



Job Vacancy Survey Report for the Greater Montgomery County Labor Market

December, 2006

Prepared by:
Center for Urban & Public Affairs
Wright State University
3640 Colonel Glenn Hwy
Dayton, OH 45435-0001

Business Research Group
University of Dayton
300 College Park
Dayton, OH 45469-2110

TABLE OF CONTENTS

TABLE OF CONTENTS I

LIST OF TABLES..... II

LIST OF FIGURES III

JOB VACANCY SURVEY (JVS) OVERVIEW 1

 LABOR MARKET GEOGRAPHY AND SCOPE..... 2

 CIVILIAN LABOR FORCE EMPLOYMENT AND UNEMPLOYMENT 3

 PROJECTED EMPLOYMENT TO 2012: A CONTEXT FOR JOB VACANCY FINDINGS..... 3

 JOB VACANCY HIGHLIGHTS FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET ... 7

JOB VACANCY REPORT RESULTS 9

 JOB VACANCIES BY MAJOR OCCUPATIONAL CATEGORIES..... 9

 JOB VACANCIES BY OCCUPATION 11

 GREATER MONTGOMERY COUNTY LABOR MARKET JOB VACANCY RATES 14

 JOB EXPERIENCE AND EDUCATION REQUIREMENTS OF POSITIONS WITH JOB VACANCIES ... 18

 KNOWLEDGE AND SKILL REQUIREMENTS OF POSITIONS WITH JOB VACANCIES 22

 DURATION OF JOB VACANCIES 24

 BENEFITS 27

 FULL-TIME VERSUS PART-TIME OCCUPATIONS AND TEMPORARY VERSUS PERMANENT POSITIONS 29

 HIGH PROSPECT JOBS..... 30

 CHANGING NATURE OF INDUSTRY IN THE GREATER MONTGOMERY COUNTY LABOR MARKET 31

 LOOKING BACK 31

 LOOKING FORWARD 33

 SUMMARY IMPLICATIONS OF RECENT INDUSTRY CHANGES 35

 JOB VACANCIES BY INDUSTRY 35

 THE CHANGING GEOGRAPHY OF EMPLOYMENT IN THE MONTGOMERY COUNTY LABOR MARKET 40

APPENDIX A - 2006 SOUTHWEST OHIO LABOR MARKET SURVEY..... 43

APPENDIX B - SURVEY METHODOLOGY 45

APPENDIX C - JOB VACANCIES BY OCCUPATION 49

APPENDIX D - JOB VACANCY RATES BY OCCUPATION..... 56

APPENDIX E - KNOWLEDGE AND SKILL REQUIREMENTS BY OCCUPATION..... 63

APPENDIX F - GREATER MONTGOMERY COUNTY LABOR MARKET AND NATIONAL JOB VACANCY RATES BY INDUSTRY, 2006 86

LIST OF TABLES

Table 1. Employment Projections by Major Occupational Group, EDR 4 4

Table 2. EDR 4 & US Occupational Employment Projections, 500 Jobs or more..... 5

Table 3. EDR 4 Fastest Growing Occupations 6

Table 4. Job Vacancy Estimates: Major Occupational Category, 2006 10

Table 5. Average Wage by Major Occupational Category, 2006..... 11

Table 6. Major Occupational Categories 15

Table 7. Job Vacancy Rates by Occupation..... 16

Table 8. Education Level and Experience Required for Top 50 Occupations..... 20

Table 9. Montgomery County Job Vacancy Estimates for Hard-to-Fill Jobs..... 26

Table 10. High Prospect Jobs in Montgomery County..... 30

Table 11. Changes in Employment by Industry, 2001-2005* 32

Table 12. EDR 4 Industry Employment Projections, 2002-2012 34

Table 13. Job Vacancies by Industry Montgomery County Labor Market, 2006 37

Table 14. Job Vacancy Rate by Industry 39

Table 15: Deconcentration of Employment..... 40

Table 16. Concentration of Job Vacancy 41

Table 17. Concentration of Employment in High Job Vacancy Sectors by County..... 42

Table 18. Concentration of Job Vacancies by Sectors by Geographic Location..... 42

LIST OF FIGURES

Figure 1 - Job Vacancy Survey Study Area..... 2

Figure 2 - Occupations with the Highest Number of Job Vacancies..... 7

Figure 3 - Top Ten Occupations, Adjusted for Turnover..... 8

Figure 4 - Occupations with Highest Number of Job Vacancies..... 13

Figure 5 - Occupations with Highest Number of Job Vacancy 14

Figure 6 - Experience Needed..... 18

Figure 7 - Educational Level Required for Occupations with Job Vacancies 19

Figure 8 - Duration of Job Vacancy..... 25

Figure 9 - Hard to Fill Jobs..... 27

Figure 10 - Benefits of All Occupations..... 28

Figure 11 - Benefits of All Occupations, Adjusted for Turnover..... 28

Figure 12 - Full-time vs. Part-time Benefits 29

Figure 13 - Job Type..... 30

Figure 14 - Major Industries with more than 800 Vacancies..... 36

JOB VACANCY SURVEY (JVS) OVERVIEW

In 1998, Congress passed the Workforce Investment Act (WIA) which provides for “customers [to] have access to employment statistics information, including accurate job vacancy listings for local, regional, and national labor markets.”¹ Many Workforce Investment Boards (WIBs) are interested in obtaining job vacancy statistics; the Greater Montgomery County Labor Market JVS was sponsored by the Montgomery County Workforce Investment Board.

Other than WIBs, several audiences are interested in JVS statistics, for example, hiring managers and human resource professionals may use these data to assess hiring competition; employment and training service providers may use this information to plan employment services; counselors, instructors, and educational planners may use this information to identify workforce development priorities and aid students and job seekers to identify occupations that are in demand; and policy makers and economic development practitioners are informed by the location and magnitude of job vacancies and the quantity and quality of current job openings.²

“While labor market information in the US is extensive and reliable, including information on employment, unemployment, wages, benefits, and labor force demographics, until recently little was known about job vacancies.”³ A job vacancy study is designed to fill that gap. The purpose of the JVS is to collect, analyze, and disseminate statistically reliable data on current job vacancies.⁴

The data in this report serve as demand side indicators of labor shortages for the Greater Montgomery County Labor Market. According to the Labor Market Information Division of the Ohio Department of Job and Family Services, *most job openings result from the need to replace employees who leave the labor force due to retirement or to transfer to another occupation.* This report provides a snap shot in time of that workforce movement. It is a measure of employer demand for specific occupational titles along with characteristics of those vacancies such as wages and benefits offered, education and experience requirements, full or part time positions, and duration of vacancy (see Appendix A, the survey instrument). Duration of vacancy measures imply areas of frictional versus structural unemployment issues. Complementary with other labor market data, job vacancy statistics provide an indicator of labor market tightness, labor force shortages, and the overall health of the local labor market.

¹ “About JVS: How to Guide for States Implementing a Job Vacancy Survey,” Bureau of Labor Statistics, Employment and Training Administration, 2002.

² Ibid

³ Ibid

⁴ Ibid

LABOR MARKET GEOGRAPHY AND SCOPE

The Greater Montgomery County Labor Market consists of ten counties having journey-to-work associations with Montgomery County.⁵ The ten counties are: Butler, Clark, Clinton, Darke, Greene, Miami, Montgomery, Preble, Shelby, and Warren Counties.

Figure 1 - Job Vacancy Survey Study Area



⁵ A labor market is the geography where the demand and supply for labor are met, primarily as measured by commuting patterns of individuals who live or work in that market. Ohio Labor Market Information Division, 2006.

CIVILIAN LABOR FORCE EMPLOYMENT AND UNEMPLOYMENT

The combined civilian labor force estimate for the Greater Montgomery County Labor Market was 859,200 on average in 2005 according to the US Bureau of Labor Statistics. The civilian labor force comprises civilians 16 years of age and over who are working or seeking work. It excludes military personnel, persons in institutions, those studying or keeping house full-time, persons who are retired or unable to work, and volunteer workers. The total employment for the Greater Montgomery County Labor Market is 809,900. As a result, the unemployment rate for this labor market is 5.7 percent. Unemployed workers are those who have not worked during the survey reference week, are available for work and actively seeking work during the preceding 30 days, or waiting to be called back to a job from which laid off, or waiting to report within 30 days to a new payroll job.

PROJECTED EMPLOYMENT TO 2012: A CONTEXT FOR JOB VACANCY FINDINGS

Employment projections are offered in this section to provide a context for job vacancy findings. Employment projections are prepared by the Ohio Labor Market Information (LMI) Division, and are available for local areas at the metropolitan statistical area level and the economic development regional level. The economic development region (EDR) that best coincides with the Greater Montgomery County Labor Market is EDR 4, Southwest Central Ohio. Southwest Central Ohio and Greater Montgomery County Labor Market share eight of the same counties.⁶

Table 1 on the following page presents projected employment to the year 2012 as prepared by LMI for Southwest Central Ohio. It should be noted that the overall projection of 645,600 represents nearly 19,000 fewer jobs than the last projection released by LMI for the Southwest Central region. The percent change in employment from 2002 to 2012 is projected to be 9.3 percent for this region compared to a state average of 9.7 percent. The table presents projections by major occupational category, in descending order, and indicates the greatest amount of employment growth coming from food preparation, health care, and sales related occupations.

Within those major occupational categories, certain occupations are projected to increase by greater numbers and at faster rates than other occupations. Table 2 shows registered nurses, truck drivers, food service workers, and customer service occupations projected to grow the most to the year 2012. This table also indicates that the US shares 9 of the region's top 15 occupations. Table 3 shows that the fastest growing jobs will increase by more than 45 percent by 2012 and those jobs are medical assistants, computer software engineers/systems software, database administrators, network systems and data communication analysts, and environmental engineers. Of interest is that several of these top growing occupations are well paying occupations too; for example, the computer

⁶ Clark, Clinton, Darke, Greene, Miami, Montgomery, Preble, and Shelby counties.

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

software engineers' average wage is about \$38/hour or \$78,000 annually and the database administrator average is about \$33/hour or \$68,000 annually.

Table 1. Employment Projections by Major Occupational Group, EDR 4

Occupational Title	Employment		Change in Employment		Total Annual Openings
	2002 Annual	2012 Projected	2002 - 2012	Percent	
Total, All Occupations	590,400	645,600	55,200	9.3%	19,534
35 Food Preparation and Serving Related Occupations	44,680	51,330	6,650	14.9%	2,405
29 Healthcare Practitioners and Technical Occupations	29,750	35,710	5,960	20.0%	1,157
31 Healthcare Support Occupations	15,870	20,270	4,400	27.7%	686
41 Sales and Related Occupations	55,930	60,250	4,320	7.7%	2,286
13 Business and Financial Operations Occupations	22,480	26,780	4,300	19.1%	839
25 Education, Training, and Library Occupations	28,470	32,520	4,050	14.2%	1,015
43 Office and Administrative Support Occupations	90,040	94,050	4,010	4.5%	2,479
15 Computer and Mathematical Occupations	11,270	14,870	3,600	31.9%	509
53 Transportation and Material Moving Occupations	49,000	52,570	3,570	7.3%	1,474
47 Construction and Extraction Occupations	22,350	25,100	2,750	12.3%	705
11 Management Occupations	37,270	39,950	2,680	7.2%	855
49 Installation, Maintenance, and Repair Occupations Building & Grounds Cleaning & Maintenance	25,320	27,650	2,330	9.2%	819
37 Occup.	18,910	20,940	2,030	10.7%	582
39 Personal Care and Service Occupations	14,620	16,600	1,980	13.5%	549
33 Protective Service Occupations	8,960	10,510	1,550	17.3%	430
21 Community and Social Services Occupations	8,410	9,890	1,480	17.6%	309
17 Architecture and Engineering Occupations	14,610	15,700	1,090	7.5%	439
27 Arts, Design, Entertainment, Sports, & Media Occ.	8,720	9,760	1,040	11.9%	267
19 Life, Physical, and Social Science Occupations	3,730	4,270	540	14.5%	144
23 Legal Occupations	3,160	3,590	430	13.6%	80
45 Farming, Fishing, and Forestry Occupations	2,180	2,200	20	0.9%	61
51 Production Occupations	74,680	71,070	-3,610	-4.8%	1,805

Source: Ohio Department of Job and Family Services, Labor Market Information Division, July 2005.

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Table 2. EDR 4 & US Occupational Employment Projections, 500 Jobs or more

SOC	Occupational Title	Change in Employment	
		EDR 4 2002-2012	US* 2004-2014
29-1111	Registered Nurses	2,230	Rank 2
53-3032	Truck Drivers, Heavy and Tractor-Trailer	2,170	
35-3021	Comb. Food Prep. & Serving Workers, Inc. Fast Food	2,060	Rank 7
43-4051	Customer Service Representatives	1,510	Rank 4
13-1199	Business Operations Specialists, All Other	1,460	
35-3031	Waiters and Waitresses	1,400	Rank 6
31-1012	Nursing Aides, Orderlies, and Attendants	1,330	Rank 9
41-2031	Retail Salespersons	1,330	Rank 1
31-1011	Home Health Aides	1,190	Rank 8
43-9061	Office Clerks, General	1,090	
31-9092	Medical Assistants	990	
11-1021	General and Operations Managers	880	Rank 10
35-2021	Food Preparation Workers	860	
41-4012	Sales Rep., Wholesale/Mfg, Ex. Tech./Sci. Prod.	830	
37-2011	Janitors & Cleaners, Ex. Maids/Housekeeping Clean.	820	Rank 5
15-1031	Computer Software Engineers, Applications	750	
43-4171	Receptionists and Information Clerks	680	
15-1051	Computer Systems Analysts	670	
25-2021	Elementary School Teachers, Ex. Special Education	670	
49-9042	Maintenance and Repair Workers, General	660	
13-2011	Accountants and Auditors	640	
53-3033	Truck Drivers, Light or Delivery Services	630	
25-2031	Secondary School Teachers, Ex. Spec. & Voc. Ed.	620	
39-5012	Hairdressers, Hairstylists, and Cosmetologists	610	
13-1111	Management Analysts	550	
37-3011	Landscaping and Grounds keeping Workers	530	
41-2011	Cashiers	530	
15-1032	Comp. Software Engineers, Systems Software	510	

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, July 2005.

*Note: U.S. third rank is postsecondary school teachers

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Table 3. EDR 4 Fastest Growing Occupations

Occupational Title	Employment Growth Rate 2002-2012	Total Annual Openings	Average Wage 2004
Medical Assistants	54.7%	133	\$11.33
Comp. Software Engineers, Systems Software	48.6%	61	\$37.51
Database Administrators	48.1%	32	\$32.69
Network Systems & Data Comm. Analysts	47.2%	31	\$28.84
Environmental Engineers	46.2%	16	\$35.33
Home Health Aides	42.2%	156	\$9.59
Social and Human Service Assistants	40.4%	66	\$12.37
Computer Software Engineers, Applications	40.1%	94	\$33.87
Personal Financial Advisors	39.5%	20	\$49.10
Physician Assistants	37.9%	15	\$34.09
Network and Computer Systems Administrators	36.5%	50	\$25.81
Respiratory Therapy Technicians	36.4%	5	\$17.23
Personal and Home Care Aides	35.4%	41	\$8.73
Dental Hygienists	34.9%	27	\$28.18
Dental Assistants	34.0%	60	\$12.30
Massage Therapists	32.4%	19	\$21.73
Computer and Information Systems Managers	32.0%	52	\$40.91
Physical Therapist Assistants	32.0%	12	\$19.24
Mental Health & Substance Abuse Social Work.	31.0%	14	\$17.38
Computer Systems Analysts	30.6%	92	\$31.25
Environ. Science & Protection Tech., Inc. Health	30.0%	5	\$17.24
Respiratory Therapists	29.8%	30	\$18.75
Heating, AC, & Refrigeration Mechanics/Installers	29.7%	32	\$17.35
Pharmacy Technicians	29.4%	29	\$11.59
Medical Records & Health Info. Technicians	29.2%	28	\$12.62
Computer and Information Scientists, Research	28.6%	6	\$42.60
Pharmacists	28.6%	47	\$41.53
Environmental Scientists/Specialists, Inc.	28.3%	21	\$23.19

Table 3. EDR 4 Fastest Growing Occupations

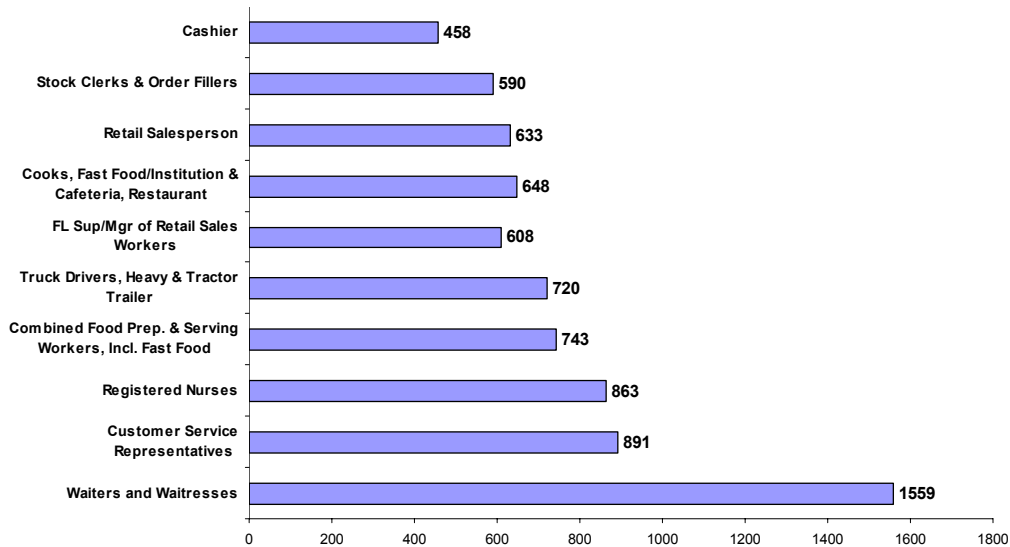
Occupational Title	Employment Growth Rate 2002-2012	Total Annual Openings	Average Wage 2004
Health			
Management Analysts	27.4%	83	\$32.58
Cardiovascular Technologists and Technicians	27.3%	5	\$16.75

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, July 2005.

JOB VACANCY HIGHLIGHTS FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

The study achieved an overall response rate of 35%. The total number of completed surveys returned was 1,951 (see Appendix B, Survey Methodology). The percentage of firms indicating they have job vacancies in the Greater Montgomery area is **40 percent and the total number of job vacancies identified is 21,000**. The top ten Greater Montgomery County area occupations, identified in the job vacancy study to be in highest demand by employers, are presented in Figure 2. Several of these occupations are in major occupational groups considered to experience high turnover rates, thus accounting for a high proportion of their job vacancies. If occupations that experience high turnover are excluded, the top ten occupations modify as is shown in Figure 3.

Figure 2 - Occupations with the Highest Number of Job Vacancies



JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Figure 3 - Top Ten Occupations, Adjusted for Turnover



To compare job vacancy patterns between one geography and another, job vacancy rates are calculated. Job vacancy rates are simply the total number of job vacancies for an industry divided by the total number of jobs plus vacancies in that industry. For the US, the rate is a national “job openings rate” based on the Job Openings and Labor Turnover Survey. The following list presents the major industry job vacancy rates in Greater Montgomery County and the U.S. Findings indicate similar patterns between the regional and the national industry job vacancy rates.

