley, *What do Technicians Do?*, p. 1.

¹⁴ Silvestri, “Occupational employment: wide variations in growth,” p. 59.

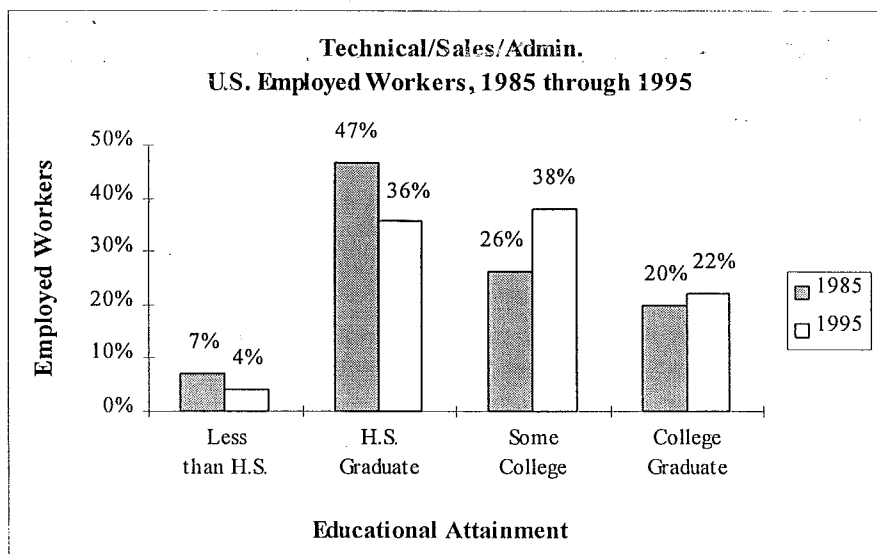
Figure 1: Educational Attainment of U.S. Employed Workers



Source: U.S. Bureau of Labor Statistics, unpublished data.

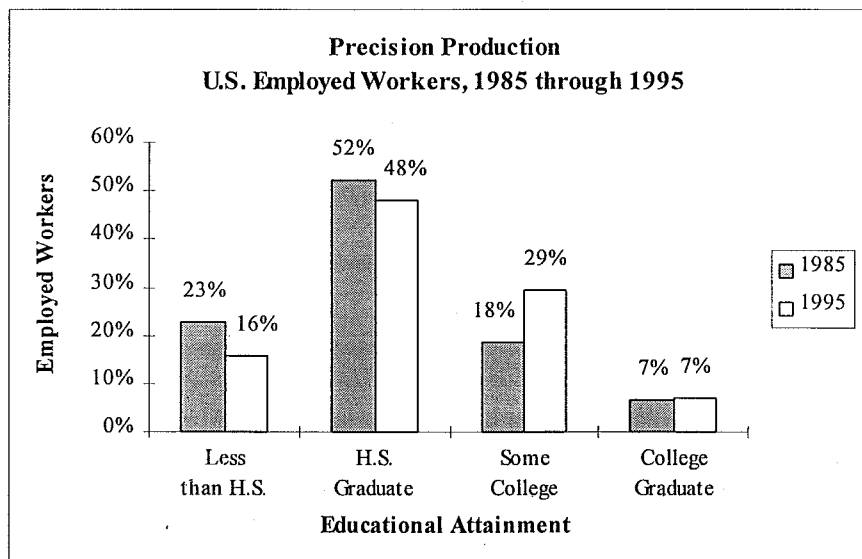
A similar trend toward higher educational attainment can be seen in two categories of workers that capture significant portions of the technical workforce: technical/sales/administrative workers and precision production workers. The following graphs reveal that in both of these categories a high school diploma is rapidly being replaced, not by a four-year college degree, but by a two-year associate's degree or other education beyond high school but below the B.A.

Figure 2: Educational Attainment of Technical/Sales/Admin. Workers



Source: Bureau of Labor Statistics, unpublished data.

Figure 3: Educational Attainment of Precision Production Workers



Source: Bureau of Labor Statistics, unpublished data.

Educational attainment indicators are important not only for what they communicate about the current skill level of the workforce but also for what they communicate about workers' potential to learn. According to one site location firm, PHH Fantus, companies use educational attainment to gauge a potential workforce's trainability—which, PHH Fantus notes, is "a crucial feature at a time when businesses must be 'retooling' their staffs to meet new competitive challenges."¹⁵

¹⁵ PHH Fantus, *Benchmarking Assessment*, p. 70.

III. Greater Philadelphia's Economic Landscape

How Is the Region Performing and How Does It Compare?

A Snapshot of the Greater Philadelphia Economy

Greater Philadelphia is home to a diverse economy that, in terms of employment by industry sector, closely mirrors the U.S. average. Based on employment, the largest industry is services, accounting for 34 percent of all jobs, followed by wholesale and retail trade at 22 percent. Manufacturing and government are tied for the third largest industry sectors, each constituting 14 percent of regional employment.

Since the most recent recession ended in 1991, Greater Philadelphia has struggled to achieve economic growth, though there are communities within the region that are faring well. For example, from 1990 to 1995, U.S. employment rose 6.1 percent. During that same time, employment in one part of the region—Philadelphia—dropped 9 percent, and only one of the four suburban Pennsylvania counties—Chester County at 8.2 percent—rose more than the national average.¹⁶ Overall, however, regional employment has risen only 1 percent in Greater Philadelphia during the five years since the recession ended.¹⁷ Another gauge of economic prosperity is the Income Opportunity Index, which measures economic prosperity based on rate of employment and average annual wages adjusted by cost of living. According to this measure, Greater Philadelphia ranked 24th among the nation's 30 largest metropolitan areas in 1993, the most recent year for which data is available.

While the region's sluggish growth can be attributed to a number of factors, the quality of its labor force seems ominously out of sync with that of more successful regions. With 33 percent of its workforce having earned only a high school diploma (a figure slightly exceeding the national average), this region's labor pool is skewed toward the low end of the educational spectrum. While Greater Philadelphia exceeds the national average for workers who have a four-year college degree, it lags for that portion of the workforce that has attained a two-year degree or similar level of higher education—the training level associated with the new class of technical workers. This distribution of educational talent suggests that Greater Philadelphia does not have the diverse and flexible workforce needed to ensure future economic competitiveness. These trends will be discussed at greater length in the sections that follow.

Regional Comparisons: Educational Attainment

How does the quality of this region's labor force—as measured by educational attainment—compare to other regions? To answer this question, PEL gathered data on seven metropolitan areas around the country (Baltimore, Boston, Chicago, Cleveland, Detroit, Phoenix, and Raleigh-Durham) and compared them to Greater Philadelphia. Baltimore and Boston were selected on the basis of their positions as East Coast competitors to Greater Philadelphia; Phoenix and Raleigh-Durham were chosen for their recognized status as growing and vibrant economies; Chicago, Cleveland, and Detroit were chosen as older industrial cities that, despite that legacy,

¹⁶ Theodore E. Fuller, Kathleen Krehling Miller, and Stephen M. Smith. *Road to Renaissance IX*, p. 7.

¹⁷ Regional Financial Associates. Conversation with Mark Zandi, Chief Economist, October 22, 1996. Figure is for mid-1991 to mid-1996.

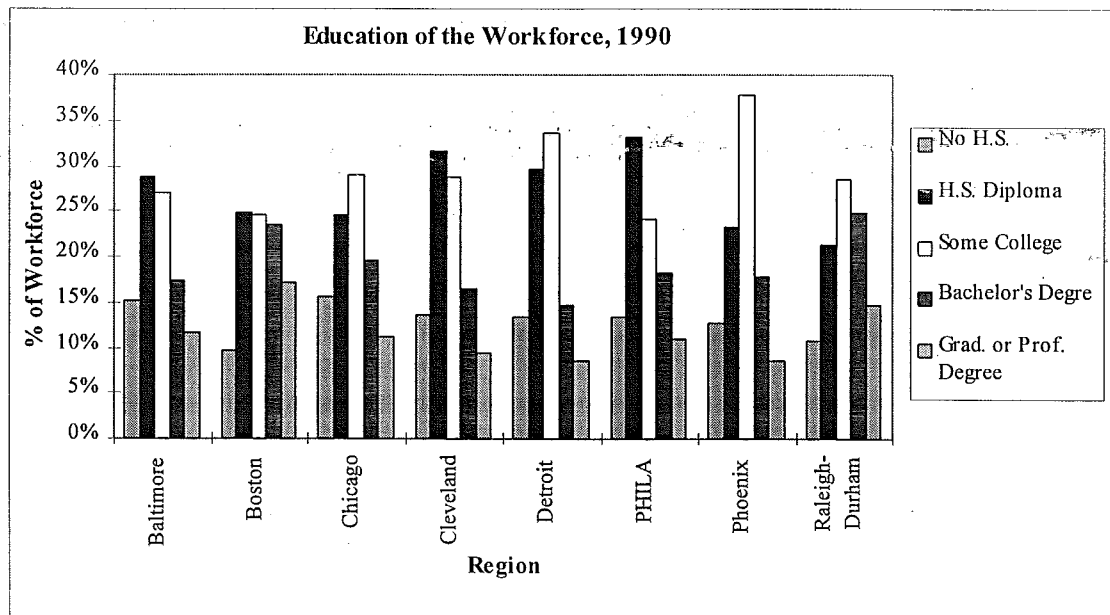
appear to be outperforming Greater Philadelphia in some measure of workforce-related economic vitality.

PEL compared the educational attainment of Greater Philadelphia's workforce (all residents aged 25 through 69 who are employed or actively seeking employment) to those of the seven comparison regions using data from the 1990 census. While the Census numbers are six years old, there is little reason to believe the composition of any region's workforce has changed dramatically since then.

The following graph shows the educational distribution of each region's workforce. Given the national growth trends in the category of "some college,"¹⁸ the importance of skilled and competent workers in high-performance work environments, and what the data reveal, Greater Philadelphia's performance is cause for concern.

With only 24 percent of its workforce having "some college," Philadelphia ranks last among the seven comparison regions and also trails the U.S. average of 29 percent. In contrast, Chicago, Cleveland, Detroit, Phoenix, and Raleigh-Durham stand out for the portions of their workforces educated at the "some college" level. At the same time, one third of Greater Philadelphia's workforce has earned only a high school diploma. None of the comparison regions has such a high portion of its workforce educated only through the twelfth grade. Consistent with its reputation as a center of higher education, the region does exceed the national average for workers with a four-year college degree, yet Greater Philadelphia still trails Boston, Chicago, and Raleigh-Durham in this category.

Figure 4: Educational Attainment of the Workforce—Regional Comparisons



Source: U.S. Census Bureau, 1990 Census, EEOC Tape File

¹⁸ "Some college" encompasses all workers with a one-year, two-year, or other educational credential beyond high school and below a bachelor's degree, or who have pursued and failed to complete any educational program above high school and below a bachelor's degree.

