Needs Assessment supporting the Employ Florida Banner Center for Manufacturing

EMPLOY FLORIDA BANNER Center Manufacturing

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NEEDS ASSESSMENT

EXECUTIVE SUMMARY

Manufacturing in Florida is a vital part of the State's economy. It ranks 13th in the nation based on employment and 16th based on contribution to the State's gross state product (approximately 5%). There are approximately 16,500 manufacturers in Florida employing 400,000 people. The sector is comprised mainly (71%) of small companies with fewer than 10 employees. Florida manufacturers are concentrated in the Northeast, Central/Space Coast, Tampa Bay, and the Southeast regions. The counties corresponding to these regions are: Broward, Duval, Hillsborough, Dade, Orange, Palm Beach and Pinellas. Miami, Tampa and Jacksonville are Florida's top industrial cities, accounting for 20 percent of the state's manufacturers.

Educational programs to support this essential sector are distributed throughout the State and are offered through both public and private providers at the secondary and post-secondary level. At the secondary level, school districts are starting to offer programs through small learning communities such as career academies and "Choice" institutes. Presently there are 9 of these programs in 7 of Florida's 67 districts. At the post-secondary level, Florida's Technical Schools and Community Colleges offer Postsecondary Adult Vocational Certificates, Occupational Certificates, Vocational Certificates, Technical Certificates, College Credit Certificates, Associate of Applied Science degrees and Associate of Science degrees. Looking at the 7 counties with the highest manufacturing concentrations; only Duval has a secondary-level career academy, all have programs either at the technical school or community college – though the program offerings are inconsistent.

When surveyed, Florida's manufacturers overwhelmingly (81%) indicated that training resulting in industry-recognized certifications was important to them, and 60% supported the national certification offered by the Manufacturing Skills Standards Council (MSSC). This being said, Florida manufacturers and educational institutions are not currently utilizing the new national certification for production workers – MSSC's Production Technician Certification. Only one entity in the State is a credentialed assessment center with the ability to offer the exams for the MSSC certification - Pinellas Technical Institute (PTEC) in Pinellas County. Additionally, Manatee Technical Institute has started the process and should be credentialed soon. Other certifications of value to manufacturers are related to quality and trade specific competencies. These are driven by manufacturing sector and not as uniform in need.

Manufacturers are increasingly relying on automation and consolidated job function to increase employee productivity. Even with this increased productivity, the Agency for Workforce Innovation predicts that change in manufacturing employment from 2005 to 2013 in durable and nondurable goods sectors will be gains of 2.4% and 1.8%, respectively with the combined change in both categories is predicted to be 2.2%.

PURPOSE

The purpose of this needs assessment is to help lay a foundation for the establishment and guidance of the Florida Banner Center for Manufacturing - hereafter called “Center” - as a resource center for all manufacturing education and training within the State of Florida. The primary Year 1 goal of the Center is to address significant and emerging training requirements for manufacturing companies, which are currently located in and/or contemplating relocation to Florida.

Realization of the goal will allow the Center to:

- Provide training to skilled workers, from entry-level to advanced, including continuous skills upgrade training as required by the targeted industry
- Perform curriculum development and curriculum standards
- Formalize industry skill standards and workforce credentialing
- Perform educational research
- Provide technical support to the manufacturing industry cluster
- Facilitate incubation for spin-off business opportunities

This needs assessment helps the Center achieve its primary goal by determining the:

- Number of current manufacturing industry workers in Florida
- Concentration of manufacturing industry businesses in Florida
- Programs currently offered through public/private postsecondary vocational training providers to include graduates and job placement data and an inventory of training providers
- Manufacturing industry-recognized training certifications in demand
- Projected number of trained workers manufacturing industry in Florida will need in the near future

APPROACH

This assessment used the latest available data from the Agency for Workforce Innovation, Enterprise Florida, Florida Department of Education, FETPIP, public and private secondary and postsecondary vocational training providers, OPPAGA, FL-ATE, and the National Association of Manufacturers as the primary source for information regarding the manufacturing and supporting educational programs in Florida. Additionally, a 2006 FL-ATE Florida Advanced Manufacturing Consortium online survey prepared for the U.S. Department of Labor, a 2004 Enterprise Florida Manufacturers Advisory Council (EFMAC) survey were used to determine manufacturing industry-recognized training certifications in demand.

The contract establishing the Center, states in Attachment A, Schedule of Deliverables and Payments, that “It is the intent of Workforce Florida that the needs assessment provided for this deliverable shall expand upon and be more current than the statement of needs contained in the Contractor’s proposal.” This statement of needs was used as the core of this report and expanded upon where appropriate. Due to the immediate nature of the timeline for this needs assessment, one block of data was not initially included in this report; public and private secondary vocational training providers were contacted for the purpose of securing their most recent annual graduation and job placement data. The Center is still awaiting responses from these providers. To address this important block of data, the most recent data available from FETPIP was used. However, once the Center receives data from educational providers, it will be processed, analyzed, and sent to Workforce Florida as an addendum to this report.

Rather than recreate and/or replicate reports that have already been created, several useful documents describing the state of manufacturing in Florida have been attached in Appendices 1-4. These documents present facts and figures related to manufacturing in Florida. When data from these reports is used in this report, it will be noted.

FINDINGS

Number of Current Manufacturing Industry Workers in Florida

The promise and challenge of sustaining and growing Florida's manufacturing industry mirrors the national situation. However, it also presents special difficulties due to its scope and diversity. Both durable and nondurable goods are manufactured in Florida, including products requiring specialized processes such as medical instruments, semiconductors and other information technology products, plastics, aviation equipment components, and food products. In terms of scope, Florida manufacturing ranks 13th in the nation based on employment and 16th based on contribution to the State's gross state product (GSP). According to a 2004 survey by the National Association of Manufacturers (NAM), manufacturing contributed \$31 billion to Florida's \$609.4 billion GSP. In terms of percentage, manufacturing represented a 5% share of the GSP.

As represented in Table 1, there was a 0.4% decrease for the period August 2005-2006 in (non-seasonally-adjusted) employment for durable and nondurable goods in the manufacturing sector—where the only notable positive sector changes were in the areas of Transportation Equipment, Aerospace Product and Parts, Ship and Boat Building, and Miscellaneous Durable Goods Manufacturing, with employment increases of 4.0%, 1.7%, 9.0%, and 1.4%, respectively.

As represented in Table 2, when compared to overall statistics (from August 2000 through August 2006) for Durable and Nondurable Goods Manufacturing Employment, there has been a marked decline in employment throughout the State. Although the Florida Agency for Workforce Innovation web site, Labor Market Statistics (in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics) did not provide an analysis of the employment data, the decline is suggestive of the trends in some fundamental aspects of the industry. As throughout the country, Florida manufacturers share an increasing reliance on automated, computer-integrated control processes and "Lean" manufacturing principles. With these more automated and efficient workplaces, the progressive changes bring with them the means for manufacturing workers to become more productive. Nationwide, it is these elements of increased productivity in the industry that contribute to declining employment figures. As the workplace becomes more automated and efficient, the progressive changes also bring with it the means for manufacturing workers to become more productive.

However, a NAM report, *Keeping America Competitive—How a Talent Shortage Threatens U.S. Manufacturing,* describes some of the reasons behind another factor. That being skill shortages in the workforce. Reasons for the skill shortages include: demographic shifts leading to massive numbers of retirees and insufficient numbers of workers to replace them; “relentless advances in technology” requiring manufacturing workers to have a wide range of technology skills and to keep learning throughout their career; and the poor image of manufacturing jobs that keeps many young people from considering it a viable career.

Nevertheless, as will be demonstrated in this report’s section on “Projected Number of Trained Workers the Manufacturing Industry in Florida Will Need in the Near Future,” the number of trained workers will increase (based on 2006 figures) for nondurable goods and decrease for durable goods manufacturing. Differences in total annual numbers must be attributed to different data collection methods employed by the two different information sources.

Table 1 - Summary of Current Manufacturing Employment In Florida (Released September 15, 2006)

Area of Manufacturing	August 2006	July 2006	August 2005	Change From July 2006 to August 2006		Change From August 2005-2006	
				Number	Percent (%)	Number	Percent (%)
Durable Goods	270,300	269,900	269,700	400	0.2	600	0.2
Nonmetallic Mineral Product Manufacturing	25,200	25,200	26,100	0	0.0	-900	-3.4
Machinery Manufacturing	26,300	26,600	26,100	-300	-1.1	200	0.8
Computer and Electronic Product Manufacturing	50,000	50,600	51,100	-600	-1.2	-1,100	-2.2
Communications Equipment Manufacturing	9,900	10,100	10,800	-200	-2.0	-900	-8.3
Transportation Equipment Manufacturing	43,900	43,700	42,200	200	0.5	1,700	4.0
Aerospace Product and Parts Manufacturing	18,200	18,200	17,900	0	0.0	300	1.7
Ship and Boat Building	14,600	14,300	13,400	300	2.1	1,200	9.0
Miscellaneous Durable Goods Manufacturing	29,800	28,900	29,400	900	3.1	400	1.4
Nondurable Goods	128,200	127,700	130,200	500	0.4	-2,000	-1.5
Textile Mills and Products and Apparel Manufacturing	12,700	12,900	13,800	-200	-1.6	-1,100	-8.0
Food Manufacturing	31,100	30,500	30,900	600	2.0	200	0.6
Beverage and Tobacco Product Manufacturing	10,700	10,700	10,900	0	0.0	-200	-1.8
Paper Manufacturing	10,100	10,000	10,600	100	1.0	-500	-4.7
Printing and Related Support Activities	23,400	23,600	23,700	-200	-0.8	-300	-1.3
Chemical Manufacturing	20,800	20,900	20,700	-100	-0.5	100	0.5
Plastics and Rubber Product Manufacturing	13,900	14,100	15,600	-200	-1.4	-1,700	-10.9
Total Durable and Nondurable Goods	**398,500**	**397,600**	**399,900**	**900**	**0.2**	**-1,400**	**-0.4**

Source: Florida Agency for Workforce Innovation web site, Labor Market Statistics (in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics). Numbers were not seasonally adjusted.

Table 2-Comparison Summary of Overall Manufacturing Employment In Florida (August 2000 to August 2006)

Year	Overall (Durable and Nondurable Goods) Manufacturing	Overall Durable Goods Manufacturing	Overall Nondurable Goods Manufacturing
2000	463,400	309,500	153,900
2001	435,100	291,800	143,300
2002	410,400	271,600	138,800
2003	390,800	257,700	133,100
2004	397,100	265,400	131,700
2005	399,900	269,700	130,200
2006	398,500	270,300	128,200
Number Change From 2000-2006	**-64,900**	**-39,200**	**-25,700**
Percent Change From 2000-2006	**-14.0%**	**-12.66%**	**-16.69%**

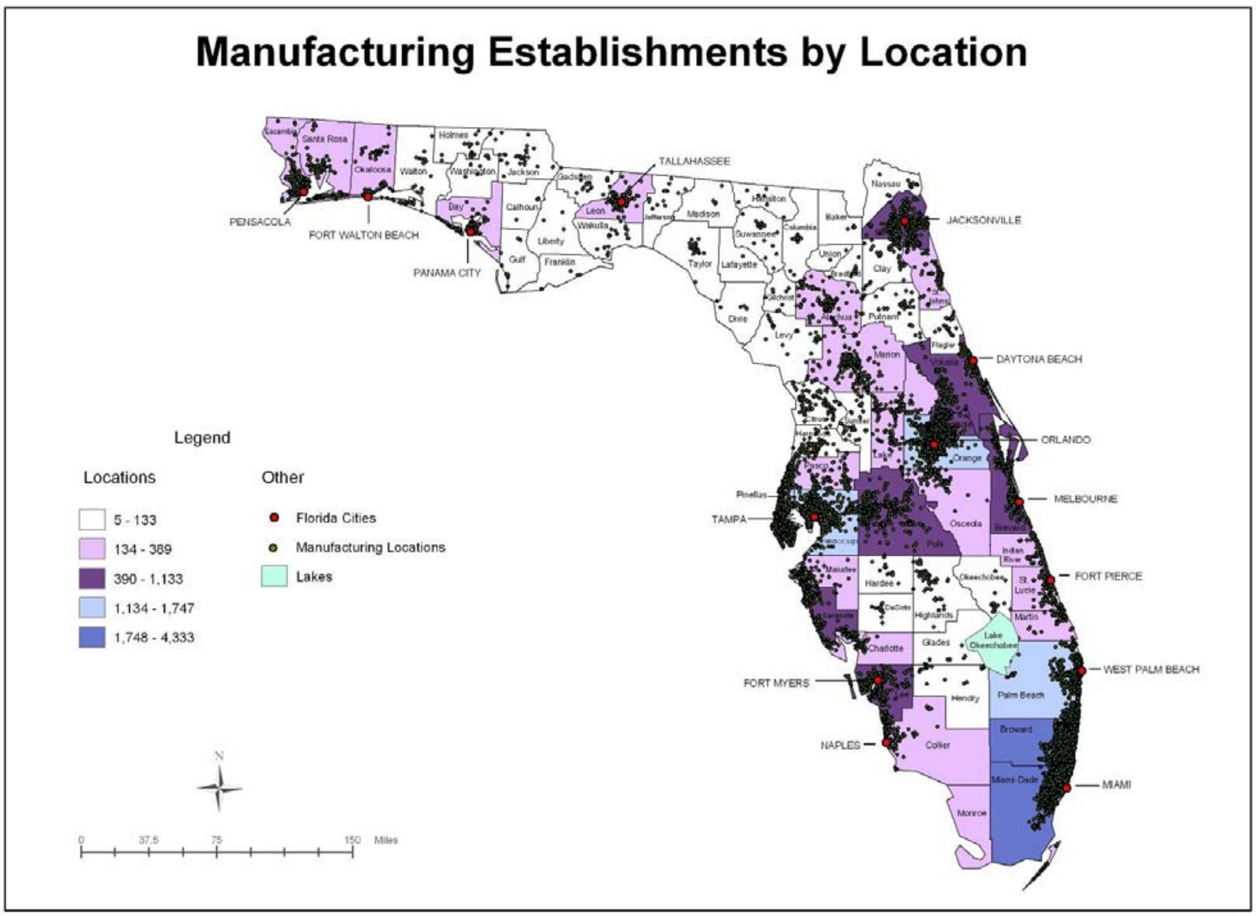
Source: Adapted from Florida Agency for Workforce Innovation web site, Labor Market Statistics (in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics). Numbers were not seasonally adjusted. Percentages are rounded.

Concentration of Manufacturing Industry Business in Florida

Using 2004 data, Enterprise Florida and NAM both report that the number of manufacturing businesses in Florida is over 16,500. NAM's manufacturing employment numbers for Florida in 2006 are 400,800. Enterprise Florida reports the total number of manufacturing employees is 388,948. Though there is an unexplained disparity between the provided data pertaining to both the number of manufacturing businesses and employees when looking at the composite Enterprise Florida data and the regional data. When Enterprise Florida presents the data by individual region (Table 3), the total number of manufacturing businesses sums to 16,045 and total employment to 385,437.

As complied by AWI in June of 2005, Figure 1 graphically represents the distribution of manufacturing businesses in Florida. The predominant concentrations of manufacturing businesses are located in the Northeast, Central/Space Coast, Tampa Bay, and the Southeast regions.

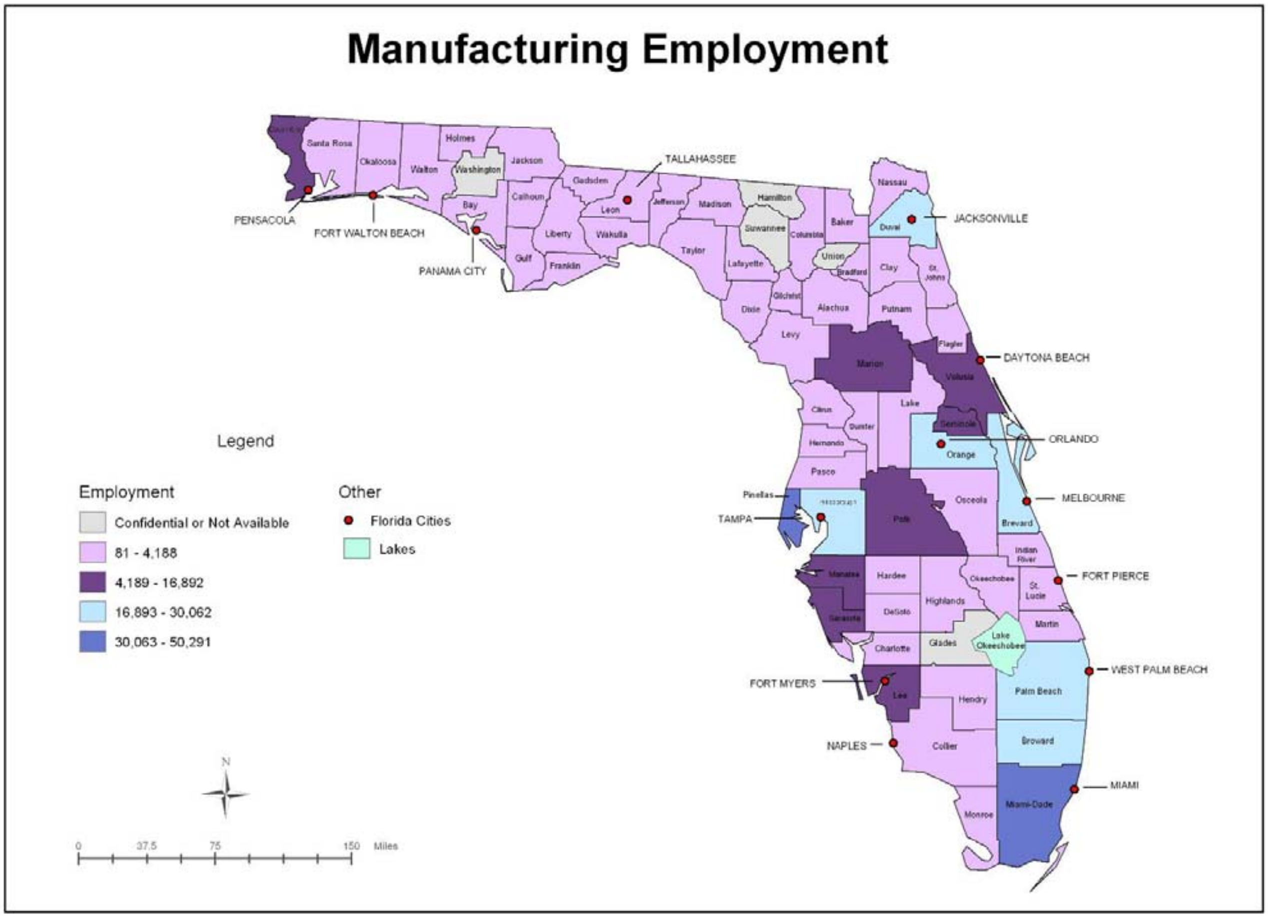
Figure 1 – Geographic Disbursement of Manufacturing Businesses in Florida



Source: ALMIS Employer Data Base, InfoUSA
Prepared by: Florida Agency for Workforce Innovation, Labor Market Statistics, July 2005.

When analyzed by county, Figure 2, the counties with the highest concentration of manufacturing businesses (30,063 – 50,291) are Pinellas and Dade. Counties in the next tier of manufacturers (16,893 – 30,062) are: Brevard, Broward, Duval, Hillsborough, Orange, and Palm Beach.

Figure 2 – Manufacturing Employment by County in Florida



Source: Florida Agency for Workforce Innovation, Labor Market Statistics,
Quarterly Census of Employment and Wages (2004 Preliminary Annual).
Prepared: July 2005.

As demonstrated in Table 3, manufacturing establishments and careers represent a significant portion of the businesses and workforce throughout Florida. Additionally, and of even greater significance, using 2004 data from NAM and Enterprise Florida, when compared with all other sectors, manufacturing careers pay average annual wages ($42,473 NAM, $40,253 Enterprise Florida) that are between 23.3 and 16.9 percent higher than the average annual state wage ($34,438). Differences in number of manufacturing businesses, employment, and average annual manufacturing wages must be attributed to different data collection methods employed by the two different information sources.

Table 3-Summary of Where Manufacturing Businesses Are Concentrated in Florida, 2004

Region of Florida	Number of Establishments	Total Employment	Average Annual Wage ($)
Northwest	846	20,954	39,041
North Central	342	12,425	33,641
Northeast	1,014	36,820	44,351
Tampa Bay	3,799	107,759	41,271
Central/Space Coast	2,795	85,784	46,368
Heartland	115	2,943	40,065
Southwest	827	10,153	35,844
Southeast	6,307	108,599	41,441
Total	16,045	385,437	40,253

Source: Adapted from Enterprise Florida web site.

