

Adams, Arapahoe, Boulder, Denver, Douglas \& Jefferson Counties

## November 2000



# Denver Metro Job Vacancy Survey 

November 2000

## State of Colorado

Bill Owens, Governor

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## Introduction

The unemployment rate, along with the level and growth rate of employment, has been used as an indicator of labor market conditions for decades. While this indicator provides information about changes in the demand for labor, it reveals nothing about the skills most sought after by employers. As such, individuals preparing themselves for the job
market have done so with limited knowledge of what proficiencies are necessary to successfully compete in the contemporary labor market.

The Denver Metro Job Vacancy Survey was initiated not only to measure the demand for employees at a specific point in time, but also to provide detailed information on the quality of employees demanded.

## Colorado Job Vacancy Survey Regions

The Job Vacancy Survey (JVS) was adopted by Colorado's Department of Labor and Employment (CDLE) through the Denver Metro pilot studies of September 1999 and April 2000, which were initiated by Arapahoe/Douglas Works! The popularity of the reports based on the survey data led the CDLE to expand its coverage to include the entire state of Colorado. Since the last Denver Metro JVS, the survey instrument was revised to eliminate ambiguity and enhanced to gather more specifics on job vacancies within the survey constraints.

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## How to Use This Report

With the analysis of labor market conditions, many questions regarding labor demand and supply, as well as labor skills requirements, often arise.

Is there a labor shortage in the region?
If so, what types of labor are in short supply?
Is there a shortage of skills?
What skills are necessary to fill current vacancies?
The answers to these and similar questions are important in the decision-making processes of employers, job seekers, trainers and planning officials. While Labor Market Information (LMI) has provided information on the local labor force supply, the Job Vacancy Survey will further complement this data by providing information about the demand for labor and offer a more complete picture of local labor markets.

## Businesses

The Job Vacancy Survey (JVS) measures the area's current vacancies and provides information to employers who may be experiencing difficulty in filling positions due to:
a worker shortage,
an imbalance between job seekers' skills and employers' needs,
or compensation packages that are insufficient as a recruitment tool when compared to market standards.
The JVS immediately identifies the nature of current vacancies according to general categories. For example, upon review of the JVS, an employer can observe the level of vacancies among the region's firms requiring a specific level of education or experience. A high percentage of vacancies might indicate the labor force and/or its skills fall short of market needs, thus calling for increased investment in training, or importing skilled workers. Even if wages are increased or benefits added, the employer may experience delays in filling the position due to the overall shortage of applicants in the area. If a low percentage of vacancies exist for a particular position with the same education or experience requirement, but the
employer is finding it difficult to fill, a comparison between the wages offered to that of the market average may indicate the need for an adjustment.

Employers from outside of the region considering relocating to the area can review the JVS results and determine if the company's employment needs will be filled with minimal delay (current low vacancies). In addition, the JVS and Occupational Employment Statistics (OES) wage data (a measure of current wages being paid by occupation) can be used to develop a benchmark of wages to offer for the upcoming positions.

## Workforce Centers

Public officials, educational institutions, and government agencies can use the information to allocate resources more efficiently among education, training, and job placement programs. The JVS provides an immediate, clear picture of the area's current needs. Workforce Centers can direct job seekers toward high demand occupations to increase placement success, or in a direction that might better suit the needs of the applicants' future career goals.

Workforce Centers can also review the nature of job vacancies and decide where to focus placement efforts. Future investments in the workforce can be directed toward occupations or industries that continuously contribute to the local economy.

Current vacancy conditions as presented by the JVS, coupled with other Labor Market Information (LMI) reports, can offer a better picture of seasonality and long-term trends that might affect the provisions of future training programs. LMI's Employment and Wage publication (ES-202 data) provides county and statewide industry data on a quarterly basis. To prepare for the high demand of seasonal workers where vacancies persist, Workforce Centers and educators can offer training during the off-season as indicated by the LMI quarterly data. Longer-term industry trends in employment are also recorded on an annual basis in the same report for each county.

In addition, LMI provides occupational projections for the area in the Denver Metro Occupational

Projections, 1998-2008, available on the Internet at: http://lmi.cdle.state.co.us/oeo/dm9808.htm, which includes projected employment growth as well as identifies growing and declining occupations. This information, used with the JVS's identification of current job vacancies, can help Workforce Centers identify occupations in demand now and in the future. Workforce Centers can subsequently plan for future training programs in cooperation with businesses and educators.

## Job Seekers

For current job seekers the JVS report is a roadmap that can be used to determine where the best paying jobs are given their skills and level of education. The JVS illustrates the current demands of the local job market and provides associated average wages. The job seeker can review LMI's occupational projections in addition to the JVS to see if current opportunities can contribute to long-term career goals. With information the JVS provides, job seekers can better tailor their education and training efforts toward industries and occupations that lead to more permanent positions.

## Economic Developers

Economic development professionals can use the data to track key industries and evaluate the area's economic growth and development potential. JVS results can help determine where bottlenecks may occur should current vacancies persist. Economic developers can also generate a comprehensive picture of the region by determining where current labor demand stands today, as identified by the JVS, and where the local market is trending with LMI's employment projections in the Denver Metro Occupational Projections.

## Caveats

The JVS data should be used as indicators, not actual values, of the demand for workers in the Denver Metro region. Figures from the survey should not be inter-
preted as annual vacancies. Rather, they are estimates of openings at a point-in-time. Users should consider, when comparing the results of one survey to another, the effects seasonality and the business cycle will have on the data. For instance, a decrease in vacancies for construction workers from April to November would represent nothing more than a seasonal decline, not a long-term decrease in the demand for such workers.

The results of the survey are based only on the sample of responses collected from November 15th through January 31st of 2001 and should not be considered as necessarily portraying the exact distribution of job vacancies in the Denver Metro area. After several years of JVS data are available, patterns may begin to emerge that more accurately reflect changing labor market conditions. It should be recognized that the survey identifies current vacancies only, and does not explain whether the vacancies are due to employment growth in the occupations or if vacancies are due to job turnover. In addition, not all surveyed firms participated. However, the employers that did participate enabled the production of statistically reliable results.

Users should keep in mind that the authors of this report are not attempting to project the level of vacancies into the future. In addition, events that have occurred since the time period analyzed, such as plant closings or the migration of people in and out of the area, may have had an effect on the vacancy status of some occupations.

Given the caveats, appropriate application by the user is the most important element for making the information in this report a relevant tool in job vacancy analysis.


## Executive Summary

The third Denver Metro Job Vacancy Survey was conducted between November 15th, 2000 and January 31st, 2001. Over the survey period randomly selected employers with at least five employees were contacted in Adams, Arapahoe, Boulder, Denver, Douglas, and Jefferson Counties. Employers were asked if they were actively hiring at the time of the survey and a variety of questions about positions that they were seeking to fill.

A total of 3,423 employers ( $9 \%$ of Denver Metro employers), representing approximately $16 \%$ of the region's total employment, responded to the survey. Out of these, 194 are large employers ( 250 or more employees) and 3,229 are from the small to mid-sized category (5-249 employees). Also, an index was created to estimate the number of vacancies for micro employers with fewer than five employees. The major findings of the survey follow:

- It is estimated that a total of 35,000 jobs were open for hire in the Denver Metro region (DMR) during the survey period.
- 29,600 jobs are estimated to be full-time openings while 5,400 are part-time openings.
- Micro employers account for $15 \%$ of the total estimated vacancies, small to mid-size employers
$69 \%$, while large employers account for the remaining $16 \%$.
- Nearly $73 \%$ of the estimated job openings are concentrated in Services and Retail Trade.
- The overall average hourly wage for all vacancies is $\$ 12.70$. Average wages for permanent vacancies exceed those of temporary vacancies at both the full-time and part-time levels.
- Both education and experience required have a significant positive influence on wages offered.
- Thirty-seven percent of openings require at least some post-secondary education.
- Fifty-three percent of total openings require experience either within or related to the occupation.
- Seventy-one percent of job openings, according to employers' responses, are either very difficult or somewhat difficult to fill.
- Employers offered a sign-on bonus for $5 \%$ of the vacancies.


