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ABSTRACT

To investigate and resolve some of the problems associated with developing a permanent state-wide occupational information service system for planning and programing vocational education, a small scale data bank was developed for six selected countries in Alabama. Inputs were collected from 38 high schools offering vocational education, two post-secondary vocational institutes, three county employment offices, one chamber of commerce, four institutions offering non-public supported programs, and some manpower training programs. The occupation-industry material approach was used to estimate employment levels, and a cross tabulation computer program was used to project employment. The information output components were: (1) demographic, (2) manpower demand, (3) manpower supply, and (4) resources inventories. Charts and exhibits illustrate the kinds of information available and its output organization from the system. (Author)

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A PILOT INVESTIGATION FOR DEVELOPING
AND OPERATING A STATE OCCUPATIONAL
INFORMATION SERVICE SYSTEM FOR
VOCATIONAL-TECHNICAL EDUCATION

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U. S. DEPARTMENT OF
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Figure 1 - Data Bank Counties

SUMMARY

The purpose of this study was to investigate and resolve some of the problems associated with developing occupational information service systems for planning and programming vocational education on a school district, county and multi-county basis. The volume and nature of the data to be handled were the major factors under study.

The study involved state and local agencies of six counties in Alabama. All activities were directed toward the development of instruments, procedures, and techniques for identifying, collecting, storing, retrieving, organizing and disseminating information.

The information output components for the small-scale system were demographic, manpower demand, manpower supply, and resources inventories.

INTRODUCTION

One generally accepted goal of public education is that appropriate vocational education programs should be made accessible to persons of all ages in all communities. These programs must be realistic in light of actual or anticipated opportunities for gainful employment and suited to the needs, interests, and abilities of potential enrollees.

The development of high quality programs will be dependent upon current local and state data relative to enrollment in occupational training programs; manpower demand; inventories of human and physical training resources; employment; demographic characteristics of the labor force; and the growth; stability; or decline of particular industries.

The development of a state plan and local program plans are requirements under the Vocational Education Amendments of 1968. Section 123 of the Act dealing with state plans makes it clear that states will be expected to develop a state-local planning procedure that will provide the training needs of all people as well as meet the needs of the labor market. If the legislative mandate is to be carried out states must assist local educational agencies by providing planning data.

There is little evidence of research and development activities being conducted in the development of information systems for planning and programming vocational education. The absence of such activities is probably due, first, to the necessity of establishing a system through the cooperative efforts of a number of public and private agencies, and second, the nature of information systems.

The basic concepts of information collection, storage, retrieval, and dissemination can be understood only if some aspects of the general nature of information systems are first investigated. This has not been accomplished successfully by vocational educators even in settings where they have or could obtain complete cooperation of the various public agencies. Many of these agencies have in their information system, data which would be of value in planning, programming, managing and evaluating vocational education programs.

To provide high quality vocational education programs, a vast amount of information is required about the student population and employment opportunities within the labor market. Kotz¹ states that. . .

manpower demand and supply, including projections and their validity, is of great importance to vocational education. The factors that most critically affect occupational education include

the interests of and the choice exercised by students; the manpower demands of the nation in both the public and private sector; the existing supply of manpower and its characteristics including adaptability.

Divisions of vocational education in state departments of education and other state agencies collect occupational information of many types, but the lack of coordination has resulted in much overlap, duplication, and repetition of effort by persons supplying information. In most instances the type of information supplied is not adequate. Kotz states. . .

there is now agreement between the Department of Labor and Education at the national and state levels to the effect that the former will provide essential job requirements data to the latter. At the state and local level, there is a woeful shortage of the kind of data necessary.

The situation may be that the data presently available from such sources are not being collected nor properly utilized. Goodwin² in a statement indicates that. . .

the absence of up-to-date data on current job opportunities, the roster of unfilled job openings listed with the local employment offices represent the best available information on occupations for which workers are being sought within a state or local area.

There seems to be a lack of coordination between vocational education and other agencies in providing enrollment data in vocational training programs. There is also a lack of coordination between these agencies in determining the availability of trained manpower and the labor market demand for manpower by job classification categories. This lack of coordination was recognized by Medvin³ in his statement that. . .

a gap which is inherent in studies to date, with such exceptions as the area skill survey and to some extent the BLS model, is the absence of labor supply figures.

And by Kotz in his statement that. . .

no studies are made of total supply coming out of the pipelines--proprietary, religious schools, manpower development and training, and on-the-job training--nor is any responsibility assigned or recognized for such summation and evaluation of total supply as related to demand.

. . . The growth, stability, or decline of particular industries has direct effect on the demand and supply for manpower. Among other labor market considerations, the educator must be concerned with trends in employment by occupational categories and by job family, skill requirements, the relationship between filled jobs and job vacancies as forecast for the state or metropolitan area, and the size of the existing work force to meet that demand.

The need for an on-going occupational information service system is clearly recognized by Lecht⁴ in his statement that. . .

manpower projections can be useful to government, to business establishments, or to groups such as this because they help to reduce uncertainty. They can indicate probable limits to change in manpower needs and can also show the probable consequences of pursuing alternative policies, including doing nothing. However, projections are not the same thing as predictions. We are many years away in the social sciences from being able to make successful quantitative predictions for a five- or ten-year period.

A sub-committee of the President's Committee on Manpower expressed a need for manpower projection.⁵ The committee further states:

. . . Any projection is an attempt to outline the future - thus, uncertainty is inherent. Nevertheless, the working group believes that errors in projections are only in part due to the uncertainty of future developments; ill-chosen assumptions, haphazard techniques, untrained staff, poor data, and lack of communication among government agencies may be major sources of error. Too frequently manpower projections have been developed on an ad hoc basis using ad hoc methods. Among our most important findings is that few agencies have put sufficient stress on the quality of manpower projections. Many have only limited technical capabilities and are operating with inadequate standards. Even in the Bureau of Labor Statistics, where the responsibility for national manpower projections is freely acknowledged, the staff is hampered by inadequate resources, limited research support, and almost unlimited demand for ad hoc specific, as well as general-purpose, projections.

The need for reliable information for planning is a problem that exists in all social agencies. The commonality of planning problems and the need for related data by all social agencies could contribute to the development of a total data system.

Given the realities of the economic and social setting, the problem in vocational education is then how to improve and develop an information system which utilizes existing data and transforms it into a more usable form.

The Problem

It is becoming increasingly apparent to professional personnel in vocational education that occupational information must be systematized so that a sequence of events can be applied which starts with the statement of questions and ends with the receipt of information for making decisions. There are few, if any, information systems on a local or state level to which questions can be addressed that have high relevance for planning and programming in vocational education.

Amazing progress has been made in the development of high speed electronic data processing equipment. Improved data processing techniques for data analysis are now available, but vocational educators have not been able to utilize the new technology because occupational information has not been collected and stored in a form that can be retrieved.

There is little evidence of any effort on the part of state and local agencies to develop computerized information systems which can handle an input question statement and translate the statement into usable information language for planners.

There exists an urgent need for a computerized information processing system on a state level which addresses itself to providing information for planning and programming vocational education on a school district, county and multi-county basis.

Purpose of the Study

The central purpose of this study was to investigate and resolve some of the problems associated with developing a permanent state-wide occupational information service system for planning and programming vocational education. More specific objectives were:

1. To develop instruments and procedures for collecting information relative to vocational-technical education students and programs from state-supported schools and private agencies.
2. To develop procedures for collecting social, economic, and occupational data for computer processing from selected state-supported agencies, private agencies, and selected businesses and industries.
3. To develop data-processing techniques for systematizing and integrating occupational information.

METHODOLOGY

Scope

This study involved the development of a small scale data bank for six selected counties in Alabama (Figure 1). In order to resolve the problems associated with developing a state-wide information system, the small scale system was flexibly designed so that the data input and information output could be expanded to include school districts within counties within vocational planning areas and state-wide totals. Inputs into the small scale were collected from 38 high schools offering vocational education within 10 school districts; two state supported post-secondary vocational institutes; three county employment field offices; one area chamber of commerce; four institutions providing non-public supported occupational training programs; and manpower training programs under the Manpower Training and Development Act.

In addition to the local agencies, inputs were also included from the Alabama State Employment Service; Bureau of Business and Economic Research, University of Alabama; Alabama Department of Agriculture and Industries; Alabama State Department of Education; Alabama Department of Public Health; Alabama Department of Pensions and Security; and Alabama Department of Industrial Relations.

Data Collection

All activities were directed toward the development of instruments, procedures and techniques that could be replicated in a total state system.

The development of the small-scale information system was conceptualized as an information flow process. The data input functions consisted of identifying, collecting, screening, coding, and storing data from both public and private agencies.

The volume and nature of data to be handled and the services to be performed were the major factors under study. Considerable effort was devoted to the planning of a system to permit conversion of present hand-operations to computer operations. This was particularly true with the data gathering and tabulation functions associated with the reporting procedures for state supported vocational education programs.

Standard twelve-row-eighty-column data processing was used for assembling numerical data collected from state agencies, businesses and statistical publications. Data collected to supplement available secondary employment data were collected from businesses by mail surveys.

