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ABSTRACT

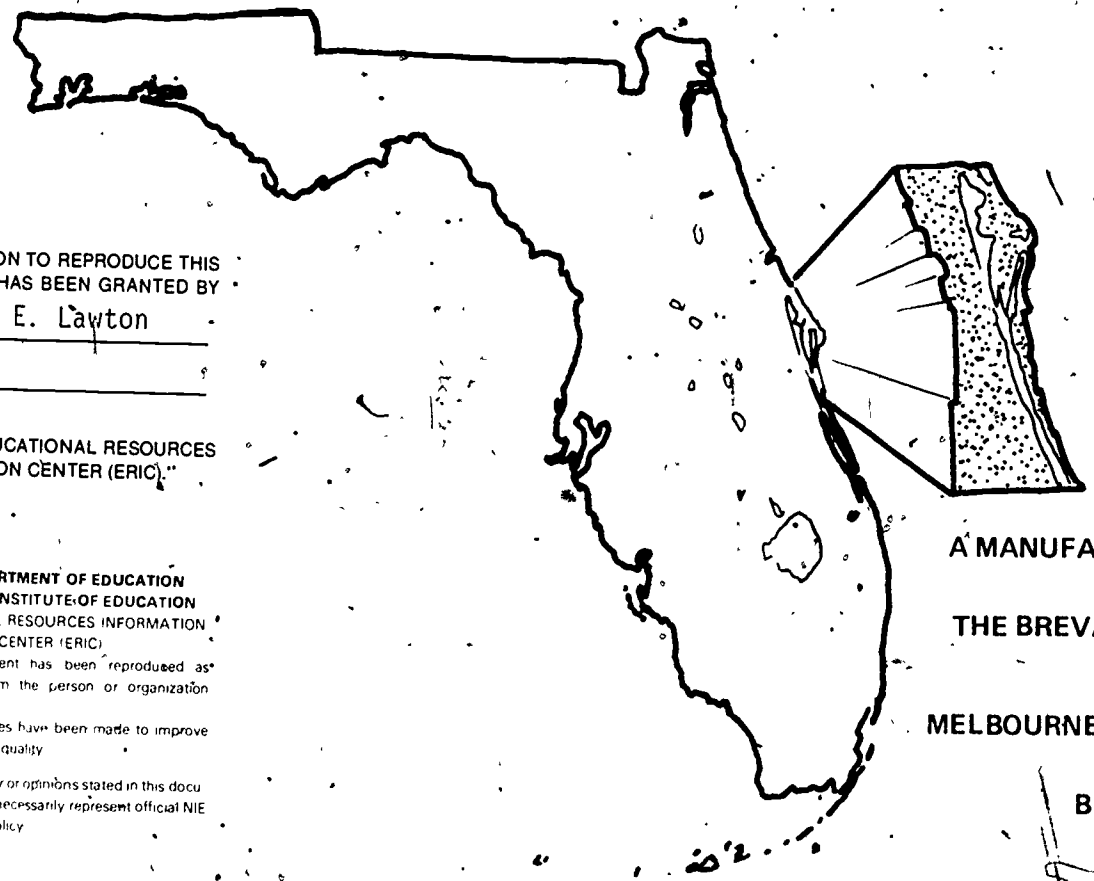
In fall 1981, 74 of Brevard County's major manufacturing firms and related industries were asked to provide detailed figures reflecting their 1982 employment, annual job vacancies, and projections for 1985 employment by job category, division, and title. Survey findings, based on responses from firms representing 75% of the employment within the sample, included the following: (1) employment opportunities within manufacturing and related industries will increase from about 24,700 in 1982 to nearly 30,500 by 1985, representing a 23% increase; (2) most job opportunities will occur in professional, technical, and managerial positions; (3) the second highest demand will be in benchwork occupations, i.e., those involving the fabrication, assembly, and repair of electronic communications, engineering, and scientific products; (4) many job opportunities will occur as new position openings, but most will result from attrition, turnover, and promotions; (5) little or no growth will occur in several areas, including industrial engineers, sales and distribution managers, truck drivers, and motor freight operators; and (6) employment projections reflect the national growth trend in high technology fields. The study report includes a description of Florida's position among the states with respect to employment, population growth, educational attainment, and educational funding. The position of Brevard among Florida's counties is also assessed. The survey instrument is provided. (KL)

BREVARD COUNTY

Labor Pool Resource Study

1981 - 1985

LPRS



A MANUFACTURING INDUSTRY NEEDS ASSESSMENT
COORDINATED BY
THE BREVARD ECONOMIC DEVELOPMENT COUNCIL

INITIATED BY THE
MELBOURNE AND PALM BAY AREA COMMITTEE OF 100.
IN COOPERATION WITH
BREVARD COMMUNITY COLLEGE

MARCH 1982

BREVARD COUNTY LABOR POOL RESOURCE STUDY
1981 - 1985

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THE

LABOR POOL RESOURCE STUDY

REPORT

In the fall of 1981, 74 of Brevard's major manufacturing and related industrial firms were asked to provide exceptionally detailed figures reflecting their 1982 employment, annual job vacancies, and projections for 1985 employment. The results of that survey, organized, analyzed and refined to ensure corporate confidentiality, are presented in this report.

BREVARD COMMUNITY COLLEGE

MARCH 1982

FOREWORD

Florida's population is projected by the U. S. Census Bureau to be the nation's fastest growing for the next twenty years. That prospect, coupled with the rapidly increasing influx of industry should raise concerned eyebrows throughout the state. In Brevard County, because of a combination of unique geographic, economic and demographic factors, the future ought to be contemplated with excitement and constructive preparation. Caught napping, Brevard may wake up feeling more panic than enthusiasm in attempting to meet emerging needs.

There is little doubt that the County will continue to exhibit strong economic growth during the 1980s. This growth, however, will be influenced by periods of turbulent change in the national economy and by sudden shifts in employment needs. To continue to control and direct the shape of the area's economic future in such times, it is important to project, from sound research, the nature and scope of countywide manpower needs. It is the purpose of this research to address a portion of those needs.

This study provides clear and detailed information that will assist community agencies and institutions in assessing the durable goods manufacturing employment picture as portrayed by the group of major manufacturing and related industries included in the survey.

Manpower needs and changes in employment levels reported here reveal a strong concensus of the employers that there will be a continuation of relatively rapid increases in manufacturing in Brevard County. By describing those increases by specific job designations, the study can assist educational institutions and other agencies to ascertain the kinds of programs, support and funding requirements necessary to assure an adequate, well-trained work force for participating industries.

ACKNOWLEDGMENTS

This study would not have been possible without the cooperation and assistance of countless unnamed administrators and personnel professionals representing most of the 74 selected employers invited to participate in this effort. A list of these employers appears on the following page.

Especial appreciation is expressed to President Maxwell C. King and the Office of Educational Research and Planning at Brevard Community College for data collection, analysis and reporting; to Mr. John E. McCauley, Executive Director, and his staff at Brevard Economic Development Council, for mailings, follow-up and clerical assistance; and finally, to Mr. Jack A. Heinzelman, Chairman of the Melbourne and Palm Bay Area Chambers of Commerce Committee of 100 for initiating, supporting and encouraging the successful completion of this project.

LABOR POOL RESOURCE STUDY - 1981

LIST OF COMPANIES ASKED TO PARTICIPATE

ARK Electronic Products, Inc.
Abbott Industries
Acopian Manufacturing Company
Advanced Board Circuitries, Inc.
Allis-Chalmers Corporation
Amertron, Inc.
Armorflite Southeast, Inc.
Boeing Services International, Inc.
Cadillac Gage Company
Camair Corporation
Cape Publications
Climatrol Florida Corporation
Collins General Aviation Div.
(Rockwell)
Computer Sciences Corporation
Coyson Crystals, Inc.
DBA Systems, Inc.
Dictaphone Corporation
Documation (Storage Technology)
Eckler's Corvette Parts
Electronic Systems Products, Inc.
Enstice Tool Grind. & Sales, Inc.
Fairchild Camera & Instrument Corp.
Florida Data Corporation
Florida Division, Victoreen, Inc.
Fujitsu America, Inc.
General Dynamics Corp. (Convair Div.)
Harris Corporation (All Divisions)
Hetra
ITT North (Telecom Switching Div.)
ITT Defense Communications Division
International Business Machines Corp.
J.E.T. Industries, Inc.
Lazy Day Products, Inc.
Lockheed Missiles & Space Company
MTC Engineering Company
Marshall Manufacturing Corporation
Martin Marietta Aerospace (Ext. Tank)
Martin Marietta Aerospace Canaveral
Operations
McDonnell Douglas Astro-Fla. Test Ctr.
McDonnell Douglas Astro-Titusville
McGregor & Werner, Inc.
Norsk-Hydro Aluminum, Inc.
Optical Business Machines, Inc.
Opto Mechanik, Inc.
PCM Products, Inc.
PRC Systems Services Company
Pan American World Services, Inc.
Aerospace Services Division
Technical & Base Support Svcs. Div.
Pouliot Designs Corporation
Precision Fabricating & Cleaning, Inc
Precision Shapes, Inc.
Q-Bit Corporation
RCA Int'l Service Corp.
Missile Test Project
RGM Industries Company
Realtime Associates, Inc.
Regency Communications, Inc.
Rockwell Int'l Space Opns. & SDD
The Rovac Corporation
Scientific Systems Services, Inc.
Sea Ray Boats, Inc.
Sunset Wire & Cable, Inc.
Systems Engineering Lab., Inc. (Gould
TRW Defense & Space Systems Group
TRW-Vidar
Technicolor Graphic Services, Inc.
Terry Corporation
Thompson Trawler. Inc.
Titusville Tool & Engineering, Inc.
Townsends' Ceramics & Glass, Inc.
Transformers, Inc.
U. S. Games, Inc.
United Space Boosters, Inc. (UTC)
Westinghouse Electric Corporation
Printed Circuits Operations (AES

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OVERVIEW

During the past decade, Brevard County made the transition from dependence on one industry (i.e., support of the nation's space and missile programs), to a more diversified economic base. A continuing feature of this change is the rapid growth of the high-technology manufacturing industry.

Brevard now leads all 67 Florida counties in the employment of non-agricultural workers by manufacturers. Manufacturing accounts for 21.5 percent of non-agricultural employment, compared to a statewide average of 14 percent. The percentage of total income generated by manufacturing in Brevard is 24.1 while the statewide average is only 13.6 percent. (See Table 7, Chapter II.)

Between 1975 and 1980, Brevard manufacturing employment doubled, from 10,800 to 21,700. (See Table 8, Chapter II.) The current study provides a partial update of employment for 1982 and focuses on projections to 1985.

HIGHLIGHTS OF FINDINGS

Among the selected industries participating in the study, the following findings emerge:

- Employment opportunities within these industries will increase from about 24.7 thousand in 1982, to nearly 30.5 thousand by 1985, an increase of 23% in the next three years.
- Most job opportunities between 1982 and 1985 will occur in professional, technical and managerial positions. Electronic engineers, computer scientists, systems analysts,

drafters, and mechanical engineers will be the most sought after. Next will be administrative specializations, including accountants, auditors, personnel directors, purchasing agents, and information systems analysts.

- The second highest demand will be in the benchwork occupations. These are jobs involving the fabrication, assembly and repair of electronic communications, engineering and scientific products.
- Many job opportunities will occur as new position openings, but, by a nearly three to one margin, vacancies will primarily result from attrition, turnover, and promotions.
- This survey reveals little or no growth in employment of industrial engineers, sales and distribution managers; truck drivers and motor freight operators; welders and cutters; engine, machine, and lighting repair persons; shipping and receiving clerks; and computing and account recording personnel.
- Employment projections based on the selected industries in this study reflect and exemplify the national (and worldwide) growth trend in high technology and the general movement toward the creation of an "information society."

CHAPTER I

PROCEDURES

This section describes the procedures used to (1) select the study participants, (2) construct the survey instrument, (3) collect the data, and (4) analyze and report the data.