## Denver Metro Region

As of November 2000, the Denver Metro region, which for the purpose of this study includes Adams, Arapahoe, Denver, Douglas, Jefferson, and Boulder Counties, was home to over 2.3 million people, according to the state demographers office at the Colorado Department of Local Affairs. The area employed over 1.34 million individuals from a labor force pool of 1.37 million. Two-thirds of the area employment was concentrated in Jefferson, Arapahoe and Denver Counties at shares of $23 \%, 22 \%$ and $21 \%$, respectively. Both Adams and Boulder Counties accounted for $14 \%$ each of the area employment while Douglas County ranked last with a $7 \%$ share. While overall the unemployment rate for the area was $2.2 \%$, unemployment rates varied from a low of $1.4 \%$ in Douglas County to a high of $2.9 \%$ in Denver County ${ }^{1}$.


Figure 2: Proportion of Employment by Industry


The Denver Metro area distribution of employment among industries has remained fairly constant throughout the 1990s. The Services division has the highest share at $31 \%$ followed by Retail Trade (17\%) and Government (13\%). Except for Mining and Agriculture, all other divisions account for relatively equal proportions of the region's employment.

Although the level of employment varies greatly from one county to another, the industry mix among the six counties is relatively similar. The Services division has the highest concentration of firms, followed by Retail Trade, in all counties
except Douglas. While all counties have the fewest number of firms in the Agriculture, Mining and Government divisions, firm concentration within the remaining industries varies by county.

The Denver Metro area is dominated by a large number of small to mid-size (5-249 employees) Services employers making up $39.8 \%$ of the region's firms. This group accounts for $30.3 \%$ of the region's employees. Retail Trade follows with $16.5 \%$ of the region's employers and $18 \%$ of the employees. Not surprisingly, the Government sector, which contains
the biggest concentration of large-size employers, ranks last on its proportion of firm concentration $(0.7 \%)$. However, Government ranks third in proportion of area employees with $13 \%$ of the total. Figure 2 shows the distribution for each of the major industry divisions under the Standard Industrial Classification system during the fourth quarter of 1999.

Figure 3: Denver Metro Region Employers and Employees in the 4th Quarter, 1999


Figure 4: Annual Employment Growth Rates Denver Metro Area


Employment growth in the Denver Metro region outpaced that of both labor force and population by over half a percentage point with growth rates of $3.3 \%$, $2.6 \%$, and $2.5 \%$, respectively.

Average annual employment growth rates ranged from a low of $1.3 \%$ in 1991 to a high of $4.5 \%$ in 1997. For most of the ' 90 s the annual employment growth rate stayed over $3 \%$.

## The JVS Sample

The third Denver Metro JVS was conducted between November 15th, 2000 and January 31 st, 2001. The survey instrument used in the previous two Denver Metro surveys was redesigned to eliminate ambiguity and enhanced to increase information available for analysis.

For the purpose of this report, all employers in the Denver Metro area with 5 or more employees are referred to as the "sample universe". Workers in the sample universe account for approximately $90 \%$ of the region's total employment. Employers with at least 250 employees are referred to as "large employers." They account for about $30 \%$ of the employment in the
sample universe. Firms employing between 5 and 249 individuals are considered "small to mid-size employers," and account for the remaining $70 \%$ of the sample universe employment.

For the small to mid-size employers, the survey sample was stratified by both county and major industry. It was designed to achieve a minimum of 60 randomly selected responses from each group whenever possible to provide statistically reliable results. For groups that contained fewer employers than the minimum number of responses required, a $50 \%$ response rate was targeted. Attempts were made to contact all 504 employers in the "large employer" category in the DMR.

Table 1: Small to Mid-Size Response Requirements

| Major Industry | Adams | Arapahoe | Boulder | Denver | Douglas | Jefferson |  | Total <br> Denver Metro |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Agriculture |  |  |  |  |  |  |  | 60 |
| Mining |  |  |  |  |  |  | 60 |  |
| Construction | 60 | 60 | 60 | 60 | 60 | 60 |  | 360 |
| Manufacturing, Non-Durable <br> Manufacturing, Durable | 48 | 60 | 60 | 60 | 13 | 60 | 301 |  |
| Transportation, Communications, <br> and Public Utilities | 60 | 60 | 60 | 60 | 28 | 60 | 328 |  |
| Trade, Wholesale | 60 | 60 | 60 | 60 | 23 | 60 |  | 323 |
| Trade, Retail | 60 | 60 | 60 | 60 | 47 | 60 |  | 347 |
| Finance, Insurance, <br> and Real Estate | 60 | 60 | 60 | 60 | 60 | 60 | 360 |  |
| Services | 60 | 60 | 60 | 60 | 60 | 60 |  | 360 |
| Government | 60 | 60 | 60 | 60 | 25 | 60 | 360 |  |
| Total | 528 | 540 | 540 | 540 | 376 | 540 | 325 |  |

Over the survey period a total of 3,423 employers, approximately $9 \%$ of the DMR employers in the sample universe, responded to the survey. Out of these, 194 are large employers and 3,229 are from the small to mid-sized category.

Response requirements were achieved for most groups. Where the required response level was not
achieved an indexing procedure was applied to estimate vacancies. ${ }^{1}$ Also, an index was created to estimate the vacancy rates of micro employers with fewer than 5 employees. The index was used to enhance the vacancy estimates.

## The Survey Instrument

Employers were asked if they had job vacancies, or open positions, which they were actively seeking to fill. Over one-fifth of the firms contacted reported at least one vacancy. Firms actively recruiting were then asked to provide more detail about each position. Information on compensation offered, the education level and experience required, and the employer's perceived difficulty in filling the vacancy as well as length of time the position had
been open was collected ${ }^{1}$. Whenever necessary, employers were contacted to clarify responses.

Employers were also asked whether or not a sign-on bonus or health insurance was offered for the position. This information was collected in addition to the minimum and maximum wages offered to describe in more detail the compensation offered.

## Timing Considerations

The Denver Metro JVS is produced semiannually. To optimize the quality of information included, a slight alteration has occurred to timing.

Analysis of historical employment and labor force trends for the Denver Metro area indicate that employ-
ment levels peak in or around the month of October. Future surveys will be conducted in October, measuring demand for labor at its peak.

Figure 5: Timing Considerations


Spring surveys will be conducted in May, which has historically been a time of rapid growth. Conducting the survey within this period will provide a picture of the labor market as both total employment and the labor force are rapidly expanding.

Technical difficulties delayed conducting this round of the Denver Metro JVS from October to midNovember. Future fall surveys will be conducted in October.

## Labor Market Conditions

During the survey period, it is estimated that 35,000 vacancies were open for immediate hire in the Denver Metro region. Nearly $82 \%$ of the vacancies reported are for full-time, permanent employment; $12 \%$ are part-time, permanent positions, and the remaining $6 \%$ are equally divided between temporary full-time and part-time.