	Greater Montgomery County	US
Total Job Vacancy Rate	3.04%	2.9%
Manufacturing Job Vacancy Rate		2.2%
Food and Apparel	1.81%	
Wood, Chemical, Nonmetallic	1.29%	
Metal, Machinery, Computer, Electrical, Trans	2.63%	
Trade, Transportation, and Utilities	3.51%	2.4%
Information	4.16%	4.4%
Financial Activities	1.51%	3.3%
Professional & Business Services	4.01%	3.6%
Education & Health Services	2.43%	3.7%
Leisure & Hospitality	6.79%	3.5%
Other Services	1.07%	2.9%
Public Administration	.81%	2.3%

JOB VACANCY REPORT RESULTS

Job vacancy statistics are gathered for many states in the US and have been collected in some form since the 1940s and 1950s. Job openings and/or vacancy data have been used as one measure of economic well being and to examine structural as well as frictional unemployment.⁷ Structural unemployment pertains to the mismatch between needs of employers and the skills and training of the labor force. Frictional unemployment pertains to people who are simply between jobs. Most job openings result from the need to replace employees who leave the labor force due to retirement or to transfer to another occupation. An example of structural unemployment can be the loss of skilled labor due to retirement and the lack of skilled labor to replace those positions.

JOB VACANCIES BY MAJOR OCCUPATIONAL CATEGORIES

As Table 4 indicates, roughly 21,000 job vacancies were identified in the Greater Montgomery County Labor Market. Nearly 1 in 5 of those jobs is in food preparation and serving related occupations, a category highly impacted by job turnover and therefore a common job vacancy category in other states and labor markets. Of note is the fifth position held by production occupations and the sixth category of transportation and material moving occupations. These two categories indicate the continued focus of a goods producing labor market and reflect the main reason for the presence of job vacancies—that of replacing a retiring workforce, which is affecting several manufacturing and other occupations. It may be surprising, given local and national news media, that a healthcare category does not top the list. However, there are two healthcare categories, and if those two were combined, the total job vacancies (2,408) would nudge this category much closer to the top. Therefore, it will be no surprise later in this report that occupations like registered nurses have one of the highest number of job vacancies.

⁷ “Surveying Job Vacancies in Local Labor Markets: A How-to Manual,” 1998.

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Table 4. Job Vacancy Estimates: Major Occupational Category, 2006		
Major Occupational Category	Number of Vacancies	Percent Distribution
Total Private Sector Occupations	20,998	100.00%
Food Preparation and Serving Related Occupations	3,974	18.93%
Sales and Related Occupations	2,563	12.21%
Office and Administrative Support Occupations	2,405	11.45%
Production Occupations	1,875	8.93%
Transportation and Material Moving Occupations	1,718	8.18%
Healthcare Practitioners and Technical Occupations	1,459	6.95%
Education, Training, and Library Occupations	991	4.72%
Healthcare Support Occupations	949	4.52%
Management Occupations	942	4.49%
Architecture and Engineering Occupations	617	2.94%
Business and Financial Operations Occupations	517	2.46%
Personal Care and Service Occupations	504	2.40%
Computer and Mathematical Occupations	502	2.39%
Installation, Maintenance, and Repair Occupations	452	2.15%
Building and Grounds Cleaning and Maintenance	443	2.11%
Protective Service Occupations	369	1.76%
Construction and Extraction Occupations	347	1.65%
Community and Social Services Occupations	153	0.73%
Arts, Design, Entertainment, Sports, and Media Occupations	147	0.70%
Life, Physical, and Social Services Occupations	67	0.32%
Other	3	0.01%
Legal Operations	1	0.00%

Incorporating average wages into this analysis of job vacancies by major category turns several of the categories upside-down. For example, the food preparation category, which has the highest number of vacancies, provides the lowest average wage (see Table 5). At the other end of the spectrum, the three highest paying job categories (computer and mathematical, life/physical/social science, and management) have a total of 1,511 job vacancies. And the table elucidates why healthcare has two categories. – Healthcare support occupations such as nurse aides are characteristically quite different from healthcare practitioner and technical occupations in terms of average wages, education and training, and turnover.

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Occupational Category	Average Wage
Computer and Mathematical Occupations	\$29.61
Life, Physical, and Social Science Occupations	\$26.61
Management Occupations	\$26.50
Architecture and Engineering Occupations	\$25.83
Business and Financial Operations Occupations	\$23.80
Healthcare Practitioners and Technical Occupations	\$21.20
Legal Occupations	\$18.50
Arts, Design, Entertainment, Sports, and Media Occupations	\$17.65
Construction and Extraction Occupations	\$16.86
Sales and Related Occupations	\$15.74
Community and Social Services Occupations	\$15.70
Installation, Maintenance, and Repair Occupations	\$14.66
Education, Training, and Library Occupations	\$14.22
Production Occupations	\$13.84
Transportation and Material Moving Occupations	\$12.38
Protective Service Occupations	\$12.32
Office and Administrative Support Occupations	\$11.17
Healthcare Support Occupations	\$10.58
Personal Care and Service Occupations	\$9.63
Building and Grounds Cleaning and Maintenance Occupations	\$8.53
Food Preparation and Serving Related Occupations	\$7.02

JOB VACANCIES BY OCCUPATION

The previous section presents the number of job vacancies by major occupational category. Within those major categories there exist roughly 300 occupations for which employers have reported job vacancies. A brief review of occupations within those major categories reveals some patterns. In most instances, job vacancies within a major category can be found in one to up to eight occupations. In some instances, job vacancies are scattered across most or all of the occupations within the category.

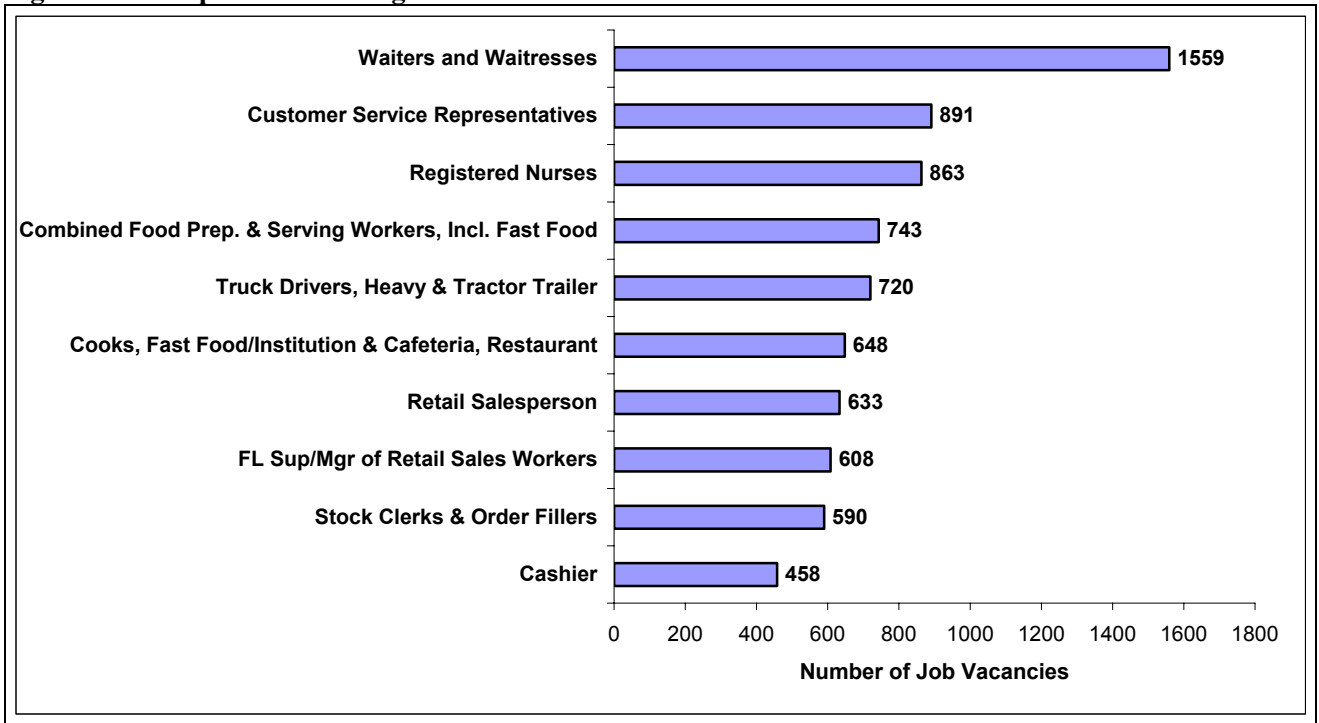
- In the major category, Management Occupations, nearly half of the 942 openings for the full group originate from two occupations—general managers and food service managers.
- In the major category, Business and Financial Operations, more than half the 517 vacancies are attributed to accountants and auditors.
- In major category, Computer and Mathematical, over 200 of the 502 vacancies are for computer software engineers in system software.
- In the Architecture and Engineering major category, industrial, mechanical, and “other” engineers account for nearly 75% of all vacancies.
- In Education, a nearly equal number of job vacancies (~135) are found for teachers at every level from preschool to secondary and postsecondary.

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

- In Healthcare Practitioner and Technical Occupations, nearly 60% of the 1,459 job vacancies are for registered nurses (RNs), with the next highest percentages (8% and 9%) of the vacancies for physical therapists and LPNs, respectively, quite distant seconds.
- In Healthcare Support, nearly 75% of the job vacancies are for home health aides (332) and nursing aides/orderlies/attendants (368).
- In Protective Services, security guards (176) and correctional officers and jailers (105) account for most of the 369 vacancies.
- In Food Preparation and Serving, occupations with vacancies are primarily for waiters/waitresses, food preparation and serving workers, and cooks.
- In Buildings and Grounds, most vacancies are in the occupations of janitors/cleaners (164) and maids/housekeeping (167).
- In Personal Care and Service, most vacancies are in personal and home care aide occupations (186) and child care workers (125).
- In Sales, most vacancies are in retail salespersons (633), first-line supervisors/managers of retail workers (608), and cashiers (458).
- In Office and Administrative Support, 891 job vacancies are in customer service occupations and another 590 for stock clerks.
- Installation, Maintenance and Repair primarily has vacancies for general maintenance workers (160) and for bus and truck mechanics (136).
- In Production, there are 8 occupations that have job vacancies in excess of 100—production worker helpers (277), production workers (202), cutting/punching/press machine (setters, operators, tenders) (158), first-line supervisors (153), welders/cutters/solderers/brazers (144), machinists (134), fiberglass laminators/fabricators (122), team assemblers (101).
- In Transportation and Material Moving, truck drivers heavy (720) and light (144), and laborers/freight/stock/material movers (303), account for 68% of the jobs in the major category.
- In the major categories – Life, Physical, & Social Science; Community & Social Services; Art, Design, Entertainment, Sports, Media; and Construction & Extraction – job vacancies are distributed across all occupations.

While Figure 4 highlights the ten occupations with the highest number of job vacancies, Appendix C presents the full list of occupations and their number of job vacancies.

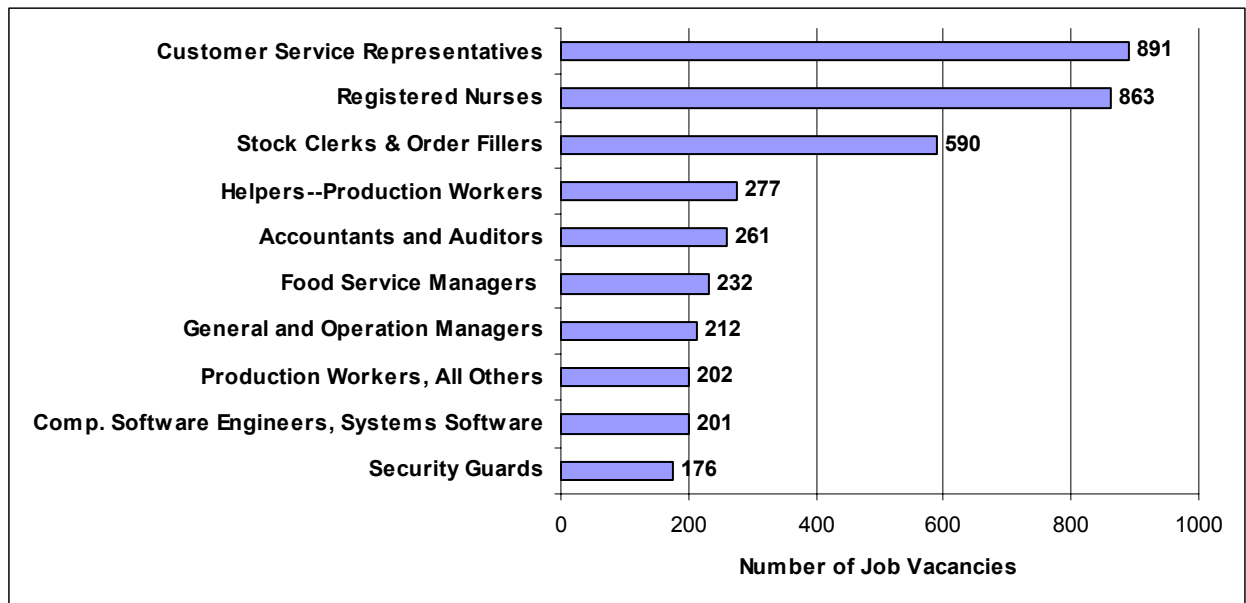
Figure 4 - Occupations with Highest Number of Job Vacancies



Many readers may be interested in indicators of workforce shortage conditions, specifically the imbalance between workforce supply and demand. Regarding workforce shortages, “job vacancy rates alone are inconclusive. Various factors influence the number of job vacancies open at a point-in-time. The major factor distorting the distribution of current job vacancies is turnover – the rate at which workers cycle in and out of jobs. Higher turnover fields like food service, retail sales, and personal care typically have the highest job vacancy rates.”⁸ If we extract occupations that come from high turnover fields, then the occupations with the highest number of job vacancies changes as presented in Figure 5 below.

⁸ “About JVS: How-to Guide for States implementing a Job Vacancy Survey,” Bureau of Labor Statistics, Employment and Training Administration and the State Labor Market Information Offices, 2002.

Figure 5 - Occupations with Highest Number of Job Vacancy



GREATER MONTGOMERY COUNTY LABOR MARKET JOB VACANCY RATES

Job vacancy rates are the proportion of job vacancies to the total employment (plus vacancies) in a category or occupation. Vacancy rates by major occupational group give some insight into vacancy rates by occupation (see Table 6). The highest vacancy rate across major occupational categories is in food preparation and serving, the second and fourth highest rates are in healthcare support occupations and healthcare practitioners and technical occupations, respectively. The third highest vacancy rate by major group is in architecture and engineering (a look into this category shows that openings are in engineering as opposed to architecture). The following table presents job vacancy rates for the major occupational categories.

Major occupational categories exhibiting lower job vacancy rates include construction and extraction occupations. This finding may seem surprising; however, there was a low response rate of surveys coming from small construction companies, while much job growth occurs among small companies. At the same time, this finding might also have been a local indicator of the nationally lagging housing construction industry. Other slower growth major occupational categories include the arts, design, entertainment, sports, and media group and legal.

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Table 6. Major Occupational Categories	Total Job Vacancies	Job Vacancy Rate
Food Preparation & Serving Related Occupations	3,974	6.08%
Healthcare Support Occupations	949	4.37%
Architecture and Engineering Occupations	617	3.83%
Healthcare Practitioners & Technical Occupations	1,459	3.83%
Sales and Related Occupations	2,563	3.54%
Management Occupations	942	3.34%
Computer and Mathematical Occupations	502	3.26%
Personal Care & Service Occupations	504	3.13%
Transportation & Material Occupations	1,718	2.71%
Protective Service Occupations	369	2.64%
Education, Training, & Library Occupations	991	2.35%
Community & Social Services Occupations	153	2.18%
Production Occupations	1,875	2.05%
Office & Administrative Support Occupations	2,405	2.04%
Building and Grounds Cleaning & Maintenance Occ.	443	1.98%
Business and Financial Operations Occupations	517	1.67%
Installation, Maintenance, and Repair Workers	452	1.54%
Life, Physical & Social Science Occupations	67	1.45%
Construction & Extraction Occupations	347	1.15%
Arts, Design, Entertainment, Sports & Media Occ.	147	0.36%
Legal Occupations	1	0.0%

Following the vacancy rates for the major occupational categories are the top 50 job vacancy rates by occupation (see Table 7). See Appendix D for a complete list of job vacancy rates by occupation. In one case, fiberglass laminators and fabricators, the job vacancies are nearly as great as the total employment. This unusual result may have one or more causes such as the effect of a high estimate for the job vacancies for this occupation, or the current and expected pending need for replacement workers due to the high number of incumbent workers accepting severance packages.

While the list of occupations having the highest vacancy rates includes several occupations already highlighted in this report, such as those in food service and the health care industry, some original positions are on the list including editors, media and communication workers, and floral designers.

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Table 7. Job Vacancy Rates by Occupation

SOC Code	Occupation	Number of Vacancies	Total Emp	Relative Standard Error*	Job Vacancy Rate**
51-2091	Fiberglass Laminators and Fabricators	122	150	19.66	44.85%
31-9096	Veterinary Assistants & Laboratory Animal Caretakers	90	320	18.18	21.95%
29-2056	Veterinary Technologists and Technicians	46	200	16.15	18.70%
35-3041	Food Servers, Non-restaurant	141	630	14.28	18.29%
29-1123	Physical Therapists	116	600	6.35	16.20%
11-9051	Food Service Managers	232	1,340	8.53	14.76%
35-1011	Chefs and Head Cooks	62	390	24.55	13.72%
15-1032	Comp. Software Engineers, Systems Software	201	1,280	10.78	13.57%
29-2055	Surgical Technologists	50	340	14.08	12.82%
27-3041	Editors	35	240	10.02	12.73%
35-9031	Host & Hostesses, Rest./Lounge/Coffee Shop	243	1,760	6.54	12.13%
35-3031	Waiters and Waitresses	1,559	11,400	4.32	12.03%
27-3099	Media and Communication Workers, All Other	22	170		11.46%
27-1023	Floral Designers	35	290	21.75	10.77%
41-9022	Real Estate Sales Agents	121	1,020		10.60%
31-9099	Healthcare Support Workers, All Others	109	970	15.20	10.10%
41-1011	FL Supervisors/Mgrs. Of Retail Workers	608	5,430	5.59	10.07%
41-3099	Sales Reps, Services, All Other	177	1,590	17.47	10.02%
33-9021	Private Detectives & Investigators	11	100	17.50	9.91%
39-5092	Manicurists and Pedicurists	32	320		9.09%
25-2011	Teachers, Preschool	127	1,300	22.08	8.90%
51-9199	Production Workers, All Others	202	2,090	12.36	8.81%
31-1011	Home Health Aides	332	3,440	10.07	8.80%
39-9021	Personal and Home Care Aides	186	2,000	22.97	8.51%
43-4051	Customer Service Representatives	891	9,810	7.46	8.33%
43-4081	Hotel, Motel, and Resort Desk Clerks	62	710	13.24	8.03%
43-9051	Mail Clerks & Mail Machine Operators, ex. Postal Serv.	74	850	20.52	8.01%
33-3012	Correctional Officers and Jailers	105	1,340	14.81	7.27%
41-4011	Sales Reps., Wholesale/Mfg, Tech./Scientific Products	145	1,920	19.83	7.02%
25-3099	Teachers & Instructors, All Other	118	1,570	7.55	6.99%
53-3032	Truck Drivers, Heavy and Tractor-Trailer	720	9,580	8.80	6.99%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

SOC Code	Occupation	Number of Vacancies	Total Emp	Relative Standard Error*	Job Vacancy Rate**
17-2071	Electrical Engineers	41	560	9.86	6.82%
17-2141	Mechanical Engineers	124	1,700	9.26	6.80%
17-2112	Industrial Engineers	161	2,210	9.85	6.79%
51-2099	Assemblers and Fabricators, All Others	58	800	23.59	6.76%
21-1022	Medical & Public Health Social Workers	47	660	7.44	6.65%
49-3031	Bus & Truck Mechanics & Diesel Engine Spec.	136	1,910	10.35	6.65%
21-9099	Counselors, Social & Religious Workers, All Other	48	700		6.42%
51-9198	Helpers--Production Workers	277	4,210	13.67	6.17%
29-1111	Registered Nurses	863	13,250	5.97	6.11%
43-5081	Stock Clerks and Order Fillers	590	9,100	3.87	6.09%
11-3061	Purchasing Managers	35	550	4.45	5.98%
29-1131	Veterinarians	14	220	24.26	5.98%
35-9021	Dishwashers	127	2,060	12.16	5.81%
15-1071	Network and Computer Systems Administrators	105	1,720	17.91	5.75%
33-1099	First-Line Sup/Mgrs, Protective Serv Work, AO	8	140	7.55	5.41%
25-9031-3	Education Administrators--Elem, Secondary, Postsec	93	1,630	8.03	5.40%
17-2199	Engineers, All Other	162	2,870	N/A	5.34%
35-3021	Combined Food Prep. & Serv. Work, inc. Fast Food	743	13,240	8.50	5.31%

***Note:** The relative standard error applies to total employment. If the RSE is 25% or less, results have reasonable accuracy. Occupations having relative standard errors in excess of 25% have been removed from this list of the top 50 occupational vacancy rates.

