

**REPORT OF THE TASK FORCE
ON DEFENSE RELATED INDUSTRIES**

**General Assembly of the Commonwealth of Pennsylvania
JOINT STATE GOVERNMENT COMMISSION**

JULY 1993

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TO THE MEMBERS OF THE GENERAL ASSEMBLY:

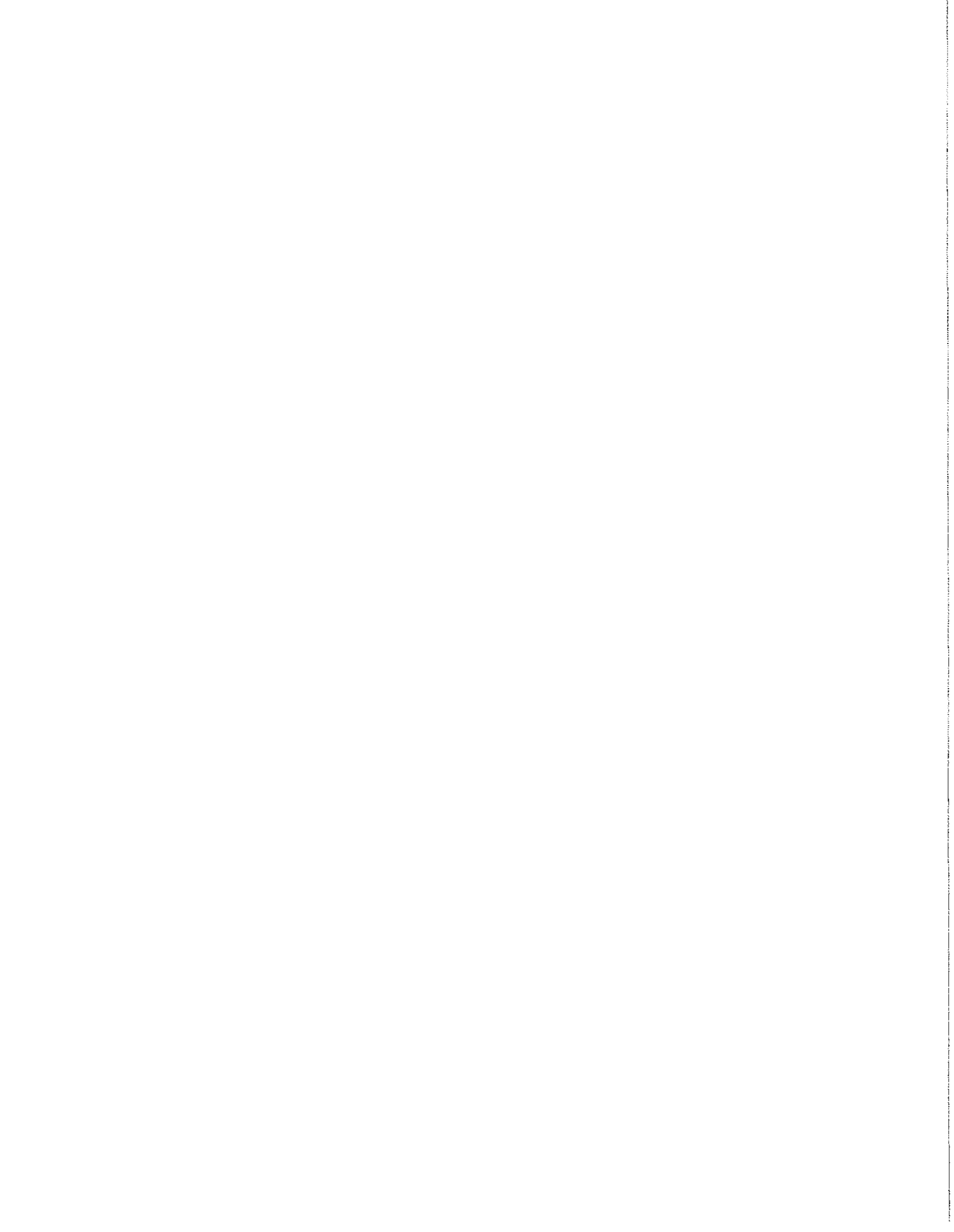
The Joint State Government Commission is pleased to present this report of the Task Force on Defense Related Industries, chaired by Senator Terry Punt. The study was conducted pursuant to Senate Resolution 176, Printer's No. 2279, adopted June 17, 1992, which directed the Joint State Government Commission to study methods of aiding the conversion of Pennsylvania's defense related industries to civilian production.

The task force conducted hearings and received testimony concerning the problems faced by defense related industries in Pennsylvania and has responded with the recommendations set forth and discussed in this report. Furthermore, the report includes an analysis of Pennsylvania's defense related industries as well as descriptions of federal and State legislation and programs which will aid defense contractors who are or who may be impacted by defense cutbacks.

Respectfully submitted,

A handwritten signature in cursive script that reads "Roger A. Madigan".

Roger A. Madigan
Chairman



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INTRODUCTION

Senate Resolution 176, Printer's No. 2279, adopted June 17, 1992, directed the Joint State Government Commission to "create a bipartisan task force to study methods of aiding the conversion of Pennsylvania's defense related industries to civilian production; and . . . report as soon as possible its findings and recommendations, as well as any proposed legislation, to the General Assembly."

Following this resolution, the task force did not consider the effects of base closure and realignment. Nor did the task force consider induced and indirect employment effects.

The task force held its organizational meeting in Harrisburg on September 30, 1992. At this meeting, the task force discussed a series of steps which the members might undertake to determine the problems confronting the Commonwealth's defense related industries because of defense cutbacks and to find solutions to these problems. The research strategy included conducting hearings for Commonwealth officials, private industry, labor and educational institutions and examining currently available federal and State programs. The first hearing of the task force took place on November 10, 1992, in Harrisburg. Witnesses included representatives from the Commonwealth, business, labor, education and a nonprofit, Washington, D.C.-based, research organization. A second hearing, also in Harrisburg, was held on April 1, 1993. Witnesses at this hearing included panels of witnesses representing two important Commonwealth technology delivery systems: the Ben Franklin Partnership and the Industrial Resource Center Network. Other witnesses included representatives from the Commonwealth of Pennsylvania, the state of New York and other interested parties.

The Report of the Task Force on Defense Related Industries is comprised of two major parts. The first part, "Pennsylvania's Defense Related Industries," provides an overview of the Commonwealth's position in the nation's defense drawdown. It begins with a short history of previous

defense drawdowns--from World War II through the Vietnam War-- and compares the effect of prior drawdowns to the current post Cold War drawdown. Following this historical data is an analysis of the impact of the defense drawdown on Pennsylvania's economy in general and on its defense related industries in particular. This part then concludes with a discussion of the impact of the defense drawdown on the local economy.

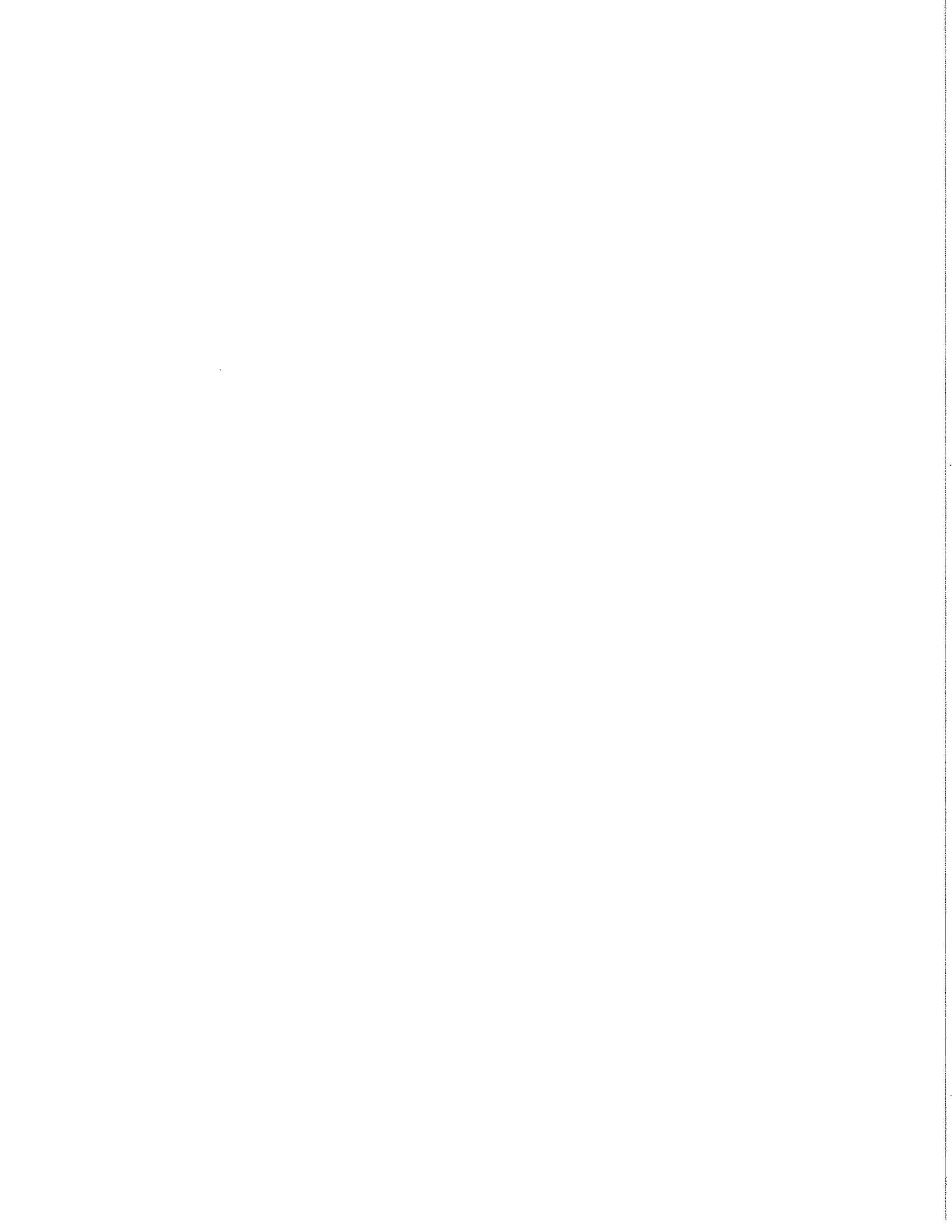
The second part of the report, "Federal and State Responses," analyzes the efforts made by the federal government to assess the impact of the defense drawdown on the nation's economy and to recommend ways to facilitate the conversion process with the least amount of disruption to defense related industries and their employees. This analysis includes a description of a selection of federal programs and enactments. This part also reviews State programs which are currently available to assist Pennsylvania industry. When integrated into a unified system of service delivery, these programs can be readily adapted to meet the needs of defense contractors during the current defense drawdown.

The remainder of the report consists of two appendices: Appendix A is a list of participants at the two hearings held in Harrisburg; Appendix B is a bibliography of related materials available in the Joint State Government Commission library and the State Library of Pennsylvania.

FINDINGS AND CONCLUSIONS

The task force based its recommendations on several general findings and conclusions:

- The defense drawdown will not have a great impact on the Commonwealth as a whole but may be substantial in certain regions of the Commonwealth where the local economy depends heavily on defense spending. For the companies, their workers and affected local communities, the consequences of reduced defense spending can be devastating.
- The statistical and economic analysis suggests that an estimated 44,000 jobs have already been lost and that an additional estimated 43,000 jobs will be lost in Pennsylvania because of prime defense contract cutbacks.
- The long-term success of defense conversion is directly tied to overall economic growth, although specific action may need to be taken to facilitate the transition by companies and local economies, to preserve needed defense capability and to alleviate the effects of worker dislocation.
- Many government programs to assist the transition of workers, companies and local economies already exist at the federal, state and local levels including highly regarded programs in Pennsylvania. However, in many cases these programs are not integrated and fail to identify the outcomes desired and the means by which to measure success. The problem is that Pennsylvania firms do not know which delivery system to approach in an efficient and orderly manner. A defense firm should be able to approach one office and be directed to the appropriate delivery system for federal or state financial aid, program information or technical assistance.



RECOMMENDATIONS

The task force having reviewed the findings and conclusions, recommends the following:

- To coordinate the various delivery systems and tailor the Commonwealth's economic development programs to defense conversion problems, the task force recommends the formation of a central clearinghouse, a "one-stop shopping" office, within the Department of Commerce, to effectively coordinate all the delivery systems.
- Because the demand for conversion assistance is likely to increase in the immediate future, the task force recommends that the Commonwealth adequately fund and support existing delivery systems, utilizing all available sources of funding, so that economic development programs are available to all companies who seek assistance, including those companies recently affected by defense cutbacks.
- To aid the several regional areas of the Commonwealth where defense cutbacks impact the greatest, the task force recommends the creation of regional boards at county levels where labor, management and local leaders can work together to develop a conversion plan.
- To assist displaced workers, the task force recommends that universities, community colleges and vocational-technical schools conduct personal management seminars, job assistance services and specialized training programs and advertise their programs through the media. Furthermore, universities should be encouraged to participate in "pre-competitive consortia" by which similarly-situated defense companies can pool their resources and lower the cost of developing new technologies.

- To provide additional federal funds to state and local governments, to offset the loss of local taxes, to enable business and labor to respond to the drawdown and to assist affected workers, the task force calls upon Congress to allocate a significant share of federal budget savings from defense cutbacks for use in economic conversion planning and assistance.

PENNSYLVANIA'S DEFENSE RELATED INDUSTRIES

HISTORICAL BACKGROUND

The current post Cold War defense drawdown is relatively mild in comparison to the post World War II, Korean and Vietnam war drawdowns. In the previous postwar periods, the data clearly show that the total level of defense spending, the percentage of Gross Domestic Product devoted to defense and the level of defense related employment were all higher at their peak levels and fell faster to their low points than is the case in the current drawdown. Tables 1 and 2 compare three measures of the absolute and relative importance of defense spending and employment. These data show that the current drawdown has a slower annual rate of decline and is stretched out over a longer time period than the previous drawdowns. In fact, the World War II drawdown in defense related employment averaged 1.8 million employees per year, a larger total than the estimated 1.3 million reduction in post Cold War defense related employment over a 10-year period. In the post World War II drawdown, the unemployment rate remained remarkably low, averaging 2.9 percent annually over the 1944-49 time period.¹ The economy's remarkable post World War II performance is usually attributed to the high level of employment and earnings that were the direct result of national defense expenditures and the high rate of money supply growth coupled with expansionary deficit spending. All of these factors contributed to a postwar boom that lasted five years. The successful conversion from a wartime to a peacetime economy was accomplished without implementing a federal conversion policy, other than a generous veterans' benefit package.

¹Report of the Defense Conversion Commission, Adjusting to the Drawdown (Washington, D.C., 1992), Supporting Annex B, From War to Peace: A History of Past Conversions (February 1993).

Table 1

COMPARISON OF PREVIOUS AND CURRENT DEFENSE DRAWDOWNS

Defense Spending as a Percentage of Gross Domestic Product

Era	Year	Peak	Year	Low point	Difference		Average change per year percentage
		Gross domestic product percentage		Gross domestic product percentage	Years	Gross domestic product percentage	
WW II	1944	39.3%	1948	3.7%	4	35.6%	8.90%
Korea	1953	14.5	1956	10.2	3	4.3	1.43
Vietnam	1968	9.6	1978	4.8	10	4.8	0.48
Current	1986	6.5	1997	3.6	11	2.9	0.26

Outlays for National Defense (billions of 1993 dollars)

Era	Year	Peak	Year	Low point	Difference		Average change per year outlays
		Outlays		Outlays	Years	Outlays	
WW II	1945	\$885.7	1948	\$80.4	3	\$805.3	\$268.4
Korea	1953	390.7	1956	284.5	3	106.2	35.4
Vietnam	1968	371.2	1977	219.1	9	152.1	16.9
Current	1989	353.6	1997	256.9	8	96.7	12.1

SOURCE: Report of the Defense Conversion Commission, Adjusting to the Drawdown (Washington, D.C., 1992), Supporting Annex B, From War to Peace: A History of Past Conversions (February 1993).