## Vacancies by Industry

The number of estimated vacancies varies greatly from one industry to the other. The overall vacancy rate ${ }^{1}$ for all industries is
3.1\%. Both Agriculture and Mining have less than 100 vacancies combined.

Figure 9: Total Employment and Vacancies by Industry


## Services

The Services division is the largest in the Denver Metro region (DMR) and the fastest in growth. It had the highest share of job vacancies ( $55 \%$ ) during the survey period. The high vacancy rate ( $4.7 \%$ ) may be attributable to its highly seasonal employment. This survey coincided with the industry's peak employment period.

## Retail Trade

Retail Trade is the second largest division in the DMR and it accounts for the second largest proportion of vacancies ( $18 \%$ ). It records a moderate vacancy rate of $2.8 \%$. Retail Trade is a rapidly growing industry and historically peaks during the fourth quarter of each year.

## Finance, Insurance, and Real Estate (FIRE)

The third largest share of estimated vacancies (7\%) during the survey period is in FIRE which is the sixth largest employing division in the DMR. Survey results show that this division has a vacancy rate of $2.7 \%$.

## Manufacturing

Manufacturing, both Durable and Non-Durable Goods, was found to have the fourth largest proportion of estimated vacancies ( $5 \%$ ) during the survey period. The industry's vacancy rate of $2.8 \%$ is close to the $3.1 \%$ vacancy rate for all industries. Manufacturing contracted during the first half of the ' 90 s , but began recovering in '95. Plant closings and layoffs caused a drop in employment from ' 98 to ' 99 .

## Construction

The Construction industry was found to have the fifth largest proportion of vacancies (4\%) and the vacancy rate of the industry is $2.6 \%$. Although employment in this industry increased rapidly throughout the 1990s, this vacancy rate is somewhat remarkable as the survey took place in construction's slowest season and one of the coldest winters in recent years.

## Transportation, Communications, and Public Utilities (TCPU)

TCPU is the fourth largest employing industry in the DMR. Employment growth of the industry has been moderate during the 1990s. The industry had the sixth largest proportion of estimated vacancies (4\%); it also recorded a vacancy rate of $2.2 \%$ during the survey period. Among many factors that influence TCPU growth, the area's increasing population is the most important.

## Wholesale Trade

Wholesale Trade ranks seventh in total estimated vacancies ( $4.6 \%$ ). The $3 \%$ job vacancy rate recorded by the industry is similar to the overall vacancy rate. Growth in the industry is moderate compared to other industries and the industry's total employment ranking vs. other industries retreated to eighth from seventh since late 1998. Employment in Wholesale Trade is highly seasonal and peaks around the Christmas holiday season.

## Government

Government, at all its levels (federal, state, and local), historically has been the third largest employer in the DMR. Survey results show a vacancy rate of $1.7 \%$. While Federal employment has declined and state government has experienced slow to moderate growth throughout the 1990s, local government has increased rapidly in an attempt to keep up with population growth and efforts to decrease school classroom size.

## Agriculture

Agriculture in the DMR is mostly in the form of agricultural services such as Landscaping and Veterinary. Although employment in this industry is low, it has grown quite rapidly through the ' 90 s with the construction boom. Also, employment in veterinary clinics has grown rapidly with the influx of new people and their pets to the area. The high seasonality of the industry, which peaks in the third quarter and sharply declines during the fourth and first quarters of each year, may help explain its low share of total estimated vacancies ( $0.17 \%$ ) and job vacancy rate ( $0.68 \%$ ).

## Mining

Mining has been in decline since the mid-80s. Today, it ranks last on total employment size among other industries. It also ranks last in proportion of total estimated vacancies $(0.1 \%)$ and job vacancy rate ( $0.07 \%$ ).

## Vacancies and Wages

Since wages offered may vary with the level of education and experience of the applicant, employers were asked to provide the range of wages offered for the vacancies and the average was calculated based on the mid-point of that range. Based on the information employers reported, analysis reveals the following:

- The overall average wage offered for all vacancies is $\$ 12.70$ per hour.
- The average minimum wage offered for all vacancies is $\$ 11.30$ and the average maximum is $\$ 14.00$ per hour.
- Forty-three percent of the vacancies offer a wage rate lower than the overall average.
- Approximately half of the positions for which wages are lower than the overall average are in the Retail Trade and Services industries.
- Seventy-two percent of the vacancies offering wages above the overall average are in Services, Government, and Manufacturing industries.

Figure 10: Average Wage by Firm Size


Permanent positions pay roughly $\$ 4.00$ more per hour than temporary positions. Average wages are consistently higher for permanent vs. temporary positions regardless of the positions full or part-time status.

Large companies reported wages that average approximately $\$ 3.00$ an hour higher than those offered by small to mid-size firms. The wage differential prevails at both the minimum and maximum wage levels.

Figure 11: Average Wage by Status


Figure 12: Average Wage by Industry


Average wages offered are well over $\$ 10.00$ per hour for all industries except Retail Trade. The highest average wage offered, which is in the Non-Durable Goods Manufacturing industry, exceeded the lowest average, offered by the Retail Trade industry, by about $\$ 10.00$ per hour.

Slightly over $2 \%$ of total estimated vacancies are in Non-Durable Goods Manufacturing while 18\% are in Retail Trade. Services, which has the largest share of vacancies ( $55 \%$ ), offers an average wage of $\$ 14.00$ per hour.


## Figure 13: Employer's Contribution to Medical Insurance Premium

Over two-thirds of the vacancies reported by employers include some form of medical insurance. Employers offer to pay the entire premium for nearly $25 \%$ of all vacancies reported and a portion of the premium for $59 \%$ of the vacancies.


Survey results reveal a positive relationship between wage and medical insurance coverage offered. As higher paying jobs require higher levels of education and experience, employers offer better medical insurance packages to attract qualified candidates. Businesses that pay the total cost of the medical insurance premium offer an average wage of $\$ 13.20$ per hour for the advertised vacancy. At the other end of the spectrum, positions where no monetary contribution is offered towards the insurance premium pay an average wage of $\$ 8.90$ per hour.

Survey results also reveal the following (Figure 15):

- The proportion of vacancies for which employers offer to pay a portion of the medical insurance premium is higher for permanent positions than temporary.
- The proportion of vacancies for which employers offer to pay the total cost of the medical insurance premium payment is higher for full-time positions than part-time regardless of whether it is permanent or temporary.
- The proportion of vacancies for which employers offer no monetary contribution towards the premium is higher in temporary than permanent vacancies.


## Education and Experience Requirements

Table 2: Experience Requirements by Educational Level

|  | No Experience | General Work <br> Experience | Experience in a <br> Related Field | Experience in <br> This Occupation |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| No Diploma | $55 \%$ | $16 \%$ | $22 \%$ | $8 \%$ |  |
| High School Diploma/GED | $23 \%$ | $27 \%$ | $34 \%$ | $16 \%$ |  |
| Vocational Training/Certification | $1 \%$ | $6 \%$ | $25 \%$ | $68 \%$ |  |
| Two-Year Degree | $1 \%$ | $2 \%$ | $53 \%$ | $44 \%$ |  |
| Bachelors Degree | $1 \%$ | $2 \%$ | $41 \%$ | $56 \%$ |  |
| Advanced Degree | $12 \%$ | $0 \%$ | $28 \%$ | $60 \%$ |  |

Employers' experience requirements are summarized in the following (Table 2):

- The majority of positions requiring No Diploma ( $55 \%$ ) are entry-level with no experience specifications.
- For positions at the High School Diploma/GED level, employers are seeking to hire at all levels of experience.