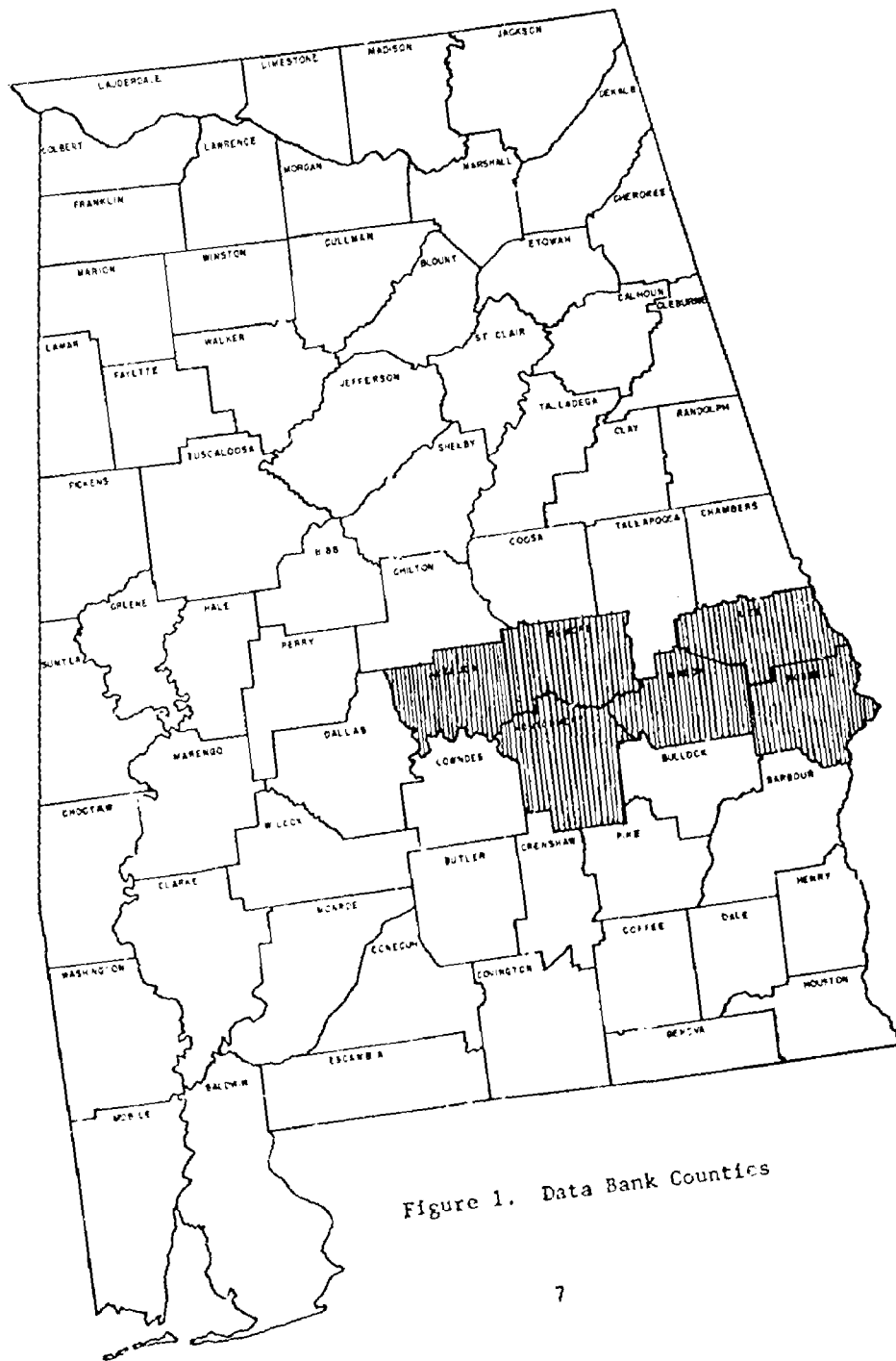


Figure 1. Data Bank Counties

Exhibit A is an example of several instruments used in mail surveys.

Special thirty-row-eighty-column data processing cards were designed and a User's Manual (Exhibits B through E) was developed for collecting data from public and private vocational schools.

Special cards were also designed to collect follow-up information from public school vocational program graduates. The address card reflected in Exhibit F was completed either by the student or instructor upon completion of the program and used to obtain computer printed mailing labels for mailing a follow-up card (Exhibit G) to the student nine months later.

Data Analysis

The occupation-industry matrix approach was used to estimate occupational employment levels. The inputs for the matrix development were: (1) industry employment levels involving industry subdivisions by SIC⁶ for five previous years, and (2) occupational composition patterns classified by DOT six digit basis⁷ for the corresponding industry segments. Occupational pattern ratios as extracted from Department of Labor Publications were used as the basis for the occupation industry matrix.⁸ The findings of mail surveys conducted in Alabama were used to compare the national occupation ratios with Alabama ratios for basic industry groups.

Given projected employment levels (Exhibit H) and occupation industry ratios, a cross tabulation computer program was used to project employment by occupations.

Data analysis for manpower supply and demographic data was accomplished through special written descriptive computer programs for data read onto magnetic tape by a Model 1501 Republic Electronic systems optical card scanner.

Findings

The central purpose of this study was to investigate and resolve some of the problems associated with developing an occupational information system. The volume and nature of data input and information output were the major factors under study. The information output components for the system were: (1) demographic, (2) manpower demand, (3) manpower supply, and (4) resources inventories.

Demographic

One of the primary purposes of vocational education is to serve non-college-bound students needing occupational skills. Therefore, the vocational planner and other decision makers need a description of the student population. Exhibits I through L reflect the kinds of information available and its output organization from the system.

Manpower Demand

Once the vocational planner has the enrollment projections and other demographic information he is then ready to relate this information to annual openings which is an indicator of the demand for manpower with various types of education and training. Exhibit M reflects the kinds of information available and its output organization from the system. The number of annual openings does not reflect the movement of workers from one occupation to another, but the openings created by normal growth and replacement needs due to death or retirement.

Manpower Supply

In order to get occupational program objectives sensitive to the labor market and the educational needs and interests of the population, the vocational planner must have an estimate of the number of graduates or terminees per year, and also an estimate of previous graduates actually accepting jobs in occupations related to their training. Exhibits N and O reflect the kinds of information available and its output organization from the system.

Resources Inventories

Decisions to adjust vocational programs depend not only on what is happening in the labor market and needs of students, but also is dependent upon the availability of vocational personnel and vocational instructional facilities. Exhibits P through T reflect the information available and its output organization from the system.

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²Robert C. Goodwin, "Locating Manpower Needs," American Vocational Journal, Vol. 43, No. 6, (1968) p. 20.

³Norman Medvin, "Forecasting Occupational Job Requirements," Occupational Education: Planning and Programming. A research study Vol. II (Melno Park, California: Stanford Research Institute, 1967) p. 410.

⁴Leonard A. Lecht, "Manpower Requirements to Meet National Goals in Research and Development," Occupational Education: Planning and Programming. A research study, Vol. I (Melno Park, California: Stanford Research Institute, 1967), p. 425.

⁵Manpower Administration. "Manpower Projections: An Appraisal and A Plan of Action", U. S. Department of Labor (1967), p. 10.

⁶United States Bureau of the Budget, Standard Industrial Classification Manual (1957 ed.), (Washington: Government Printing Office).

⁷United States Department of Labor, Dictionary of Occupational Titles (3rd ed.): 1965. Vol. I and II. (Washington: Government Printing Office).

⁸United States Department of Labor, Tomorrow's Manpower Needs (Washington: Government Printing Office)

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EXHIBIT A

Include in the answers below only those persons employed at this location.

1. What is the county number on the automobile tag for the county in which this business is located? _____
2. Which of the following categories most appropriately describes the function of this business? (check only one)
 - A. Retail
 - B. Wholesale Trade
 - C. Service

3. Which of the following categories most appropriately describes the activity of this business? (check only one)

Do not write in this space		
A	B	C
		731
56	5036-7	
54	504	
581		70
		79
571	5097	
525	507	
596	5033	
5992	509	
53	503	
55	501	
554	5092	
		60,61,62
		63,64
		65
		40-49
		72
599		
	509-8	
		89

- Advertising Services
- Apparel and Accessories
- Food Distribution
- Food Services
- Hotel and Lodging
- Recreation and Tourism
- Home Furnishings
- Hardware, Building Materials, Farm & Garden Supplies & Equipment
- Floristry
- General Merchandising
- Automotive
- Petroleum
- Finance & Credit
- Insurance
- Real Estate
- Transportation, Utilities
- Personal Services
- Retail Trade, Other
- Wholesale Trade, Other
- Services, Other
- None of the above

4. Record the largest number of employees working for you at any one time during the years indicated.

	1967	1968	1969	1970
Number full-time	_____	_____	_____	_____
Number part-time	_____	_____	_____	_____

5. Give the number of employees you hired during the last twelve months.

Number full-time _____ Number part-time _____

6. Give the number of employees needed to fill present vacancies.

Number full-time _____ Number part-time _____

7. Do you plan to reduce the number of employees now in this business?

Number full-time _____ Number part-time _____

8. Estimate the number of employees you plan to add in this business in each of the following years. 1971 1973 1975

Number full-time _____
 Number part-time _____

9. Indicate the number of employees who left your employment during the past twelve months for the following reasons.

	<u>Number</u>
a. Left to accept a similar job in another business.	_____
b. Total number who left (include those above and others who left).	_____

10. Do you currently have employees enrolled in an organized training program? (Not on-the-job nor public school training) If so, how many? Number _____

11. Of the total number of workers presently employed by this business, how many are employed:

AS-----AT THE LEVEL OF:

	Beginning Employees (One year or less of total experience)	Experienced Employees (Over one year of total experience)	Managerial & Supervisory Employees
<u>Store managers</u>			
<u>Sales Persons</u>			
<u>Route Salesmen</u>			
<u>Cashiers</u>			
<u>Markers</u>			
<u>Receiving Clerks</u>			
<u>Stock Clerks</u>			
<u>Delivery Clerks</u>			
<u>Display Workers</u>			
<u>Credit & Collection Workers</u>			
<u>Interior Decorators</u>			
<u>Automotive Parts Countermen</u>			
<u>Service Station Workers</u>			