Table 2

COMPARISON OF PREVIOUS AND CURRENT DEFENSE DRAWDOWNS

Defense Related Industry Employment

Era	Year	Peak		Low point			Difference		Years	Average annual change (000s)	Annual percentage change
		Defense related employment (000s)	Percentage of private employment	Year	Defense related employment (000s)	Percentage of private employment	Defense related employment (000s)	Percentage of private employment			
WW II	1943	13,361	29.7%	1950	713	1.4%	12,648	28.3%	7	1,807	4.0%
Korea	1953	4,118	8.0	1956	2,500	4.6	1,618	3.4	3	539	1.1
Vietnam	1968	3,174	5.2	1976	1,690	2.4	1,484	2.8	8	186	0.3
Current	1987	3,365	3.6	1997	2,058	1.9	1,307	1.7	10	131	0.2

NOTE: Private sector employment is estimated at 105 million in 1997.

SOURCE: Schmidt, C. P. & S. Kosiak, "Potential Impact of Defense Spending Reductions on the Defense Industrial Labor Force by State," Defense Budget Project (Washington, D.C., 1992).

The Defense Conversion Commission² has documented the history of prior conversions from war to peacetime in some detail. This study concluded that the World War II conversion was a swift and dramatic success. The Korean, Vietnamese and Cold War defense expansions and reductions were quite small by comparison and resulted in a much smaller disruption to total economic activity. In a growing economy, the overall economic dislocations due to post World War II defense buildups and drawdowns were quite mild. However, in an economy experiencing a slow rate of growth, the impact of a defense spending drawdown on employment and output is more pronounced and would tend to slow the growth rate of output and raise the unemployment rate.

Nevertheless, the economic disruptions associated with the current drawdown can substantially impinge on certain states and localities within states. The effect has been and will be generally measured in economic terms: primary job losses, secondary job losses, the out-migration of younger residents, local business shutdowns and bankruptcies, and falling real estate values. All of these economic effects are, of course, reflected in local and state government revenues and expenditures. Many of these impacts will be mitigated by regional and state economic growth in the private sector, but some regions which were particularly dependent on military procurement contracts will experience long-term dislocations which are discernable generally by their effects on the economic measures enumerated above.

²The Defense Conversion Commission, Department of Defense, was formed in April 1992 to assess the consequences of the defense drawdown and to make recommendations constructively addressing them. The Commission submitted a report of its findings and recommendations to the Secretary of Defense in December 1992.

THE DEFENSE DRAWDOWN AND PENNSYLVANIA'S ECONOMY

The current drawdown's effect on Pennsylvania's economy will be relatively small. The Defense Budget Project's³ estimate of the top ten defense related states is listed in table 3. Pennsylvania has a 4 percent share of all defense purchases and is ranked seventh nationally; however, purchases represent a smaller share of economic activity as measured by the proportion of total State purchases and employment in defense related industries relative to total employment in the State.

Table 4 shows prime contract awards, defense industry employment and prime contract dollar awards per employee for each state and the District of Columbia in 1991. Pennsylvania's share of total prime defense contracts in 1991 is \$2.94 billion out of a total of \$122.9 billion, or 2.4 percent of all prime defense contracts; this is about half of the percentage of Pennsylvania's share of the total U.S. population of approximately 4.8 percent in 1990. In 1991, the U.S. Labor Department estimated that Pennsylvania had 123,108 employees involved in producing defense related goods and services, including research, operation and maintenance and construction (prime contracts and subcontracts). This is about 4 percent of the 3.1 million estimated total employment in the defense related industries in 1991.⁴ Pennsylvania has a higher percentage of the total defense related employment than its share of prime contracts.

The average award per defense related worker for the nation is \$39,630. This implies that for every million dollars in prime contract awards, the economy creates about 25 defense related jobs.⁵ This employment number does not account for indirect job creation in service industries in each locality, but it does represent employment by both prime and subcontractors in defense related industries. For the nation, the total Gross Domestic Product was \$5.677 trillion and total employment was 118.4

³The Defense Budget Project is a nonpartisan, nonprofit research organization founded in 1983 and based in Washington, D.C. Among other tasks, the Project tracks Administration policy and Congressional legislation relating to the defense budget, economic adjustment, defense planning and the international arms industry and produces selected summaries and reviews of proposals and legislation.

⁴Schmidt, C. P. & S. Kosiak, "Potential Impact of Defense Spending Reductions on the Defense Industrial Labor Force by State," Defense Budget Project (Washington, D.C., 1992).

⁵ $\$1,000,000/\$39,630 = 25.2$ jobs.

Table 3

TOP TEN DEFENSE DEPENDENT STATES UNDER VARIOUS CRITERIA:
FISCAL YEAR 1991

Rank	State	State share of 1991 U.S. Defense purchases	State	Defense share of total 1991 state purchases	State	Defense industry employment as share of 1991 state employment
1	CA	18.4%	VA	10.3%	DC	7.1%
2	TX	6.5	AK	9.2	CT	6.0
3	NY	6.0	HI	7.9	VA	4.9
4	VA	5.0	CT	7.8	MA	4.8
5	MA	4.5	WA	7.6	CA	4.1
6	OH	4.3	CA	7.4	MD	3.7
7	PA	4.0	MD	7.2	MO	3.4
8	FL	3.9	ME	7.0	WA	3.4
9	CT	3.2	MS	7.0	AZ	3.4
10	NJ	3.0	MA	7.0	AK	3.2
Total		58.8%				

NOTE: Pennsylvania's share of defense purchases includes expenditures for labor services and the procurement of intermediate goods in military bases located in the state, as well as for prime contracts awarded to Pennsylvania-based businesses.

SOURCE: Schmidt, C. P. & S. Kosiak, "Potential Impact of Defense Spending Reductions on the Defense Industrial Labor Force by State," Defense Budget Project (Washington, D.C., 1992), table 3.

Table 4

**PRIME DEFENSE CONTRACTS, ESTIMATED DEFENSE RELATED INDUSTRY EMPLOYMENT
AND PRIME CONTRACT AWARDS IN DOLLARS PER DEFENSE WORKER
BY STATE, 1991**

State	1991 Prime defense contracts (millions of dollars)	1991 Defense industry employment (000s)	1991 Prime contract dollars per worker	State	1991 Prime defense contracts (millions of dollars)	1991 Defense industry employment (000s)	1991 Prime contract dollars per worker
Alabama	\$1,816	44.2	\$41,086	Nebraska	\$253	9.5	\$26,632
Alaska	556	7.3	76,164	Nevada	254	6.0	42,333
Arizona	2,509	54.4	46,121	New Hampshire	442	16.3	27,117
Arkansas	313	18.1	17,293	New Jersey	3,564	93.8	37,996
California	23,871	569.5	41,916	New Mexico	678	17.2	39,419
Colorado	2,651	53.2	49,831	New York	6,908	185.5	37,240
Connecticut	4,945	99.4	49,748	North Carolina	1,535	48.1	31,913
Delaware	132	7.1	18,592	North Dakota	149	3.5	42,571
District of Columbia	1,110	17.8	62,630	Ohio	4,759	132.4	35,944
Florida	5,136	119.4	43,015	Oklahoma	772	28.4	27,183
Georgia	1,969	65.9	29,879	Oregon	314	15.6	20,128
Hawaii	703	11.3	62,212	Pennsylvania	2,939	123.1	23,873
Idaho	79	4.4	17,955	Rhode Island	406	12.9	31,473
Illinois	1,763	87.2	20,218	South Carolina	961	26.8	35,858
Indiana	2,150	68.4	31,433	South Dakota	125	3.3	37,879
Iowa	458	20.1	22,786	Tennessee	2,023	34.4	58,808
Kansas	851	25.8	32,964	Texas	10,173	202.7	50,187
Kentucky	577	22.3	25,874	Utah	809	23.1	35,022
Louisiana	1,236	41.0	30,146	Vermont	73	6.4	11,406
Maine	1,051	15.5	67,806	Virginia	6,711	155.3	43,213
Maryland	4,049	87.6	46,221	Washington	1,757	79.2	22,184
Massachusetts	6,902	140.3	49,195	West Virginia	146	11.3	12,920
Michigan	1,327	70.9	18,717	Wisconsin	959	39.1	24,527
Minnesota	1,771	47.6	37,206	Wyoming	64	3.6	17,778
Mississippi	1,777	33.2	53,524				
Missouri	6,304	87.0	72,460	Total U.S.	\$122,863	3,100.0	\$39,630
Montana	83	3.7	22,432				

SOURCE: Schmidt, C. P. & S. Kosiak, "Potential Impact of Defense Spending Reductions on the Defense Industrial Labor Force by State," *Defense Budget Project* (Washington, D.C., 1992), table 5 and Report of the Defense Conversion Commission, *Adjusting to the Drawdown* (Washington, D.C., 1992), Supporting Annex F, *Impacts of Defense Spending Cuts on Industry Sectors, Occupational Groups, and Localities*, Table C-1. The defense industry employment figures include defense contractors and subcontractors for procurement, research and development, operations and maintenance and construction.

million, for an average expenditure of \$47,952 per employee or 20.8 jobs per \$1 million in expenditures on all final goods and services produced in the United States.⁶

Table 4 also indicates that the expenditure per employee varies by state considerably around the U.S. average of \$39,630. Alaska and Missouri both exceed \$70,000 per worker, while Vermont and West Virginia account for only about \$11,400 and \$12,900 per worker. Pennsylvania is ranked 39th in prime contract dollars per worker at \$23,873 per employee. Generally, the prime contract awards identify the location of the prime contractor, but not the subcontractors where a substantial amount of employment may be generated. In Pennsylvania, the wages and benefit payments needed to employ one skilled worker probably are not much different from those needed to employ an equally skilled worker in Missouri. More than likely Pennsylvania's prime contracts of \$2.939 billion support about 74,152 prime contract jobs; an additional 49,948 jobs are created by subcontractors within Pennsylvania who supply prime contractors in Pennsylvania and other states such as Missouri, Maine, Connecticut, Massachusetts and the District of Columbia with goods and services needed to fulfill their prime contract obligations.⁷

The conclusions advanced on the relatively mild impact on the national economy of the military drawdown can be applied to Pennsylvania as well. The statewide importance of military procurement is indicated by the fact that \$2.9 billion in prime contracts account for about 1.3 percent of Pennsylvania's personal income of \$230.9 billion in 1991.⁸ A similar relationship is revealed by comparing the 123,108 employed in defense related industries to the 5.4 million employed in total, a ratio of 2.3 percent.⁹ While the statewide impact is relatively small, the local, county or regional impact may be quite large when compared to the local economy.

⁶Economic Report of the President (Washington, D.C., U.S. Government Printing Office, 1993).

⁷ $\$2.939 \text{ billion} / \$39,630 = 74,152.$

⁸U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business (U.S. Government Printing Office, Washington, D.C., v. 73, April 1993).

⁹See table 8.

THE IMPACT ON DEFENSE RELATED INDUSTRIES

Table 5 presents data on the absolute level of prime military contract awards in Pennsylvania by county in 1991.¹⁰ A county by county list of prime contract awards with smaller contracts identified is provided in table 13. The prime contract employment is attributed to the county that received the prime contract. These estimates are simply the dollar totals of contract awards in each county divided by \$39,630, the nationwide average dollar per worker (see table 4) for prime defense contracts. Estimates of prime and subcontractor employment are based on the assumption that subcontractors are located in the same counties as prime contractors, in accordance with the dollars awarded in each county. The estimates assume that total State defense related employment is 123,108 and that this employment is allocated to each county by the prime contract award divided by \$23,873 (see table 4). In fact, it may be the case that a large part of the prime contract employment for awards made to Allegheny county resides in Washington or Beaver county. If so, then a large part of the defense related employment estimated for Allegheny county should be shifted to Washington and Beaver counties. In fact, there may be some employment related to prime defense contract awards in Cameron or Elk county because a subcontractor is located in either or both of these counties.

The linking of contract awards and employment probably is generally correct for a region which includes Allegheny, Beaver, Washington, Butler and Westmoreland counties or the Philadelphia area which includes part of New Jersey and the counties contingent to Philadelphia.

Table 5 shows that the Western River Valley counties,¹¹ with at least one major contractor, constitute one region ranked according to size of awards; this region includes the counties of Allegheny (\$586 million), Cambria (\$61 million), Fayette (\$28 million), Greene (\$21 million) and Butler (\$18 million). The five-county region has a total of \$716 million in prime contracts and a potential of 18,065 prime contract jobs and about 29,900 total jobs in defense related industries.

¹⁰The contract awards are shown for awards exceeding \$25,000 in any one county.

¹¹See chart I for the definition of regions in Pennsylvania.

Table 5

PRIME DEFENSE CONTRACT AWARDS IN PENNSYLVANIA, BY COUNTY, AND THE ESTIMATED EMPLOYMENT DUE TO PRIME CONTRACTS
AND SUB-CONTRACTS, BY COUNTY, FOR FISCAL YEAR 1991

County	Major contractor (more than \$16 million in value)	Major contract value (000s)	Prime contracts county total (000s)	Estimated prime contract employ- ment	Estimated prime and sub- contract employ- ment	County	Major contractor (more than \$16 million in value)	Major contract value (000s)	Prime contracts county total (000s)	Estimated prime contract employ- ment	Estimated prime and sub- contract employ- ment
Adams	None	\$0	\$3,843	97	161	Columbia	None	\$0	\$799	20	33
Allegheny	Carnegie-Mellon Univ.	49,224	---	---	---	Crawford	None	0	165	4	7
	Westinghouse Corp.	437,900	---	---	---	Cumberland	None	0	37,548	947	1,573
	Subtotal	487,122	586,609	14,802	24,575	Dauphin	None	0	20,168	509	845
Armstrong	None	0	82	2	3	Delaware	Boeing Company	52,526			
Beaver	None	0	5,770	146	242		Sun Refining	50,900			
Bedford	None	0	844	21	35		Subtotal	103,426	150,394	3,795	6,300
Berks	Exide Battery	28,831	46,914	1,184	1,965	Elk	None	0	0	0	0
Blair	None	0	384	10	16	Erie	None	0	33,820	853	1,417
Bradford	None	0	1,391	35	58	Fayette	Lane Construction	27,484	28,809	727	1,207
Bucks	Intermetrics	18,125	92,984	2,346	3,895	Forest	None	0	0	0	0
Butler	Mine Safety App.	16,843	18,371	464	770	Franklin	None	0	34,910	881	1,462
Cambria	Univ. of Pittsburgh	19,896	61,003	1,539	2,556	Fulton	None	0	996	25	42
Cameron	None	0	0	0	0	Greene	Jones Group	20,940	21,138	533	886
Carbon	None	0	12,826	324	537	Huntingdon	None	0	1,378	35	58
Centre	Penn State Univ.	57,894	75,073	1,894	3,145	Indiana	None	0	1,735	44	73
Chester	Unisys	29,352	79,891	2,016	3,347	Jefferson	None	0	72	2	3
Clarion	None	0	2,432	61	102	Juniata	None	0	1,731	44	73
Clearfield	Target Sportswear Inc.	22,667	26,467	668	1,109	Lackawanna	None	0	40,979	1,034	1,717
Clinton	None	0	15,443	390	647	Lancaster	Sechan Elect.	18,342	60,687	1,531	2,542

Table 5--Continued

County	Major contractor (more than \$16 million in value)	Major contract value (000s)	Prime contracts county total (000s)	Estimated prime contract employ- ment	Estimated prime and sub- contract employ- ment	County	Major contractor (more than \$16 million in value)	Major contract value (000s)	Prime contracts county total (000s)	Estimated prime contract employ- ment	Estimated prime and sub- contract employ- ment
Lawrence	None	\$0	\$4,641	117	194	Pike	None	\$0	\$0	0	0
Lebanon	None	0	9,194	232	385	Potter	None	0	575	15	24
Lehigh	None	0	30,037	758	1,258	Schuylkill	None	0	7,397	187	310
Luzerne	None	0	9,588	242	402	Snyder	None	0	0	0	0
Lycoming	None	0	15,643	395	655	Somerset	None	0	6,035	152	253
McKean	None	0	0	0	0	Sullivan	None	0	0	0	0
Mercer	None	0	555	14	23	Susquehanna	None	0	5,872	148	246
Mifflin	None	0	399	10	17	Tioga	None	0	257	6	11
Monroe	None	0	29,998	757	1,257	Union	None	0	4,667	118	196
Montgomery	AEL Defense General Electric Merck Subtotal	20,113 74,809 <u>21,147</u> 116,069	287,348	7,251	12,038	Venango	None	0	9,750	246	408
Montour	None	0	2,363	60	99	Warren	None	0	7,899	199	331
Northampton	None	0	6,751	170	283	Washington	None	0	2,740	69	115
Northumberland	None	0	1,118	28	47	Wayne	None	0	289	7	12
Perry	None	0	85	2	4	Westmoreland	None	0	13,243	334	555
Philadelphia	Boeing & Sikorsky Boeing General Electric Subtotal	258,592 181,985 <u>116,493</u> 557,370	759,713	19,170	31,826	Wyoming	None	0	29	1	1
						York	Harsco Olin Ordnance Subtotal	171,772 <u>27,405</u> 199,177	256,819	6,480	10,759
						Pennsylvania Total		\$1,723,540	\$2,938,661	74,152	123,108

SOURCE: Table 4 and Department of Defense, Directorate for Information Operations and Reports, Prime Contract Awards by State, County, Contractor and Place (Washington Headquarters Services, 1991, 1992).