The majority of vacancies requiring Vocational Training or Certification also require specific experience in the occupation.

- Vacancies requiring at least a Two-Year Degree also require higher levels of experience.


## Education and Wages

Figure 16: Vacancies by Education

Employers were asked what level of education was required of an applicant in order to be considered for a particular vacancy. Results show that $63 \%$ of the positions reported by employers require no post-secondary education. The majority of the remaining positions ( $20 \%$ ) require Vocational Training or Certification.



Employers add a substantial premium to wage compensation when requiring higher levels of educational attainment. The highest incremental wage rate increase ( $\$ 7.10$ ) was found between requiring a

Two-Year and a Bachelor's Degree. The requirement of Vocational Training or Certification increases the wage rate by $\$ 5.10$ from a High School Diploma/GED.

## Experience and Wages

No experience is required for less than one-fourth of the job openings. Of the vacancies requiring some form of experience, "Experience in a Related Field" is the most frequently desired, followed by "Experience in This Occupation."

Figure 18: Vacancies by Experience


Figure 19: Average Wage by Experience


It comes as no surprise that survey results indicate employers offer premiums for higher experience levels. These premiums range from less than $\$ 1.00$ per hour at the "General Work Experience" level to more than $\$ 4.00$ at the "Experience in This Occupation" level.

## Difficulty to Fill

Because the response to the question, "Is this position difficult to fill?" is subjective, employers were queried as to how long each position had been open at the time of the survey. Knowing how long a position has been open allows further analysis into the subjectivity of the response to the first question. This information may help gain additional insight concerning the challenges employers face in filling vacancies.

Survey results show that employers do perceive difficulties in filling open positions. Seventy-one percent
of the vacancies reported are classified as either "somewhat" or "very difficult" to fill with the remaining $29 \%$ considered "not difficult" to fill.

Thirty-five percent of the vacancies, however, are reported as "always hiring". The majority of the remaining positions were open for a period less than 30 days.

Figure 20: Difficulty to Fill
Wage information reported by employers highlights two important facts.

1. Positions for which higher wages are offered tend to be more difficult to fill. This could be due to the specialized skills or requirements needed to fill these vacancies.
2. Jobs for which lower wages are offered tend to stay open for longer periods. This could be due to the increased competition among firms to fill

Figure 21: Duration of Vacancies such positions, as they typically are competing for the same skill-sets.
Employers offer wages for positions "very difficult" and "somewhat difficult" to fill that are approximately $20 \%$ and $6 \%$ over the average wage offered for positions "not difficult" to fill, respectively. Vacancies that are open for continuous hiring offer an average wage of $\$ 8.50$ per hour.

Figure 22: Average Wage by Difficulty to Fill


Figure 23: Average Wage by Vacancy Duration


The level of difficulty in filling positions is almost identical in the six counties. The highest concentration of vacancies is in the somewhat difficult to fill category in all counties except Jefferson, where almost half of the vacancies are very difficult to fill. Positions not difficult to fill range between $22 \%$ and $30 \%$ of total vacancies from one county to the other.

Figure 24: Difficulty to Fill by County


## OTHER FINDINGS:

- Forty-six percent of the positions requiring No Diploma and $30 \%$ of positions requiring a High School Diploma/GED have been open for less than 30 days. Proportions of positions always open for hire in each category are $42 \%$ and $43 \%$, respectively.
- The majority of positions requiring either Vocational Training/Certification or Two-year Degrees have been open for less than 60 days.

Between one-fourth to one-third of these categories are always open for hire.

- Due to the specialized requirements of positions for which either a Bachelors Degree or an Advanced Degree is preferred, most of these positions are open for an extended period of time. None of the positions requiring an Advanced Degree and only $4 \%$ of those requiring a Bachelors Degree are open for continuous hire.
- The higher the level of experience required, the longer the period for which the position remains open.


## Sign-On Bonus



## Occupations

Number of vacancies varies greatly between major occupational groups. Out of the 22 major occupational groups, eleven groups
have more than 1,000 openings. Half of total estimated vacancies fall in the top four major occupational groups.


Employers reported 304 different occupations with at least one vacancy. The average number of job openings per occupation is 115 . Nineteen percent of all occupations are above the average while the remaining $81 \%$ are below the average number of vacancies per occupation.

Occupational groups with high levels of educational requirements such as Management, Business \&

Financial Operations, Computer and Mathematical, Architecture \& Engineering, Life, Physical \& Social Science, and Healthcare Practitioners \& Technical, offer the highest wages. Wages for these occupational groups also have a wider range between the minimum and maximum offered (Figure 28).


Figure 28: Range of Average Wages by Major Occupational Group


Smaller wages with less variation between the minimum and maximum are offered for major occupational groups with the least educational requirements. The tight wage range suggests only a small premium is paid for experience in these occupational groups. Such groups include Food Preparation \& Serving Related, Personal Care \& Service, and Sales \& Related.

Over one-third of the vacancies reported are in the top six occupations by openings (Table 3).
Furthermore, $83 \%$ of the openings are in the top $25 \%$ of the occupations listed.