AS-----AT THE LEVEL OF:

	Beginning Employees (One year or less of total experience)	Experienced Employees (Over one year of total experience)	Managerial & Supervisory Employees
Baggers			
Produce Clerks			
Waiters and Waitresses			
Hostesses			
Food Service Counterworkers			
Hotel Clerks			
Stewards & Stewardesses			
Ticket Clerks, Transportation			
Layout & Copy Workers			
Buyers			
All Other Employees			

EXHIBIT B

86357
- Z O * * O * * O

1	VOCATIONAL	2	01234567890
	DIVISION	3	01234567890
2	OCCUPATION	4	01234567890
	IDENTIFICATION	5	01234567890
	OE CODE	6	01234567890
	NUMBER	7	01234567890
3	INSTRUCTIONAL PROG.	8	01234567890
4	PROGRAM	9	01234567890
	CLASSIFICATION	10	01234567890
5	SCHOOL CODE	11	01234567890
		12	01234567890
		13	01234567890
		14	01234567890
6	ADMINISTRATIVE	15	01234567890
	SYSTEM UNIT	16	01234567890
	CODE	17	01234567890
7	COUNTY	18	01234567890
	CODE	19	01234567890
8	COUNTY	20	01234567890
	CLUSTER	21	01234567890
9	MONTH	22	01234567890
	AND	23	01234567890
	YEAR	24	01234567890
	REPORTED	25	01234567890
10	TEACHER,	26	01234567890
	COORDINATOR,	27	01234567890
	OR	28	01234567890
	INSTRUCTOR	29	01234567890
11	STUDENT CHARACTER.	30	00
12	RES. AREA SERVED	31	000
13	PROGRAM IDENTIFICAT.	32	01234567890
	HOURS	33	01234567890
14	TAUGHT	34	01234567890
	THIS MONTH	35	01234567890
15	YEARS COVERED IN F/U	36	01234567890
16	CONTRACT TIME	37	01234567890
17	OTHER EMPL. ACTIVITIES	38	01234567890
18	BASIC VOC. ED. IND.	39	01234567890
		40	01234567890

MASTER DATA CARD

EXHIBIT C

STUDENT		1	01234567890	ELEVENTH GRADE STUDENTS		41	00000000000
1	OE	2	01234567890	0	COMPLETING	42	00000000000
	CODE	3	01234567890	2	COURSE OF STUDY	43	01234567890
	NUMBER	4	01234567890	1	TWELFTH GRADE	44	01234567890
2	TOTAL	5	01234567890	1	BOYS ENROLLED	45	01234567890
	ENROLLMENT	6	01234567890	2	TWELFTH GRADE	46	01234567890
3	URBAN	7	01234567890	2	GIRLS ENROLLED	47	01234567890
	ENROLLMENT	8	01234567890	2	TWELFTH GRADE BOYS	48	01234567890
4	SUBURBAN	9	01234567890	3	COMPLETING	49	01234567890
	ENROLLMENT	10	01234567890	2	COURSE OF STUDY	50	01234567890
5	RURAL	11	01234567890	2	TWELFTH GRADE GIRLS	51	01234567890
	ENROLLMENT	12	01234567890	4	COMPLETING	52	01234567890
6	SEVENTH GRADE	13	01234567890	4	COURSE OF STUDY	53	01234567890
	BOYS ENROLLED	14	01234567890	2	HANDICAPPED	54	01234567890
7	SEVENTH GRADE	15	01234567890	5	ENROLLED	55	01234567890
	GIRLS ENROLLED	16	01234567890	2	DISADVANTAGED	56	01234567890
8	SEVENTH GRADE STUDENTS	17	01234567890	6	ENROLLED	57	01234567890
	COMPLETING	18	01234567890	2	HANDICAPPED PLANNING	58	01234567890
9	EIGHTH GRADE	19	01234567890	7	TO ENTER POST-	59	01234567890
	BOYS ENROLLED	20	01234567890	7	SECONDARY VOC. P.	60	01234567890
10	EIGHTH GRADE	21	01234567890	2	DISADVANTAGED PLAN TO	61	01234567890
	GIRLS ENROLLED	22	01234567890	8	ATTEND POST-SECONDARY	62	01234567890
11	EIGHTH GRADE STUDENTS	23	01234567890	2	VOC. PROGRAMS	63	01234567890
	COMPLETING	24	01234567890	2	OTHER GRADUATES	64	01234567890
12	NINTH GRADE	25	01234567890	2	PLANNING TO ATTEND	65	01234567890
	BOYS ENROLLED	26	01234567890	9	POST-SECONDARY VOC. P	66	01234567890
13	NINTH GRADE	27	01234567890	3	GRADUATES	67	01234567890
	GIRLS ENROLLED	28	01234567890	0	EMPLOYED	68	01234567890
14	NINTH GRADE STUDENTS	29	01234567890	3	GRADUATES AVAILABLE	69	01234567890
	COMPLETING	30	01234567890	1	FOR EMPLOYMENT	70	01234567890
15	TENTH GRADE	31	01234567890	3	POST-SECONDARY	71	01234567890
	BOYS ENROLLED	32	01234567890	2	ENROLLMENT FULL-TIME	72	01234567890
16	TENTH GRADE	33	01234567890	2	(FIRST YEAR)	73	01234567890
	GIRLS ENROLLED	34	01234567890	3	POST-SECONDARY	74	01234567890
17	TENTH GRADE STUDENTS	35	01234567890	3	ENROLLMENT FULL-TIME	75	01234567890
	COMPLETING	36	01234567890	3	(SECOND YEAR)	76	01234567890
18	ELEVENTH GRADE	37	01234567890	3	POST-SECONDARY	77	01234567890
	BOYS ENROLLED	38	01234567890	4	ENROLLMENT	78	01234567890
19	ELEVENTH GRADE	39	01234567890	4	PART-TIME	79	01234567890
	GIRLS ENROLLED	40	01234567890	3	ADULT PREPARATORY	80	01234567890
20	ELEVENTH GRADE STUDENTS	41	01234567890	5	ENROLLMENT	81	01234567890
	COMPLETING	42	01234567890	3	ADULT EXTENSION	82	01234567890
21	TWELFTH GRADE	43	01234567890	6	ENROLLMENT	83	01234567890
	BOYS ENROLLED	44	01234567890	3	POST-SECONDARY, ADULT,	84	01234567890
22	TWELFTH GRADE	45	01234567890	3	& PEP	85	01234567890
	GIRLS ENROLLED	46	01234567890	7	ENROLLMENT 16 TO 22	86	01234567890
23	TWELFTH GRADE BOYS	47	01234567890	3	YEARS	87	01234567890
	COMPLETING	48	01234567890	3	PREPARATORY & EXTENSION	88	01234567890
24	COURSE OF STUDY	49	01234567890	8	ENROLLED IN PREVIOUS	89	01234567890
	TWELFTH GRADE GIRLS	50	01234567890	8	COURSE	90	01234567890
25	COMPLETING	51	01234567890	3	STUDENTS WHO LEFT	91	01234567890
	COURSE OF STUDY	52	01234567890	9	PROGRAM WITH	92	01234567890
26	HANDICAPPED	53	01234567890		MARKETABLE SKILLS	93	01234567890
	ENROLLED	54	01234567890			94	01234567890
27	DISADVANTAGED	55	01234567890			95	01234567890
	ENROLLED	56	01234567890			96	01234567890
28	HANDICAPPED PLANNING	57	01234567890			97	01234567890
	TO ENTER POST-	58	01234567890			98	01234567890
29	SECONDARY VOC. P.	59	01234567890			99	01234567890
	DISADVANTAGED PLAN TO	60	01234567890			100	01234567890
30	ATTEND POST-SECONDARY	61	01234567890				
	VOC. PROGRAMS	62	01234567890				
31	OTHER GRADUATES	63	01234567890				
	PLANNING TO ATTEND	64	01234567890				
32	POST-SECONDARY VOC. P	65	01234567890				
	GRADUATES	66	01234567890				
33	EMPLOYED	67	01234567890				
	GRADUATES AVAILABLE	68	01234567890				
34	FOR EMPLOYMENT	69	01234567890				
	POST-SECONDARY	70	01234567890				
35	ENROLLMENT FULL-TIME	71	01234567890				
	(FIRST YEAR)	72	01234567890				
36	POST-SECONDARY	73	01234567890				
	ENROLLMENT FULL-TIME	74	01234567890				
37	(SECOND YEAR)	75	01234567890				
	POST-SECONDARY	76	01234567890				
38	ENROLLMENT	77	01234567890				
	PART-TIME	78	01234567890				
39	ADULT PREPARATORY	79	01234567890				
	ENROLLMENT	80	01234567890				
40	ADULT EXTENSION	81	01234567890				
	ENROLLMENT	82	01234567890				
41	POST-SECONDARY, ADULT,	83	01234567890				
	& PEP	84	01234567890				
42	ENROLLMENT 16 TO 22	85	01234567890				
	YEARS	86	01234567890				
43	PREPARATORY & EXTENSION	87	01234567890				
	ENROLLED IN PREVIOUS	88	01234567890				
44	COURSE	89	01234567890				
	STUDENTS WHO LEFT	90	01234567890				
45	PROGRAM WITH	91	01234567890				
	MARKETABLE SKILLS	92	01234567890				