The Delaware Valley Region, ranked by awards, consists of Philadelphia (\$760 million), Montgomery (\$287 million), Delaware (\$150 million), Bucks (\$93 million), Chester (\$80 million) and Berks (\$47 million) counties. This six-county region has \$1.417 billion in prime contracts and a potential 35,756 prime contract jobs and a potential for 59,356 jobs in defense related industries.

The Allegheny Plateau Region consists of Centre (\$75 million), Clearfield (\$26 million) and Clinton (\$15 million) counties. This region has about \$116 million in prime contracts and 2,927 potential prime contract jobs, and possibly 4,859 jobs in defense related industries.

The Capital Region counties of York (\$257 million), Lancaster (\$61 million), Cumberland (\$38 million) and Dauphin (\$20 million) have a combined total of \$376 million in prime contracts and 9,487 potential prime contract jobs as well as 15,750 jobs in defense related industries (exclusive of any military base-related jobs that are attributed to Cumberland county in this region).

Each of these four regions has a dominant area in that Philadelphia, Allegheny, York and Centre counties are the major recipients of prime defense contract awards within each region. Philadelphia, Allegheny, Montgomery and York counties had a combined total of \$1.809 billion in defense contracts in 1991, or about 61 percent of all prime contracts, and possibly 45,000 prime defense related jobs and 75,000 prime contract and subcontract defense related jobs. These defense related job totals are absolutely large in these four counties but are also relatively large in Philadelphia, Allegheny and York counties.¹²

According to the Defense Conversion Commission, the defense spending drawdown over the 1987-97 time period will be concentrated in the military procurement budget. It is estimated that procurement spending will fall by 46 percent and by \$46 billion over the 10-year period from 1987-97.¹³ Military outlays are projected to decline from about \$340 billion in 1987 to \$237 billion by 1997, a reduction of \$103 billion in outlays. Procurement purchases will account for \$46 billion of the \$103 billion or for about 45 percent of the total reduction in outlays. The

¹²See tables 8 and 9 for county data on the relative importance of defense related employment and earnings.

¹³Report of the Defense Conversion Commission, Adjusting to the Drawdown (Washington, D.C., 1992), Supporting Annex A, The DoD Drawdown: Planned Spending and Employment Cuts (February 1993).

Commission reports that 1992 defense outlays were \$306 billion, a reduction of \$34 billion from the 1987 peak outlay, and represent a 10 percent drawdown in total outlays, and about one-third of the projected \$103 billion reduction.

In Pennsylvania, with respect to prime military contracts, the situation is somewhat different in that prime contract awards in 1986 were \$4.2 billion and in 1987 were \$3.9 billion, with an average value of \$4.05 billion.¹⁴ In 1991 and 1992 the prime contract awards had fallen to \$2.95 billion and \$3.06 billion for an average value of about \$3 billion. Over the 1986-87 through 1991-92 time period, prime defense contract awards have fallen by 26 percent in Pennsylvania.

Table 6 shows the average contract awards by county for 1986-87 and 1991-92 and an estimate of the change in prime contract employment, assuming that every million dollars in awards generates about 25 jobs in the area. There is enormous diversity among counties within the 26 percent statewide decline. Several counties such as Cambria, Clearfield, Fayette, Greene, Mifflin, Philadelphia, Tioga, Venango and Wayne have experienced increases in awards, with potential job creation of about 5,347 jobs. Other counties, such as Chester, Cumberland, Delaware, Lackawanna, Lancaster, Montgomery and York have undergone substantial losses in contract awards; in total, those counties have experienced a loss of 26,545 potential prime contract jobs. The job losses outweigh the job gains by a factor of 5. Statewide, the prime contract job losses are estimated at 26,399. It appears that the seven counties estimated job loss of 26,545 is slightly larger than the statewide estimated prime contract job loss.

It is estimated that in 1986-87, \$4.05 billion in prime defense contracts may have supported 169,665 defense related jobs.¹⁵ A similar estimation for 1991-92 leads to the conclusion that \$3.01 billion in prime defense contracts supported 125,941 jobs.¹⁶ The 1986-87 through 1991-92 total defense related job loss in Pennsylvania is 43,724 jobs, a 26 percent reduction in the five-year period, or an annual average of 8,745 jobs.¹⁷

¹⁴The averaging process smoothes out the year-to-year fluctuations in awards to counties and gives a better reading to the average level of defense spending by county.

¹⁵ $\$4.05 \text{ billion} / \$23,873 = 169,665 \text{ jobs.}$ (See tables 4 and 6).

¹⁶ $\$3.01 \text{ billion} / \$23,873 = 125,941 \text{ jobs.}$ (See tables 4 and 6).

¹⁷ $169,665 - 125,941 = 43,724.$

Table 6

PRIME CONTRACT AWARDS IN PENNSYLVANIA, BY COUNTY, AVERAGE CONTRACT AWARD VALUE FOR 1986-87 AND 1991-92
AND THE ESTIMATED CHANGE IN PRIME CONTRACT EMPLOYMENT OVER THE SAME TIME PERIOD

County	1986 and 1987 average contract awards (000s)	1991 and 1992 average contract awards (000s)	Change in contract awards 1987-92	Change in prime contract employment	County	1986 and 1987 average contract awards (000s)	1991 and 1992 average contract awards (000s)	Change in contract awards 1987-92	Change in prime contract employment
Adams	\$3,806	\$4,264	\$458	12	Lancaster	159,902	84,874	(75,029)	-1,893
Allegheny	581,003	528,421	(52,582)	-1,327	Lawrence	5,005	5,101	96	2
Armstrong	1,607	147	(1,461)	-37	Lebanon	\$10,655	\$9,240	\$(1,416)	-36
Beaver	12,829	8,609	(4,221)	-106	Lehigh	19,168	25,064	5,896	149
Bedford	10,603	2,452	(8,151)	-206	Luzerne	19,888	8,103	(11,786)	-297
Berks	37,954	46,615	8,661	219	Lycoming	17,678	13,680	(3,999)	-101
Blair	10,998	440	(10,558)	-266	McKean	20	0	(20)	-0
Bradford	5,145	2,820	(2,325)	-59	Mercer	1,448	792	(656)	-17
Bucks	123,087	103,809	(19,279)	-486	Mifflin	(452)	438	890	22
Butler	12,979	10,272	(2,707)	-68	Monroe	32,407	36,140	3,733	94
Cambria	20,555	52,532	31,977	807	Montgomery	452,815	272,622	(180,193)	-4,547
Cameron	98	0	(98)	-2	Montour	5,093	6,992	1,899	48
Carbon	26,104	8,605	(17,499)	-442	Northampton	13,921	5,591	(8,330)	-210
Centre	70,789	69,388	(1,401)	-35	Northumberland	1,430	1,337	(93)	-2
Chester	256,109	69,720	(186,389)	-4,703	Perry	25	43	18	0
Clarion	3,929	3,579	(350)	-9	Philadelphia	820,849	927,558	106,709	2,693
Clearfield	6,997	15,979	8,982	227	Pike	195	0	(195)	-5
Clinton	7,934	11,613	3,680	93	Potter	265	730	465	12
Columbia	19,646	4,794	(14,852)	-375	Schuylkill	21,353	8,572	(12,782)	-323
Crawford	797	446	(351)	-9	Snyder	137	60	(77)	-2
Cumberland	177,951	48,438	(129,513)	-3,268	Somerset	5,404	8,278	2,874	73
Dauphin	43,826	17,426	(26,400)	-666	Sullivan	157	66	(91)	-2
Delaware	449,197	145,061	(304,136)	-7,674	Susquehanna	3,131	3,566	436	11
Elk	409	27	(382)	-10	Tioga	379	1,542	1,164	29
Erie	44,300	27,898	(16,402)	-414	Union	1,268	2,855	1,587	40
Fayette	2,215	30,252	28,037	707	Venango	269	5,342	5,073	128
Forest	91	0	(91)	-2	Warren	4,858	6,139	1,281	32
Franklin	41,348	39,014	(2,334)	-59	Washington	3,177	2,256	(921)	-23
Fulton	520	887	367	9	Wayne	180	889	709	18
Greene	383	28,763	28,380	716	Westmoreland	19,424	11,750	(7,674)	-194
Huntingdon	3,095	986	(2,110)	-53	Wyoming	337	191	(146)	-4
Indiana	1,757	1,769	13	0	York	342,881	227,163	(115,718)	-2,920
Jefferson	178	200	22	1					
Juniata	380	866	486	12					
Lackawanna	108,540	43,536	(65,004)	-1,640	Total	\$4,050,411	\$3,006,587	\$(1,043,824)	-26,339

SOURCE: U.S. Bureau of Census, Consolidated Federal Funds Report (federal government expenditures or obligations by state and county areas fiscal 1986 and 1987) and Department of Defense, Directorate for Information Operations and Reports, Prime Contract Awards by State, County, Contractor and Place (Washington Headquarters Services, 1991, 1992).

Given the Defense Budget Project's medium defense expenditure cut option, Pennsylvania will lose an additional 43,467 defense related jobs in the 1991–97 time period. The total 10.5 year defense drawdown from 1986–87 through 1997 is estimated at 87,191 defense related jobs.¹⁸ The estimated 1997 defense related employment will be 82,474, a figure which is about 53 percent smaller than the 1986–87 total.¹⁹

The percentage drop in Pennsylvania's defense related employment is considerably larger than the estimate of the Defense Budget Project for the United States economy. According to the Project's medium cut option estimate, defense related employment will fall from its 1986–87 total of 3,340,000 to 2,058,444 in 1997, a loss of 1,281,556 defense related jobs or a 38.4 percent loss.²⁰ The Project's deep cut option results in a 1,398,514 job loss in defense related employment.²¹ Total direct defense expenditure dependent job loss (including military and reserves, DoD civilian and private sector defense related employment) is likely to be 2,700,000 annually if currently projected defense expenditure reductions are essentially correct. The Defense Conversion Commission in February, 1993 estimates that real defense expenditures in 1993 dollars will fall by \$108 billion dollars annually by 1997.²² Given the current estimate that \$1 billion in defense expenditure supports about 25,000 defense jobs, the \$108 billion in expenditure reduction implies a 2.7 million fall in annual direct defense expenditure employment. In addition, if the indirect and induced employment reductions are included, the national job loss total could be as large as 4.86 million.²³

Pennsylvania's higher job loss estimate is due to the fact that total U.S. prime defense contract awards averaged \$149 billion²⁴ in 1986–87 and had fallen to \$123 billion in 1991, a drop of 17.5 percent, while in Pennsylvania, the prime contract awards fell by 26 percent. This difference in drawdown rates is probably due to the fact that Pennsylvania has a high

¹⁸43,724 + 43,467 = 87,191. (See footnote 17).

¹⁹169,665 – 87,191 = 82,474. (See footnote 15).

²⁰Schmidt, C. P. & S. Kosiak, "Potential Impact of Defense Spending Reductions on the Defense Industrial Labor Force by State," Defense Budget Project (Washington, D.C., 1992).

²¹Ibid.

²²Report of the Defense Conversion Commission, Adjusting to the Drawdown (Washington, D.C., 1992), Supporting Annex A, The DoD Drawdown: Planned Spending and Employment Cuts (February 1993).

²³Defense Spending and its Impact on New York State's Economy in the Post Cold War Era A Report by the Governor's Defense Advisory Panel, December 1991, p. 16.

²⁴U. S. Bureau of Census, Consolidated Federal Funds Report, 1986, 1987.

proportion of military procurement contracts, as opposed to other prime contracts, and this part of the prime contract total has been cut more and will be cut more severely than the other components of prime military contracts.

A loss of 87,191 defense related jobs over a ten-year period is about 8,720 jobs per year. Since total employment is about 5.5 million annually, the annual job loss is less than two-tenths of one percent of total employment. Moreover, the job losses in defense related industries do not mean that the workers became permanently unemployed or unemployed for an extended time period. The former defense related employees had to search for alternate employment and some may have relocated and/or taken cuts in pay or taken early involuntary retirement. In a growing economy, such as we experienced during 1986-89 when about 8.2 million jobs were created nationwide,²⁵ the national employment impact of defense budget cuts was minimal. Since the 1990-91 growth slowdown, the impact of defense related employment cuts is more pronounced. Moreover, the regional impact is probably underestimated. Defense employment cuts are disruptive and debilitating to those communities where they are implemented. While the decline of the coal and steel industry has not prevented continued employment growth in the nation's economy the demise had very discernable, long-lasting and still visible impacts on certain Pennsylvania counties and communities.

Table 6 shows that the levels of contract awards and employment by county in 1986-87 give no hints about the level of contract awards and employment in 1991-92. As indicated, some counties actually increased their award levels and potential employment, while others with presumably equally talented procurement supplier skills apparently were caught up in the general defense drawdown through no fault of their own. It appears that it is impossible to predict the 1991-92 outcome from any knowledge of the 1986-87 actual awards. In the same way, it is impossible to predict the future impact of prime contract drawdowns by county in Pennsylvania. What is certain is that those counties or regions with substantial prime and subcontract employment will bear most of the burden of future job losses, estimated at 43,467 over the 1991-97 time period. The total estimated prime and subcontract employment by counties with more than 5,000 jobs in 1991 is as follows: Allegheny (24,575), Delaware (6,300), Montgomery (12,038), Philadelphia (31,826) and York (10,759). These five counties may

²⁵Economic Report of the President (Washington, D.C., U.S. Government Printing Office, 1993), table 70.

have 85,498 jobs in defense related employment, constituting about 69 percent of Pennsylvania's total defense related employment. Allegheny and Philadelphia alone comprise about 46 percent of the defense related employment statewide.²⁶

The Defense Conversion Commission indicates that the Department of Defense's budget authority projections will have a major impact on military procurement expenditures.²⁷ Table 7 shows that procurement spending is the only program category that is expected to fall during the 1987-93 period--from \$80 billion to \$54 billion in current dollars a 33 percent reduction. Pennsylvania's prime contract awards have fallen by 26 percent over a shorter period from 1986-87 to 1991-92. In constant 1993 dollars, the reduction in actual procurement goods and services produced and shipped by private contractors will be 44.4 percent. It is very likely that employment in the procurement sector of national defense spending will fall by about 44 percent. The study suggests a substantially higher employment impact on the private producers of military hardware and the products that go into making up this hardware. The counties and regions of the State that have procurement-related defense contract awards will receive the most severe impact, although operations and maintenance, research and development and military construction/family housing will sustain cuts in real spending of 22, 27 and 20 percent, respectively. No part of the national defense budget will escape real dollar cuts, but the non-procurement part of the defense budget at least maintains a rough parity in current dollar authorization over the decade.

THE IMPACT ON THE LOCAL ECONOMY

Up to this point, the impact of the defense drawdown on absolute level of employment statewide and by county has been the subject of inquiry. However, the drawdown's effect on communities, counties, or regions is probably in direct proportion to the relative importance of defense related employment and earnings in the county or region. The following discussion relates the level of prime defense contracts and their

²⁶Again, the employment numbers attributed to counties is purely a mechanical process that allocates 41.9 prime and subcontract defense jobs to a county per \$1 million dollars in prime contract awards. The estimating procedure is probably more accurate on a regional basis than it is on strict county boundary line basis.

²⁷See table 7.