Selection of the Participants

The rapid increase in manufacturing employment in Brevard County since 1975 gives rise to the need to accurately define this growth for at least two reasons. First, one must understand the nature of this growth to project future needs; and second, it must be understood in order to ensure that provisions are made to provide an adequately trained work force to support it. It was the intent of this study, therefore, to focus on those employers whose nature and recent development seemed to typify Brevard's emerging manufacturing base.

The Brevard Economic Development Council's publication, Manufacturing and Related Industries, was the principal source document used to identify potential study participants. The BEDC listings are organized under twenty standard industrial classification groups. Approximately half of these groups were selected for study, and after eliminating the smaller firms (less than eight employees), 74 representative participants (firms) were identified.

Construction of the Instrument

The survey required an instrument incorporating a standardized and comprehensive list of job classifications and titles. To develop such a form, standard industrial classification terminology was derived from the U.S. Department of Commerce Standard Occupational Classification Manual, published by The Office of Federal Statistical Policy and Standards and the Department of Labor's Dictionary of Occupational Titles.

The survey instrument is structured on a three-level system: category, division and job title. Each level represents groupings in successively finer detail, enabling the user to tabulate or analyze data on different levels of aggregation. Residual categories are established at each level to handle occupations that do not warrant separate classification or do not fit into one of the specific groups or titles listed.

The structure described is an abbreviation of the format underlying the standard industrial classification system. Its simplified nature allows employers to avoid the complexities of greater detail and increases the likelihood of survey response. It still preserves the utility of the mechanism for cross-referencing and analyzing data in relation to other occupational information collected for a variety of purposes by federal and state agencies, professional associations, or other public and private research organizations.

To assist employers in accurately filling out the survey instrument, instructions were furnished with each set of forms. Two attachments were also designed and furnished as an aid to completing the form. These included a numerical listing of job titles by occupational group code and a cross-referenced alphabetical listing of job titles. Copies are included as an appendix to this report.

Collecting the Data

Any survey will only be as valid and reliable as the conscientious cooperation of those chosen to participate will permit. To encourage the maximum assistance in this task, the Brevard Economic Development Council identified the Chief Executive Officer of each firm, enclosed a cover letter and personal

endorsements with the survey instrument, and mailed these to each CEO. The endorsements included letters supporting the BEDC Executive Director's request for assistance, from the President of Brevard Community College and, in many cases, from the firms' respective Chamber of Commerce or Committee of 100 representative (see appendix).

Telephone follow-up was initiated several weeks after the initial mailing and continued for several additional weeks, until responses were received from firms representing about three-fourths of the total employment within the survey group.

Confidentiality in the data collection process was a major concern from the outset, and in spite of assurances to concerned firms, nevertheless proved to be a barrier to a more complete response in the end. All possible precautions were taken to ensure that no individual corporate data would be compromised, no compromises occurred, and none will be possible inasmuch as the original data was destroyed as soon as aggregate figures were compiled. The Brevard Community College Office of Educational Research and Planning was identified as a neutral and "disinterested" party to collect, analyze and report survey results. Instructions at the top of each instrument read: "Information on this form is strictly confidential and is not to be revealed to any unauthorized person, nor published in such a manner that data relating to individual companies can be identified." No provisions were made for any firm to put its name on the survey form or return envelope. This created some problems in the follow-up process because the BCC office compiling the data was frequently unable to determine which firms had not responded. Additional actions taken that also protect individual corporate data are cited in the following discussion of the analysis and reporting process.

Firms from which no response was obtained ultimately turned out to be either those whose concern for confidentiality remained overriding, or (more frequently) those whose relatively small size may have exempted them from as intense a follow-up effort as accorded the larger companies.

Analysis and Reporting

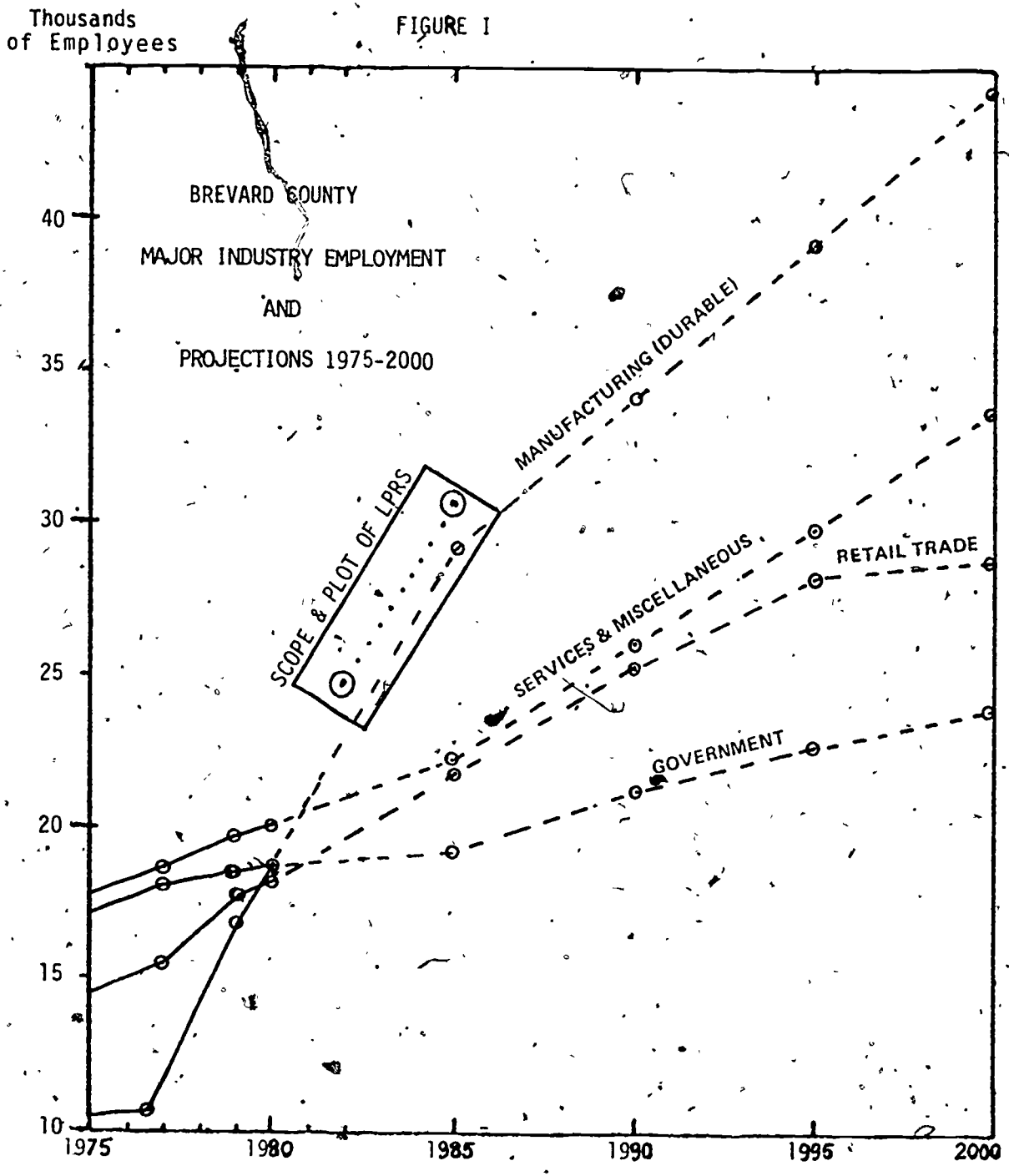
Once the individual survey instruments were tallied and the various job, division and category aggregate totals were compiled, the general employment patterns for 1982 and the projections for 1985 emerged quite clearly. General findings have been highlighted in the overview section of this report. A wealth of more detailed information is available through closer inspection, cross tabulations, and other examination or manipulations of the data. Some observations of this nature are offered later in this report.

Because of the requirement for confidentiality of individual corporate data, adjustments have been made to all figures used in the aggregate listings provided in this report. These adjustments are intended to disguise the actual data while preserving the essential relationships and fidelity of information as representative of both the respondents and non-respondents among the 74 firms asked to participate. The adjustments were made by a process which included both mathematical computations to change the figures, and the introduction of data outside the scope of the survey instrument itself. Both of these procedures were made to fill in gaps left by non-respondents. The research analyst describes this as analagous to "computer enhancement" of the data to produce optimum clarity in the employment picture presented by all the firms asked to participate, including those who chose not to do so.

As the foregoing suggests, this is not intended to be a full-scale labor market survey for Brevard County. It does, however, portray quite accurately, and in considerable detail, the durable

manufacturing segment of the county's work force. It also reinforces earlier studies that have described manufacturing as the fastest growing sector of major industry employment and it almost exactly replicates numerical projections arrived at by other agencies through independently different processes. Figure 1, Major Industry and Employment Projections 1975 - 2000," based on Brevard County Planning Department figures released in 1981, is annotated to show the focus and numerical projection of the Labor Pool Resource Study. The LPRS plot parallels the slope of the county projection almost perfectly while the total employment figures track slightly higher.

FIGURE I


Thousands of Employees
BREVARD COUNTY
MAJOR INDUSTRY EMPLOYMENT
AND
PROJECTIONS 1975-2000
SCOPE & PLOT OF LPRS
MANUFACTURING (DURABLE)
SERVICES & MISCELLANEOUS
RETAIL TRADE
GOVERNMENT
40
35
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1975
1980
1985
1990
1995
2000

CHAPTER II

A PERSPECTIVE ON NATIONAL, STATE AND LOCAL FACTORS

In the midst of great national economic change and uncertainty if not gloom, Florida must be recognized as an island of bright prospects, and Brevard County as one of its most brilliant jewels.

The following factors, based upon federal and state documentation, help place Brevard County in perspective:

- Florida is the leading state in the Southeast and third in the nation in the number of manufacturing jobs won in the last decade (Table 1 and Figure 2).
- Florida, the seventh largest state, is the fastest growing of the ten largest and ranks third in the nation in the pace of population growth during the last decade (Table 2).
- Florida is projected by the Bureau of the Census to be the fastest growing state in the nation for the next twenty years. By the year 2000, it could grow from its current seventh ranking to the fourth most populous state in the country (Table 3 and Figure 3).
- Florida has the highest level of educational attainment in the Southeast; the 11th largest increase in the number of high school graduates during the past five years and the ninth highest level of enrollment in higher education in the nation. These factors indicate that a large and better qualified work force will be available in Florida in future years (Tables 4 and 5).

- Florida leads the nation in per capita spending for vocational education programs - the type of programs designed primarily to train the labor force to serve the state's rapid industrial growth (Table 6 and Figure 4).

As for Brevard County, Florida, the following factors emerge from a variety of sources as cited in a recent survey published by Brevard Community College: Facilities Survey, October 1981.

- Brevard leads all 67 Florida counties in the employment of non-agricultural workers by manufacturers and its percentage of total income generated by manufacturing is 24.1% compared to a statewide average of 13.6% (Table 7).
- From 1975 to 1980, Brevard's manufacturing employment doubled from 10,800 to 21,700 and is forecast to pass 30,000 by 1985 (Table 8).
- Brevard's high-technology manufacturing industry includes the Harris Corporation, Florida's largest industrial employer, and a major factor in electronics nationally and internationally.
- Brevard's population growth is paced by Palm Bay, whose 63 miles of incorporated land area ranks it geographically as the second largest city in the state. Palm Bay grew 158.6% during the past decade as a direct result of the high technology companies locating in its area. This growth may be compared to a statewide average of 43.4% during the same period.