VOCATIONAL-TECHNICAL PROGRAM ENROLLMENT DATA CARD

EXHIBIT D

STUDENT FOLLOW-UP BY TEACHER, COORDINATOR, OR INSTRUCTOR	1	STUDENT OCCUPATIONAL CODE NUMBER	1	01234567890	BOYS EMPLOYED FULL-TIME IN NON-RELATED OCCUP.	41	01234567890	
			2	01234567890		42	01234567890	
			3	01234567890	GIRLS EMP. FULL-TIME IN NON-RELATED OCCUP.	44	01234567890	
			4	01234567890		45	01234567890	
		2	BOYS WHO COMPLETED PROGRAM REQUIREMENTS	5	01234567890	BOYS EMPLOYED PART-TIME	46	01234567890
				6	01234567890		47	01234567890
		3	GIRLS WHO COMPLETED PROGRAM REQUIREMENTS	7	01234567890	GIRLS EMPLOYED PART-TIME	48	01234567890
				8	01234567890		49	01234567890
		4	BOYS WHO ENTERED MILITARY FORCES	9	01234567890	BOYS UNEMPLOYED AND NOT SEEKING EMPLOYMENT	50	01234567890
				10	01234567890		51	01234567890
		5	GIRLS WHO ENTERED MILITARY FORCES	11	01234567890	GIRLS UNEMPLOYED AND NOT SEEKING EMPLOYMENT	52	01234567890
				12	01234567890		53	01234567890
		6	BOYS WHO CONTINUED FULL-TIME SCH. & UNEMP.	13	01234567890	BOYS STATUS UNKNOWN	54	01234567890
				14	01234567890		55	01234567890
		7	GIRLS WHO CONTINUED FULL-TIME SCH. & UNEMP.	15	01234567890	GIRLS STATUS UNKNOWN	56	01234567890
				16	01234567890		57	01234567890
		8	BOYS WHO CONT. FULL-TIME SCH. & EMP. P/TIME	17	01234567890	BOYS WHO LEFT PRIOR TO NORMAL COMP. T/W/M/S/LL	58	01234567890
				18	01234567890		59	01234567890
		9	GIRLS WHO CONT. FULL-TIME SCH. & EMP. P/TIME	19	01234567890	GIRLS WHO LEFT PRIOR TO NORMAL COMP. T/W/M/S/LL	60	01234567890
				20	01234567890		61	01234567890
		10	BOYS WHO ENTERED COLLEGE DEGREE PROGRAMS	21	01234567890		62	01234567890
				22	01234567890		63	01234567890
		11	GIRLS WHO ENTERED COLLEGE DEGREE PROGRAMS	23	01234567890		64	01234567890
				24	01234567890		65	01234567890
		12	BOYS NOT IN LABOR FORCE FOR OTHER REASONS	25	01234567890		66	01234567890
				26	01234567890		67	01234567890
		13	GIRLS NOT IN LABOR FORCE FOR OTHER REASONS	27	01234567890		68	01234567890
				28	01234567890		69	01234567890
		14	BOYS EMPLOYED AND/OR AVAILABLE FOR EMP.	29	01234567890		70	01234567890
				30	01234567890		71	01234567890
		15	GIRLS EMPLOYED AND/OR AVAILABLE FOR EMP.	31	01234567890		72	01234567890
				32	01234567890		73	01234567890
		16	BOYS EMPLOYED FULL-TIME IN OCCUP. FOR WHICH TR.	33	01234567890		74	01234567890
				34	01234567890		75	01234567890
		17	GIRLS EMPLOYED FULL-TIME IN OCCUP. FOR W/TRAINED	35	01234567890		76	01234567890
				36	01234567890		77	01234567890
		18	BOYS EMPLOYED FULL-TIME IN RELATED OCCUPATIONS	37	01234567890		78	01234567890
				38	01234567890		79	01234567890
		19	GIRLS EMP. FULL-TIME IN RELATED OCCUPATIONS	39	01234567890		80	01234567890
				40	01234567890			

EXHIBIT E

VOCATIONAL EDUCATION

OCCUPATIONAL
INFORMATION
SERVICE
SYSTEM

USER'S
MANUAL

ALABAMA

INTRODUCTION

This publication is a product of a pilot investigation being conducted by the Occupational Research Coordinating Unit at Auburn University in cooperation with the Division of Vocational Education, State Department of Education, and under contract with the Bureau of Research, U. S. Office of Education.

The Occupational Information Service System is intended to provide the State Director of Vocational Education and his Staff, the State Superintendent and the State Board of Education, and City and County Superintendents with valuable information for planning and programming vocational-technical education on a county, multi-county, and state basis. This investigation will also be of value to vocational education in other states for either the development or refinement of similar information systems.

The primary objective is to investigate and resolve some of the problems associated with developing and operating a permanent state occupational information system and providing information services for planning and programming vocational-technical education.

During the course of this investigation, a small-scale occupational information system is being established by involving six selected Alabama counties (Autauga, Elmore, Lee, Macon, Montgomery and Russell). These data sources for the system consist of both public and private agencies and businesses operating in the six counties.

This manual provides information and instructions for assisting local school personnel with the procedures involved in data reporting activities.

MASTER DATA CARD

The master data card provides general program identification data. One completed master card () will accompany each set of completed Program Enrollment Data Cards, Student Follow-Up Data Cards, and the Student Information Data Cards.

Master Card Design

Optical scanner card column numbers are located on the extreme left side of the card. These numbers are for item identification. Do not mark in this column.

Key punch card column numbers are located to the immediate right side of each item. Do not mark in this column.

The numbers ranging from zero to nine are for optical scanner card reporting. Use a number two pencil to darken or blot the appropriate numbers.

The spaces provided on the extreme right side of the card are for recording the numbers reported.

EXAMPLE:

The vocational division code is reported (Vo-Ag 01) by darkening the appropriate number in the zero to nine column and by recording this number in the extreme right column.

1	Vocational	2	0	1	2	3	4	5	6	7	8	9	0
(A)	(B)	(C)					(D)						(E)
	Division	3	0	1	2	3	4	5	6	7	8	9	1

Where:

- A = Optical scanner card column number
- B = Item
- C = Key punch card column number
- D = Code number reported for optical scanner reading
- E = Space for recording the code reported.

Identifying Codes

<u>Card Column</u>	<u>Item</u>	<u>Code Numbers</u>
1	Vocational Division	01 - Vocational Agric. 04 - Distributive Ed. 07 - Health Occup. 09 - Consumer Home Ec. 14 - Bus. & Office Ed. 99 - Occup. Home Ec. 17 - T & I Education 16 - Technical Ed.

Identifying Codes (Cont'd.)

<u>Card</u>	<u>Column</u>	<u>Item</u>	<u>Code Numbers</u>
2		Occupational Identification OE Code Number	Report the OE code number for the occupation that you teach by recording the first four numbers to the right of the decimal. Example: Consumer Homemaking is recorded 0100. Occupational Home Economics-Food Management, Production, and Service as 0203 01 AGRICULTURE Agriculture Production 01.01 00 Agriculture Supplies 01.02 00 Agricultural Mechanics 01.03 00 Agricultural Products 01.04 00 Floral Horticulture 01.05 00 Resources 01.06 00 01.07 00 01.99 00 04.01 01 4.01 02 1 03 4
3		Instructional Program	1 - Preparatory 2 - Cooperative 3 - Supplementary
4		Program Classification	0 - Junior High 1 - Comprehensive High 2 - Area Voc. High 3 - Residential School 4 - Adult Program 5 - Apprenticeship 6 - State Voc.-Tech. 7 - Junior College 8 - MOFA-Regular 9 - Private Vocational School or Business College 10 - Rehab. Facility 11 - MOFA-Contract 12 - OEO

Identifying Codes (Cont'd.)

<u>Card Column</u>	<u>Item</u>	<u>Code Numbers</u>
5	School	Autauga County 0010 - Autauga County High 0020 - Billingsley 0040 - Jones 0050 - Marbury 0060 - Pine Level 0070 - Prattville Jr. High 1010 - Autauga County Training - New Salem Iland High

<u>Card Column</u>	<u>Card Column</u>	<u>Card Column</u>	<u>Name of System</u>
6	7	8	
<u>School System</u>	<u>County</u>	<u>County Cluster</u>	
001	04	09	Autauga County
002	05	14	Baldwin County

VOCATIONAL-TECHNICAL PROGRAM ENROLLMENT DATA CARD

One card must be completed in October and June to report each Office of Education Code Number. If more than one code number is reported, use separate cards for each number.

<u>Card Column</u>	<u>Item</u>	<u>Answer Code and/or Instructions</u>
1	Student OE Code Number	Report the first four digits to the right of the decimal. <u>Use four digits.</u> Example: 17.15 99 00 00 is recorded 1599.
2	Total Enrollment	Report the total number of students who are engaged in the same occupational area of study as indicated by the OE Code in item number one. <u>Use two digits.</u> Example: Three students are reported by darkening the zero in the first row and the three in the second row.

STUDENT FOLLOW-UP BY TEACHER, COORDINATOR, OR INSTRUCTOR

One card must be completed for reporting each Office of Education Code Number. If more than one code number is reported, use separate cards for each number.

<u>Card</u>	<u>Item</u>	<u>Answer Code and/or Instructions</u>
1	Student Occupational OE Code Number	Report the first four digits to the right of the decimal of the code number for the occupation for which the students received training. <u>Use four digits.</u> Example: 01.01 03 00 00 is recorded 0103. 1 number of boys who com- ments during the nducted.

STUDENT FOLLOW-UP DATA CARD

Each student will complete a Student Follow-Up Data Card prior to program exit. This includes program graduates, transfers, and dropouts. In the event a student should exit from the program before completing a data card, the teacher, coordinator, or instructor will complete a card for him.