Table 7

DoD BUDGET AUTHORITY BY PROGRAM, FISCAL YEAR 1992 THROUGH FISCAL YEAR 1997
(billions of dollars)

Program	1987	1991	1992	1993	1994	1995	1996	1997	Percentage change		
									1987- 1992	1992- 1997	1987- 1997
Current dollars											
Military personnel	\$74	\$84	\$79	\$77	\$72	\$72	\$74	\$76	6.7%	-3.8%	2.7%
Operations and maintenance	80	132	92	86	84	85	88	90	15.0	-2.2	12.5
Procurement	80	72	60	54	59	63	62	63	-25.0	5.0	-21.3
Research, development, test and evaluation	36	36	37	39	40	38	37	36	2.7	-2.8	0.0
Military construction/ family housing	8	8	8	10	13	11	10	10	0.0	0.0	25.0
Other	1	2	0	2	0	1	-1	0	*	*	*
Total	279	334	276	268	268	270	270	275	-1.1	-0.4	-1.4
Constant 1993 dollars											
Military personnel	91	91	83	77	69	66	65	64	-8.8	-22.9	-29.7
Operations and maintenance	100	138	95	86	81	79	79	78	-5.0	-17.9	-22.0
Procurement	99	76	63	54	57	59	56	55	-36.3	-12.7	-44.4
Research, development, test and evaluation	44	39	38	39	39	36	34	32	-13.7	-15.8	-27.2
Military construction/ family housing	10	9	9	10	12	10	9	8	-10.1	-11.1	-20.0
Other	2	2	-1	2	0	0	-1	1	*	*	*
Total	\$346	\$355	\$287	\$268	\$258	\$250	\$242	\$238	-17.1%	-17.1%	-31.2%

SOURCE: Report of the Defense Conversion Commission, Adjusting to the Drawdown (Washington, D.C., 1992), Supporting Annex A, The DoD Drawdown: Planned Spending and Employment Cuts February 1993.

implied employment and earnings relative to the county private sector employment and earnings. It is evident that several counties with fairly small prime defense contracts, such as Greene, Cambria, Clinton and Clearfield, are relatively more dependent on the defense industry and therefore more vulnerable to a protracted drawdown than are a number of counties with large contract awards but also large economic strengths.

Table 8 shows the importance of potential prime contract and subcontract employment in Pennsylvania by county relative to private sector employment in each county. The ratio of defense related employment to total private sector employment indicates the importance of defense related employment to the local economy and the relative size of the downsizing impact of reduced defense spending on prime contracts.

The 12 counties most heavily dependent on defense related employment and ranked by the percentage of defense related employment are: Greene (7.9), Centre (6.7), York (6.4), Clinton (5.6), Philadelphia (4.6), Cambria (4.3), Clearfield (3.6), Allegheny (3.4), Carbon (3.2), Fayette (3.1), Franklin (3.0) and Monroe (2.9). Only York, Philadelphia and Allegheny of the 12 top counties on this ranking are among the leading counties in absolute levels of awards and employment. Chart I shows the counties and regions of the State that have the heaviest dependence on defense related employment in the State. Five of the six regions in the State have counties with more than average dependence on military contracts and their related employment. Both Centre and Cambria counties are heavily dependent on defense research contracts, while the remaining counties are primarily involved in procurement of goods and services.²⁸

²⁸See tables 5 and 13.

Table 8

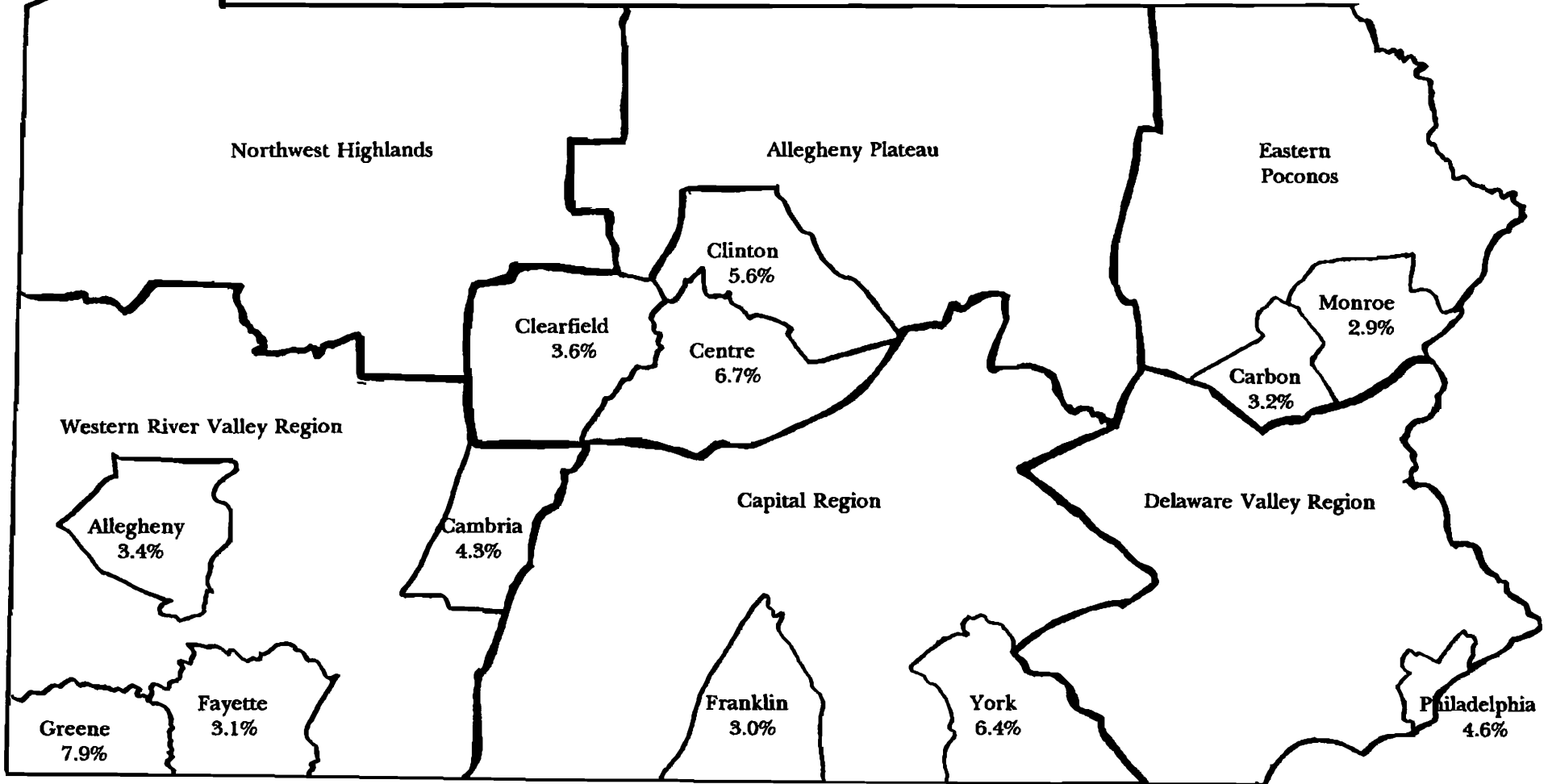
PENNSYLVANIA PRIVATE SECTOR EMPLOYMENT, PRIME CONTRACT AND SUBCONTRACT EMPLOYMENT
AND THE PERCENTAGE OF PRIVATE EMPLOYMENT ATTRIBUTED TO PRIME MILITARY CONTRACTS, BY COUNTY, 1991

County	Private sector employment	Percentage prime contract employment	Percentage prime and subcontract employment	Estimated prime contract employment	Estimated prime and subcontract employment	County	Private sector employment	Percentage prime contract employment	Percentage prime and subcontract employment	Estimated prime contract employment	Estimated prime and subcontract employment
Adams	31,622	0.3%	0.5%	97	161	Lancaster	222,555	0.7%	1.1%	1,531	2,542
Allegheny	719,384	2.1	3.4	14,802	24,575	Lawrence	35,344	0.3	0.6	117	194
Armstrong	20,780	0.0	0.0	2	3	Lebanon	43,298	0.5	0.9	232	385
Beaver	53,168	0.3	0.5	146	242	Lehigh	159,204	0.5	0.8	758	1,258
Bedford	16,156	0.1	0.2	21	35	Luzerne	142,370	0.2	0.3	242	402
Berks	166,877	0.7	1.2	1,184	1,965	Lycoming	54,210	0.7	1.2	395	655
Blair	56,383	0.0	0.0	10	16	McKean	18,253	0.0	0.0	0	0
Bradford	25,657	0.1	0.2	35	58	Mercer	48,190	0.0	0.0	14	23
Bucks	240,809	1.0	1.6	2,346	3,895	Mifflin	18,310	0.1	0.1	10	17
Butler	58,420	0.8	1.3	464	770	Monroe	43,688	1.7	2.9	757	1,257
Cambria	59,172	2.6	4.3	1,539	2,556	Montgomery	479,449	1.5	2.5	7,251	12,038
Cameron	2,476	0.0	0.0	0	0	Montour	11,493	0.5	0.9	60	99
Carbon	16,850	1.9	3.2	324	537	Northampton	92,974	0.2	0.3	170	283
Centre	47,100	4.0	6.7	1,894	3,145	Northumberland	35,254	0.1	0.1	28	47
Chester	184,954	1.1	1.8	2,016	3,347	Perry	8,285	0.0	0.0	2	4
Clarion	13,934	0.4	0.7	61	102	Philadelphia	686,728	2.8	4.6	19,170	31,826
Clearfield	30,549	2.2	3.6	668	1,109	Pike	8,153	0.0	0.0	0	0
Clinton	11,470	3.4	5.6	390	647	Potter	5,790	0.3	0.4	15	24
Columbia	27,716	0.1	0.1	20	33	Schuylkill	55,354	0.3	0.6	187	310
Crawford	35,056	0.0	0.0	4	7	Snyder	16,991	0.0	0.0	0	0
Cumberland	112,619	0.8	1.4	947	1,573	Somerset	28,670	0.5	0.9	152	253
Dauphin	130,332	0.4	0.6	509	845	Sullivan	2,214	0.0	0.0	0	0
Delaware	234,198	1.6	2.7	3,795	6,300	Susquehanna	11,494	1.3	2.1	148	246
Elk	16,096	0.0	0.0	0	0	Tioga	14,106	0.0	0.1	6	11
Erie	128,038	0.7	1.1	853	1,417	Union	16,808	0.7	1.2	118	196
Fayette	38,388	1.9	3.1	727	1,207	Venango	20,760	1.2	2.0	246	408
Forest	1,726	0.0	0.0	0	0	Warren	18,387	1.1	1.8	199	331
Franklin	49,141	1.8	3.0	881	1,462	Washington	70,206	0.1	0.2	69	115
Fulton	4,439	0.6	0.9	25	42	Wayne	17,631	0.0	0.1	7	12
Greene	11,211	4.8	7.9	533	886	Westmoreland	134,568	0.2	0.4	334	555
Huntingdon	13,130	0.3	0.4	35	58	Wyoming	11,653	0.0	0.0	1	1
Indiana	31,291	0.1	0.2	44	73	York	167,962	3.9	6.4	6,480	10,759
Jefferson	17,906	0.0	0.0	2	3						
Juniata	7,555	0.6	1.0	44	73						
Lackawanna	105,096	1.0	1.6	1,034	1,717	Total	5,420,051	1.4%	2.3%	74,152	123,108

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, U.S. Doc. Rend [BE-55] Table CA25 Total Employment for Pennsylvania, 1969-90 and table 5.

Chart I

PENNSYLVANIA COUNTIES WITH A RELATIVELY HIGH PERCENTAGE OF PRIVATE EMPLOYMENT
ATTRIBUTED TO PRIME MILITARY CONTRACTS AND SUBCONTRACTS FOR 1991
(counties depicted have percentages at least 125 percent larger than
the statewide mean percentage of 2.3)



SOURCE: Table 8.

Another way of ranking counties in terms of the relative importance of defense related employment is to calculate for each county the prime contracts award value per person employed in each county. The prime contract awards per county private sector employee are shown in table 9; this table also shows private sector employment and the percentage of federal civilian employment by county. These data produce the following list of counties with the highest prime contract dollars per employed worker: Greene (\$1,885), Centre (\$1,594), York (\$1,529), Clinton (\$1,346), Philadelphia (\$1,106), Cambria (\$1,031), Clearfield (\$866), Allegheny (\$815), Carbon (\$761), Fayette (\$750), Franklin (\$710), Monroe (\$687), Delaware (\$642) and Montgomery (\$599). This ranking of counties with respect to prime contract dollars per employed worker confirms a similar ranking with respect to prime contract employment which could be made from table 8. Chart II shows the fourteen counties with above-average prime defense contract award dollars per employed worker. Not surprisingly, the same counties and the same regions show up as having prime contract awards a relatively important part of the county's economic activity. Chart II differs from chart I in that Delaware and Montgomery counties are included in the Delaware Valley Region in chart II. Table 5 shows the absolute importance of prime contracts and employment to these two counties, and chart II indicates the strength of the regional impact of prime defense contracts and defense related employment drawdowns on that region of the State.

Table 10 shows the relative importance of prime defense contract awards and federal civilian government earnings by county for Pennsylvania in 1990. This table again assumes that the dollar proceeds of all the prime contracts accrue to county residents as wages and salaries paid to those employed in defense related industries. The federal government civilian earnings are, of course, the earnings of federal government employees who work in post offices, banks, army, navy and national guard bases, federal prisons and other federal facilities in Pennsylvania. Quantitatively, federal government employee earnings are 63 percent larger than the prime contract awards and account for a larger fraction of total employment, than do prime contract and subcontract employment.²⁹ The counties where federal civilian employees represent a substantial percentage of county earnings are: Franklin (11.9), Philadelphia (11.4), Cumberland (10.2), Monroe (9.9), Union (9.3) and Lebanon (6.4). This ranking is certainly much different from the prime contract list, but for every county except Union, where federal prisons drive employment and

²⁹See tables 8 and 9.

Table 9

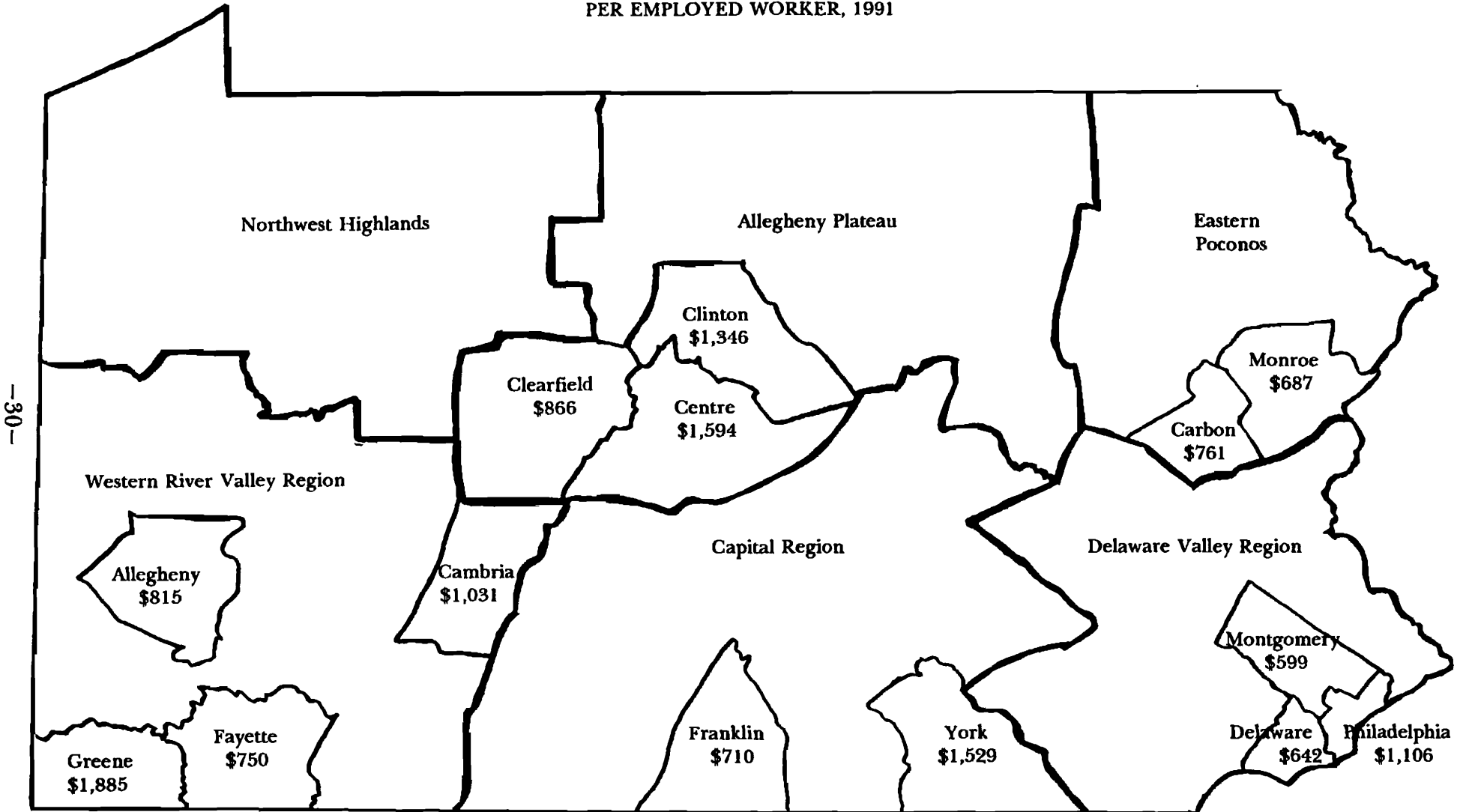
**PENNSYLVANIA PRIVATE SECTOR EMPLOYMENT, PRIME CONTRACT AND SUBCONTRACT EMPLOYMENT
AND THE PERCENTAGE OF PRIVATE EMPLOYMENT ATTRIBUTED TO PRIME MILITARY CONTRACTS, BY COUNTY, 1991**