Table 3: Occupations

| O*Net Code | O*Net Occupation Title | Number of Vacancies | Average <br> Wage <br> Offered, <br> Fall 2000 | Occupational Employment Statistics Wage Data 1999-2000 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Average Wages |  |  | Percentile Distribution |  |  |  |  |
|  |  |  |  | Entry | Overall | Experienced | 10th | 25th | 50th | 75th | 90th |
| 41-2031.00 | Retail Salespersons | 3,130 | \$8.00 | \$6.73 | \$10.02 | \$11.67 | \$6.10 | \$7.01 | \$8.26 | \$10.81 | \$15.95 |
| 43-4051.00 | Customer Service Representatives | 2,980 | \$10.90 | \$8.99 | \$12.49 | \$14.23 | \$8.63 | \$9.73 | \$11.76 | \$14.66 | \$18.17 |
| 13-2082.00 | Tax Preparers | 2,170 | \$9.50 | \$7.41 | \$14.76 | \$18.44 | \$6.55 | \$8.50 | \$14.47 | \$19.50 | \$24.59 |
| 39-5012.00 | Hairdressers, Hairstylists, and Cosmetologists | 1,730 | \$5.70 | \$7.12 | \$9.06 | \$10.03 | \$6.87 | \$7.57 | \$8.79 | \$10.22 | \$11.86 |
| 29-1111.00 | Registered Nurses | 1,090 | \$20.50 | \$16.82 | \$22.13 | \$24.79 | \$15.62 | \$18.27 | \$21.73 | \$24.93 | \$32.02 |
| 41-2011.00 | Cashiers | 1,040 | \$6.80 | \$6.35 | \$8.76 | \$9.97 | \$5.90 | \$6.68 | \$7.92 | \$9.82 | \$14.55 |
| 31-1012.00 | Nursing Aides, Orderlies, and Attendants | 970 | \$10.70 | \$7.92 | \$9.43 | \$10.18 | \$7.29 | \$8.54 | \$9.50 | \$10.34 | \$11.43 |
| 43-3031.00 | Bookkeeping, Accounting, and Auditing Clerks | 600 | \$11.60 | \$9.16 | \$12.73 | \$14.51 | \$8.51 | \$10.51 | \$12.41 | \$14.95 | \$16.94 |
| 49-3023.02 | Automotive Specialty Technicians | 590 | \$8.70 | \$10.12 | \$16.24 | \$19.29 | \$8.45 | \$11.73 | \$15.41 | \$19.60 | \$24.36 |
| 35-3031.00 | Waiters and Waitresses | 560 | \$5.40 | \$5.73 | \$7.37 | \$8.18 | \$5.55 | \$5.75 | \$6.10 | \$6.82 | \$9.75 |
| 35-3021.00 | Combined Food Preparation and Serving Workers, Including Fast Food | 540 | \$6.10 | \$5.71 | \$6.62 | \$7.07 | \$5.57 | \$5.81 | \$6.30 | \$7.36 | \$8.50 |
| 43-9061.00 | Office Clerks, General | 510 | \$10.00 | \$8.49 | \$11.12 | \$12.43 | \$7.83 | \$9.12 | \$10.54 | \$12.80 | \$15.64 |
| 51-9198.01 | Production Laborers | 460 | \$8.80 | \$5.75 | \$7.42 | \$8.26 | \$5.41 | \$5.81 | \$6.46 | \$8.81 | \$11.16 |
| 43-4171.00 | Receptionists and Information Clerks | 450 | \$10.10 | \$7.37 | \$10.13 | \$11.51 | \$6.68 | \$8.32 | \$10.13 | \$11.55 | \$13.51 |
| 15-1021.00 | Computer Programmers | 440 | \$25.10 | \$16.89 | \$27.22 | \$32.39 | \$13.79 | \$19.84 | \$27.89 | \$36.92 | \$43.51 |
| 53-3031.00 | Driver/Sales Workers | 440 | \$9.40 | \$5.92 | \$11.52 | \$14.32 | \$5.70 | \$6.09 | \$10.53 | \$15.48 | \$20.23 |
| 27-3043.04 | Copy Writers | 430 | \$11.00 | \$17.51 | \$19.90 | \$21.10 | \$17.03 | \$17.99 | \$19.60 | \$21.20 | \$25.11 |
| 41-1011.00 | First-Line Supervisors/Managers of Retail Sales Workers | 430 | \$9.50 | \$10.43 | \$17.38 | \$20.86 | \$9.52 | \$11.60 | \$14.67 | \$19.01 | \$30.03 |
| 49-3023.00 | Automotive Service Technicians and Mechanics | 430 | \$13.50 | \$10.12 | \$16.24 | \$19.29 | \$8.45 | \$11.73 | \$15.41 | \$19.60 | \$24.36 |
| 53-7062.03 | Freight, Stock, and Material Movers, Hand | 430 | \$8.90 | \$7.77 | \$10.67 | \$12.11 | \$6.98 | \$8.66 | \$9.89 | \$12.07 | \$16.17 |
| 53-3033.00 | Truck Drivers, Light or Delivery Services | 390 | \$10.80 | \$8.21 | \$11.58 | \$13.27 | \$7.54 | \$8.89 | \$11.26 | \$13.50 | \$16.39 |
| 15-1031.00 | Computer Software Engineers, Applications | 370 | \$25.90 | \$23.66 | \$32.59 | \$37.06 | \$22.43 | \$25.91 | \$32.12 | \$39.36 | \$44.78 |
| 15-1041.00 | Computer Support Specialists | 370 | \$25.40 | \$13.87 | \$18.04 | \$20.12 | \$13.05 | \$14.70 | \$16.91 | \$20.63 | \$25.23 |
| 43-6011.00 | Executive Secretaries and Administrative Assistants | 360 | \$12.10 | \$12.44 | \$16.15 | \$18.01 | \$11.29 | \$13.67 | \$15.66 | \$18.44 | \$21.10 |
| 49-9042.00 | Maintenance and Repair Workers, General | 350 | \$11.80 | \$8.41 | \$12.45 | \$14.48 | \$7.62 | \$9.51 | \$11.54 | \$15.10 | \$18.81 |
| 39-9011.00 | Child Care Workers | 330 | \$6.70 | \$5.98 | \$7.50 | \$8.25 | \$5.75 | \$6.44 | \$7.47 | \$8.37 | \$9.54 |
| 11-1021.00 | General and Operations Managers | 310 | \$20.80 | \$18.90 | \$36.04 | \$44.61 | \$17.36 | \$21.13 | \$31.95 | \$49.01 |  |
| 41-3041.00 | Travel Agents | 290 | \$9.90 | \$8.12 | \$11.32 | \$12.93 | \$7.25 | \$9.27 | \$11.18 | \$13.06 | \$15.79 |
| 13-2011.00 | Accountants and Auditors | 280 | \$21.00 | \$14.94 | \$22.25 | \$25.91 | \$13.97 | \$16.42 | \$19.80 | \$26.24 | \$36.58 |
| 37-2012.00 | Maids and Housekeeping Cleaners | 280 | \$7.70 | \$5.89 | \$7.12 | \$7.73 | \$5.66 | \$6.15 | \$7.06 | \$8.14 | \$8.97 |