The data cards will be handled on a cumulative basis by each teacher, coordinator, and instructor. The accumulated cards will be mailed to the Information Service System at the end of each school year or upon program completion.

DATA CARD DESIGN

The Student Follow-Up Data Card provides for collection of nine items of information. Each information item section is identified by a shaded block number located within the respective item section. The section numbers and information items are:

CARD FRONT

<u>Section Number</u>	<u>Information Item</u>
1	The Student's Name

INSTRUCTIONAL FACILITIES DATA CARD

The term facility, as used here, refers to a classroom, shop, or laboratory used for instructional purposes.

Use card Columns 12 through 22 to report data pertaining to the facility utilized for the instructional program identified in card Columns 1 through 10. If two facilities are used for this same instructional program (for instance, a classroom and a laboratory or two laboratories) report data pertaining to the second facility in Card Columns 23 through 33. Use additional cards, as required, to report utilization of more than two facilities by this teacher for this instructional program.

A separate card must be used for each different instructional program (as identified in Card Columns 1 through 10) conducted by this teacher.

<u>Card Column</u>	<u>Item</u>	<u>Answer Code and/or Information</u>
1-10		Refer to the Master Data Card section of the User's Manual for directions for completing Card Columns 1 through 10.
		MAKE NO MARKS IN THIS COLUMN
	lity	1 - Classroom 2 - Laboratory or Shop 3 - Classroom - Laboratory combination (both in same room)
		the number by which the 's (or director's) office is facility. Use ample: Room No.
		the state- the

EXHIBIT H

LEAST SQUARES METHODOLOGY FOR STRAIGHT LINE
TIME SERIES PROJECTION

$Y_1, Y_2, Y_3 \dots Y_n$, which are points on a least squares line can be determined by the equation:

$$Y_c = a + bX$$

Where the constants a and b are determined by solving simultaneously the equations:

$$\text{I. } \Sigma Y = aN + b\Sigma X$$

$$\text{II. } \Sigma XY = a\Sigma X + b\Sigma X^2$$

or

$$a = \frac{(\Sigma Y)(\Sigma X^2) - (\Sigma X)(\Sigma XY)}{N\Sigma X^2 - (\Sigma X)^2}$$

and

$$b = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{N\Sigma X^2 - (\Sigma X)^2}$$

In the formula $Y_c = a + bX$, X is a function of the number of units of time from the central time unit of the base data for which a Y_c value is desired.

EXHIBIT I
CURRENT AND PROJECTED POPULATION BY AGE GROUPS

Age Groups	State			Vocational Planning Area		
	Number		% Change	Number		% Change
	1-year	5-years	5-years	1-year	5-years	5-years
14-17	26,706	30,166	+7.8	14,881	16,147	+10.9
18-24	27,776	26,223	-5.9	18,721	19,665	+2.2
25-65	150,221	136,622	-9.0	74,526	75,933	+1.9

EXHIBIT J
ESTIMATED CURRENT AND PROJECTED SCHOOL POPULATION GRADES ONE THROUGH TWELVE BY CHARACTERISTICS

Characteristics	State			Vocational Planning Area			
	Current	1-year	5-years	Current	1-year	5-years	% of Total Current
Total Enrollment	85,133	84,668	82,804	41,631	41,675	41,845	100.0
Non-White	37,820	37,243	34,933	17,721	17,781	18,023	42.6
White	47,313	47,425	47,871	23,910	23,894	23,831	57.4
Disadvantaged	28,094	27,940	27,325	12,072	12,085	12,135	29.0
Handicapped	9,365	9,313	9,108	4,579	4,584	4,603	11.0

EXHIBIT K
ESTIMATED CURRENT AND PROJECTED SECONDARY SCHOOL POPULATION

Grade Level	State			Vocational Planning Area		
	Number		% Change	Number		% Change
	1-year	5-years	5 years	1-year	5-years	5-years
1-6	47,815	47,392	-4.4	23,444	23,319	-2.7
7	8,280	8,356	+4.6	4,093	4,145	+6.4
8	7,477	7,519	+2.8	3,572	3,601	+4.1
9	6,838	6,887	+3.6	3,117	3,141	+3.8
10	6,309	6,374	+5.2	3,001	3,029	+4.7
11	5,443	5,500	+5.2	2,544	2,555	+2.2
12	4,545	4,585	+2.2	2,030	2,108	+6.2
Total	86,707	86,613	86,234	41,801	41,898	42,102

EXHIBIT L
ESTIMATED CURRENT AND PROJECTED POTENTIAL SECONDARY SCHOOL VOCATIONAL ENROLLMENT

Grade Level	State			Vocational Planning Area				
	Number	5-years	% Change	Current	5-years	% Change		
	1-year		5-years	1-year		5-years		
7	6,326	6,384	6,620	+4.6	3,200	3,217	3,368	+4.7
8	5,523	5,547	5,647	+2.2	2,679	2,673	2,732	+2.0
9	4,884	4,915	5,043	+3.3	2,224	2,213	2,252	+1.3
10	4,355	4,402	4,594	+4.4	2,108	2,101	2,156	+2.3
11	3,489	3,528	3,688	+5.7	1,651	1,627	1,614	-2.2
12	2,591	2,613	2,705	+4.4	1,137	1,180	1,253	+10.2
Total	27,168	27,389	28,297	+4.2	12,999	13,011	13,375	+2.9

EXHIBIT M

OCCUPATIONS	MANPOWER DEMAND *				VDC - PLANNING AREA				
	CURRENT YEAR	ONE YEAR	FIVE YEAR ANNUAL AVG.	CURRENT YEAR	ONE YEAR	FIVE YEAR ANNUAL AVG.	CURRENT YEAR	ONE YEAR	FIVE YEAR ANNUAL AVG.
01 FARM & FARM WORKERS	2,703.5	2,735.9	2,864.3	656.2	628.4	517.1	179.26	628.4	517.1
02 PROFESSIONAL TECH. WRT	807.4	817.4	839.3	8.3	184.3	157.2		157.2	5.4
02.01 AGRICULTURE SUPPLIES									
02.02 AGRICULTURE MECHANICS									
02.03 ORNAMENTAL HORTICULTURE									
02.04 AGRICULTURAL RESOURCES									
02.05 FORESTRY									
02.06 OTHER AGRICULTURE									
03 SUB-TOTAL (LINES 1-2)	3,513.6	3,551.3	3,707.0	88.6	840.5	674.3		840.5	33.2
04 SALES WORKERS	13,266.8	13,568.7	14,911.3	330.1	7,716.3	8,613.5		7,921.2	8,613.5
05 DISTRIBUTIVE OCCUP. OTHER	16,334.1	16,708.7	18,431.0	419.3	9,456.9	10,261.4		9,687.8	10,261.4
05.01 ADVERTISING SERVICES									
05.02 APPAREL & ACCESSORIES									
05.03 AUTOMOTIVE									
05.04 FINANCE & CREDIT									
05.05 FOOD DISTRIBUTION									
05.06 FOOD SERVICES									
05.07 GEN. MERCHANDISE									
05.08 HARDWARE/BUILDING MAT.									
05.09 HOME FURNISHINGS									
05.10 HOTEL & LODGING									
05.11 INSURANCE									
05.12 MANAGEMENT									
05.13 MARKETING									
05.14 REAL ESTATE									
05.15 RETAIL TRADE									
05.16 TRANSPORTATION									
05.17 WHOLESALE TRADE									
06 SUB-TOTAL (LINES 4-5)	29,579.3	30,253.6	33,321.9	748.5	17,173.3	18,874.5		17,609.1	18,874.5
07 PRACTICAL NURSES	155.5	166.2	180.0	4.9	104.0	117.7		106.7	117.7
08 PROFESSIONAL NURSES	280.8	289.2	324.6	8.7	185.9	206.2		190.7	206.2
09 TECH. MED. & DENTAL	122.4	125.9	141.6	3.8	81.4	91.8		83.6	91.8
09.01 CYTOLOGY TECH.									
09.02 DENTAL ASSISTANT									
09.03 DENTAL HYG. ASSO. DEG.									
09.04 DENTAL LAB TECH.									
09.05 HISTOLOGY TECH.									
09.06 MED. LAB ASSISTANT									
09.07 MED. X-RAY TECHNICIAN									
09.08 OPTICIAN ASSISTANT									
10 SUB-TOTAL (LINES 7-8-9)	551.8	581.1	646.2	17.5	368.5	414.6		376.1	414.6

EXHIBIT M (CONTINUED)