TABLE 1

MANUFACTURING EMPLOYMENT AND JOBS WON/LOST, 1970 to 1980

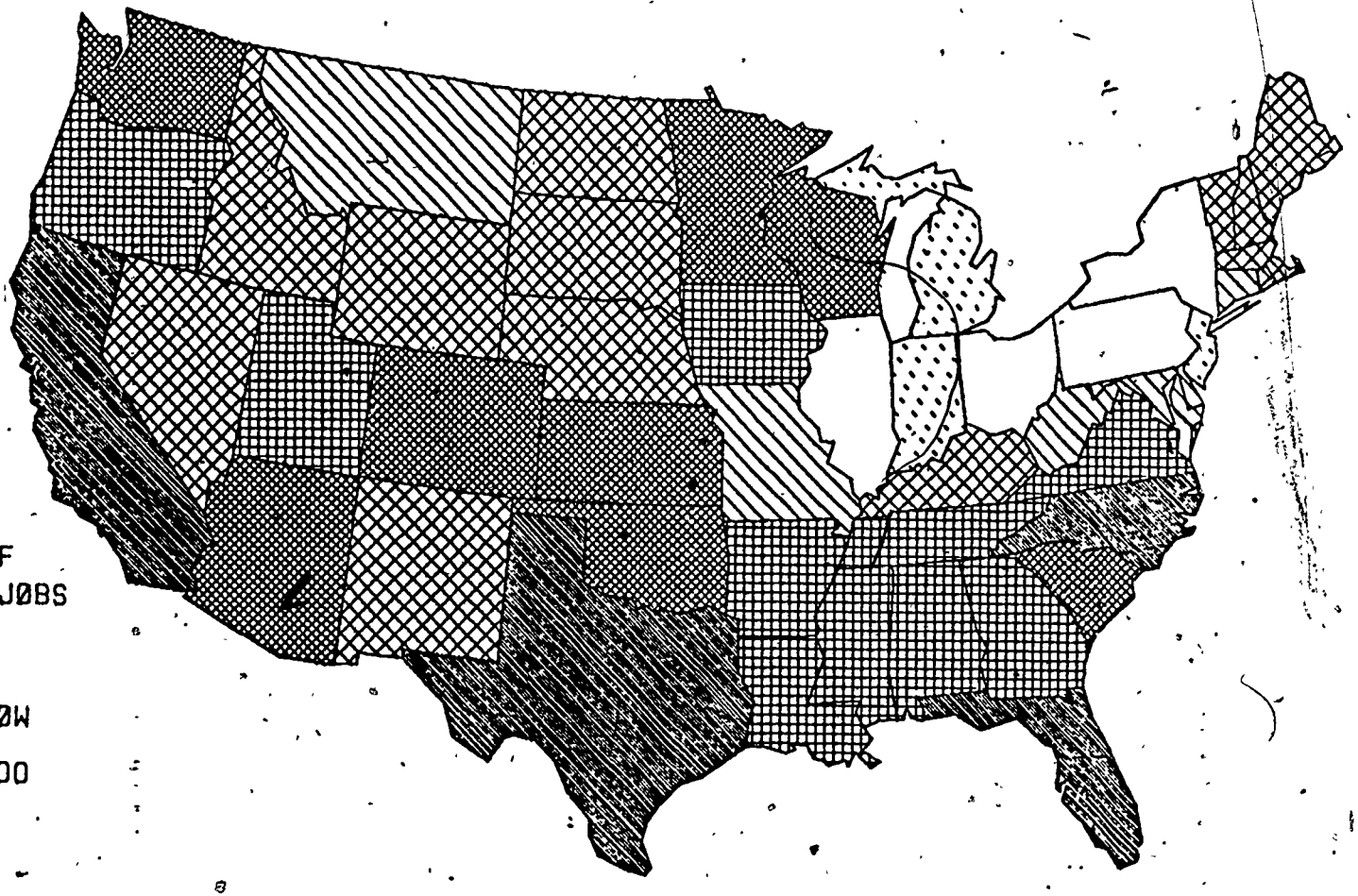
Competition among the states for locating new industry continues to be intense because firms make site selections only after long and deliberate evaluation of factors such as location suitability, tax structure, training facilities, labor availability and wage rates. Oven time, the ability to attract new industry can be measured in terms of its increase in manufacturing jobs. Using this as a criteria, the data below show Florida is the leading state in the Southeast and ranks 3rd in the nation in the number of jobs won.

	Manufacturing Employment (000's) 1970	1980	Jobs Won/Lost (000's)
United States	19,367.0	20,365.0	998.0
California	1,558.0	2,001.1	443.1
Texas	734.3	1,048.9	314.6
FLORIDA	322.5	457.2	134.7
North Carolina	713.0	824.2	111.2
Washington	239.5	307.4	67.9
Arizona	71.2	152.6	61.4
Colorado	120.8	181.4	60.6
Wisconsin	500.9	560.2	59.3
Oklahoma	134.1	190.1	56.0
Minnesota	318.7	372.5	53.8
Kansas	137.2	189.5	52.3
South Carolina	340.3	392.3	52.0
Georgia	467.1	516.2	49.1
Virginia	366.0	410.5	44.5
Oregon	172.3	214.2	41.9
Arkansas	168.6	210.4	41.8
Tennessee	463.8	504.6	40.8
Mississippi	182.1	221.4	39.3
Alabama	327.2	362.0	34.8
Louisiana	179.0	212.2	33.2
Utah	56.0	88.6	32.6
Iowa	326.0	243.5	27.5
New Hampshire	91.8	116.8	25.0
Massachusetts	648.3	673.1	24.8
Kentucky	255.2	276.1	20.9
Idaho	40.3	64.9	14.6
New Mexico	21.4	34.3	12.9
Nebraska	84.5	96.1	11.6
Nevada	8.6	19.4	10.8
South Dakota	15.8	26.0	10.2
Vermont	40.5	50.6	10.1
Rhode Island	120.9	127.8	6.9
North Dakota	9.9	15.5	5.6
Alaska	8.6	13.4	4.8
Wyoming	7.4	10.5	3.1
Maine	110.4	113.2	2.8
Delaware	71.1	71.0	-.1
Montana	23.9	23.6	-.3
Connecticut	443.7	441.8	-1.9
Hawaii	25.6	23.5	-2.1
West Virginia	126.5	117.2	-9.3
Missouri	449.4	435.9	-13.5
Maryland	271.4	237.9	-33.5
Indiana	710.2	658.0	-52.2
Michigan	1,071.5	1,007.2	-64.3
New Jersey	863.0	783.4	-79.6
Illinois	1,358.6	1,222.3	-136.3
Ohio	1,409.9	1,267.5	-142.4
Pennsylvania	1,528.8	1,328.0	-200.8
New York	1,760.6	1,451.1	-309.5

SOURCE: Employment and Earnings, U.S. Dept. of Commerce, Bureau of Labor Statistics.
Tenn. data furnished by Atlanta Regional Office, Bureau of Labor Statistics.

FIGURE 2

MANUFACTURING JOBS WON OR LOST, 1970 to 1980



NET NUMBER ØF
MANUFACTURING JØBS

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- -99,999 TØ -50,000
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MINIMUM VALUE: -309,500
MAXIMUM VALUE: 443,100

TABLE 2

POPULATION GROWTH TRENDS, 1970 to 1980.

Population size provides an indicator of a state's existing markets; historical shifts in population provide insight into the growth potential of a specific state or region. Areas which have experienced rapid population increases are prime locations for industrial, retail, and service trade development. Florida is the 7th largest state in the nation. It is the fastest growing of the ten largest states, and ranks 3rd overall in the pace of population growth.

	Population		Percent Change
	1970	1980	
United States	208,302,031	226,504,825	11.41%
Nevada	488,738	799,184	63.52
Arizona	1,775,399	2,717,866	53.08
FLORIDA	6,791,418	9,739,992	43.42
Wyoming	332,416	470,816	41.63
Utah	1,059,273	1,461,037	37.93
Idaho	713,015	943,935	32.39
Alaska	302,583	400,000	32.20
Colorado	2,209,596	2,888,834	30.74
New Mexico	1,017,055	1,299,968	27.82
Texas	11,198,655	14,228,383	27.05
Oregon	2,091,533	2,632,663	25.87
Hawaii	769,913	965,000	25.34
New Hampshire	737,681	920,610	24.80
Washington	3,413,244	4,130,163	21.00
South Carolina	2,590,713	3,119,208	20.40
Georgia	4,587,930	5,464,265	19.10
Arkansas	1,923,322	2,285,513	18.83
California	19,975,069	23,668,562	18.49
Oklahoma	2,559,463	3,025,266	18.20
Tennessee	3,926,018	4,590,750	16.93
North Carolina	5,084,411	5,874,429	15.54
Louisiana	3,644,637	4,203,972	15.35
Vermont	444,732	511,456	15.00
Virginia	4,651,448	5,346,279	14.94
Mississippi	2,216,994	2,520,638	13.70
Kentucky	3,220,711	3,661,433	13.68
Montana	694,409	786,690	13.29
Maine	993,722	1,124,660	13.18
Alabama	3,444,354	3,890,061	12.94
West Virginia	1,744,237	1,949,644	11.78
Delaware	548,104	595,225	8.60%
Maryland	3,923,897	4,216,446	7.46
Minnesota	3,806,103	4,077,148	7.12
Wisconsin	4,417,821	4,705,335	6.51
Nebraska	1,485,333	1,570,006	5.70
Indiana	5,195,392	5,490,179	5.67
North Dakota	617,792	652,695	5.65
Missouri	4,677,623	4,917,444	5.13
Kansas	2,249,071	2,363,208	5.07
Michigan	8,881,826	9,258,344	4.24
South Dakota	662,257	690,178	4.22
Iowa	2,825,368	2,913,387	3.12
Illinois	11,110,258	11,418,461	2.77
New Jersey	7,171,112	7,364,158	2.69
Connecticut	3,032,217	3,107,576	2.49
Ohio	10,657,423	10,797,419	1.31
Massachusetts	5,689,170	5,737,037	.84
Pennsylvania	11,800,766	11,866,728	.56
Rhode Island	949,723	947,154	-.27
New York	18,236,967	17,557,288	-3.73

SOURCE: U.S. Department of Labor, Employment and Training Administration, Unemployment Insurance Service, Division of Acturial Services, unpublished data.

TABLE 3

PROJECTIONS OF POPULATION GROWTH, 1980 to 2000

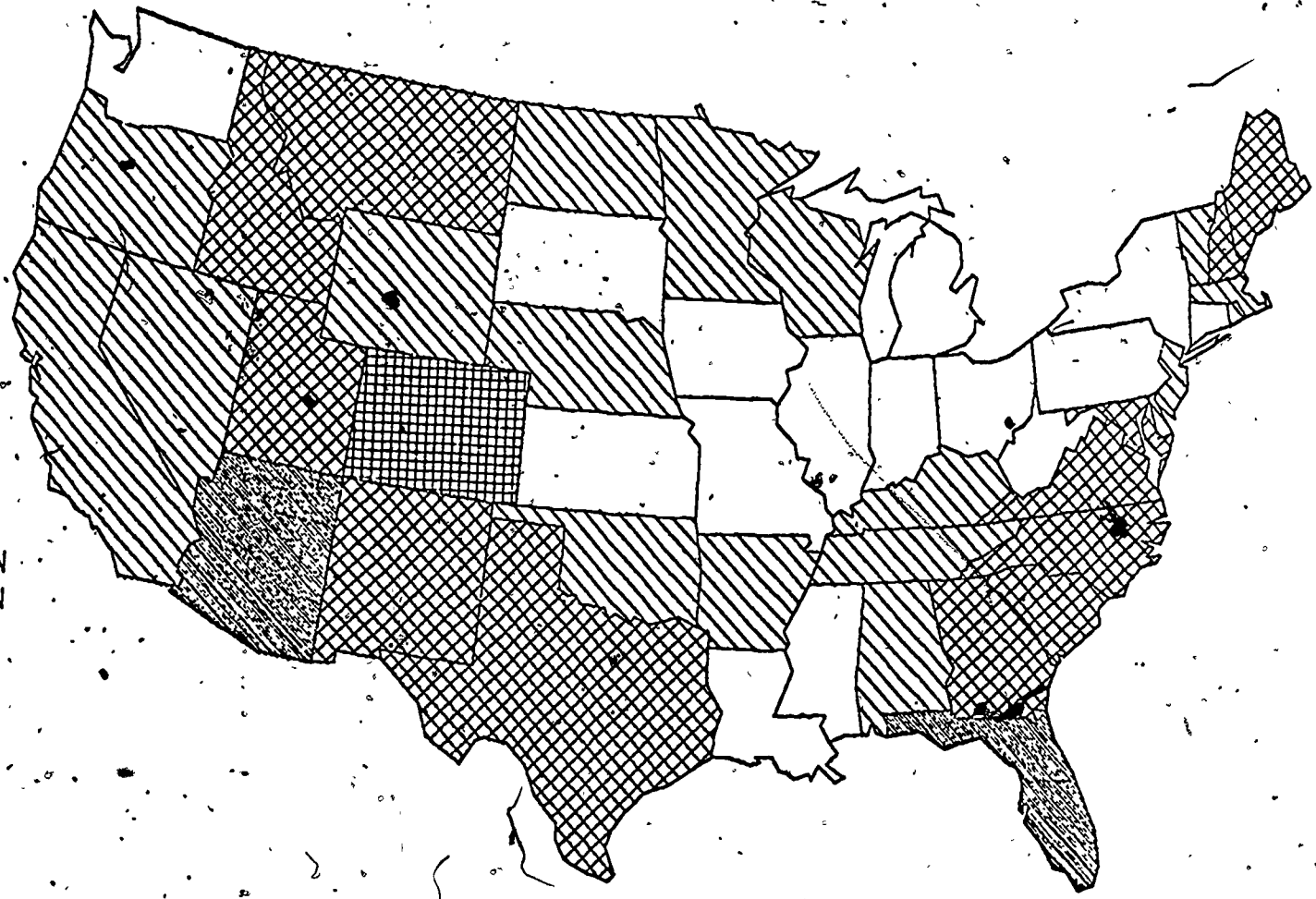
Population projections indicate whether historical growth trends are expected to continue or be modified in the future. Growth in Florida's population is projected to lead the country during the next two decades, ensuring continued growth in the state's consumer markets. During this time, Florida could grow from its current ranking of the 7th most populous state to the 4th largest state.