A summary of Enterprise Florida descriptions of the regions presented in Table 3 are:

Northwest. Readily available land, cost effective utility and labor rates, and requisite infrastructure make business operating costs practical. Strong government and military influence has facilitated the growth of key industries: aviation/aerospace/defense, semiconductors, and information technology. One certified semiconductor site opportunity is already available, and three more certifications are currently in process. Finally, well-known educational institutions and special research centers are prominent.

North Central. The University of Florida, and several facilities in the area that provide customized training, produce a large population of ambitious and talented graduates/educated workers. The cost of conducting business in the region is minimal compared to other regions of the state with the same type of workforce. Infrastructure requisite to providing products quickly to customers is in place. Manufacturing, distribution and forestry industries are experiencing significant growth.

Northeast. A strong military influence has contributed significantly to a well-disciplined workforce with excellent technical skills. Aftermarket manufacturers and aircraft maintenance organizations contribute to the areas prominence in business. Administrative and utility costs are lower than other metro areas nationwide. An excellent infrastructure requisite to providing products quickly to customers is in place.

Tampa Bay. An emerging metropolis, this region anchors one end of the Florida High Tech Corridor, which houses more than 50% of Florida’s high-tech companies and is a stronghold of medical device manufacturing. The network of colleges in the area, led by the University of South

Florida, collaborates with companies in the region to aid in the development of products and services. As a result, educational institutions are able to shape their curriculum with the latest industry trends. Businesses receive a consistent supply of well-educated workers, since more than 50% of the graduates remain in the area. An excellent infrastructure requisite to providing products quickly to customers is in place.

Central/Space Coast. A significant portion of the technological advances in the state originate in this region. It contains part of the Florida High Tech Corridor—comprising key leaders in simulation and photonics industries, supported by the engineering and technology programs at the University of Central Florida and the regions community colleges. It is home to NASA's Kennedy Space Center, Spaceport Technology Center, and several providers of space-enabled services. Characterized by rapid growth, a strong support system is available.

Heartland. This region offers a wealth of land in which businesses can build structures tailored to their needs, while retaining room for future growth. The region is designated as an Area of Critical Economic Concern. Free education, training and job placement for employers, and the existence of enterprise zones, are but a few benefits in the area.

Southeast. This region provides a strategic foundation for companies competing on the international level, providing easy access to international markets through international airports and deep-water seaports. Businesses in this area are at the cutting edge of technological advances in video, voice and data transmission. The region offers a large, highly skilled workforce pool, being home to several researchers and educational institutions.

Southwest. Some 600-plus technology businesses occupy this region, anchored by a skilled workforce, advanced infrastructure and low business costs. Florida Gulf Coast University/Technology Research Park provides businesses with resources requisite to growth.

Programs Currently Offered Through Public/Private Postsecondary Vocational Training Providers.

Direct contact was made with the Florida Department of Education's Industrial Education Division to secure the data pertaining to public/private postsecondary vocational training providers. The Division was able to provide public data to include enrollments for the 2004-2005 timeframe, but not the number of annual graduates or job placement data. They suggested that the Center contact each individual public training provider for that data. Based on this recommendation, public and private secondary vocational training providers with manufacturing related programs were contacted for the purpose of securing their most recent annual graduation and job placement data. The response rate for this direct inquiry was too low to be of use in this assessment.

Additionally, per the recommendation of the Industrial Education Division, the Department's Commission for Independent Education was contacted to request data pertaining to private postsecondary vocational training providers. A list of providers was available on the Commission's web site. However, it did not provide the number of annual graduates or job placement data.

In order to secure the missing data, with the assistance of the Workforce Florida Director of Special Projects, the Center contacted representatives of the Florida Education and Training Information Placement Program (FETPIP). FETPIP, on October 31, 2006, provided a body of available graduation and job placement data, included herein. However, since there are still instances of incomplete graduation and job placement data in this report, the Center assumes that either the vocational training providers did not provide this data to FETPIP or there were no enrollments in the respective manufacturing/manufacturing related programs.

The data presented in Tables 4-12 serve several purposes. They:

- Identify the manufacturing and manufacturing related programs currently offered through the public/private postsecondary vocational training providers
- Identify enrollment, graduate, and job placement numbers (2004-05) for the public postsecondary vocational training providers
- Establish an inventory of vocational training providers
- Identify the secondary Career Academies offering manufacturing/manufacturing related programs
- Provide a comparison of Career Academy themes throughout the State.

As a result of the Center's research it must be noted that LEA Region 2 (Broward county) does not have any career academies related to manufacturing. Additionally, an institution (Robert E. Lee High School) in Duval County and one in St. Lucie County (Treasure Coast High School) do not identify themselves as traditional career academies. However, their programs focus on manufacturing and engineering. Each school targets all levels of secondary students and provides them with the skills and hands-on experiences necessary to enter the workplace and/or background needed for advancement to postsecondary degree programs. The schools also enjoy the support of their respective manufacturers associations and local engineering and manufacturing firms.

Table 4 - Industrial Management Technology Programs Provided by Public Postsecondary Vocational Training Providers: 2004-05

Period	LEA #	LEA Name	LEA Type	CIP #	CIP Title	Fund Type	Enrollment	# Grads	#Employed
2004-05	2	Broward	C	0606200101	IMT	AAS	15	3	3
2004-05	2	Broward	C	1606200101	IMT	AS	11	4	2
2004-05	5	Daytona Beach	C	0606200101	IMT	AAS	7	2	1
2004-05	7	FLCC at Jax	C	0606200101	IMT	AAS	14	5	0
2004-05	7	FLCC at Jax	C	1606200101	IMT	AS	76	14	7
2004-05	10	Hillsborough	C	0606200101	IMT	AAS	30	1	0
2004-05	10	Hillsborough	C	1606200101	IMT	AS	2		
2004-05	14	Manatee	C	0606200101	IMT	AAS	2	1	1
2004-05	15	Miami-Dade	C	1606200101	IMT	AS	4	2	2
2004-05	16	North Florida	C	0606200101	IMT	AAS	1		
2004-05	17	Okaloosa-Walton	C	0606200101	IMT	AAS	122	122	28
2004-05	18	Palm Beach	C	1606200101	IMT	AS	3		
2004-05	18	Palm Beach	C	0606200101	IMT	AAS	2		
2004-05	20	Pensacola	C	0606200101	IMT	AAS	12	3	2
2004-05	26	South Florida	C	0606200101	IMT	AAS	1		
2004-05	22	St. Johns River	C	1606200101	IMT	AS	6		
2004-05	23	St. Petersburg	C	0606200101	IMT	AAS	20		
2004-05	27	Tallahassee	C	1606200101	IMT	AAS	7	3	3
2004-05	27	Tallahassee	C	1606200101	IT	AAS			

Source: Adapted from Florida Department of Education, 2004-2005 Industrial Education Reporting Cycle LEA (Local Education Agency) CIP (Classification of Instructional Programs), research of individual public postsecondary vocational training provider web sites in Florida – 2006, and FETPIP provided data. Acronym key: IMT (Industrial Management Technology); IT (Industrial Technology)

Table 5 - Manufacturing Technology Programs Provided by Public Postsecondary Vocational Training Providers: 2004-05

Period	LEA #	LEA Name	LEA Type	CIP #	CIP Title	Fund Type	Enrollment	# Grads	#Employed
2004-05	5	Daytona	C	0615060302	MT	AAS	31		
2004-05	10	Hillsborough	C	0615060302	MT	AAS	2	0	0
2004-05	10	Hillsborough	C	1615060302	MT	AS	8		
2004-05	17	Okaloosa-Walton	C	0615060302	MT	AAS	3		
2004-05	20	Pensacola	C	1615060302	MT	AS	1	1	1
2004-05	20	Pensacola	C	0615060302	MT	AAS	10	2	2
2004-05	23	St. Petersburg	C	0615060302	MT	AAS	2		
2004-05	23	St. Petersburg	C	1615060302	MT	AS	19		

Source: Adapted from Florida Department of Education, 2004-2005 Industrial Education Reporting Cycle. LEA (Local Education Agency). CIP (Classification of Instructional Programs) and research of individual public postsecondary vocational training provider web sites in Florida-2006, and FETPIP provided data. Acronym key: MT (Manufacturing Technology)

Table 6 - Computer Integrated Manufacturing Programs Provided by Public Postsecondary Vocational Training Providers: 2004-05

Period	LEA #	LEA Name	LEA Type	CIP #	CIP Title	Fund Type	Enrollment	# Grads	# Employed
2004-05	7	FLCC at Jax	C	0615049901	CIM	AAS	2		
2004-05	7	FLCC at Jax	C	1615049901	CIM	AS	11		
2004-05	9	Gulf Coast	C	1615049901	CIM	AS		4	3
2004-05	23	St. Petersburg	C	1615049901	CIM	AS	15	1	1

Source: Adapted from Florida Department of Education, 2004-2005 Industrial Education Reporting Cycle. LEA (Local Education Agency). CIP (Classification of Instructional Programs) and research of individual public postsecondary vocational training provider web sites in Florida-2006, and FETPIP provided data.

Table 7 – Electronics Engineering Technology Programs Provided by Public Postsecondary Vocational Training Providers: 2004-05

Period	LEA Name	LEA Type	CIP #	CIP Title	Fund Type	# Grads	#Employed
2004-05	Brevard	C	0615060301	EET	AAS	7	4
2004-05	Broward	C	0615060301	EET	AAS	10	6
2004-05	Chipola	C	1615060301	EET	AAS	1	1
2004-05	Gulf Coast	C	0615060301	EET	AAS	4	4
2004-05	Indian River	C	1615060301	EET	AAS	4	3
2004-05	Manatee	C	0615060301	EET	AAS	1	1
2004-05	Palm Beach	C	0615060301	EET	AAS	4	3
2004-05	Pensacola	C	0615060301	EET	AAS	7	1
2004-05	South Florida	C	1615060301	EET	AAS	1	1
2004-05	St. John's	C	1615060301	EET	AAS	1	1
2004-05	Valencia	C	1615060301	EET	AAS	16	14

Source: 2006 FETPIP provided data.

Table 8 - Manufacturing and Related Programs Provided by Private Postsecondary Vocational Training Providers

Period	LEA Name	CIP Code	CIP Title
2006	Atlantic International Institute-Jacksonville	0615030300	Industrial Electronics and Microprocessor Technology-Diploma
2006	CNAD of Florida-Weston	099999	Industrial Administration-B.S.
2006	Southern Illinois University-Hurlburt Field	150612	Industrial Technology-B.S.
2006	Art Institute of Ft. Lauderdale	500404	Industrial Design-B.S.

Source: Adapted from the Florida Department of Education's Commission for Independent Education's web site.

Table 9 - Industry Themes of Programs Identifying Themselves as Career Academies

Industry Theme	Number of Academies
Information Technology	52
Health Science	49
Arts, Audio/Video Technology, and Communications	33
Scientific Technology, Engineering, and Mathematics	30
Financial Services	27
Business Management and Administration	26
Hospitality and Tourism	22
Marketing, Sales, and Service	20
Other **	18
Architecture and Construction	18
Agriculture, Food, and Natural Resources	17
Law, Public Safety, and Security	16
Culinary Arts	15
Transportation, Distribution, and Logistics	13
Education and Training	12
Manufacturing/Industrial Tech/Mgmt/Engineering	9
Government and Public Administration	7

Source: Adapted from Florida Department of Education Workforce Development Web Site, 2006 and from OPPAGA Report 06-55 of school districts and programs identified as career academies.
** 'Other' category includes programs that did not fit into other categories.

Table 10 – Manufacturing and Related Secondary Career Academies by District

District	Site	Academy
Duval	Robert E. Lee High School	Pre-Engineering Magnet
Hernando	Nature Coast Technical High School	Engineering Academy
Lee	Ida S. Baker High School	Academy of Engineering and Manufacturing
Lee	South Ft. Myers High School	Academy of Engineering and Manufacturing Technology
Manatee	Braden River High School	Engineering Academy
Marion	Marion Technical Institute	Advanced Manufacturing Academy
St. Lucie	St. Lucie County High School	Manufacturing/Pre-Engineering Career Academy
St. Lucie	Treasure Coast High School	Engineering and Industrial Technology
Volusia	Mainland High School	The Academy of Design and Manufacturing Technology

Source: Adapted from Florida Department of Education Workforce Development Web Site, 2006 and direct contact of County High Schools and their web sites.

Table 11 – Manufacturing and Related Certificates Provided by Public Postsecondary Vocational Training Providers: 2004-05

Period	LEA Name	LEA Type	CIP Title	Fund Type	# Grads	# Employed
2004-05	Brevard	C	Welding	PSAV	6	6
2004-05	Brevard	C	AutoCAD Foundations	PSVC	13	9
2004-05	Central Florida	C	Applied Welding Technologies	PSAV	6	5
2004-05	Chipola	C	Applied Welding Technologies	PSAV	3	2
2004-05	Daytona Beach	C	AutoCAD Foundations	OC		
2004-05	Daytona Beach	C	Applied Welding Technology	VC	4	2
2004-05	Daytona Beach	C	Machining	VC	3	3
2004-05	Daytona Beach	C	Computer Electronics Technology	PSAV	2	2
2004-05	FLCC at Jax	C	Applied Welding Technologies	WCC		
2004-05	FLCC at Jax	C	Industrial Maintenance Technology	WCC		
2004-05	FLCC at Jax	C	Computer Electronics Technology	PSAV	4	2
2004-05	Hillsborough	C	AutoCAD Foundations	CCC	21	11
2004-05	Lake City	C	Welding	AVC		
2004-05	Miami-Dade	C	Electronics Technology	VCC		
2004-05	Okaloosa-Walton	C	AutoCAD Foundations	PSVC	6	4
2004-05	Palm Beach	C	Machining	VC		
2004-05	Palm Beach	C	Welding	VC	5	4
2004-05	Palm Beach	C	Electronics Technology	PSAV	1	1
2004-05	Pasco-Hernando	C	Applied Welding Technologies	TC	4	3
2004-05	Pasco-Hernando	C	AutoCAD Foundations	PSVC	7	5
2004-05	Pensacola	C	AutoCAD Foundations	PSVC	6	6
2004-05	St. Petersburg	C	AutoCAD Foundations	PSVC	2	1
2004-05	St. Petersburg	C	Lean-Six Sigma Green Belt	CT		
2004-05	St. Petersburg	C	Quality Process Technician	CT		
2004-05	St. Petersburg	C	Six Sigma Black Belt	CT		
2004-05	South Florida	C	Computer Electronics Technology	OC	1	1
2004-05	Santa Fe	C	Applied Welding Technology	CT	12	11
2004-05	Valencia	C	AutoCAD Foundations	PSVC	239	189

Source: Adapted from Florida Department of Education, 2004-2005 Industrial Education Reporting Cycle and research of individual public postsecondary vocational training provider web sites in Florida-2006, and FETPIP provided data.

Acronym Key: LEA (Local Education Agency). CIP (Classification of Instructional Programs). PSAV (Postsecondary Adult Vocational Certificate). PSVC (Postsecondary Vocational Certificate). ATC (Advanced Technical Certificates). VC (Vocational Certificate). OC (Occupational Certificate). WCC (Workforce Credit Certificate). AVC (Adult Vocational Certificate). VCC (Vocational Credit Certificate). TC (Technical Certificate). CT (Certificate). CCC (College Credit Certificate).

Table 12 – Manufacturing and Related Certificates Provided by Florida Area Vocational-Technical Centers: 2004-05

Period	Region	LEA Name	CIP Title	Fund Type	#	#
2004-05	Northwest	George Stone Area Vo-Tech	Applied Welding Technologies	CT	16	13
2004-05	Northwest	George Stone Area Vo-Tech	Electronic Technology	CT	4	2
2004-05	Northwest	Lively Technical Center	Applied Welding Technologies	CT		
2004-05	Northwest	Lively Technical Center	Electronic Technology	CT	11	8
2004-05	Northwest	Lively Technical Center	IPC Soldering	CT		
2004-05	Northwest	Lively Technical Center	Machining	CT		
2004-05	Northwest	Lively Technical Center	Computer Electronics Technology	CT	25	17
2004-05	Northwest	Thomas P. Haney Vo-Tech. Ctr	Electrical & Electronic Engr Technology	CT		
2004-05	Northwest	Thomas P. Haney Vo-Tech. Ctr	Electronic Technology	CT	5	4
2004-05	Northwest	Thomas P. Haney Vo-Tech. Ctr	Applied Welding Technologies	CT	4	3
2004-05	Northwest	Thomas P. Haney Vo-Tech. Ctr	Computer Electronics Technology	CT	2	2
2004-05	Northwest	Locklin Technical Center	Applied Welding Technologies	CT	8	7
2004-05	Northwest	Locklin Technical Center	Computer Electronics Technology	CT	36	19
2004-05	Northwest	Okaloosa Applied Tech Ctr	Applied Welding Technologies	CT	1	1
2004-05	Northwest	Okaloosa Applied Tech Ctr	Computer Electronics Technology	CT	36	21
2004-05	Northwest	Washington-Holmes Voc-Tech	Applied Welding Technologies	CT	22	12
2004-05	Northwest	Washington-Holmes Voc-Tech	Computer Electronics Technology	CT	13	7
2004-05	Northwest	Walton County Voc School	Computer Electronics Technology	CT	7	6
2004-05	Northeast	Bradford Union Area Career	Applied Welding Technologies	CT	7	3
2004-05	Northeast	Bradford Union Area Career	Computer Electronics Technology	CT	34	21
2004-05	Northeast	Florida Technical College	Electronics/Computer Technology	CT		
2004-05	Northeast	First Coast Technical Institute	Applied Welding Technologies	CT	19	13
2004-05	Northeast	Taylor County Voc-Tech	Applied Welding Technologies	CT	23	17
2004-05	Northeast	Taylor County Voc-Tech	Computer Electronics Technology	CT	13	10
2004-05	Northeast	Taylor County Voc-Tech	Industrial Machinery Maintenance	CT	18	15
2004-05	Northeast	Taylor County Voc-Tech	Related Industrial Technology	CT	91	63
2004-05	East Central	Florida Technical College	Electronics/Computer Technology	CT		
2004-05	East Central	Lake Technical Center	Applied Welding Technologies	CT	23	15
2004-05	East Central	Lake Technical Center	Computer Electronics Technology	CT	15	8
2004-05	East Central	Mid-Florida Tech	Applied Welding Technologies	CT		
2004-05	East Central	Mid-Florida Tech	Electronic Technology	CT		

2004-05	East Central	Mid-Florida Tech	Machining	CT		
2004-05	East Central	West Side Tech	Applied Welding Technologies	CT		
2004-05	East Central	O-Tec Mid-Florida Tech	Applied Welding Technologies	CT	18	16
2004-05	East Central	O-Tec Mid-Florida Tech	Electronic Technology	CT	8	7
2004-05	East Central	O-Tec Mid-Florida Tech	Machining	CT	2	0
2004-05	East Central	O-Tec Mid-Florida Tech	Computer Electronics Technology	CT	21	15
2004-05	East Central	O-Tec Westside Tech	Applied Welding Technologies	CT	13	9
2004-05	East Central	O-Tec Winter Park Tech	Computer Electronics Technology	CT	70	44
2004-05	East Central	Withlacoochee Technical	Computer Electronics Technology	CT		
2004-05	East Central	Withlacoochee Technical	Applied Welding Technologies	CT	10	8
2004-05	West Central	Brewster Technical Center	Industrial Mechanics and Maintenance	CT		
2004-05	West Central	Brewster Technical Center	Computer Electronics Technology	CT	13	6
2004-05	West Central	Maynard A. Traviss Technical	Applied Welding Technologies	CT	57	49
2004-05	West Central	Maynard A. Traviss Technical	Computer Electronics Technology	CT	14	8
2004-05	West Central	Pinellas Technical Education	Applied Welding Technology	CT	25	19
2004-05	West Central	Pinellas Technical Education	Electronic Technology	CT	2	2
2004-05	West Central	Pinellas Technical Education	Machining	CT	6	4
2004-05	West Central	Pinellas Technical Education	Computer Electronics Technology	CT	20	9
2004-05	West Central	Pinellas Technical Education	Industrial Machinery Maintenance	CT	1	1
2004-05	West Central	Ridge Technical Center	Applied Welding Technologies	CT	6	5
2004-05	West Central	David G. Erwin Tech Center	Applied Welding Technologies	CT	7	5
2004-05	West Central	David G. Erwin Tech Center	Computer Electronics Technology	CT	18	12
2004-05	West Central	Learey Technical Center	Applied Welding Technologies	CT	26	13
2004-05	West Central	Learey Technical Center	Computer Electronics Technology	CT	13	10
2004-05	West Central	Learey Technical Center	Industrial Machinery Maintenance	CT	15	14
2004-05	West Central	Manatee Technical Institute	Applied Welding Technologies	CT	20	10
2004-05	West Central	Manatee Technical Institute	Electronic Technology	CT	2	2
2004-05	West Central	Sarasota County Tech Institute	Computer Electronics Technology	CT	6	4
2004-05	South Central	Florida Technical College	Electronics/Computer Technology	CT		
2004-05	South Central	Mid-Florida Tech	Applied Welding Technologies	CT		
2004-05	South Central	West Side Tech	Applied Welding Technologies	CT		
2004-05	South Central	Withlacoochee Technical	Computer Electronics Technology	CT	15	7
2004-05	Dade-Monroe	Lindsey Hopkins Tech Ed Ctr	Applied Welding Technologies	CT	8	3