Regional differences with regard to two-year degree or other educational attainment within “some college” may result from modest differences in the structures of the regional economies. For example, larger manufacturing sectors in Cleveland and Detroit may produce demand for higher concentrations of workers who have completed a two-year technical school or manufacturing curriculum. Yet this is not wholly the answer, for regions where the economies more closely mirror Philadelphia’s—such as Boston—also have higher proportions of two-year prepared workers. The following table shows employment by industry sector for the comparison regions.¹⁹

Figure 5: Regional Employment Comparisons

Employment by Industry (%)							
Metro Area	Services	Retail/Whole -sale Trade	Gov't	Manuf.	FIRE*	Transport./ Public Util.	Construc./ Mining
Baltimore	31.6	23.4	18.8	9.3	6.5	4.9	5.5
Boston	38.0	21.8	12.1	12.4	8.5	4.4	2.8
Chicago	29.8	23.1	12.3	16.9	8.0	5.9	3.9
Cleveland	28.6	23.2	13.0	20.6	6.3	4.2	4.0
Detroit	29.4	23.5	11.7	22.1	5.4	4.4	3.5
Philadelphia	33.9	22.1	14.1	14.3	7.1	4.9	3.7
Phoenix	29.3	24.1	13.9	12.9	7.6	5.2	6.9
Raleigh-Durham	29.0	20.6	21.4	14.7	4.8	4.2	5.2
U.S.	28.0	23.2	16.8	15.8	5.9	5.3	5.0

*Finance, Insurance and Real Estate

Source: Bureau of Labor Statistics, Employment & Earnings, August 1995. Cited in *America's Top-Rated Cities, A Statistical Handbook*, 1996 Edition.

Regardless, what is clear is that, at the middle and lower ends, Greater Philadelphia's workforce is relatively uneducated when measured against these seven metropolitan regions. Using education levels as a barometer of employer demand for skills and training, it appears that Greater Philadelphia—historically strong in blue-collar employment—has yet to realize the workforce changes that have made regions such as Phoenix more attractive to business.

It is important to remember that a region's workforce is a natural resource *that can be improved*. While regions such as Raleigh-Durham have demonstrated that it is possible to import talent and skills at the upper ends of the education and compensation scales—biophysicists, for example—logic suggests that regions must cultivate their own talent at the level of technical workers. Indeed, when one manufacturer in Greater Philadelphia recently purchased a small business in a neighboring state and consolidated operations in the Philadelphia suburbs, none of the employees at the acquired company opted to relocate, in spite of incentives offered. The employer was forced to recruit new employees from a region where such workers are already difficult to find.

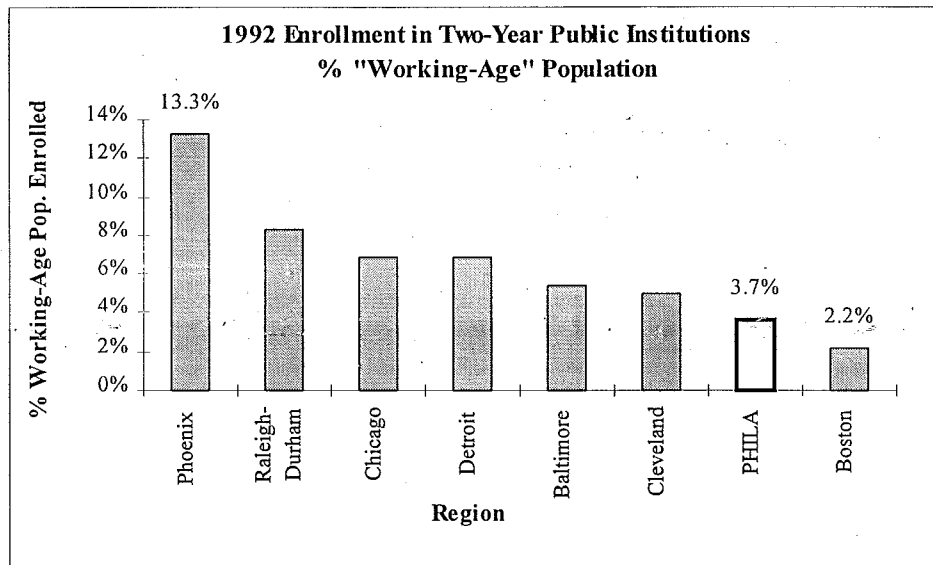
¹⁹ Note: Figures are as of May 1995 and are not seasonally adjusted. Also, numbers may not add to 100 due to rounding.

Regional Comparisons: Enrollment in Institutions of Higher Education

If Greater Philadelphia lags in the educational attainment of its workforce, particularly at the level of the community-college trained technical worker, how can it make up ground? A region improves its educational attainment either by bringing in more educated workers or by improving the education of its existing workers and entrants to the workforce. It is difficult to get a sense of the former but, to get a sense of the latter, PEL compared enrollment figures for Greater Philadelphia to those of each of the seven comparator regions.

The table below shows that the 1992 enrollment at public two-year institutions²⁰ in the Philadelphia metro area totals only 3.7 percent of the area’s working-age population.²¹ This compares to Phoenix, the leader, at 13.3 percent. Philadelphia’s comparatively low enrollment in two-year institutions—despite 18 percent growth in community college enrollment in Southeastern Pennsylvania from 1985 to 1995—is troubling for two reasons. First, it suggests that students, parents, and employers within this region don’t yet fully appreciate the value of two-year institutions in preparing students for competitive careers. Second, it suggests that the region lags in providing a pipeline of skilled workers.

Figure 6: Enrollment in Two-Year Schools



Source: Integrated Postsecondary Education Data System (IPEDS) 1992, National Center for Education Statistics, Office of Educational Research and Improvement (OERI), U.S. Department of Education.

Another reason for the low proportion of the region’s workforce educated at two-year schools is that Greater Philadelphia is home to a large regional network of four-year colleges and

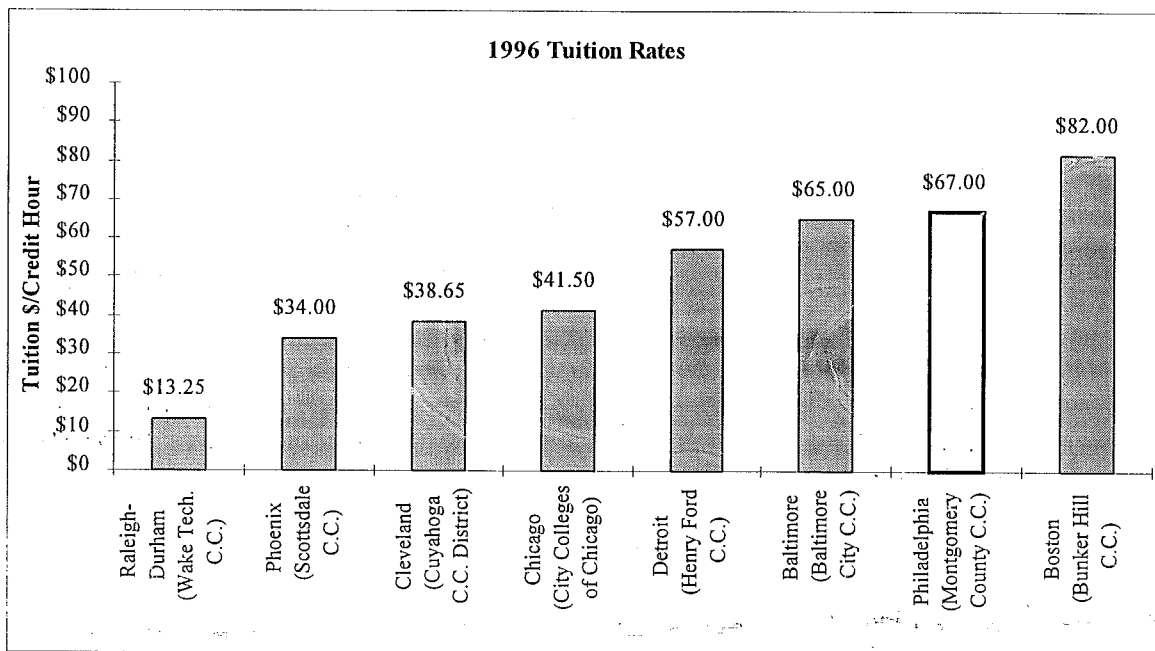
²⁰ “Public, two-year institutions” is a U.S. Department of Education category comprising community colleges and other not-for-profit, public educational institutions such as vocational-technical schools offering approved, postsecondary educational programs. For a complete list of the two-year institutions included in this category for Greater Philadelphia, please see Appendix C.

²¹ The 1992 IPEDS data was the most recent comparable information available as of the writing of this report. Data on enrollment is presented as a function of working age metropolitan population (age 18 to 64) to allow for comparisons across regions of different sizes.

universities, and there may be a strong historical bias in favor of four-year education. The fact that Boston, another region known for its four-year schools, ranks relatively low as well suggests that an “East Coast” or “Ivy League” bias toward four-year college education may be at work.

The cost implications of both running and attending community college may also help explain why enrollment remains comparatively low in Greater Philadelphia. As the following chart demonstrates, tuition rates per credit hour are higher at community colleges in Southeastern Pennsylvania than they are in all of the comparator regions except Boston. Figure 7 depicts comparable tuition rates at an average community college in each of the eight regions.

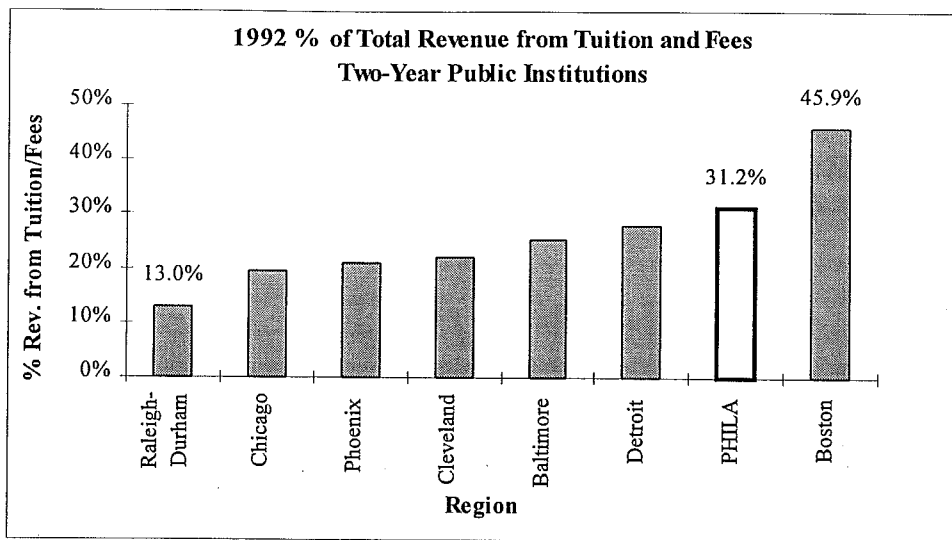
Figure 7: Community College Tuition per Credit Hour



Source: Admissions or Financial Aid Offices of the respective institutions. The schools presented were chosen as representing a middle ground in community college tuition rates for schools in each region.