	Population		Percent Change
	1980	2000	
United States	226,504,825	259,869,000	14.73%
California	23,668,562	27,309,000	15.38
New York	17,557,288	17,961,000	2.30
Texas	14,228,383	17,167,000	20.65
FLORIDA	9,739,992	14,394,000	47.78
Pennsylvania	11,866,728	12,317,000	3.79
Illinois	11,418,461	11,923,000	4.42
Ohio	10,797,419	11,051,000	2.35
Michigan	9,258,344	10,148,000	9.61
New Jersey	7,364,158	8,425,000	14.41
North Carolina	5,874,429	7,226,000	23.01
Massachusetts	5,737,037	6,842,000	19.26
Georgia	5,464,265	6,840,000	25.18
Virginia	5,346,279	6,768,000	26.59
Indiana	5,490,179	5,731,000	4.39
Wisconsin	4,705,335	5,545,000	17.84
Maryland	4,216,446	5,436,000	28.92
Missouri	4,917,444	5,346,000	8.72
Tennessee	4,590,750	5,183,000	12.90
Minnesota	4,077,148	4,561,000	11.87
Louisiana	4,203,972	4,486,000	6.71
Alabama	3,890,061	4,425,000	13.75
Kentucky	3,661,433	4,290,000	17.17
Washington	4,130,163	4,161,000	.75
South Carolina	3,119,208	3,893,000	24.81
Colorado	2,888,834	3,892,000	34.73
Arizona	2,717,866	3,822,000	40.63
Oklahoma	3,025,266	3,449,000	14.01
Connecticut	3,107,576	3,386,000	8.96
Iowa	2,913,387	3,131,000	7.47
Oregon	2,632,663	3,070,000	16.61
Mississippi	2,520,638	2,763,000	9.62%
Arkansas	2,285,513	2,690,000	17.70
Kansas	2,363,208	2,540,000	7.48
West Virginia	1,949,644	2,076,000	6.48
Nebraska	1,570,006	1,851,000	17.90
Utah	1,461,037	1,775,000	21.49
New Mexico	1,299,968	1,636,000	25.85
Maine	1,124,660	1,405,000	24.93
Idaho	943,935	1,195,000	26.60
Hawaii	965,000	1,193,000	23.63
Rhode Island	947,154	1,117,000	17.93
New Hampshire	920,610	1,113,000	20.90
Montana	786,690	977,000	24.19
Nevada	799,184	908,000	13.62
South Dakota	690,178	748,000	8.38
North Dakota	652,695	732,000	12.15
Delaware	595,225	689,000	15.75
Vermont	511,456	586,000	14.57
Alaska	400,000	544,000	36.00
Wyoming	470,816	527,000	11.93

SOURCE: Current Population Reports (Series P-25, No. 796) and Census of Population and Housing, 1980: P.L. 94-171 Population Counts (machine-readable data file), U.S. Department of Commerce, Bureau of the Census.

FIGURE 3

POPULATION CHANGE, 1980 - 2000



MINIMUM VALUE: .75 PERCENT
MAXIMUM VALUE: 47.78 PERCENT

TABLE 4

TOTAL ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATION, FALL 1979

A state's enrollment in institutions of higher education gives a firm some measure of the future availability of managers, highly trained professional and technical personnel, and skilled production workers. Florida has the 9th highest level of enrollment in the U.S., indicating that skilled labor will be available in sufficient quantities to assure ease of recruitment in Florida in future years.

United States	11,569,899		
California	1,698,668	Louisiana	153,812
New York	970,168	Oklahoma	152,683
Texas	676,047	Kentucky	135,179
Illinois	612,916	Kansas	133,360
Michigan	503,839	Iowa	132,599
Pennsylvania	481,347	South Carolina	131,459
Ohio	463,548	Mississippi	100,272
Massachusetts	396,267	Utah	90,398
FLORIDA	395,233	Nebraska	86,446
New Jersey	312,460	West Virginia	81,335
Washington	303,469	Arkansas	74,701
Virginia	270,599	Rhode Island	64,435
North Carolina	269,065	New Mexico	56,189
Wisconsin	255,907	Hawaii	47,204
Indiana	228,397	Maine	42,912
Missouri	222,046	New Hampshire	42,112
Maryland	218,745	Idaho	40,661
Tennessee	199,654	Nevada	35,935
Minnesota	193,830	Delaware	32,308
Arizona	188,976	Montana	31,906
Georgia	178,017	North Dakota	31,904
Alabama	159,784	South Dakota	31,294
Colorado	156,100	Vermont	29,550
Connecticut	156,067	Alaska	20,052
Oregon	154,597	Wyoming	19,490

SOURCE: Rankings of the States, 1981, National Education Association, Washington, D.C.

TABLE 5

PERCENT CHANGE IN NUMBER OF PUBLIC HIGH SCHOOL GRADUATES, 1975-76 to 1980-81

An increase in the number of high school graduates is indicative of a larber and/or better qualified labor force. Both of these are true of Florida. Florida has the highest level of educational attainment in the Southeast, and has the 11th largest increase in the number of high school graduates in the U.S.

United States	-3.45%		
Alaska	26.71	North Carolina	-1.79
Arizona	15.30	Washington	-1.98
Idaho	15.25	Minnesota	-2.28
Nevada	15.13	Connecticut	-2.34
New Hampshire	14.58	Nebraska	-2.82
Wyoming	8.3	Kansas	-2.98
Arkansas	8.27	Kentucky	-3.02
Texas	6.03	Louisiana	-3.05
Oklahoma	4.35	North Dakota	-3.85
Rhode Island	4.22	New Jersey	-4.07
FLORIDA	3.57	Tennessee	-4.18
Iowa	3.27	Alabama	-4.44
Colorado	2.66	South Dakota	-4.79
South Carolina	2.21	Oregon	-4.86
Delaware	2.06	California	-5.22
New Mexico	1.72	West Virginia	-6.47
Georgia	0.89	Hawaii	-6.54
Wisconsin	0.31	Missouri	-7.42
Utah	0.22	New York	-7.74
Indiana	0.21	Massachusetts	-7.74
Vermont	0.02	Michigan	-7.85
Maine	0.00	Montana	-11.20
Mississippi	-0.06	Pennsylvania	-11.23
Maryland	-0.11	Ohio	-11.73
Virginia	-0.27	Illinois	-11.75

SOURCE: Rankings of the States, 1981, National Education Association, Washington, D.C.

TABLE 6

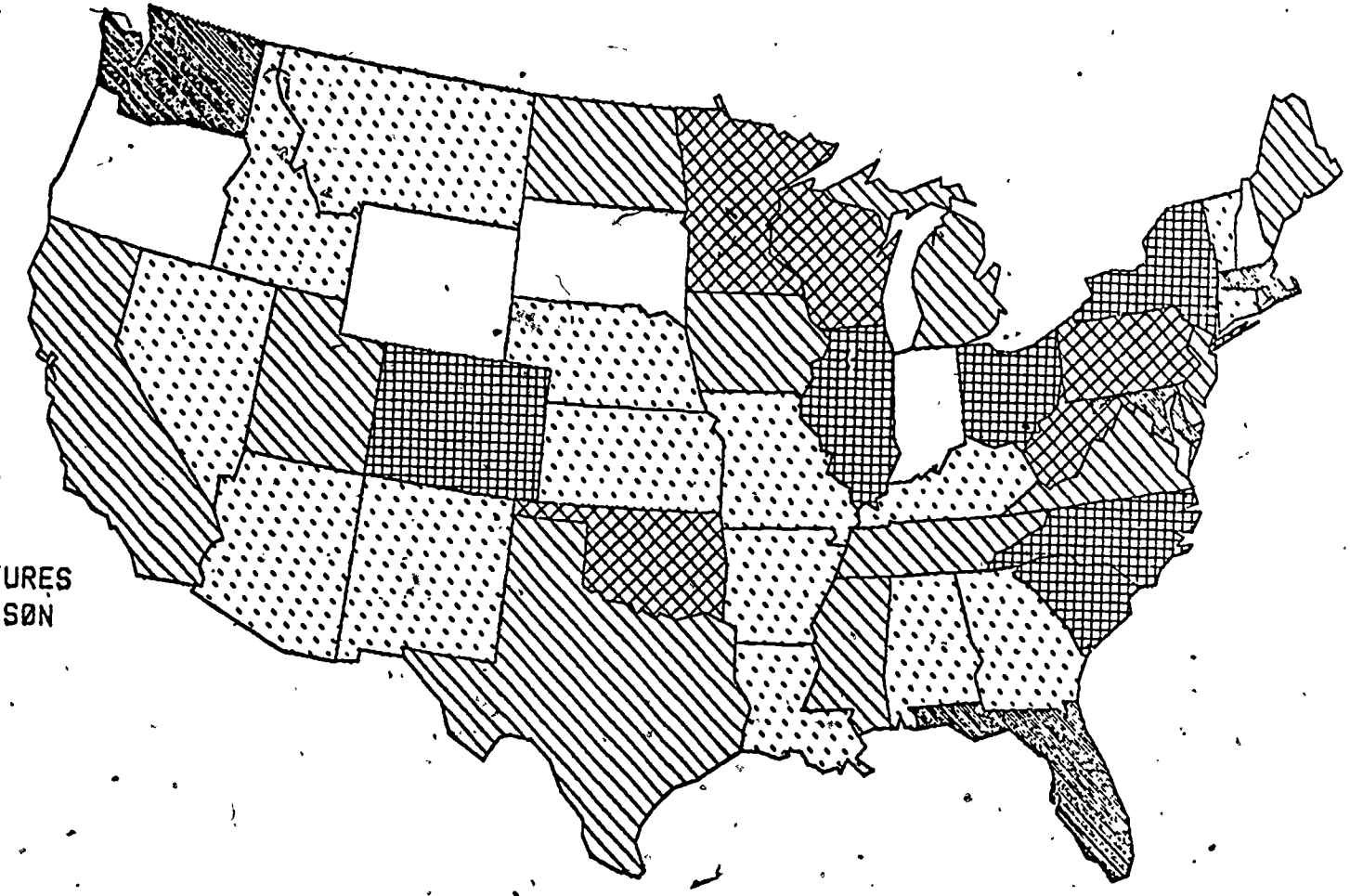
PER CAPITA EXPENDITURES FOR VOCATIONAL EDUCATION, FISCAL YEAR 1978

The availability of programs for vocational education can ensure that a skilled work force exists or can be quickly trained to meet the staffing needs of a new facility. The funding level of vocational programs is one measure of the importance which is placed on vocational training. Florida leads the nation in per capita spending for vocational education programs.