County	1990 private sector employment	Percentage federal (civilian) employment	Prime contract dollars per employed worker	County	1990 private sector employment	Percentage federal (civilian) employment	Prime contract dollars per employed worker
Adams	31,622	2.0%	\$122	Lancaster	222,555	0.7%	\$273
Allegheny	719,384	2.3	815	Lawrence	35,344	1.4	131
Armstrong	20,780	1.3	4	Lebanon	43,298	7.0	212
Beaver	53,168	0.9	109	Lehigh	159,204	1.0	189
Bedford	16,156	0.9	52	Luzerne	142,370	2.6	67
Berks	166,877	0.8	281	Lycoming	54,210	1.0	289
Blair	56,383	1.7	7	McKean	18,253	1.3	0
Bradford	25,657	0.8	54	Mercer	48,190	0.7	12
Bucks	240,809	1.7	386	Mifflin	18,310	0.6	22
Butler	58,420	3.2	314	Monroe	43,688	9.5	687
Cambria	59,172	1.8	1,031	Montgomery	479,449	1.0	599
Cameron	2,476	0.8	0	Montour	11,493	0.4	206
Carbon	16,850	0.9	761	Northampton	92,974	0.7	73
Centre	47,100	0.9	1,594	Northumberland	35,254	0.8	32
Chester	184,954	1.3	432	Perry	8,285	1.2	10
Clarion	13,934	1.0	175	Philadelphia	686,728	8.5	1,106
Clearfield	30,549	1.1	866	Pike	8,153	1.0	0
Clinton	11,470	1.2	1,346	Potter	5,790	1.0	99
Columbia	27,716	0.7	29	Schuylkill	55,354	0.9	134
Crawford	35,056	0.8	5	Snyder	16,991	0.5	0
Cumberland	112,619	7.4	333	Somerset	28,670	0.9	210
Dauphin	130,332	2.1	155	Sullivan	2,214	1.3	0
Delaware	234,198	0.9	642	Susquehanna	11,494	1.2	511
Elk	16,096	0.8	0	Tioga	14,106	1.3	18
Erie	128,038	1.4	264	Union	16,808	5.6	278
Fayette	38,388	1.4	750	Venango	20,760	1.1	470
Forest	1,726	3.9	0	Warren	18,387	1.7	430
Franklin	49,141	11.2	710	Washington	70,206	1.0	39
Fulton	4,439	0.8	224	Wayne	17,631	0.8	16
Greene	11,211	1.4	1,885	Westmoreland	134,568	0.8	98
Huntingdon	13,130	1.1	105	Wyoming	11,653	0.6	2
Indiana	31,291	1.0	55	York	167,962	2.7	1,529
Jefferson	17,906	0.9	4				
Juniata	7,555	1.1	229	Total	5,420,051	2.7%	\$542
Lackawanna	105,096	1.0	390				

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, U.S. Doc. Rend [BE-55] Table CA25 Total Employment for Pennsylvania, 1969-90 and Table 5.

Chart II

PENNSYLVANIA COUNTIES WITH ABOVE AVERAGE PRIME CONTRACT DEFENSE DOLLARS
PER EMPLOYED WORKER, 1991



-30-

NOTE: Pennsylvania average prime contract dollars per employed worker is \$542.

SOURCE: Table 9.

Table 10

NET EARNINGS BY PLACE OF RESIDENCE IN PENNSYLVANIA COUNTIES AND THE RATIOS (IN PERCENT)
OF FEDERAL GOVERNMENT CIVILIAN EMPLOYEES EARNINGS AND PRIME CONTRACT AWARDS TO NET EARNINGS, 1990

County	Net earnings (000,000)	Percentage federal (civilian) government earnings	Percentage prime defense contract	County	Net earnings (000,000)	Percentage federal (civilian) government earnings	Percentage prime defense contract
Adams	\$986	1.5%	0.4%	Lancaster	\$6,082	0.9%	1.0%
Allegheny	18,878	3.1	3.1	Lawrence	906	1.9	0.5
Armstrong	823	0.9	0.0	Lebanon	1,359	6.4	0.7
Beaver	1,896	0.8	0.3	Lehigh	4,235	1.3	0.7
Bedford	415	0.9	0.2	Luzerne	3,365	3.3	0.3
Berks	4,880	1.0	1.0	Lycoming	1,305	1.4	1.2
Blair	1,266	2.7	0.0	McKean	440	1.5	0.0
Bradford	671	0.9	0.2	Mercer	1,217	0.8	0.0
Bucks	9,580	1.5	1.0	Mifflin	443	0.8	0.1
Butler	1,922	2.7	1.0	Monroe	1,242	9.9	2.4
Cambria	1,420	2.4	4.3	Montgomery	13,797	1.2	2.1
Cameron	55	0.9	0.0	Montour	227	0.6	1.0
Carbon	548	0.8	2.3	Northampton	3,229	0.7	0.2
Centre	1,422	1.0	5.3	Northumberland	905	0.9	0.1
Chester	7,078	1.2	1.1	Perry	457	0.6	0.0
Clarion	384	1.0	0.6	Philadelphia	17,356	11.4	4.4
Clearfield	737	1.3	3.6	Pike	388	0.6	0.0
Clinton	303	1.3	5.1	Potter	154	0.9	0.4
Columbia	612	0.9	0.1	Schuylkill	1,543	0.9	0.5
Crawford	843	0.9	0.0	Snyder	413	0.6	0.0
Cumberland	2,719	10.2	1.4	Somerset	721	1.0	0.8
Dauphin	3,204	3.1	0.6	Sullivan	50	1.3	0.0
Delaware	9,047	0.9	1.7	Susquehanna	382	0.9	1.5
Elk	418	0.8	0.0	Tioga	354	1.5	0.1
Erie	3,255	1.9	1.0	Union	366	9.3	1.3
Fayette	1,245	1.3	2.3	Venango	560	1.2	1.7
Forest	39	4.0	0.0	Warren	494	1.7	1.6
Franklin	1,331	11.9	2.6	Washington	2,266	1.0	0.1
Fulton	145	0.6	0.7	Wayne	414	0.9	0.1
Greene	320	1.5	6.6	Westmoreland	4,314	0.8	0.3
Huntingdon	361	1.1	0.4	Wyoming	324	0.6	0.0
Indiana	827	1.1	0.2	York	5,114	2.6	5.0
Jefferson	437	1.0	0.0				
Juniata	208	1.1	0.8	Total	\$155,056	3.1%	1.9%
Lackawanna	2,362	1.6	1.7				

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, U.S. Doc. Rend [BE-55] Table CA5 Personal Income for Pennsylvania, 1969-90 and Table 5.

earnings, all of the ranked counties are heavily affected by defense base or national guard related earnings and employment. The data suggest that the closing of the Philadelphia Naval Yard will have a much greater impact on Philadelphia's economy than a 25 percent reduction in prime defense contracts granted to Philadelphia.

The civilian employment impacts of the cold war military buildup generally took place over the 1977-87 time period, and 1987 is generally taken as the peak year for real national defense outlays and employment. The industries, including Defense Department civilian personnel, which enjoyed the greatest buildup in defense related employment over the 1977-87 time period are, not surprisingly, the industries slated for the greatest drawdown over the 1987-97 time period. Table 11 shows recently published data on the decade-long buildup and the decade-long drawdown by industry. One surprising entry is wholesale trade, an unlikely candidate for defense related drawdowns. Most of the other industries are highly involved in the procurement of military hardware except for eating and drinking places, trucking and warehousing, maintenance and repair construction and personnel supply services.

One method of predicting where the employment impact of the current defense drawdown is likely to take place is to look for those industries in Pennsylvania counties that are most dependent on defense spending. Table 12 shows the percentage of defense related employment relative to the total employment in individual industries. Almost 80 percent of the employment in the ship building and repair industry depends on defense spending. In general, the manufacturing of ships, planes, missiles and ammunition are all very dependent on defense spending and are subject to deep projected cuts in defense outlays. These industries, in particular, are the most likely to experience deep employment cuts. The counties and regions within Pennsylvania that are involved in the manufacturing of these products or in the supplying of parts and materials for these products are going to experience the greatest impact from the current Cold War defense drawdown.

Table 11

UNITED STATES INDUSTRIES WITH THE LARGEST CHANGE
IN LEVELS OF DEFENSE RELATED EMPLOYMENT 1977-87 AND 1987-97
(in thousands of jobs)

Industry	Employment change 1977-87	Employment change 1987-97
Federal general government	163	-200
Wholesale trade	108	-118
Aircraft	69	-116
Search and navigation equipment	48	-75
Guided missiles and space vehicles	72	-66
Aircraft and missile engines	44	-65
Eating and drinking places	77	-59
Trucking and warehousing	47	-53
Maintenance and repair construction	52	-49
Aircraft and missiles parts and equipment	64	-47
Miscellaneous electronic components	45	-46
Ship building and repairing	19	-44
Computer equipment	35	-42
Personnel supply services	148	-42
Semiconductors and related services	56	-41
Total	1,047	-1,063

SOURCE: Saunders, N. C., "Employment Effects of the Rise and Fall in Defense Spending," *Monthly Labor Review*, v. 116, No. 4, (U.S. Department of Labor, Bureau of Labor Statistics, April 1993), p. 9.

Table 12

**INDUSTRIES MOST HEAVILY DEPENDENT
ON DEFENSE SPENDING, 1990**

Industry	Defense related employment as a percentage of total employment
Ship building and repairing	78.7%
Guided missiles and space vehicles	74.8
Ammunition and ordnance, except small arms	72.8
Aircraft and missile parts and equipment	47.6
Aircraft and missile engines	47.0
Research and testing services	44.5
Broadcasting and communications equipment	41.5
Aircraft	40.0
Small arms and small arms ammunition	32.2
Search and navigation equipment	30.7
Semiconductors and related devices	29.0
Miscellaneous electronic components	20.5
Forgings	20.4
Electrical equipment and supplies, n.e.c.	19.1
Nonferrous foundries	16.6
Miscellaneous transportation equipment	16.2
New nonbuilding facilities, n.e.c.	14.2
Measuring and controlling devices; watches	12.9
Computer equipment	12.9
Industrial machinery, n.e.c.	12.7
Metal services, n.e.c.	12.2
Screw machine products, bolts, rivets, etc.	12.2
Engines and turbines	12.2
Management and public relations	12.1
Personnel supply services	11.8

SOURCE: Saunders, N. C., "Employment Effects of the Rise and Fall in Defense Spending," *Monthly Labor Review*, v. 116, No. 4, (U.S. Department of Labor, Bureau of Labor Statistics, April 1993), p. 9.

Table 13

PRIME DEFENSE CONTRACT AWARDS IN PENNSYLVANIA, BY COUNTY
 CONTRACTS VALUED BETWEEN \$2 AND \$16 MILLION IN FISCAL 1991

County	Contractor	Award value (000s)	County	Contractor	Award value (000s)					
Adams	None	\$0	Cameron	None	\$0					
Allegheny	Benton Corp.	1,997	Carbon	Kovatch Corporation	12,707					
	Carnegie Group Inc.	7,854	Centre	Locus Inc.	11,640					
	Chevron USA Inc.	2,330	Chester	Environmental Resource Mgt.	2,508					
	Contraves USA Inc.	8,937		Hewlett Packard Company	11,620					
	Dairyland Sales Co.	2,216		Hollingsworth John R. Co.	5,412					
	Dravo Corporation	2,400		Ketron Inc.	4,426					
	Heinz HJ Company	2,639		Moody JA Co. Inc.	2,129					
	International Technology Corp.	4,872		Weston Roy F. Inc.	<u>5,887</u>					
	Mine Safety Appliances Co.	3,878	Subtotal	31,982						
	National Draeger Inc.	2,079	Clarion	None	0					
	NUS Corporation	2,343	Clearfield	None	0					
	Ross Engineering Co. Inc.	8,361	Clinton	C & S Transit Corporation	13,542					
	Southwest Petro-Chem Inc.	15,604	Columbia	None	0					
	University of Pittsburgh	<u>2,437</u>	Crawford	None	0					
Subtotal	67,947	Cumberland	CACI Inc.	2,863						
Armstrong	None		0	Chemical Waste Management	2,468					
Beaver	Contraves USA Inc.		3,376	Computer Resource Management	3,117					
				Federal Data Corporation	5,558					
Berks	Bay Metal & Machine Co. Inc.		4,037	International Business Machines Corp.	4,379					
				Dawson Consumer Products Inc.	4,649					
		Lobar Inc.		2,709						
Bedford	None	0	Mandex Inc.	<u>2,339</u>						
			Subtotal	23,433						
Blair	None	0	Dauphin	Chromalloy Gas Turbine Corp.	2,660					
				Harsco Corporation	3,456					
				Hershey Foods Corporation	<u>4,809</u>					
				Subtotal	10,925					
				Delaware	Ametek Inc.	6,618				
			Baldt Inc.		2,157					
			Chem Nuclear Systems Inc.		3,960					
			Container Research Corporation		9,092					
			Elwyn Inc.		4,816					
			Bradford	None	0	Piasecki Aircraft Corp.	2,216			
Vickers Inc.	2,970									
Villanova University	<u>2,034</u>									
Subtotal	33,863									
Bucks	Ametek Inc.	3,247				Elk	None	0		
									Atlantic Science & Technology	2,479
									Control Data Corporation	2,006
									Digital Systems Group Inc.	4,503
									Environmental Technotics Corp.	5,136
									Microcom Corporation	4,202
			Unisys Corporation	4,096						
			Veda Incorporated	3,769						
			Vitro Corporation	2,120						
			Warren Machine Co. Inc.	<u>2,483</u>						
Subtotal	34,041									
Butler	None	0	Cambria	General Kinetics Incorporated	2,211					
						Subtotal	0			
Butler	None	0				Kasel Manufacturing Company	2,823	3,750		
									Merck & Co. Inc.	16,127
									Penn Metal Fabricators Inc.	<u>10,483</u>
									Subtotal	35,394
									Cambria	General Kinetics Incorporated
Kasel Manufacturing Company	2,823									
Kircon Breco	3,750									
Merck & Co. Inc.	16,127									
Penn Metal Fabricators Inc.	<u>10,483</u>									
Subtotal	35,394									

Table 13--Continued

2.