****Note:** Gray shading indicates total is for EDR 4 rather than for the 10 counties in the studied labor market.

JOB EXPERIENCE AND EDUCATION REQUIREMENTS OF POSITIONS WITH JOB VACANCIES

Considering all occupations for which employers reported vacancies, most job positions (51.3%) require experience related to the position. Over one quarter (27.5%) require some job experience, and one in five (21.5%) require no job experience.

Figure 6 - Experience Needed

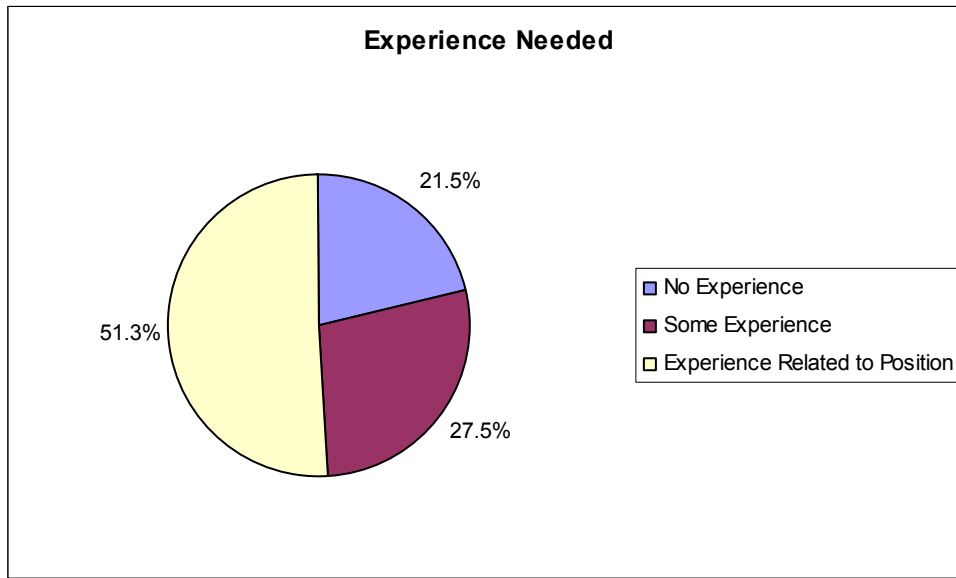
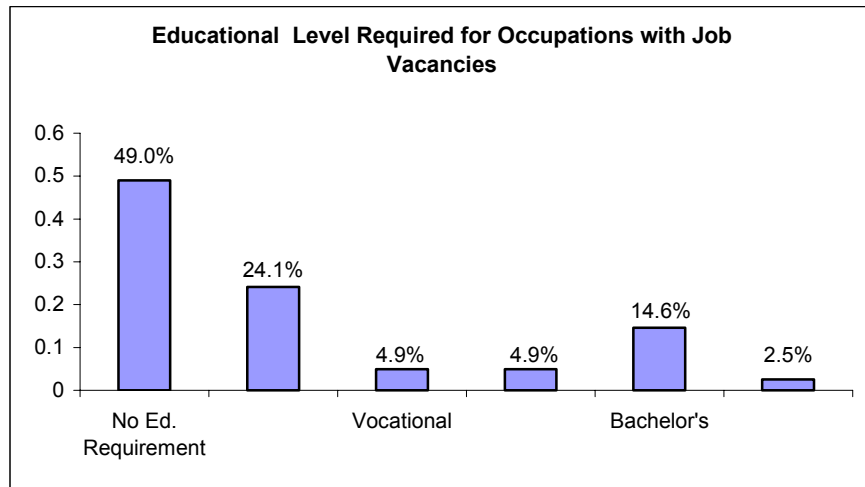


Figure 7 presents the educational attainment level required by employers for the job vacancies they reported. The chart indicates a high percentage of occupations (49%) where there are job vacancies that require no education. Another 24% require only a high school education or GED. Another one-fourth of occupations where there are job vacancies require a higher level of educational attainment with the most common requirement being a bachelor's degree (15%). Details are presented in Table 8.

Figure 7 - Educational Level Required for Occupations with Job Vacancies



JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Table 8. Education Level and Experience Required for Top 50 Occupations			
Occupation	Job Vacancies	Education	Experience
Waiters and Waitresses	1,559	No Ed. Requirement/HS or GED	No Experience
Customer Service Reps.	891	HS or GED	Experienced
Registered Nurses	863	Associate's	No/Some/Experienced
Comb. Food Prep. & Serving Workers, Inc. Fast Food	743	No Ed. Requirement	No Experience
Truck Drivers, Heavy and Tractor-Trailer	720	HS or GED	No/Some/Experienced
Cooks, Fast Food/Institution & Cafeteria, Rest., Short Order	648	HS or GED	Experienced
Retail Salesperson	633	HS or GED	No/Some/Experienced
FL. Sup./Mgrs. Of Retail Workers	608	Bachelor's	Some
Stock Clerks and Order Fillers	590	HS or GED	No Experience
Cashiers	458	HS or GED	No Experience
Nursing Aides, Orderlies, and Attendants	368	No Ed. Requirement/HS or GED/Vocational	No/Some/Experienced
Home Health Aides	332	HS or GED	Experienced
Laborers & Freight/Stock/Material Movers, Hand	303	No Ed. Requirement/HS or GED	No/Some
Helpers-Production Workers	277	No Ed. Requirement	No Experience
Accountants and Auditors	261	HS or GED/Bachelor's	No/Some/Experienced
Host & Hostesses, Rest./Lounge/Coffee Shop	243	HS or GED	No Experience
Food Service Managers	232	HS or GED	Some/Experienced
General and Operations Manager	212	HS or GED/Bachelor's	Experienced
Sales Reps., Wholesale/Mfg. Tech./Ex. Scientific Products	212	HS or GED	No/Experienced
Production Workers, All Others	202	HS or GED	No/Some/Experienced
Comp. Software Engineers, Systems Software	201	Bachelor's	Experienced
Personal and Home Care Aides	186	HS or GED	No/Some/Experienced
Security Guards	176	HS or GED	No/Some
Bartenders	173	No Ed. Requirement/HS or GED/Vocational	Some
Maids and Housekeeping Cleaners	167	No Ed. Requirement/HS or GED	Some
Janitors & Cleaners, ex. Maids/Housekeeping Cleaners	164	No Ed. Requirement/HS or GED	Some/Experienced
Engineers, All Other	162	Bachelor's	Experienced
Industrial Engineers	161	Bachelor's	Experienced

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Table 8. Education Level and Experience Required for Top 50 Occupations			
Occupation	Job Vacancies	Education	Experience
Maintenance and Repair Workers, General	160	HS or GED	Experienced
FL. Sup./Mgrs. Of Production/Operating Workers	149	HS or GED/Bachelor's	Some/Experienced
Sales Reps., Wholesale/Mfg. Tech./Scientific Products	145	HS or GED	Experienced
Welders, Cutters, Solderers, and Brazers	144	No Ed. Requirement/HS or GED/Vocational	Some
Truck Drivers, Light or Delivery Service	144	No Ed. Requirement/HS or GED	No/Experienced
Teacher Assistants	143	No Ed. Requirement/HS or GED	No/Some/Experienced
Food Servers, Non restaurant	141	HS or GED	Experienced
Teachers, Elementary ex. Special Ed.	138	Bachelor's	No/Experienced
Teachers, Postsecondary	137	Advanced	Experienced
Bus and Truck Mechanics & Diesel Engine Spec.	136	HS or GED/Vocational/Associate's	Some/Experienced
Machinists	134	HS or GED/Vocational	No/Some/Experienced
Licensed Practical & Licensed Vocational Nurses	128	Vocational/Associate's	Some
Teachers, Preschool	127	HS or GED/Associate's	Some/Experienced
Dishwashers	127	HS or GED	No Experience
Child Care Workers	125	HS or GED	Some/Experienced
Mechanical Engineers	124	Associate's/Bachelor's	Experienced
Teachers, Secondary ex. Special Ed.	124	Bachelor's	No/Experienced
Real Estate Sales Agents	121	HS or GED	Some
Packers and Packagers, Hand	121	HS or GED	No Experience
Physical Therapists	116	Associate's/Advanced	No/Some/Experienced
Bookkeeping, Accounting, and Auditing Clerks	110	HS or GED/Bachelor's	No/Some/Bachelor's
Healthcare Support Workers, All Other	109	HS or GED	Some/Experienced
Correctional Officers, and Jailers	105	HS or GED	No Experience

KNOWLEDGE AND SKILL REQUIREMENTS OF POSITIONS WITH JOB VACANCIES

In order to get a better understanding of the vacant occupations in the Greater Montgomery County labor market, it is necessary to look at the knowledge and skill levels needed to fill these vacant occupations. The top fifty jobs provide some insight into the skills and knowledge needed for all vacant occupations in the Greater Montgomery County Labor Market. Occupations were divided into two groups—those that required a general skill and knowledge level and those that needed more specialized skills and knowledge. Specialized skills and knowledge could include medical, science, computer, or mathematical requirements. The list below presents occupations from the “top 50 job vacancies” that require only general skills and knowledge, however many require on the job training. Following the list is a presentation of the general skills and knowledge requirements for those jobs.

Top Occupations Requiring General Skills and Knowledge

- Bartenders
- Bookkeeping, Accounting, and Auditing Clerks
- Bus and Truck Mechanics & Diesel Engine Specialists
- Cashiers
- Child Care Workers
- Combined Food Preparation
- Cooks, Fast Food, Short Order, Restaurant, Institution
- Customer Service Representative
- FL. Sup./Mgr. of Retail Workers
- FL. Sup/Mgrs. Of Production Workers, General
- Food Servers, Non-restaurant
- Food Service Managers
- Helpers-Production Workers
- Home Health Aide
- Host and Hostesses, Restaurant./Lounge/Coffee Shop
- Janitors and Cleaners, excluding Maids/Housekeeping Cleaners
- Laborers and Freight/Stock/Material Movers, Hand
- Machinists
- Maids and Housekeeping Cleaners
- Maintenance and Repair Workers
- Packers and Packagers, Hand
- Personal and Home Care Aides
- Production Workers, All Other
- Retail Salesperson
- Security Guards
- Stock Clerks and Order Fillers
- Truck Drivers, Heavy and Tractor Trailer
- Truck Drivers, Light or Delivery Service
- Waiters and Waitresses

KNOWLEDGE

- Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- Clerical — Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

SKILLS

- Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
- Time Management — Managing one's own time and the time of others.
- Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

While just over half of the top 50 occupations by job vacancy require general skills and knowledge which are commonly gathered while on the job, twenty-one (21) of the top 50 occupations require specialized knowledge and skills. Specialized skills, which include medical, science, computer, or mathematical requirements, refer to such skills as systems analysis, technology design (generating or adapting technological equipment to meet user needs), and use of scientific rules and methods. Specialized knowledge refers to specialized education and training, an understanding of principles of psychology and sociology, and knowledge of computers and electronics. **Appendix E** contains the skill and knowledge requirements, by occupational title, for the positions listed below.

Top Occupations requiring Specialized Knowledge and Skills

- Accountants
- Auditors
- Computer Software Engineers, Systems Software
- Correctional Officers and Jailers
- Engineers
- General and Operations Managers
- Industrial Engineers
- Licensed Practical and Licensed Vocational Nurses

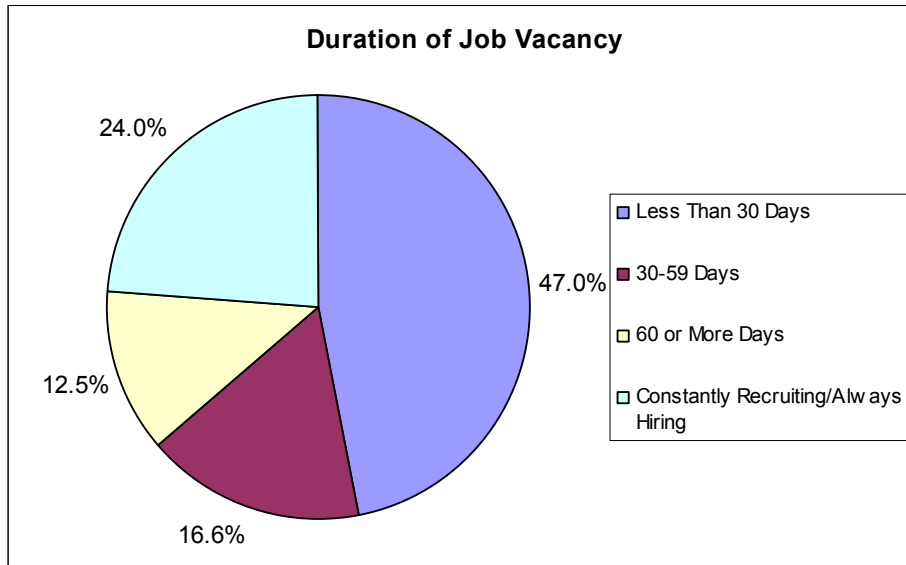
JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

- Mechanical Engineers
- Nursing Aides, Orderlies, and Attendants
- Physical Therapists
- Real Estate Sales Agents
- Registered Nurses
- Sales Representatives, Wholesale & Manufacturing except Technical/Scientific Products
- Sales Representatives, Wholesale & Manufacturing, Technical/Scientific Products
- Teacher Assistants
- Teachers, Elementary, excluding Special Education
- Teacher, Preschool
- Teacher, Postsecondary excluding Special Education
- Teacher, Secondary excluding Special Education
- Welders, Cutters, Solderers, Brazers

DURATION OF JOB VACANCIES

The Job Vacancy Survey form included a question regarding the length of time that the employer had been trying to fill the vacancy. Four responses to this question were possible—less than 30 days, 30-59 days, 60 or more days, and constantly recruiting/always hiring. The pie chart below indicates that nearly half (47%) of the vacancies had had recent efforts to fill them, another quarter (24%) were constantly being pursued, while 17% had remained unfilled for 30-59 days, and 12.5% had remained unfilled for 60 or more days.

Figure 8 - Duration of Job Vacancy



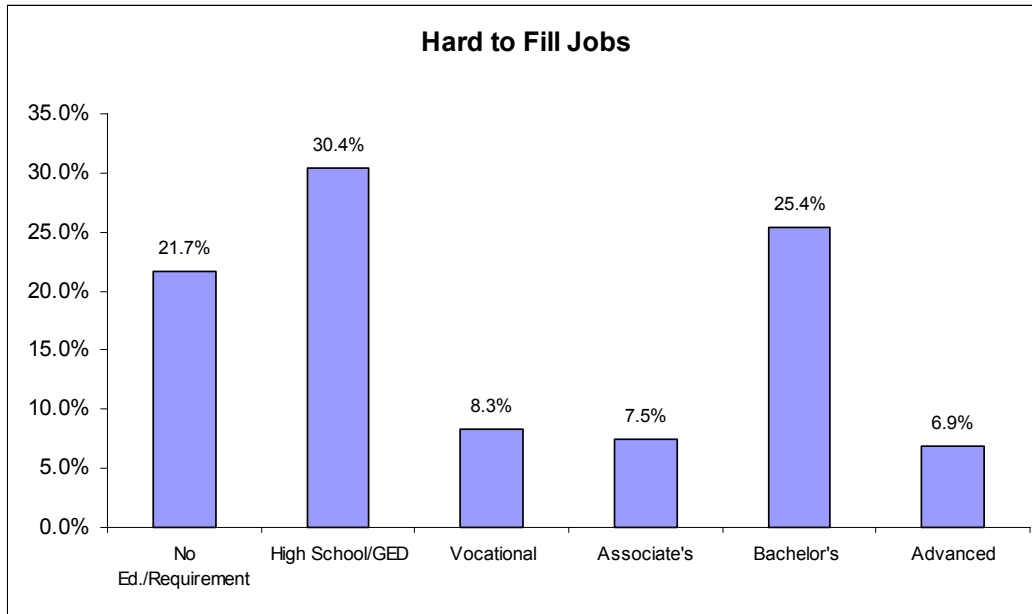
JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

These four classifications allow analysts to identify difficult to fill occupations. Table 9 presents occupations most commonly categorized into one of the three hard to fill categories—constantly recruiting, 60+ days, and 30-59 days. Of interest in the first column is the registered nurse occupation being classified with other high turnover positions. Of interest in the second column, recruiting 60+ days, is generally the high level of educational attainment and/or skill required. And in the last column, quite a mixture of occupations is presented.

Table 9. Montgomery County Job Vacancy Estimates for Hard-to-Fill Jobs		
Constantly Recruiting	Recruiting 60+ Days	Recruiting 30-59 Days
Waiters and Waitresses	Engineers, All Other	General and Operations Manager
Bartender	Engineering Managers	Business Operations Specialists, All Other
Food Service Manager	Computer Support Specialist	Stock Clerks and Order Fillers
Cashiers	Computer Systems Analyst	Laborers and Freight, Stock, and Material Movers, Hand
Cooks, Restaurant	Accountants and Auditors	Maintenance and Repair Workers, General
Retail Salesperson	Bookkeeping, Accounting, and Auditing Clerk	Janitors and Cleaners, Except Maid and Housekeeping Cleaners
Combined Food Preparation and Serving Workers, Including Fast Food	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	Water and Liquid Waste Treatment Plant and System Operator
Dishwasher	Executive Secretaries and Administrative Asst.	Sales Representatives, Services, Other
Customer Service Representative	Managers, All Other	Licensed Practical and Licensed Vocational Nurses
Truck Drivers, Heavy and Tractor Trailer	Purchasing Manager	Computer Software Engineers
Registered Nurses	Machinists	Industrial Engineers
Nursing Aides, Orderlies, and Attendants	Education Administration, Postsecondary	

Hard to fill jobs (high turnover, and over 30 and 60 day recruiting efforts) cross tabulated by the education required for those occupations provides the dispersed results presented below. The high proportion of hard to fill jobs requiring no or less education is influenced by the number of occupations in high turnover fields such as food preparation and service as well as sales.

Figure 9 - Hard to Fill Jobs



BENEFITS

The job vacancy survey included a question series pertaining to benefits. Cross tabulations of the data allow an analysis of benefits by all occupations, by occupations less affected by turnover, and by full and part-time occupations, among other variables. The first chart in this section indicates that roughly 90% of all occupations offer benefits. The most common benefit offered is health insurance (82.9%); the least common benefit offered is paid sick leave (55.1%). The following chart, titled, “All Occupations, Adjusted for Turnover,” presents the distribution of benefits for occupations that are less affected by turnover. This chart shows that low turnover occupations are more likely to receive benefits; 92.9% of all of these occupations receive some form of benefit. And percentages for each of the four types of benefits are higher in this chart than in the initial chart, with a higher prevalence of paid sick leave provided for these occupations (68.1% v. 55.1% among higher turnover occupations). The third chart in this section presents benefits offered to full v. part-time positions. This chart indicates vast differences, where 97.5% of all full-time occupations receive benefits and 67.4% of part-time occupations do so. About half of the part-time occupations that have job vacancies offer retirement plans, paid vacation, and health benefits (52.1%, 50.8%, 47.4%, respectively). The greatest differential regards health benefits and paid sick leave, where full-time occupations are 2 times more likely to receive health benefits and nearly 3 times more likely to receive paid sick leave than part-time occupations.