United States	$ 25.59
FLORIDA	40.73
Washington	37.73
Maryland	37.58
Massachusetts	36.64
Illinois	33.54
Colorado	32.52
North Carolina	32.49
South Carolina	31.35
New York	31.15
Ohio	30.95
Minnesota	28.83
Oklahoma	28.59
Wisconsin	27.00
Rhode Island	25.35
West Virginia	25.31
Pennsylvania	25.22
Michigan	24.98
Virginia	24.90
North Dakota	24.[illegible]
New Jersey	23.45
Iowa	22.98
California	22.52
Delaware	22.44
Texas	22.34
Utah	22.21
Maine	$ 22.10
Tennessee	21.55
Mississippi	20.34
New Mexico	19.92
Georgia	19.48
Alaska	19.38
Idaho	19.26
Nevada	18.09
Kentucky	18.06
Missouri	17.94
Vermont	17.82
Alabama	17.80
Kansas	17.06
Arizona	16.95
Montana	16.82
Arkansas	16.57
Hawaii	16.42
Louisiana	16.15
Connecticut	15.70
Nebraska	15.23
New Hampshire	14.68
South Dakota	14.48
Wyoming	13.92
Indiana	13.43
Oregon	6.65

SOURCE: Digest of Education Statistics-1980, National Center for Education Statistics.

EXPENDITURES FOR VOCATIONAL EDUCATION, 1978



VØCATIØNAL EXPENDITURES
IN DØLLARS PER PERSØN

- LESS THAN $15.00
- $15.00 TØ $19.99
- $20.00 TØ $24.99
- $25.00 TØ $29.99
- $30.00 TØ $34.99
- ØVER $35.00

MINIMUM VALUE: $ 6.65
MAXIMUM VALUE: $40.78

TABLE 7

LABOR & PROPRIETORS INCOME[1] BY INDUSTRIAL SECTOR

(PERCENT OF TOTAL)
1978

	BREVARD	LAKE	ORANGE	OSCEOLA	SEMINOLE	VOLUSIA	FLORIOA
TOTAL LABOR & PROPRIETORS INCOME	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
FARM	1.3	26.7	3.6	9.0	3.1	3.3	3.1
NON-FARM	98.7	73.3	96.4	91.0	96.9	96.7	96.9
PRIVATE	76.0	61.6	78.3	76.0	80.8	81.1	78.4
Ag. Serv., For., Fish, & Other	0.4	7.1	(D)	(D)	(D)	0.7	0.9
Mining	0.0	(D)	0.0	0.0	0.0	(L)	0.4
Construction	6.3	5.7	6.4	(D)	(D)	8.0	7.1
Manufacturing	24.1	9.8	13.6	12.1	19.9	12.6	13.6
Trans. & Public Utilities	5.9	(D)	(D)	2.3	(D)	5.6	8.7
Wholesale Trade	2.4	(D)	8.6	(D)	(D)	3.5	6.5
Retail Trade	10.6	11.8	11.1	15.2	16.5	18.2	13.1
Finance, Ins., & Real Estate	3.8	3.8	7.2	4.4	6.2	6.7	7.4
Services	22.5	13.9	23.7	28.7	15.8	25.8	20.7
GOVERNMENT	22.7	11.7	18.1	15.0	16.1	15.6	18.5

[1]Income by place of work

(D) Not shown to avoid disclosure of confidential information.
(L) Less than $50,000

SOURCE: U.S. Bureau of Economic Analysis, Regional Economics Information System.

TABLE 8

BREVARD COUNTY:

INDUSTRY EMPLOYMENT
(thousands)

	1975	1976	1977	1978	1979	1980
Total All Industries	74.4	75.5	80.2	89.0	97.1	101.4
Manufacturing	10.8	11.8	14.4	16.9	19.9	21.7
Mfg: Durable	9.8	10.8	13.4	15.8	18.6	20.3
Mfg: Non-Durable	1.0	1.0	1.0	1.1	1.3	1.4
Construction	3.4	3.4	4.2	5.4	6.4	6.1
Trans., Comm., Utilities	3.9	4.0	3.9	4.0	4.4	4.6
Trade	16.3	16.5	17.0	19.3	21.1	22.4
Wholesale	2.0	2.0	1.9	2.1	2.4	2.3
Retail	14.3	14.5	13.9	17.2	18.7	20.1
Fins., Ins., & R.E.	3.0	3.0	3.2	3.7	3.9	4.1
Services, Misc., & Mining	18.3	18.4	18.9	20.7	23.0	23.8
Hotels & Lodging	1.5	1.5	1.4	1.4	1.5	1.6
Business Services	4.2	3.3	2.9	2.4	3.3	3.3
Health Services	3.4	3.7	3.9	4.2	4.5	3.6
Government	18.7	18.4	18.5	19.0	18.4	18.7
Federal	5.5	5.5	5.5	5.5	5.5	5.4

SOURCE: U.S. Department of Labor

CHAPTER III

AGGREGATE EMPLOYER RESPONSES

A facsimile of the survey instrument (Table 9) is presented here, showing in detail the tally of responses after "statistical enhancement adjustments" were made as described in the preceding section.

A master summary, Table 10, summarizes the data, shows the extent of changes between 1982 and 1985, and combines annual vacancies with new jobs to project annual job opportunities by category.

It is obvious from Table 10, and as reported in the overview section of this report, that the overwhelming numbers of job opportunities (2,838 per year) fall into the professional, technical and managerial category. These are followed by the benchwork occupations, category 7 (1,767 per year), and clerical and sales occupations, category 2, (1,125 per year).

To determine the division and job title specifics of these and other job opportunities, one need only consult the facsimile survey data. For example, the nature of job opportunities within category 1 obviously do not provide encouragement for librarians *within the manufacturing firms covered here.*

Caution must be exercised in interpreting the data because, again, *within the scope of this study,* there is no sign of opportunities in the Medicine and Health Division, but studies of these fields would involve a significantly different population of employers and would yield much different results.

Another area where caution must be exercised and the tabulations watched closely relates to the differences in job opportunities between new openings and vacancies occasioned by annual turnover. An example may help to illustrate the point. A substantial number of job opportunities appear to be available in sales and distribution management due to vacancies (category 1, SIC Code 163). However, inspection of the total

employment change forecast between 1982 and 1985 shows a drop from 613 to 347. Vacancies here will probably be filled from within, and there will still be a net loss of 91 such jobs. Attention to this kind of detail becomes crucial if the data are being used in a search for career opportunities or job placement within the study industries. To assist in this kind of activity, Figure 5 provides a rough graphic representation of the data. This is followed by more detailed alphabetical and rank ordered listings of job titles indicating the net job opportunities for each between 1982 and 1985, (Table 11). Individual firms may find it instructive to compare their own corporate experience with the data presented below. An area of particular interest might be the annual vacancy rates shown in Table 10. Here it may be noted for example that benchwork occupations, with the second highest number of new job opportunities, has over twice as high a vacancy rate as the professional, technical, and managerial area which ranks number one in job opportunities.

NOTE to TABLE 9 - An addendum page was attached to the original survey instrument, on which respondents could identify positions they did not find among the categories, divisions or jobs listed. In compiling the final tally presented here, those positions were forced into one of the nine basic categories under a job title that closely approximated the specific title identified.

TABLE 9
(10 pages)

BREVARD COUNTY LABOR POOL RESOURCE STUDY - 1981

INFORMATION REPORTED ON THIS FORM IS STRICTLY CONFIDENTIAL AND IS NOT TO BE REVEALED TO ANY UNAUTHORIZED PERSON NOR PUBLISHED IN SUCH A MANNER THAT DATA RELATING TO INDIVIDUAL COMPANIES CAN BE IDENTIFIED.

CATEGORY	DIVISION	DIVISION TOTAL	SIC* CODE	JOB TITLE	# OF EMPLOYEES 1982	# OF EMPLOYEES 1985	Annual Vacancies
1 PROFESSIONAL, TECHNICAL & MANAGERIAL CATEGORIES	00/01 Architecture, engineering, & surveying	7407 (1982) 8767 (1985); 1194 Annual Vacancies	001	Architectural	25	29	3
			002	Aeronautical engineering	88	104	19
			003	Electrical/electronic engineering	3977	4268	534
			005	Civil engineering	92	95	19
			006	Ceramic engineering	3	4	—
			007	Mechanical engineering	311	868	90
			008	Chemical engineering	114	183	32
			009	Computer science	684	1199	180
			010	Systems analyst (Engineering & Scientific)	350	456	57
			011	Metallurgy & metallurgical engineering	112	152	17
			012	Industrial engineering	453	394	49
			017	Drafters	245	343	49
			019	Occupations in architectural, engineering & surveying (not elsewhere classified)	753	672	145
	02 Mathematics & physical sciences	324 (1982) 487 (1985); 65 Annual Vacancies	020	Mathematics	127	206	29
			023	Physics	165	256	35
			029	Mathematics & physical science (not elsewhere classified)	32	25	1
	04 Life science	48 (1982) 48 (1985); 4 Annual Vacancies	041	Biological sciences	48	48	4
	07 Medicine & health	143 (1982) 83 (1985); 11 Annual Vacancies	075	Registered nurses	31	39	5
			076	Physical therapists	—	—	—
			077	Dieticians	—	1	—
			078	Medical technicians	43	43	6
			079	Medicine & health (not elsewhere classified)	69	—	—

*SIC: Standard Industrial Classification

LPRS '81

TABLE 9
(Page 2 of 10)

PROFESSIONAL, TECHNICAL & MANAGERIAL CATEGORIES (CONT'D)

		1982	1985	Annual Vacancies
09	Education	29	68	17
099	Education occupations (not otherwise classified)	29	68	17
10	Library & archival sciences	5	5	—
100	Librarians	5	5	—
11	Law	21	31	4
110	Lawyers	21	31	4
14	Art	229	282	44
141	Commercial artists, designers, illustrators & graphic arts	229	282	44
16	Administrative specializations	2876	3234	408
160	Accountants & auditors	529	673	91
161	Systems analyst (Acctg. & Info. Systems)	243	288	34
162	Purchasing management	292	334	42
163	Sales and distribution management	613	457	65
165	Public relations management	12	22	2
166	Personnel administration	235	289	40
168	Inspectors and investigators	123	153	9
169	Administrative specializations (not elsewhere classified)	829	1020	125

TABLE 9
(Page 3 of 10)

			1982	1985	Annual Vacancies
PROFESSIONAL, TECHNICAL & MANAGERIAL CATEGORIES (CONT'D)	18 Managers & officials (not elsewhere classified)	956 (1982) 1091 (1985) 86 Annual Vacancies			
		184 Transportation, communication, industry managers & officials	391	385	29
		189 Miscellaneous managers & officials (not elsewhere classified)	565	706	57
	19 Miscellaneous professional, technical & managerial	712 (1982) 1168 (1985) 200 Annual Vacancies			
		199 Miscellaneous professional, technical & managerial occupations (not elsewhere classified)	712	1168	200
TOTALS: 12,750 (1982) 15,164 (1985) 2,033 Annual Vacancies					

* *

2 CLERICAL & SALES CATEGORIES	20 Stenographic, typing, filing, & related occupations	2370 (1982) 2828 (1985) 405 Annual Vacancies			
		201 Secretaries	939	1268	168
		202 Stenographers	230	221	38
		203 Typists & typewriter machine operators	1005	1109	160
		209 Stenographic, typing, filing & related occupations (not elsewhere classified)	196	230	39
	21 Computing & account-recording	793 (1982) 1101 (1985) 278 Annual Vacancies			
		210 Bookkeeper & bookkeeping machine operators	91	138	24
		213 Electronic & electro-mechanical data processors	259	373	66
		215 Payroll, timekeeping & duty-roster clerks	54	74	12
		216 Accounting & statistical clerks	277	411	74
		219 Computing & account-recording occupations (not elsewhere classified)	112	105	12
	22 Production and stock clerks, & related occupations	953 (1982) 982 (1985) 93 Annual Vacancies			
		222 Shipping-receiving, stock & related clerical	953	982	93