The cost to students or businesses of community college education in the region is likely to contribute to lower use of these institutions in workforce preparation and economic development. The following graph shows that, on average, Greater Philadelphia’s community colleges derive a higher proportion of their total revenue from tuition and fees than do similar schools in other regions. A review of community colleges’ dependence on tuition as a revenue generator suggests that this dependence is directly related to tuition costs—the higher the reliance on tuition as opposed to state or local funding, the higher the tuition rates.

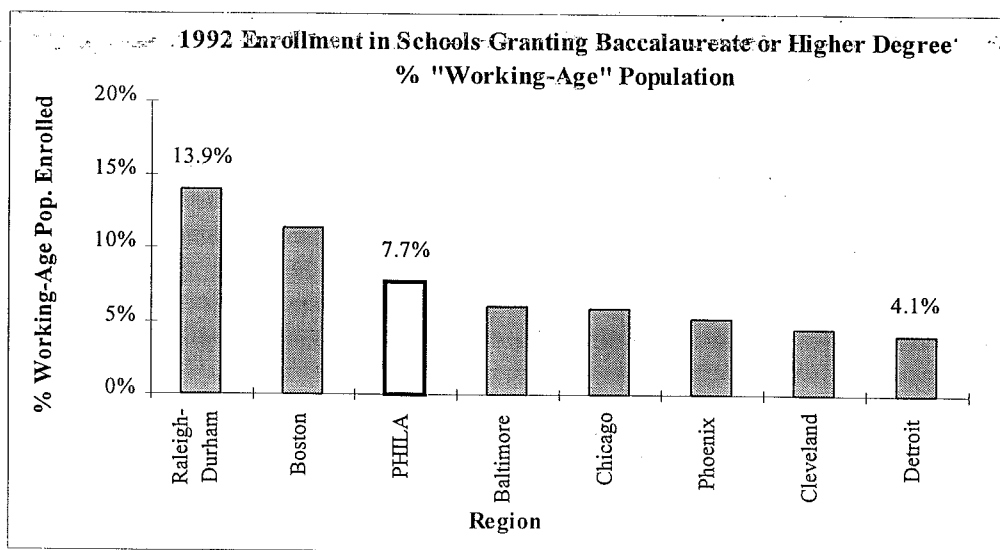
Figure 8: Two-Year Public Institutions—Average Tuition and Fee Revenue Share



Source: IPEDS 1992, National Center for Education Statistics, OERI, U.S. Department of Education.

Greater Philadelphia's gap in two-year enrollments would be less alarming if the region were a clear leader in four-year enrollments. Philadelphia's rank among the eight regions for baccalaureate enrollment or higher is impressive, however the portion of the region's working-age population enrolled in such schools is actually closer to Detroit (last among the regions) than to the leaders. Greater Philadelphia's performance in four-year enrollments is detailed below.²²

Figure 9: Enrollment in Four-Year Schools



Source: IPEDS 1992, National Center for Education Statistics, OERI, U.S. Department of Education.

²² Enrollment data is presented as a proportion of working-age population to allow for comparisons among regions of different sizes. It must be recognized, however, that some portion of the student body at four-year institutions is drawn from outside each region, and some portion will move away upon graduation.

It is possible, given Greater Philadelphia's relative performance in two-year and four-year education, that the region is turning out workers with bachelor's degrees who end up underemployed—filling roles that in other regions are filled by two-year degree recipients. One regional employer stated that it hires baccalaureate degree recipients to customer support positions; similar positions at other companies or in other regions are filled with individuals who have been trained at two-year institutions. For example, AT&T, Citicorp, Gateway 2000, and DST have established a customer support training center in conjunction with the Metropolitan Community Colleges in Kansas City to help maintain the trained labor supply for such positions. There is, however, little proof that workers in Greater Philadelphia are underemployed in large proportions and across occupations.

Workforce Demands of Regional Employers

If the region's economy were growing and regional employers were satisfied with the quality of the workforce, then the educational character and quality of Greater Philadelphia's workforce would be only mildly interesting. The regional economy is not growing, however, and employers that PEL interviewed voiced clear frustrations with the workforce and concerns about its future competitiveness. Indeed, the frequency with which regional employers interviewed for this report made statements like "we're losing companies because they can't find folks" and "workforce quality here is not as strong as it is in other places" is troubling.

In general, interview and survey data lead PEL to three broad conclusions about the state of regional employers' workforce needs:

- Employers' requirements for technical skills and behavioral competencies are rising, and employers worry that the regional labor market and training resources can't meet their current workforce needs.
- There is a disconnect between employers and educational institutions—both in terms of communicating needs and in the perceived relevance of schools to employment.
- Employers have serious concerns that the region will not be able to provide the future frontline workforce needed by competitive companies in a global economy.

How large is the gap between what employers want and what the region's workforce and training institutions can provide? That is a difficult, if not impossible, question to answer quantitatively. In a 1995 analysis of the challenges confronting Greater Philadelphia, authors Neal Peirce and Curtis Johnson called for universities and colleges to create a state-of-the-art labor market forecast that would align jobs and workers in Greater Philadelphia.²³ In a perfect world, such a solution might be possible—business needs could be projected forward with precision, local educational institutions would design their offerings to meet those needs, and students and workers would have a clear idea of where the jobs were and where they could get the training to fill those jobs. Given the difficulty in accurately tracking job creation, and given how difficult and expensive it would be to construct a "real-time" employment monitoring system, those suggestions are not realistic. (In 1995, PEL analyzed available labor market forecasts for Philadelphia's Private Industry Council to determine the utility of such forecasts in informing training decisions and came to the same conclusion in a more detailed way.)²⁴

²³ Neal R. Peirce and Curtis W. Johnson. "Reinventing the Region," p. H12.

²⁴ Pennsylvania Economy League, *A User's Guide to Labor Market Information*, iv.

Greater Philadelphia Is not Meeting the Workforce Needs of Regional Employers

PEL's interviews, and those limited surveys that are available,²⁵ reveal some troubling findings about the needs of regional employers and the ability of the regional workforce to meet those needs. Yet the diversity of Greater Philadelphia's economy results in a broad range of technical workforce needs, making it difficult to summarize those needs. For example, some companies—particularly those in the manufacturing and high-tech industries—are experiencing *an absolute shortage of workers and viable applicants*. Others, like those in health care, have an established and significant presence in the region and have, in many cases, an adequate supply of labor. These employers, however, face a significant challenge in *retooling the incumbent workforce*.

Inadequate Labor Supply

Two industries—manufacturing and data-intensive services—have been vocal about absolute shortages of labor at both a regional and national level. Such shortages constitute a basic market failure—an inability to meet demand. A five-county survey of 961 manufacturing firms is being conducted by the Delaware Valley Industrial Resource Center as of the writing of this report. In the survey's findings to date, 97 companies plan to hire 457 employees combined in the near future; 73 percent of those new hires will be frontline technical/production workers. The reasons for the expansion range from growth of companies to the “graying” of the current workforce and anticipated turnover of employees. Fully 70 percent of respondents confirmed that hiring and training technical/production employees is a difficult process. Furthermore, 68 percent of respondents labeled the quality of available technical/production workers “low” or “unacceptable.”

There has been no corresponding regional survey of employers' hiring needs in high-tech companies or data-intensive services. Yet anecdotal evidence from computer-related businesses and financial services firms suggests that the regional labor market is sufficiently tight that companies are expanding job searches to multi-state and even national levels. A tight labor market, particularly for this industry, is not unique to Philadelphia—employers in growth regions are exhausting their local employment pools and searching elsewhere. In Greater Philadelphia, however, employers believe the shortage is complicated by the perceived lack of a large and visible cluster of business to act as a magnet for new talent.

Inadequate Skills in the Labor Force

Businesses are concerned about the skills of both their existing workforces and of incoming workers. First, a look at concerns about incoming workers: Today, when employers talk about their expectation that secondary schools will turn out graduates with a strong set of basic skills, they no longer mean simply good reading, writing, and math. The term “basic” skills now encompasses all of the traditional definitions as well as problem-solving skills, presentation/oral communication skills, and a recognition of the need for lifelong learning. While some schools recognize this redefinition of the skills needed for career success, employers continue to feel that graduates are poorly prepared for employment.

Employers interviewed for this report generally agreed that students in secondary school and higher education need exposure to technology skill areas as a foundation for technical competence. At the very least, employers expect students to be computer literate. Employers' expectations for more specific levels of technical competence vary across industry sectors and

²⁵ For a list of recent state and local surveys that relate to workforce needs, please see Appendix D.

industry size. Predictably, larger employers voice greater tolerance for and acceptance of the need to train new hires than do smaller employers, due to an increased ability to absorb the costs of training. In general, PEL found that many smaller employers believe they can ill afford a substantial investment in training entry-level workers and consider it a better investment to attract skilled and experienced workers. At the same time, the small businesses interviewed recognize the benefits of providing additional training to experienced workers, whether or not they felt that they could afford to provide it.

The Pennsylvania Technical Assistance Program (PENNTAP) conducted recent statewide surveys of the manufacturing and technology industries in part to determine training needs for existing employees. The surveys highlighted the top technical skill needs and the top non-technical skill or competency needs of respondents, ranked by the percentage of respondents identifying the need. In both industries, there was consensus about the skill areas in which employee training was most needed, and in both industries a greater proportion of respondents indicated a need for technical skills training than non-technical skills training.

Figure 10: Top Training Needs of Pennsylvania Firms

Technical Skill Needs		
Skill Area	Manufacturing*	Technology*
Quality, testing, calibration	36	42
Computers, info. systems, networks	33	44
Manufacturing technologies & processes	26	15
Non-Technical Skill Needs		
Skill Area	Manufacturing*	Technology*
Basic management & HR management skills	24	27
Quality management & productivity improvement	21	22
Sales, marketing, customer service	20	24

*Percent of firms responding affirmatively to need for training.

Source: Pennsylvania Technical Assistance Program (PENNTAP), Needs Surveys, 1995 & 1996.

The skill areas highlighted reflect the workforce needs of companies in a new economy—one that is characterized by advancing technology and new work processes. It is in Greater Philadelphia’s economic interests to find ways to meet these workforce needs.