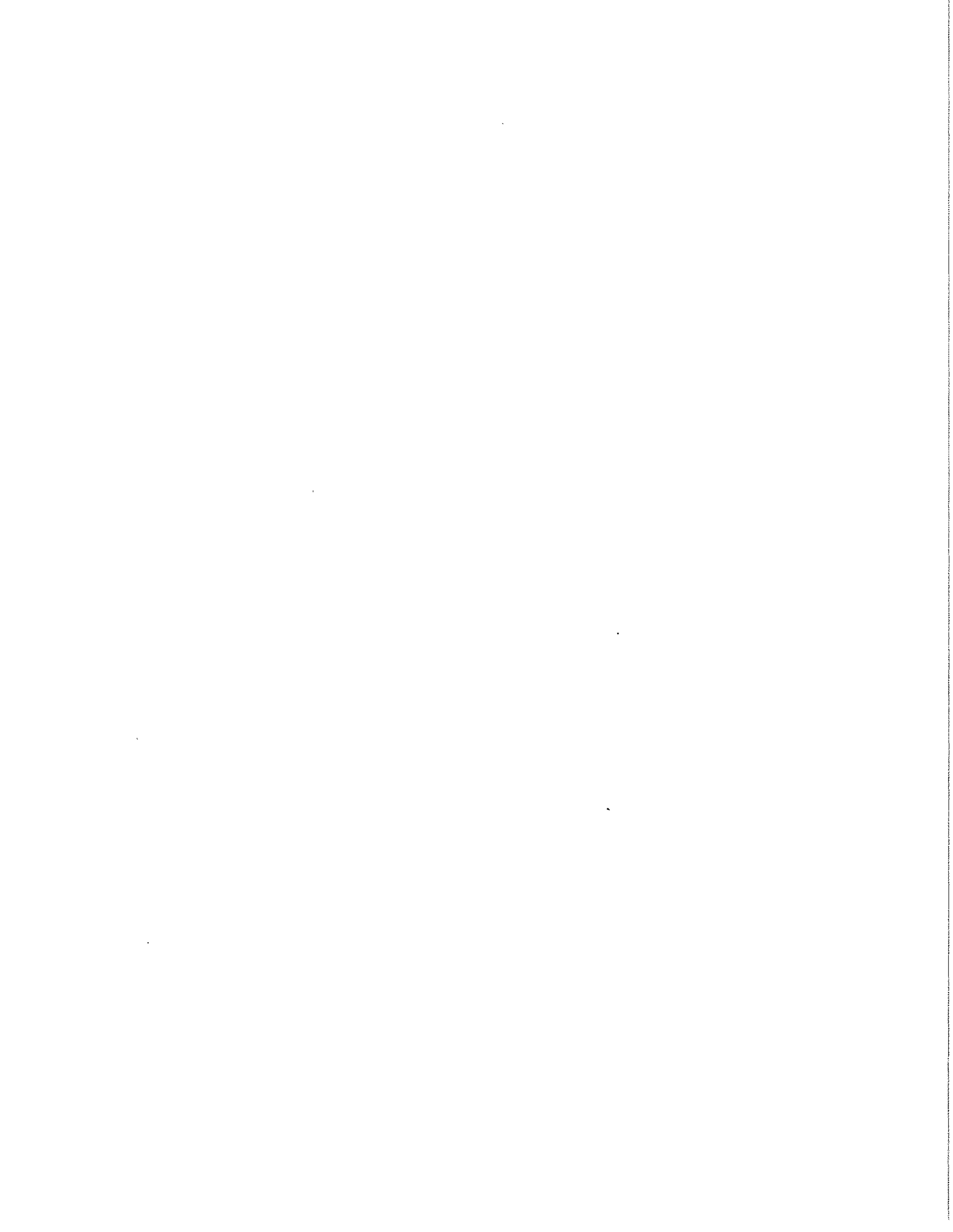
County	Contractor	Award value (000s)	County	Contractor	Award value (000s)
Erie	American Sterilizer Company	\$2,337	Luzerne	Medico Industries Inc.	\$2,805
	Ed Kreamer & Durocher JV	5,740	Lycoming	Litton Systems Inc.	11,185
	Erie Forge & Steel Inc.	5,469			
	Lord Corporation	<u>11,133</u>	McKean	None	0
Subtotal	24,679	Mercer	None	0	
Fayette	None	0	Mifflin	None	0
Forest	None	0	Monroe	Biehn Construction Inc.	3,687
Franklin	Kidde Inc.	14,785		Connaught Laboratories Inc.	5,737
	Lear Szegler Management Svcs.	2,195		Pennsylvania Power & Light Co.	2,015
	Marshall & Huschart McHenry Co.	2,250		Salk Institute for Biological Studies	<u>8,999</u>
	West Penn Power Company	<u>2,083</u>		Subtotal	20,438
Subtotal	21,313	Montgomery	Aydin Corporation	2,003	
Fulton	None	0	Boro Developers Inc.	11,249	
Greene	None	0	CDI Temporary Services Inc.	8,150	
Huntingdon	None	0	Center Core Inc.	2,962	
			Computer Sciences Corporation	5,782	
Indiana	None	0	Drexel Industries. Inc.	2,754	
			EMC Science Center Inc.	2,468	
Jefferson	None	0	Hale Fire Pump Co.	2,960	
			Hamilton Standard Electronics	13,305	
Juniata	None	0	Industrial Energy Services Co.	2,354	
			Keystone Computer Associates	5,584	
Lackawanna	Chamberlain Manufacturing Corp.	3,639	Longacre Horace W. Co. Inc.	2,588	
			General Dynamics Corporation	2,226	
			Genetex Corporation	13,132	
			Loral Corporation	4,322	
			Pocal Industries Inc.	6,001	
			Union Corporation	<u>6,423</u>	
			Subtotal	35,743	
Lancaster	Bulova Technologies Inc.	4,335	Loral Corporation	7,372	
			Burle Industries Inc.	8,156	
			Herley Industries Inc.	8,882	
			Logics Inc.	2,754	
			Wyeth Ayerst Laboratories Inc.	<u>5,199</u>	
Subtotal	29,326	Orbit Advanced Technologies Inc.	2,413		
Lawrence	Lockley Manufacturing Co. Inc.	3,299	Pacer Systems Inc.	9,781	
			Phoenix Petroleum Company	3,335	
Lebanon	Norwood Industrial Const. Co.	3,624	RDL Inc.	9,458	
			SPS Technologies Inc.	3,404	
Lehigh	Air Products & Chemicals Inc.	5,288	STV Engineers Inc.	<u>5,593</u>	
			Mack Trucks Inc.	9,786	
			Stanley Vidmar Inc.	<u>8,786</u>	
			Subtotal	23,860	
Montour	None	0	Subtotal	103,515	
			Northampton	ITT Corporation	2,108
Northumberland	None	0	Perry	None	0

Table 13--Continued

3.

County	Contractor	Award value (000s)	County	Contractor	Award value (000s)
Philadelphia	Action Manufacturing Company	\$12,570	Snyder	None	\$0
	Bedwell Co. Inc.	2,893	Somerset	Murdock Enterprises Inc.	2,579
	Deval Corporation	15,068	Sullivan	None	0
	EHG National Health Services	2,887	Susquehanna	Allied Signal Aerospace Co.	4,811
	Ippoliti Incorporated	4,679	Tioga	None	0
	Jetronic Industries Inc.	4,910	Union	Federal Prison Industries	4,230
	Mayer Oscar Foods Corporation	2,403	Venango	Franklin Steel	9,750
	Magnavox Govt. & Industrial Elctr.	2,236	Warren	National Forge Company	6,266
	Micro Computers System Inc.	3,418	Washington	None	0
	National Salvage & Service	2,066	Wayne	None	0
	Native American Consultants	2,452	Westmoreland	Valdes G. Enterprises	4,586
	Owl International Inc.	2,159	Wyoming	None	0
	Pierce-Phelps Inc.	13,346	York	Continental Wire	13,670
	Penn Precision Manufacture	5,263		Gichner Systems Group Inc.	2,480
	PRC Inc.	5,731		Penn Detroit Diesel Allison	6,152
	Research Management Corp.	2,289		Union Corporation	7,644
	Rohm & Haas Company	10,724		York International Corporation	3,289
	San Lucas	3,597		Subtotal	33,235
	Scott Worldwide Inc.	4,291			
	Select Investigative Services	15,978			
	SPD Technologies Inc.	15,513			
	University of Pennsylvania	5,544			
	VIZ Manufacturing Company Inc.	7,207			
VSE Corporation	3,441				
Xerox Corp.	2,294				
Subtotal	153,139				
Pike	None	0			
Potter	None	0			
Schuylkill	Morgan JE Knitting Mills Inc.	\$5,165			
			Pennsylvania Total		\$795,344

SOURCE: Department of Defense, Directorate for Information Operations and Reports, Prime Contract Awards by State, County, Contractor and Place (Washington Headquarters Services, 1991, 1992).



FEDERAL AND STATE RESPONSES

The preceding statistical and economic analysis suggests that an estimated 44,000 jobs have already been lost and that an additional estimated 43,000 jobs will be lost in six regions of Pennsylvania because of prime defense contract cutbacks. While this is distressing it is not an insurmountable problem. For the past several years, the federal government and a number of state governments have initiated programs in an effort to address the issues associated with a defense drawdown and have attempted to find ways to solve it. The federal government has enacted important legislation which will provide funding to the states and particularly to regions within states to aid the transition from a heavily defense-oriented to a more commercially focused economy. Under the terms of the statutes, the states can provide loans, grants and technical assistance through new or existing programs to defense contractors who have been or may be negatively impacted by the defense cutbacks.

While it is generally agreed that defense contractors should be assisted in adjusting to defense cutbacks, it is not entirely clear what is the best feasible strategy. Of the three options available to defense contractors--converting from current defense contracts to other defense contracts, converting from defense contracts to other federal contracts and converting from defense contracts to commercial contracts--the third option is considered to be the most difficult to accomplish. Evidence gathered from both federal and state attempts to assess the problem indicates that defense contractors should weigh their options carefully and proceed gradually with any kind of conversion effort. The consensus appears to be that defense contractors should look either at a mix of defense and commercial work or at other defense or other federal government work.

FEDERAL ACTION

Defense Conversion Commission

The federal government has led the effort to help defense contractors. One initiative is the Defense Conversion Commission, Department of Defense. The Defense Conversion Commission was formed in April 1992 in order to assess the impact of the defense drawdown on the U.S. economy and to recommend ways to facilitate the conversion process with the least amount of disruption to defense related industries and their employees. The Commission's report, published December 31, 1992, contains findings and recommendations derived from extensive public hearings, private briefings, meetings and reviews of existing studies.

The Defense Conversion Commission arrived at the following findings and conclusions. First, at the national level, the Cold War defense drawdown is less severe and spread over a longer time span than similar drawdowns associated with the Korean and Vietnam Wars. Nevertheless, the regional impacts in certain highly impacted local economies may be substantial for heavily defense-dependent industries, their labor forces and communities. Second, the conversion process will be less disruptive overall in a growing economy, although specific policies may be needed to alleviate the transition costs in certain local economies. Third, defense conversion and the concomitant reduction in national defense spending cannot solve the nation's economic problems. However, wise conversion strategies will contribute to enhancing economic growth and serve as a model for other government and private transitions. Fourth, private business enterprise is the source of job creation and economic growth, although government does have a substantial role in promoting and sustaining economic growth. Fifth, many government transition assistance programs exist at all three levels of government, but they are not integrated and coordinated.

These findings point to several goals that ought to be pursued by governments in their attempts to ease the conversion process. These goals are:

- Foster long-term economic growth in order to facilitate the transition process.
- Preserve the nation's defense capability by maintaining a healthy industrial base and by integrating commercial and military manufacturing processes.

- Employ temporary assistance to ease the immediate impact of the defense drawdown on workers, communities and industries.
- Utilize effective and efficient government programs in order to maximize benefits or minimize costs.

The Defense Conversion Commission, in light of its findings and conclusions and the proposed goals, recommends the following specific actions to accomplish these goals:

- In order to foster economic growth and facilitate the transition process, government policies should redirect resources from defense to investment, rather than consumption. All short-term government programs designed to facilitate conversion should encourage long-term economic growth.
- To preserve and enhance defense capability, the Defense Department should integrate commercial and military technologies, processes and products. Barriers to integration should be removed and defense dependent companies should be encouraged to diversify into developing, producing and marketing commercially viable products. The integration of military and commercial research and development programs will strengthen the U.S. economy and promote a globally competitive and technologically sophisticated American industry.
- To ease the impact of defense drawdowns, a broad use of integrated local community planning is needed. The federal government can foster and support such efforts, but the final responsibility rests with the local impacted communities.
- Government programs need to be integrated and improved. A set of principles and criteria should be utilized for evaluating government programs. Explicit program objectives should be stated and outcomes measured and evaluated. Measuring progress and establishing baseline data are important, but decisions establishing eligibility and common integrated applications for program aid can restore local economies quickly and at the least cost to the taxpayers.

- Finally, the federal government must focus on implementing the recommendations and organizing the structures which support the recommendations. The Department of Defense is needed, but the actuating process must come from the Executive Office of the President. Because many issues that cut across political and administrative boundaries, the oversight of Congress and the Administration is needed to assure full implementation of the Commission's recommendations.

The Defense Conversion Commission's final conclusion advocates an effective process which fosters economic growth and eases and shortens the transition process for impacted workers, communities and companies.

Programs

The federal government has recently enacted legislation which creates a number of programs. These programs are detailed in table 14 and are designed to aid both impacted defense firms and dislocated defense employees. A description of the various programs follows.

Eight separate statutory programs are authorized by the Defense Conversion, Reinvestment, and Transition Assistance Act³⁰ of 1992 and other statutes and incorporated in the Technology Reinvestment Project (TRP). The TRP is funded under Title IV of the Defense Appropriations Act.³¹ Available funding for the TRP as authorized by the Defense Appropriations Act is about \$464 million.

The mission of the TRP is "to stimulate the transition to a growing, integrated, national industrial capability which provides the most advanced, affordable, military systems and the most competitive commercial products."³² TRP programs are structured to expand high quality employment opportunities in commercial and dual use United States industries and to demonstrably enhance U.S. competitiveness. This will be accomplished through the application of defense and commercial resources to develop dual use technologies, manufacturing and technology assistance

³⁰National Defense Authorization Act for Fiscal Year 1993, Section 4001 et seq. (Public Law 102-484).

³¹Defense Appropriations Act of 1993 (Public Law 102-396).

³²Program Information Package for Defense Technology Conversion, Reinvestment, and Transition Assistance, March 10, 1993.

Table 14

SELECTED FEDERAL DEFENSE CONVERSION PROGRAMS
FISCAL YEAR 1993-94

Name of program	Authorizing Act	Funding Act	Amount of funding (in millions)
Technology Reinvestment Project (TRP) (incorporates the following 8 programs)			
Defense Dual Use Critical Technology Partnerships	National Defense Authorization Act for Fiscal Year 1993, Section 4001 (Public Law 102-484)	Defense Appropriations Act of 1993 (Public Law 102-396)	\$81.9
Commercial-Military Integration Partnerships	National Defense Authorization Act for Fiscal Year 1993, Section 4001 (Public Law 102-484)	Defense Appropriations Act of 1993 (Public Law 102-396)	42.1
Regional Technology Alliances Assistance Program	National Defense Authorization Act for Fiscal Year 1993, Section 4001 (Public Law 102-484)	Defense Appropriations Act of 1993 (Public Law 102-396)	90.5
Defense Advanced Manufacturing Technology Partnerships	National Defense Authorization Act for Fiscal Year 1993, Section 4001 (Public Law 102-484)	Defense Appropriations Act of 1993 (Public Law 102-396)	23.5
Manufacturing Extension Programs	National Defense Authorization Act for Fiscal Year 1993, Section 4001 (Public Law 102-484)	Defense Appropriations Act of 1993 (Public Law 102-396)	87.4
Defense Dual Use Assistance Extension Program	National Defense Authorization Act for Fiscal Year 1993, Section 4001 (Public Law 102-484)	Defense Appropriations Act of 1993 (Public Law 102-396)	90.8
Manufacturing Engineering ¹ Education: Grant Program	National Defense Authorization Act for Fiscal Year 1993, Section 4001 (Public Law 102-484)	Defense Appropriations Act of 1993 (Public Law 102-396)	43.6
Manufacturing Experts in the Classroom	National Defense Authorization Act for Fiscal Year 1993, Section 4001 (Public Law 102-484)	Defense Appropriations Act of 1993 (Public Law 102-396)	4.6
Employment and Training Assistance for Dislocated Workers (JTPA, Title III)	Omnibus Trade and Competitiveness Act of 1988, Section 6302 (Public Law 100-418)	U.S. Department of Labor - Appropriation	527.0 ^a
Defense Diversification Program (JTPA, Title III)	National Defense Authorization Act for Fiscal Year 1993, Section 4465 (Public Law 102-484)	Defense Appropriations of 1993 (Public Law 102-396)	75.0 ^b
Defense Conversion Adjustment (DCA) Program (JTPA, Title III)	National Defense Authorization Act for Fiscal Year 1991, Section 4202 (Public Law 101-510)	National Defense Authorization Act for Fiscal Year 1991 (Public Law 101-510)	150.0 ^c

1. Other programs - includes \$20.1 million of fiscal year 1992 funds for Manufacturing Engineering Education: Grant Program.
a. For fiscal year 1991 (with an additional \$150 million from defense conversion available through fiscal year 1995). \$576.0 for fiscal year 1992 and \$567.0 for fiscal year 1993.

b. For fiscal year 1993.

c. For fiscal year 1991 (to remain available until expended).

SOURCE: TRP, Program Information Package for Defense Technology Conversion, Reinvestment, and Transition Assistance, March 10, 1993; Report of the Defense Conversion Commission, Adjusting to the Drawdown (Washington, D.C., 1992), Supporting Annex C, Compendium of Programs to Assist the Transition (February 1993).

to small firms, and education and training programs that enhance U.S. manufacturing skills and target displaced defense industry workers.