OCCUPATIONS	CURRENT				STATE				MANPOWER DEMAND *				VOC. PLANNING AREA			
	YEAR	ONE YEAR	FIVE YEARS	ANNUAL AVG.	YEAR	ONE YEAR	FIVE YEARS	ANNUAL AVG.	CURRENT YEAR	ONE YEAR	FIVE YEARS	ANNUAL AVG.	YEAR	ONE YEAR	FIVE YEARS	ANNUAL AVG.
11 OTHER MED., HEALTH WKR.	703.4	725.4	816.0	22.5	462.4	474.6	522.5	12.0	832.8	854.8	939.5	21.3	832.8	854.8	939.5	21.3
12 SUB-TOTAL (LINES 10-11)	1,261.5	1,300.3	1,462.3	40.1	832.8	854.8	939.5	21.3	832.8	854.8	939.5	21.3	832.8	854.8	939.5	21.3
13 PVT HOUSEHOLD & INST. WKS	1,316.7	1,357.8	1,526.4	41.9	896.4	920.1	1,015.3	23.7	896.4	920.1	1,015.3	23.7	896.4	920.1	1,015.3	23.7
14 FOOD MGT. PROD & SER WKS	1,758.0	1,806.4	1,999.5	48.3	1,013.6	1,037.3	1,060.9	9.4	1,013.6	1,037.3	1,060.9	9.4	1,013.6	1,037.3	1,060.9	9.4
15 SUB-TOTAL (LINES 13-14)	3,074.7	3,164.1	3,526.0	90.2	1,909.9	1,957.4	2,076.2	33.2	1,909.9	1,957.4	2,076.2	33.2	1,909.9	1,957.4	2,076.2	33.2
16 OCCUP PREP OTHERS	2,192.8	2,243.2	2,472.4	55.9	1,317.1	1,350.2	1,439.1	24.4	1,317.1	1,350.2	1,439.1	24.4	1,317.1	1,350.2	1,439.1	24.4
16-01 CHILD CARE																
16-02 CLO MEN PROD & SER																
16-03 HOME FOR EQUIP & SERV.																
17 SUB-TOTAL (LINES 15-16)	5,201.6	5,338.4	5,912.7	142.2	3,156.6	3,275.8	3,466.7	54.0	3,156.6	3,275.8	3,466.7	54.0	3,156.6	3,275.8	3,466.7	54.0
18 STENOGR. TYPISTS, SECRETAR	6,152.0	6,289.8	6,979.4	165.8	3,542.3	3,630.6	3,705.2	72.5	3,542.3	3,630.6	3,705.2	72.5	3,542.3	3,630.6	3,705.2	72.5
19 OFFICE MACHINE OPERATORS	743.5	758.2	844.0	20.1	404.8	414.2	416.1	2.2	404.8	414.2	416.1	2.2	404.8	414.2	416.1	2.2
20 CLERICAL, KIN WKR., OTHER	12,137.5	12,417.2	13,855.2	343.5	6,821.1	6,985.6	7,347.8	105.3	6,821.1	6,985.6	7,347.8	105.3	6,821.1	6,985.6	7,347.8	105.3
20-01 ACCOUNTING																
20-02 BOOKKEEPING																
20-03 BUS DATA PROC & COMP OP.																
20-04 CASHIERS																
20-05 CLERICAL, OTHERS																
20-06 TELLERS																
21 SUB-TOTAL (LINES 18-20)	18,213.0	18,745.6	20,926.6	542.7	10,568.1	10,823.5	11,436.3	173.6	10,568.1	10,823.5	11,436.3	173.6	10,568.1	10,823.5	11,436.3	173.6
22 CRAFTSMEN	490.6	501.3	570.5	15.9	204.3	209.8	228.9	4.9	204.3	209.8	228.9	4.9	204.3	209.8	228.9	4.9
23 SURVEYORS	189.7	194.8	215.4	5.1	87.5	88.9	94.3	1.3	87.5	88.9	94.3	1.3	87.5	88.9	94.3	1.3
24 AIR TRAFFIC CONTROLS	10.7	11.1	12.5	.3	7.0	7.2	7.7	.1	7.0	7.2	7.7	.1	7.0	7.2	7.7	.1
25 SUBTOTAL (LINES 22,23,24)	689.4	705.5	796.7	21.4	298.2	304.9	330.3	6.4	298.2	304.9	330.3	6.4	298.2	304.9	330.3	6.4
26 OTHER TECH. EXC. MED. & DENT	1,508.1	1,621.3	1,739.2	26.1	490.1	501.6	518.4	9.6	490.1	501.6	518.4	9.6	490.1	501.6	518.4	9.6
26-01 AUTOMOTIVE																
26-02 CHEMICAL																
26-03 CIVIL																
26-04 COMMERCIAL PILOT																
26-05 ELECTRICAL																
26-06 ENGINEERING																
26-07 ENVIRONMENTAL CONTROL																
26-08 FIRE AND SAFETY																
26-09 HEALTH RELATED																
26-10 INDUSTRIAL																
26-11 INSTRUMENTAL																
26-12 MACHINE																
26-13 MECHANICAL																

EXHIBIT X (CONTINUED)

OCCUPATIONS	CURRENT YEAR			STATE FIVE YEAR ANNUAL AVG.			MANDOWER DEMAND *			MCC. PLANNING AREA		
	CURRENT YEAR	CNE YEAR	FIVE YEAR ANNUAL AVG.	STATE FIVE YEAR ANNUAL AVG.	CURRENT YEAR	FIVE YEAR ANNUAL AVG.	MANDOWER DEMAND *	CURRENT YEAR	ONE YEAR	FIVE YEARS	FIVE YEAR ANNUAL AVG.	
26-14 METALLURGICAL												
26-15 NUCLEAR												
26-16 OFFICE RELATED												
26-17 PETROLEUM												
26-18 POLICE SCIENCE												
26-19 SCIENTIFIC												
27 SUB-TOTAL (LINES 25-26)	1,699.8	1,727.8	1,936.7	47.3	788.6	806.7	848.8	12.0				
28 CARPENTERS	1,472.6	1,506.2	1,660.4	37.5	840.7	857.8	919.5	15.7				
29 BRICKMANS & TILE SETTER	307.0	315.3	348.7	8.3	176.2	179.5	192.4	3.2				
30 CEMENT, CONCRETE FINISHER	103.7	106.4	118.2	2.9	59.8	60.8	65.3	1.1				
31 ELECTRICIANS	556.0	567.4	631.6	15.1	308.7	315.6	326.8	3.6				
32 PAINTERS & PAPEMANGERS	929.2	952.4	1,049.8	24.1	564.2	564.2	606.0	10.8				
33 PLASTERERS	106.1	109.0	120.7	2.9	62.4	63.6	68.8	1.2				
34 PLUMBERS AND PIPEFITTERS	519.5	529.9	590.4	14.1	284.6	290.3	310.4	5.1				
35 ROOFERS AND SLATERS	94.6	97.1	107.5	2.5	54.3	55.4	59.4	1.0				
36 STRUCTURAL METALWORKERS	101.4	101.0	114.1	1.5	54.7	55.4	60.2	1.1				
37 MACHINIST RELATED OCCUPY	440.1	446.7	579.4	12.6	148.3	153.6	160.2	3.9				
38 WELDMEN, FOUNDRYMEN	27.1	27.1	30.6	0.3	14.7	15.0	16.2	0.3				
39 MILLWORKERS	11.7	11.7	13.2	0.2	17.4	17.4	19.3	0.3				
40 HEAT TREATERS, ANNEALERS	1.5	1.5	15.9	0.1	4.0	4.0	4.8	0.1				
41 MILLWRIGHTS	87.0	86.5	97.8	2.1	76.1	76.5	76.6	1.1				
42 HOLDER METL EX. GOREMAKERS	28.0	28.1	31.0	0.3	7.8	8.1	9.3	0.3				
43 PATTERN MAKERS METAL+WOOD	74.7	73.3	47.1	2.4	11.6	11.9	1.5	0.3				
44 COLLERS AND POLL MANDS	11.0	7.4	10.5	0.1	2.8	2.9	3.3	0.1				
45 SHEET METAL WORKERS	169.1	171.7	191.3	4.8	87.7	89.2	96.7	1.8				
46 TOOLMAKERS & DIEMAKERS	174.1	182.3	225.7	5.3	49.1	51.2	59.1	2.0				
47 TRANSPORT & PUBLIC UTIL.	501.7	500.7	420.4	11.4	208.5	214.0	236.4	5.5				
48 AIRPLANE MECHS. BREADBAMEN	156.1	160.1	174.1	4.0	104.3	107.0	117.5	2.6				
49 MOTOR VEHICLE MECHANIC	1174.1	1,111.0	1,154.4	30.4	762.9	763.1	857.0	10.0				
50 REFR. MACHINE MECHANICS	144.7	144.1	148.0	3.4	43.5	43.5	45.9	1.4				
51 AIRCRAFT MECHANICS	36.5	36.5	47.1	1.1	23.2	24.3	27.8	1.1				
52 TECH. & REPAIR MEN. SEC. ITP	2,807.2	2,803.1	2,437.1	70.0	1,549.6	1,430.3	1,495.3	39.2				
53 AIR CONDITIONING												
54 APPLIANCE REPAIR												
55 AUTOBODY REPAIR												
56 DIESEL MECHANIC												
57 ELECTRONICS COMMUNICAT.												
58 ELECTRONIC INDUSTRIAL												
59 RUST ATOMIC ENERGY OCC												
60 SMALL ENGINE REPAIR												
61 WATCH REPAIR												
62 JEWELRYMAKERS	151.9	154.4	172.1	4.0	80.4	83.8	92.6	2.3				
63 SLATERS	48.2	51.7	57.1	1.0	23.7	24.3	26.4	0.5				

EXHIBIT M (CONTINUED)