Table 3: Occupations - Page 2

| O*Net Code | O*Net Occupation Title | Number of Vacancies | Average Wage Offered, Fall 2000 | Occupational Employment Statistics Wage Data1999-2000 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Average Wages |  |  | Percentile Distribution |  |  |  |  |
|  |  |  |  | Entry | Overall | Experienced | 10th | 25th | 50th | 75th | 90th |
| 51-2092.00 | Team Assemblers | 260 | \$9.60 | \$7.19 | \$10.17 | \$11.66 | \$6.99 | \$7.96 | \$9.86 | \$12.10 | \$13.65 |
| 21-1093.00 | Social and Human Service Assistants | 240 | \$15.70 | \$7.78 | \$11.20 | \$12.91 | \$6.94 | \$8.86 | \$11.23 | \$13.47 | \$15.82 |
| 35-2021.00 | Food Preparation Workers | 240 | \$6.30 | \$7.14 | \$8.44 | \$9.10 | \$6.83 | \$7.25 | \$7.94 | \$9.23 | \$11.82 |
| 31-9091.00 | Dental Assistants | 230 | \$12.50 | \$8.71 | \$12.45 | \$14.31 | \$8.09 | \$9.54 | \$11.95 | \$15.24 | \$17.14 |
| 49-3021.00 | Automotive Body and Related Repairers | 220 | \$15.50 | \$14.71 | \$16.47 | \$17.35 | \$13.86 | \$14.59 | \$15.81 | \$17.11 | \$19.91 |
| 15-1051.00 | Computer Systems Analysts | 210 | \$26.50 | \$21.24 | \$29.67 | \$33.88 | \$19.44 | \$24.18 | \$29.70 | \$34.72 | \$41.31 |
| 35-2011.00 | Cooks, Fast Food | 210 | \$5.90 | \$5.67 | \$6.61 | \$7.08 | \$5.58 | \$5.79 | \$6.19 | \$7.42 | \$8.45 |
| 41-4011.03 | Sales Representatives, Electrical/Electronic | 190 | \$12.60 | \$18.38 | \$34.18 | \$42.08 | \$16.52 | \$21.72 | \$33.38 | \$49.77 | \$60.86 |
| 47-2073.00 | Operating Engineers and Other Construction Equipment Operators | 170 | \$16.20 | \$13.87 | \$17.32 | \$19.05 | \$12.92 | \$14.86 | \$17.57 | \$19.69 | \$21.08 |
| 47-2111.00 | Electricians | 170 | \$17.60 | \$13.81 | \$20.66 | \$24.08 | \$12.05 | \$15.71 | \$22.32 | \$25.22 | \$26.95 |
| 41-2022.00 | Parts Salespersons | 160 | \$9.00 | \$8.21 | \$12.99 | \$15.37 | \$7.54 | \$9.13 | \$11.65 | \$15.76 | \$20.65 |
| 43-6012.00 | Legal Secretaries | 160 | \$17.00 | \$11.50 | \$14.54 | \$16.05 | \$10.92 | \$12.05 | \$13.38 | \$17.17 | \$20.03 |
| 13-2072.00 | Loan Officers | 150 | \$12.30 | \$11.46 | \$21.39 | \$26.35 | \$9.77 | \$14.01 | \$19.89 | \$26.76 | \$34.32 |
| 35-1012.00 | First-Line Supervisors/Managers of Office and Administrative Support Workers | 150 | \$13.80 | \$11.97 | \$17.85 | \$20.79 | \$11.15 | \$13.46 | \$16.74 | \$20.66 | \$26.04 |
| 43-1011.00 | First-Line Supervisors/Managers of Food Preparation and Serving Workers | 150 | \$7.30 | \$9.26 | \$12.98 | \$14.83 | \$8.84 | \$9.63 | \$11.43 | \$16.07 | \$19.76 |
| 43-3071.00 | Tellers | 150 | \$10.80 | \$8.20 | \$9.72 | \$10.48 | \$7.43 | \$8.88 | \$9.69 | \$10.57 | \$11.86 |
| 47-2061.00 | Construction Laborers | 150 | \$8.10 | \$8.00 | \$10.92 | \$12.39 | \$7.38 | \$8.67 | \$10.70 | \$12.91 | \$15.36 |
| 53-7062.00 | Laborers and Freight, Stock, and Material Movers, Hand | 150 | \$9.90 | \$7.77 | \$10.67 | \$12.11 | \$6.98 | \$8.66 | \$9.89 | \$12.07 | \$16.17 |
| 11-9111.00 | Medical and Health Services Managers | 140 | \$21.40 | \$19.57 | \$31.03 | \$36.75 | \$16.36 | \$22.54 | \$27.70 | \$38.51 | \$49.91 |
| 21-1011.00 | Substance Abuse and Behavioral Disorder Counselors | 140 | \$13.00 | \$11.75 | \$13.50 | \$14.37 | \$11.02 | \$11.60 | \$12.56 | \$13.63 | \$18.49 |
| 41-1012.00 | First-Line Supervisors/Managers of Non-Retail Sales Workers | 140 | \$34.00 | \$15.11 | \$25.47 | \$30.65 | \$13.01 | \$17.42 | \$23.56 | \$31.51 | \$40.48 |
| 43-6013.00 | Medical Secretaries | 140 | \$11.20 | \$10.29 | \$12.25 | \$13.24 | \$9.95 | \$10.76 | \$11.52 | \$13.65 | \$15.84 |
| 51-4041.00 | Machinists | 140 | \$22.00 | \$11.63 | \$15.62 | \$17.62 | \$11.10 | \$12.81 | \$15.21 | \$18.02 | \$20.97 |
| 15-1071.00 | Network and Computer Systems Administrators | 130 | \$29.60 | \$17.33 | \$25.45 | \$29.51 | \$15.96 | \$19.62 | \$24.36 | \$30.36 | \$37.95 |
| 21-1021.00 | Child, Family, and School Social Workers | 130 | \$10.50 | \$11.66 | \$16.80 | \$19.37 | \$10.37 | \$13.19 | \$16.65 | \$20.21 | \$23.83 |
| 21-1091.00 | Health Educators | 130 | \$25.20 | \$13.65 | \$22.06 | \$26.27 | \$10.74 | \$16.89 | \$23.03 | \$27.28 | \$32.17 |
| 29-1051.00 | Pharmacists | 130 | \$30.70 | \$26.67 | \$31.15 | \$33.40 | \$24.50 | \$28.60 | \$32.56 | \$38.37 | \$42.91 |

Table 3: Occupations - Page 3

| O*Net Code | O*Net Occupation Title | Number of Vacancies | Average Wage Offered, Fall 2000 | Occupational Employment Statistics Wage Data1999-2000 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Average Wages |  |  | Distribution |  |  |  |  |
|  |  |  |  | Entry | Overall | Experienced | 10th | 25th | 50th | 75th | 90th |
| 35-3022.00 | Counter Attendants, Cafeteria, Food Concession, and Coffee Shop | 130 | \$6.90 | \$5.79 | \$7.15 | \$7.82 | \$5.71 | \$6.34 | \$7.35 | \$8.13 | \$8.62 |
| 43-3021.00 | Billing and Posting Clerks and Machine Operators | 130 | \$10.30 | \$9.61 | \$12.11 | \$13.37 | \$9.11 | \$10.62 | \$11.81 | \$13.50 | \$15.80 |
| 11-3042.00 | Training and Development Managers | 120 | \$16.00 |  |  |  |  |  |  |  |  |
| 13-1071.00 | Employment, Recruitment, and Placement Specialists | 120 | \$17.00 | \$13.94 | \$19.60 | \$22.43 | \$13.45 | \$14.58 | \$16.40 | \$21.98 | \$29.97 |
| 27-4011.00 | Audio and Video Equipment Technicians | 120 | \$12.40 | \$12.71 | \$17.62 | \$20.07 | \$11.18 | \$14.12 | \$16.84 | \$20.09 | \$25.03 |
| 33-3051.03 | Sheriffs and Deputy Sheriffs | 120 | \$12.70 | \$16.44 | \$20.89 | \$23.11 | \$15.16 | \$17.74 | \$21.04 | \$24.14 | \$26.36 |
| 37-2011.00 | Janitors and Cleaners, Except Maids and Housekeeping Cleaners | 120 | \$9.20 | \$6.27 | \$8.47 | \$9.57 | \$5.82 | \$6.66 | \$8.08 | \$9.86 | \$11.91 |
| 43-3051.00 | Payroll and Timekeeping Clerks | 120 | \$11.00 | \$10.02 | \$14.40 | \$16.59 | \$9.42 | \$11.12 | \$12.93 | \$15.24 | \$17.02 |
| 53-6031.00 | Service Station Attendants | 120 | \$10.20 | \$6.26 | \$7.95 | \$8.80 | \$5.89 | \$6.68 | \$7.83 | \$8.99 | \$10.11 |
| 17-2061.00 | Computer Hardware Engineers | 110 | \$21.60 | \$24.89 | \$35.09 | \$40.18 | \$23.13 | \$26.92 | \$33.38 | \$41.66 | \$51.18 |
| 25-4012.00 | Curators | 110 | \$22.00 |  |  |  |  |  |  |  |  |
| 33-3012.00 | Correctional Officers and Jailers | 110 | \$14.90 | \$9.98 | \$16.09 | \$19.14 | \$8.73 | \$11.38 | \$16.40 | \$20.06 | \$23.77 |
| 39-1021.00 | First-Line Supervisors/Managers of Personal Service Workers | 110 | \$7.00 | \$7.77 | \$12.17 | \$14.37 | \$6.80 | \$8.77 | \$10.24 | \$13.04 | \$21.97 |
| 41-3021.00 | Insurance Sales Agents | 110 | \$14.70 | \$14.83 | \$25.73 | \$31.18 | \$13.35 | \$16.60 | \$23.10 | \$30.94 | \$34.14 |
| 47-1011.02 | First-Line Supervisors and Manager/Supervisors- Extractive Workers | 110 | \$16.00 | \$15.03 | \$21.15 | \$24.21 | \$14.43 | \$16.03 | \$20.68 | \$25.24 | \$29.63 |
| 49-1011.00 | First-Line Supervisors/Managers of Mechanics, Installers, and Repairers | 110 | \$14.00 | \$16.89 | \$23.75 | \$27.18 | \$15.29 | \$19.34 | \$23.69 | \$27.15 | \$32.86 |
| 49-2022.03 | Communication Equipment Mechanics, Installers, and Repairers | 110 | \$18.50 | \$16.77 | \$21.78 | \$24.28 | \$14.68 | \$19.72 | \$23.20 | \$25.30 | \$26.57 |
| 51-9198.02 | Production Helpers | 110 | \$8.50 | \$5.75 | \$7.42 | \$8.26 | \$5.41 | \$5.81 | \$6.46 | \$8.81 | \$11.16 |
| 15-1032.00 | Computer Software Engineers, Systems Software | 100 | \$31.40 | \$22.42 | \$31.56 | \$36.13 | \$20.35 | \$25.24 | \$31.30 | \$38.02 | \$43.15 |
| 35-2014.00 | Cooks, Restaurant | 100 | \$7.40 | \$6.97 | \$8.79 | \$9.70 | \$6.31 | \$7.24 | \$8.61 | \$10.02 | \$11.66 |
| 35-9031.00 | Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop | 100 | \$6.70 | \$6.32 | \$7.99 | \$8.82 | \$5.93 | \$6.69 | \$7.64 | \$8.59 | \$11.68 |
| 13-2071.00 | Telemarketers | 90 | \$9.50 | \$6.09 | \$8.53 | \$9.76 | \$5.74 | \$6.63 | \$7.96 | \$10.42 | \$12.57 |
| 25-4012.00 | Loan Counselors | 90 | \$9.60 | \$11.72 | \$13.04 | \$13.69 | \$11.04 | \$11.72 | \$12.85 | \$14.55 | \$16.02 |
| 41-9041.00 | Counter and Rental Clerks | 90 | \$7.30 | \$5.95 | \$8.53 | \$9.82 | \$5.75 | \$6.37 | \$7.65 | \$9.50 | \$12.43 |
| 15-1061.00 | Database Administrators | 80 | \$23.90 | \$18.35 | \$26.75 | \$30.95 | \$16.61 | \$20.72 | \$25.91 | \$34.73 | \$41.90 |
| 29-2041.00 | Emergency Medical Technicians and Paramedics | 80 | \$15.70 | \$9.92 | \$14.30 | \$16.49 | \$9.36 | \$11.08 | \$12.60 | \$16.93 | \$21.75 |