TABLE 9
(Page 4 of 10)

				1982	1985	Annual Vacancies
CLERICAL & SALES CATEGORIES (CONT'D)	23 Information & message distribution	109 (1982) 175 (1985)				
		30 Annual Vacancies	237 Information & reception clerks	86	143	25
				23	32	5
	29 Miscellaneous sales occupations	45 (1982) 88 (1985)				
		18 Annual Vacancies	292 Route sales and delivery occupations	45	88	18
TOTALS: 4,270 (1982) 5,174 (1985)						
824						
3 SERVICE OCCUPATION CATEGORIES	37 Protective service occupations	447 (1982) 458 (1985)				
		28 Annual Vacancies	372 Security guards	338	379	22
			373 Fire fighters	79	79	6
TOTALS: 482 (1982) 582 (1985)	38 Building & related service occupations	65 (1982) 124 (1985)				
59 Annual Vacancies		31 Annual Vacancies	381 Porters & cleaners	9	16	2
			382 Janitors	56	108	29

4 FISHERY & RELATED OCCUPATION CATEGORIES

TOTALS:

— 1982 — 1985

— Annual Vacancies

		1982	1985	Annual Vacancies
40	Plant farming	—	—	—
403	Fruit picker	—	—	—

— 1982 — 1985

— Annual Vacancies

5 PROCESSING OCCUPATIONS CATEGORIES

		1982	1985	Annual Vacancies
50	Metal processing occupations	56	83	15
500	Electroplating	53	78	15
501	Dip plating operations	—	—	—
503	Pickling, cleaning & related occupations	—	—	—
505	Metal spraying, coating & related occupations	3	5	0
51	Ore refining & foundry	1	—	—
514	Metal pourer	—	—	—
519	Mill labor supervisor	—	—	—
52	Food & related products processing	69	15	15
520	Soft drink mixer	—	—	—
525	Slaughtering & breaking operations	—	—	—
529	Food & related products processing	69	15	15

15 Annual Vacancies

— Annual Vacancies

15 Annual Vacancies

PROCESSING OCCUPATIONS CATEGORIES (CONT'D)

TOTALS:

997 (1982) 1922 (1985)

415 Annual Vacancies

		1982	1985	Annual Vacancies
57	Stone, clay, glass & related products	3	3	–
				Annual Vacancies
59	Processing occupations (not elsewhere classified)	869	1821	385
				Annual Vacancies

		1982	1985	Annual Vacancies
570	Crushing, grinding & mixing operations	–	–	–
575	Forming operations	–	–	–
579	Stone, clay, glass & related products occupations (not elsewhere classified)	3	3	–
590	Assorted materials processing products occupations	869	1821	385

6 MACHINE TRADES OCCUPATIONS CATEGORIES

		1982	1985	Annual Vacancies
60	Metal machining occupations	777	1120	99
				Annual Vacancies
61	Metalworking occupations (not elsewhere classified)	163	165	25
				Annual Vacancies
62/63	Mechanics & machinery repairs	580	220	47
				Annual Vacancies

		1982	1985	Annual Vacancies
600	Machinists & related occupations	203	260	14
601	Toolmakers & related occupations	42	61	4
605	Milling, shaping & planing occupations	74	170	42
609	Metal machining occupations (not elsewhere classified	458	629	39
614	Extruding & drawing occupations	41	27	14
615	Punching & shearing occupations	28	43	2
616	Fabricating machine occupations	68	85	7
617	Forming occupations (not elsewhere classified)	5	5	1
619	Miscellaneous metalworking occupations (not elsewhere classified)	21	5	1
620	Engineering equipment mechanics & repairs	150	168	33
621	Aircraft mechanics & repairs	2	5	1
625	Engine & transmission repairs	104	1	1
638	Machine installation & repairs	324	47	12

57

58

MACHINE TRADES OCCUPATIONS CATEGORIES (CONT'D)

TOTALS:

1,759 (1982) 1,810 (1985)

206 Annual Vacancies

		1982	1985	Annual Vacancies
65	Printing occupations	161	211	34
650	Typesetters & composers	8	8	2
651	Printing press occupations	96	128	19
652	Printing machine occupations	57	75	13
69	Machine trades	78	94	1
691	Fabrication of insulated wire & cable	78	94	1

7 BENCHWORK OCCUPATIONS CATEGORIES

		1982	1985	Annual Vacancies
70	Fabrication, assembly & repair of metal products	156	146	7
703	Sheet metal products assembly & repair	83	103	5
704	Engravers, etchers, & related occupations	8	13	—
705	Cleaning & polishing occupations	25	30	2
706	Metal unit assemblers & adjusters (not elsewhere classified)	40	—	—
71	Fabrication/repair of scientific, optical & related products occupations	484	606	93
710	Fabrication/repair of physical characteristic instruments occupations	—	—	—
711	Fabrication/repair of optical instruments occupations	6	7	1
714	Fabrication/repair of photographic instruments occupations	2	2	1
716	Fabrication/repair of engineering & scientific instruments & equipment (not elsewhere classified)	476	597	91

TABLE 9
(Page 8 of 10)

BENCHWORK OCCUPATIONS CATEGORIES (CONT'D)

TOTALS:

3,244 (1982) 4,648 (1985)

1,299 Annual Vacancies

		1982	1985	Annual Vacancies
72	Assembly/repair of electrical equipment	2418	3634	1165
722	Communications equipment assembly & repair	399	516	480
723	Electrical fixtures assembly & repair	108	152	31
726	Assembly/repair of electronic components & accessories (not elsewhere classified)	1789	2730	614
729	Assembly/repair of electrical equipment (not elsewhere classified)	122	236	40
74	Painting, decorating & related occupations	131	144	17
741	Spray painters	30	43	6
749	Painting, decorating & related occupations (not elsewhere classified)	101	101	11
75	Fabrication & repair of plastic products occupations	26	78	13
754	Fabrication & repair of miscellaneous plastic products	26	78	13
77	Fabrication & repair of sand, stone, clay & glass products occupations	29	40	4
777	Model makers & patternmaker	29	40	4
78	Textile, leather & related products fabrication & repair	—	—	—
785	Uniformer	—	—	—

61

62

TABLE 9
(Page 9 of 10)

8

STRUCTURAL WORK OCCUPATIONS CATEGORIES

TOTALS:

835 (1982) 902 (1985)

132

		1982	1985	Annual Vacancies
80	Metal Fabricating	162	244	47
801	Fitting & bolting occupations	–	–	–
804	Sheet metal workers	105	149	10
806	Transportation equipment assemblers	51	86	34
807	Transportation body worker	6	9	3
81	Welders, cutters, & related occupations	71	71	12
810	Arc welders and cutters	35	24	1
819	Welders, cutters and related occupations (not elsewhere classified)	56	47	11
82	Electrical assembling, installing & repair	442	497	54
823	Avionics	–	–	–
824	Lighting & wiring, assembly, installation & repair	270	252	27
828	Electrical & electronics products fabrication, installation & repair	172	245	27
84	Painting, plastering, waterproofing & related occupation	63	2	–
843	Protective coating & related occupations	63	2	–
844	Concrete finishing & related occupations	–	–	–
86	Construction occupations (not elsewhere classified)	97	88	19
860	Carpenters & related occupations	87	88	19
861	Brick & stone masons	10	–	–

63

64

TABLE 9
(Page 10 or 10)

9 MISCELLANEOUS OCCUPATIONS CATEGORIES

TOTALS:

363 (1982) 288 (1985)

49 Annual Vacancies

90 Motor freight occupations

168 (1982) 82 (1985)

10 Annual Vacancies

92 Packaging & materials handling occupations

69 (1982) 89 (1985)

17 Annual Vacancies

95 Production & distribution of utilities occupations

40 (1982) 22 (1985)

Annual Vacancies

97 Graphic art work occupations

86 (1982) 95 (1985)

22 Annual Vacancies

		1982	1985	Annual Vacancies
900	Concrete-mixing-truck drivers	—	—	—
902	Dump-truck drivers	—	—	—
904	Trailer-truck drivers	—	—	—
905	Truck-drivers, heavy	74	35	—
906	Truck-drivers, light	17	20	3
909	Motor freight operations (not elsewhere classified)	26	27	7
		52	—	—
920	Packaging occupations	38	58	14
921	Hoisting & conveying occupations	31	31	3
955	Refuse & sewage disposal occupations	40	22	—
970	Art work occupations	24	35	9
976	Darkroom occupations (not elsewhere classified)	62	60	13

65

66

TABLE 10
Job Opportunity Projections in Selected Categories

CATEGORY & TITLE	1982	1985	CHANGE 1982-85 # Δ	CHANGE 1982-85 % Δ	VACANCIES #/Yr	VACANCIES %/Yr	NEW #/Yr	TOTAL #/Yr
1 Professional, Technical & Managerial	12,750	15,164	2,414	19	2,033	15	805	2,838
2 Clerical & Sales Occupations	4,270	5,174	904	21	824	17	301	1,125
3 Service Occupations	482	582	100	21	59	11	33	92
4 Fisheries & Related Occuaptions	Not germane to this study							
5 Processing Occupations	997	1,922	925	93	415	28	308	723
6 Machine Trades Occupations	1,752	1,810	58	3	206	12	19	225
7 Benchwork Occupations	3,244	4,648	1,404	43	1,299	33	468	1,767
8 Structural Work Occupations	835	902	67	8	132	15	- 22	154
9 Miscellaneous Occupations	363	288	(-75)	(-21)	49	15	(-25)	24
TOTALS	24,693	30,490	5,797	23	5,017	21	1,931	6,948

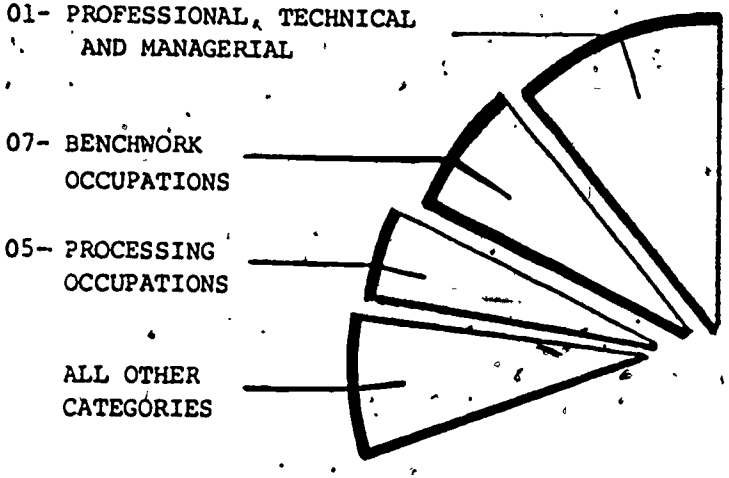
NOTE: Figures are extrapolations from a selected group of Brevard Industries.

The group of firms was not randomly selected nor stratified to portray the categories in proportion to their current existence, hence conclusions from this data can only be interpreted in reference to the specific group of companies surveyed.