Figure 10 - Benefits of All Occupations

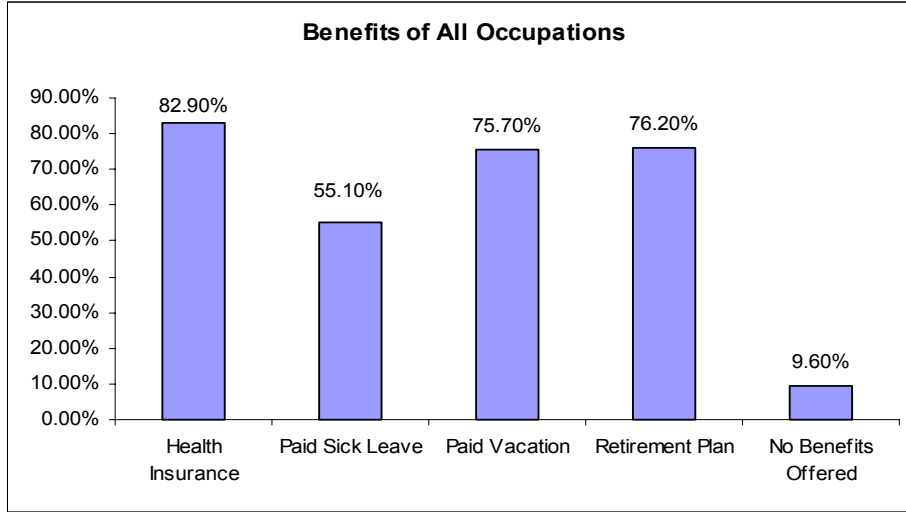


Figure 11 - Benefits of All Occupations, Adjusted for Turnover

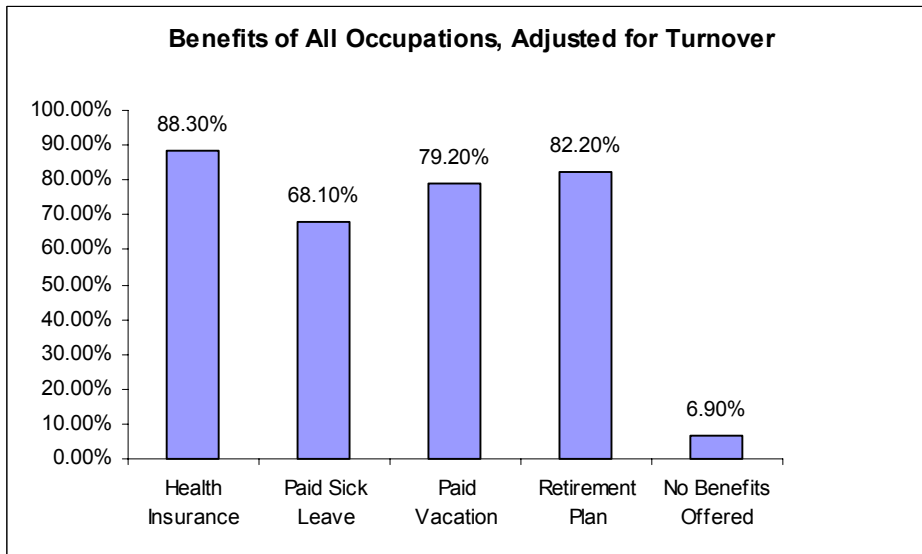
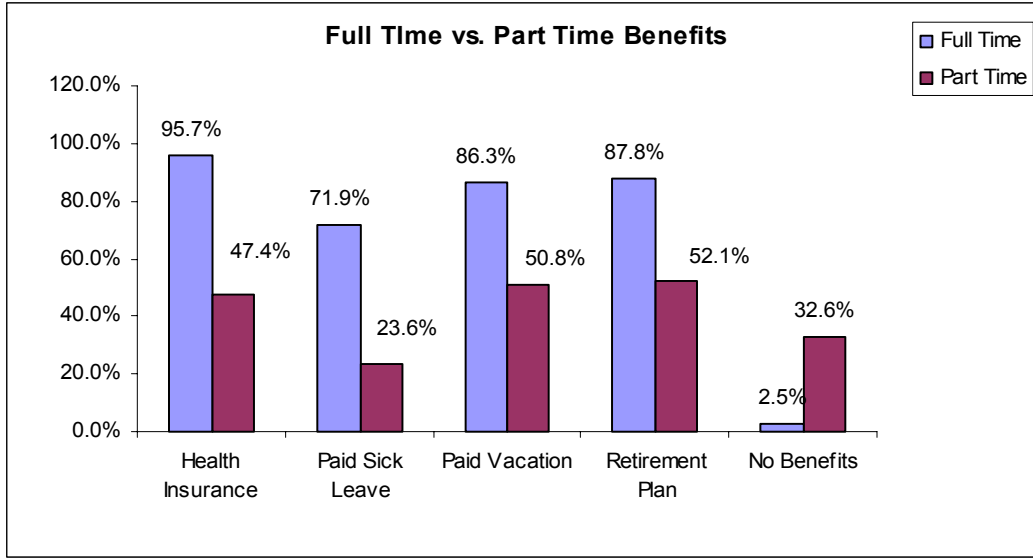


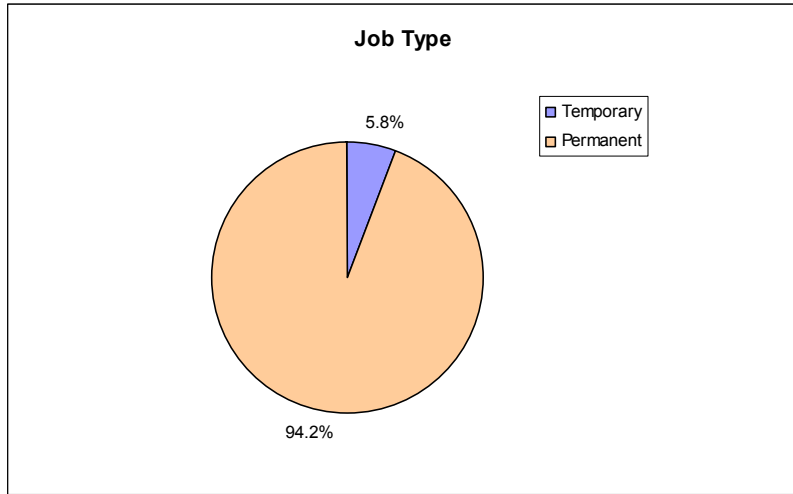
Figure 12 - Full-time vs. Part-time Benefits



FULL-TIME VERSUS PART-TIME OCCUPATIONS AND TEMPORARY VERSUS PERMANENT POSITIONS

Employers were also asked to indicate whether the positions were full or part-time positions and whether they were temporary or permanent positions. Regarding the full and part-time classification, some employers recorded a position as being both full and part-time. If those records are set aside, a cross tabulation of full or part-time by job vacancies can be run. The results show that in the Greater Montgomery County Labor Market, 69% (or 12,749) of the job vacancies are in full-time positions and 31% (or 5,718) are in part-time positions. Regarding temporary versus permanent positions, nearly all the occupations with job vacancies are permanent (94.2%) rather than temporary (5.8%) opportunities. This percentage may have been affected by survey implementation in the spring rather than in summer or late fall.

Figure 13 - Job Type



HIGH PROSPECT JOBS

High prospect jobs in this report are those occupations that have 200 or more job vacancies and pay higher than \$12 per hour (see Table 10). Other job vacancy reports include any occupation having 75 or more job vacancies at \$12 per hour in their listing of high prospect jobs.

Occupation	Vacancies	Wage
Registered Nurses	863	\$21.67
Truck Drivers, Heavy and Tractor Trailer	720	\$19.03
FL Sup./Mgr. of Retail Sales Workers	608	\$20.79
Accountants and Auditors	261	\$23.81
Food Service Managers	232	\$13.79
General and Operations Manager	212	\$24.37
Sales Reps., Wholesale/Mfg. ex. Tech./Scientific Products	212	\$21.85
Comp. Software Engineers, Systems Software	201	\$35.28

JOB VACANCY BY INDUSTRY

CHANGING NATURE OF INDUSTRY IN THE GREATER MONTGOMERY COUNTY LABOR MARKET

LOOKING BACK

Part of the issue with respect to job vacancies is the changing pattern of employment by industry and geography for the Greater Montgomery County Labor Market. In this section the shape of the industrial sector and changing nature is noted.

In the period from 2001 to 2005, the Greater Montgomery County Labor Market lost 18,300 jobs (-2.6%) (see Table 11, next page). The slight decline in overall jobs was linked to profound changes in industrial mix. At the broadest level, Goods Producing Industries lost 23,046 jobs, a 13.1% decline; Service Providing Industries gained 4,877 jobs, an increase of just 0.9%. The slight gain in Service Providing Industries obscures dramatic changes in the relative composition of that sector. The Trade, Transportation and Utility sub-sector lost 13,034 jobs (-8.1%) while the Financial Activities (+9.1%), Education and Health Services (+8.5%) and Leisure and Hospitality (+7.4%) sub-sectors all gained substantially, +3073 jobs, +12,298 jobs, and +4,601 jobs respectively.

The most dramatic declines at a 2 digit level occur in the two durable good manufacturing sectors (NAICS 32 and 33) which lost 15.9% and 17.8% of their jobs respectively over the 4 year period and in the Retail, NAICS 45, which lost 16.5% of its jobs. Utilities, NAICS 22 (-12.3%) and Postal Services/Warehousing, NAICS 49 (-13.1%) also had substantial reductions.

The most dramatic increases in employment over the period were in Finance and Insurance NAICS 52 (+2,923 jobs, +11.1%) and Health Care 62 (+8,885 jobs, +10.6%). Substantive growth also occurred in Accommodation and Food Services 72 (+4,720 jobs, +8.6%).

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Table 11. Changes in Employment by Industry, 2001-2005*

	2001	2005	Change
Total	709,955	691,656	-18,300
Goods Producing Industries	176,384	153,338	-23,046
11 Agriculture, Forestry, Fishing and Hunting	1,588	1,657	69
21 Mining	635	545	-90
23 Construction	29,148	29,888	739
31 Manufacturing (Food and Apparel)	8,220	8,190	-30
32 Manufacturing (Wood, paper, print, chemical, plastic, non-metallic)	33,386	28,072	-5,314
33 Manufacturing (Primary/Fabricated Metal, Machinery/computer/electrical/transportation)	103,407	84,987	-18,420
Services Providing	533,441	538,318	4,877
Trade, Transportation and Utilities	160,363	147,329	-13,034
22 Utilities	3,415	2,994	-421
42 Wholesale Trade	33,856	32,118	-1,738
44 Retail Trade (Auto/Furniture/Electronics/Building Material/Food/Health/Gas/Apparel)	52,469	50,319	-2,149
45 Retail Trade (Sports/Music/General Merchandise/Miscellaneous/Nonstore retailers)	34,263	28,593	-5,670
48 Transportation	18,658	17,929	-729
49 Postal Services/Warehousing)	17,702	15,376	-2,327
51 Information	16,381	15,418	-963
Financial Activities	33,883	36,955	3,073
52 Finance & Insurance	26,221	29,143	2,923
53 Real Estate & Rental & Leasing	7,662	7,812	150
Professional & Business Services	60,344	59,367	-976
54 Professional, Scientific, and Technical Services	30,900	30,245	-655
55 Management of Companies & Enterprises	10,700	9,838	-862
56 Administrative and Support and Waste Management and Remediation Services	18,744	19,285	541
Education and Health Services	145,280	157,578	12,298
61 Educational Services	61,272	64,684	3,412
62 Health Care & Social Assistance	84,008	92,894	8,885
Leisure and Hospitality	62,080	66,681	4,601
71 Arts, Entertainment, and Recreation	7,453	7,333	-119
72 Accommodation and Food Services	54,628	59,348	4,720
81 Other Services (except Public Administration)	21,254	21,275	21
82 Public Administration	33,856	33,714	-142

* The Greater Montgomery County Labor Market is defined here as Butler, Clark, Clinton, Darke, Greene, Miami, Montgomery, Preble, Shelby and Warren Counties

LOOKING FORWARD

It is not possible to get long term job projections by industry for the Greater Montgomery County Labor Market as defined in this study. However, the Ohio Bureau of Labor Market Information has projected jobs by 2 digit NAIC sector for Economic Development Region 4 (Southwest Central Ohio) (EDR4), using the base year of 2002 and estimating growth and decline to 2012. The counties in EDR4 differ from the Greater Montgomery County Labor Market in that EDR4 excludes Butler and Warren counties and includes Champaign County. The forecast is compared to what is known for the Greater Montgomery County Labor Market (MCLM) over the period 2001-2005. The projections for EDR4 are somewhat problematic for certain industrial sectors, given that the projections were made in 2002 and given what has occurred over the 2001-2005 period (see Table 12).

The results posit a small decline in Good Producing Industries (-5,500) that is more than offset by a large increase in Service Providing Industries (+60,100). The decline in the Goods-Producing Industries is likely to be more substantial than projected. The decline in the Goods-Sector Industries was already 13.1% in the period 2001-2005 linked to a 16.4% decline in manufacturing. It is difficult to envision circumstances in which the lost manufacturing jobs are recovered.

The projected growth in the Service-Providing Industries for EDR4 (14.2%) is also somewhat optimistic given the 0.9% growth in the MCLM over the 2001-2005 period. The most problematic forecasts in the Service Providing Sectors are those for Information and Professional and Business Services. Both of these sectors experienced declines over the period from 2001 to 2005 (-5.9% and -1.6%). It is difficult to see a recovery over the next 6 years substantial enough to bring the posited growth rates of 21.7% and 23.6%, respectively, for the sectors.

The projected increases observed in most other sectors over the time frame are reasonable. Financial Activities have already grown substantially over the period 2001-2005 in MCLM (9.1%) so little net addition is required for the EDR4 forecast (12.9%) to be reasonable. Both the Education and Health and Social Assistance Sectors have grown in the 2001-2005 period by about half of the projected growth posited for the full period from 2002-2012. The growth in Leisure and Hospitality also appears reasonable although it should be noted that most of the growth over the period from 2001-2005 was in Accommodation and Food Service.

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Table 12. EDR 4 Industry Employment Projections, 2002-2012					
Industry	2002 Annual Employment	2012 Projected Employment	Change in Employment 2002-2012	Percent Change 2002-2012	Montgomery County Labor Market Change, 2001-2005
Total Employment	590,400	645,600	55,200	9.3%	-2.6%
Goods-Producing	134,100	128,600	-5,500	-4.1%	-13.1%
11,21 Natural Resources and Mining	11,300	10,300	-1,000	-8.8%	-0.9%
11 Agriculture	11,000	10,100	-900	-8.2%	4.3%
23 Construction	20,300	23,400	3,100	15.3%	2.5%
31,32,33 Manufacturing	102,400	94,900	-7,500	-7.3%	-16.4%
Service-Providing	422,700	482,800	60,100	14.2%	0.9%
Trade, Transportation and Utilities	107,700	116,000	8,300	7.7%	-8.1%
44,45 Retail Trade	62,800	66,700	3,900	6.2%	-9.0%
48,49 Transportation and Warehousing	22,900	25,000	2,100	9.2%	-8.4%
Information	12,900	15,700	2,800	21.7%	-5.9%
Financial Activities	22,400	25,300	2,900	12.9%	9.1%
52 Finance and Insurance	16,400	18,500	2,100	12.8%	11.1%
53 Real Estate and Rental and Leasing	6,100	6,700	600	9.8%	2.0%
Professional and Business Services	59,200	73,200	14,000	23.6%	-1.6%
54 Professional, Scientific & Technical Services	22,600	27,700	5,100	22.6%	-2.1%
55 Management of Companies and Enterprises	5,800	7,300	1,500	25.9%	-8.1%
56 Administrative and Waste Services	30,800	38,300	7,500	24.4%	2.9%
Education and Health Services	71,900	86,100	14,200	19.7%	8.5%
61 Educational Services	8,800	9,900	1,100	12.5%	5.6%
62 Health Care & Social Assistance	63,000	76,200	13,200	21.0%	10.6%
Leisure and Hospitality	45,800	52,800	7,000	15.3%	7.4%
71 Arts, Entertainment & Recreation	4,700	5,300	600	12.8%	-1.6%
72 Accommodation and Food Services	41,200	47,500	6,300	15.3%	8.6%
Other Services	21,700	24,300	2,600	12.0%	0.1%
Government	81,100	89,300	8,200	10.1%	-0.4%
Source for EDR 4 projections is Ohio Bureau of Labor Market Information					

SUMMARY IMPLICATIONS OF RECENT INDUSTRY CHANGES

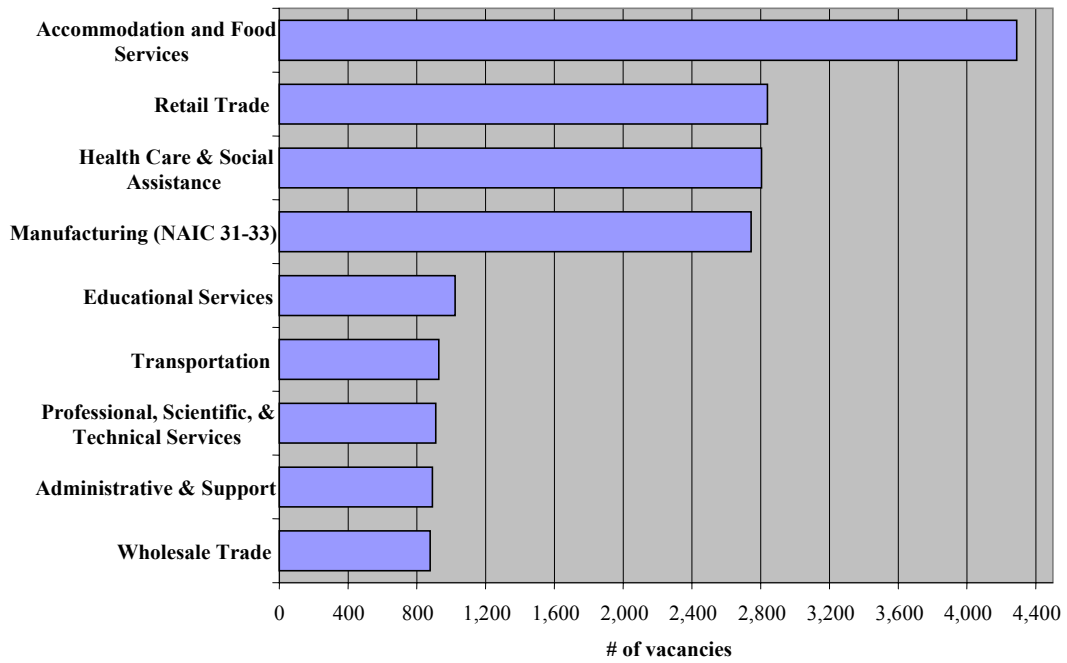
There are clearly profound changes occurring in the industrial structure of the Greater Montgomery County Labor Market. Both the recent past and the projections over the next 6 years suggest substantial declines in Manufacturing and substantial increases in Financial Activities, Education and Health Services. The most problematic aspect of the projections is for Information and Professional and Business Services. A disconnect can be observed between the recent past and projections for the immediate future in both these sectors.

While it is clear the industrial structure is changing, observers must be careful to keep in mind the distinction between net new jobs by industry (what has been discussed in this section) and gross job vacancies (the subject of the survey). Gross job vacancies can still be substantial in industries that are declining because of the nature of job turnover in the industry (Retail and Food Service), turnover associated with retirements, and the accelerated turnover associated with the aging of baby boomers out of the work force.