Three statutory requirements are common to all TRP programs: (1) competitive awards, (2) certain participation and organizational requirements, and (3) cost sharing of at least fifty percent (50%). The Advanced Research Projects Agency (ARPA), Department of Defense; the Department of Energy/Defense Programs (DOE/DP); the Department of Commerce, National Institute of Standards and Technology (NIST); the National Science Foundation (NSF) and the National Aeronautics and Space Administration (NASA) are collaborating in the TRP to carry out the program.

In Pennsylvania, the Department of Commerce/PA Economic Development Partnership's (hereinafter referred to as the "Department") Office of Technology Development will seek funding for four regions within the Commonwealth. The Department has sponsored the four regions. The regions will apply for a total of \$7 million of federal assistance. The Department will provide the matching funds to support this initiative. The TRP matches one or more of a number of "activities" with one or more sources of funding. In this case, the "activity" is the Manufacturing Extension Service Providers category and the funding is from the Manufacturing Extension Program. The Industrial Resource Centers and the Ben Franklin Program will provide the required matching funds. This "activity" will build on manufacturing programs that work directly with small manufacturers (fewer than 500 employees). The goals include increasing competitiveness through technical and management advancement, with support for improvement of business practices, assistance in accessing training and consulting services, and the transition of technologies from research to commercially viable products and processes.

The Economic Development Administration (EDA), has funds which are specifically designated for defense related planning, technical assistance, construction and public works projects, loan assistance and training. In Pennsylvania, the Department has submitted an application to the EDA for defense conversion activities of \$2.5 million. This money will be used, together with matching funds, to provide financial and technical assistance to defense contractors in the Commonwealth. Furthermore, the Department's Office of Technology Development has been awarded a grant of \$250,000 to assess the needs of the Commonwealth's defense manufacturers. The Office has received approval to spend the money and

will contract with the Industrial Resource Centers (IRCs) to perform the survey. The IRCs will use private matching funds to accomplish this survey.³³

Recent federal acts designed to assist displaced workers include the Economic Dislocation and Worker Adjustment Assistance Act, the National Defense Authorization Act of 1993, the Defense Economic Adjustment, Diversification, Conversion and Stabilization Act of 1990, and the Worker Adjustment and Retraining Notification Act of 1988. The total funds available from the last three programs is \$752 million. The total available federal funds equals \$1.2 billion. These transition funds cannot replace the estimated \$108 billion drawdown in annual constant dollars for defense purposes. The dollars that are available should be spent where they will have the greatest benefits to displaced workers, industries and communities.

The Economic Dislocation and Worker Adjustment Assistance Act (EDWAA),³⁴ which amends Title III of the Job Training Partnership Act³⁵ (JTPA), is the primary federal enactment specifically designed to provide re-employment services to displaced workers.

Four general services may be provided under EDWAA: rapid response assistance, training services, basic readjustment services, and needs-related payments.

- (1) Rapid response assistance is provided by the states' dislocated worker units to establish on-site contact with employer and employee representatives within a short period of time (preferably 48 hours or less) after becoming aware of a current or projected permanent closure or substantial layoff. Under rapid response, specialists provide information on, and facilitate access to, available public programs and services and provide emergency assistance relevant to the specific closure or layoff. Specialists also assist the local community in developing its own coordinated response and in obtaining access to state economic development assistance.

³³Information on the Department's applications for funds was obtained from the Department's Office of Technology Development.

³⁴Omnibus Trade and Competitiveness Act of 1988, Section 6301 et seq. (Public Law 100-418).

³⁵Job Training Partnership Act, Public Law 97-300 (1982).

- (2) Training services are provided to eligible dislocated workers. Such services may include classroom training, occupational skill training, on-the-job training, out-of-area job search, relocation, basic and remedial education, literacy and English for non-English speakers training, entrepreneurial training, and other training activities directly related to employment opportunities.
- (3) Basic readjustment services are provided to eligible dislocated workers that may include development of individual readjustment plans, outreach programs, early readjustment assistance, job or career counseling, testing, orientation, assessment (including evaluation of educational attainment and participant interests and aptitudes), determination of occupational skills, providing occupational outlook information, job placement assistance, labor market information, information on job clubs, job search, job development, supportive services (including child care, commuting assistance, and financial and personal counseling), and pre-layoff assistance.
- (4) Needs-related payments may be made to eligible dislocated workers who do not qualify for unemployment compensation, to enable these workers to participate in training or education programs.

Eighty percent of the annual appropriation for this program is distributed by formula allotment to the states. Twenty percent of the appropriation comprises a national reserve from which states, substate areas and employers can apply to the Secretary of Labor for project grants when faced with mass layoffs or plant closures that exceed a state's formula allocation funding level. Forty percent of the state's share is available to each state governor for administration, rapid response actions, and some discretionary projects. The state's remaining 60 percent is distributed by formula to local service delivery areas. Funding for fiscal year 1991 is \$527 million (with an additional \$150 million from defense conversion available through fiscal year 1995); funding for fiscal year 1992 is \$576 million; and funding for fiscal year 1993 is \$567 million with an additional \$75 million authorized for Section 4465 (Defense Diversification Program).

Section 4465 of the National Defense Authorization Act³⁶ amended Title III of the JTPA³⁷ to establish a discretionary program known as the Defense Diversification Program. This program is specifically designed for the reemployment service needs of eligible military personnel, Department of Defense civilian employees as well as defense industry workers faced with dislocation. The Secretary of Defense has discretionary authority together with the Secretary of Labor to make grants to states, substate grantees, employers, representatives of employees, labor-management committees, and other entities for providing training, adjustment assistance, and employment services to eligible displaced military, Department of Defense civilian, and defense industry employees. Also, Section 4465 calls for the Secretary of Defense to develop plans for defense diversification and conversion assistance to facilities directly affected by the defense drawdown. Funding for the program for fiscal year 1993 is \$75 million. The Secretary of Defense may transfer any of these funds to the Secretary of Labor to carry out the functions of the program. Under the program, eligible participants are certain members of the Armed Forces who were on active duty during a specified time period and who were involuntarily separated, certain Department of Defense civilian employees who received notice of termination or layoff from reductions in defense spending (as defined by the Secretary of Defense) and defense contractor employees (during the five-year period beginning on October 1, 1992) who receive a notice of termination or layoff resulting from reductions in defense spending or the closure or realignment of a military installation. None of these defense workers are eligible for the program if they are entitled to retirement pay or retainer pay incident to termination. Department of Defense civilian employees, military personnel and defense industry workers are eligible for the program 180 days prior to notice of layoff if the termination or layoff is a result of reductions in defense spending (as determined by the Secretary of Defense or the Secretary of Energy). Department of Defense civilian employees employed at a military installation being closed or realigned are eligible for the program 24 months before the date on which the installation is to be closed or the realignment is to be completed.

The Defense Economic Adjustment Diversification, Conversion and Stabilization Act³⁸ amended Title III of the JTPA³⁹ and established the Defense Conversion Adjustment program (DCA). Funds for the program

³⁶Supra, p. 43.

³⁷Supra, p. 45.

³⁸National Defense Authorization Act for Fiscal Year 1991, Section 4001 et seq. (Public Law 101-510). See Section 4202.

³⁹Supra, p. 45.

totalling \$150 million for fiscal year 1991 were appropriated to the Secretary of Defense to carry out this program and were to remain available until expended. In turn, the Department of Defense worked out an agreement with the Department of Labor to allow the Department of Labor to obligate the funds.⁴⁰

The process for applying for DCA funds is similar to the process used for applying for regular Title III National Reserve Grants. Proposals must be submitted to the Department of Labor. Each proposal will be reviewed for funding in consultation with the Department of Defense. Workers are eligible for DCA funded services if they meet the EDWAA, JTPA Title III eligibility criteria; and they have been terminated or laid off or have received a notice of termination or layoff as a consequence of reductions in expenditure by the United States for defense or by closure of U.S. military facilities.

The Pennsylvania Department of Labor and Industry applied for and was awarded the following DCA grants: \$750,000 on behalf of the GE Aerospace employees in King of Prussia and Philadelphia; \$464,198 (a DCA Demonstration grant) to assist 11,000 workers who will be laid off from the Philadelphia Naval Base and Shipyard. This was one of 11 DCA Demonstration grants awarded nationwide. This project will use the time prior to layoffs to develop an employee skills inventory and occupational assessment; develop a comprehensive training plan and establish a community based task force to oversee the implementation of the training plan.

The Pennsylvania Department of Labor and Industry through the Dislocated Worker Unit is also in the process of writing DCA grant proposals for employees in the following facilities: Philadelphia Naval Base and Shipyard, Philadelphia County; The Naval Air Development Center, Bucks County; and Letterkenny Army Depot, Franklin County.

⁴⁰Information on the Defense Conversion Adjustment (DCA) program was received from the Pennsylvania Department of Labor and Industry, Dislocated Worker Unit. The Dislocated Worker Unit was established in response to a mandate in the Economic Dislocation and Workers Adjustment Assistance Act (EDWAA) to provide rapid response activities and coordinate services provided by the agencies administering JTPA programs and other relevant agencies.

The Worker Adjustment and Retraining Notification Act⁴¹ (WARN) was enacted on August 4, 1988. It requires large employers to give notice of certain significant reductions in force.

WARN applies to business enterprises that employ 100 or more full-time employees. It requires the employer to serve sixty days written notice of any "plant closing" or "mass layoff" to each representative of the affected employees, to the State dislocated worker unit under Title III of the JTPA⁴² and to the chief elected official of the unit of local government in which the closing or layoff is to occur. If the employees are not represented, notice must be served on each employee.

The requirement of notice is triggered by either a "plant closing" or "mass layoff." "Plant closing" means a permanent or temporary shutdown that results in an "employment loss" for 50 or more employees at any single site of employment. "Mass layoff" means any other reduction in force which results in an "employment loss" at a single site of employment during any 30-day period for: (1) at least 33 percent of the full-time employees and at least 50 such employees, or (2) at least 500 such employees. An "employment loss" means an employment termination (other than a discharge, retirement or voluntary quit), a layoff exceeding six months, or a reduction in hours of work of more than 50 percent during each month of any six-month period. An employment loss does not occur if the closing or layoff is the result of the relocation or consolidation of all or part of the employer's business and the employer offers to transfer the employee to a different site of employment with no more than a six-month break in employment.

The act does not apply if the plant closing is of a temporary facility or if the closing or layoff is the result of the completion of a particular project and the employees were hired on the understanding that their employment would terminate upon the closing of the facility or the completion of the project.

An employer who violates the notice requirement of WARN is liable to aggrieved employees for back pay and benefits for the period of the violation, up to 60 days; this amount is reduced by wages or voluntary payments made to the employee or on the employee's behalf with respect

⁴¹Worker Adjustment and Retraining Notification Act, Public Law 100-379 (1988).

⁴²Supra, p. 45.

to the period of violation. An employer who violates WARN with respect to a local government unit is liable for a civil penalty of up to \$500 for each day of the violation, but this penalty does not apply if the employer pays each employee the amount of its liability within three weeks of the date it orders the shutdown or layoff. The court may reduce the liability or penalty in its discretion if the employer proves that the violation was in good faith and that the employer had reasonable grounds for believing it was not violating the act. The court is permitted to shift reasonable attorney's fees to the prevailing party. These are the sole remedies permitted for violation of WARN; the court is specifically prohibited from enjoining the closing or layoff on this ground. However, the remedies under WARN are "in addition to . . . any other contractual or statutory rights and remedies of the employees. . ."

STATE ACTION

The Department of Commerce had about \$205 million in funds available in fiscal year 1992-93 and about \$212 million for fiscal year 1993-94. The General Fund has supplied about 63 percent of total funds and special funds, augmentations and other funds have supplied the bulk of the remaining funds. The Department is provided with about \$26 million for general government operations and an additional \$125 million is provided for grants and subsidies from General Fund sources. The Economic Revitalization Fund is provided with \$41 million and Other Funds account for the remaining \$18 million.

Pennsylvania funds a number of existing programs (shown in table 15) which are designed to help industry improve its competitiveness in the national and international marketplace. Although these programs are ideally constituted to help defense contractors who are feeling the impact of defense cutbacks, current and past funding has not been primarily utilized for defense conversion purposes. There is no specific allocation of funds for defense conversion purposes in the Governor's 1993-94 Executive Budget. However, the General Appropriation Act of 1993 appropriates \$175,000 to the Department of Commerce for defense conversion.

The Department plays an important role in the State's economic development of programs and is the logical agency to coordinate

Table 15

**SELECTED PENNSYLVANIA ECONOMIC DEVELOPMENT PROGRAMS
FUNDS PROVIDED FOR FISCAL YEARS 1992-93 AND 1993-94**

Name of program	Source of funds	1992-93 funding ¹	1993-94 funding ²
Ben Franklin Partnership Fund	General Fund	\$24,125,000	\$25,750,000
Industrial Resource Center Network Program	General Fund	5,790,000	7,790,000
Machinery and Equipment Loan Fund	Pennsylvania Economic Revitalization Fund (PERF)	7,760,000	7,800,000
Capital Loan Fund --Class III loans --Export Assistance loans	Revolving Loan Fund	12,000,000	12,000,000
Industrial Communities Site Development and Action Program	PERF	9,700,000	13,700,000
Community Economic Recovery Program	PERF	2,025,000	1,500,000
Employee Ownership Assistance Program	PERF	243,000	250,000
Business Infrastructure Development Program	PERF	14,550,000	14,500,000
Pennsylvania Minority Business Development Authority	General Fund	647,000	1,200,000
Industrial Development Assistance Program	General Fund	500,000	500,000
Customized Job Training Program	General Fund	6,755,000	7,755,000
Engineering School Equipment Grant Program	PERF	N/A	1,000,000
Pennsylvania Export Partnership (New)	General Fund	--	500,000
Pennsylvania Industrial Development Authority (PIDA)	Annual transfer of Corporate Net Income Tax revenues ³	75,000,000	75,000,000
MILRITE Council	General Fund	240,000 operating budget 700,000 grant program	248,000 operating budget 700,000 grant program
Pennsylvania Technical Assistance Program	Department of Commerce U.S. Economic Development Administration and The Pennsylvania State University	975,000	1,100,000

1. Act of June 30, 1992 (P.L. __, No.8A), known as the General Appropriation Act of 1992.

2. Act of May 28, 1993 (P.L. __, No.1A), known as the General Appropriation Act of 1993.

3. Act of August 4, 1991 (P.L.97, No.22).

SOURCE: Department of Commerce/PA Economic Development Partnership and Governor's Executive Budget, 1992-93 and 1993-94.

applications for federal defense conversion funds.⁴³ The most relevant programs are the Ben Franklin Partnership Fund and the Industrial Resource Center Network Program. The act of July 2, 1993 (P.L. ____, No. 64) creates the Ben Franklin/IRC Partnership, a new State entity which will coordinate and oversee both the Ben Franklin Partnership and Industrial Resource Center programs. The purpose of the Partnership is to promote the competitiveness of Commonwealth companies through interaction of technology development, modernization and training programs; to certify industrial resource centers which shall exist for the purpose of strengthening the competitive position of small-to-medium-sized Commonwealth manufacturing companies through the promotion, demonstration and transmission of modern manufacturing techniques and technologies; and to certify Ben Franklin technology centers which shall exist for the purpose of identifying, generating, developing and refining technology innovation opportunities for Commonwealth businesses. Furthermore, it is the Commonwealth's policy not to duplicate or mandate the delivery of technical and professional economic development services being provided now or in the future. The Partnership will be composed of the Secretary of Commerce; a representative of the Governor's Office; representatives of the manufacturing or advanced technology business sector, the education sector, organized labor, and the General Assembly; and the chairman of the MILRITE Council. An advisory board is created within the Department and is composed of the chairs of the boards of each industrial resource center, each Ben Franklin technology center and the Economic Planning and Development Council; the State director of the small business development centers and the President of the Pennsylvania Economic Development Association. All appropriations to the Ben Franklin Partnership Fund and the Industrial Resource Center Network Program are transferred to the Partnership.