The Disconnect between Employers and Schools

One of the most troublesome findings of this report and other research efforts is that, in general, schools and employers not only fail to communicate well with one another but employers tend to discount the relationship between formal schooling and work. As researchers with the National Center on the Educational Quality of the Workforce learned in a nationwide survey, the weight employers give to particular hiring criteria reflects a belief that schools matter little in the preparation of frontline workers. The criteria employers considered least important in hiring decisions were teacher recommendations, the reputation of the school attended, and grades.

Employers' most important considerations focused on attitude, communication skills, and previous work experience.²⁶

In Pennsylvania, a 1992 Business Outreach Survey found general dissatisfaction with the basic skills of the entering workforce, yet in an apparently contradictory finding, respondents expressed general satisfaction—or at least not serious dissatisfaction—with educational facilities. In assessing the high schools, vocational schools, and community colleges that constitute “local educational facilities,” only 20 percent of respondents considered community colleges to be “very important.” This placed community colleges last among the three types of institutions, though no more than a third of respondents considered any of these institutions “very important.”²⁷

The disconnect between employers and schools extends to the businesses' use of schools and publicly funded programs to provide training to the incumbent workforce as well. The Business Outreach Survey found that 71 percent of respondents had never used community college facilities for training or further education for the workforce. In addition, 83 percent of respondents had never used the state's Customized Job Training program, 82 percent had not used Private Industry Council programs, and 77 percent had never participated in an apprenticeship program.²⁸

PEL's interviews with employers in Greater Philadelphia found that businesses do not utilize schools or participate in publicly funded training programs for several reasons, including little awareness of available training programs, perceptions of inconsistent quality of programs and availability of courses when needed, concern about the extent to which schools understand business needs, and concern about costs and convenience. One small manufacturing employer complained that employees he enrolled in a community college program spent a great deal of their course time doing hands-on learning with equipment. While that approach might work well for an incoming workforce participant who has not been exposed to a shop floor, the employer felt that it was ill-suited to current employees who are familiar with the equipment but need to learn the theory of the work. Similarly, another small manufacturer complained that he often signs his employees up for community college courses only to be told the classes were canceled due to low enrollment.

Perceptions notwithstanding, research shows that increased education does contribute to increased workforce productivity. As noted earlier, one national study found that raising the educational level of a firm's manufacturing employees by 10 percent or approximately one year increased firm productivity by 5 to 8 percent. Nevertheless, through surveys, interviews, and anecdotes, Greater Philadelphia's business community is saying that it lacks access to a workforce development infrastructure that can assist it with its training needs, and that it lacks confidence in publicly supported institutions to deliver quality workforce preparation.

Employers' Concerns about Future Workforce Competitiveness

Can Pennsylvania—and more explicitly Greater Philadelphia—produce a quality workforce for the future? Statewide, this concern was raised in a 1996 analysis conducted by the site selection

²⁶ Zemsky, “Skills and the Economy,” p. 13.

²⁷ Irwin Feller, Lee Carpenter, Sarah Crandall, and Laura Heuchan, *Business Perspectives on the Pennsylvania Economy*, p. 69.

²⁸ Feller et. al., *Business Perspectives*, p. 71.

firm PHH Fantus, on behalf of the Commonwealth of Pennsylvania, and it has recurred throughout PEL's interviews with regional employers.

Southeastern Pennsylvania's community colleges are aware of the concern and have been active in attempting to respond to the needs of employers and workers in the region. Each of the four institutions in Southeastern Pennsylvania—Bucks County, Delaware County, Montgomery County, and Philadelphia Community Colleges—has developed a center for business and industry training to help employers meet their workforce needs. The private sector on the whole, however, appears ambiguous about the ability of the community colleges to meet their future workforce needs. Some employers express satisfaction with their interactions with the community colleges; others express clear dissatisfaction and frustration; still others have yet to consider the community colleges as a source of training. In turn, community colleges do not feel that they receive the support needed from either business or government to design the types of training programs employers demand.

If employers cannot find enough good workers in Greater Philadelphia, and if they are not aware of or confident in the region's capacity to train the workers they need, they may choose to leave. Indeed two regional employers interviewed for this report stated that they had or were considering locating expansion facilities in regions other than Greater Philadelphia, and a third revealed that he was considering outsourcing significant portions of work to other regions or overseas. All cited workforce quality and availability as primary considerations in their decisions. A 1996 study by Fairmount Capital Advisors for Greater Philadelphia First confirmed that workforce issues such as labor cost and quality contribute to firms' decisions to *relocate* to (not just expand in) other regions. The same study revealed that firms surveyed felt that state, regional, and local economic development officials did not seem interested in learning about their needs, contributing to the firms' perceptions that the region has a negative business climate.²⁹

²⁹ Fairmount Capital Advisors, "Why Companies Have Decided to Leave Greater Philadelphia," p. 3 and p. 7.

IV. Answering the Call to Compete

Current Approaches to Workforce Development in Greater Philadelphia

If workforce issues are increasingly important to regional economic competitiveness, regions with education and training systems that are highly responsive to employers' needs will be more likely to succeed in attracting and retaining business. This section examines the methods employers in Greater Philadelphia are using to address their workforce needs, and initiatives that are underway in other regions from which Greater Philadelphia's leaders might learn.

Employer Strategies

Largely left to their own devices, how have individual businesses in Greater Philadelphia tried to attract, retain, and train an adequate workforce? PEL's interviews revealed a number of strategies adopted by employers to compensate for what appears to be an under-educated regional labor force. Either singularly or in combination, employers have:

- raised the bar for entry to the workforce;
- lowered the bar for entry to the workforce;
- invested substantially in workforce training;
- outsourced functions;
- worked with schools to secure a stream of entry-level workers;
- aggregated demand for workforce development within industries.

Raising the Bar

Many employers among those PEL interviewed have raised their hiring standards, seeking college graduates rather than high school graduates, or experienced employees rather than new graduates. The reasons are related to behavioral competencies as much as to skill levels.

One regional employer explained that within the last two years, her company had raised the bar in hiring for many positions from new college graduates to college graduates with related work experience. The company felt that it no longer had the luxury of investing in ground-level training for inexperienced employees. Many years prior, the same consideration prompted a decision to hire college graduates rather than high school graduates, as the company felt that colleges were "creaming" the best students from the schools. "Raising the bar" has become an increasingly popular strategy for employers, and one made easier by the sheer numbers of students now pursuing higher education.

Employers' preference to hire workers with more advanced education and skills has different implications in regions that have a deep and diverse workforce pool and in regions that don't have such a labor pool. In the first case, employers might incur greater costs by hiring workers with increased skill and education levels, yet the potential labor pool allows them to choose where they will get the most bang for their buck. In regions that offer employers a less diverse labor pool, employers may be forced to "buy higher" than their competitors.

Lowering the Bar

Particularly in growing industries, some businesses take the opposite approach by lowering their hiring requirements—usually to eliminate a call for previous work experience rather than to lower educational criteria.

Businesses pursuing this strategy tend to have concerns about the cost and supply of labor. For cost reasons, one health services firm has reversed a policy of hiring only nurses with hospital experience and is recruiting directly from schools. An employer in the data-intensive services industry made a similar change in hiring for specific positions, attributing the decision to a rapid growth period for the company, the lack of a sufficient, experienced labor pool from which to fill their needs, and the prohibitive costs involved with trying to lure away large numbers of experienced workers from other companies and other regions.

While cited as a cost reduction strategy, “lowering the bar” can impose indirect costs on employers that may counteract any intended savings. These indirect costs are incurred when new and inexperienced employees must climb a steeper learning curve upon entry to a workplace, resulting in higher-than-average costs of training or a loss in productivity for the company.

Investing in the Workforce

Extensive training for new hires at all levels is a routine matter for many companies, particularly large employers. Such training may include orientation to the company philosophy, facilities, equipment, expectations, and benefits, as well as training specific to the new employee’s job responsibilities.

One regional manufacturer recently began investing in its workforce, both to upgrade competitiveness and to address the changing quality of its applicant pool. As this interviewee noted, “We no longer worry about getting the technically qualified. We will train them our own way.” This firm’s training is open to all employees, not just new hires, and was implemented along with a reorganization of the work environment. The initiative includes vendor-provided training related to products, math and language courses taught on-site by outside training providers, and technical courses provided by certified staff. The business may begin offering GED courses to employees as well.

The employer reports satisfaction with the results of its training investment—including documented improvements in productivity and increased employee loyalty—yet has some concerns about costs. Money that now goes to training, including basic and remedial education, might otherwise be invested in higher level training, improved pay or benefits, equipment and technology, or other productivity enhancements. In a region where the public sector plays a very limited role in workforce development partnerships, such costs are less likely to be shared but to be born solely by the employer.

Outsourcing Functions

Outsourcing particular jobs is a strategy that employers have long pursued to reduce costs or to avoid the costs of having to acquire additional expertise. Several of the companies interviewed by PEL in data-intensive services expressed interest in outsourcing functions in response to both a shortage of highly skilled labor and the costs involved in trying to attract such employees to the region. These companies are also considering moving operations to, or expanding operations in, other parts of the country.

Each of the regional employers making this argument stated the need to improve access to skill sets; several also viewed the strategy as a cost-saving mechanism. The potential for incurring additional costs also exists, however, if the contracting organization fails to live up to the employer's expectations and the employer cannot exercise sufficient control over the contractor. The strategy also has negative connotations for Greater Philadelphia—including the loss of good-paying jobs, loss of businesses, and a handicap on the region's ability to keep, grow, or attract related businesses in the future.

Working with Schools

Another strategy employers shared with PEL—and one pursued by only a few of the employers interviewed—is direct employer involvement with the schools to build a stream of potential new employees. Employers who were most satisfied with the outcomes of their involvement worked not only with students but with teachers and school administrators as well. Such partnerships take many forms, including established apprenticeship programs, summer internships for students, and career information sessions for teachers and/or students during the school year. Employers contend that the success of such partnerships depends upon a strong commitment from the school and participating students and staff, and significant employer investment to make the experience meaningful. In the end, the employers also concede, what they secure for their investment in terms of eventual full-time new hires is less a *trained* employee and more an “adequate *trainee*.” Employers interviewed still put new hires from such programs through additional education and training.

The opportunities represented by such partnership strategies are significant—employers can formally or informally influence what students learn, and students and school personnel receive a valuable orientation to the world of work. These are the types of partnerships the federal government's 1994 School-to-Work Opportunities Act, which sought to consolidate and strengthen career-oriented educational programs, hopes to foster. Yet the cost to the employer in terms of time and resources committed is substantial and may deter many from participating. Likewise, several of the employers interviewed by PEL felt that it is rare to find school administrators and teachers who are willing to make the investments needed to ensure a partnership's success.