JOB VACANCIES BY INDUSTRY

Figure 14 and Table 13 provide information by Industry at the 2 Digit NAIC Sector Level. Figure 14 indicates all industries with more than 800 jobs. Two points are worth making. First, two of the industries with the highest absolute number of job vacancies, Accommodations & Food Services (4,290) and Retail Trade (2,840) are characterized by relatively high job vacancy rates (7.2% for NAIC 72 and 6.3% for NAIC 45). These sectors account for 20.4% and 13.5% of all job vacancies. Second, rates of job growth are not the key determinant of the absolute number of job vacancies. The total number of job vacancies in Manufacturing (NAIC 31,32 and 33) at 2,800 represents 13% of all job vacancies and is just below Health care and Social Assistance (2806 job vacancies) with respect to importance.

Figure 14 - Major Industries with more than 800 Vacancies



JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Table 13. Job Vacancies by Industry Montgomery County Labor Market, 2006

			2005 Employment	% of 2005 Employment	% Change 2001-2005	Estimated Job Vacancies	Distribution of Job Vacancies	Job Vacancy Rate
Total			691,656	100.0%	-2.6%	21,019	100.0%	3.0%
Goods Producing Industries			153,338	22.2%	-13.1%	3,410	16.2%	2.2%
	11	Agriculture	1,657	0.2%	4.3%	20	0.1%	1.2%
	21	Mining	545	0.1%	-14.2%	0	0.0%	0.0%
	23	Construction	29,888	4.3%	2.5%	646	3.1%	2.2%
	31	Manufacturing (Food and Apparel)	8,190	1.2%	-0.4%	149	0.7%	1.8%
	32	Manufacturing (Wood-based, Chemical, Non-metallic)	28,072	4.1%	-15.9%	363	1.7%	1.3%
	33	Manufacturing (Metal, Machinery, Computer, Electrical, Transportation)	84,987	12.3%	-17.8%	2,233	10.6%	2.6%
Service Providing Industries			538,318	77.8%	0.9%	17,609	83.8%	3.3%
Trade, Transportation, and Utilities			147,329	21.3%	-8.1%	5,167	24.6%	3.5%
	22	Utilities	2,994	0.4%	-12.3%	30	0.1%	1.0%
	42	Wholesale Trade	32,118	4.6%	-5.1%	877	4.2%	2.7%
	44	Retail Trade (Auto, Furniture, Electronics, Building Materials, Food, Health, Gas, apparel)	50,319	7.3%	-4.1%	1,031	4.9%	2.0%
	45	Retail Trade (Sports, Music, General Merchandise, Miscellaneous, Nonstore Retailers)	28,593	4.1%	-16.5%	1,809	8.6%	6.3%
	48	Transportation	17,929	2.6%	-3.9%	928	4.4%	5.2%
	49	Postal Services, Warehousing	15,376	2.2%	-13.1%	492	2.3%	3.2%
51 Information			15,418	2.2%	-5.9%	641	3.1%	4.2%
Financial Activities			36,955	5.3%	9.1%	557	2.7%	1.5%
	52	Finance and Insurance	29,143	4.2%	11.1%	190	0.9%	0.7%
	53	Real Estate, Rental, Leasing	7,812	1.1%	2.0%	368	1.7%	4.7%
Professional and Business Services			59,367	8.6%	-1.6%	2,382	11.3%	4.0%
	54	Professional, Scientific, Technical Services	30,245	4.4%	-2.1%	910	4.3%	3.0%
	55	Management of Companies and Enterprises	9,838	1.4%	-8.1%	581	2.8%	5.9%
	56	Administrative Support, Waste Management	19,285	2.8%	2.9%	891	4.2%	4.6%
Education and Health Services			157,578	22.8%	8.5%	3,830	18.2%	2.4%
	61	Educational Services	64,684	9.4%	5.6%	1,024	4.9%	1.6%
	62	Health Care, Social Assistance	92,894	13.4%	10.6%	2,806	13.4%	3.0%
Leisure and Hospitality			66,861	9.6%	7.4%	4,531	21.6%	6.8%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

		2005 Employment	% of 2005 Employment	% Change 2001-2005	Estimated Job Vacancies	Distribution of Job Vacancies	Job Vacancy Rate
71	Arts, Entertainment, Recreation	7,333	1.1%	-1.6%	241	1.1%	3.3%
72	Accommodations, Food Service	59,348	8.6%	8.6%	4,290	20.4%	7.2%
81 Other Services		21,275	3.1%	0.1%	228	1.1%	1.1%
92 Public Administration		33,714	4.9%	-0.4%	273	1.3%	0.8%

*Montgomery County Labor Market is defined here as Butler, Clark, Clinton, Darke, Greene, Montgomery, Preble, Shelby, and Warren Counties

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Two important elements of Table 13 (employment growth 2001-2005 and job vacancy rate) are summarized at the 2 Digit NAICS level in Table 14. The 2 digit NAICS industries are sorted by employment growth, 2001-2005. Those sectors having job vacancy rates at or above the overall job vacancy rate have been **grayed**. The resulting shading emphasizes the lack of connection between employment growth and job vacancies at the 2 digit industry level. Of the 15 2 digit sectors with negative employment growth, 6 have job vacancy rates at or above the overall rate of 3.0%. Manufacturing sector 33 had employment declines of 17.8% yet still had a job vacancy rate just below 3.0% (2.6%). Of the 9 industries with positive employment growth from 2001-2005 only 4 had job vacancy rates at or above the average rate of 3.0%. That provides insight into the relative disconnect between employment growth and job vacancies, and the closer relationship of job vacancies to ordinary labor market turnover associated with industry conditions and labor market departures (associated with life cycle changes whether family formation or retirement). Note that the 2 digit industries with the highest job vacancy rates (72 Accommodation and Food Services, 7.2%) and Retail Trade 45, 6.3%) are at opposite ends of the employment growth rankings (employment growth of 8.6% and -16.5%, respectively). Refer to Appendix F for Montgomery County job vacancy rates by industry compared to the national rates.

Table 14. Job Vacancy Rate by Industry

	% Change in Employment, 2001-2005	Job Vacancy Rate
Job Vacancy Rate at or Above the Overall Vacancy Rate of 3.0%		
33 Manufacturing (Metal, Machinery, Computer, Electrical, Transportation)	-17.8%	2.6%
45 Retail Trade (Sports, Music, General Merchandise, Miscellaneous, Nonstore retailers)	-16.5%	6.3%
32 Manufacturing (Wood Based, Chemical, Non-Metallic)	-15.9%	1.3%
21 Mining	-14.2%	0.0%
49 Postal Services, Warehousing	-13.1%	3.2%
22 Utilities	-12.3%	1.0%
55 Management of Companies & Enterprises	-8.1%	5.9%
51 Information	-5.9%	4.2%
42 Wholesale Trade	-5.1%	2.7%
44 Retail Trade (Auto, Furniture, Electronics, Building Material, Food, Health, Gas, Apparel)	-4.1%	2.0%
48 Transportation	-3.9%	5.2%
54 Professional, Scientific & Technical Services	-2.1%	3.0%
71 Arts, Entertainment & Recreation	-1.6%	3.3%
92 Public Administration	-0.4%	0.8%
31 Manufacturing (Food and Apparel)	-0.4%	1.8%
81 Other Services	0.1%	1.1%
53 Real Estate & Rental & Leasing	2.0%	4.7%
23 Construction	2.5%	2.2%
56 Administrative Support & Waste Management	2.9%	4.6%
11 Agriculture	4.3%	1.2%
61 Educational Services	5.6%	1.6%
72 Accommodation and Food Service	8.6%	7.2%
62 Health Care & Social Assistance	10.6%	3.0%
52 Finance & Insurance	11.1%	0.7%

THE CHANGING GEOGRAPHY OF EMPLOYMENT IN THE MONTGOMERY COUNTY LABOR MARKET

While job vacancy rates in an industry are not tied closely to the industry’s employment growth and decline, there are problems for Montgomery County workers with respect to the changing geography of jobs in the broader Montgomery County labor market. Total job vacancies are linked closely to total jobs so the location of job vacancies will reflect roughly the location of employment by industry type. All else equal, one would expect a greater share of job vacancies in 2005 than in 2001 in those counties with a greater share of employment in 2005 than in 2001.

The difficulty is illustrated in Table 15. Total employment in the 10 County Greater Montgomery County Labor Market only declined 2.6% over the period 2001 to 2005. However in Montgomery County itself it declined by 7.1%. Employment declines were equally severe in the counties to the immediate north (Miami, -9%), northwest (Darke, -5.3%) and northeast (Clark, -10.8%). Employment growth occurred to the immediate east (Greene, 4.5%), south (Warren, 8.6%) and southwest (Butler, 4.6%) as well as in the far North (Shelby, 4.2%). One would expect Montgomery County job seekers to travel further a-field in 2005 than in 2001 in order to access job vacancies.

Table 15: Deconcentration of Employment

	Total Employment		% Change 2001-
	2001	2005	2005
Struggling Core Counties	387,460	357,202	-7.8%
Montgomery County	289,345	268,899	-7.1%
Clark County	55,651	49,654	-10.8%
Miami County	42,463	38,648	-9.0%
Growing Fringe Counties	269,265	283,793	5.4%
Butler County	124,070	129,757	4.6%
Warren County	58,333	63,359	8.6%
Greene County	59,392	62,060	4.5%
Shelby County	27,470	28,617	4.2%
Peripheral Rural	53,230	50,661	-4.8%
Clinton County	24,318	22,732	-6.5%
Darke County	18,374	17,395	-5.3%
Preble County	10,538	10,534	0.0%
Total Montgomery County Labor Market	709,955	691,656	-2.6%

Since there is no earlier job vacancy study to refer to, it is not possible to know if the changing geography of employment results in a one for one change in the geography of job vacancies. However, it is possible to calculate absolute job vacancies and a job vacancy rate by county. The resulting job vacancies must be interpreted with caution. The initial sampling process was designed to give as accurate a representation as possible at the 2 digit level over the entire 10 county labor market. As a consequence, the sample elements may not represent as well the individual county from which employer surveys have come. This is most likely for the Peripheral Rural Counties where sample size was very small. Those results must be interpreted

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

with extreme caution. Even though confidence in the data is only at the regional level, one can analyze job vacancies in this labor market by where the companies with vacancies are located, thus allowing a listing by county.

Surprisingly, the job vacancy rates are somewhat higher in the Struggling Core counties (3.4%) than in the Growing Fringe Counties (2.8%) or in the Rural periphery (1.7%) (see Table 16). This is primarily due to a higher job vacancy rate in Montgomery County (3.7%) than in any other county. Only Greene County has a job vacancy rate as high.

Table 16. Concentration of Job Vacancy

	Employment 2005	% Change 2001- 2005	Job Vacancies	Job Vacancy Rate	Sample Size
Struggling Core Counties	357,202	-7.8%	12285	3.4%	1060
Montgomery County	268,899	-7.1%	10067	3.7%	770
Clark County	49,654	-10.8%	973	2.0%	145
Miami County	38,648	-9.0%	1245	3.2%	145
Growing Fringe Counties	283,793	5.4%	7856	2.8%	611
Butler County	129,757	4.6%	3036	2.3%	255
Warren County	63,359	8.6%	1668	2.6%	144
Greene County	62,060	4.5%	2245	3.6%	146
Shelby County	28,617	4.2%	907	3.2%	66
Peripheral Rural	50,661	-4.8%	877	1.7%	140
Clinton County	22,732	-6.5%	380	1.7%	39
Darke County	17,395	-5.3%	292	1.7%	66
Preble County	10,534	0.0%	204	1.9%	35
Total Montgomery County Labor Market	691,656	-2.6%	21019	3.0%	1811

Inspecting Table 16, one might suspect that a higher concentration of Retail Sector 45 and Accommodation and Food Service 72 employment (sectors with very high job vacancy rates) in Montgomery and Greene County explain the higher job vacancy rates there. Employment in Sectors 45 and 72 is 12.9% of Total Employment in the Greater Montgomery County Labor Market overall (see Table 17, next page). In Greene County they represent 14.9% of employment but in Montgomery County just 12.5% of employment. The percent employed in those sectors does help to explain the higher job vacancy rate in Greene County but not in Montgomery County.

The higher job vacancy rate in Montgomery County is a function of a higher job vacancy rate across both sectors 45 and 72 and All Other sectors (see Table 18).⁹ For sectors 45 and 72 as a group, Montgomery County's estimated job vacancy rate is 10.1% while for All Other Counties as a group it is 4.8%. For All Other Sectors as a group, the job vacancy rate in Montgomery County is 2.8% while for All Other Counties as a group it is 1.7%.

⁹ Information on job vacancy numbers and rates are suppressed for all counties other than Montgomery County due to sample size issues, (see sample size information in Table IIIC 2).

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Why is the job vacancy rate higher in Montgomery County? The concentration of both employment and population in Montgomery County is greater than in the other counties that constitute the labor market. Due to greater employment concentration, the average worker in Montgomery County has more opportunities to learn of other employment opportunities. This is likely to result in higher levels of frictional unemployment as workers move from one job to another. By the same token, employers faced with higher concentrations of population may worry less about finding qualified applicants and be quicker to release workers they are dissatisfied with.

Table 17. Concentration of Employment in High Job Vacancy Sectors by County

	Employment, 2005		Sectors 45, 72 as % of Total
	All Other Sectors	NAIC Sectors 45, 72	
Struggling Core Counties	311001	46200	12.9%
Montgomery County	235394	33505	12.5%
Clark County	43063	6591	13.3%
Miami County	32544	6104	15.8%
Growing Fringe Counties	246567	37225	13.1%
Butler County	111590	18167	14.0%
Warren County	55759	7600	12.0%
Greene County	52800	9260	14.9%
Shelby County	26418	2199	7.7%
Peripheral Rural *	46146	4515	8.9%
Clinton County	21133	1599	7.0%
Darke County	15608	1787	10.3%
Preble County	9405	1129	10.7%
Total Montgomery County Labor Market	603715	87941	12.7%

Table 18. Concentration of Job Vacancies by Sectors by Geographic Location

	Estimated Job Vacancies			
	All Other Sectors		NAIC Sectors 45, 72	
	#	Rate	#	Rate
Montgomery County	6695	2.8%	3372	10.1%
All Other Counties	6138	1.7%	2596	4.8%
Total Montgomery County Labor Market	14920	2.5%	6099	6.9%

If the higher job vacancy rate in Montgomery County than in All Other Counties as a group is closely linked to employment and population concentration, the pattern (of a higher job vacancy rate) would be expected to remain relatively stable over time.

APPENDIX A - 2006 SOUTHWEST OHIO LABOR MARKET SURVEY

Directions

Please direct this survey to the manager or human resources professional responsible for hiring and recruitment at this location of your business. Please answer Part A below, even if you do not have any vacancies. If applicable, complete Part B.

Please respond before _____, 2006.

Surveys can be faxed to 937-775-2422 or returned by mail in the enclosed business reply envelope or mail it in a separate envelope. *ATTN: Jane Dockery, Center for Urban and Public Affairs, Wright State University, 3640 Colonel Glenn Hwy, Dayton OH 45435.*

If you have NO job vacancies, you can e-mail reply to tina.wiley@wright.edu, fax or call at 1-800-877-6181 and complete your survey over the telephone.

Part A - About Your Business

<p>What is your total number of employees?</p> <p>_____ Full-time</p> <p>_____ Part-time</p> <p><i>If you have multiple locations, please fill out the survey only for the location listed on the mailing label of this survey.</i></p>	<p>Who is responding to the survey?</p> <p>What is your name? _____</p> <p>What is your title? _____</p> <p>What is your phone number? (____) _____</p> <p>What is your e-mail address? _____</p> <p>What is your zip code? _____</p>	<p>In the next six months, how does your firm or business plan to change your current employment level, if at all?</p> <p><i>Please check only one appropriate answer.</i></p> <p><input type="checkbox"/> We expect to hire more employees</p> <p><input type="checkbox"/> We expect to decrease our current employment level</p> <p><input type="checkbox"/> We expect our employment level to remain the same</p> <p><input type="checkbox"/> Uncertain</p>
<p>Do you have job vacancies at this location of your company? Please check only one of the following options</p> <p><input type="checkbox"/> Yes, Please turn over the survey and complete Part B</p> <p><input type="checkbox"/> No, Please return the survey in postage-paid, self-addressed envelope</p>		<p><Insert Company Name></p> <p><Insert Address1></p> <p><Insert Address2></p> <p><Insert City, Insert ST, Insert Zip Code></p>

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Part B – CURRENT Job Vacancies at This Location

INSTRUCTIONS: On this form, please list the job titles for which you have job vacancies. Space is provided for up to 4 different job titles on this page. **Please direct the survey to the manager or human resources professional responsible for hiring and recruitment at this location of your business.** Surveys can be faxed to 937-775-2422 or **returned by mail in the enclosed business reply envelope** or mail it in a separate envelope, ATTN: Jane Dockery, Center for Urban and Public Affairs, Wright State University, 3640 Col Glenn Hwy, Dayton, OH 45435. **Please respond before __, 2006.**

Job Titles for Vacancies <ul style="list-style-type: none"> • Include positions you are actively recruiting for • Include full- and part-time, temporary and permanent workers • Exclude positions reserved for consultants, outside contractors and others not considered employees • If multiple openings for the same position, report for the oldest one only Full-time = 35+ hours per week Part-time = 1-34 hours per week	Write in number of current job vacancies Full-time = F Part-time = P	Check the box if position is seasonal or temporary (temporary means it lasts for a fixed duration)	Check the box if this job vacancy is a new position (i.e., this job is NOT a replacement position)	How long have you been trying to fill this vacancy? Please choose only one				Check the box only if a license or certification is required	What education level is usually required? Please choose only one						What experience is usually required? Please choose only one	What is the expected hourly, monthly or annual compensation?	What benefits are offered? Choose all that apply.			
				Less than 30 days	30 - 59 days	60 or more days	Constantly recruiting/always hiring		No education requirement	High school or GED	Vocational training	Associate's degree	Bachelor's degree	Advanced degree			No experience required	Some work experience	Experience related to position	Health insurance
<i>(Example) Junior Accountant</i>	2	F	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	\$30,000	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

APPENDIX B - SURVEY METHODOLOGY

JOB VACANCY SURVEY METHODOLOGY

SAMPLING METHOD

The population of firms was selected from the Employment Security (ES) 202 database—an administrative database maintained by the Ohio Department of Job and Family Services for ensuring appropriate unemployment compensation insurance by firms.

Two stratification criteria were used to organize the population of all firms in order to select a representative sample—industry sector and the firm’s employment size. Firms were initially pulled from 16 counties in west central Ohio, and later scaled back to 14 counties. The counties were selected based on journey-to-work commuting patterns that imply the workforce interdependence of counties. This overall sample was later organized into two more specified labor markets, the Montgomery and the Clark County labor markets.

Firms in the ES202 database either designate their own industry sector code or are assigned a code by professional state government staff. A total of 24 two-digit NAICS categories were included for this analysis, which excluded NAICS 561310/20/30 (employment placement agencies, temporary help agencies, and professional employer organizations, which are establishments that provide human resources and human resource management services to staff client businesses) to avoid double counting job vacancies. The population of all companies was next organized into 7 employment class size groups—1-4, 5-9, 10-19, 20-49, 50-99, 100-249, and 250+.

A representative sample from these 168 NAICS-employment size class combinations was pulled according to the Neyman method. The Neyman Allocation method is recommended by the US Bureau of Labor Statistics. This method optimally allocates sample units to cell strata in the case where the stratification criteria vary greatly in size (e.g., employment in certain areas and the number of firms in industry sectors). The end of this discussion includes specific formulas and descriptions of the Neyman method as applied in this case.

The total sample size was set at 6,000; however, over 300 firms had to be discarded due to apparent closure (disconnected telephone numbers and return-to-sender mailed items). The sample size of 5,637 reflects the geographic and industry detail required for the reliable estimation of job vacancy results. Minimum cell size was fixed at 6 firms, because a response rate of 33% was assumed, resulting in at least two firms responding in each cell which is sufficient for the calculation of a standard deviation for future use.

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

RESPONSE RATES

The survey was conducted from early May 1 to June 30, 2006. The study achieved an overall response rate of 35% with a higher response rate, 38%, from goods-producing than service-providing industries, 33%. The total number of completed surveys returned was 1,951. Results by industry sector show the highest response rates for manufacturing and construction in the goods-producing industries, and public administration, health care and social assistance, and professional/scientific/ technical services in the service-providing industries.