OCCUPATIONS	MANPOWER DEMAND *					VOC. PLANNING AREA						
	CURRENT YEAR	ONE YEAR	FIVE YEARS ANNUAL AVG.	CURRENT YEAR	ONE YEAR	FIVE YEARS ANNUAL AVG.	CURRENT YEAR	ONE YEAR	FIVE YEARS ANNUAL AVG.	CURRENT YEAR	ONE YEAR	FIVE YEARS ANNUAL AVG.
55 JEWELER AND WATCHMAKER	81.2	51.9	66.3	30.7	31.5	35.0	30.7	31.5	35.0	30.7	31.5	35.0
56 LOOM FIXERS	29.7	29.3	32.9	2.5	2.6	11.1	2.5	2.6	11.1	2.5	2.6	11.1
57 OPTICIAN, LENS GRINDER	15.0	14.4	15.7	7.4	7.5	8.2	7.4	7.5	8.2	7.4	7.5	8.2
58 UPHOLSTERS	188.5	192.6	217.2	108.5	112.4	125.3	108.5	112.4	125.3	108.5	112.4	125.3
59 PRINTING TRADES	173.0	167.4	190.6	41.7	42.9	46.0	41.7	42.9	46.0	41.7	42.9	46.0
60 OTH. CRAFTSMEN & KIMO.	3,391.0	3,425.9	3,825.9	86.9	1,724.2	1,682.7	86.9	1,724.2	1,682.7	86.9	1,724.2	1,682.7
60.01 MARITIME OCCUPATIONS												
61 SUB-TOTAL (LINES 28-59)	14,040.7	14,288.6	15,986.5	389.1	7,580.9	8,124.5	389.1	7,580.9	8,124.5	389.1	7,580.9	8,124.5
62 DRIVERS & DELIVERMEN	3,511.3	3,556.9	3,776.6	53.0	2,038.2	2,071.1	53.0	2,038.2	2,071.1	53.0	2,038.2	2,071.1
63 CRANE DERRICK MOIST MEN	160.0	159.1	173.8	2.7	79.1	85.4	2.7	79.1	85.4	2.7	79.1	85.4
64 EXCAV GRAD MACH OPER.	462.4	474.4	522.8	12.0	259.9	281.9	12.0	259.9	281.9	12.0	259.9	281.9
65 WELDERS & FLAME CUTTERS	864.9	880.3	997.8	26.5	447.0	458.4	26.5	447.0	458.4	26.5	447.0	458.4
66 MACH TOOL OPER, CLASS B	256.9	259.9	305.5	9.7	100.3	115.4	9.7	100.3	115.4	9.7	100.3	115.4
67 ELECTROPLATERS	3.6	3.4	4.1	.9	1.0	1.1	.9	1.0	1.1	.9	1.0	1.1
68 SEWERS & STITCHERS	443.5	419.7	472.1	5.7	83.0	180.3	5.7	83.0	180.3	5.7	83.0	180.3
69 ASBESTOS, INSUL. WKRS.	38.6	38.6	43.1	.9	20.7	22.8	.9	20.7	22.8	.9	20.7	22.8
70 ATTEND. AUTO SEV. PARK	392.1	342.0	383.3	10.2	203.8	231.8	10.2	203.8	231.8	10.2	203.8	231.8
71 BLASTERS & PONDERS	5.6	5.6	6.0	3.2	3.2	3.3	3.2	3.2	3.3	3.2	3.2	3.3
72 LAUNDRY DRY CLEAN OPER.	352.8	363.7	408.5	11.1	238.0	244.3	11.1	238.0	244.3	11.1	238.0	244.3
73 MEAT CUT. EXC MEAT PACK.	181.0	186.8	210.5	5.9	81.3	92.4	5.9	81.3	92.4	5.9	81.3	92.4
74 O-RATIVE & KIND OCC OTH	10,217.3	10,192.9	11,509.0	258.3	4,149.7	4,224.7	258.3	4,149.7	4,224.7	258.3	4,149.7	4,224.7
74.01 BARBERING												
74.02 COSMETOLOGY												
74.03 METALLURGY OCCUPATIONS												
74.04 NUCLEONIC OCCUPATIONS												
74.05 BAKER												
74.06 COOK/CHEF												
74.07 WAITER/WAITRESS												
74.08 COMMERCIAL ART												
74.09 COMMERCIAL FISHERY												
74.10 COMMERCIAL PHOTOGRAPHY												
74.11 PLASTICS OCCUPATIONS												
74.12 SHOE REPAIR												
75 SUB-TOTAL (LINES 62-74)	16,838.4	16,891.5	18,822.6	396.8	7,704.7	7,850.5	396.8	7,704.7	7,850.5	396.8	7,704.7	7,850.5
76 FIREMEN	254.9	263.1	295.9	8.2	165.2	181.6	8.2	165.2	181.6	8.2	165.2	181.6
77 POLICE OTH LAW ENFOR OFF	1,194.6	1,226.7	1,372.3	35.5	753.4	808.9	35.5	753.4	808.9	35.5	753.4	808.9
78 SUB-TOTAL (76-77)	1,449.5	1,490.4	1,668.2	43.7	908.6	990.5	43.7	908.6	990.5	43.7	908.6	990.5
79 SUB-TOT LINE 61 & 75 & 78	32,321.6	32,662.8	36,467.8	829.2	16,189.3	16,945.4	829.2	16,189.3	16,945.4	829.2	16,189.3	16,945.4
80 OTHER SERVICE WORKERS	4,669.1	4,588.4	5,088.3	123.8	2,867.4	3,048.9	123.8	2,867.4	3,048.9	123.8	2,867.4	3,048.9
80.01 CUSTODIAL SERVICES												

EXHIBIT H (CONTINUED)

OCCUPATIONS	MANPOWER DEMAND*						VOC. PLANNING AREA		
	CURRENT YEAR	ONE YEAR	FIVE YEARS	FIVE YEAR ANNUAL AVG.	CURRENT YEAR	ONE YEAR	FIVE YEARS	FIVE YEAR ANNUAL AVG.	
01 LABOR EXC FARM & HOME	8,434.4	8,561.8	9,234.1	159.9	3,930.3	3,970.1	4,037.2	21.3	
02 PROFESS & KINDRED OCCUP.	9,585.4	9,775.8	10,918.7	69.7	5,103.0	5,210.0	5,250.2	28.4	

* NCC...

Five year annual average demand represents only projected needs based on previous economic and employment levels and does not include existing unfilled vacancies. State and local job surveys will be necessary to determine existing unfilled vacancies. Indented occupational groups represent a breakdown of occupational groups within a main heading. Employment data for the occupational groups is inclusive in respective main headings. State and local job surveys will be necessary to determine employment levels for the indented occupational groups.

Occupational groups 02.01, 02.02, 02.03, 02.04, 02.05 and 02.06 are not considered breakdowns of main heading 02.

ESTIPATED MANPOWER SUPPLY

DE CODE	INSTRUCTIONAL PROGRAM	CURRENT				ONE YEAR				VOCATIONAL PLANNING AREA			
		VOCATIONAL		OTHER SECTOR		VOCATIONAL		OTHER SECTOR		CURRENT		ONE YEAR	
		NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT
1-0100	AGRICULTURE PRODUCTION	4	.32			10	.75						
1-0200	AGRICULTURE SUPPLIES	7	.57			4	.30						
1-0300	AGRICULTURE MECHANICALS	110	8.43	23	17.87	23	1.74			16	1.85		
1-0400	AGRICULTURE PRODUCTS	2	.16			10	.75						
1-0500	ORNAIMENTAL HORTICULTURE	11	.89			10	.75			1	.18		
1-0600	AGRICULTURAL RESOURCES	7	.57			4	.30						
1-0700	ADREXURY	8	.65			9	.68						
1-0900	OTHER AGRICULTURE	87	7.05	31	24.54	31	2.34			1	.18		
	SUB TOTAL	236	19.16	315	23.76	2	.35			10	1.85		
4-0101	ADVERTISING SERVICES	1	.08			4	.30			1	.18		
4-0102	APPAREL & ACCESSORIES	6	.49			5	.68			5	.88		
4-0103	AUTOMOBILE					4	.30						
4-0104	FINANCE & CREDIT	3	.24							3	.53		
4-0105	FOOD DISTRIBUTION	2	.16			5	.38			1	.18		
4-0106	FOOD SERVICES	9	.73			7	.60						
4-0107	GEN. MERCHANDISE	28	2.27	19	1.43	19	1.43			28	4.96	14	2.96
4-0108	HARDWARE/BUILDING MAT.	4	.32			1	.08					1	.18
4-0109	HOME FURNISHINGS	2	.16			1	.08			1	.18		
4-0110	MOTEL & LODGING	4	.32			1	.08						
4-0113	MANAGEMENT												
4-0114	MARKETING	3	.24							2	.35		
4-0116	REAL ESTATE												
4-0117	RETAIL TRADE	2	.16							2	.35		
4-0118	TRANSPORTATION					1	.08						
4-0119	WHOLESALE TRADE	7	.56							2	.35		
	SUB TOTAL	66	5.16	53	4.00	4	.30			4	.76	18	3.33
7-0101	GENERAL ASSISTANTS	7	.57			1	.08			6	1.06		
7-0103	CENTRAL LAB TECH.												
7-0200	ORDERLY			20	3.41					20	3.64		
7-0207	PSYCHOLOGY TECH.												
7-0205	NURSE PRACTICAL (LPN)	33	2.08	36	6.14	18	1.36			23	4.07	17	3.14
7-0206	NURSES' AIDE	5	.41							2	.35		
	SUB TOTAL	45	3.65	56	4.56	19	1.43			31	5.49	20	3.64
9-0100	CONSUMER MARKETING	504	40.91	472	35.60	214	37.88			141	26.06		

EXHIBIT P
VOCATIONAL PERSONNEL

Responsibility	OE Code	Number								
		Secondary		Post-Secondary		Adult				
		State	Voc. Planning Area	State	Voc. Planning Area	State	Voc. Planning Area			
Administration	01.0000									
Supervision	14.0000	2	1	2	2					
Counseling	14.0102			3	2					
Instruction	14.0200	5	4	1	0					
Program Area	14.0203									
	14.0203									
	14.0701									
	14.0701									
	14.0901									
	04.0000	34	8			34	8			
	04.0400	6	2			3	2			
	04.1300									
	04.1500									
	07.0000									
	07.0302									
Distributive	04.0901	7	3			3	2			
	04.0400									
	04.1300									
	04.1500									
Health	07.0000									
	07.0302									
Home Economics	09.0100									
Consumer	09.0100									
Home Economics	99.0000									
Occupational	16.0108	6	1			3	3			
Technical	16.0108									