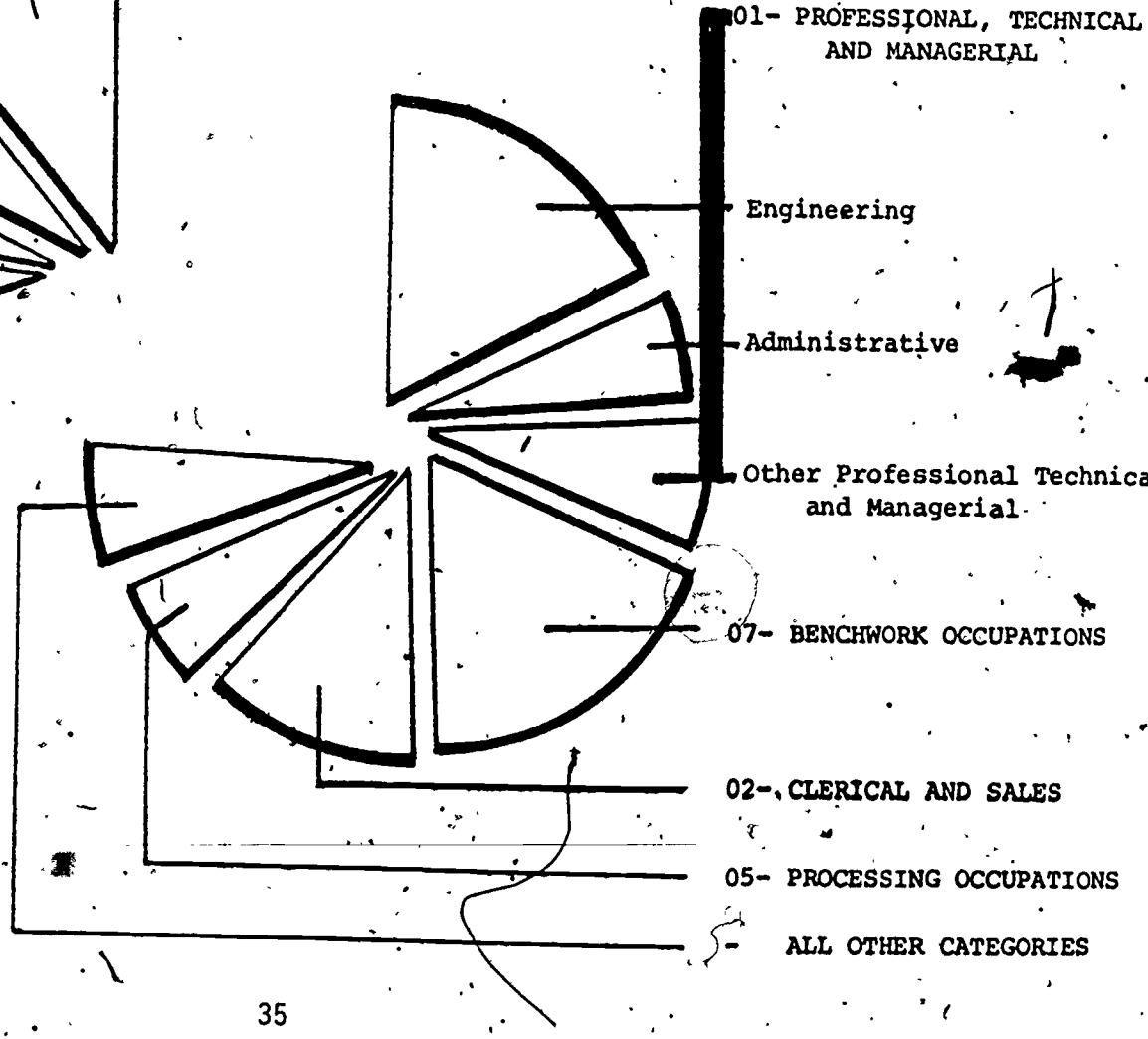
FIGURE 5

BREVARD LPRS MANUFACTURING FIRMS'
ANNUAL JOB OPPORTUNITIES BY CATEGORY
1982 - 1985

NEW JOBS - 1,931



VACANCIES IN EXISTING JOBS - 5,017



TOTAL (NEW AND VACANCIES) ANNUAL JOB OPPORTUNITIES:

6,948

TABLE 11
(4 pages)

JOB OPPORTUNITIES IN RANK ORDER WITHIN BREVARD MANUFACTURING SECTOR SURVEYED

RANK	NET JOBS	SIC CODE	OCCUPATIONS
1	961	726	Assembly and repair of electronic components
2	702	590	Assorted materials processing (NEC)*
3	631	003	Electrical/electronic engineering
4	519	722	Communications equipment assembly and repair
5	352	199	Miscellaneous professional, technical and managerial (NEC)
6	318	009	Computer science
7	278	201	Secretaries
8	276	007	Mechanical engineering
9	195	203	Typists and typewriter machine operators
10	189	169	Administrative specializations (NEC)
11	187	210	Bookkeeper and bookkeeping machine operators
12	139	160	Accountants and auditors
13	131	716	Fabrication and repair of scientific instruments & equip. (NEC)
14	118	019	Architectural and engineering (NEC)
15	104	213	Electronic and electro-mechanical data processors
16	103	222	Shipping-receiving stock and related clerical
17	101	189	Miscellaneous managers and officials (NEC)
18	96	609	Metal machining (NEC)
19	92	010	Systems analyst (engineering and scientific)
20	82	017	Drafters
21	78	729	Assembly/repair of electrical equipment (NEC)
22	74	605	Milling, shaping and planing
23	65	023	Physics
24	62	141	Commercial artists, designers, illustrators, and graphic arts
25	57	166	Personnel administration

*(NEC) Not elsewhere classified

JOB OPPORTUNITIES IN RANK ORDER WITHIN BREVARD MANUFACTURING SECTOR SURVEYED (Cont'd)

RANK	NET JOBS	SIC CODE	OCCUPATIONS
26	56	162	Purchasing management
27T	55	008	Chemical engineering
27T	55	020	Mathematics
28	52	828	Elec and electronics products fabrication installation & repair
29	50	209	Steno, typing, filing and related (NEC)
30	49	161	Systems analyst (Accounting and informations systems)
31T	46	382	Janitors.
31T	46	723	Electrical fixtures assembly and repair
31T	46	806	Transportation equipment assemblers
32	44	237	Information & reception clerks
33	39	620	Engineering equipment mechanics and repair
34T	35	202	Stenographers
34T	35	372	Security guards
35	33	600	Machinists and related occupations
36	32	292	Route sales and delivery
37T	30	011	Metalurgy and metalurgical engineering
37T	30	099	Education (NEC)
37T	30	651	Printing press
37T	30	754	Fabrication and repair of miscellaneous plastic products
38	27	184	Transportation, communication, industry managers and officials
39	25	804	Sheet metal workers
40	24	002	Aeronautical engineering
41	23	500	Electroplating
42T	21	824	Lighting and wiring assembly installation and repair
42T	21	920	Packing.
43	20	005	Civil engineering
44T	19	168	Inspectors and investigators
44T	19	216	Accounting and statistical clerks
44T	19	651	Printing machine occupations
44T	19	860	Carpenters and related occupations
45	14	219	Computing and account recording (NEC)

JOB OPPORTUNITIES IN RANK ORDER WITHIN BREVARD MANUFACTURING SECTOR SURVEYED (Cont'd)

RANK	NET JOBS	SIC CODE	OCCUPATIONS
46T	13	163	Sales and distribution management
46T	13	616	Fabricating machine occupations
46T	13	970	Art work
47T	12	703	Sheet metal products assembly and repair
47T	12	976	Darkroom occupations (NEC)
48	11	749	Painting, decorating and related occupations
49T	10	601	Toolmakers and related occupations
49T	10	741	Spray painters
50	9	614	Extruding and drawing
51	8	075	Registered nurses
51T	8	237	Information and reception clerks
51T	8	777	Modelmakers and patternmakers
51T	8	819	Welders, cutters and related occupations (NEC)
51T	8	906	Truck drivers, light
52T	7	110	Lawyers
52T	7	615	Punching and shearing occupations
53T	6	078	Medical technicians
53T	6	373	Firefighters
53T	6	691	Fabrication of insulated wire and cable
54	4	165	Public relations management
55T	4	001	Archectitural
55T	4	041	Biological sciences
55T	4	381	Porters and cleaners
55T	4	705	Cleaning and polishing (metal products)
55T	4	807	Transportation body worker
55T	4	905	Truck drivers, heavy
56	3	921	Hoisting and conveying
57T	2	621	Aircraft mechanics and repairs
57T	2	650	Typesetters and composers (printing)
57T	2	704	Engravers, etchers, and related (metal)
58T	1	077	Dieticians
58T	1	505	Metal spraying, coating and related occupations
58T	1	617	Forming (metal) (NEC)
58T	1	711	Fabrication/repair of optical instruments
58T	1	714	Fabrication/repair of photographic instruments

JOB OPPORTUNITIES IN RANK ORDER WITHIN BREVARD MANUFACTURING SECTOR SURVEYED (Cont'd)

RANK	NET JOBS	SIC CODE	OCCUPATIONS
59T	0	006	Ceramic engineering
59T	0	005	Librarians
59T	0	579	Stone glass and related products processing (NEC)
60	-1	029	Math and physical science (NEC)
61T	-3	529	Food and related products processing
61T	-3	810	Arc Welders and cutters
61T	-3	861	Brick and stone masons
62	-4	619	Miscellaneous metalworking (NEC)
63	-6	955	Refuse and sewage disposal
64T	-13	706	Metal unit assemblers and adjusters (NEC)
64T	-13	904	Trailer truck drivers
65	-17	909	Motor freight operations (NEC)
66	-20	843	Protective coating and related (structural work)
67	-23	079	Medicine and health (NEC)
68	-34	625	Engine and transmission repairs
69	-37	012	Industrial engineering
70	-80	638	Machine installation and repairs (machine trades)

SUMMARY AND RECOMMENDATIONS

Brevard's present and forecast durable manufacturing industry is accurately and confidentially assessed by the employers included in this study. There has been, however, no attempt to account for those new employers who will undoubtedly come to Brevard and further expand the figures included in this report. Yet, with past experience as a guide, the trend toward expansion of the high-technology industry in Brevard can be expected to continue as such companies tend to follow one another into the area.

Findings of this study lend support to the thesis that Brevard's durable manufacturing expansion will continue to be a leading development factor within Florida, even as the state paces the nation in population growth and other factors outlined in the report. This conclusion is merited by the expected growth rates reported by the participating firms, without even allowing for potential newcomers. That rate stands at 23% over the next three years.

The implications for education and training are readily apparent. With some seven thousand manufacturing job opportunities per year identified by the study, employers may well face critical shortages of personnel possessing the necessary and desired skills. Because good indications of the kinds of jobs forecast to be most in demand are provided in this report, corporations and educational institutions will be able to plan appropriate programs with more precision than in the past.

Nevertheless, several large groups of job opportunities do emerge which are not clearly defined. For example, the second largest number of net job openings and three of the top ten occupations ranked

are in the "catch-all" standard industrial classification codes identified as (NEC), "not elsewher classified." This indicates a need to refine and extend certain categories such as processing occ pations and administrative specializations on the survey instrument to obtain more complete job specification.

RECOMMENDATIONS

1. In view of the expressed interest and continuing need to update and assess Brevard's labor resources, the initial efforts represented by this report should be refined and expanded. Some directions to be considered should include:
   a. Identification of an agency and funding source(s) to support future reports on a routine annual or bi-annual basis.
   b. Extension of this type of investigation to other major segments of the labor market such as government, retail trade, services (hotels, business, health), transportation, construction, etc.
   c. Increased job specification within the survey instrument to the extent that participants will continue to respond at an acceptable rate.
2. Acting in meaningful ways upon the information provided by this study will require that industry, education and other interested agencies integrate the information into their planning processes and cooperative relationships. For example:

a. Corporate and institutional leaders should, therefore, establish increased cooperative relationships such as an industry-education council. Such a group would be made up of a cross-section of representatives from large and small firms and both the public and private sector, including educational institutions from K-12 through the post-secondary vocational and academic studies at the post-graduate university level.

b. Information from this report should be shared among all interested members of industry and education and reviewed by other county agencies such as the County Planning Department, where it may be considered in relation to similar or corollary data.

c. All educational institutions in Brevard should review their program offerings and career counseling activities in the light of this information. In so doing, decisions to expand or delete offerings should take into account the limitations of the study as mentioned throughout this report.

3. Because of the extreme care with which this study was organized to protect the confidentiality of individual corporate information, the fears evidenced by some firms should be put aside in the future. To the extent that this is done, survey completeness, validity and reliability can be greatly enhanced.