Industry Employment Report for the Montgomery and Clark County Areas, 2006				
Industry	2006 Employment	2006 Units	Sampled Units	Response Rate
Total Private Employment	795,752	35,712	5,637	34.6%
Goods Producing	182,342	5,542	1,191	38.1%
Mining	735	48	27	25.9%
Construction	32,785	3,042	318	36.8%
Manufacturing	148,822	2,452	846	39.0%
Service-Providing	615,381	30,300	4,481	33.4%
Trade, Transportation, and Utilities	162,461	8,881	1,339	30.1%
Wholesale Trade	34,605	2,398	332	32.8%
Retail Trade	88,563	5,292	793	28.5%
Transportation and Warehousing	37,425	1,092	194	32.5%
Utilities	1,868	99	20	25.0%
Information	16,448	534	90	32.2%
Financial Activities	39,736	3,618	272	36.0%
Finance and Insurance	31,264	2,194	182	35.2%
Real Estate and Rental & Leasing	8,472	1,424	90	37.8%
Professional and Business Services	87,502	5,123	487	36.8%
Professional, Scientific & Technical Services	34,243	3,211	287	38.3%
Management of Companies and Enterprises	9,167	151	51	27.5%
Administrative and Waste Services	44,092	1,761	149	36.9%
Education and Health Services	174,411	4,442	1,205	38.7%
Educational Services	72,376	925	583	31.6%
Health Care and Social Assistance	102,035	3,517	622	45.3%
Leisure and Hospitality	73,147	3,380	742	24.5%
Arts, Entertainment, and Recreation	7,121	369	97	34.0%
Accommodation and Food Service	66,026	3,011	645	23.1%
Other Services (except Public Administration)	23,455	3,201	248	33.9%
Public Administration	38,221	1,121	98	57.1%

STUDY LIMITATIONS

Low response rates from firms among the smallest employment size classes did affect results for two industries, the construction industry (NAICS 23) and the management of companies and enterprises industry (NAICS 55). Therefore, job vacancy estimates for these two industries may be undercounted (since much new job generation does occur among smaller firms), represent job vacancies for medium size and larger firms, and should be read with caution. Results for industries having a very small number of units, such as mining and utilities, should also be reviewed with caution.

Two universities collected data for this project, and while precautions were taken to ensure similar data collection methods, some differences did exist. For example, one university collected no data via telephone interviewing for firms having more than five employees, while the other university did conduct surveys via telephone interviewing. Overall, the use of mixed methodologies—mailing, telephoning, faxing, and emailing may affect results. For example, interviews conducted by telephone may not have allowed company representatives to verify their estimates with human resource records, while the other methods would allow time for such verification.

THE NEYMAN METHOD

The Neyman method is composed of three items if targeting by total sample size (the target was $n = 6000$).

1. N_h = population of stratum h
2. S_h = standard deviation of # Job Vacancies in stratum h
3. n = total sample size (sum of all strata sample sizes)

The first step was to calculate the sample size for each stratum h using the formula:

$$n_h = \frac{N_h S_h}{\sum N_h S_h}$$

Because this study has never been completed for the Montgomery and Clark County labor markets, there were no available standard deviations for the number of Job Vacancies. However, it is generally assumed (as a starting point) by the Bureau of Labor Statistics that the number of Job Vacancies = 3% of the total number of jobs. Therefore,

$$\text{std. dev. (\# Job Vacancies)} = 0.03 * \text{std. dev. (Total \# of Jobs)}$$

Substituting this into the formula, n_h can be calculated.

The next step was to adjust each value of n_h according to these constraints:

- $6 \leq n_h \leq N_h$, for $N_h \geq 6$,
 - Sample size could be no larger than the size of the population of stratum h

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

- Assuming a response rate of 33%, a minimum sample size of 6 would give a sample containing at least 2 observations, enough to calculate a standard deviation for future use.
- $n_h = N_h$, for $N_h \leq 6$
 - Because the population size is very small, the entire population would be sent the survey forms.

DETERMINATION OF APPROPRIATE SAMPLE MULTIPLIERS

The fundamental goal of the job vacancy study was to determine the number of job vacancies by occupation and industry for the Greater Montgomery County Labor Market. Given cost constraints, it was necessary to sample firms rather than conduct a census. As a consequence it is necessary to create a multiplier by which the number of job vacancies reported by each sample firm can be multiplied to discover the total population of job vacancies by industry and occupation.

Given that the sample was selected to provide sufficient sample firms by 2 digit industry and size class, one might assume that the sample firms from each 2 digit North American Industrial Classification System (NAICS) sector represented the average firm in their industry. One might simply multiply the number of sample job vacancies by a multiplier formed as a ratio of the population number of firms in a 2 digit NAIC sector to the sample number of firms in the 2 digit NAIC sector. However, given limitations of the sample, sample firms' average employment might be above or below average employment for the population of firms. An alternative multiplier might then be Total Employment in the 2 digit sector divided by Total Employment in the sample firms from that 2 digit sector.

Unfortunately evidence suggests that job vacancy rates vary by size of firm as well as industry of firm. For the sample as a whole, regression analysis shows that the job vacancy rate initially falls as firm size increases and then rises again. To allow for a non-linear relationship between job vacancies and employment size of firms, a separate regression equation was estimated for each 2 digit NAIC sector that allowed the relationship between job vacancies and employment at the firm level to be a non-linear function. The resulting regression coefficients were then used to estimate job vacancies associated with each firm in the population of firms. The total job vacancies within a 2 digit sector were the summation of the job vacancies estimated for each individual firm within the sector. The job vacancy multiplier for a sample firm was then based on its share of total sample job vacancies for that 2 digit sector.

APPENDIX C - JOB VACANCIES BY OCCUPATION

Montgomery County Labor Market: Detailed Occupations, 2006			
SOC Code	Occupation	Number of Vacancies	Percent Distribution
	Total Private Sector	20,998	100.0%
11-0000	Management Occupations	849	4.0%
11-1011	Chief Executives	12	0.1%
11-1021	General and Operations Managers	212	1.0%
11-2021	Marketing Managers	25	0.1%
11-2022	Sales Manager	44	0.2%
11-3011	Administrative Services Managers	1	0.0%
11-3021	Computer and Information Systems Manager	21	0.1%
11-3031	Financial Managers	74	0.4%
11-3051	Industrial Production Managers	39	0.2%
11-3061	Purchasing Managers	35	0.2%
11-3071	Transportation, Storage and Distribution Managers	3	0.0%
11-9021	Construction Managers	29	0.1%
11-9041	Engineering Managers	34	0.2%
11-9051	Food Service Managers	232	1.1%
11-9111	Medical and Health Services Managers	30	0.1%
11-9151	Social and Community Service Managers	3	0.0%
11-9199	Managers, All Other	55	0.3%
13-0000	Business and Financial Operations Occupations	517	2.5%
13-1022	Wholesale & Retail Buyers, excl. Farm Products	32	0.2%
13-1023	Purchasing Agents, Excl. Whole., Retail & Farm	29	0.1%
13-1031	Claims Adjusters, Examiners, and Investigators	3	0.0%
13-1041	Compliance Off. Ex. Agric, Cons., Health/Safety & Trans.	8	0.0%
13-1051	Cost Estimators	14	0.1%
13-1073	Training and Development Specialists	4	0.0%
13-1079	Human Resource Specialist	3	0.0%
13-1081	Logistician	10	0.0%
13-1111	Management Analysts	24	0.1%
13-1199	Business Operations Specialists, All Other	54	0.3%
13-2011	Accountants and Auditors	261	1.2%
13-2021	Appraisers and Assessors of Real Estate	10	0.0%
13-2031	Budget Analysts	5	0.0%
13-2041	Credit Analysts	3	0.0%
13-2051	Financial Analysts	14	0.1%
13-2061	Financial Examiners	6.00	0.0%
13-2072	Loan Officers	34	0.2%
13-2081	Tax Examiners, Collectors, & Revenue Agents	3	0.0%
15-0000	Computer and Mathematical Occupations	502	2.4%
15-1011	Computer and Information Scientists, Research	4	0.0%
15-1021	Computer Programmers	32	0.2%
15-1031	Computer Software Engineers, Applications	18	0.1%
15-1032	Comp. Software Engineers, Systems Software	201	1.0%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Labor Market: Detailed Occupations, 2006			
SOC Code	Occupation	Number of Vacancies	Percent Distribution
15-1041	Computer Support Specialists	52	0.2%
15-1051	Computer Systems Analyst	43	0.2%
15-1061	Database Administrators	9	0.0%
15-1071	Network and Computer Systems Administrators	105	0.5%
15-1081	Network Systems & Data Communications Analysts	34	0.2%
15-1099	Computer Specialists, All Other	4	0.0%
17-0000	Architecture and Engineering Occupations	617	2.9%
17-1011	Architects, Ex. Landscape and Naval	9	0.0%
17-1022	Surveyors	3	0.0%
17-2071	Electrical Engineers	41	0.2%
17-2112	Industrial Engineers	161	0.8%
17-2141	Mechanical Engineers	124	0.6%
17-2199	Engineers, All Other	162	0.8%
17-3011	Architectural and Civil Drafters	16	0.1%
17-3019	Drafters, All Other	22.00	0.1%
17-3023	Electrical & Electronic Engineering Technicians	38	0.2%
17-3026	Industrial Engineering Technicians	28	0.1%
17-3027	Mechanical Engineering Technicians	6	0.0%
17-3031	Surveying and Mapping Technicians	7	0.0%
19-0000	Life, Physical & Social Science Occupations	67	0.3%
19-3021	Market Research Analysts	29	0.1%
19-4011	Agricultural Technicians & Food Science Technicians	21.00	0.1%
19-4099	Life, Physical & Social Science Tech, All Other	17.00	0.1%
21-0000	Community and Social Services Occupations	153.00	0.7%
21-1012	Educational, Vocational & School Counselors	27	0.1%
21-1022	Medical & Public Health Social Workers	47	0.2%
21-1023	Mental Health & Substance Abuse Social Workers	31	0.1%
21-9099	Counselors, Social & Religious Workers, All Other	48	0.2%
23-0000	Legal Occupations	1	0.0%
23-2099	Legal Support Workers, All Others	1	0.0%
25-0000	Education, Training, & Library Occupations	1,084	5.2%
25-1010-1199 not including 1194	Teachers, Postsecondary	137	0.7%
25-1194	Teachers, Voc Ed Postsecondary Schools	4.00	0.0%
25-2011	Teachers, Preschool	127	0.6%
25-2021	Teachers, Elementary ex. Special Education	138	0.7%
25-2022	Teachers, Middle School ex. Spec. & Voc. Ed	66	0.3%
25-2031	Teachers, Secondary ex. Special and Voc Ed	124	0.6%
25-2032	Teachers, Voc Ed Secondary Schools	34	0.2%
25-2041	Special Ed. Teachers, Pre/Kinder/Elem Schools	42	0.2%
25-2042	Special Ed. Teachers, Middle School	23	0.1%
25-2043	Special Ed. Teachers, Secondary School	20	0.1%
25-3099	Teachers & Instructors, All Other	118	0.6%
25-4021,31	Librarians & Library Technicians	12.00	0.1%
25-9031	Instructional Coordinators	3.00	0.0%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Labor Market: Detailed Occupations, 2006			
SOC Code	Occupation	Number of Vacancies	Percent Distribution
25-9032,3	Education Administrators--Elem, Secondary, Postsec	93	0.4%
25-9041	Teacher Assistants	143	0.7%
27-0000	Arts, Design, Entertainment, Sports & Media Occupations	147	0.7%
27-1011	Art Directors	5	0.0%
27-1023	Floral Designers	35	0.2%
27-1099	Designers, All Other	23.00	0.1%
27-2012	Producers and Designers	7	0.0%
27-2022	Coaches and Scouts	8	0.0%
27-2031	Dancers	4.00	0.0%
27-2041	Music Directors and Composers	4	0.0%
27-3022	Reporters and Correspondents	4	0.0%
27-3041	Editors	35	0.2%
27-3099	Media and Communication Workers, All Other	22	0.1%
29-0000	Healthcare Practitioners & Technical Occupations	1,459	6.9%
29-1031	Dietitians and Nutritionists	11	0.1%
29-1051	Pharmacists	8	0.0%
29-1069	Physicians and Surgeons, All Other	12	0.1%
29-1111	Registered Nurses	863	4.1%
29-1122	Occupational Therapists	35	0.2%
29-1123	Physical Therapists	116	0.6%
29-1124	Radiation Therapists	3.00	0.0%
29-1126	Respiratory Therapists	31	0.1%
29-1127	Speech Language Pathologists	22	0.1%
29-1129	Therapists, All Other	3.00	0.0%
29-1131	Veterinarians	14	0.1%
29-2011	Medical and Clinical Laboratory Technologists & Technicians	19	0.1%
29-2034	Radiologic Technologists and Technicians	25	0.1%
29-2041	Emergency Medical Technicians & Paramedics	27	0.1%
29-2052	Pharmacy Technicians	31	0.1%
29-2055	Surgical Technologists	50	0.2%
29-2056	Veterinary Technologists and Technicians	46	0.2%
29-2061	Licensed Practical & Licensed Vocational Nurses	128	0.6%
29-2071	Medical Records & Health Information Technicians	6	0.0%
29-9091	Athletic Trainers	6.00	0.0%
29-9099	Healthcare Practitioners & Technical Workers, All Other	3	0.0%
31-0000	Healthcare Support Occupations	949	4.5%
31-1011	Home Health Aides	332	1.6%
31-1012	Nursing Aides, Orderlies and Attendants	368	1.8%
31-2022	Physical Therapist Aide	6	0.0%
31-9091	Dental and Medical Assistants	31	0.1%
31-9094	Medical Transcriptionists	9	0.0%
31-9095	Pharmacy Aides	4	0.0%
31-9096	Veterinary Assistants & Laboratory Animal Caretakers	90	0.4%
31-9099	Healthcare Support Workers, All Others	109	0.5%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Labor Market: Detailed Occupations, 2006			
SOC Code	Occupation	Number of Vacancies	Percent Distribution
33-0000	Protective Service Workers	369	1.8%
33-1099	First-Line Sup/Mgrs, Protective Serv Work, AO	8	0.0%
33-2011	Fire Fighters	19	0.1%
33-3012	Correctional Officers and Jailers	105	0.5%
33-3031	Fish & Game Wardens	35.00	0.2%
33-3051	Police & Sheriff's Patrol Officers	15	0.1%
33-9021	Private Detectives & Investigators	11	0.1%
33-9032	Security Guards	176	0.8%
35-0000	Food Preparation & Serving Related Occupations	3,981	19.0%
35-1011	Chefs and Head Cooks	62	0.3%
35-1012	FL Sup/Mgrs of Food Prep & Serving Workers	62	0.3%
35-2011	Cooks, Fast Food/Institution & Cafeteria, Restaurant, Short Order	648	3.1%
35-2021	Food Preparation Workers	99	0.5%
35-3011	Bartenders	173	0.8%
35-3021	Combined Food Prep. & Serv. Work, inc. Fast Food	743	3.5%
35-3022	Counter Attendant, Caf�/Food Concession/Coffee Shop	9	0.0%
35-3031	Waiters and Waitresses	1,559	7.4%
35-3041	Food Servers, Nonrestaurant	141	0.7%
35-6011	Baggage Porters and Bellhops	7.00	0.0%
35-9011	Dining Room & Cafeteria Attendant & Bar Helpers	94	0.4%
35-9021	Dishwashers	127	0.6%
35-9031	Host & Hostesses, Rest./Lounge/Coffee Shop	243	1.2%
35-9099	Food Preparation and Serving Related Workers, All Others	14.00	0.1%
37-0000	Building and Grounds Cleaning & Maintenance Occupations	443.00	2.1%
37-1011	FL Sup/Mgrs of Housekeeping & Janitorial Workers	11	0.1%
37-1012	FL Sup/Mgrs of Landscape/Lawn Serv/Groundskeeper	6	0.0%
37-2011	Janitors & Cleaners, ex. Maids/Housekeeping Cleaners	164	0.8%
37-2012	Maids and Housekeeping Cleaners	167	0.8%
37-3011	Landscaping & Groundskeeping Workers	95	0.5%
39-0000	Personal Care & Service Occupations	497	2.4%
39-3031	Ushers, Lobby Attendants, and Ticket Takers	28	0.1%
39-4021	Funeral Attendants	6	0.0%
39-5012	Hairdressers, Hairstylists, and Cosmetologists	35	0.2%
39-5092	Manicurists and Pedicurists	32	0.2%
39-9011	Child Care Workers	125	0.6%
39-9021	Personal and Home Care Aides	186	0.9%
39-9031	Fitness Trainers and Aerobics Instructors	13	0.1%
39-9032	Recreation Workers	52	0.2%
39-9041	Residential Advisors	8.00	0.0%
39-9099	Personal Care & Service Workers, All Others	12	0.1%
41-0000	Sales and Related Occupations	2,563	12.2%
41-1011	FL Supervisors/Mgrs. Of Retail Workers	608	2.9%
41-2011	Cashiers	458	2.2%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Labor Market: Detailed Occupations, 2006			
SOC Code	Occupation	Number of Vacancies	Percent Distribution
41-2021	Counter and Rental Clerks	6	0.0%
41-2022	Parts Salespersons	22	0.1%
41-2031	Retail Salespersons	633	3.0%
41-3011	Advertising Sales Agents	22	0.1%
41-3021	Insurance Sales Agents	9	0.0%
41-3041	Travel Agents	3	0.0%
41-3099	Sales Reps, Services, All Other	177	0.8%
41-4011	Sales Reps., Wholesale/Mfg, Tech./Scientific Products	145	0.7%
41-4012	Sales Reps., Wholesale/Mfg, ex. Tech./Scientific Products	212	1.0%
41-9021	Real Estate Brokers	3	0.0%
41-9022	Real Estate Sales Agents	121	0.6%
41-9031	Sales Engineers	8	0.0%
41-9041	Telemarketers	82	0.4%
41-9099	Sales and Related Workers, All Others	54	0.3%
43-0000	Office and Administrative Support Occupations	2,405	11.5%
43-1011	First-Line Sup/Mgrs of Office and Administrative Support	50	0.2%
43-3011	Bill and Account Collectors	45	0.2%
43-3021	Billing & Posting Clerks & Machine Operators	17	0.1%
43-3031	Bookkeeping, Accounting and Auditing Clerks	110	0.5%
43-3041	Gaming Cage Workers	4.00	0.0%
43-3051	Payroll and Timekeeping Clerks	1	0.0%
43-3071	Tellers	65	0.3%
43-4051	Customer Service Representatives	891	4.2%
43-4081	Hotel, Motel, and Resort Desk Clerks	62	0.3%
43-4121	Library Assistants	17	0.1%
43-4171	Receptionists and Information Clerks	84	0.4%
43-4199	Information and Record Clerks, All Other	7	0.0%
43-5041	Meter Readers, Utilities	2	0.0%
43-5061	Production, Planning, and Expediting Clerks	18	0.1%
43-5071	Shipping, Receiving, and Traffic Clerks	92	0.4%
43-5081	Stock Clerks and Order Fillers	590	2.8%
43-6011	Executive Secretaries & Administrative Assistants	73	0.3%
43-6012	Legal Secretaries	5	0.0%
43-6013	Medical Secretaries	24	0.1%
43-6014	Secretaries, ex. Legal, Medical, and Executive	27	0.1%
43-9011	Computer Operators	4	0.0%
43-9021	Data Entry Keyers	4	0.0%
43-9022	Wordprocessing and Typists	9	0.0%
43-9041	Insurance Claims and Policy Processing Clerks	8	0.0%
43-9051	Mail Clerks & Mail Machine Operators, ex. Postal Serv.	74	0.4%
43-9061	Office Clerks, General	84	0.4%
43-9199	Office & Administrative Support Workers, All Others	38	0.2%
47-0000	Construction & Extraction Occupations	347	1.7%
47-1011	First Line Sup/Mgrs of Con. Trades/Extract Workers	6	0.0%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Labor Market: Detailed Occupations, 2006			
SOC Code	Occupation	Number of Vacancies	Percent Distribution
47-2021	Brickmasons and Blockmasons	26	0.1%
47-2031	Carpenters	46	0.2%
47-2061	Construction Laborers	46	0.2%
47-2073	Operating Engineers and Other Con. Equip. Op	19	0.1%
47-2111	Electricians	43	0.2%
47-2131	Insulation Workers, Floor, Ceiling, and Walls	19.00	0.1%
47-2141	Painters, Construction, and Maintenance	26	0.1%
47-2152	Plumbers, Pipefitters, and Steamfitters	19	0.1%
47-2181	Roofers	26	0.1%
47-2211	Sheet Metal Workers	51	0.2%
47-2221	Structural Iron and Steel Workers	13	0.1%
47-4051	Highway Maintenance Workers	7	0.0%
49-0000	Installation, Maintenance, and Repair Workers	452	2.2%
49-1011	FL Sup/Mgrs of Mechanics/Installers/Repairers	3	0.0%
49-2011	Computer, ATM & Office Machine Repairers	4	0.0%
49-2094	Electrical/Electronics Repair, Comm/Indus Equip	5	0.0%
49-3021	Automotive Body and Related Repairers	20	0.1%
49-3023	Automotive Service Technicians and Mechanics	48	0.2%
49-3031	Bus & Truck Mechanics & Diesel Engine Spec.	136	0.6%
49-3053	Outdoor Power Equip & Other Sm Engine Mech.	4	0.0%
49-3093	Tire Repairers and Changers	9	0.0%
49-9021	Heating, AC & Refrigeration Mechanics/Installers	51	0.2%
49-9042	Maintenance and Repair Workers, General	160	0.8%
49-9098	Helpers -- Installation/Maintenance/Repair Workers	6	0.0%
49-9099	Installation/Maintenance/Repair Workers, AO	6	0.0%
51-0000	Production Occupations	1,875	8.9%
51-1011	FL Sup/Mgrs of production/Operating Workers	153	0.7%
51-2022	Electrical & Electronic Equipment Assemblers	29	0.1%
51-2031	Engine and Other Machine Assemblers	19	0.1%
51-2091	Fiberglass Laminators and Fabricators	122	0.6%
51-2092	Team Assemblers	101	0.5%
51-2099	Assemblers and Fabricators, All Others	58	0.3%
51-3011	Bakers	4	0.0%
51-3021	Butchers and Meat Cutters	6	0.0%
51-4011	Computer-Controlled Machine Tool Oper., M/P	40	0.2%
51-4012	Numerical Tool & Process Control Programmers	4	0.0%
51-4031	Cutting/Punching/Press Machine S/OT, M/P	158	0.8%
51-4032	Drilling & Boring Machine Tool Setters, O/T, M/P	15	0.1%
51-4033	Grind/Lapping/Polish/Buff Mach. Tool S/O/T, M/P	67	0.3%
51-4034	Lathe & Turning Machine Tool Setters, O/T, M/P	11	0.1%
51-4041	Machinists	134	0.6%
51-4072	Molding/Coremaking/Casting Mach. S/O/T, M/P	3	0.0%
51-4081	Multiple Machine Tool Setters, O/T, M/P	12	0.1%
51-4111	Tool and Die Makers	17	0.1%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Labor Market: Detailed Occupations, 2006			
SOC Code	Occupation	Number of Vacancies	Percent Distribution
51-4121	Welders, Cutters, Solderers and Brazers	144	0.7%
51-5023	Printing Machine Operators	19	0.1%
51-6011	Laundry and Dry-Cleaning Workers	6	0.0%
51-6021	Pressers, Textile, Garment, & Related Materials	6	0.0%
51-6091	Extruding/Form Mach S/O/T, Synthetic/Glass Fibers	6.00	0.0%
51-8031	Water/Liquid Waste Treatment Plant/System Op.	37	0.2%
51-8099	Plant and System Operators, All Others	86.00	0.4%
51-9022	Grinding and Polishing Workers, Hand	7	0.0%
51-9023	Mixing/Blending Mach. Setter/Operator/Tender	4	0.0%
51-9032	Cutting/Slicing Mach. S/O/T	3	0.0%
51-9061	Inspectors, Testers/Sorters/Samplers/Weighers	54	0.3%
51-9071	Jewelers and Precious Stone and Metal Workers	11.00	0.1%
51-9111	Packaging & Filling Machine Operators/Tenders	21	0.1%
51-9121	Coating/Painting/Spraying Machine Setters, O/T	13	0.1%
51-9122	Painters, Transportation Equipment	3	0.0%
51-9123	Painting, Coating, and Decorating Workers	8	0.0%
51-9131	Photographic Processing Machine Operators	13	0.1%
51-9196	Paper Goods Mach. S/O/T	2	0.0%
51-9198	Helpers--Production Workers	277	1.3%
51-9199	Production Workers, All Others	202	1.0%
53-0000	Transportation & Material Occupations	1,718	8.2%
53-1021	FL Sup/Mgrs of Help/Labor/Mat. Movers, Hand	31	0.1%
53-1031	FL Sup/Mgrs of Trans/Mat. Movers Mach. & Veh Op	10	0.0%
53-3031	Driver/Sales Worker	85	0.4%
53-3032	Truck Drivers, Heavy and Tractor-Trailer	720	3.4%
53-3033	Truck Drivers, Light or Delivery Services	144	0.7%
53-6011	Bridge and Lock Tenders	4.00	0.0%
53-6021	Parking Lot Attendants	7	0.0%
53-6031	Service Station Attendants	9	0.0%
53-7032	Excavating & Loading Machine & Dragline Oper.	18	0.1%
53-7051	Industrial Truck and Tractor Operators	6	0.0%
53-7061	Cleaners of Vehicles and Equipment	60	0.3%
53-7062	Laborers & Freight/Stock/Material Movers, Hand	303	1.4%
53-7063	Machine Feeders and Offbearers	5	0.0%
53-7064	Packers and Packagers, Hand	121	0.6%
53-7072	Pump Operators, Except Wellhead Pumpers	69.00	0.3%
53-7081	Refuse and Recyclable Material Collectors	15	0.1%
53-7199	Material Moving Workers, All Others	111.00	0.5%