2004-05	Dade-Monroe	Lindsey Hopkins Tech Ed Ctr	Computer Electronics Technology	CT	32	25
2004-05	Dade-Monroe	Robert Morgan Vo-Tech Inst	Applied Welding Technologies	CT	22	14
2004-05	Dade-Monroe	Robert Morgan Vo-Tech Inst	Electronic Technology	CT	6	5
2004-05	Dade-Monroe	Robert Morgan Vo-Tech Inst	Computer Electronics Technology	CT	21	12
2004-05	Dade-Monroe	Turner Tech Arts Adult Ed Ctr	Applied Welding Technologies	CT	8	6
2004-05	Dade-Monroe	Miami Lakes Tech Ed Ctr	Electronic Technology	CT	14	7
2004-05	Dade-Monroe	Miami Lakes Tech Ed Ctr	Computer Electronics Technology	CT	53	34
2004-05	Dade-Monroe	Miami Lakes Tech Ed Ctr	Related Industrial Technology	CT	40	39
2004-05	Dade-Monroe	Hialeah Sr. High Adult Ed Ctr	Machining	CT	2	1
2004-05	Broward	William McFatter Tech Ctr	Applied Welding Technologies	CT	26	22
2004-05	Southwest	Lee County High Tech Center	Applied Welding Technologies	CT	9	8
2004-05	Southwest	Lee County High Tech Ctr N	Electronic Technology	CT	2	2
2004-05	Southwest	Lee County High Tech Ctr N	Computer Electronics Technology	CT	19	10
2004-05	Southwest	Lee County High Tech Ctr Ctrl	Electronic Technology	CT	5	4
2004-05	Southwest	Lee County High Tech Ctr Ctrl	Computer Electronics Technology	CT	8	3
2004-05	Southwest	Atlantic Technical Institute	Electronic Technology	CT	1	1
2004-05	Southwest	Atlantic Technical Institute	Machining	CT	6	4
2004-05	Southwest	Atlantic Technical Institute	Welding Technologies	CT	12	8
2004-05	Southwest	Atlantic Technical Institute	Computer Electronics Technology	CT	47	27
2004-05	Southwest	Atlantic Technical Institute	Industrial Machinery Maintenance	CT	9	8
2004-05	Southwest	Charlotte Technical Center	Electronic Technology	CT	5	4
2004-05	Southwest	Charlotte Technical Center	Computer Electronics Technology	CT	6	3
2004-05	Southwest	Lorenzo Walker Institute	Computer Electronics Technology	CT	40	29
2004-05	Broward	Sheridan Technical Center	Computer Electronics Technology	CT	21	10

Source: Research of individual vocational-technical training provider web sites in Florida-2006, and FETPIP provided data. Acronym key: CT (Certificate).

Manufacturing Industry-Recognized Training Certifications in Demand

As with the nation's manufacturing sector, the continued growth in Florida manufacturing rests upon two vital foundations—the development of advanced manufacturing methods, and technologies and the application of those methods by a trained, skilled and motivated workforce. For the purpose of this needs assessment, it must be emphasized that Florida's ability to develop and sustain a high-performance workforce needs improvement.

Just as the information technology industry has recognized the value of certification and has well-established certifications, there is a vast growing body of manufacturing industry executives and manufacturers associations/councils building support for a national certification - specifically the Manufacturing Skill Standards Council (MSSC) Production Technician Certification. This certification addresses the core competencies needed by all sectors within durable and non-durable manufacturing. NAM has praised this new certification, "This is a breakthrough with great implications for the future of manufacturing in the United States," NAM President John Engler said. "Introduction of this certification program underscores growing recognition that America must do a better job of training and educating our workforce to remain competitive in the global economy."

John Rauschenberger, Manager of Personnel Research & Development for Ford Motor Company, said that as workforce competence looms ever larger as a serious challenge to industry, nationally-recognized certification will provide a basis for documenting competency across all sectors. "This unique system is the definitive nationwide program for creating a much larger pool of production workers with strong cross-cutting, multidisciplinary competencies that has the flexibility to adjust to rapid change," Rauschenberger said. "MSSC's industry-led and federally-recognized skill standards remain the most authoritative and comprehensive definition of the skills and knowledge needed in manufacturing today and into the foreseeable future. The MSSC system will be a major benefit for manufacturers both large and small who require competent employees to remain competitive."

During a November 16, 2005, Launch Event Workshop, leading representatives from the manufacturing community met to discuss how to build support for the MSSC System. Some highlights of the workshop's recommendations follow:

- The system will provide employers an industry-recognized standard to determine the skill levels of production workers in different work sites in their plants.
- The main strengths of the system will establish means to perform pre- and post-measuring, benchmarking, and targeting training to skill weaknesses.
- The system will increasingly help manufacturing production workers document their skills, and assist manufacturers refine their skill training programs.
- Employers can use the system as a screening tool to measure potential of entry-level production worker candidates.
- Incumbent workers can use the system to document that they have the foundational skills requisite to qualifying for more technical jobs.
- The system will improve competitiveness of the workforce, since it demonstrates that MSSC Production Technicians have "standardized" skills that are portable and measurable.

Presently only one entity in the State is a credentialed assessment center with the ability to offer the exams for the MSSC certification - Pinellas Technical Institute (PTEC) in Pinellas County. Additionally, Manatee Technical Institute has started the process and should be credentialed soon. As part of the Center initiative, 5 community colleges (FCCJ, HCC, MCC, PCC, PHCC) will become assessment centers in early 2007.

A February 2004 EFMAC electronic survey was issued to all EFMAC members and Florida manufacturing association members to obtain more information about he workforce recruitment and training needs of Florida's manufacturers. When the results were tallied, 81% of the respondents indicated that training resulting in industry-recognized certifications was important to them.

As presented in Figure 3, an online, FL-ATE (Florida Advanced Technological Education) Center 2006 Manufacturing Needs Assessment Survey asked Florida manufacturers to respond to the question in "Would An Industry Certification In Manufacturing be Important to Your Company?" after being made aware that "There is a national certification for manufacturing skills being adopted by many manufacturers as a preferred condition for employment." The results demonstrated that 60% of the 94 respondents indicated that an industry certification in manufacturing would be important to their company.

With respect to certifications beyond the overarching MSSC certification, many public and private educational institutions offer "certifications" in quality programs and tools such as "Lean" and "Six Sigma". In the same online survey reference above, FL-ATE asked Florida manufacturers if there was interest in an online certification program in this area, 59% replied in the affirmative, see Figure 4.

Other certifications offered in the manufacturing field:

The Society of Manufacturing Engineers (SME) offers six certifications:

- Certified Manufacturing Technologist (CMfgT)
- Certified Manufacturing Engineer (CMfgE)
- Certified Enterprise Integrator (CEI)
- Certified Engineering Manager (CEM)
- Six Sigma Certification
- Lean Certification

The American Society for Quality (ASQ) offers fourteen certifications:

- Biomedical Auditor
- Calibration Technician
- HACCP Auditor
- Manager of Quality/Organizational Excellence
- Quality Inspector
- Quality Auditor
- Quality Engineer
- Quality Improvement Associate
- Quality Process Analyst
- Quality Technician

- Reliability Engineer
- Six Sigma Black Belt
- Six Sigma Green Belt
- Software Quality Engineer

The Association for Operations Management (APICS) offers three certification programs:

- Certified in Production and Inventory Management (CPIM)
- Certified Supply Chain Professional (CSCP)
- Certified in Integrated Resource Management (CIRM)

The manufacturing industry focus groups that will be conducted by the Center will address the certification issue. Discussions about the desire for certification, the types of certifications desired, and the value of certification to Florida manufacturers will be conducted and the data will be collected. After the aggregate focus group results are compiled, the focus group participants, along with the partners to the Center will be asked to respond to an online survey. The intention of the survey will be to validate the resultant findings of and/or establish benchmarks for findings that were not immediately brought out during the group meetings. These results will be forwarded to Workforce Florida as an addendum to this section.

Figure 3 – Florida Manufacturers Interest in a National Certification

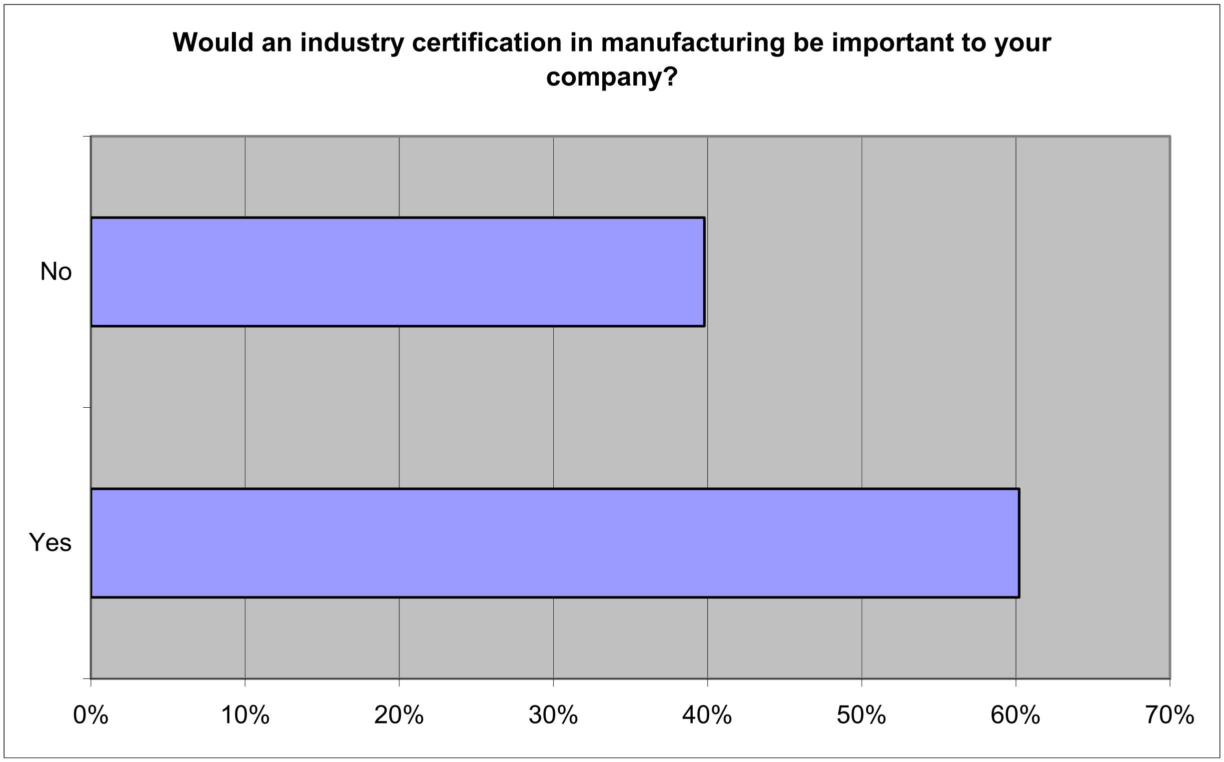
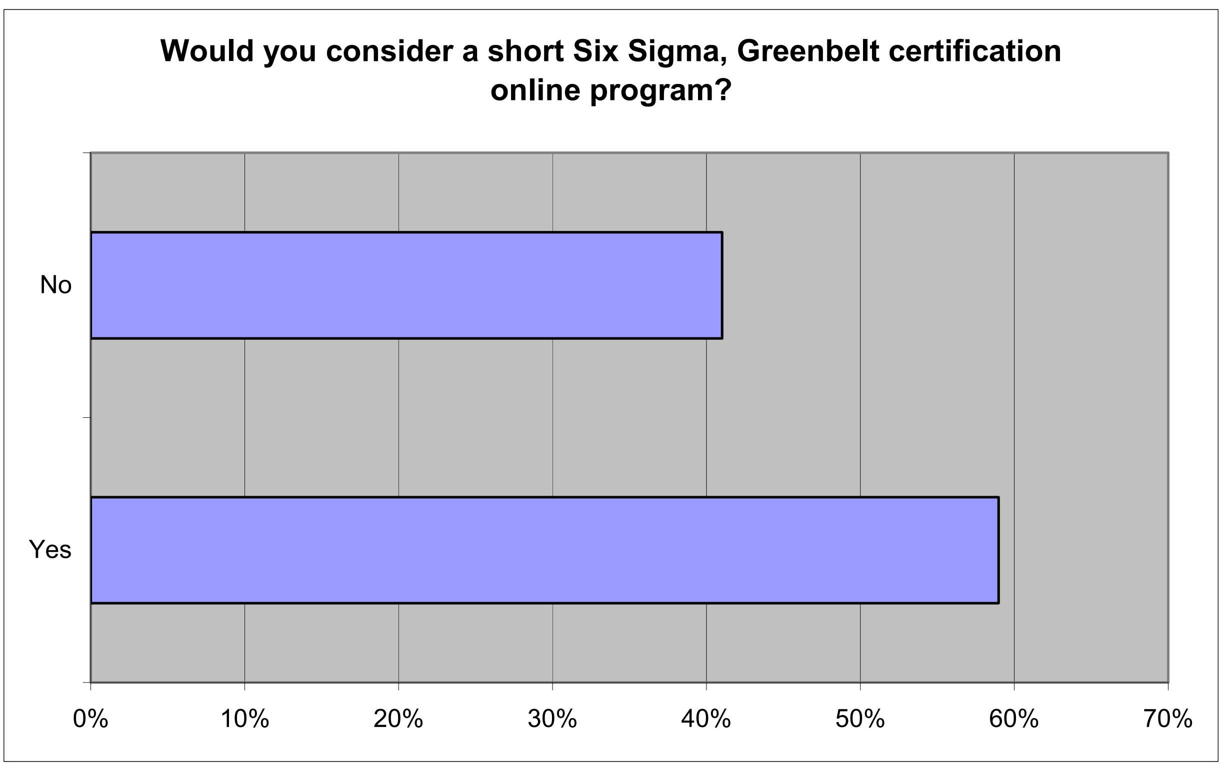


Figure 4 – Florida Manufacturers interest in online Quality Certifications



Source: Adapted from an online, FL-ATE (Florida - Advanced Technological Education) Center 2006 Manufacturing Needs Assessment Survey, n=94.

Projected Number of Trained Workers the Manufacturing Industry in Florida will Need in the Near Future

When characterizing both the current and future "trained" worker, it is vital to note that the evolving, high-tech, high-performance workplace must employ workers that are compatible with this environment. Since Florida manufacturers have an increasing reliance on automated, computer-integrated control processes and "lean" manufacturing principles, a trained worker must possess the fundamental knowledge, specialized skill sets, portable production skills, as well as flexibility and adaptability in their work habits. Skill sets that were once the exclusive province of supervisors and managers are now needed by operators and technicians as well. While the U.S. continues to lead the world in new technology development, its ability to develop and sustain a skilled manufacturing workforce is in jeopardy.

A 2005 national study by NAM, *2005 Skills Gap Report—A Survey of the American Manufacturing Workforce,* found that 74% of manufacturers responded that a high-performance workforce will be the most important resource for future business success. Then when asked what types of employees are expected to be in short supply over the next three years, 80% responded that it would be skilled production workers, a far greater amount than the next category, scientists and engineers, at 35%.

The "Number of Current Manufacturing Industry Workers in Florida" section of this assessment report cites a NAM report, *Keeping America Competitive - How a Talent Shortage Threatens U.S. Manufacturing,* which describes skill shortages in the workforce. Reasons for the skill shortages include: demographic shifts leading to massive numbers of retirees and insufficient numbers of workers to replace them; "relentless advances in technology" requiring manufacturing workers to have a wide range of technology skills and to keep learning throughout their career; and the poor image of manufacturing jobs that keeps many young people from considering it a viable career.

On a regional note, in Pinellas County, one of the two counties in Florida with the highest number of manufacturers, A 2003 Pinellas County Economic Development Council Manufacturing Technology Survey was issued to all 2256 manufacturing and high-tech firms in the county. The list of firms was purchased from INFOUSA. The survey was completed by 311 of the firms. At the time of the survey, Pinellas County was #2 in Florida manufacturing employment. The survey respondents demonstrated a need for availability of quality job training programs in the county. They also reported difficulty in recruiting employees in the local skilled labor, technician, and semi-skilled labor sectors. Not surprisingly, 19% of the manufacturing firms expected that their employee training needs to increase in 2004.

This survey was followed up with a 2005 Manufacturing Technology Survey, which was issued to 1411 manufacturing firms in Pinellas County. The survey was completed by 211 of the firms. The survey respondents demonstrated a decrease in the perceived quality of education and training from both technical schools (35% excellent to good rating—down 6%) and community colleges and universities (55% excellent to good rating—down 7%). At the same time, the respondents indicated a 13% decline in the availability of qualified employees and 30% indicated they needed more training for their employees.

Statewide predictions for manufacturing employment are presented in Table 12. It is predicted that change in manufacturing employment from 2005 to 2013 in durable and nondurable goods sectors will be 2.4% and 1.8%, respectively. The combined change in both categories is predicted to be 2.2%. The comparison of data presented in Table 2 with that of Table 12 offers an interesting, but unexplained finding. In Table 12, during 2005 trained worker employment in both durable and nondurable goods manufacturing was 390,633. However, Table 2 reflects an employment figure of 399,900. It is assumed that this disparity is due to the use of different data collection methods. Nevertheless, the disparity continues when the future trained worker employment projection for 2013 in Table 12 is 399,154, which is statistically close to the figures for 2005 and 2006 in Table 2, 399,900 and 398,500, respectively.

The five manufacturing industry focus groups that will be conducted by the Center will address the issue of current and future trends in the manufacturing industry, which will drive workforce training needs for incumbent/entry-level workers. After the aggregate focus group results are compiled, the focus group participants, along with the partners to the Center will be asked to respond to an online survey. The intention of the survey will be to validate the resultant findings of and/or establish benchmarks for findings that were not immediately brought out during the group meetings.

Table 13 - Projected Number of Trained Workers the Manufacturing Industry in Florida Will Need In the Near Future

Area of Manufacturing	Employment		Change (2005 → 2013)	
	2005	2013	Total	Percent (%)
Durable Goods Manufacturing	**259,947**	**266,148**	**6,201**	**2.4%**
Wood Product Manufacturing	20,369	21,793	1,424	7.0%
Nonmetallic Mineral Product Manufacturing	24,585	27,094	2,509	10.2%
Primary Metal Manufacturing	5,013	4,849	-164	-3.3%
Fabricated Metal Product Manufacturing	37,390	38,505	1,115	3.0%
Machinery Manufacturing	25,163	24,488	-675	-2.7%
Computer and Electronic Product Manufacturing	48,865	45,800	-3,065	-6.3%
Electrical Equipment and Appliance Manufacturing	8,411	7,898	-513	-6.1%
Transportation Equipment Manufacturing	41,780	44,448	2,668	6.4%
Furniture and Related Product Manufacturing	18,964	19,036	72	0.4%
Miscellaneous Manufacturing	29,407	32,237	2,830	9.6%
Nondurable Goods Manufacturing	**130,686**	**133,006**	**2,320**	**1.8%**
Food Manufacturing	32,334	33,045	711	2.2%
Beverage and Tobacco Product Manufacturing	10,020	11,005	985	9.8%
Textile Mills	2,216	2,262	46	2.1%
Textile Product Mills	5,618	5,733	115	2.0%
Apparel Manufacturing	6,313	5,655	-658	-10.4%
Leather and Allied Product Manufacturing	1,267	1,223	-44	-3.5%
Paper Manufacturing	10,301	10,180	-121	-1.2%
Printing and Related Support Activities	23,757	22,887	-870	-3.7%
Petroleum and Coal Products Manufacturing	2,867	3,323	456	15.9%
Chemical Manufacturing	20,940	21,856	916	4.4%
Plastics and Rubber Products Manufacturing	15,053	15,837	784	5.2%
Total Durable and Nondurable Goods	**390,633**	**399,154**	**8,521**	**2.2%**

Source: Adapted from Florida Agency for Workforce Innovation, Labor Market Statistics – February 2006

EMPLOY FLORIDA BANNER Center Manufacturing

Needs Assessment
Appendix 1

Florida Manufacturing Industry Labor Market Profile

Florida Agency for Workforce Innovation, Labor Market Statistics.
Prepared July 2005.