Table 3: Occupations - Page 4

| O*Net Code | O*Net Occupation Title | Number of Vacancies | Average Wage Offered, Fall 2000 | Occupational Employment Statistics Wage Data1999-2000 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Average Wages |  |  | Percentile Distribution |  |  |  |  |
|  |  |  |  | Entry | Overall | Experienced | 10th | 25th | 50th | 75th | 90th |
| 41-2021.00 | Truck Drivers, Heavy and Tractor-Trailer | 80 | \$19.00 | \$11.41 | \$15.63 | \$17.75 | \$10.95 | \$12.31 | \$14.71 | \$17.53 | \$20.66 |
| 41-3031.02 | Sales Agents, Financial Services | 80 | \$7.00 |  |  |  |  |  |  |  |  |
| 53-3032.00 | Truck Drivers, Heavy | 80 | \$13.10 | \$11.41 | \$15.63 | \$17.75 | \$10.95 | \$12.31 | \$14.71 | \$17.53 | \$20.66 |
| 13-1111.00 | Management Analysts | 70 | \$25.00 | \$17.93 | \$32.46 | \$39.72 | \$15.54 | \$20.58 | \$28.40 | \$39.65 | \$65.15 |
| 21-1022.00 | Medical and Public Health Social Workers | 70 | \$9.80 | \$12.78 | \$17.56 | \$19.96 | \$11.54 | \$13.91 | \$16.27 | \$21.46 | \$25.36 |
| 43-9021.00 | Data Entry Keyers | 70 | \$10.60 | \$7.83 | \$10.13 | \$11.29 | \$7.16 | \$8.60 | \$9.88 | \$11.48 | \$13.43 |
| 49-9011.00 | Mechanical Door Repairers | 70 | \$14.00 | \$13.67 | \$16.99 | \$18.64 | \$12.75 | \$14.57 | \$16.76 | \$19.29 | \$20.83 |
| 33-9032.00 | Security Guards | 60 | \$9.40 | \$7.71 | \$10.81 | \$12.35 | \$7.23 | \$8.33 | \$9.66 | \$11.73 | \$17.97 |
| 43-5032.00 | Dispatchers, Except Police, Fire, and Ambulance | 60 | \$11.90 | \$9.28 | \$13.49 | \$15.60 | \$9.02 | \$10.21 | \$12.52 | \$16.04 | \$19.78 |
| 43-6014.00 | Secretaries, Except Legal, Medical, and Executive | 60 | \$10.40 | \$9.74 | \$12.80 | \$14.33 | \$8.93 | \$10.95 | \$12.76 | \$15.06 | \$16.64 |
| 49-9021.00 | Heating, Air Conditioning, and Refrigeration Mechanics and Installers | 60 | \$15.80 | \$12.30 | \$17.34 | \$19.87 | \$11.21 | \$13.66 | \$16.29 | \$20.51 | \$24.26 |
| 51-3011.00 | Bakers | 60 | \$9.50 | \$8.20 | \$12.53 | \$14.69 | \$7.48 | \$9.28 | \$11.77 | \$14.87 | \$18.42 |
| 51-7011.00 | Cabinetmakers and Bench Carpenters | 60 | \$15.10 | \$8.97 | \$11.87 | \$13.32 | \$8.55 | \$9.35 | \$10.68 | \$14.01 | \$16.58 |
| 11-3011.00 | Administrative Services Managers | 50 | \$16.40 | \$11.06 | \$23.87 | \$30.28 | \$9.61 | \$12.71 | \$22.54 | \$31.76 | \$41.78 |
| 11-3031.00 | Financial Managers | 50 | \$20.90 | \$22.70 | \$35.13 | \$41.35 | \$20.80 | \$25.66 | \$32.61 | \$42.58 | \$57.22 |
| 11-9141.00 | Property, Real Estate, and Community Association Managers | 50 | \$10.80 | \$10.58 | \$20.01 | \$24.73 | \$8.73 | \$13.00 | \$17.79 | \$25.51 | \$35.98 |
| 13-1031.00 | Claims Adjusters, Examiners, and Investigators | 50 | \$15.30 | \$12.34 | \$18.37 | \$21.39 | \$10.25 | \$14.15 | \$17.27 | \$22.64 | \$26.87 |
| 13-2051.00 | Financial Analysts | 50 | \$25.90 | \$17.84 | \$30.46 | \$36.77 | \$17.42 | \$19.64 | \$23.86 | \$32.29 |  |
| 29-2012.00 | Medical and Clinical Laboratory Technicians | 50 | \$13.80 | \$11.32 | \$16.36 | \$18.88 | \$10.32 | \$12.68 | \$16.60 | \$19.65 | \$22.56 |
| 29-2061.00 | Licensed Practical and Licensed Vocational Nurses | 50 | \$13.00 | \$12.88 | \$15.38 | \$16.64 | \$12.28 | \$13.54 | \$14.85 | \$16.15 | \$18.48 |
| 31-9092.00 | Medical Assistants | 50 | \$14.70 | \$9.66 | \$11.84 | \$12.93 | \$9.12 | \$10.40 | \$11.82 | \$13.10 | \$15.11 |
| 35-3041.00 | Food Servers, Nonrestaurant | 50 | \$7.60 | \$5.78 | \$7.56 | \$8.45 | \$5.66 | \$6.19 | \$7.42 | \$8.60 | \$10.13 |
| 43-5071.00 | Shipping, Receiving, and Traffic Clerks | 50 | \$11.60 | \$7.66 | \$10.80 | \$12.37 | \$7.16 | \$8.51 | \$10.21 | \$12.58 | \$15.54 |
| 43-9022.00 | Word Processors and Typists | 50 | \$8.00 | \$8.76 | \$11.44 | \$12.77 | \$8.05 | \$9.74 | \$11.21 | \$12.87 | \$15.41 |
| 47-1011.01 | First-Line Supervisors and Manager/SupervisorsConstruction Trades Workers | 50 | \$27.70 | \$15.03 | \$21.15 | \$24.21 | \$14.43 | \$16.03 | \$20.68 | \$25.24 | \$29.63 |
| 47-2152.02 | Plumbers | 50 | \$17.70 | \$10.37 | \$16.47 | \$19.52 | \$9.39 | \$11.73 | \$15.42 | \$20.86 | \$24.87 |
| 17-2051.00 | Civil Engineers | 40 | \$25.20 | \$19.49 | \$27.59 | \$31.64 | \$18.07 | \$20.92 | \$26.70 | \$34.12 | \$42.18 |
| 29-1126.00 | Respiratory Therapists | 40 | \$18.50 | \$13.74 | \$16.87 | \$18.43 | \$12.96 | \$14.76 | \$16.83 | \$19.11 | \$20.80 |