APPENDIX D - JOB VACANCY RATES BY OCCUPATION

Montgomery County Job Vacancy Rates					
SOC Code	Occupation	Number of Vacancies	Total Emp	Relative Standard Error	Job Vacancy Rate
51-2091	Fiberglass Laminators and Fabricators	122	150	19.66	44.85%
31-9096	Veterinary Assistants & Laboratory Animal Caretakers	90	320	18.18	21.95%
29-2056	Veterinary Technologists and Technicians	46	200	16.15	18.70%
35-3041	Food Servers, Nonrestaurant	141	630	14.28	18.29%
29-1123	Physical Therapists	116	600	6.35	16.20%
11-9051	Food Service Managers	232	1,340	8.53	14.76%
35-1011	Chefs and Head Cooks	62	390	24.55	13.72%
15-1032	Comp. Software Engineers, Systems Software	201	1,280	10.78	13.57%
29-2055	Surgical Technologists	50	340	14.08	12.82%
27-3041	Editors	35	240	10.02	12.73%
35-9031	Host & Hostesses, Rest./Lounge/Coffee Shop	243	1,760	6.54	12.13%
35-3031	Waiters and Waitresses	1,559	11,400	4.32	12.03%
27-3099	Media and Communication Workers, All Other	22	170		11.46%
27-1023	Floral Designers	35	290	21.75	10.77%
41-9022	Real Estate Sales Agents	121	1,020		10.60%
31-9099	Healthcare Support Workers, All Others	109	970	15.20	10.10%
41-1011	FL Supervisors/Mgrs. Of Retail Workers	608	5,430	5.59	10.07%
41-3099	Sales Reps, Services, All Other	177	1,590	17.47	10.02%
33-9021	Private Detectives & Investigators	11	100	17.50	9.91%
39-5092	Manicurists and Pedicurists	32	320		9.09%
25-2011	Teachers, Preschool	127	1,300	22.08	8.90%
51-9199	Production Workers, All Others	202	2,090	12.36	8.81%
31-1011	Home Health Aides	332	3,440	10.07	8.80%
39-9021	Personal and Home Care Aides	186	2,000	22.97	8.51%
43-4051	Customer Service Representatives	891	9,810	7.46	8.33%
29-1122	Occupational Therapists	35	400	5.71	8.05%
43-4081	Hotel, Motel, and Resort Desk Clerks	62	710	13.24	8.03%
43-9051	Mail Clerks & Mail Machine Operators, ex. Postal Serv.	74	850	20.52	8.01%
33-3012	Correctional Officers and Jailers	105	1,340	14.81	7.27%
41-4011	Sales Reps., Wholesale/Mfg, Tech./Scientific Products	145	1,920	19.83	7.02%
25-3099	Teachers & Instructors, All Other	118	1,570	7.55	6.99%
53-3032	Truck Drivers, Heavy and Tractor-Trailer	720	9,580	8.80	6.99%
17-2071	Electrical Engineers	41	560	9.86	6.82%
17-2141	Mechanical Engineers	124	1,700	9.26	6.80%
17-2112	Industrial Engineers	161	2,210	9.85	6.79%
51-2099	Assemblers and Fabricators, All Others	58	800	23.59	6.76%
21-1022	Medical & Public Health Social Workers	47	660	7.44	6.65%
49-3031	Bus & Truck Mechanics & Diesel Engine Spec.	136	1,910	10.35	6.65%
21-9099	Counselors, Social & Religious Workers, All Other	48	700		6.42%
51-9198	Helpers--Production Workers	277	4,210	13.67	6.17%
29-1111	Registered Nurses	863	13,250	5.97	6.11%
43-5081	Stock Clerks and Order Fillers	590	9,100	3.87	6.09%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Job Vacancy Rates					
SOC Code	Occupation	Number of Vacancies	Total Emp	Relative Standard Error	Job Vacancy Rate
11-3061	Purchasing Managers	35	550	4.45	5.98%
29-1131	Veterinarians	14	220	24.26	5.98%
35-9021	Dishwashers	127	2,060	12.16	5.81%
15-1071	Network and Computer Systems Administrators	105	1,720	17.91	5.75%
33-1099	First-Line Sup/Mgrs, Protective Serv Work, AO	8	140	7.55	5.41%
25-9031,2,3	Education Administrators--Elem, Secondary, Postsecondary	93	1,630	8.03	5.40%
17-2199	Engineers, All Other	162	2,870	N/A	5.34%
35-3021	Combined Food Prep. & Serv. Work, inc. Fast Food	743	13,240	8.50	5.31%
11-2021	Marketing Managers	25	450	7.90	5.26%
47-2211	Sheet Metal Workers	51	920	46.03	5.25%
33-9032	Security Guards	176	3,180	4.33	5.24%
21-1023	Mental Health & Substance Abuse Social Workers	31	570	14.11	5.16%
51-4121	Welders, Cutters, Solderers and Brazers	144	2,870	9.86	4.78%
27-2012	Producers and Designers	7	140	9.41	4.76%
39-9099	Personal Care & Service Workers, All Others	12	240	22.62	4.76%
35-3011	Bartenders	173	3,530	18.84	4.67%
35-9011	Dining Room & Cafeteria Attendant & Bar Helpers	94	1,930	10.85	4.64%
29-1126	Respiratory Therapists	31	640	9.15	4.62%
51-4033	Grind/Lapping/Polish/Buff Mach. Tool S/O/T, M/P	67	1,420	14.80	4.51%
47-2221	Structural Iron and Steel Workers	13	280	43.81	4.44%
37-2012	Maids and Housekeeping Cleaners	167	3,600	6.61	4.43%
15-1081	Network Systems & Data Communications Analysts	34	740	8.77	4.39%
11-3031	Financial Managers	74	1,630	8.03	4.34%
51-8031	Water/Liquid Waste Treatment Plant/System Op.	37	830	20.84	4.27%
51-4031	Cutting/Punching/Press Machine S/OT, M/P	158	3,570	8.49	4.24%
13-2011	Accountants and Auditors	261	5,910	4.12	4.23%
25-2041	Special Ed. Teachers, Pre/Kinder/Elem Schools	42	1,000		4.03%
17-3026	Industrial Engineering Technicians	28	670	7.13	4.01%
17-3023	Electrical & Electronic Engineering Technicians	38	910	11.08	4.01%
13-2021	Appraisers and Assessors of Real Estate	10	240	35.64	4.00%
41-9099	Sales and Related Workers, All Others	54	1,330	17.37	3.90%
13-1022	Wholesale & Retail Buyers, excl. Farm Products	32	800	13.23	3.85%
51-4012	Numerical Tool & Process Control Programmers	4	100	17.48	3.85%
17-3011	Architectural and Civil Drafters	16	420	13.28	3.67%
49-9021	Heating, AC & Refrigeration Mechanics/Installers	51	1,350	23.97	3.64%
11-9021	Construction Managers	29	770	14.10	3.63%
11-2022	Sales Manager	44	1,170	7.25	3.62%
39-9011	Child Care Workers	125	3,330	11.05	3.62%
47-2021	Brickmasons and Blockmasons	26	700	21.54	3.58%
25-2042	Special Ed. Teachers, Middle School	23	640		3.47%
31-1012	Nursing Aides, Orderlies and Attendants	368	10,300	5.11	3.45%
41-9041	Telemarketers	82	2,300	40.16	3.44%
25-2032	Teachers, Voc Ed Secondary Schools	34	960		3.42%
17-1011	Architects, Ex. Landscape and Naval	9	260	14.64	3.35%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Job Vacancy Rates					
SOC Code	Occupation	Number of Vacancies	Total Emp	Relative Standard Error	Job Vacancy Rate
Occ Code	Management Occupations	942	27,270	2.24	3.34%
47-2181	Roofers	26	770	14.31	3.27%
13-2072	Loan Officers	34	1,030	14.65	3.20%
53-7061	Cleaners of Vehicles and Equipment	60	1,820	17.50	3.19%
19-3021	Market Research Analysts	29	880	14.32	3.19%
53-7081	Refuse and Recyclable Material Collectors	15	460	20.30	3.16%
25-9041	Teacher Assistants	143	4,400		3.15%
43-9199	Office & Administrative Support Workers, All Others	38	1,170	11.88	3.15%
29-1031	Dietitians and Nutritionists	11	340	14.34	3.13%
41-2031	Retail Salespersons	633	19,690	4.01	3.11%
39-9032	Recreation Workers	52	1,640	7.55	3.07%
11-9199	Managers, All Other	55	1,760	5.90	3.03%
13-1081	Logistician	10	320	20.16	3.03%
11-3051	Industrial Production Managers	39	1,250	5.75	3.03%
27-3022	Reporters and Correspondents	4	130	21.24	2.99%
47-2141	Painters, Construction, and Maintenance	26	850	10.75	2.97%
53-3033	Truck Drivers, Light or Delivery Services	144	4,860	6.88	2.88%
11-9041	Engineering Managers	34	1,150	6.14	2.87%
51-4041	Machinists	134	4,570	9.88	2.85%
49-3021	Automotive Body and Related Repairers	20	710	12.47	2.74%
11-1021	General and Operations Managers	212	7,630	2.89	2.70%
27-1011	Art Directors	5	180	26.34	2.70%
29-2061	Licensed Practical & Licensed Vocational Nurses	128	4,650	9.91	2.68%
35-2011	Cooks, Fast Food/Institution & Cafeteria, Restaurant, Short Order	648	14,660	N/A	2.63%
17-3031	Surveying and Mapping Technicians	7	260	25.29	2.62%
29-1127	Speech Language Pathologists	22	820	18.43	2.61%
49-3093	Tire Repairers and Changers	9	340	39.12	2.58%
25-1010-1199 not including 1194	Teachers, Postsecondary	137	5,180		2.58%
51-2031	Engine and Other Machine Assemblers	19	720	40.59	2.57%
29-2041	Emergency Medical Technicians & Paramedics	27	1,040	10.78	2.53%
53-6021	Parking Lot Attendants	7	270	23.27	2.53%
41-4012	Sales Reps., Wholesale/Mfg, ex. Tech./Scientific Products	212	8,180	4.83	2.53%
13-2051	Financial Analysts	14	550	23.43	2.48%
51-1011	FL Sup/Mgrs of production/Operating Workers	153	6,070	3.79	2.46%
41-2011	Cashiers	458	18,300	4.01	2.44%
15-1011	Computer and Information Scientists, Research	4	160	20.62	2.44%
21-1012	Educational, Vocational & School Counselors	27	1,100	7.77	2.40%
15-1041	Computer Support Specialists	52	2,140	7.15	2.37%
11-9111	Medical and Health Services Managers	30	1,280	7.11	2.29%
53-3031	Driver/Sales Worker	85	3,630	8.85	2.29%
51-4011	Computer-Controlled Machine Tool Oper., M/P	40	1,720	11.81	2.27%
41-9021	Real Estate Brokers	3	130	31.78	2.26%
53-1021	FL Sup/Mgrs of Help/Labor/Mat. Movers, Hand	31	1,360	7.34	2.23%
43-3011	Bill and Account Collectors	45	2,020	39.16	2.18%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Job Vacancy Rates					
SOC Code	Occupation	Number of Vacancies	Total Emp	Relative Standard Error	Job Vacancy Rate
39-4021	Funeral Attendants	6	270	33.48	2.17%
49-3053	Outdoor Power Equip & Other Sm Engine Mech.	4	190	35.47	2.06%
51-9121	Coating/Painting/Spraying Machine Setters, O/T	13	620	11.93	2.05%
29-2034	Radiologic Technologists and Technicians	25	1,210	12.28	2.02%
49-9042	Maintenance and Repair Workers, General	160	7,860	6.86	2.00%
51-9122	Painters, Transportation Equipment	3	150	13.51	1.96%
31-9094	Medical Transcriptionists	9	460	11.92	1.92%
29-2052	Pharmacy Technicians	31	1,590	13.97	1.91%
41-3011	Advertising Sales Agents	22	1,140	37.59	1.89%
25-2031	Teachers, Secondary ex. Special and Voc Ed	124	6,530		1.86%
43-4171	Receptionists and Information Clerks	84	4,460	5.50	1.85%
17-1022	Surveyors	3	160	31.36	1.84%
51-4081	Multiple Machine Tool Setters, O/T, M/P	12	660	20.86	1.79%
25-2022	Teachers, Middle School ex. Spec. & Voc. Ed	66	3,640		1.78%
39-9031	Fitness Trainers and Aerobics Instructors	13	720	11.53	1.77%
15-1051	Computer Systems Analyst	43	2,400	7.29	1.76%
43-3071	Tellers	65	3,660	12.70	1.74%
25-2021	Teachers, Elementary ex. Special Education	138	7,780		1.74%
43-5071	Shipping, Receiving, and Traffic Clerks	92	5,250	5.15	1.72%
53-7062	Laborers & Freight/Stock/Material Movers, Hand	303	17,480	8.04	1.70%
11-3021	Computer and Information Systems Manager	21	1,230	7.17	1.68%
37-3011	Landscaping & Groundskeeping Workers	95	5,570	11.51	1.68%
35-2021	Food Preparation Workers	99	5,850	8.26	1.66%
13-2031	Budget Analysts	5	300	11.73	1.64%
53-7064	Packers and Packagers, Hand	121	7,260	7.87	1.64%
15-1061	Database Administrators	9	550	14.82	1.61%
13-1041	Compliance Off. Ex. Agric, Cons., Health/Safety & Trans.	8	490	13.36	1.61%
15-1021	Computer Programmers	32	2,000	9.64	1.57%
41-9031	Sales Engineers	8	500	29.39	1.57%
35-1012	FL Sup/Mgrs of Food Prep & Serving Workers	62	3,950	4.36	1.55%
49-9099	Installation, Maintenance, and Repair Workers	452	28,820	2.94	1.54%
25-2043	Special Ed. Teachers, Secondary School	20	1,280		1.54%
51-9022	Grinding and Polishing Workers, Hand	7	450	22.03	1.53%
37-2011	Janitors & Cleaners, ex. Maids/Housekeeping Cleaners	164	10,740	6.81	1.50%
13-2081	Tax Examiners, Collectors, & Revenue Agents	3	200	21.64	1.48%
49-9098	Helpers -- Installation/Maintenance/Repair Workers	6	400	8.74	1.48%
49-3023	Automotive Service Technicians and Mechanics	48	3,240	7.56	1.46%
31-2022	Physical Therapist Aide	6	410	9.17	1.44%
27-2041	Music Directors and Composers	4	280		1.41%
49-2094	Electrical/Electronics Repair, Comm/Indus Equip	5	350	9.44	1.41%
51-5023	Printing Machine Operators	19	1,350	10.15	1.39%
17-3027	Mechanical Engineering Technicians	6	430	15.37	1.38%
13-1023	Purchasing Agents, Excl. Whole., Retail & Farm	29	2,080	2.99	1.38%
41-2022	Parts Salespersons	22	1,600	21.91	1.36%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Job Vacancy Rates					
SOC Code	Occupation	Number of Vacancies	Total Emp	Relative Standard Error	Job Vacancy Rate
51-4034	Lathe & Turning Machine Tool Setters, O/T, M/P	11	800	11.54	1.36%
47-2061	Construction Laborers	46	3,410	7.80	1.33%
29-2011	Medical and Clinical Laboratory Technologists & Technicians	19	1,410	N/A	1.33%
37-1011	FL Sup/Mgrs of Housekeeping & Janitorial Workers	11	820	13.30	1.32%
37-1012	FL Sup/Mgrs of Landscape/Lawn Serv/Groundskeeper	6	460	13.71	1.29%
41-3041	Travel Agents	3	230	11.65	1.29%
47-2031	Carpenters	46	3,560	9.33	1.28%
43-4121	Library Assistants	17	1,320	28.98	1.27%
51-9061	Inspectors, Testers/Sorters/Samplers/Weighers	54	4,240	8.72	1.26%
53-6031	Service Station Attendants	9	710	37.57	1.25%
43-3031	Bookkeeping, Accounting and Auditing Clerks	110	8,700	3.85	1.25%
51-2022	Electrical & Electronic Equipment Assemblers	29	2,310	19.83	1.24%
39-5012	Hairdressers, Hairstylists, and Cosmetologists	35	2,960	14.23	1.17%
43-9022	Wordprocessing and Typists	9	770	20.77	1.16%
47-2073	Operating Engineers and Other Con. Equip. Op	19	1,670	12.30	1.12%
27-2022	Coaches and Scouts	8	730	12.74	1.08%
31-9095	Pharmacy Aides	4	370	24.48	1.07%
13-1051	Cost Estimators	14	1,350	9.03	1.03%
51-6021	Pressers, Textile, Garment, & Related Materials	6	590	13.25	1.01%
43-6011	Executive Secretaries & Administrative Assistants	73	7,200	5.70	1.00%
13-1111	Management Analysts	24	2,460	7.98	0.97%
51-4111	Tool and Die Makers	17	1,870	19.39	0.90%
49-2011	Computer, ATM & Office Machine Repairers	4	450	14.84	0.88%
11-9151	Social and Community Service Managers	3	340	7.52	0.87%
51-3021	Butchers and Meat Cutters	6	680	9.80	0.87%
43-1011	First-Line Sup/Mgrs of Office and Administrative Support	50	5,770	3.58	0.86%
43-5061	Production, Planning, and Expediting Clerks	18	2,090	8.53	0.85%
31-9091	Dental and Medical Assistants	31	3,650	N/A	0.84%
47-2111	Electricians	43	5,180	19.27	0.82%
53-1031	FL Sup/Mgrs of Trans/Mat. Movers Mach. & Veh Op	10	1,220	7.79	0.81%
47-2152	Plumbers, Pipefitters, and Steamfitters	19	2,330	28.53	0.81%
13-2041	Credit Analysts	3	370	30.50	0.80%
49-9099	Installation/Maintenance/Repair Workers, AO	6	740	19.33	0.80%
29-2071	Medical Records & Health Information Technicians	6	750	6.59	0.79%
11-3071	Transportation, Storage and Distribution Managers	3	380	9.41	0.78%
13-1199	Business Operations Specialists, All Other	54	6,900	5.44	0.78%
51-4032	Drilling & Boring Machine Tool Setters, O/T, M/P	15	2,080		0.72%
43-5041	Meter Readers, Utilities	2	280	28.97	0.71%
33-2011	Fire Fighters	19	2,680	18.87	0.70%
47-4051	Highway Maintenance Workers	7	1,060	18.24	0.66%
43-9061	Office Clerks, General	84	13,180	5.32	0.63%
51-9111	Packaging & Filling Machine Operators/Tenders	21	3,370	20.60	0.62%
15-1031	Computer Software Engineers, Applications	18	2,920	12.98	0.61%
15-1099	Computer Specialists, All Other	4	650	9.14	0.61%