Aggregating Demand

In isolated cases, employers in Greater Philadelphia are forming industry-specific partnerships to meet their workforce needs. The Greater Philadelphia Hotel Association's Educational Institute is an example of such a partnership. Through the Educational Institute, members of the Hotel Association provide industry-recognized training courses to workers at all levels of employment, and the training can be applied toward certification recognized by the American Hotel and Motel Association. The Greater Philadelphia Hotel Association's Educational Committee decides what courses are to be offered, and hotels donate the space for classes. In the year since the Association launched the Institute, it has sought to offer three to four courses per semester.

To ensure that the Association is indeed addressing the workforce needs of the region's hotels, it is conducting a membership survey of training needs. Through this outreach effort and its courses, the Educational Institute plays an important role in enhancing the skills of those already employed in the hotel industry. Nevertheless, the Institute addresses only half of the workforce development question; the missing piece is the development of the potential labor pool to fill the industry's new hiring needs.

Public Policy Responses

What have state and local governments done in this region and this state to address the workforce development challenge? The public sector is involved in workforce development in two ways: upgrading the skills of the incumbent workforce and preparing young people to become workforce participants. In most cases, the public sector's involvement consists of financial support to schools, or state-level grant programs to help individual companies support workforce training. At neither level are public entities in Pennsylvania as deeply or comprehensively involved as those in flagship states like North or South Carolina.

Public-Sector Involvement in Preparing Workforce Entrants

State and local governments are financially vested in the preparation of tomorrow's workforce through their support of secondary schools, community colleges, and public four-year colleges and universities.

In this report, PEL emphasizes the importance of developing a diverse workforce to meet employer needs and of growing or attracting the types of technical jobs that have been identified as growth occupations for the future. One of the areas in which Greater Philadelphia's workforce and its educational institutions lag behind areas outpacing this region in economic growth is in the two-year training that increasingly prepares workers for technical jobs.

Two-year college education in Greater Philadelphia is delivered through community colleges and proprietary schools. Because proprietary schools do not receive direct public-sector operating support, and because enrollment in the region's proprietary schools is relatively low compared to other types of educational institutions, they are not included in this analysis.

In accordance with state law, Southeastern Pennsylvania's four community colleges are locally governed, county-based institutions, sponsored both by local school districts and a local government body. Operating support is derived one-third from the state and two-thirds from the locality, although in some cases the state ends up shouldering more than one-third of the burden. Up to half of the locality's support may be tuition based, and most of the state's community colleges have reached that statutory limit.

Community colleges in Greater Philadelphia and elsewhere evolved to fill a junior college role in preparing students for baccalaureate education, and they continue to meet high levels of demand in this arena. Indeed, Community College of Philadelphia has been nationally recognized for its performance in "transfer" education (preparation for earning a bachelor's degree). In other regions, two-year schools have developed a more explicit focus on preparing workforce participants.

Bucks County, Delaware County, Montgomery County, and Philadelphia Community Colleges have developed reputations for filling a pipeline of technical workers for certain industries such as health care services. Yet their success to date in transfer education, and the region's diverse economic base (which makes it difficult to develop a strong curriculum around a particular industry's needs), complicate expansion of career programs. The costs of funding career education programs and the equipment needed to support those curricula are also a concern for community colleges, despite a state-designated variable stipend for occupational education.

Public-Sector Involvement in Upgrading Workforce Skills

From the employers' perspective, the two most visible public-sector training programs operating in Greater Philadelphia are the federally funded Job Training Partnership Act (JTPA) programs

overseen by the county Private Industry Councils (PICs), and the state's Customized Job Training Program.

In terms of dollars allocated, the federally sponsored PIC programs dwarf the state's Customized Job Training budget. All told, for the 1996 program year, close to \$26 million in JTPA funds was allocated to the five counties of Southeastern Pennsylvania, primarily to assist JTPA's target populations of disadvantaged and displaced workers.

A much smaller program in terms of funding, Pennsylvania's Customized Job Training (CJT) program has been the state's flagship program for upgrading the skills of non-disadvantaged workforce participants since the early 1980s. CJT has been the state's only employment and training program that could be used for business attraction and retention. Since 1988-89, the Commonwealth's investment in the state-wide CJT program has fluctuated from a high of \$11.5 million in 1989-90 to a low of \$5.3 million the following year, based on state resources available to fund the program and on demand for the program's services. It is interesting to note that while Southeastern Pennsylvania accounts for over a third of the state's employment, the portion of funds going to employers in Southeastern Pennsylvania has not exceeded 20 percent in that time.

Since taking office, Governor Ridge has expressed a commitment to investing in workforce development—a commitment that resulted in \$9 million dollars being allocated to the CJT program in 1995-96, and \$15 million budgeted for the 1996-97 fiscal year. Observers feel that the increased funding is a step in the right direction, but the program is still subject to criticisms that funds are earmarked largely for companies creating new jobs, rather than upgrading existing jobs, and that funds are not accessible to small and mid-sized firms. In addition, competition for CJT dollars often is keen, and appropriated funds may be committed within the first half of the fiscal year.

For FY97, the Governor proposed, and the General Assembly approved, funding for two additional workforce development initiatives—a Business Quality Partnership and Individual Learning Accounts. The Business Quality Partnership is based on an employer-driven program at Duquesne University that links the business and training communities. State officials anticipate that grants will be made to groups of businesses to form their own training programs with an approved training provider. Individual Learning Accounts, on the other hand, will be grants to individual employers to foster shared investment and planning in skills and education development for employees. Each initiative is funded at a quarter of a million dollars, rendering them small pilot programs rather than large-scale initiatives.

While recent initiatives from Harrisburg recognize the importance of a flexible, highly skilled workforce to economic vitality, a significant concern about the success of such efforts is that the approach remains piecemeal and that the state has come late to the game. As other states further their reputation for supporting workforce development, Pennsylvania remains at risk of giving up ground it can ill afford to lose.

Absent: A Voice for Change

Greater Philadelphia's economic and workforce characteristics, and the employer concerns outlined in the preceding section, paint a troubling picture of a region that is treading water in economic performance. The region is not providing its employers with the workforce they need, nor is the region aggressively positioning itself for future economic growth. Unfortunately, both public- and private-sector initiatives have been either too modest in scale, too limited in scope, or too fragmented to have significant impact. No organization, public or private, has been able

to develop a clear and cohesive definition of what employers need from the regional workforce, and then develop a structure or system to fill those needs.

The region's public- and private-sector leaders are not unaware of employers' workforce concerns. Instead, the absence of a strong voice articulating a shared workforce development vision points to structural characteristics of the Greater Philadelphia economy that have impeded the development of an efficient and effective system:

- *A lack of large, dominant employers.*
In the forest that is Greater Philadelphia's economy, there are relatively few "tall trees," and even our tall trees are shorter than those in other regions. Figures on establishment size across the eight metropolitan regions studied in this report suggest that, as a function of workforce size, Greater Philadelphia has fewer large firms (over 1,500 employees) than many of the comparison regions, including Detroit, Cleveland, Chicago, and Raleigh-Durham.³⁰ From another angle, Ford employs more people in the Detroit region than all of the companies represented on the Board of Greater Philadelphia First *combined*. The lack of large, dominant employers increases the difficulty of creating a market for workforce training.
- *A diverse economy lacking a dominant industry.*
The diversified economy of the region—where no single industry claims a lion's share of employment—creates multiple, mid-sized workforce markets to be served. While educational programs and a labor pool may develop for one industry, such as health care delivery, other industries go unserved.
- *Historic dependence on the manufacturing industry.*
Much of Pennsylvania's economic history was tied to heavy manufacturing—whether steel in Southwestern Pennsylvania or coal in Northeastern Pennsylvania—or more craft-oriented manufacturing here in Southeastern Pennsylvania. These types of industries were supported either by strong labor union apprenticeship programs or did not require extensive workforce training for their employees. Even as our economy changes, state government is still struggling to change traditional perspectives about workforce policy and workforce development, perspectives that seem increasingly out of sync with the realities of a changing economy.
- *A broad geographic distribution of employers.*
From 1969 to 1994, the share of the region's payroll employment concentrated in the City of Philadelphia dropped from 52 percent to 32 percent, and the suburbs' share of employment grew accordingly.³¹ The distribution of employers across a nine-county geographic region, and lengthening employee commutes, make it difficult to develop constituencies to be served by county-based community colleges.
- *Fragmented and historically weak public-sector leadership on workforce issues.*
Pennsylvania has a long and proud tradition of strong local government that has made it difficult for the Commonwealth to develop a clear and strong voice on issues that affect particular regions of the state. As a result, Pennsylvania does not control and utilize its community colleges as directly as state government does in North and South Carolina.

³⁰ U.S. Department of Commerce, Bureau of the Census. County Business Patterns, 1993.

³¹ U.S. Bureau of Labor Statistics, cited in *Factbook on the Philadelphia Economy 1995*, Table 1.

Without a dominant private-sector force that creates a market for workforce training, and without strong and consistent state policy leadership, companies in the region have been forced to fend for themselves, to settle for less than an optimally prepared workforce, to move operations to locations that can better serve their workforce needs, or to hope that a third party emerges to help join supply and demand.

Competitive States and Regions

In regions that benefit from competitive economies, smart companies and forward-thinking governments alike have recognized the need for a strong workforce development infrastructure. As a result, both private and public sectors have moved quickly to cultivate the competitive workforce demanded by a new economy by investing in training, working with schools, establishing business-education partnerships, and incorporating workforce development more explicitly into economic development activities.

The use of two-year technical schools and community colleges as flagships for workforce development is a fairly recent phenomenon in the history of higher education. Community colleges began as preparatory institutions for university study. Yet the growing importance of frontline workers, in part attributable to companies' trimming layers of management and devolving decision-making authority, has given rise to the importance of two-year educational institutions as training grounds for employment as well as for further study. The Carolinas were among the first states to begin using two-year institutions as tools of economic development by supporting a focus on technical and occupational education,³² and that approach has become the model for workforce development partnerships in competitive regions across the nation.

North and South Carolina use community colleges in a two-pronged approach to workforce development. One strategy is to build a qualified labor pool by preparing incoming workers for careers through existing degree programs. The second strategy is to meet the immediate workforce needs of employers by developing short-term programs to upgrade the skills and competencies of new or current workers. The skills enhancement function is particularly important, because as companies upgrade technology and implement new work processes or high-performance work systems, they require their workforce to adapt and upgrade as well.

In the competition to attract jobs and employers, those states or regions that can demonstrate a workforce development advantage, or even a commitment to workforce development, are being rewarded with media attention (in the form of rankings as "best places" to do business), calls from relocation consultants, and actual corporate relocations and expansions. It is no accident that those regions gaining reputations as good places to do business, or those regions producing remarkable economic turnarounds or exceptional growth, seem to place a high priority on the creation and promotion of innovative workforce development programs.