⁴³HB 911, Pr.'s No. 988, introduced March 24, 1993, would create the Economic Adjustment Board within the Department of Commerce. The duty of the Board is to develop, advocate and monitor an economic adjustment strategy for the Commonwealth. The Board will undertake studies of unstable, declining or failing industries and facilities in the Commonwealth; and facilitate the development of economic adjustment committees and regional economic adjustment committees through technical assistance and the award of grants for initial program costs. The duties of the economic adjustment committees and regional adjustment committees include reviewing the skills and mechanical capabilities of the area facilities and labor force and conducting research or engaging in technical assistance to determine diverse types of business activities which can use the skills and facilities in the area to maximize employment and minimize community and worker dislocation. Note: HB 911, Pr.'s No. 988 is almost identical to HB 135, Pr.'s No. 1320, introduced January 29, 1991, and HB 697, Pr.'s No. 778, introduced March 13, 1989.

The Board of the Ben Franklin Partnership Fund was created in 1982 in the Department.⁴⁴ The Board is authorized to promote, stimulate and encourage (1) basic and applied scientific research and development in Pennsylvania and (2) scientific and technological education in Pennsylvania, which may reasonably be expected to advance the Commonwealth's economic growth and welfare. The Board is authorized to establish advanced technology centers which serve as university-based consortiums between business, universities and government to provide advanced technology research and development, training, education and related activities which show significant potential in the diversification of Pennsylvania's economy and the State's economic growth. The programs attempt both to promote new jobs and to protect existing jobs. The Department works to commercialize Penn State Research findings through patent transfers, licensing arrangement and other mechanisms via the Ben Franklin Partnership Fund. The Ben Franklin Partnership Fund is funded primarily by annual appropriations from the Commonwealth. State funding for the period 1992-93 was \$24.1 million; funding for the period 1993-94 is \$25.8 million.

The Industrial Resource Center Network Program was created in 1988 to help the Commonwealth's manufacturing community compete more effectively in today's international marketplace. The program is administered by the Department and its primary focus is to help modernize small and medium-sized firms, which represent the backbone of the Commonwealth's manufacturing sector. To meet this objective, eight Industrial Resource Centers (IRCs) were established throughout the State to provide a variety of practical, hands-on services to manufacturing companies. These centers are independent, nonprofit corporations, managed by industry executives who work together to form a statewide manufacturing network. Each IRC has a professional staff with expertise and skills in various manufacturing areas, including manufacturing management, industrial engineering, computer engineering, factory automation and strategic planning. Seven of the centers serve traditional manufacturing industries; the eighth serves the rapidly growing biotechnology sector. The primary mission of the IRCs is to help Pennsylvania's manufacturers improve product quality and productivity in an effort to keep their operations competitive. To meet this challenge, the IRCs offer services to help companies learn about and adopt modern manufacturing philosophies, techniques and technologies. Programs foster

⁴⁴Act of April 9, 1929 (P.L.177, No.175), known as The Administrative Code of 1929, § 448(n), § 2503-B.

enhanced competitiveness in manufacturing industries, job loss replacement, improved reemployment possibilities for displaced workers and job retention by existing workers.

Although working with individual companies is the primary task of the IRCs, the network also has a mandate to develop initiatives with a broader impact for manufacturers, for example, developing quality improvement programs for suppliers within Pennsylvania, creating regional and statewide manufacturing associations and consortiums, and developing innovative work force initiatives. One of these innovations is a "teaching factory" that allows manufacturers to train employees and test new production techniques and technologies. The IRC program is funded primarily by annual appropriation from the Commonwealth. State funding for the period 1992-93 was \$5.8 million; funding for the period 1993-94 is \$7.8 million.

The Machinery and Equipment Loan Fund⁴⁵ was created in 1988. The purpose of the Fund is the making of loans by the Department to business enterprises involved in industrial processes, mining, manufacturing or other industrial sectors to acquire and install new machinery and equipment or upgrade existing machinery and equipment. One of the conditions for approval of a loan is that the project must demonstrate the creation or retention of one job for every \$25,000 received from the Fund. The Fund also supports programs which attempt to protect existing jobs. The Fund draws upon the Pennsylvania Economic Revitalization Fund.⁴⁶ Funding for the period 1992-93 was \$7.8 million; funding for the period 1993-94 is also \$7.8 million.

The Capital Loan Fund⁴⁷ was created in 1984. The Department is directed to determine eligibility requirements for certain federal loans

⁴⁵Act of October 21, 1988 (P.L.1050, No.120), known as the Machinery and Equipment Loan Fund Act.

⁴⁶Act of July 2, 1984 (P.L.512, No.104), known as the Pennsylvania Economic Revitalization Act. The act creates the Pennsylvania Economic Revitalization Fund (PERF) which funds six programs administered by the Department: Machinery and Equipment Loan Fund; Industrial Communities Site Development and Action Program; Community Economic Recovery Program; Employee Ownership Assistance Program; Engineering School Equipment Grant Program and Business Infrastructure Development Program. The Fund is dedicated to administering a \$190,000,000 bond fund, authorized by public referendum, inter alia, to promote economic redevelopment throughout Pennsylvania through job producing programs and grants and loans for industrial and business development.

⁴⁷Act of July 2, 1984 (P.L.545, No.109), known as the Capital Loan Fund Act.

and authorized to make advances to area loan organizations for the purpose of making certain capital development and export assistance loans. Capital Loan Fund (Class III Loans) are made to support capital development projects which demonstrate a substantial likelihood of providing long-term increases in net new employment opportunities. Capital Loan Fund (Export Assistance Loans) are made to support the financing of land, buildings, machinery or working capital for the manufacture of products for export. The Fund is credited with appropriations from the General Fund and other sources. The amount available to the Fund for the period 1992-93 was \$12 million; funding available for the period 1993-94 is also \$12 million.

Another program is the Industrial Communities Site Development and Action Program. Under the Industrial Communities⁴⁸ Site Development and Action Program,⁴⁹ the Department is authorized to make grants to local authorities for projects to construct or upgrade industrial sites. The goal of the program is exclusively to promote new jobs. To be eligible for grant funds, a project must meet, inter alia, the following criteria:

- (1) Create opportunities to develop new facilities or expand existing facilities for manufacturing, industrial research and development and other industrial operations that produce goods.
- (2) Eliminate, reduce or otherwise alleviate blight at an industrial site.
- (3) Have potential for job creation.

The program is funded by the Pennsylvania Economic Revitalization Fund. Funding for the period 1992-93 was \$9.7 million; funding for the period 1993-94 is \$13.7 million.

The Community Economic Recovery Program was established in 1986 under the direction of the Department of Commerce.⁵⁰ The purpose of the program is to provide grants to local development agencies to plan

⁴⁸Act of July 10, 1989 (P.L.313, No.52), known as the Industrial Communities Action Program Act.

⁴⁹Act of May 6, 1968 (P.L.117, No.61), known as the Site Development Act.

⁵⁰Act of July 9, 1986 (P.L.1232, No.112), known as the Community Economic Recovery Program Act.

and implement an economic recovery strategy. The program draws upon the Pennsylvania Economic Revitalization Fund. Funding for the period 1992-93 was \$2.0 million; funding for the period 1993-94 is \$1.5 million.

The Employee-Ownership Assistance Program was established in 1984 under the Department.⁵¹ The program is a technical and financial assistance program to promote the development of employee-owned enterprises and increased employee participation in new and existing businesses for the purpose of retaining existing jobs and creating new employment opportunities. The program draws upon the Pennsylvania Economic Revitalization Fund. Funding for the period 1992-93 was \$243,000; funding for the period 1993-94 is \$250,000.

The Business Infrastructure Development Program⁵² was established under the direction of the Department in 1984. The purpose of the program is making grants or loans to local sponsors in order to install specific infrastructure improvements necessary to complement investment by private companies which increase Pennsylvania's share of domestic and international commerce and create net new jobs. Funding is from the Pennsylvania Economic Revitalization Fund. Funding for the period 1992-93 was \$14.6 million; funding for the period 1993-94 is also \$14.5 million.

The Pennsylvania Minority Business Development Authority was created in 1974 for the purpose of (i) alleviating and overcoming the many barriers to business opportunity that have handicapped socially and economically disadvantaged persons; and (ii) providing assistance, financial and otherwise, which will contribute to well-balanced national and state economies by facilitating the acquisition or maintenance of ownership of business enterprises by persons whose participation in the free enterprise system is hampered because of social or economic disadvantages.⁵³ The Department administers the Bureau of Minority Business Development. The Authority is authorized to make guaranteed loans to aid minority business enterprises financed by tax-exempt bonds. The Authority is funded by appropriation from the General Fund. State funding for the

⁵¹Act of July 2, 1984 (P.L.568, No.113), known as the Employee-Ownership Assistance Program Act.

⁵²Act of July 2, 1984 (P.L.520, No.105), known as the Business Infrastructure Development Act.

⁵³Act of July 22, 1974 (P.L.598, No.206), known as the Pennsylvania Minority Business Development Authority Act.

period 1992-93 was \$647,000; funding for the period 1993-94 is \$1.2 million.

Another program is the Industrial Development Assistance Program. This program was created in 1956 and authorizes the Department to make grants to local industrial development agencies which are or may be engaged in planning and promoting programs designated to stimulate the establishment of new or enlarged industrial, commercial and manufacturing enterprises within the counties served by these agencies.⁵⁴ The program is funded by appropriation from the General Fund. Funding for the period 1992-93 was \$500,000; funding for the period 1993-94 is also \$500,000.

The Customized Job Training Program was created in 1985 and is administered by the Department of Education. The program was established to meet the training needs of the State's new and expanding business by enhancing the skills of the Commonwealth's workers. Funding is dedicated towards training projects which result in net new full-time employment opportunities, significant wage improvements, the retention of otherwise lost jobs or other conditions which would offer substantial economic benefit to the Commonwealth. Recognizing that many regions of the State remain economically distressed, customized job training programs should attempt to meet the special training needs of those areas.⁵⁵ Funding is by appropriation from the Commonwealth's General Fund. Funding for the period 1992-93 was \$6.8 million; funding for 1993-94 is \$7.8 million.

Administered by the Department, the Engineering School Equipment grant program helps accredited State engineering schools to acquire new engineering equipment and to upgrade existing engineering equipment.⁵⁶ Funding is by appropriation from the Commonwealth's

⁵⁴Act of May 31, 1956 (1955 P.L.1911, No.635), known as the Industrial Development Assistance Law.

⁵⁵Act of December 20, 1985 (P.L.492, No.116), known as the Customized Job Training Act. Note: SB 695, Printer's No. 748, introduced March 23, 1993, broadens the definition of "private company" to include any enterprise determined by the Department of Education to be in a key growth industry vital to Pennsylvania's future competitiveness in the international marketplace or significantly active in international exporting including medical research, advanced manufacturing, advanced materials, advanced technology and pharmaceutical industries.

⁵⁶Act of July 2, 1984 (P.L.553, No.110), known as the Engineering School Equipment Act.

General Fund. The program also draws upon the Pennsylvania Economic Revitalization Fund; funding for the 1993–94 period is \$1 million.

A new program, the Pennsylvania Export Partnership is administered by the Department of Commerce and funded by appropriation from the Commonwealth. Funding of \$500,000 is provided for the period 1993–94.

The Pennsylvania Industrial Development Authority (PIDA)⁵⁷ is a public corporation which was created in 1956. The Authority exists and operates for the public purpose of alleviating unemployment with its resulting spread of indigency and economic stagnation by the promotion and development of industrial and manufacturing enterprises and research and development facilities in those areas of the Commonwealth in which conditions of critical unemployment currently or may from time to time exist. The Authority's programs attempt both to promote new jobs and to retain existing jobs. The Authority is funded by an annual transfer of Corporate Net Income Tax revenues.⁵⁸ Funding for the period 1992–93 totalled \$75 million; funding for the period 1993–94 is also \$75 million.

The MILRITE Council is an independent State agency⁵⁹ which was created in 1978 to promote economic development through the cooperative efforts of business, labor and government. The powers and duties of the Council are, inter alia, to:

- (1) Undertake research and investigation relating to the promotion of the industrial potential of Pennsylvania.
- (2) Create plans for economic revitalization of Commonwealth industries.

⁵⁷Act of May 17, 1956 (1955 P.L.1609, No.537), known as the Pennsylvania Industrial Development Authority Act.

⁵⁸Previously appropriations made by the General Assembly to the Pennsylvania Industrial Development Authority (PIDA) were credited to the Industrial Development Fund. Effective January 1, 1992 these appropriations were replaced by an annual \$75 million transfer, \$17.5 million per quarter, of Corporate Net Income Tax revenues, as provided by the act of August 4, 1991 (P.L.97, No.22). The monies are used to make loans to local industrial development agencies to stimulate economic activity in areas of high unemployment. Repayments of loans, while not credited to this fund, represent the primary source of revenue to PIDA and are used by PIDA to make additional loans.

⁵⁹Act of July 1, 1978 (P.L.584, No.109), known as the MILRITE Act. MILRITE is an acronym for "Make Industry and Labor Right in Today's Economy."

- (3) Draw upon labor, management and government participants to promulgate plans and implement procedures.
- (4) Encourage and stimulate cooperation and coordination among federal, State and local programs.

An amendment to the MILRITE act in 1984 established the Area Labor–Management Committee grant program. The purpose of the grant program is the encouragement of cooperation between business and labor in finding constructively positive solutions to mutual problems and concerns through a neutral forum to be established at the local level.

The Council supports programs which attempt to protect existing jobs. The Council is funded by appropriation from the Commonwealth's General Fund. Funding for the period 1992–93 was \$240,000 for the operating budget and \$700,000 for a grant program, the Area Labor–Management Committee grant program; funding for the period 1993–94 is \$248,000 for the operating budget and \$700,000 for the grant program.

The Pennsylvania State University is one of the major research universities in the nation. It is also the nation's second largest industrial research university. The Research and Technology Transfer Office assists university research faculty and staff to identify and capitalize on emerging research opportunities and works to transfer research findings to industry and other users. The Pennsylvania Technical Assistance Program (PENNTAP), one of the nation's first university–based technology transfer programs, is a source of free technical assistance for Pennsylvania manufacturing companies. PENNTAP was established in 1965. It is a partnership between the Pennsylvania State University, the Department of Commerce and the U.S. Economic Development Administration and the Pennsylvania State University. PENNTAP's mission is to strengthen the economy of Pennsylvania by providing scientific and technological assistance to Pennsylvania business and industry with a primary focus on small– and medium–sized manufacturing companies to help improve their global competitiveness. Funding is provided by Pennsylvania State University, the Department of Commerce and the U.S. Economic Development Administration. Funding for the period 1992–93 was \$975,000; funding for the period 1993–94 is \$1.1 million.

APPENDIX A

PARTICIPANTS AT TASK FORCE HEARINGS

Hearing, November 10, 1992, Harrisburg

CAROL A. LESSURE, Outreach Coordinator, Defense Budget Project,
Washington, DC

JOHN P. DEFELICE, President and CEO, Precision Components
Corporation, York, PA

PAUL P. CHRISTIANO, Ph.D., Provost, Carnegie Mellon University,
Pittsburgh, PA

PHILLIP SINGERMAN, Ph.D., President and CEO, Ben Franklin
Technology Center of Southeastern Pennsylvania, Philadelphia, PA

WILLIAM GEORGE, President, Pennsylvania AFL-CIO, Harrisburg, PA

Hearing, April 1, 1993, Harrisburg

JACK E. MINNICH, Executive Director, MANTEC, Inc., York, PA

JOE HOULDIN, Executive Director, Delaware Valley Industrial Resource
Center, Philadelphia, PA

WILLIAM DESCIAK, Executive Director, Northeast Pennsylvania
Industrial Resource Center, West Pittston, PA

DAVID WASHBURN, Director of Legislative Affairs, Department of
Commerce/PA Economic Development Partnership, for Secretary
Andrew T. Greenberg

**SCOTT BAIR, Director, Office of Economic Policy, Department of
Commerce/PA Economic Development Partnership**

**JOHN E. WERNER, President, Ben Franklin Technology Center of
Central & Northern Pennsylvania, University Park, PA**

**KATHY HALUSKA for Larry McGeehan, Ph.D., President, Ben Franklin
Technology Center of Western Pennsylvania, Pittsburgh, PA**

**MARK LANG, Executive Director, Ben Franklin Technology Center of
Northeast Tier, Bethlehem, PA**

**BRAD C. JOHNSON, Director, New York State Office of Federal Affairs
and Co-Chairman of Governor's Defense Advisory Panel,
Washington, DC**

**MIKE ROSS, President, Pennsylvania Economic Development Association,
Harrisburg, PA**

**L. RAYMOND HETTICHE, Director, Applied Research Laboratory, The
Pennsylvania State University, State College, PA**

APPENDIX B

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