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Job Vacancy Rates					
SOC Code	Occupation	Number of Vacancies	Total Emp	Relative Standard Error	Job Vacancy Rate
29-1069	Physicians and Surgeons, All Other	12	1,960	N/A	0.61%
43-3021	Billing & Posting Clerks & Machine Operators	17	2,820	5.37	0.60%
35-3022	Counter Attendant, Café/Food Concession/Coffee Shop	9	1,500	18.83	0.60%
11-1011	Chief Executives	12	2,010	6.29	0.59%
29-1051	Pharmacists	8	1,350	6.31	0.59%
51-2092	Team Assemblers	101	17,130	10.42	0.59%
43-6013	Medical Secretaries	24	4,170	8.18	0.57%
43-9011	Computer Operators	4	710	12.23	0.56%
43-6012	Legal Secretaries	5	910	17.41	0.55%
43-9041	Insurance Claims and Policy Processing Clerks	8	1,460	14.28	0.54%
51-9032	Cutting/Slicing Mach. S/O/T	3	550	22.09	0.54%
53-7063	Machine Feeders and Offbearers	5	1,030	44.80	0.48%
33-3051	Police & Sheriff's Patrol Officers	15	3,160	9.95	0.47%
51-9023	Mixing/Blending Mach. Setter/Operator/Tender	4	860	14.42	0.46%
13-1073	Training and Development Specialists	4	870	5.15	0.46%
51-6011	Laundry and Dry-Cleaning Workers	6	1,310	12.20	0.46%
29-9099	Healthcare Practitioners & Technical Workers, All Other	3	660	20.00	0.45%
41-3021	Insurance Sales Agents	9	2,040	13.42	0.44%
51-3011	Bakers	4	980	17.20	0.41%
13-1031	Claims Adjusters, Examiners, and Investigators	3	810	19.69	0.37%
43-4199	Information and Record Clerks, All Other	7	1,940	8.61	0.36%
43-9021	Data Entry Keyers	4	1,270	10.91	0.31%
43-6014	Secretaries, ex. Legal, Medical, and Executive	27	9,680	5.31	0.28%
23-2099	Legal Support Workers, All Others	1	360	4.07	0.28%
13-1079	Human Resource Specialist	3	1,180	9.61	0.25%
41-2021	Counter and Rental Clerks	6	2,400	13.57	0.25%
47-1011	First Line Sup/Mgrs of Con. Trades/Extract Workers	6	2,900	12.42	0.21%
51-9196	Paper Goods Mach. S/O/T	2	1,310	17.74	0.15%
53-7051	Industrial Truck and Tractor Operators	6	3,950	6.44	0.15%
11-3011	Administrative Services Managers	1	720	8.59	0.14%
49-1011	FL Sup/Mgrs of Mechanics/Installers/Repairers	3	2,710	5.03	0.11%
43-3051	Payroll and Timekeeping Clerks	1	1,050	8.90	0.10%
51-4072	Molding/Coremaking/Casting Mach. S/O/T, M/P	3	3,370	24.71	0.09%
41-1012	FL Sup./Mgrs. Of Non-Retail Sales Worker		1,440	7.81	0.00%
13-2061	Financial Examiners	6.00	NTA		
17-3019	Drafters, All Other	22.00	NTA		
19-4011	Agricultural Technicians & Food Science Technicians	21.00	NTA		
27-1099	Designers, All Other	23.00	NTA		
27-2031	Dancers	4.00	NTA		
29-1124	Radiation Therapists	3.00	NTA		
29-1129	Therapists, All Other	3.00	NTA		
29-9091	Athletic Trainers	6.00	NTA		
33-3031	Fish & Game Wardens	35.00	NTA		
35-9099	Food Preparation and Serving Related Workers, All Others	14.00	NTA		

JOB VACANCY SURVEY REPORT FOR THE GREATER MONTGOMERY COUNTY LABOR MARKET

Montgomery County Job Vacancy Rates					
SOC Code	Occupation	Number of Vacancies	Total Emp	Relative Standard Error	Job Vacancy Rate
39-9041	Residential Advisors	8.00	NTA		
43-3041	Gaming Cage Workers	4.00	NTA		
47-2131	Insulation Workers, Floor, Ceiling, and Walls	19.00	NTA		
51-6091	Extruding/Form Mach S/O/T, Synthetic/Glass Fibers	6.00	NTA		
51-8099	Plant and System Operators, All Others	86.00	NTA		
51-9071	Jewelers and Precious Stone and Metal Workers	11.00	NTA		
53-6011	Bridge and Lock Tenders	4.00	NTA		
53-7072	Pump Operators, Except Wellhead Pumpers	69.00	NTA		
25-1194	Teachers, Voc Ed Postsecondary Schools	4.00	NTA		
25-9031	Instructional Coordinators	3.00	NTA		
25-4021,31	Librarians & Library Technicians	12.00	NTA		
35-6011	Baggage Porters and Bellhops	7.00	NTA		

***Note:** The relative standard error applies to total employment. If the RSE is 25% or less, results have reasonable accuracy. Occupations having relative standard errors in excess of 25% have been removed from this list of the top 50 occupational vacancy rate.

****Note:** Gray shading indicates total is for EDR 4 rather than for the 10 counties in the studied labor market

APPENDIX E - KNOWLEDGE AND SKILL REQUIREMENTS BY OCCUPATION

Accountants

Knowledge

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Economics and Accounting — Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Law and Government — Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.

Clerical — Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

Personnel and Human Resources — Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

Skills

Mathematics — Using mathematics to solve problems.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.

Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.

Coordination — Adjusting actions in relation to others' actions

Auditors

Knowledge

Economics and Accounting — Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

Computer Software Engineers, All others

Knowledge

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Engineering and Technology — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.

Clerical — Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

Telecommunications — Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.

Skills

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Technology Design — Generating or adapting equipment and technology to serve user needs.

Troubleshooting — Determining causes of operating errors and deciding what to do about it.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Programming — Writing computer programs for various purposes.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.

Mathematics — Using mathematics to solve problems.

Operations Analysis — Analyzing needs and product requirements to create a design.

Correctional Officers and Jailers

Knowledge

Public Safety and Security — Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

Law and Government — Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.

Psychology — Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Sociology and Anthropology — Knowledge of group behavior and dynamics, societal trends and influences, human migrations, ethnicity, cultures and their history and origins.

Personnel and Human Resources — Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

Clerical — Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

Skills

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Speaking — Talking to others to convey information effectively.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Coordination — Adjusting actions in relation to others' actions.

Instructing — Teaching others how to do something.

Persuasion — Persuading others to change their minds or behavior.

Engineers, All Others

This occupation is a combination of other occupations. Therefore, there is no unique skill or knowledge set for this occupation.

General and Operations Managers

Knowledge

Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Law and Government — Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.

Personnel and Human Resources — Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Economics and Accounting — Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.

Public Safety and Security — Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

Production and Processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

Skills

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.

Time Management — Managing one's own time and the time of others.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Speaking — Talking to others to convey information effectively.

Management of Financial Resources — Determining how money will be spent to get the work done, and accounting for these expenditures.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Persuasion — Persuading others to change their minds or behavior.

Industrial Engineers

Knowledge

Engineering and Technology — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

Production and Processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Clerical — Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

Skills

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Time Management — Managing one's own time and the time of others.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Mathematics — Using mathematics to solve problems.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Speaking — Talking to others to convey information effectively.

Licensed Practical & Licensed Vocational Nurse

Knowledge

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Medicine and Dentistry — Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Therapy and Counseling — Knowledge of principles, methods, and procedures for diagnosis, treatment, and rehabilitation of physical and mental dysfunctions, and for career counseling and guidance.

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Psychology — Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Public Safety and Security — Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

Chemistry — Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.

Skills

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Time Management — Managing one's own time and the time of others.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Service Orientation — Actively looking for ways to help people.

Speaking — Talking to others to convey information effectively.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Mechanical Engineer

Knowledge

Engineering and Technology — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Production and Processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Physics — Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and processes.

Skills

Mathematics — Using mathematics to solve problems.

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Science — Using scientific rules and methods to solve problems.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Time Management — Managing one's own time and the time of others.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Operations Analysis — Analyzing needs and product requirements to create a design.

Nursing Aides, Orderlies, and Attendants

Knowledge

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Medicine and Dentistry — Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.

Skills

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Instructing — Teaching others how to do something.

Speaking — Talking to others to convey information effectively.

Coordination — Adjusting actions in relation to others' actions.

Time Management — Managing one's own time and the time of others.

Service Orientation — Actively looking for ways to help people.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents

Physical Therapists

Knowledge

Medicine and Dentistry — Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.

Therapy and Counseling — Knowledge of principles, methods, and procedures for diagnosis, treatment, and rehabilitation of physical and mental dysfunctions, and for career counseling and guidance.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Biology — Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

Psychology — Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Sociology and Anthropology — Knowledge of group behavior and dynamics, societal trends and influences, human migrations, ethnicity, cultures and their history and origins.

Skills

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Instructing — Teaching others how to do something.

Time Management — Managing one's own time and the time of others.

Speaking — Talking to others to convey information effectively.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Science — Using scientific rules and methods to solve problems.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Real Estate Sales Agents

Knowledge

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.

Clerical — Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Economics and Accounting — Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.

Law and Government — Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.

Building and Construction — Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Skills

Active Listening — Giving full attention to what other people are saying, taking time to

understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Time Management — Managing one's own time and the time of others.

Negotiation — Bringing others together and trying to reconcile differences.

Speaking — Talking to others to convey information effectively.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Coordination — Adjusting actions in relation to others' actions.

Mathematics — Using mathematics to solve problems.

Service Orientation — Actively looking for ways to help people.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Registered Nurse

Knowledge

Medicine and Dentistry — Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.

Psychology — Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Biology — Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

Therapy and Counseling — Knowledge of principles, methods, and procedures for diagnosis, treatment, and rehabilitation of physical and mental dysfunctions, and for career counseling and guidance.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Sociology and Anthropology — Knowledge of group behavior and dynamics, societal trends and influences, human migrations, ethnicity, cultures and their history and origins.

Skills

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Instructing — Teaching others how to do something.

Speaking — Talking to others to convey information effectively.

Time Management — Managing one's own time and the time of others.

Service Orientation — Actively looking for ways to help people.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products

Knowledge

Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Economics and Accounting — Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.

Production and Processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

Skills

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Speaking — Talking to others to convey information effectively.

Time Management — Managing one's own time and the time of others.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Persuasion — Persuading others to change their minds or behavior.

Service Orientation — Actively looking for ways to help people.

Negotiation — Bringing others together and trying to reconcile differences.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Active Learning — Understanding the implications of new information for both current and

future problem-solving and decision-making.

Coordination — Adjusting actions in relation to others' actions.

Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products

Knowledge

Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Economics and Accounting — Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.

Skills

Speaking — Talking to others to convey information effectively.

Persuasion — Persuading others to change their minds or behavior.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Instructing — Teaching others how to do something.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Equipment Selection — Determining the kind of tools and equipment needed to do a job.

Mathematics — Using mathematics to solve problems.

Teacher Assistants

Knowledge

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Education and Training — Knowledge of principles and methods for curriculum and training

design, teaching and instruction for individuals and groups, and the measurement of training effects.

Psychology — Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Skills

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Instructing — Teaching others how to do something.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Speaking — Talking to others to convey information effectively.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Time Management — Managing one's own time and the time of others.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Teachers, Elementary School, Except Special Education

Knowledge

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Psychology — Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

Geography — Knowledge of principles and methods for describing the features of land, sea, and air masses, including their physical characteristics, locations, interrelationships, and distribution of plant, animal, and human life.

History and Archeology — Knowledge of historical events and their causes, indicators, and effects on civilizations and cultures.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Public Safety and Security — Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

Clerical — Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

Skills

Instructing — Teaching others how to do something.

Speaking — Talking to others to convey information effectively.

Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Time Management — Managing one's own time and the time of others.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Teachers, Preschool

Knowledge

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Psychology — Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Public Safety and Security — Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

Skills

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Instructing — Teaching others how to do something.

Speaking — Talking to others to convey information effectively.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Time Management — Managing one's own time and the time of others.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Teachers, Postsecondary

This occupation is a combination of all postsecondary teaching occupations. Therefore, the knowledge and skill requirements for a Physics Teacher was selected as an example

Knowledge

Physics — Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub- atomic structures and processes.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Engineering and Technology — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

Chemistry — Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.

Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Skills

Instructing — Teaching others how to do something.

Science — Using scientific rules and methods to solve problems.

Speaking — Talking to others to convey information effectively.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Mathematics — Using mathematics to solve problems.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Teacher, Secondary, excluding Special Education

Knowledge

Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Psychology — Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Therapy and Counseling — Knowledge of principles, methods, and procedures for diagnosis, treatment, and rehabilitation of physical and mental dysfunctions, and for career counseling and guidance.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

History and Archeology — Knowledge of historical events and their causes, indicators, and effects on civilizations and cultures.

Clerical — Knowledge of administrative and clerical procedures and systems such as word

processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Sociology and Anthropology — Knowledge of group behavior and dynamics, societal trends and influences, human migrations, ethnicity, cultures and their history and origins.

Skills

Instructing — Teaching others how to do something.

Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Speaking — Talking to others to convey information effectively.

Time Management — Managing one's own time and the time of others.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Welders, Cutters, Solderers, and Brazers

This occupation is a newly defined occupation for which no knowledge or skill set data are yet available.

Appendix F - Greater Montgomery County Labor Market and National Job Vacancy Rates by Industry, 2006

Job Vacancies by Industry: Montgomery County Labor Market and National Rates, 2006

	Montgomery County Labor Market Job Vacancy Rate	National Job Opening Rate, June 2006
Total	3.04%	2.9%
Goods Producing Industries	2.22%	
21 Mining	0.00%	2.1%
23 Construction	2.16%	2.4%
31 Manufacturing (Food and Apparel)	1.81%	
32 Manufacturing (Wood based, chemical, non-metallic)	1.29%	2.2%
33 Manufacturing (Metal, Machinery, Computer, Electrical, Transportation)	2.63%	
Services Providing	3.27%	
Trade, Transportation and Utilities	3.51%	2.4%
42 Wholesale Trade	2.73%	2.3%
44 Retail Trade (Auto, Furniture, Electronics, Building Material, Food, Health, Gas, Apparel)	2.05%	2.3%
48 Transportation	5.18%	2.8%
51 Information	4.16%	4.4%
Financial Activities	1.51%	3.3%
52 Finance & Insurance	0.65%	3.4%
53 Real Estate & Rental & Leasing	4.71%	2.9%
Professional & Business Services	4.01%	3.6%
Education and Health Services	2.43%	3.7%
61 Educational Services	1.58%	2.5%
62 Health Care & Social Assistance	3.02%	3.9%
Leisure and Hospitality	6.79%	3.5%
71 Arts, Entertainment & Recreation	3.28%	2.6%
72 Accommodation & Food Services	7.23%	3.7%
81 Other Services	1.07%	2.9%
92 Public Administration	0.81%	2.3%

* Montgomery County Labor Market is defined here as Butler, Clark, Clinton, Darke, Greene, Miami, Montgomery, Preble, Shelby and Warren Counties