PEL attempted to identify states and regions that are either well-known for their workforce development programs and policies or that appear to be gaining attention for innovation in prioritizing workforce development as a crucial component of economic development. What the initiatives outlined below have in common—in contrast to Greater Philadelphia—is a comprehensive approach to improving workforce development that cuts across employers, education and training providers, and the public sector.

³² Stuart A. Rosenfeld, "The Metamorphosis of America's Two-Year Colleges," p. 24.

Prioritizing Workforce Development: Michigan

Realizing that a competitive workforce is critical to successful economic development, Michigan Governor John Engler has propelled workforce development to the top of the political agenda.

The Michigan Jobs Commission—whose home page on the Internet challenges visitors to “judge us by the companies we keep”—is charged with implementing the following initiatives and service standards:

- expanding the Michigan Business Retention Program to visit every employer with more than 100 employees once a year to provide customized services that promote job growth (PHH Fantus has called the program the “best business retention program in the nation”);
- developing a network of ten trade academies by 1998;
- developing and lobbying for a youth registered apprenticeship tax credit for job providers, and recruiting at least 500 high school students to participate in apprenticeships;
- designing a vocational training report card to measure graduation rates, placement, and retention of students in all levels of vocational programs;
- and developing an on-line Virtual Tour that allows employers to report economic development needs and concerns—including workforce issues. Michigan has set a standard of responding to all Virtual Tour requests within 24 hours of the inquirer’s visit.

While it is too early to determine the success of these initiatives, the message is loud and clear: Michigan is serious about workforce and economic development. That message is only strengthened by moves such as a spring 1996 state- and business-sponsored forum for educators on the future workforce needs of the auto industry, and Governor Engler’s “Come Home to Michigan” campaign, to address a shortage of skilled workers in the engineering and computer fields. The campaign, launched in March, seeks to attract graduates of Michigan universities who have moved out of state, and the clients of outplacement firms dealing with corporate downsizing in other regions. Michigan has also developed a Web site to help facilitate electronic job applications for appropriate jobs.

Incorporating Workforce and Economic Development: North and South Carolina

The program of customized job training in North Carolina differs from Pennsylvania less in the level of funds allocated and more in flexibility and organization. Some innovative characteristics of North Carolina’s program, including the division of funds between distinct programs for new and existing businesses, are outlined below.

More than 30 years ago, North Carolina developed a unique program of company-specific, customized job training programs provided by the community colleges. Through the New and Expanding Industry Training Program (NIT), customized training is offered to any firm creating at least 12 new jobs. The program receives funding of approximately \$6 million per year, and the funds are allocated to local community colleges to provide needed training. Often, the schools train company employees as course instructors, enabling them to deliver the training on-site and over time.

North Carolina supports the training needs of existing, targeted businesses, particularly in skill areas defined as “critical” or very important, through the Focused Industry Training Program (FIT). FIT is funded at \$3.5 million per year, allocated mainly to community colleges based on the manufacturing presence in the area. At the request of area manufacturers, the local college will create a customized course, generally for a few targeted students in need of skill upgrades.

In some cases, FIT funds support employee travel to receive specialized training. Some FIT funds are also awarded on a project basis to businesses located in areas not well served by community colleges.

In neighboring South Carolina, businesses have benefited for 35 years from a program offered by the South Carolina State Board for Technical and Comprehensive Education, which explicitly seeks to promote economic growth, job creation, a higher quality of life, and a broader tax base for state and local government.

Perhaps the single most important function of the State Board is the oversight of the Special Schools Program. The Special Schools Program offers customized training free of charge to companies bringing new investment to the state. When a company decides to locate a facility in the state or to expand an existing operation, the Board's economic development division works with the company and the local technical college to recruit, select, and train potential employees. By the time a plant is prepared to open, there is pool of trained workers available for hire, and there is no commitment on the part of the employer to hire any person trained by the state but deemed inadequate or unnecessary. Since it was started, South Carolina's Special Schools Program has trained 152,539 students and served 1,254 businesses.

Building Industry Partnerships: Boston's Advanced Biotechnology Education Project

The Boston region's Advanced Biotechnology Education Project is a continuous, interdisciplinary academic and career preparation program that spans grades 9-14 and exemplifies the power of partnerships to address shared workforce needs. The Project began in 1989, when a shortage of skilled biotechnicians propelled the Massachusetts Biotechnology Council to launch discussions with Middlesex Community College about meeting the industry's workforce needs. The Community College coordinated a task force of colleges to survey employers' needs, and the resulting training initiative attracted state financial support from an organization called the Bay State Skills Corporation. When the College launched the 20-student curriculum in 1990, it received 80 applications for admission.

The initiative gathered momentum in response to an opportunity presented by the National Science Foundation, which sought to support advanced technology education initiatives. Three additional schools joined the partnership: Minuteman Regional Technical School—a high school which runs a Biotechnology Academy for students in grades 9-12; the City of Cambridge public school system—which offers relevant vocational and comprehensive courses for students; and Worcester Polytechnic Institute (WPI)—a four-year institution that has experience supporting biotechnology education in high schools and two-year colleges. In addition to the academic partners, project members now include the Massachusetts Biotechnology Council (a local biotechnology trade association representing 140 companies)/Massachusetts Biotechnology Research Institute (a body which coordinates biotechnology education in Massachusetts), and the Education Development Center (a nationally renowned educational organization which developed the national skill standards for bioscience technicians). In 1994, the partnership was recognized as a National Science Foundation Advanced Technology Education initiative.

The success of the Project is based on strong education-industry relationships in developing a curriculum that grounds students with solid theoretical and technical skill sets, and in developing internships that provide students with work experience and work readiness skills. To date, the one-year certificate program at Middlesex has been so successful that students have almost a 100 percent job placement rate, and the school has difficulty keeping up with employers' demand for new graduates.

A Continuing Focus on Improvement: North Carolina

As much as other states point to North Carolina as the “best practice” for workforce and economic development, they might be surprised to learn that North Carolina shares their concerns about the challenges of workforce development.

In 1994, North Carolina founded a partnership called the North Carolina Alliance for Competitive Technologies (NC ACTs) to coordinate existing resources and investments in technology. NC ACTs brings industry, higher education, and government representatives together to advise the state on enhancing economic competitiveness and charting technology-based economic development.

NC ACTs’ activities include drafting a state technology development and manufacturing modernization strategy; developing strategic plans for particular industry sectors to improve their long-term competitiveness; linking state-funded economic development organizations with the private sector; and identifying sources of external funding to support North Carolina’s industries, higher education institutions, and non-profit institutions engaged in economic development. NC ACTs has also proposed five strategies for improving the state’s workforce:

- Build a strong foundation for competitiveness through higher quality K-12 education.
- Support the recommendations and programs being developed by the North Carolina Education Standards and Accountability Commission and the Governor’s Commission on Workforce Preparedness.
- Increase training, retraining, and apprenticeship assistance to the state’s manufacturers.
- Establish means for community colleges to exchange ideas on ways to assist in manufacturing modernization and provide incentives for building partnerships with the private sector.
- Encourage more representation from manufacturing and technology firms on education policy and advisory boards.

The emphasis on evaluation and progress embodied in NC ACTs’ partnership is a critical component of ongoing investment in and continuous improvement of the workforce. The similarity of North Carolina’s strategies to those proposed elsewhere—including Pennsylvania—demonstrate that workforce challenges are consistent across the country; it is the *response* to those challenges that distinguishes growing economies from stagnant economies.

Lessons Learned

While none of the initiatives outlined above represents a made-to-order solution to Greater Philadelphia’s workforce challenges, together they offer key lessons for a region seeking to enhance its workforce development system:

- *Leadership matters.* States and regions with high-quality workforce development systems and reputations for excellence have benefited from the leadership—and ability to forge strategic partnerships—of a governor or other public-sector or industry leader.
- *Economic development and workforce development are inextricably linked.* Regions and states that boast excellent workforce development systems treat the workforce as an economic asset—just as important as buildings, infrastructure, and capital.

- *Successful workforce development programs are private sector driven.* It is no accident that shining examples in workforce development come from regions with historically poor performance in education—places where the public sector had to prove to prospective employers beyond a shadow of doubt that it was addressing private-sector needs and not other agendas.
- *Telling the story helps win the war.* One common practice across these regions is that once a quality or innovative workforce development system is in place, its developers spread the word. Successful regions and states don't keep a quality workforce and workforce development system under wraps. Gaining a critical mass of success stories will make the marketing all the easier.

V. Advancing a Regional Response

“A knowledge-value economy requires, as one of its key inputs, a skilled workforce. Strong backs and strong arms are not enough anymore. . . . A community that cannot provide people who are thoroughly comfortable in this kind of world will wither and die.”³³

The Choice: Growth or Stagnation

Greater Philadelphia's future economic competitiveness is closely linked to the quality of its workforce. A flexible technical workforce and a responsive workforce development system are central to the economic growth and competitiveness of regions. Why?—because the workforce is a marketable economic development asset, and perhaps one of the few economic development assets that can be improved. The new, knowledge-dominated economy requires workers at all levels that are capable of utilizing new technologies, working in teams, and responding quickly to changes in the workplace.

Regions with the capacity to meet the workforce needs of existing employers demonstrate their commitment to employer retention and growth. Just as important, regions that integrate workforce development strategies with economic development strategies demonstrate their understanding of the realities of quickly changing economies.

Greater Philadelphia must accept the fact that it will be increasingly judged on the quality of its workforce—and take the steps necessary to demonstrate to companies here and companies around the world that it is serious about improving workforce quality. The region could then look forward to the economic benefits that will accrue from short-term strategies that address the immediate training and skill development needs of companies, and long-term strategies that support a growing pool of technical workers.

There are a number of different workforce strategies that the region can choose as it attempts to improve regional competitiveness. These choices—simply letting the market work as best it can, responding ad hoc to threats and opportunities, looking to the state for leadership, or developing a new regional capacity for addressing workforce needs—present the region's business, economic development, and education leadership with distinct options for the region's future.

Let the Market Work: Frustration with the current workforce development system has led many in the business community to the conclusion that they will try to solve their workforce problems by themselves. In employer interviews, PEL noted a healthy skepticism on the part of many employers about the ability of public policy and publicly funded programs to develop the innovative solutions that have become accepted practice in other regions.

History suggests, however, that the region's diverse economy and lack of dominant employers have made it difficult for the market to bring the workforce into alignment with employer needs. Such market-making has been difficult in Greater Philadelphia because the region lacks dominant employers who could by themselves create a constituency to be served. It is also made more difficult by the diversity of the region's economy, by the distribution of employers across a geographic region that spans numerous political jurisdictions, and by a historical lack of state leadership on workforce issues. Even as the community colleges in Bucks, Chester, Delaware,

³³ David Birch, Anne Haggerty, and William Parsons, *Entrepreneurial Hot Spots*, p. 10.

Montgomery, and Philadelphia Counties have developed business and industry outreach programs, they have found it difficult to discern employers' workforce needs and meet their demands for training.