4. Ways should be explored which could enable future studies of this nature to include data from firms considering future operations in Brevard. Again, protection of the corporate data and disclosure of corporate identification need not be a problem. Without such forecast data, educational institutions cannot adequately prepare appropriate offerings.

5. Finally, those jobs which are most difficult for industry to fill because of a shortage of qualified personnel are also the most difficult for educational institutions to find qualified instructors to teach. As it identifies many of those areas, this report concludes by recommending that steps be taken by industry to help meet education's requirements for scarce instructors and equipment. Provisions for sharing both hardware and personnel will be necessary to ensure that training is available for those seeking it, that the labor pool is increased where needed and that the subject matter covered encompasses the latest changes in technology, methodology and equipment.

APPENDIX

Included here are sample transmittal letters, instructions for completing the survey and cross-referenced listings of job titles to assist participants in completing the survey form. For a facsimile copy of the survey instrument, see Table 9, pages 24 through 33 in the text of the report.

BREVARD COMMUNITY COLLEGE

August 28, 1981

Dear

An accurate projection of the employment needs in Brevard County during the next several years will be an extremely valuable management tool for all of us in industry and education alike. Because this is so, we at Brevard Community College are devoting a significant research effort toward helping to compile this data--and we are joining with the Brevard Economic Development Council and others in asking that you also direct some valuable time and effort toward providing the essential elements for this type of forecast.

Your willingness to provide the best possible estimates of employee requirements in your company through 1985 will determine the accuracy and credibility of the enclosed labor survey. In turn, this will determine the ability of the educational community serving Brevard to obtain resources and facilities sufficient to provide an appropriately trained labor pool to meet your needs.

In urging your participation, I wish to assure you that individual survey responses will be held in strict confidence by our research office and resulting reports will be organized to avoid compromising your trust.

Many thanks for your cooperation in this effort.

Sincerely,

Maxwell C. King
President

MCK:mb

Enclosures

Cocoa Campus, Clearlake Road, Cocoa, Florida 32922 (305) 632 1111
a Multi-Campus College Serving Brevard County

OFFICE OF THE PRESIDENT

BREVARD ECONOMIC DEVELOPMENT COUNCIL

September 1, 1982

Dear

A great many of your new employees this year and in the years to follow will probably be trained right here in Brevard County - product of our schools and our vocational training programs, plus higher education.

In order that those who are charged with the responsibilty for vocational and academic programs may have the best knowledge available of what is going to be needed, the enclosed survey has been prepared and forwarded to you, an employer of significance in Brevard County. We believe this is a most worthwhile project and will, perhaps, presage continuation of similar reviews in the future.

While the form is somewhat detailed, this is necessary to permit the kind of hard information which is needed for academic and vocational training programs and will be used by the institutions involved in proportion to the coverage obtained, which could involve over 80 percent of the manufacturing employment in Brevard County.

An addressed envelope is provided for your returning the completed forms to Brevard Community College. In no way will these records of the initial information be available for any use other than by the Brevard Community College analyst who will be reviewing and compiling the data for further dissemination in total rather than with reference to the individual contributors. Please call Mr. Lawton at BCC (636-1111, Ext. 224) for any needed assistance with the form.

Compilation of this survey has been handled under the auspices of the Committee of 100 of the Melbourne and Palm Bay Area Chambers of Commerce, Florida Institute of Technology, individual representatives of industry and this agency, BEDC.

Thank you for your cooperation in this matter - it will, hopefully, benefit the major employers of Brevard County and thus the Brevard County economy and its people.

Very truly yours,

William C. Potter

WCP:mf

Enclosures

2575 N COURTENAY PARKWAY MERRITT ISLAND FLORIDA 32952 PHONE 305/453-9519

SURVEY PURPOSE AND INSTRUCTIONS

The purpose of this survey is to gather information for projecting county-wide manpower needs and changes in employment levels precipitated by rapid increases in manufacturing in Brevard. This information will help the Educational Delivery System to ascertain the support and funding requirements to assure an adequate well-trained work force for industry. It will also be used to assist in obtaining the needed State or other funding to maintain these programs or establish new programs.

The survey to be completed is divided into nine occupational categories. Within each of these categories are subordinate two-digit occupational divisions, and projected employment requirements for each job title. The form should be completed from right to left, completing summation of employment projections for each division and compiling the totals at the end of each category.

The last page of the survey is an addendum. Jobs/positions peculiar to your company's operation, and which are not elsewhere identified, should be included on this page.

The two attachments accompanying the survey, NUMERICAL LISTING BY OCCUPATIONAL GROUP CODES and ALPHABETICAL LISTING OF JOB TITLES, are provided as an aid to completing the survey, they identify job/position titles which should be included, where appropriate to your firm, in each specific group code. These two attachments are <u>not</u> to be returned with the completed employment projection survey.

ALPHABETICAL LISTING OF JOB TITLES

Shear operator	615
Shipping & receiving clerk	222
Shop supervisor	600
Soft drink mixer	520
Software technician (EDP)	003
Sorter, fruit	529
Sprayer, metal protective coating	843
Spray painter	741
Statistician	020
Stenographic clerk	202
Stenotype operator	202
Stock clerk	222
Stock supervisor	921
Stress analyst	002
Subassembler	706
Supervisor, bottling line	920
Supervisor, mail room	209
Supervisor, maintenance	184
Supervisor, metalizing	505
Supervisor, mill operator	519
Supervisor, milling	570
Supervisor, press room	651
Supervisor, shop	600
Supervisor, stock	921
Systems analyst (Mathematical)	020
Systems engineer (EDP)	003
Technician, air conditioning	007
Technician, avionics	823
Technician, chemical engineering	008
Technician, data processing	020
Technician, electrical	003
Technician, electromechanical instrument	710
Technician, electronics	003
Technician, film laboratory	976
Technician, illustrator	141
Technician, industrial engineering	012
Technician, computer laboratory	003
Technician, mathematical	020
Technician, mechanical engineering	007
Technician, medical	078
Technician, optomechanical	007
Technician, photographic equip. maint.	714
Technician, quality control	012
Technician, semiconductor	003
Technician, software (EDP)	003
Technician, test	726
Technician, welding	011
Terminal operator	203
Test engineer, electrical	003
Test engineer, electronics	003
Test technician	726
Tester, electronics	726
Therapist, physical	076
Tool crib attendant	222
Tool maker	601
Tool & die maker	601
*Systems analyst (Acctg. & info Systems)	161
*Systems analyst (Engineering & Scientific	010

Truck driver (general)	904
Truck driver (heavy)	905
Truck driver (light)	906
Typesetter	650
Typist, clerk	203
Uniformer	785
Washer, bottle	529
Waste-disposal attendant	955
Welder, arc	810
Welder, combination	819
Welding tech	011
Wirer, cable	729
Wirer, lamp	723
Worker, cosmetics	550
Worker, electronics	726
Worker, fish house	920
Worker, forming processing	590
Worker, layout	600
Worker, sheet metal	804

NUMERICAL LISTING BY OCCUPATIONAL GROUP CODES

001
Architects
Architectural drafter

002
Aerodynamist
Aeronautical engineer
Cost analyst engineer
Stress analyst

003
Computer laboratory technician
Electrical drafter
Electrical engineer
Electrical technician
Electrical test engineer
Electronics drafter
Electronics engineer
Electronics technician
Electronics test engineer
Semiconductor technician
Software technician (EDP)
Systems engineer (EDP)

005
Civil drafter

006
Ceramics engineer

007
Air conditioning technician
Computer programer
Layout drafter
Mechanical drafter
Mechanical engineer
Mechanical engineering technician
Optomechanical engineer
Optomechanical technician
Plant engineer

008
Chemical engineer
Chemical engineering technician
*009 & 010 (See back page)
011
Welding technician
Metallurgist

012
Industrial engineer
Industrial engineering technician
Planners
Processor
Production engineer
Programer
Quality control engineer

012 (Cont'd)
Quality control technician
Safety engineer

017
Detail engineer

019
Optical engineer
Ordnance engineer

020
Computer analyst
Computer applications engineer
Data processing technician
Engineering analyst
Mathematician
Mathematics technician
Operations research analyst
Statistician
Systems analyst (Mathematical)

023
Physicist

029
Environmental analyst

041
Biologist

075
Nurse

076
Physical therapist

077
Dietition

078
Medical technician

079
Medical assistant
099
Educational & training specialist
100
Librarian
110
Attorney
141
Graphic artist
Technical illustrator
160
Accountant
Auditor

*161 (See back page)
162
Buyer
Contract administrator
Procurement engineer
Purchasing agent

163
Sales manager

165
Public relations representative

166
Employee assistance prog. counselor

168
Quality control coordinator
Safety inspector

169
Administrative assistant

184
Maintenance supervisor

189
Security officer

199
Planning assistant

201
Secretary

202
Clerk stenographer
Stenotype operator

203
Clerk typist
Keypunch operator
Terminal operator

209
Mail clerk
Mailroom supervisor
Personnel clerk

210
Audit clerk
Bookkeeper

213
Computer operator

215
Payroll clerk

216
Accounting clerk
Budget record clerk

219
Administrative clerk
Benefirs & compensation clerk

222
Expeditor
Shipping & receiving clerk
Stock clerk
Tool crib attendant

237
Receptionist

292
Route sales/delivery driver

372
Security guard

373
Fire fighter

381
Industrial cleaner
Metal polisher

382
Janitors

403
Fruit picker

500
Anodizer
Electroplating laborer
Electroplating production plater

501
Hot dip plater

503
Electroless plater
Metalizing supervisor

514
Metal pourer

519
Mill labor supervisor

520
Soft drink mixer

525
Fish cutter
Fish dresser

529
Bottle washer
Fruit grader
Fruit sorter

570
Concrete batch-plant opr.
Milling supervisor

575
Brick molder

579
Concrete mixer operator

590
Ceramic capacitor processor
Electronic component processor
Etched circuit processor
Forming processing worker
Impregnator
Printed circuit etcher
Semiconductor processor

600
Instrument maker
Layout worker
Machinist
Shop supervisor

601
Tool & Die maker
Tool maker

605
Milling machine operator
Milling planner
Mill operator

609
Shop-laborer

615
Punch-press operator
Shear operator

616
Machine operator
Multi-operations forming machine operator

617
Brake operator
Hydraulic press operator

614
Metal fabricator

619
Metal fabricating shop helper

620
Automotive mechanic

621
Research mechanic

625
Diesel mechanic

638
Mainetenance mechanic
Millwright

691
Leader assembler

703
Metal finish inspector

704
Lettering engraver

705
Metal finisher

706
Assembler
Metal parts assembler
Subassembler

710
Electromechanical instrument tech.

711
Optical inspector
Optical instrument assembler

714
Camera repairman
Photographic equip. maintenance tech.

716
Precision lens grinder

722
Electronic instrument inspector

723
Lamp wirer

726
Developmental electronics assembler
Electronics assembler
Electronics inspector
Electronics tester
Electronics worker
Encapsulator
Quality control inspector
Test tech.

729
Cable wirer

741
Spray painter

749
Lamp decorator

754
Mechanical assembler
Patternmaker

777
Spray painter

785
Uniformer

801
Pump assembler

804
Sheet metal worker

806
Fiberglass laminator

807
Auto body customizer

810
Arc welder

819
Combination welder

823
Avionics tech.

824
Electrician

828
Electronics mechanic

843
Metal protective coating sprayer

844
Concrete finisher/polisher

860
Boat builder

861
Concrete block mason

900
Concrete mixing truck driver

902
Dump-truck driver

904
Truck driver (general)

905
Garbage collector driver
Truck driver (heavy)

906
Truck driver (light)

909
Garbage collector

920
Packager
Bottling line attendant
Bottling line supervisor
Fish house worker
Fish packer
Fruit packer

921
Stock supervisor

955
Sanitary landfill operator
Waste-disposal attendent

970
Artist

976
Film-laboratory tech.

009
Computer science (software)

010
Systems analyst (Eng. & Scientific)

161
Systems Analyst (Acctg. & Info Systems)