Florida

Manufacturing Industry

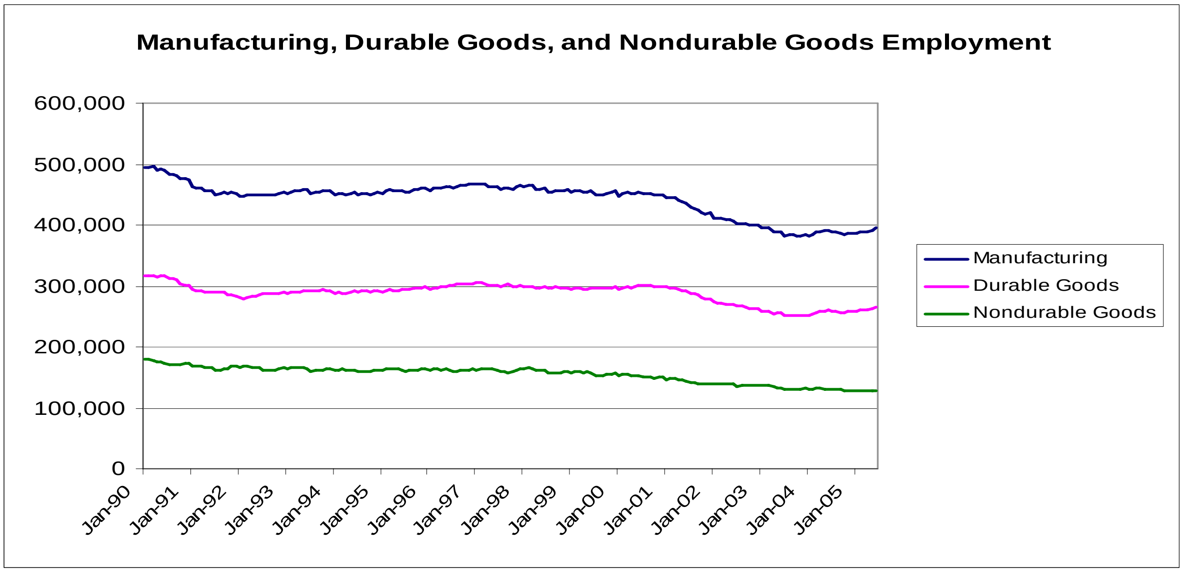
Labor Market Profile

Source: Florida Agency for Workforce Innovation, Labor Market Statistics.
Prepared July 2005.

Florida's
Manufacturing Industry

- Manufacturing employment was 394,700 in June 2005, a gain of 3,200 jobs (+0.8 percent) over the year, showing some recovery from a low of 382,400 in November 2003. The manufacturing industry has shown small over-the-year job gains in 14 of the last 15 months and appears to have stabilized after over three years of losses.

- Florida's manufacturing industry represents 5.1 percent of Florida's total nonagricultural employment and consists of two major groups: durable and nondurable goods manufacturing. In June 1990, manufacturing employment represented 9.0 percent of Florida's total nonagricultural employment.



- The June 2005, over-the-year job gains in manufacturing were entirely in durable goods manufacturing (+5,400 jobs, +2.1 percent). Much of the growth in durable goods was in transportation equipment manufacturing (+2,000 jobs, +4.8 percent). Computer and electronic product manufacturing gained 1,200 jobs and miscellaneous durable goods manufacturing gained 1,100 jobs.

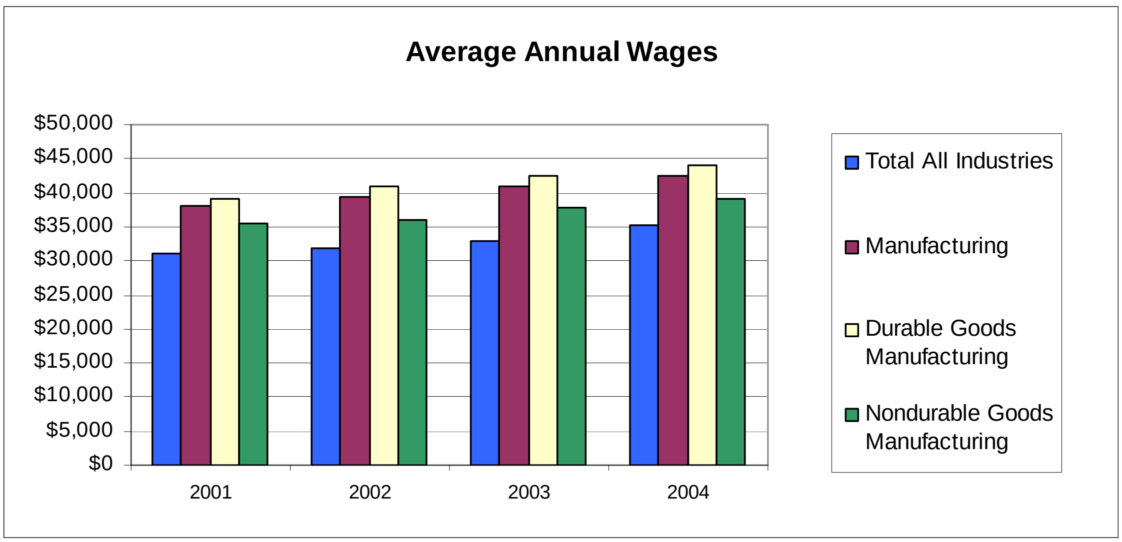
- Durable goods manufacturing lost 51,500 jobs over the last 15 years (since June 1990). Nonmetallic mineral product manufacturing and miscellaneous durable goods manufacturing were the only durable goods sectors that posted gains in jobs between June 1990 and June 2005 (+1,000 jobs and +7,200 jobs, respectively). Most of the losses during this time period were in computer and electronic product manufacturing (-38,600 jobs).

- Nondurable goods manufacturing had over-the-year jobs losses in June 2005 (-2,200 jobs, -1.7 percent). The majority of the losses were in printing and related support activities (-1,100 jobs) and food manufacturing (-1,000 jobs).

- Nondurable goods manufacturing has lost 44,500 jobs over the last 15 years (since June 1990). The only nondurable goods sector that posted job gains between June 1990 and June 2005 was beverage and tobacco product manufacturing (+1,300 jobs). The sector with the most jobs lost during this time period was textile mills, textile products, and apparel manufacturing (-23,900 jobs).

- Manufacturing's 2004 average annual wage was 20.9 percent higher than the average annual wage for all industries. Durable goods manufacturing paid a higher average annual wage in 2004 than nondurable goods manufacturing (12.5 percent higher).

- Average annual wages in all industries grew by 13.1 percent from 2001 to 2004 and average annual wages in manufacturing grew by 11.8 percent during this period. Average annual wages in durable goods manufacturing grew faster than nondurable goods manufacturing from 2001 to 2004 (12.4 percent and 10.4 percent, respectively.

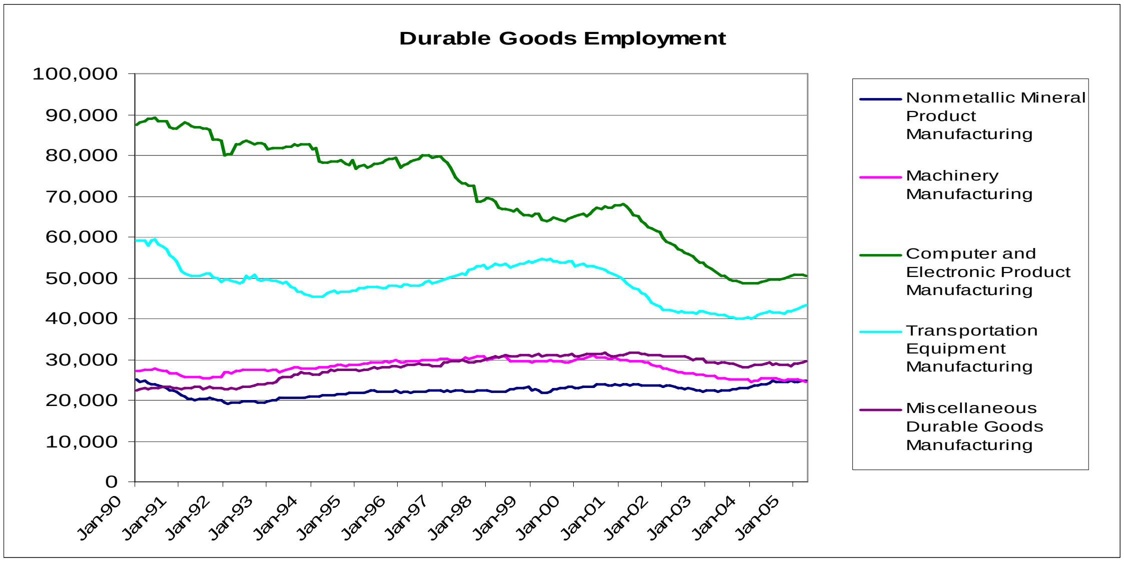


- Florida employers in manufacturing are concentrated along the central and southeast parts of the state. The counties with the highest concentration of manufacturing employers include: Broward, Hillsborough, Miami-Dade, Orange, Palm Beach, and Pinellas.

- Florida employment in manufacturing, for those counties that have reportable data, is concentrated in the southeast, central, and northeast parts of the state. These counties include: Brevard, Broward, Duval, Hillsborough, Miami-Dade, Orange, Palm Beach, and Pinellas. Due to confidentiality, employment in the manufacturing industry cannot be displayed for five of Florida's 67 counties.

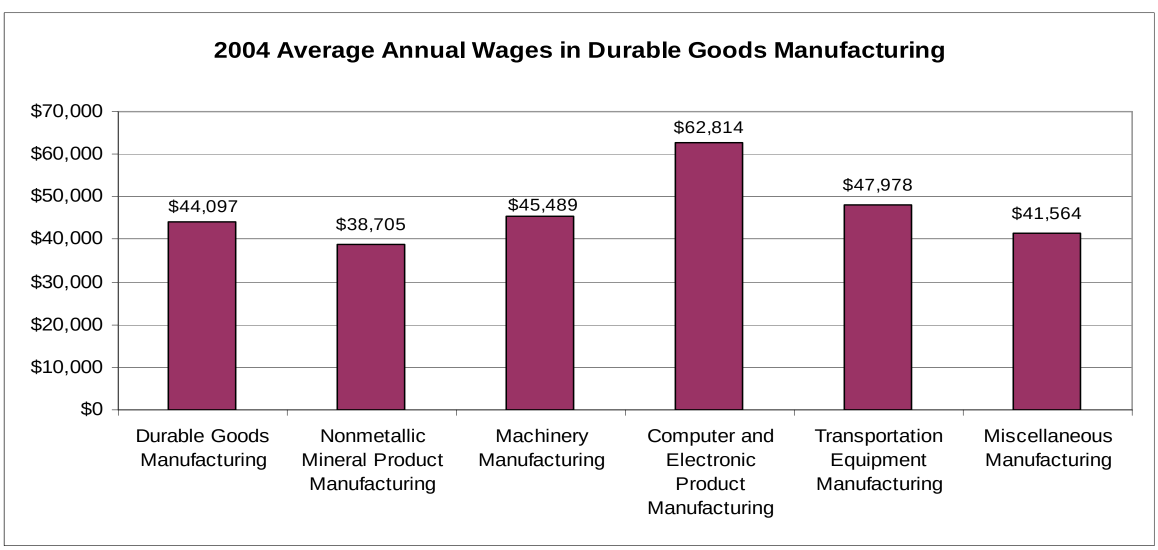
Durable Goods Manufacturing

- The two largest sectors in durable goods manufacturing are computer and electronic product manufacturing and transportation equipment manufacturing. Together, these two industries account for over one-third of durable goods manufacturing employment (35.6 percent).



- The durable goods manufacturing sector with the highest 2004 average annual wage was computer and electronic product manufacturing ($62,814), followed by transportation equipment manufacturing ($47,978).

- Durable goods manufacturing sectors with the fastest growing average annual wages between 2001 and 2004 were computer and electronic product manufacturing (18.0 percent), miscellaneous manufacturing (16.3 percent), and transportation equipment manufacturing (15.9 percent).



Computer and Electronic Product Manufacturing

- The computer and electronic product manufacturing industry posted over-the-year job gains in June 2005 (+1,200 jobs, +2.4 percent). This industry has posted over-the-year job gains every month since July 2004.

- Occupations with the most employment in the computer and electronic product manufacturing industry are: *electrical and electronic equipment assemblers*; *electrical and electronic engineering technicians*; and *electrical engineers*. Together, these three occupations account for approximately 18 percent of employment in this industry.

- Average hourly wages among the fifteen largest computer and electronic product manufacturing occupations range from a high of $46.52 for *engineering managers* to a low of $10.79 for *electrical and electronic equipment assemblers*.

- Eight of the fifteen largest computer and electronic product manufacturing occupations pay an average hourly wage that exceeds $20.00 per hour.

- Fourteen of the largest occupations are projected to lose jobs between 2005 and 2012. Only *computer systems software engineers* is projected to gain jobs.

- The two most common skills across the fifteen largest computer and electronic product manufacturing occupations are reading comprehension and mathematics.

- The computer and electronic product manufacturing occupations that require the greatest number of skills are *electrical and electronic engineering technicians*, requiring 29 skills and *electrical engineers*, requiring 27 skills.

COMPUTER AND ELECTRONIC PRODUCT MANUFACTURING OCCUPATIONS

Florida Statewide

Occupation Title	Employment 2005	Employment 2012	Annual Change Total	Annual Change Percent	% of Industry Total	2005 Average Hourly Wage	Training Requirement
Electrical and Electronic Equipment Assemblers	5,346	4,074	-182	-3.4	10.0	10.79	Post Secondary Adult Vocational Certificate
Electrical and Electronic Engineering Technicians	2,148	1,938	-30	-1.4	4.0	19.48	Community College Certificate or Degree
Electrical Engineers	2,012	1,729	-40	-2.0	3.8	34.31	Bachelor's Degree
Team Assemblers	1,929	1,525	-58	-3.0	3.6	12.16	High School Diploma or GED
Computer Hardware Engineers	1,855	1,566	-41	-2.2	3.5	38.82	Bachelor's Degree
Inspectors, Testers, Sorters, Samplers, and Weighers	1,790	1,501	-41	-2.3	3.4	12.89	High School Diploma or GED
Computer Software Engineers, Applications	1,722	1,669	-8	-0.4	3.2	33.94	Post Secondary Adult Vocational Certificate
Production, Planning, and Expediting Clerks	1,507	1,392	-16	-1.1	2.8	16.61	High School Diploma or GED
Semiconductor Processors	1,451	1,211	-34	-2.4	2.7	14.57	Community College Certificate or Degree
Customer Service Representatives	1,362	1,341	-3	-0.2	2.5	13.79	High School Diploma or GED
Industrial Engineers	1,122	1,046	-11	-1.0	2.1	30.13	Bachelor's Degree
Electronics Engineers, Except Computer	1,106	1,018	-13	-1.1	2.1	33.75	Bachelor's Degree
Computer Software Engineers, Systems Software	1,091	1,115	3	0.3	2.0	38.28	Community College Certificate or Degree
First-Line Supervisors/Managers of Production and Operating Workers	1,011	922	-13	-1.3	1.9	24.11	Post Secondary Adult Vocational Certificate
Engineering Managers	954	861	-13	-1.4	1.8	46.52	Bachelor's Degree

Transportation Equipment Manufacturing

- The transportation equipment manufacturing industry had the largest over-the-year gain of the five published durable goods manufacturing industries (+2,000 jobs, +4.8 percent). This industry has posted over-the-year job gains every month since April 2004.

- The fifteen largest occupations in the transportation equipment manufacturing industry represent nearly half of total employment in this industry.

- Average hourly wages among the fifteen largest transportation equipment manufacturing occupations range from a high of $37.05 for *aerospace engineers* to a low of $10.96 for *electrical and electronic equipment assemblers*.

- The fastest growing occupations in the transportation equipment manufacturing industry are *carpenters* with a projected annual growth rate of 2.0 percent and *welders, cutters, solderers, and brazers* with a projected annual growth rate of 1.7 percent.

- Nine of the fifteen largest occupations in the transportation equipment manufacturing industry are projected to gain jobs between 2005 and 2012.

- Ten of the fifteen largest transportation equipment manufacturing occupations require a postsecondary adult vocational certificate.

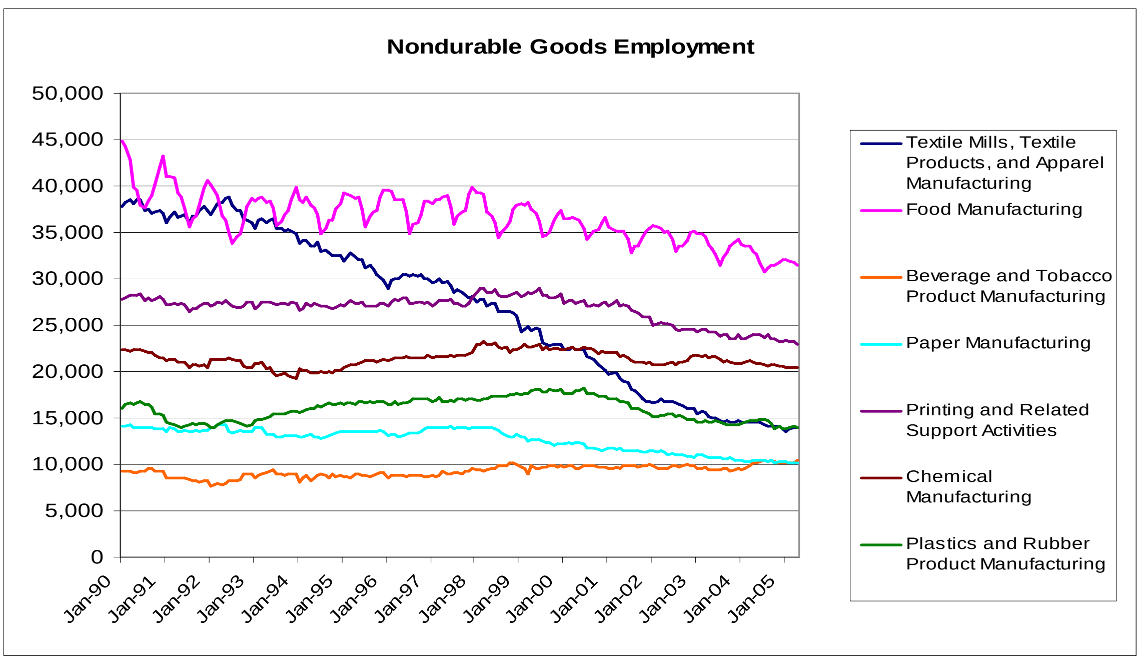
- The three most common skills across the fifteen largest transportation equipment manufacturing occupations are mathematics, equipment selection, and reading comprehension.

- The transportation equipment manufacturing occupations that require the greatest number of skills are *aerospace engineers*, requiring 27 skills, ranging from critical thinking to troubleshooting, and *first-line supervisors/managers of production and operating workers*, requiring 19 skills, ranging from coordination to social perceptiveness.

TRANSPORTATION EQUIPMENT MANUFACTURING OCCUPATIONS							
Florida Statewide							
					% of	2005 Average	
	Employment		Annual Change		Industry	Hourly	Training
Occupation Title	2005	2012	Total	Percent	Total	Wage	Requirement
Team Assemblers	3,633	3,739	15	0.4	8.5	11.17	High School Diploma or GED
Aerospace Engineers	2,441	2,218	-32	-1.3	5.7	37.05	Bachelor's Degree
Welders, Cutters, Solderers, and Brazers	1,755	1,969	31	1.7	4.1	14.09	Post Secondary Adult Vocational Certificate
Fiberglass Laminators and Fabricators	1,580	1,670	13	0.8	3.7	12.19	Post Secondary Adult Vocational Certificate
Aircraft Mechanics and Service Technicians	1,278	1,306	4	0.3	3.0	18.65	Post Secondary Adult Vocational Certificate
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	1,269	1,171	-14	-1.1	3.0	17.00	Post Secondary Adult Vocational Certificate
Carpenters	1,248	1,424	25	2.0	2.9	15.14	Post Secondary Adult Vocational Certificate
First-Line Supervisors/Managers of Production and Operating Workers	1,176	1,287	16	1.3	2.7	23.75	Post Secondary Adult Vocational Certificate
Electrical and Electronic Equipment Assemblers	1,101	1,027	-11	-1.0	2.6	10.96	Post Secondary Adult Vocational Certificate
Inspectors, Testers, Sorters, Samplers, and Weighers	1,021	957	-9	-0.9	2.4	15.28	High School Diploma or GED
Industrial Engineers	671	672	0	0.0	1.6	27.96	Bachelor's Degree
Structural Metal Fabricators and Fitters	662	675	2	0.3	1.5	13.42	Post Secondary Adult Vocational Certificate
Sheet Metal Workers	646	625	-3	-0.5	1.5	13.40	Post Secondary Adult Vocational Certificate
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	641	654	2	0.3	1.5	11.17	High School Diploma or GED
Electromechanical Equipment Assemblers	629	633	1	0.1	1.5	11.76	Post Secondary Adult Vocational Certificate

Nondurable Goods Manufacturing

- The two largest sectors in nondurable goods manufacturing are food manufacturing and printing and related support activities. Together, these two industries accounted for 42.1 percent of nondurable goods manufacturing employment.