Respond to Threats and Opportunities: Over the past few years, the region has experienced several events—either threats or opportunities—that have spurred action and innovation in workforce development. The closing of the Philadelphia Naval Shipyard, for example, brought about the creation of the Shipyard College, a collaborative effort of regional community colleges and Drexel University to provide education and training to displaced Naval Yard workers. In somewhat similar fashion, current changes in the health care economy have motivated activity among hospital officials and labor unions to provide re-training to displaced workers.

While this strategy has resulted in some notable innovations, it remains a fragmented and sporadic approach and it does not build long-term capacity. Indeed, it is typically focused on meeting the needs of displaced employees rather than existing and future employers. If the region is to build a reputation for its workforce and its workforce development infrastructure, it must build capacity in a more comprehensive fashion. Trying to create that capacity piecemeal to respond to a crisis or an opportunity is an incomplete solution.

Look to Harrisburg: Throughout the country, state governments have become the leaders in using workforce development to improve economic competitiveness. Pennsylvania's long tradition of local autonomy will make it difficult to pursue strategies like those in the Carolinas, however. In these states, the government directly employs community colleges in workforce and economic development; Pennsylvania, on the other hand, does not currently have in place the structural and financial levers to effect sweeping change in its community college system.

In recent years, there have been steps toward a more active state role in workforce development. The FY97 budget contained a significant increase—from \$9 to \$15 million—for Customized Job Training, the state's primary economic development training program. Two pilot programs—the Business Quality Partnership and Individual Learning Accounts—were also passed in an attempt to improve the state's workforce offerings. As the state focuses on improving its competitive position, it becomes increasingly obvious that improving the quality of the workforce and improving the responsiveness and flexibility of workforce development initiatives will be vital elements of the state's economic development strategy.

Create New Regional Capacity: Workforce competitiveness transcends political boundaries—few companies draw all of their workforce from one county or city, and many workers travel across county and even state borders to find employment. Regions that have successfully integrated workforce development with economic development have forged strong alliances between the business community, the economic development community, and the educational community to create policies and strategies that work.

Given employers' skepticism about existing programs, the fragmentation of the existing training infrastructure, and the slow pace of change in state workforce policy, building new regional capacity to address workforce issues comprehensively may be the most effective way to build a world-class workforce. From this perspective, what is needed is a new regional body solely focused on meeting the current and future workforce needs of a competitive economy. This new entity must be a partnership of public- and private-sector entities and must become the region's leader in workforce development.

A framework for creating a regional approach to workforce development follows.

Creating a Partnership for Workforce Competitiveness

Developing a strategy that identifies both long- and short-term initiatives, that bridges the geographic boundaries of a regional economy, and that is responsive to the needs and concerns of both employers and educational providers requires a new way of thinking for the region's economic development leaders.

First and foremost, the agenda of a new partnership for technical workforce competitiveness must be driven by employer needs and private-sector standards. In addition, it must be an equal partner with existing economic development organizations, and it must engage the region's education and training institutions in a performance-oriented relationship with private-sector employers. This new partnership could bring together the business, economic development, and education communities in a unique framework to guide the development and integration of new strategies for providing a competitive workforce that will be second to none.

Structure

Four key principles must shape this new partnership of organizations:

1. **A new partnership must be employer driven, with representation ensuring that the needs of regional employers will be at the center of all initiatives.** It should represent both small and large businesses—recognizing the diverse structure of the regional economy. Equally important, it should reflect the sectoral composition of the regional economy, as well as vibrant sub-sectors of industry in which the region should support or create a competitive edge.
2. **A new partnership must be on equal footing with the region's leading economic development organizations.** By promoting the idea that workforce quality is increasingly as important a component in economic development strategies as land, physical infrastructure, and financial capital, a new workforce partnership will help position Philadelphia among the nation's competitive regions.
3. **A new partnership must actively engage the region's training providers, enhancing their effectiveness and providing them with an increased capacity to meet the needs of a growing regional economy.** As a focal point for workforce development strategies, a partnership should aid the region's community colleges in meeting the needs of the business community. A partnership should also provide a strong regional voice on behalf of education and training providers with national, state, and local government and foundation funders.
4. **A new partnership must be an advocate for policy change.** In order to create a competitive workforce development system, any new partnership must provide both policy direction and leadership on issues to be addressed at the state level, such as the structure and funding of community colleges, and overall financing for workforce development priorities. Change will not be achieved unless the vision is driven home at both the state and local levels.

A Framework for Success

The mission of a partnership focused on workforce competitiveness should be to create a market for effective short- and long-term workforce development strategies. Creating a market will require leadership to define a vision that:

- integrates workforce and economic development policy and practices;
- develops a flexible education and training system to address short-term workforce needs;
- facilitates business partnerships and access to education and training resources; and
- develops a long-term strategy for improving regional workforce competitiveness.

The following section outlines a strategy and a framework for fulfilling this mission.

Integrating Workforce and Economic Development Policy

An area of workforce development in which places like the Carolinas succeed while Greater Philadelphia falls short is in integrating workforce and economic development to address the skill and competency needs of existing and new business, whether they result from changes in work processes and technologies or from business relocation or expansion. To sustain its viability as a business location, Greater Philadelphia and the Commonwealth of Pennsylvania must be—and must build a reputation for being—agile in responding to workforce development needs as they arise.

The new partnership on workforce development described herein must be the foremost promoter of treating the workforce as a critical component of economic development, and it must serve as the primary link between the traditional economic development leaders and the training community. Such a role will entail:

- prioritizing the identification and attraction of state economic development resources such as Customized Job Training, the newly developed Individual Learning Account grants, and the new Business Quality Partnership grants;
- advocating for separate state initiatives to support education and training upgrades for existing jobs and for new jobs, to eliminate any sense of conflict between the goals of business retention and business attraction;
- coordinating and promoting training services/resources in the region, including developing a common guide—available through channels including the Internet—to regional workforce development services, and promoting those services and relevant success stories;
- coordinating the participation of education/workforce development representatives in all regional business attraction and retention efforts;
- encouraging the co-location of offices of economic development and education/training institutions to facilitate the exchange of information about workforce needs of employers; and
- advocating for policy changes that promote greater collaboration among community colleges and the development of specific career curricula at educational institutions.

Addressing Short-Term Workforce Needs

Greater Philadelphia's economic development community must take an aggressive and responsive approach to acknowledging and addressing employers' workforce concerns. In doing so, the region needs to develop the infrastructure and protocols to ensure that employers' inquiries can be handled through a single point of contact and will be acknowledged within a known time frame. Establishing such a system will not only promote coherence among workforce development resources, but it will increase their visibility. In turn, if employers'

workforce needs are well met, private-sector confidence in and utilization of existing educational resources will improve.

Establishing a coordinated system through which employers can find “no wrong door” access to training resources within a region requires both the development of an electronic or telephone system for employers to report workforce needs, and the development of an outreach program that actively solicits information on employer’s needs. Ultimately, a regional information sharing system should be incorporated into a statewide system for tracking all economic development needs. The new partnership should be responsible for the successful implementation of such a system by:

- facilitating active information sharing and cooperation among training providers and economic development officials;
- coordinating the collection and distribution of accurate information on financial resources and incentives that support training investments;
- coordinating the development of an accurate database of training institutions, programs, curricula, equipment, and program outcomes available to help businesses meet their workforce needs;
- developing an information system with multiple points of access; and
- setting performance standards for responding to employers’ inquiries.

Facilitating Business Partnerships and Access to Resources

One of the most important roles that a new workforce development entity can play in improving workforce quality is to assist businesses in accessing educational resources and programs. Many businesses recognize the need to upgrade employee skills in order to improve workforce productivity, and many are willing to make the investment. Surveys and interviews reveal, however, that employers—particularly small and mid-sized employers—have little access to information about training programs and do not have sufficient resources to research the options. Another complaint of small and mid-sized businesses is that they don’t have a critical mass of employees to enroll in programs offered by regional training providers, nor do they, individually, constitute a visible target market to be served.

The identification and promotion of business partnerships is a particularly important role for a new partnership to assume, since many small companies are a locus of job growth but have felt shut out of traditional workforce development initiatives such as Customized Job Training. By assessing and aggregating the demand for particular training programs, a partnership could improve the financial viability of training initiatives by ensuring a steady stream of training clients and potentially spreading the costs of program development over a larger body of users. Employer partnerships at this level could result in any number of actions including pooling of workers to enroll in established courses, pooling of workers to establish a critical mass for specialized course development or delivery of on-site instruction, joint applications for state training grants, and the formation of advisory groups to inform schools of the workforce needs of small businesses within particular industries.

Acting as a broker of training services, a new partnership should become an intermediary between employers and training providers, assisting both in better understanding the potential for training partnerships. This role would involve:

- assisting with needs/goals assessment for small and mid-sized businesses that lack human resource personnel to fill this function;
- disseminating information on sources of training as well as public-sector programs, policies, and financial resources, and assisting with applications to available programs;
- seeking out and identifying employers with shared workforce development needs, and brokering relationships among them to improve their access to training resources and to heighten their visibility as a market segment to be served; and
- following-up with private-sector customers to determine whether their needs have been met and how satisfied they were with the services offered.

Developing a Long-Term Strategy for Improving Regional Competitiveness

Developing a world-class technical workforce is a long-term goal requiring a better understanding of employer needs and environments at all educational levels. The importance of such an effort cannot be underestimated, for success in this arena will decrease the need for expensive, quick-fix measures over the long haul and will establish a reputation for excellence in basic workforce preparation here in Pennsylvania.

To get to the point where the region is consistently producing workers—especially technical workers—that add value for their employers, a partnership must take the lead in identifying the workforce concerns of employers, and in working with educators to communicate those needs to the next generation of workers. PEL found that employers' "wish list" of characteristics for a world-class workforce and a world-class workforce development system include:

- a good work ethic and strong skill sets (basic skills, computer skills, presentation skills, logic/problem-solving, interpersonal competencies, teamwork competencies) among workforce entrants;
- work readiness of job applicants—an understanding of the work environment and the expectations and responsibilities that come with a job;
- a labor pool sufficiently deep and diverse to contain concentrations of potential employees with industry-specific skill sets; and
- fluid transitions between schools at various levels of educational attainment, and between education and employment for workforce entrants.

While it is difficult to generate a discrete "to-do" list from the objectives listed above, a partnership should seek opportunities to advocate for and, where possible, facilitate initiatives such as basic education reform; investments in technology for schools; student, parent, and teacher awareness of the labor market and paths to employment; and exposure to career areas and business environments through externships for students and teachers, and through programs like School-to-Work.

Who Will Accept the Challenge?