EXHIBIT Q

SCHOOL CODE	DE CODE	TYPE OF FACILITY	AREA IN SQ. FT.	FACILITY UTILIZATION VOCATIONAL PLANNING AREA									
				STUDENT CAPACITY	PERIODS PER DAY	PERIODS/WK. FAC. USED	STUDENTS PER DAY	SURPLUS CAP./DAY	PERIODS PER WK NOT USED				
9-0100	1	1	1460	24	6	25	124	20	5				
9-0100	1	1	1296	24	6	25	111	33	5				
10 1-0000	1	1	390	20	5	25	74	26					
10 1-0000	2	1	1100	15	6	5	43	47	25				
10 1-0000	2	1	2026	26	6	10	60	60	20				
10 6-0000	2	2	750	20	3	15	24	36					
10 9-0100	2	1	520	20	1	5	35	15					
10 9-0100	1	1	960	30	5	25	98	52					
10 9-0202	1	1	1080	30	6	25	93	87	5				
20 1-0300	2	2	720	18	2	10	30	6					
20 9-0100	1	1	3000	40	6	8	130	110	22				
20 9-0100	2	2	696	15	4	20	65	6					
30 1-0000	2	2	2560	20	6	10	97	23					
30 1-0000	1	1	600	10	6	30	97	37					
30 1-0000	2	2	2400	20	7	25	71	23	10				
30 9-0100	1	1	624	20	6	25	69	51	5				
30 9-0100	1	1	810	20	6	25	99	21	5				
30 9-0100	2	2	1008	20	6	10	32	10	20				
30 9-0901	2	2	792	16	5	25	89	9					
30 9-0901	2	2	792	16	5	25	89	9					
30 17-0000	1	1	576	20	4	20	35	45					
30 17-0000	1	1	576	24	4	30	46	45					
40 9-0000	2	2	828	25	2	10	45	5					
40 17-3601	1	1	4900	12	6	10	34	74					
50 1-0000	2	2	2400	24	6	30	110	34					
50 9-0100	1	1	7620	24	6	20	66	78	10				
80 9-0100	1	1	960	20	5	25	77	23					
90 1-0000					5		75		25				

EXHIBIT B

FOUR MONTH STUDENT FOLLOW-UP

DE CODE	COMPLETIONS		EMPLOYED		STATE		NON-RELATED		COMPLETIONS		VOCATIONAL PLANNING AREA		EMPLOYED		NON-RELATED	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	RELATED		EMPLOYED		NON-RELATED	
											NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
1-0100	70	8.02	23	32.86	13	18.57	54	11.18	15	27.78	12	22.22				
1-0200	4	.46	26	26.26	1	1.01	1	.21			1	100.00				
1-0300	99	11.34	3	12.50	2	8.33	5	1.04	1	20.00	2	40.00				
1-0400	1	.11	21	33.87	1	4.84	1	.21								
1-0500	24	2.75	1	25.00			2	.41	2	40.00						
1-0600	1	.11	2	66.67			2	.41	1	50.00						
1-0900	62	7.10	2	66.67			1	.21	2	66.67						
1-0902	4	.46														
1-0102	2	.23														
1-0103	2	.23														
1-0104	5	.57														
1-0105	3	.34														
1-0106	1	.11														
1-0107	1	.11														
1-0109	1	.11														
1-0114	2	.23														
1-0117	6	.69														
1-0119	4	.44														
1-0402	4	.44														
1-0403	1	.11														
1-0404	4	.44														
1-0405	2	.23														
1-0406	3	.34														
1-0407	8	.92														
1-0408	1	.11														
1-0409	1	.11														
1-0412	1	.11														
1-0415	4	.44														
1-0418	1	.11														
1-0420	1	.11														
1-0499	4	.44														
1-0203	1	.11														
1-0205	14	1.59														
1-0206	2	.23														
1-0208	1	.11														
1-0215	1	.11														
1-0900	8	.92														
1-0908	3	.34														
1-0100	8	.87														
1-0101	9	1.03														
1-0102	5	.57														

EXHIBIT 5

ONE YEAR STUDENT FOLLOW-UP

STUDENT DE CODE	FIRST JOB		TERMINEE EMPLOYMENT BY INDUSTRY				COUNTY				STATE			RETURNS			
	DOT	NO.	PERCENT	SIC	NO.	PERCENT	NAME	NO.	PERCENT	NAME	NO.	PERCENT	NAME	NO.	PERCENT	TOTAL	PERCENT OF TOTAL
14-0901	201-368	2	33.33	491	1	16.67		1	16.67	ALA	4	100.00	ALA	1	16.67	6	4.26
14-0901	209-388	2	33.33	565	1	16.67	MTGY	4	66.67	ALA	4	66.67	ALA	4	66.67		
14-0901	219-488	1	16.67	591	1	16.67	ALTAUTA	1	16.67	ALTAUTA	1	16.67	CHLD	1	16.67		
14-0901	313-381	1	16.67	651	1	16.67											
14-0901				736	1	16.67											
14-0901				510	1	16.67											
16-0111	201-368	1	25.00	151	1	25.00	MTGY	4	100.00	ALA	4	100.00	ALA	4	100.00	4	2.84
16-0111	213-382	1	25.00	631	1	25.00											
16-0111	213-282	2	50.00	739	1	25.00											
16-0111				620	1	25.00											
16-0113	17-281	1	100.00	191	1	100.00	MTGY	1	100.00	ALA	1	100.00	ALA	1	100.00	1	.71
16-0117	213-382	1	50.00	171	1	50.00											
16-0117	807-281	1	50.00	762	1	50.00	PIKE	1	50.00	PIKE	2	100.00	ALA	2	100.00	2	1.42
17-0101	827-281	1	33.33	909	1	33.33	MTGY	2	66.67	ALA	3	100.00	ALA	3	100.00	3	2.13
17-0101	905-881	1	33.33	972	1	33.33	OUTLEM	1	33.33	OUTLEM	1	33.33	ALA	1	33.33		
17-0301	378-957	1	100.00	919	1	100.00	MTGY	1	100.00	MTGY	1	100.00	ALA	1	100.00	1	.71
17-0302	620-281	1	50.00	753	2	100.00	MTGY	2	100.00	MTGY	2	100.00	ALA	2	100.00	2	1.42
17-0302	620-381	1	50.00														
17-1004	311-878	1	25.00	151	1	25.00	MTGY	4	100.00	MTGY	4	100.00	ALA	4	100.00	4	2.84
17-1004	861-381	3	75.00	174	2	50.00											
17-1004				701	1	25.00											
17-1099	680-280	1	100.00	751	1	100.00	MTGY	1	100.00	MTGY	1	100.00	ALA	1	100.00	1	.71
17-1401	222-687	1	100.00	762	1	100.00	MTGY	1	100.00	MTGY	1	100.00	ALA	1	100.00	1	.71

EXHIBIT T

ONE YEAR STUDENT FOLLOW-UP

STUDENT DE CODE	PRESENT JOB		TERMINEE EMPLOYMENT BY INDUSTRY			COUNTY			STATF			AFTERSHS TOTAL	PERCENT OF TOTAL
	DOT	NO.	PERCENT	SIC	NO.	PERCENT	NAME	NO.	PERCENT	NAME	NO.		
14-0901	90-999	1	16.67	651	1	16.67	MTGY	3	50.00	ALA	4	66.67	
14-0901	201-368	1	16.67	806	1	16.67	PIKE	1	16.67	CHIC	1	16.67	
14-0901	209-388	1	16.67	822	1	16.67							
14-0901	355-878	1	16.67	910	1	16.67							
16-0111	90-999	1	25.00	504	1	25.00	MTGY	1	75.00	ALA	4	100.00	2.84
16-0111	213-382	1	25.00	822	1	25.00	PIKE	1	75.00				
16-0111	213-582	1	25.00	970	2	50.00							
16-0111	213-782	1	25.00										
16-0113	17-281	1	100.00	151	1	100.00	MTGY	1	100.00	ALA	1	100.00	.71
16-0117	213-382	1	50.00	762	1	50.00	LEE	1	50.00	ALA	2	100.00	1.42
16-0117	674-281	1	50.00	829	1	50.00	PIKE	1	50.00				
17-0101	90-999	1	33.33	151	1	33.33				ALA	2	66.67	2.13
17-0101	687-281	1	33.33	171	1	33.33				ALA	1	33.33	
17-0101	869-284	1	33.33	821	1	33.33							
17-0301	97-278	1	100.00	824	1	100.00	MTGY	1	100.00	ALA	1	100.00	.71
17-0302	670-281	1	50.00	791	1	50.00	MTGY	1	50.00	ALA	1	50.00	1.42
17-0302	840-381	1	50.00							ALA	1	50.00	
17-1004	852-281	1	75.00	191	1	75.00	MTGY	1	75.00	ALA	3	75.00	2.84
17-1004	861-381	1	75.00	174	1	75.00	MTGY	1	75.00	WESS	1	25.00	
17-1099	19-281	1	100.00	824	1	100.00	LEE	1	100.00	ALA	1	100.00	.71
17-1401	222-687	1	100.00	281	1	100.00	MTGY	1	100.00	ALA	1	100.00	.71
17-1500	637-887	1	100.00	827	1	100.00	WAGON	1	100.00	ALA	1	100.00	.71