- The nondurable goods manufacturing sector with the highest 2004 average annual wage was chemical manufacturing ($50,255), followed by paper manufacturing ($49,935).

- Nondurable goods manufacturing sectors with the fastest growing average annual wages between 2001 and 2004 were textile mills, textile products, and apparel manufacturing (21.7 percent) and printing and related support activities (11.3 percent).

Food Manufacturing

- The food manufacturing industry lost 1,000 jobs over the year. This industry has lost 7,100 jobs since June 1990.

- The fifteen largest occupations in the food manufacturing industry represent nearly half of total employment in this industry.

- Average hourly wages among the fifteen largest food manufacturing occupations range from a high of $20.87 for *first-line supervisors/managers of production and operating workers* to a low of $7.65 for *meat, poultry, and fish cutters and trimmers*.

- Twelve of the largest food manufacturing occupations are projected to gain jobs between 2005 and 2012.

- The occupation with the fastest projected growth rate in the food manufacturing industry is *bakers,* 1.9 percent.

- Only three of the fifteen largest food manufacturing occupations require more than a high school diploma.

- The two most common skills across the fifteen largest food manufacturing occupations are operation and control and reading comprehension.

- The food manufacturing occupations that require the greatest number of skills are *food cooking machine operators and tenders*, requiring 22 skills and *first-line supervisors/managers of production and operating workers*, requiring 19 skills.

FOOD MANUFACTURING OCCUPATIONS

Florida Statewide

Occupation Title	Employment 2005	Employment 2012	Annual Change Total	Annual Change Percent	% of Industry Total	2005 Average Hourly Wage	Training Requirement
Packers and Packagers, Hand	2,256	2,303	7	0.3	6.5	9.19	Less than a High School Diploma
Packaging and Filling Machine Operators and Tenders	1,935	2,003	10	0.5	5.6	12.26	Less than a High School Diploma
Bakers	1,815	2,058	35	1.9	5.2	11.06	High School Diploma or GED
Food Batchmakers	1,528	1,673	21	1.4	4.4	11.28	Less than a High School Diploma
Slaughterers and Meat Packers	1,422	1,532	16	1.1	4.1	8.71	Less than a High School Diploma
Laborers and Freight, Stock, and Material Movers, Hand	1,249	1,138	-16	-1.3	3.6	9.89	Less than a High School Diploma
First-Line Supervisors/Managers of Production and Operating Workers	1,087	1,147	9	0.8	3.1	20.87	Post Secondary Adult Vocational Certificate
Meat, Poultry, and Fish Cutters and Trimmers	1,039	1,109	10	1.0	3.0	7.65	Less than a High School Diploma
Industrial Truck and Tractor Operators	992	980	-2	-0.2	2.9	12.36	Post Secondary Adult Vocational Certificate
Food Cooking Machine Operators and Tenders	873	907	5	0.6	2.5	11.7	High School Diploma or GED
Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	789	887	14	1.8	2.3	7.83	Less than a High School Diploma
Helpers--Production Workers	762	773	2	0.2	2.2	10.65	Less than a High School Diploma
Mixing and Blending Machine Setters, Operators, and Tenders	716	691	-4	-0.5	2.1	12.12	High School Diploma or GED
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	706	732	4	0.5	2.0	9.62	Less than a High School Diploma
Maintenance and Repair Workers, General	642	674	5	0.7	1.9	15.24	Post Secondary Adult Vocational Certificate

Printing and Related Support Activities

- The printing and related support activities industry lost 1,100 jobs (-4.6 percent) over the year in June 2005.

- Occupations with the most employment in the printing and related support activities industry are: *printing machine operators*; *job printers*; and *bindery workers*. Together these three occupations account for one-third of the employment in this industry.

- Average hourly wages among the fifteen largest printing and related support activities occupations range from a high of $51.59 for *general and operations managers* to a low of $9.33 for *packers and packagers, hand*.

- Six of the fifteen largest occupations in the printing and related support activities industry make an average hourly wage of at least $15.00.

- The only occupations in the printing and related support activities industry projected to gain jobs between 2005 and 2012 are *desktop publishers* and *graphic designers*.

- Seven of the fifteen largest printing and related support activities occupations require a postsecondary adult vocational certificate.

- The most common skills found across the top five printing and related support activities occupations are: equipment selection, operation and control, quality control analysis, and reading comprehension.

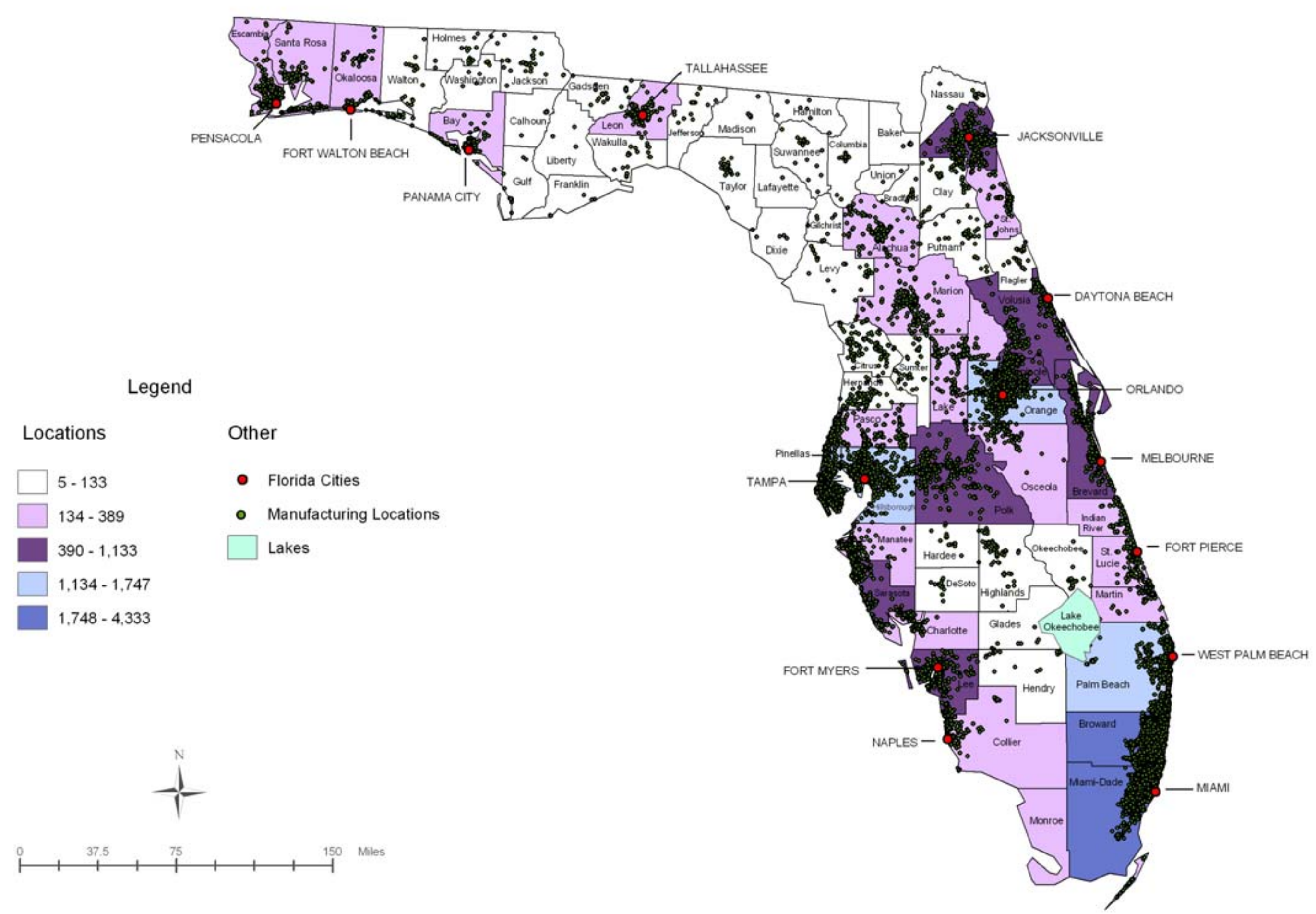
- The printing and related support occupations that require the greatest number of skills are *general and operations managers*, requiring 22 skills and *first-line supervisors/managers of production and operating workers*, requiring 19 skills.

PRINTING AND RELATED SUPPORT ACTIVITIES OCCUPATIONS

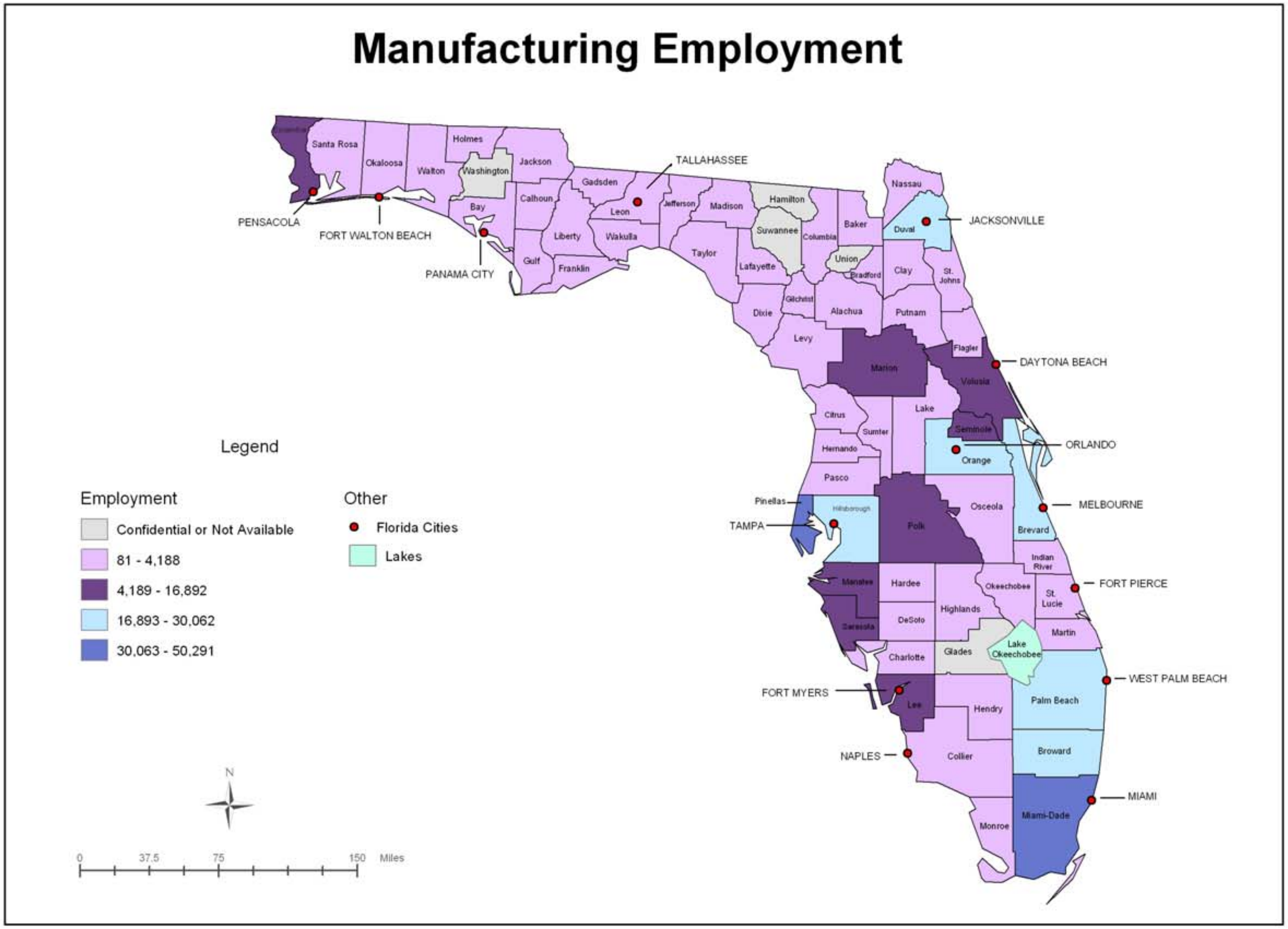
Florida Statewide

Occupation Title	Employment 2005	Employment 2012	Annual Change Total	Annual Change Percent	% of Industry Total	2005 Average Hourly Wage	Training Requirement
Printing Machine Operators	3,531	3,312	-31	-0.9	14.8	13.66	Post Secondary Adult Vocational Certificate
Job Printers	2,655	2,540	-16	-0.6	11.1	14.70	Post Secondary Adult Vocational Certificate
Bindery Workers	1,826	1,454	-53	-2.9	7.6	11.70	High School Diploma or GED
Prepress Technicians and Workers	1,675	1,345	-47	-2.8	7.0	14.96	Post Secondary Adult Vocational Certificate
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,237	1,174	-9	-0.7	5.2	31.47	Post Secondary Adult Vocational Certificate
Customer Service Representatives	1,157	1,098	-8	-0.7	4.8	15.11	High School Diploma or GED
First-Line Supervisors/Managers of Production and Operating Workers	1,032	979	-8	-0.7	4.3	23.67	Post Secondary Adult Vocational Certificate
Shipping, Receiving, and Traffic Clerks	624	501	-18	-2.8	2.6	11.76	High School Diploma or GED
Graphic Designers	609	618	1	0.2	2.5	17.00	Post Secondary Adult Vocational Certificate
Office Clerks, General	508	436	-10	-2.0	2.1	10.23	High School Diploma or GED
General and Operations Managers	424	394	-4	-1.0	1.8	51.59	Community College Certificate or Degree
Packers and Packagers, Hand	413	355	-8	-2.0	1.7	9.33	Less than a High School Diploma
Desktop Publishers	403	415	2	0.4	1.7	17.10	Post Secondary Adult Vocational Certificate
Machine Feeders and Offbearers	376	331	-6	-1.7	1.6	9.46	Less than a High School Diploma
Laborers and Freight, Stock, and Material Movers, Hand	374	307	-10	-2.6	1.6	9.83	Less than a High School Diploma

Manufacturing Establishments by Location



Source: ALMIS Employer Data Base, InfoUSA
Prepared by: Florida Agency for Workforce Innovation, Labor Market Statistics, July 2005.



Source: Florida Agency for Workforce Innovation, Labor Market Statistics,
Quarterly Census of Employment and Wages (2004 Preliminary Annual).
Prepared: July 2005.

EMPLOY FLORIDA BANNER Center Manufacturing

Needs Assessment
Appendix 2

State of Florida Manufacturing Profile

National Association of Manufacturers

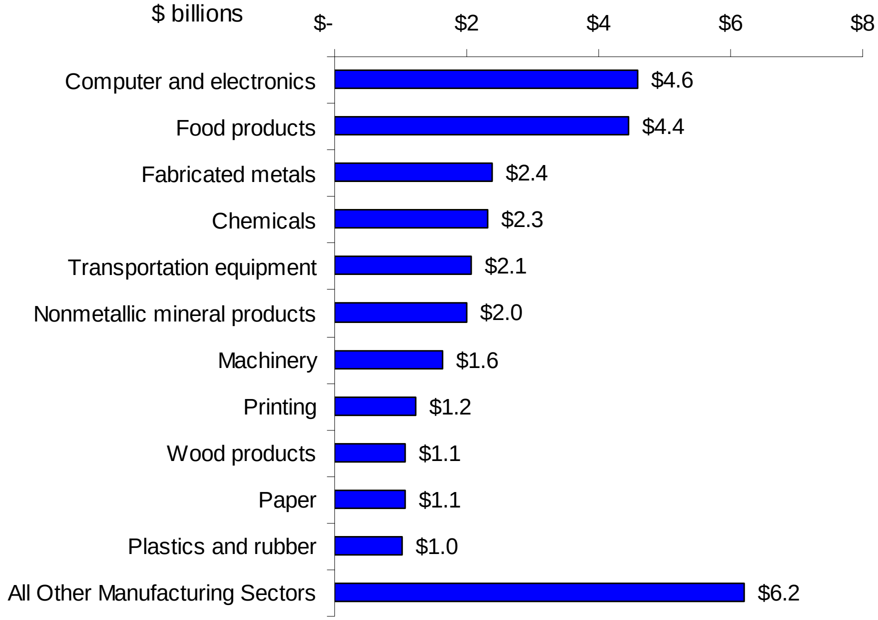
Prepared June 2006

Facts About Florida Manufacturing

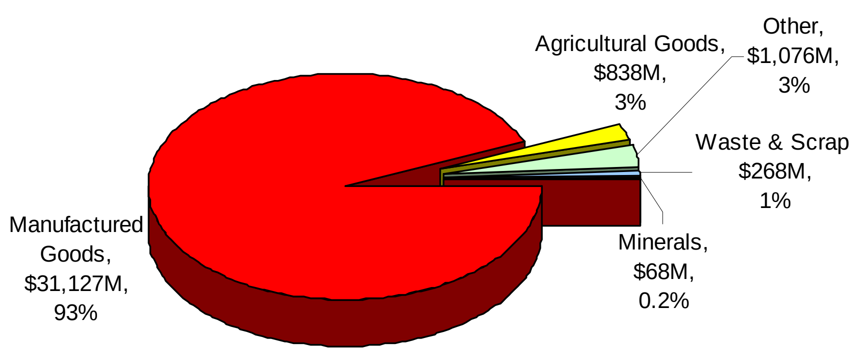
Manufacturing Employment and Wages	
Employees, April 2006 Employees, 2000	400,800 462,500
Manufacturing businesses, 2004	16,540
Average annual manufacturing wages*, 2004 Average annual state wages*, 2004 *Wages do not include benefits as data is not available by state	$42,473 $34,438

Manufacturing Share of Florida, 2004	
Gross State Product (GSP), $ billions	$609.4
Manufacturing share of Florida, $ billions	$31
Manufacturing share as percent of GSP	5%

Top Fl Manufacturing Sectors 2003,
$ billions



Bulk of Florida Exports are Manufactured Goods 2005[a],
$ millions,
as a percent of total merchandise exports



Florida Total 2005 Exports: $33.4 billion

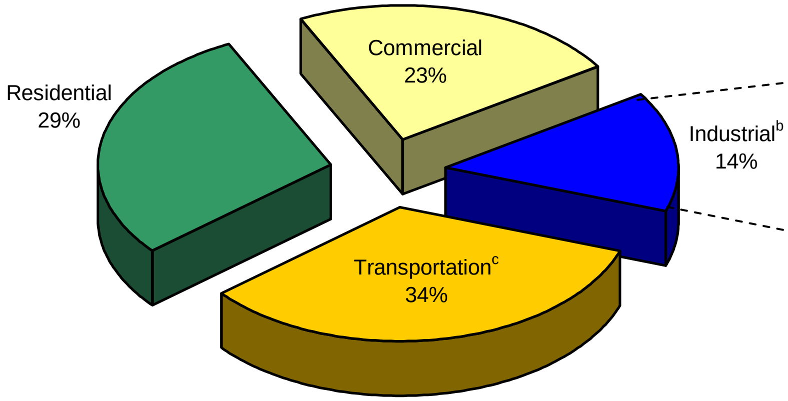
Sources: U.S. Bureau of Labor Statistics, U.S. Bureau of Economic Analysis, U.S. Census Bureau and Commerce Department
[a]/ Service exports data are not available by state.