Looking forward, it is important to recognize that the quality of the region's workforce cannot be improved overnight—it will require a long-term commitment. Greater Philadelphia must also recognize that workforce development is not something you fix once and then let be. All members of the region's economic development community—private and public leaders,

educators, and the workers themselves—must be committed to ongoing investments and continuous improvements in workforce development.

This is far from being the first report on workforce development needs to surface in Greater Philadelphia in recent years. The fact that the issue won't go away indicates that it is begging to be addressed. If the challenge is clear, who is prepared to take it on and who is capable of doing so in a diverse and fragmented region such as this?

In the course of carrying out this project, PEL has come in contact with numerous organizations that seek to address some piece of the workforce development puzzle: the community colleges, Strategy 21, Greater Philadelphia First, the 21st Century League, the Delaware Valley Reinvestment Fund through the Annie Casey Jobs Initiative, community organizations like the Ogontz Area Revitalization Corporation, local school districts, Private Industry Councils, Pennsylvania government, and private corporations. Separately, each of these organizations has limited influence and resources to implement significant change. However, if these regional leaders combine and coordinate their efforts, the region has an opportunity to make the dramatic, systemic changes that will make employers sit up and take notice. The vehicle for this collaboration should be a new partnership—one that is organized around the principles set forth in this report and committed to developing and promoting a world-class workforce in Greater Philadelphia.

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Appendix A: Strategy 21 Member Organizations

Bell Atlantic
Ben Franklin Technology Center of Southeastern Pennsylvania
Bucks County Community College
Bucks County Industrial Development Corporation
Chester County Development Council
Community College of Philadelphia
Delaware County Commerce Center
Delaware County Community College
Delaware River Port Authority
Delaware Valley Industrial Resource Center
Delaware Valley Regional Planning Commission
Greater Philadelphia Chamber of Commerce
Greater Philadelphia First
Montgomery County Community College
Montgomery County Industrial Development Corporation
PECO Energy
Pennsylvania Economy League
Philadelphia Industrial Development Corporation
Philadelphia Suburban Water Company
The Port of Philadelphia and Camden, Inc.
University City Science Center

Appendix B: Interview and Focus Group Participants

Carolle Aldinger Associate Dean Delaware Co. Comm. College	Chuck Braun Business Manager Central Montgo. Tech. Ctr.	Michael G. Erwin Administrative Director No. Mont. Tech. Career Ctr.
Natalie Allen President Phila. High School Acad., Inc.	Lynette M. Brown V.P. Communications & Gov. Relations Community College of Phila.	Robert Falin Director, Training & Organizational Dev. Svcs. Mercy Health Corporation
Kathy Anderson Consultant Eastern Technology Council	Fred S. Bubeck Director of H.R. Sheraton Society Hill Hotel	Joseph A. Farrell Director, Operations PIC of Philadelphia, Inc.
Joe Barakat President Sigma Precision	Karen Burgess Director Data Processing Trainers	Garry Fudala Plant Manager Philadelphia Tramrail Co.
Amy Baron Naples, SPHR Human Resources Manager Bluestone	Frederick W. Capshaw President Community College of Phila.	Michael Gecht President Travel Ease
Bonita Barron Administrative Director Western Ctr. for Tech. Studies	Mary Jane Clancy Coordinator, Education for Employment School District of Phila.	Robert P. Gioella President Art Institute of Philadelphia
Michael Bergen Co-Op Coordinator Delaware Co. Vocational Technical School	Robert F. Cormack Executive Director Bucks County IDC	J. Michael Glynn Chief Executive Officer Integrated Software Solutions
Robert Bowman Director Shipyard College	Renee D. Crenshaw Personnel Specialist Philadelphia Int'l Airport	Robert G. Gorgone Philadelphia Industrial Development Corporation
Kay Brauer Principal Vanguard Financial Center	Karen L. Dawkins Director, Bus. & Indus. Training Bucks Co. Commun. College	William H. Harrington Sr. Vice President Ben Franklin Technology Center of Southeastern PA

Paul Helfrich, Ph.D. Technology Programs Director The Franklin Institute	Richard Land Human Resources Manager AMETEK, U.S. Gauge	Glenn B. Murray Director CHI Institute
Albert D. Herbert, Jr., MS, Chairman & Assistant Prof. Thomas Jefferson University	Chris Madonna Manager, Learning Specialists Rosenbluth International	Maureen A O'Connor President LEM Products, Inc.
Suzanne Homel Director of Human Resources Fox Rothschild O'Brien & Frankel	Dorothy McCaden Business & Performer Coordinator PECO Learning Center	Tom Panzarella President Cook Specialty Company
Carmen S. Italia, Jr. President Montgomery County Indus. Development Corp.	Christopher McDermott Vice President Commonwealth Savings Banks	Johannes Ponsen Program Director Phila. High School Acad., Inc.
Daniel M. Jones Operations Manager Philadelphia Scientific	Thomas A. Mellon, Jr. Director—Center for Partnerships with Bus. & Ind. Mont. Co. Commun. College	Dona M. Rittmayer Dir., Corp. Staffing & Employee Relations The Penn Mutual Life Insurance Company
Gavin R. Kerr Assoc. V.P., H.R. University of Pennsylvania Health System	Barbara A. Miller Associate Dean for Continuing Education Bucks Co. Commun. College	RoseAnn B. Rosenthal Senior V.P., Strategic & Program Devt. Philadelphia Industrial Development Corp.
Sandra Kouguell Director CADETT	Edward Miller, CCP General Manager Rosenbluth International World Headquarters	Marsha Francine Sall Administrator McCarrie Schools of Health Sciences & Technology, Inc.
Bob Kropp Education and Training Mgr. Ford Electronics	Kathleen Mills Regional Manager Training Services Dept. Henkels & McCoy, Inc.	Dick Sands Manager, Performance Improvement Merck Manuf Division
David W. Lacey Director, Human Resources The Hay Group	Gerald F. Murphy Human Resources Manager Pennsylvania Convention Center Authority	Drew Schmidt President William A. Schmidt & Sons, Inc.

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Independence Blue Cross

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Chester County Devel. Council

Judy Tumas
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E. W. Yost Co.

Sharon A. Smith
Dean of College Advancement
Delaware Co. Comm. College

Thomas J. Walker
Professor
Temple University Center for
Vocational Education

Ed Zale
Manager
Hatboro Job Center

Edward G. Stephany
Manager of Human Resources
Kingsbury, Inc.

Stephen Wells
Vice President, Operations
Tri-Temps

Barbara Zelnio
Director, Career Development
Services
Peirce College

Appendix C: Regional Institutions of Higher Education (public, two-year)

(Source: Integrated Postsecondary Education Data System, 1992)

Institution	Location	
Bucks County Community College	Newtown	PA
Burlington County College	Pemberton	NJ
Camden County College	Blackwood	NJ
Community College of Philadelphia	Philadelphia	PA
Delaware County Community College	Media	PA
Eastern Montgomery County Area Voc Tech School*	Willow Grove	PA
Frankford Hospital School of Nursing	Philadelphia	PA
Gloucester County College	Sewell	NJ
Montgomery County Community College	Blue Bell	PA
Salem Community College	Carneys Point	NJ
Upper Bucks County Area Voc. Tech. School*	Perkasie	PA

*Offers accredited two-year degree program.

Appendix D: Summary of Surveys

A number of research organizations and economic development organizations have conducted surveys that solicit information from businesses about workforce needs. The following tables summarize those surveys that PEL encountered in the course of its research.

Recent Surveys of Business Needs in Pennsylvania

Title/Sponsors	Year	Surveyed Entities	Scope of Survey
Temple University <i>Contact:</i> Chester P. Wichowski, D.Ed., The Center of Vocational Education, 215-204-6249.	1991-92	Businesses (large & small) and educators (academic and vocational).	Factor analysis of agreement on educational outcomes; 1,838 responses analyzed.
"Business Perspectives on the Pennsylvania Economy"—Penna. State University and Bell of Penna. <i>Contact:</i> Institute for Policy Research and Evaluation, The Pennsylvania State University.	1992	Businesses (large & small) in portions of SE, SW, and Central Penna.	Analysis of business plans/satisfaction with sites and services—analysis based on 1,259 responses across industries (note: manufacturers accounted for 34% of respondents).
"Needs Survey of Pennsylvania Technology Firms"—PENNTAP & Ben Franklin Partnership Program. <i>Contact:</i> Jack Gido, Director, PENNTAP, 814-865-5909.	1995	Technology firms across the state.	Analysis of company needs for technical information, technical assistance, and training, based on 250 responses. (157 manufacturing, 93 non-manufacturing)
"Needs Survey of Pennsylvania Manufacturing Firms"—PENNTAP, Penna. State Univ., Bell Atlantic <i>Contact:</i> Jack Gido, Director, PENNTAP, 814-865-5909.	1996	Manufacturing firms across the state.	Analysis of company needs for technical information, technical assistance, and training, based on 533 responses.
"Benchmarking Assessment for the Commonwealth of Pennsylvania"—PHH Fantus Consulting	1996	Interviews with representative sampling of Penna. businesses	Analysis of the comparative position of Pennsylvania in the market for business location and expansion.

Summary of Regional Survey Initiatives

Surveying Entity	Nature of Survey	Scope of Survey	Relevant Findings
<p>Lower Bucks County Chamber of Commerce</p> <p>Contact: Lower Bucks Chamber, 215-943-7400.</p>	<p>Survey of businesses & schools for School-to-Work initiative; focused on business/education partnerships.</p>	<p>Business portion of survey included 50 establishments; approximately 19 responded in some form.</p>	<p>Skills respondents hope to help students improve include: technical skills, work ethic, basic skills, knowledge of realistic career choices, realization that a job can be more than just a paycheck.</p>
<p>Delaware Co. Office of Employment and Training (OET)</p> <p>Contact: Bud Sons, 610-713-2200.</p>	<p>Survey of Delaware County employers' skill needs.</p>	<p>Circulated to 15,000 businesses, with 2 percent responding.</p>	<p>70 percent hiring for office computer skills, 52 percent hiring for general office skills, 33 percent hiring for desktop publishing skills, 9 percent hiring LAN technicians, retail salesmen and retail customer service representatives.</p>
<p>Delaware Co. OET</p> <p>Contact: Bud Sons, 610-713-2200.</p>	<p>Survey of need for CNC operators of various levels.</p>	<p>Circulated to 1500 machine shops in region.</p>	<p>72 shops indicated relevant needs; respondents indicated that there are some 400 openings to be filled.</p>
<p>Technologies Dept., Delaware County Community College (DCCC)</p> <p>Contact: DCCC, 610-359-5000</p>	<p>Business and industry awareness/needs survey.</p>	<p>41 respondents—highest concentrations had as primary business manufacturing, engineering/design.</p>	<p>Program awareness high for CAD, low for telecommunications, varies for others; respondents expect to hire median of 2 tech. employees over 3-5 years (range 0-500).</p>