National Association of Manufacturers

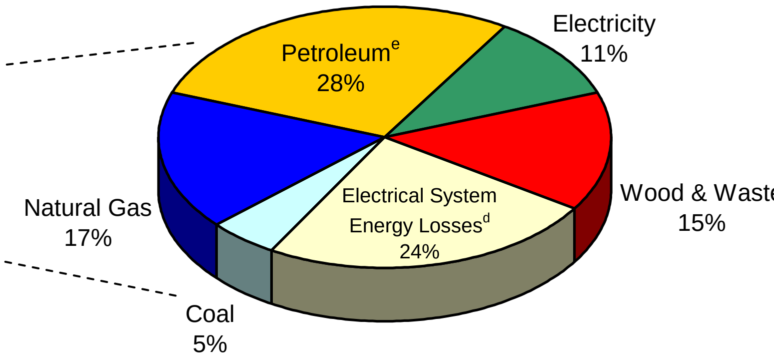
June 2006
www.nam.org/statedata

Energy Facts: Florida Industries

Florida Industries Use 14% of Energy Supply,
End-Use Sectors of Energy,
as a percent of total energy consumed[a]



Florida Industries' Energy Usage[b],
as a percent of total energy usage[a]



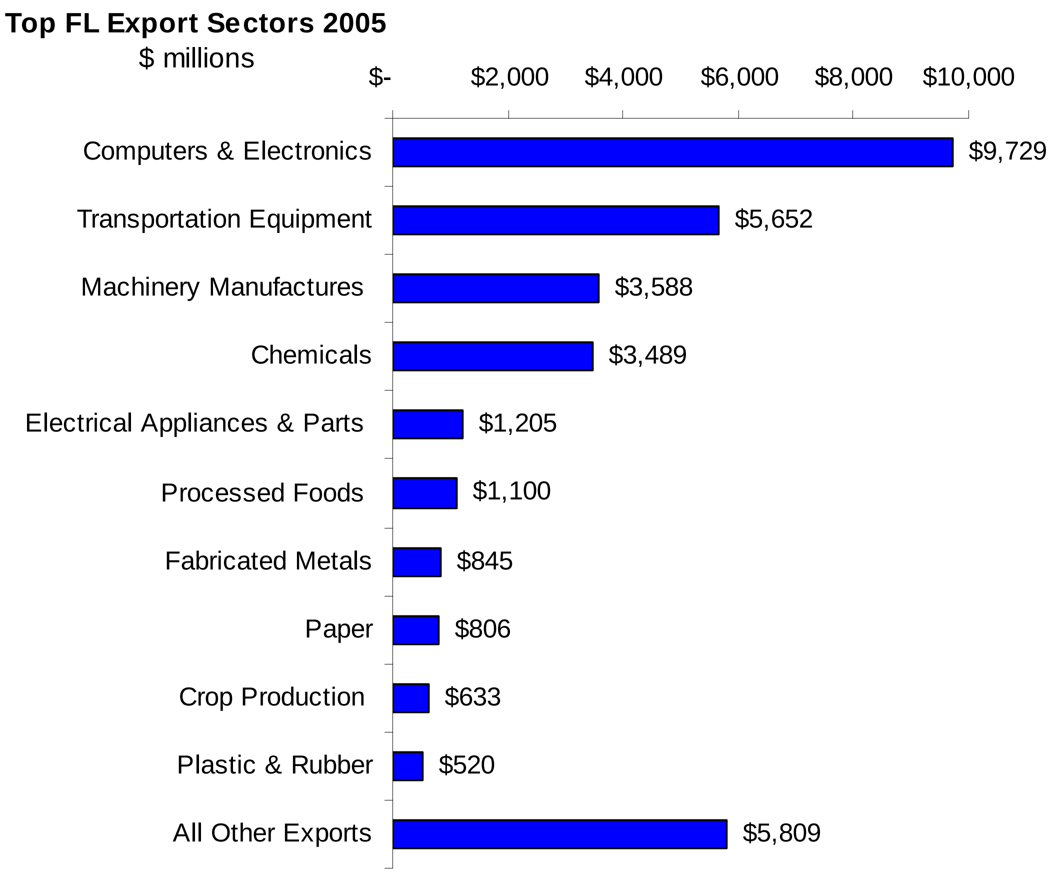
<u>Fact</u>: More than 80% of the area in the Outer Continental Shelf is off-limits to energy development, while the Department of Energy estimates that maintaining US economic growth through 2025 will require a 40% increase in natural gas. (Source: U.S. Department of Energy)

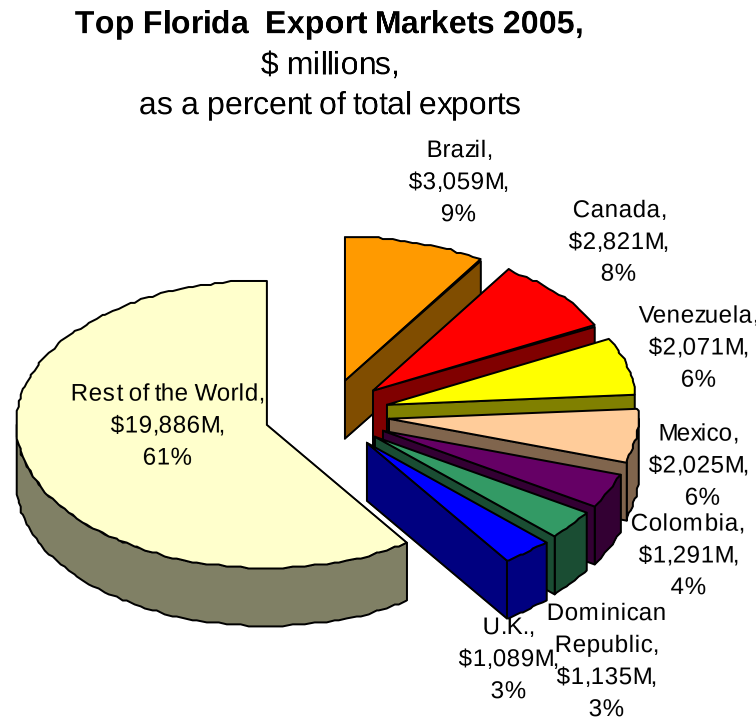
Source: Department of Energy, Energy Information Administration (EIA)
a/ Energy usage is measured in trillions of British thermal units (Btu).
b/ The manufacturing sector consumes 70 percent of industrial's usage nationwide, according to EIA's Manufacturing Energy Consumption data. The industrial sector includes manufacturing, agriculture, forestry, fishing, and hunting, mining (including oil and gas extraction), and construction sectors. Florida industries consumed 598 trillion Btu or 14% of the total 4,135 trillion Btu consumed in the state, according to the EIA's 2001 statistics.
c/ The transportation sector includes residential, commercial and industrial energy usage. Disaggregated data for transportation is not available.
d/ Incurred in the generation, transmission and distribution of electricity plus plant use and unaccounted for electrical system energy losses.
e/ Petroleum includes the following sources: asphalt and road oil, distillate fuel, kerosene, LPG (Liquefied Petroleum Gas), lubricants, motor gasoline, residual fuel and other petroleum products.

National Association of Manufacturers

June 2006
www.nam.org/statedata

Trade Facts: Florida Manufacturing





Fact: Florida manufacturers in 2005 exported more than $31 billion of the $33 billion in total goods, or 93% of exports. (Source: U.S. Commerce Department).

National Association of Manufacturers

June 2006
www.nam.org/statedata

EMPLOY FLORIDA BANNER Center Manufacturing

Needs Assessment
Appendix 3

An Overview of the Manufacturing Component of the Florida Economy

The Institute for Economic Competitiveness
College of Business Administration
University of Central Florida

Prepared November 2005

An Overview of the Manufacturing Component of the Florida Economy

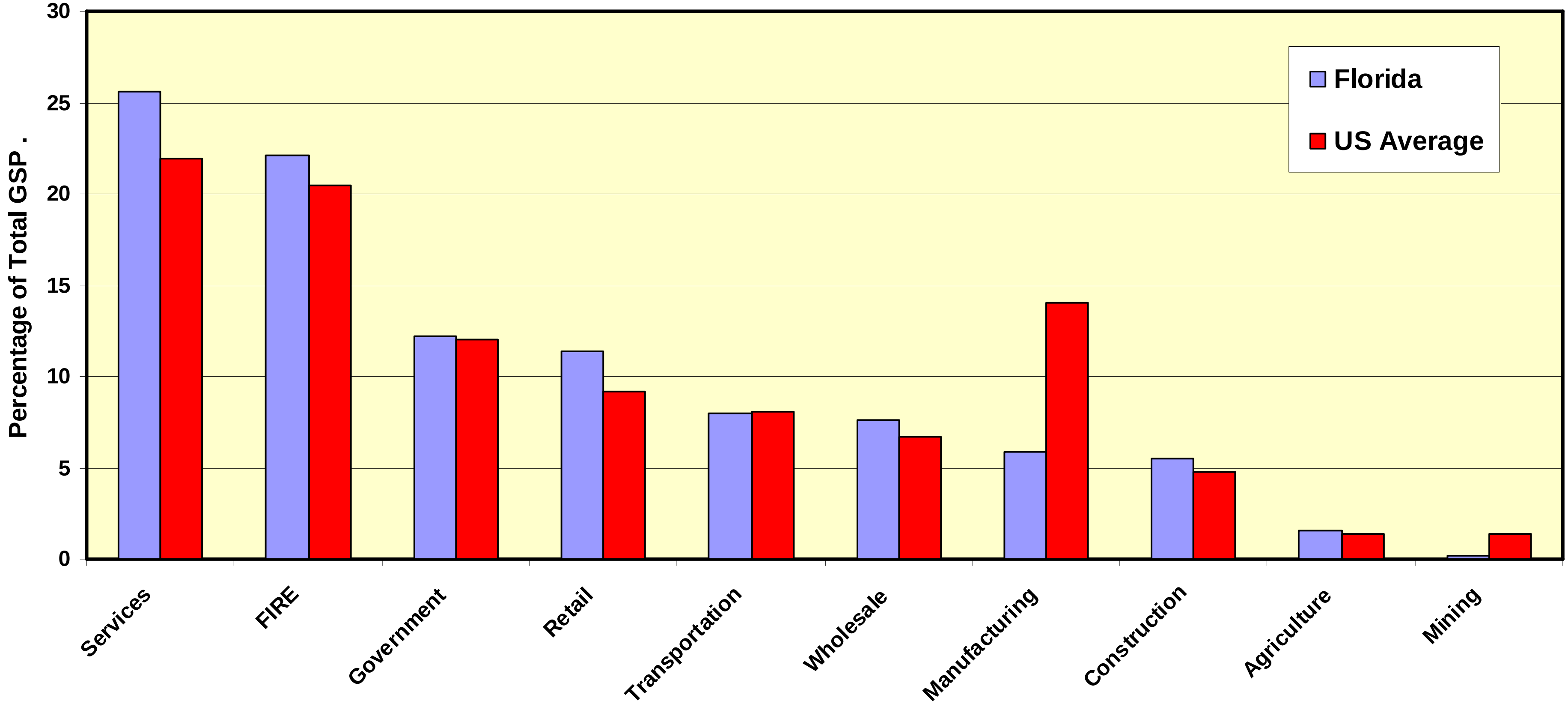
Prepared by:

The Institute for Economic Competitiveness
College of Business Administration

Funded by:

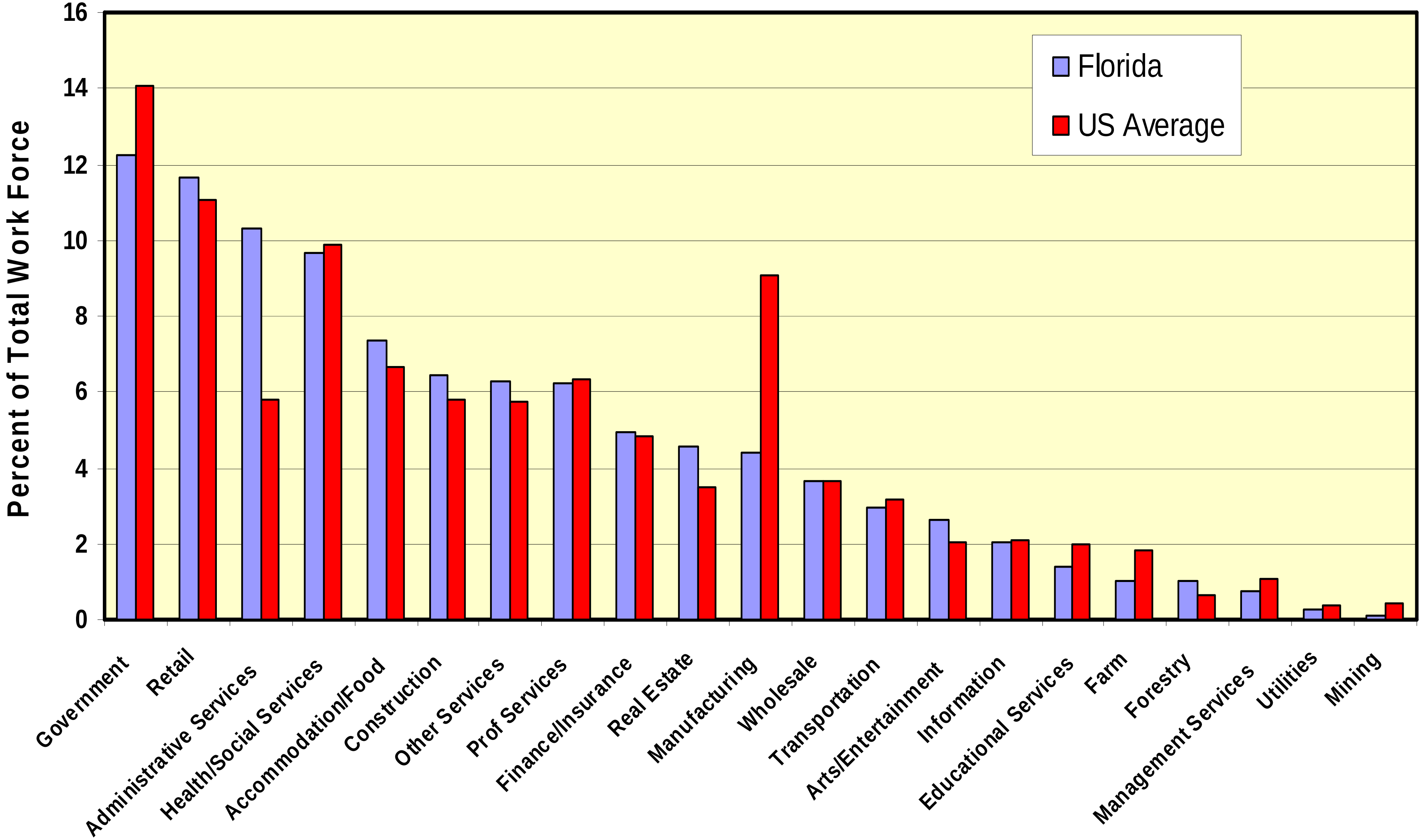
Florida Manufacturing Association
Enterprise Florida
Florida High Tech Corridor Council
UCF Office of Economic Development

Components of Gross State Product (GSP) (YE2002)



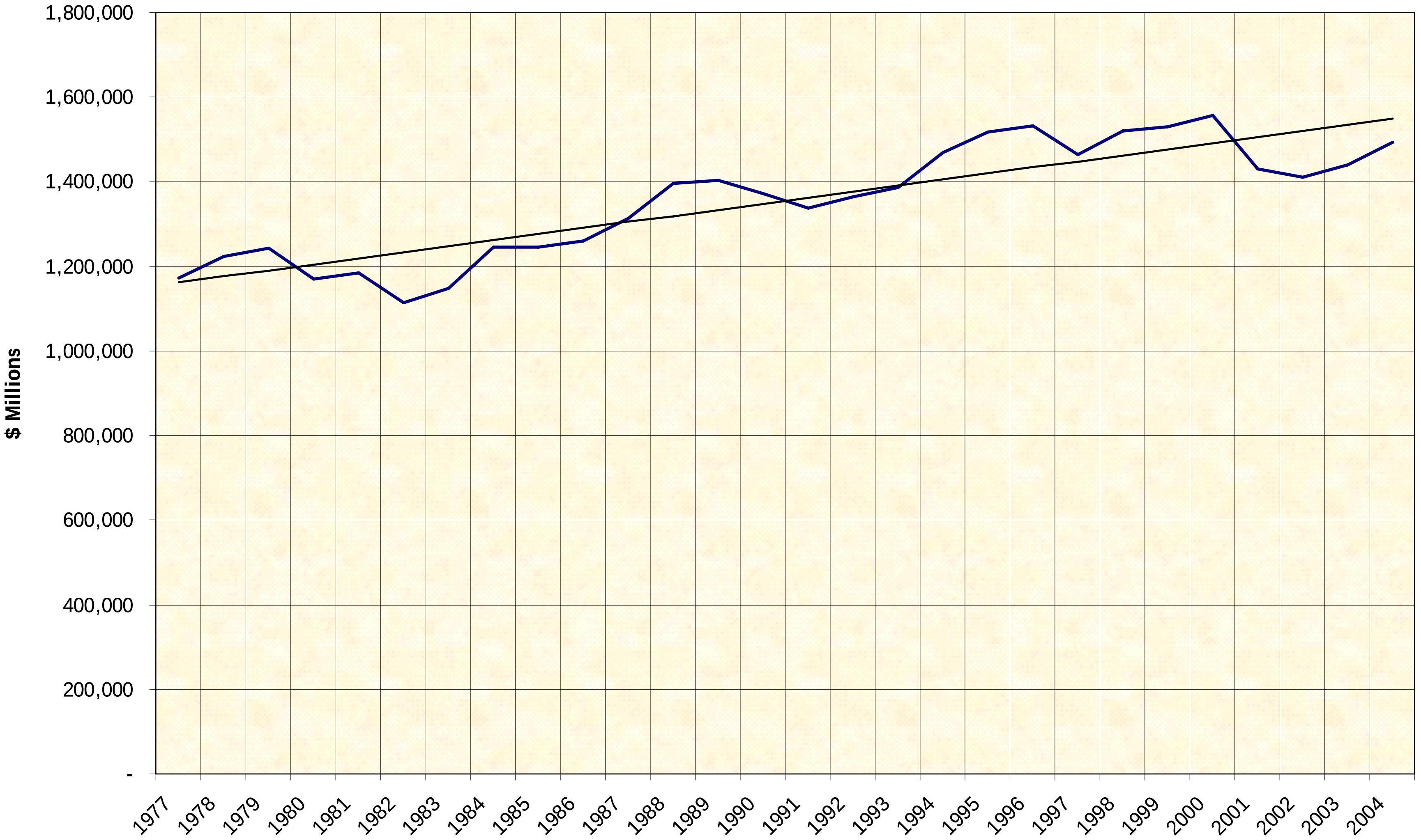
Source: US Bureau of Economic Analysis

Components of Work Force (YE2003)



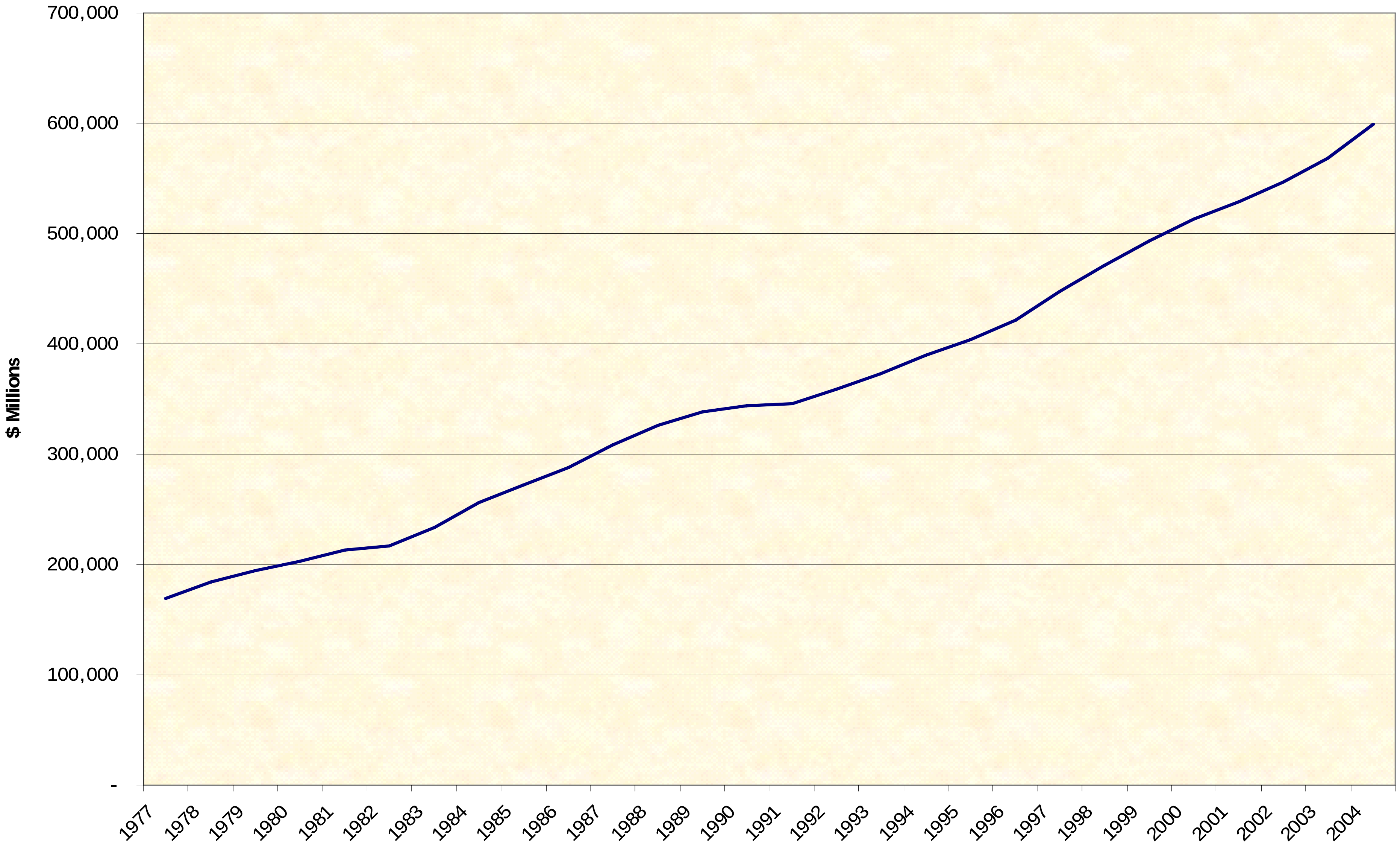
Source: US Bureau of Economic Analysis

US Manufacturing GSP in 2004 Dollars

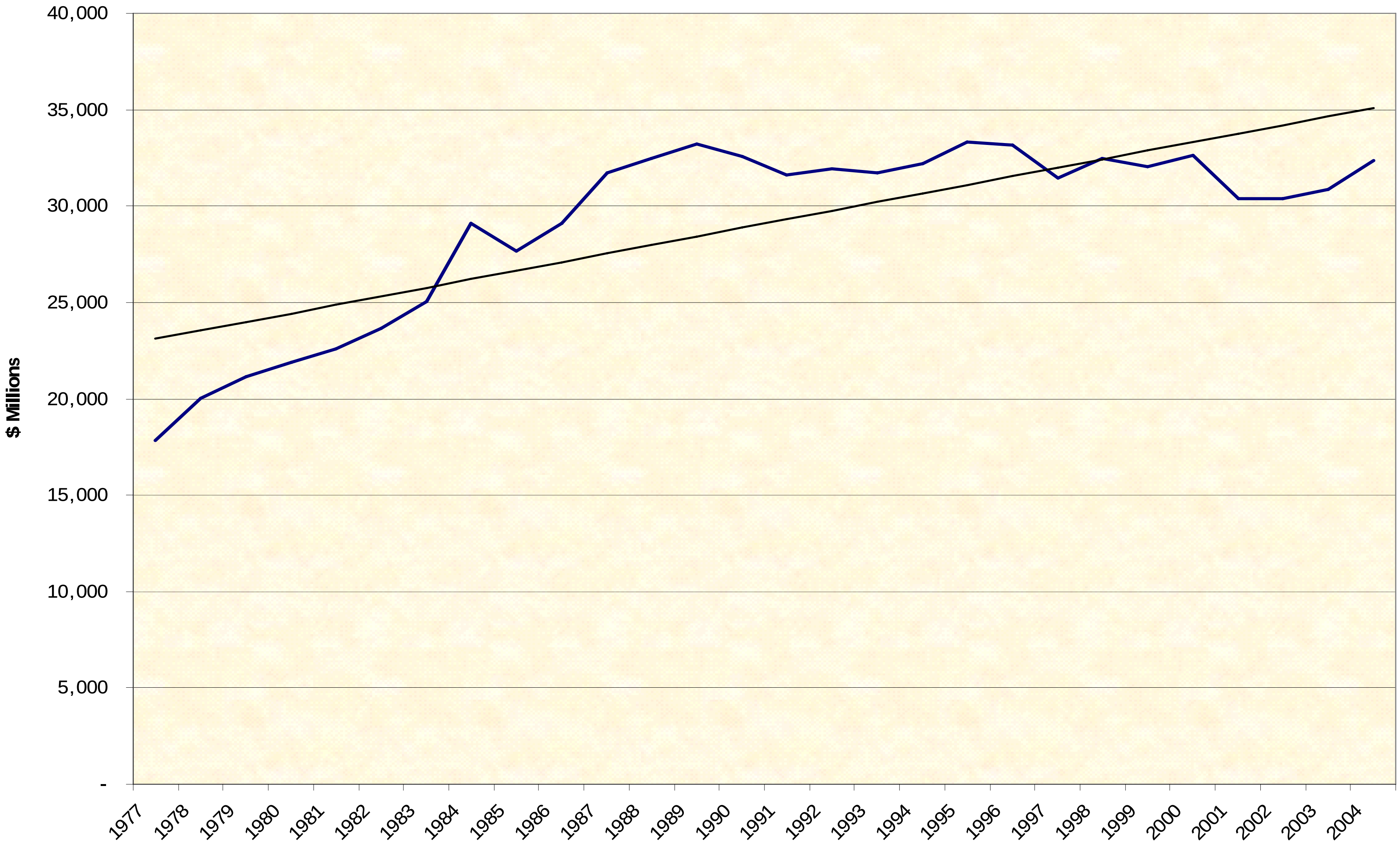


Source: US Bureau of Economic Analysis

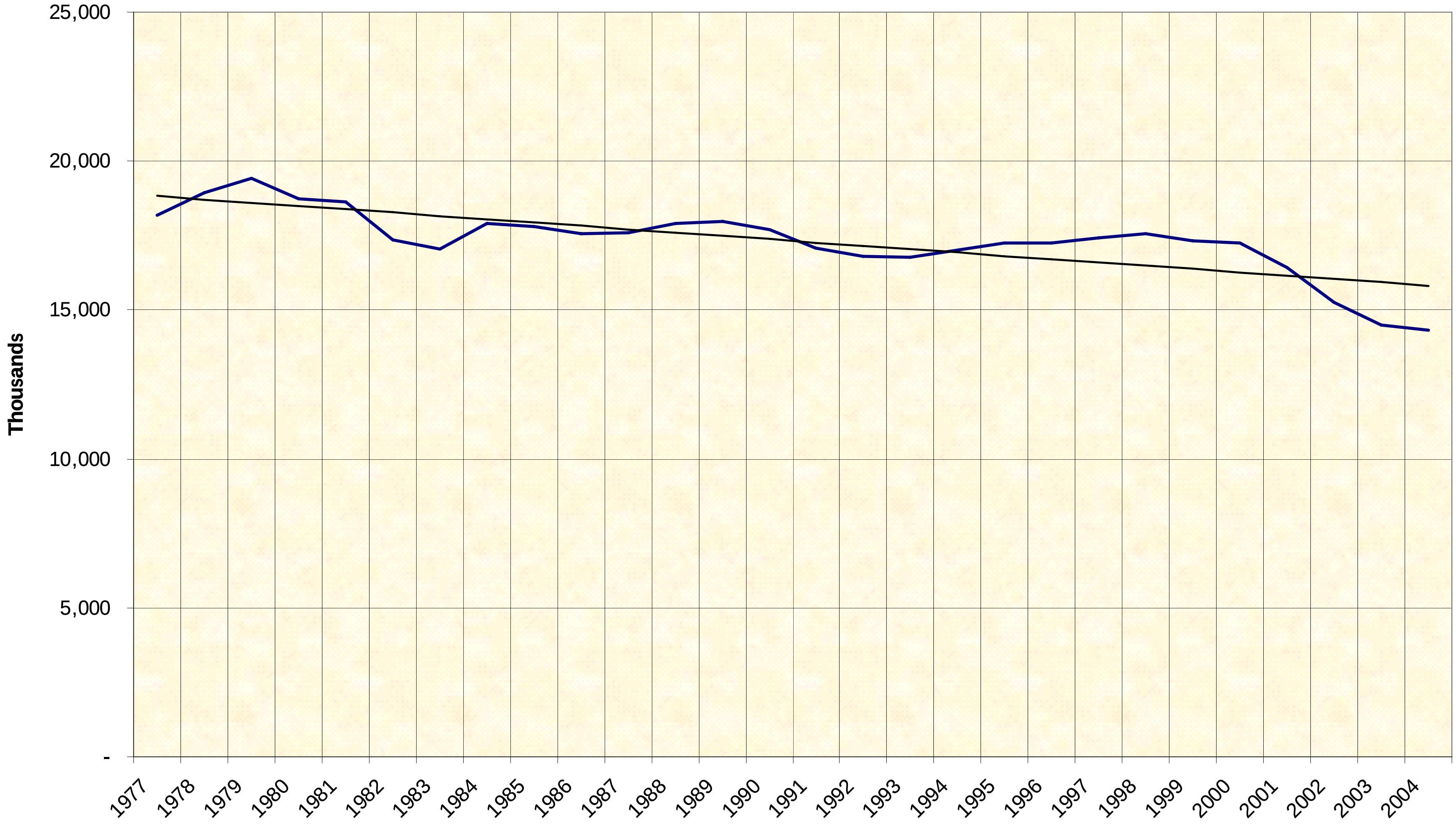
Florida Gross State Product (GSP) in 2004 Dollars



Florida Manufacturing GSP in 2004 Dollars

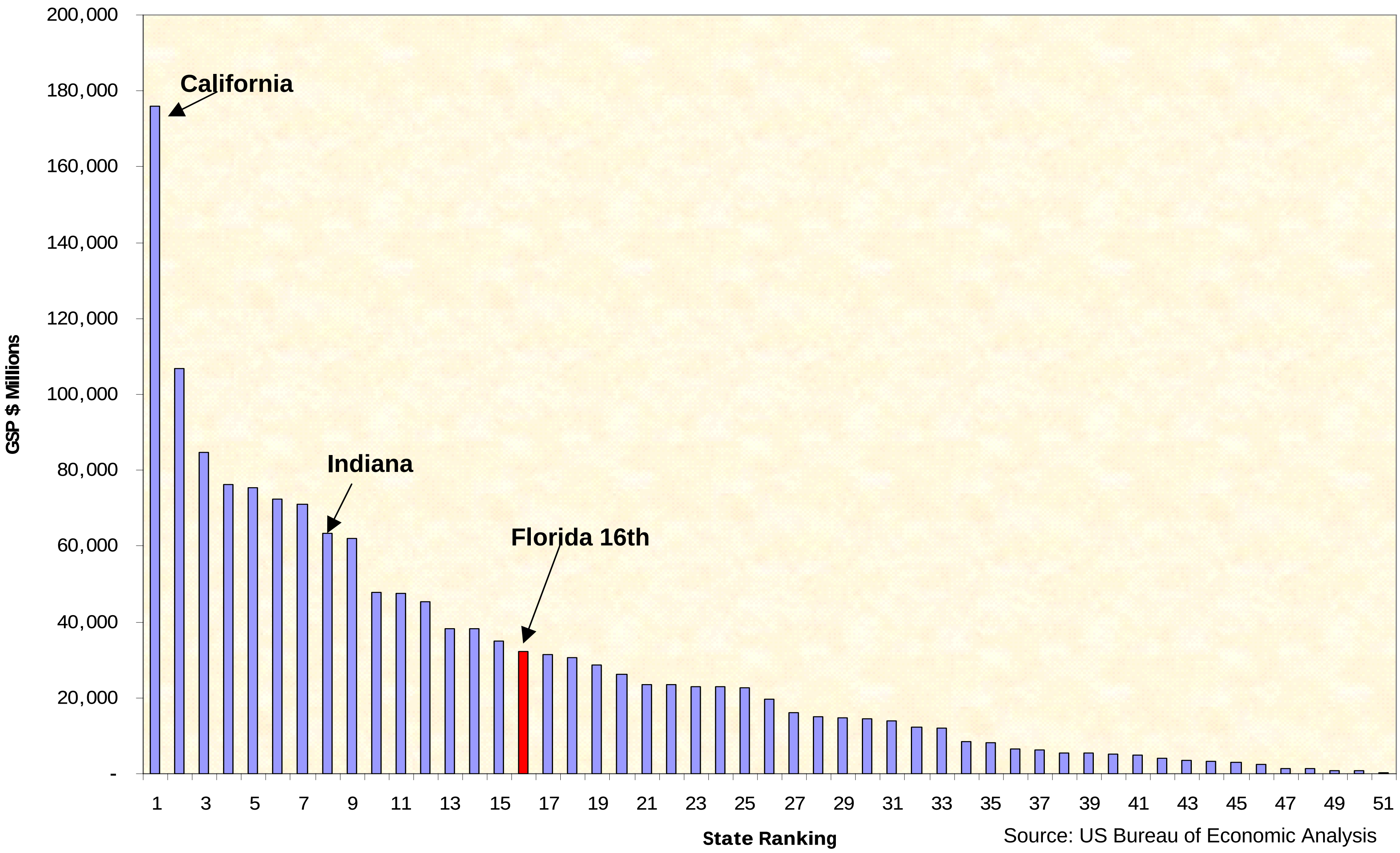


US Manufacturing Employment



Source: US Bureau of Labor Statistics

Manufacturing GSP (2004)



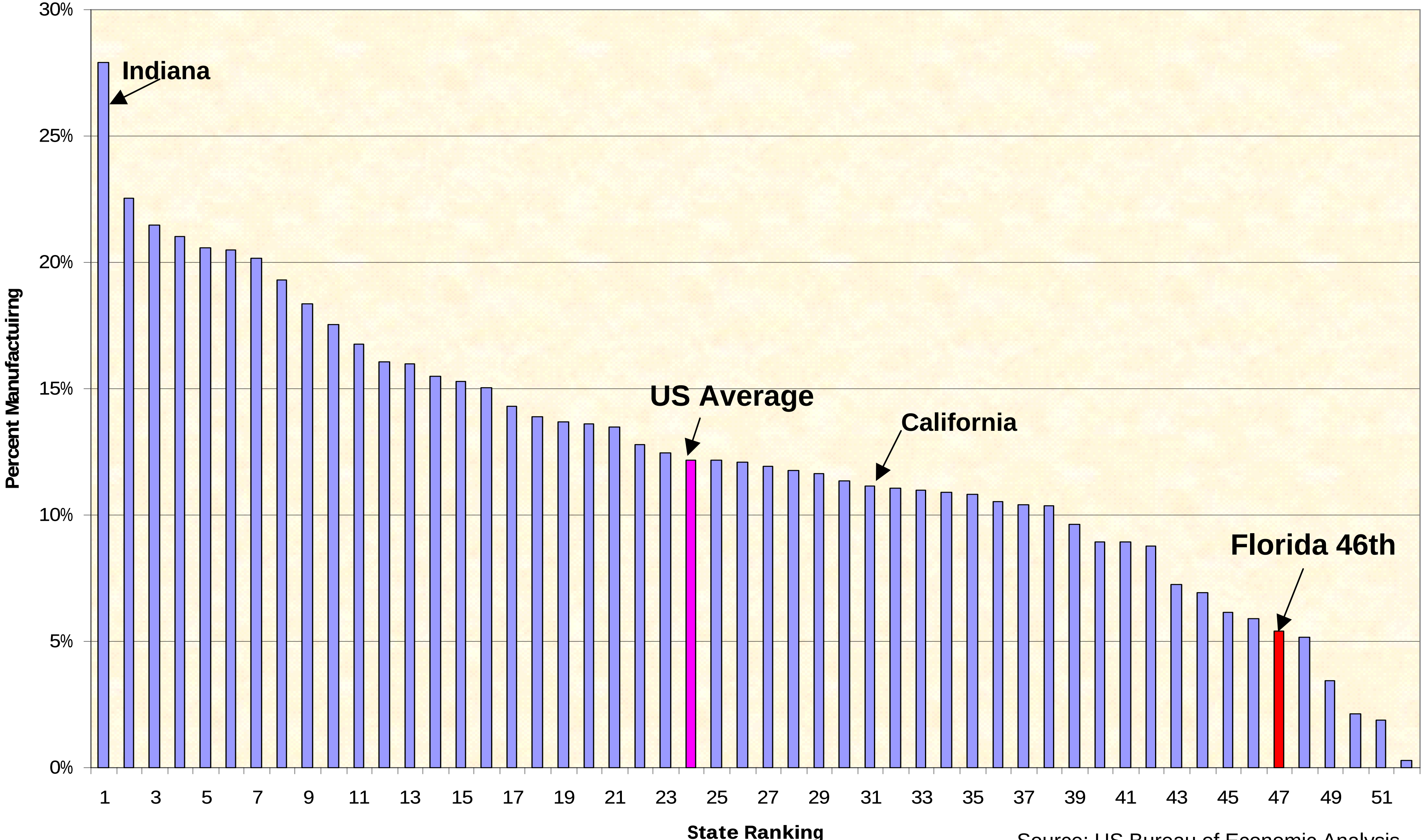
Source: US Bureau of Economic Analysis

States Ranked by Manufacturing GSP

Rank	State	Manufacturing GSP $ Millions	Rank	State	Manufacturing GSP $ Millions	Rank	State	Manufacturing GSP $ Millions
1	California	175,852	18	Minnesota	30,670	35	Nebraska	8,305
2	Texas	106,749	19	Kentucky	28,707	36	New Hampshire	6,470
3	Ohio	84,633	20	South Carolina	26,265	37	Idaho	6,231
4	Michigan	76,261	21	Arizona	23,550	38	West Virginia	5,470
5	Pennsylvania	75,281	22	Alabama	23,418	39	New Mexico	5,446
6	North Carolina	72,295	23	Washington	22,955	40	Maine	5,177
7	Illinois	71,027	24	Iowa	22,859	41	Delaware	4,841
8	Indiana	63,477	25	Connecticut	22,652	42	Rhode Island	4,006
9	New York	62,081	26	Oregon	19,581	43	Nevada	3,455
10	Wisconsin	47,685	27	Louisiana	16,103	44	South Dakota	3,181
11	Georgia	47,677	28	Kansas	14,897	45	Vermont	2,953
12	New Jersey	45,358	29	Arkansas	14,851	46	North Dakota	2,366
13	Virginia	38,344	30	Colorado	14,529	47	Montana	1,415
14	Tennessee	38,142	31	Maryland	14,062	48	Wyoming	1,412
15	Massachusetts	34,912	32	Mississippi	12,161	49	Hawaii	947
16	Florida	32,352	33	Oklahoma	11,981	50	Alaska	725
17	Missouri	31,481	34	Utah	8,567	51	District of Columbia	209

Source: US Bureau of Economic Analysis

Manufacturing as a Percent of GSP (2004)

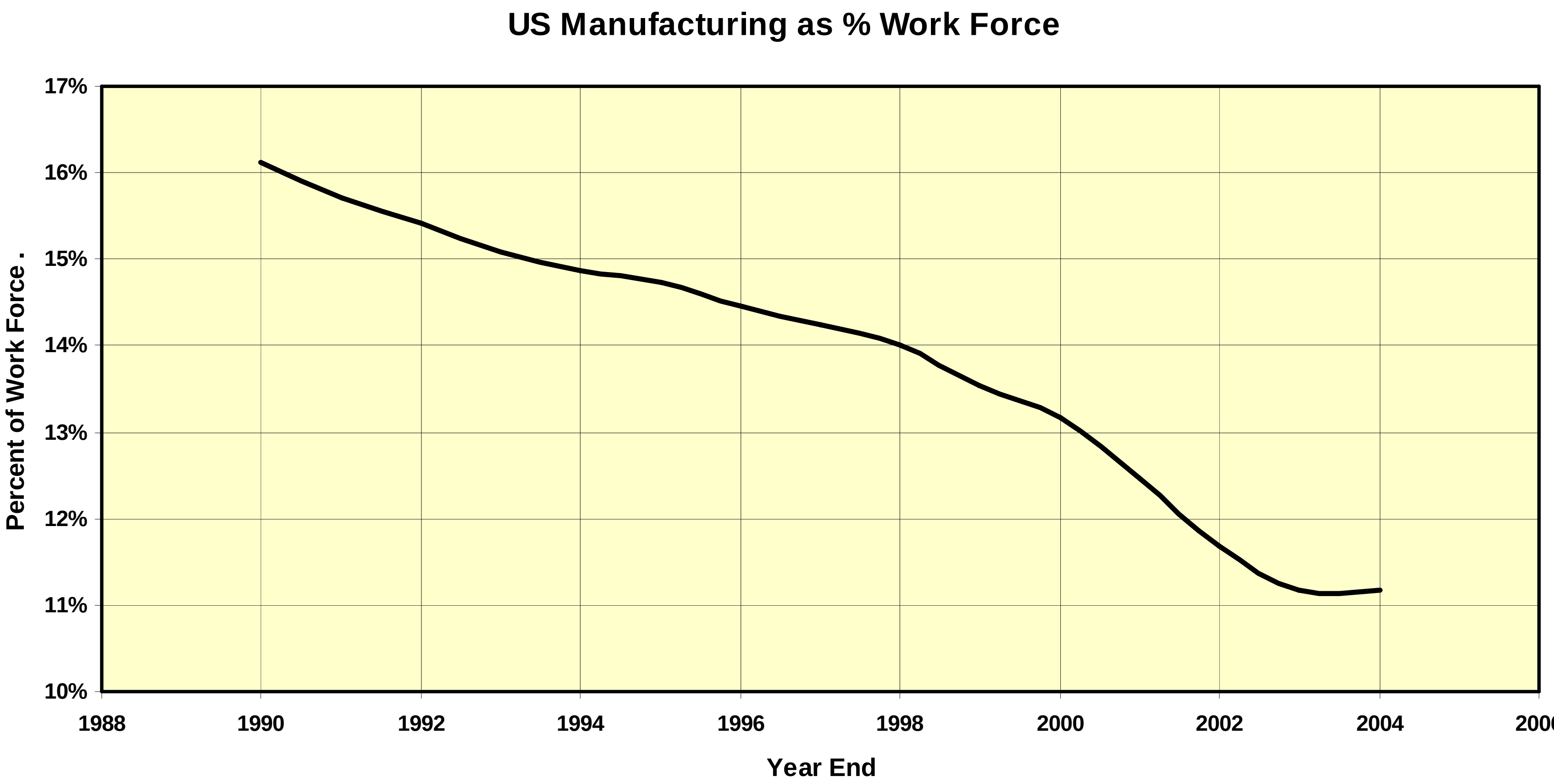


Source: US Bureau of Economic Analysis

States Ranked by Manufacturing as a Percent of GSP

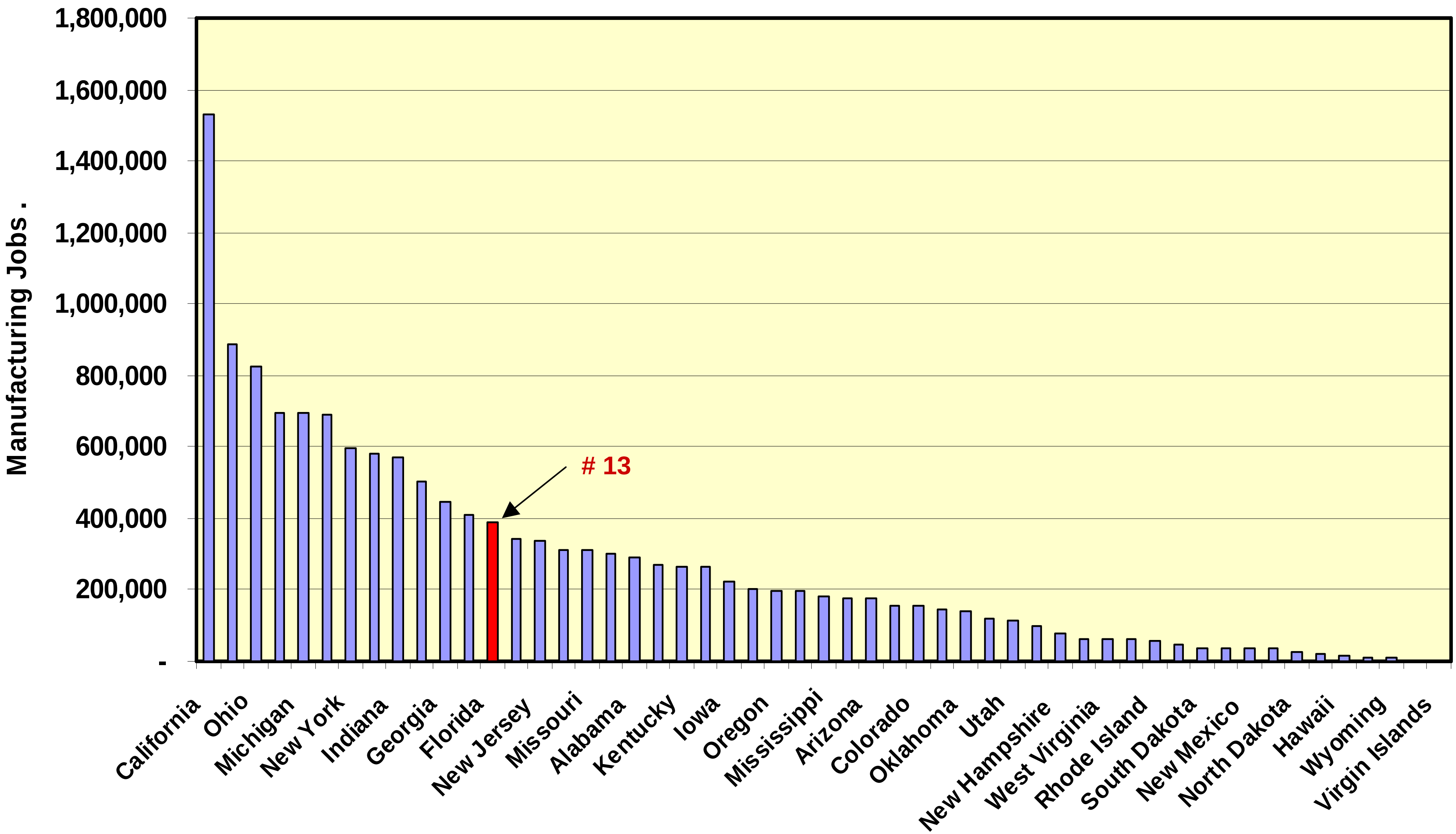
Rank	State	Manufacturing of GSP	Rank	State	Manufacturing of GSP	Rank	State	Manufacturing of GSP
1	Indiana	28%	18	Georgia	14%	35	Louisiana	11%
2	Wisconsin	23%	19	Minnesota	14%	36	North Dakota	10%
3	North Carolina	21%	20	Illinois	14%	37	Utah	10%
4	Kentucky	21%	21	Vermont	13%	38	Rhode Island	10%
5	Iowa	21%	22	New Hampshire	12%	39	New Mexico	9%
6	Michigan	20%	23	Connecticut	12%	40	Delaware	9%
7	Ohio	20%	24	Nebraska	12%	41	Washington	9%
8	South Carolina	19%	25	Texas	12%	42	Colorado	7%
9	Arkansas	18%	26	Maine	12%	43	New York	7%
10	Tennessee	18%	27	Arizona	12%	44	Maryland	6%
11	Alabama	17%	28	Virginia	12%	45	Wyoming	6%
12	Pennsylvania	16%	29	California	11%	46	Florida	5%
13	Mississippi	16%	30	Oklahoma	11%	47	Montana	5%
14	Missouri	15%	31	West Virginia	11%	48	Nevada	3%
15	Oregon	15%	32	Massachusetts	11%	49	Alaska	2%
16	Kansas	15%	33	New Jersey	11%	50	Hawaii	2%
17	Idaho	14%	34	South Dakota	11%	51	District of Columbia	0%

Source: US Bureau of Economic Analysis



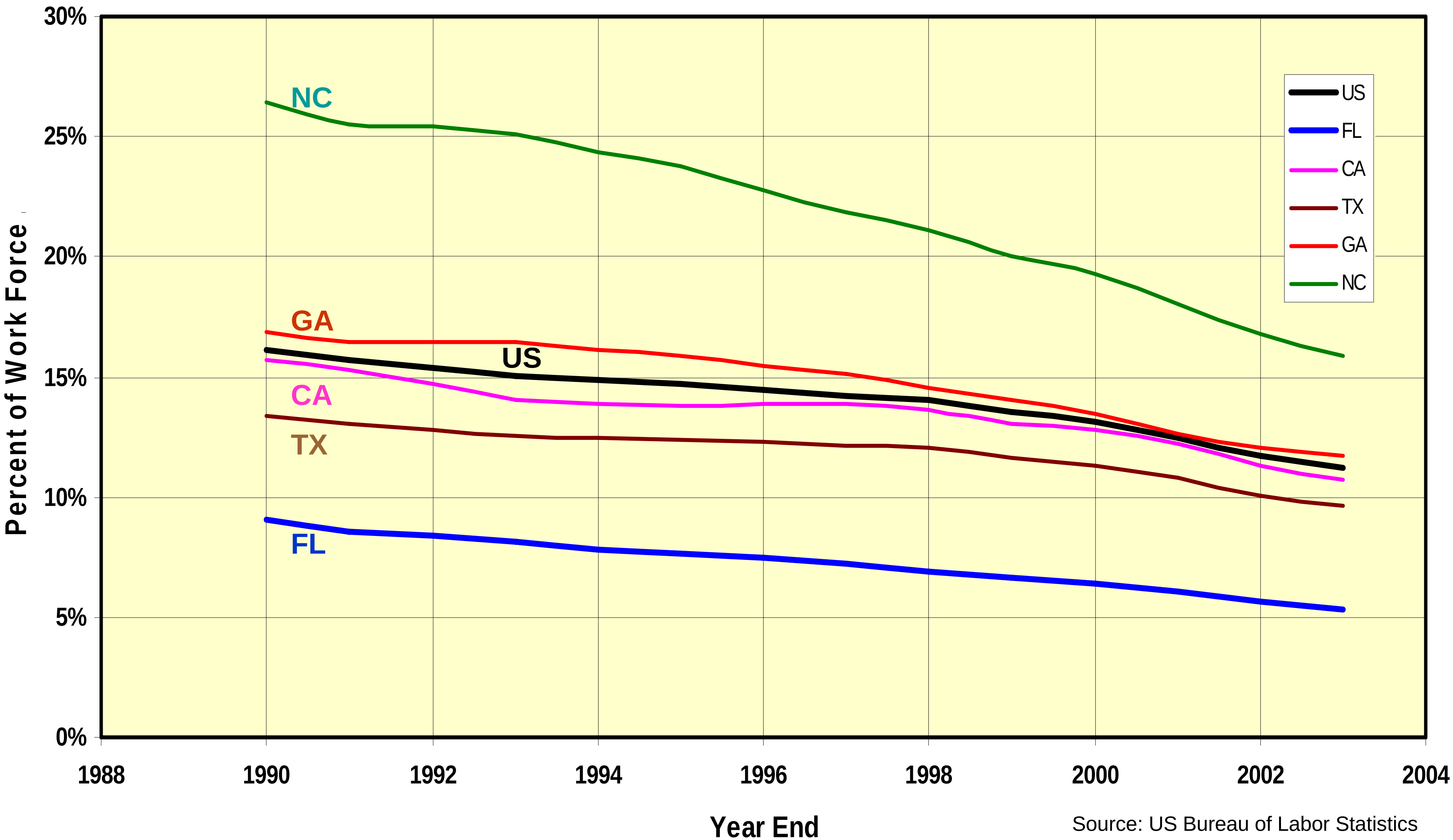
Source: US Bureau of Labor Statistics

US Manufacturing Jobs (YE 2004)



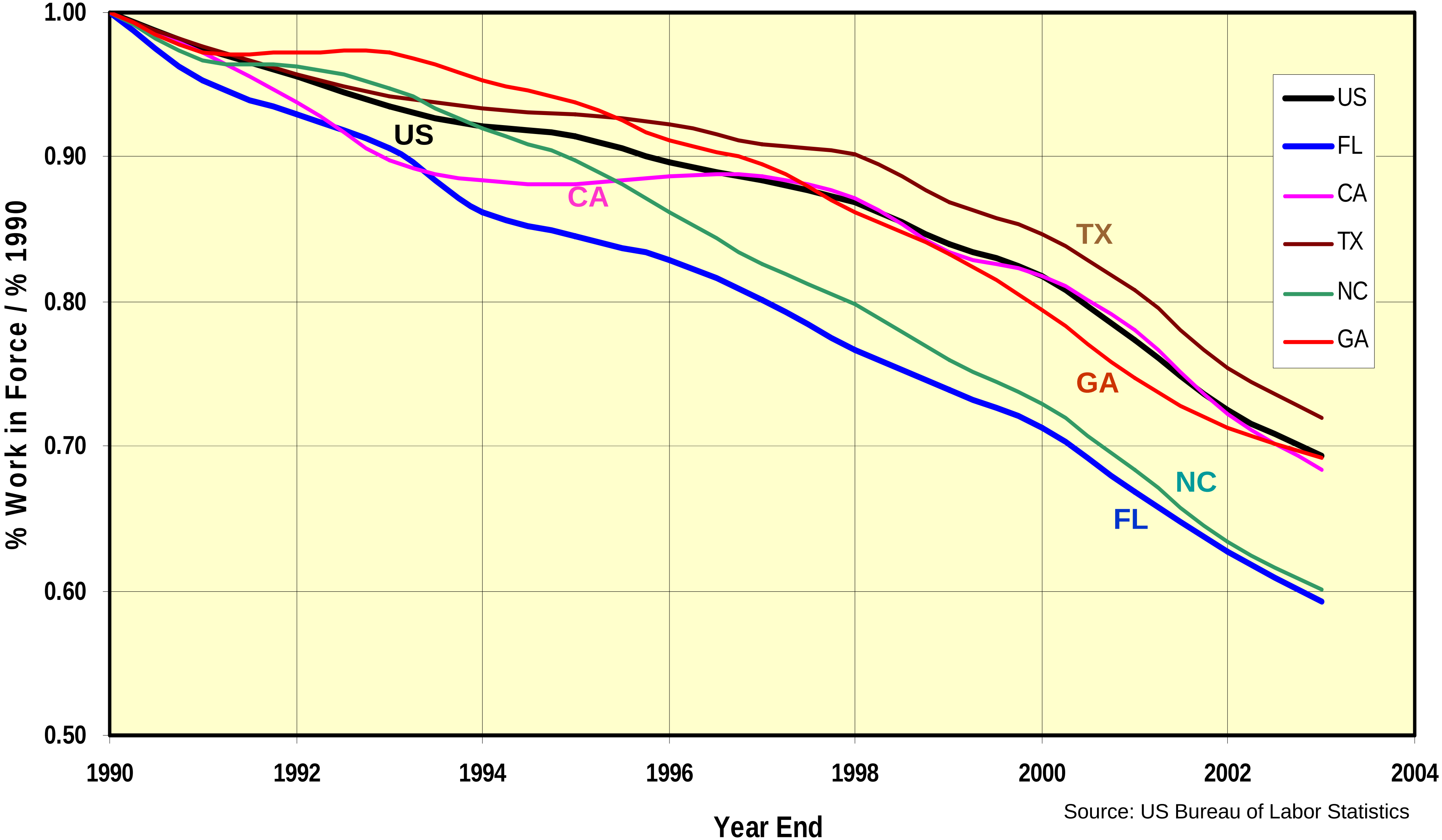
Source: US Bureau of Labor Statistics

Manufacturing as % of Work Force



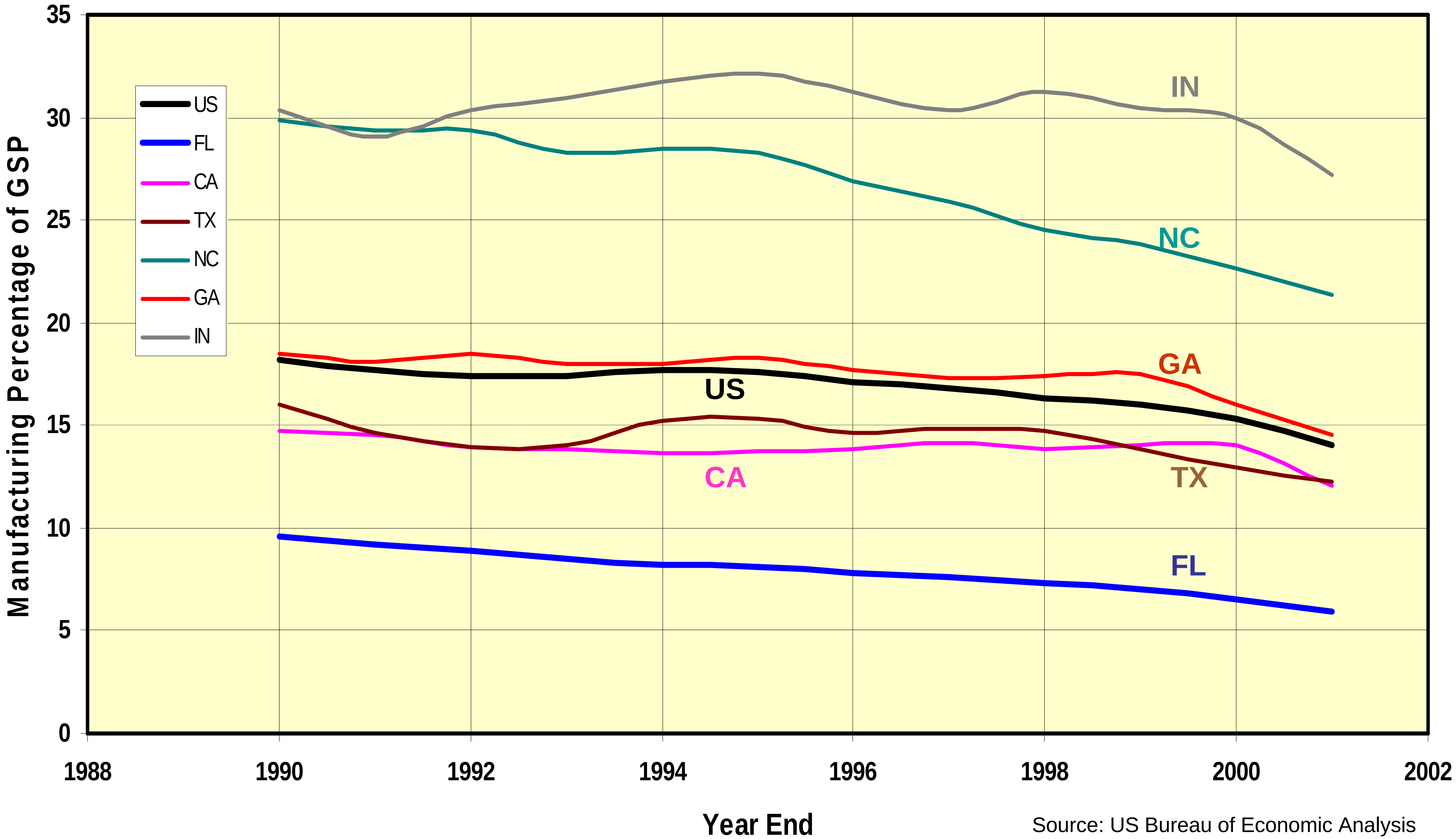
Source: US Bureau of Labor Statistics

Change in % of Work Force



Source: US Bureau of Labor Statistics

Change in Manufacturing Contribution to GSP



Source: US Bureau of Economic Analysis

EMPLOY FLORIDA BANNER Center Manufacturing

Needs Assessment
Appendix 4

Florida Manufacturing Profile

Manufacturers Association of Florida

Prepared January 2006

Manufacturers Association of Florida

(850) 402-2954 FAX (850) 402-0139 1625 Summit Lake Drive, # 300 Tallahassee, FL 32317
www.mafmfg.com

FLORIDA MANUFACTURING

Employment

- There are approximately 16,000 manufacturers in Florida (over 15,800); 71% of them employ fewer than 10 employees.
- Florida manufacturers are concentrated along the central and southeast parts of the state. The counties with the highest concentrations of manufacturing employees include: Broward, Hillsborough, Miami-Dade, Orange, Palm Beach and Pinellas.
- Florida manufacturers employ more than 388,000 Floridians; in fact, the Florida Agency for Workforce Innovation reports that manufacturing employment was up to 394,700 in June 2005, a gain of 3,200 jobs over the previous year showing some recovery from a low of 382,400 in November 2003. Recent newspaper reports show even more gains in manufacturing jobs nationwide in the past month. The manufacturing industry is showing signs of stabilizing after over three years of losses.
- In 2003, the Florida annual average wage for manufacturing was $40,935.
- Florida ranks #13 in the nation in manufacturing jobs, behind California and Georgia.

Economics

- Florida's gross state product was $600 billion in 2004; manufacturing represented approximately $32 billion of that amount. Sectors producing a larger percentage of the gross state product were government, retail, transportation and wholesale industries. Falling behind manufacturing in percentage of gross state product produced were construction and agriculture. Florida ranked #16 in manufacturing gross state product in the states, with California ranked the highest.
- Florida ranks 8th in the U.S. in state-origin exports of all kinds (i.e., those actually produced or with significant value added in the state). Florida-origin exports reached $29 billion in 2004, a 16% increase over the previous year.
- Brazil and Canada are the leading destinations for exports from Florida. The leading products exported from Florida include fertilizer, parts for office machinery, telecommunications equipment, and machinery and parts for aircraft and spacecraft.

Sources
An Overview of the Manufacturing Component of the Florida Economy, University of Central Florida, Orlando, FL, November 28, 2005.
Manufacturing in Florida, Enterprise Florida Inc., July 2005.
Florida Manufacturing Industry Labor Market Profile, Florida Agency for Workforce Innovation, Tallahassee, FL, July 2005.
Florida Manufacturing and Taxes, University of Central Florida, November 2004
Enterprise Florida Inc.