Table 3: Occupations - Page 5

| O*Net Code | O*Net Occupation Title | Number of Vacancies | Average Wage Offered, Fall 2000 | Occupational Employment Statistics Wage Data |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Entry | Overall | Experienced | 10th | 25th | 50th | 75th | 90th |
| 29-2011.00 | Medical and Clinical Laboratory Technologists | 40 | \$11.40 | \$14.30 | \$18.99 | \$21.34 | \$13.01 | \$16.17 | \$18.93 | \$21.62 | \$24.96 |
| 29-2055.00 | Surgical Technologists | 40 | \$11.90 | \$9.33 | \$13.34 | \$15.35 | \$8.80 | \$10.88 | \$12.62 | \$14.95 | \$16.74 |
| 33-3051.01 | Police Patrol Officers | 40 | \$14.30 | \$16.44 | \$20.89 | \$23.11 | \$15.16 | \$17.74 | \$21.04 | \$24.14 | \$26.36 |
| 39-9031.00 | Fitness Trainers and Aerobics Instructors | 40 | \$8.70 | \$8.62 | \$15.23 | \$18.54 | \$8.04 | \$9.54 | \$13.27 | \$20.54 | \$25.48 |
| 47-2211.00 | Sheet Metal Workers | 40 | \$10.70 | \$9.07 | \$16.05 | \$19.54 | \$6.86 | \$11.24 | \$15.38 | \$21.96 | \$24.97 |
| 49-9043.00 | Maintenance Workers, Machinery | 40 | \$8.00 | * |  |  | * | * |  |  |  |
| 51-1011.00 | First-Line Supervisors/Managers of Production and Operating Workers | 40 | \$23.20 | \$13.09 | \$19.07 | \$22.05 | \$11.79 | \$14.72 | \$18.51 | \$22.91 | \$27.06 |
| 51-4121.01 | Welders, Production | 40 | \$10.30 | \$9.98 | \$13.75 | \$15.63 | \$9.37 | \$11.05 | \$13.13 | \$15.99 | \$19.38 |
| 51-5011.00 | Bindery Workers | 40 | \$10.00 | \$5.94 | \$9.55 | \$11.35 | \$5.69 | \$6.49 | \$8.44 | \$12.07 | \$15.17 |
| 51-5023.00 | Printing Machine Operators | 40 | \$10.20 | \$10.32 | \$15.42 | \$17.97 | \$9.55 | \$11.47 | \$15.01 | \$18.75 | \$22.88 |
| 51-9061.05 | Production Inspectors, Testers, Graders, Sorters, Samplers, Weighers | 40 | \$9.50 | \$7.68 | \$12.89 | \$15.50 | \$6.99 | \$8.65 | \$11.77 | \$15.98 | \$20.44 |
| 53-1021.00 | First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand | 40 | \$14.70 | \$10.85 | \$17.64 | \$21.04 | \$10.04 | \$12.08 | \$16.78 | \$21.28 | \$27.29 |
| 11-2021.00 | Marketing Managers | 30 | \$16.50 | \$23.30 | \$36.41 | \$42.97 | \$20.00 | \$27.78 | \$35.34 | \$45.45 | \$56.93 |
| 13-1072.00 | Compensation, Benefits, and Job Analysis Specialists | 30 | \$27.00 | \$14.32 | \$22.80 | \$27.03 | \$13.22 | \$15.98 | \$19.41 | \$24.64 | \$33.42 |
| 17-2141.00 | Mechanical Engineers | 30 | \$23.30 | \$19.39 | \$27.99 | \$32.29 | \$17.80 | \$21.50 | \$27.71 | \$36.14 | \$42.48 |
| 19-1042.00 | Medical Scientists, Except Epidemiologists | 30 | \$33.70 | \$18.16 | \$29.67 | \$35.43 | \$17.16 | \$19.41 | \$24.64 | \$34.53 | \$54.90 |
| 27-3042.00 | Technical Writers | 30 | \$9.50 | \$17.50 | \$23.32 | \$26.24 | \$15.97 | \$19.31 | \$23.21 | \$26.16 | \$30.79 |
| 29-2052.00 | Pharmacy Technicians | 30 | \$11.00 | \$9.04 | \$11.60 | \$12.89 | \$8.31 | \$10.20 | \$11.95 | \$13.22 | \$14.39 |
| 29-2071.00 | Medical Records and Health Information Technicians | 30 | \$12.00 | * |  |  |  |  |  |  |  |
| 33-2011.00 | Fire Fighters | 30 | \$13.00 | \$11.51 | \$18.62 | \$22.18 | \$11.24 | \$13.98 | \$18.63 | \$22.94 | \$27.18 |
| 33-3021.02 | Police Identification and Records Officers | 30 | \$12.20 | \$21.31 | \$27.75 | \$30.97 | \$19.24 | \$24.15 | \$29.18 | \$32.43 | \$34.38 |
| 33-9092.00 | Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers | 30 | \$9.00 | * | * | * | * | * |  |  |  |
| 35-9021.00 | Dishwashers | 30 | \$5.90 | \$6.19 | \$7.34 | \$7.91 | \$5.79 | \$6.74 | \$7.42 | \$8.09 | \$8.50 |
| 41-4011.00 | Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products | 30 | \$10.60 | \$18.38 | \$34.18 | \$42.08 | \$16.52 | \$21.72 | \$33.38 | \$49.77 | \$60.86 |
| 41-9021.00 | Real Estate Brokers | 30 | \$18.00 | * | * |  | * | * | * |  |  |
| 43-1011.02 | First-Line Supervisors, Administrative Support | 30 | \$13.30 | \$11.97 | \$17.85 | \$20.79 | \$11.15 | \$13.46 | \$16.74 | \$20.66 | \$26.04 |
| 43-4081.00 | Hotel, Motel, and Resort Desk Clerks | 30 | \$9.60 | \$7.34 | \$7.95 | \$8.26 | \$6.53 | \$7.18 | \$7.90 | \$8.65 | \$9.60 |

Table 3: Occupations - Page 6

| O*Net Code | O*Net Occupation Title | Number of Vacancies | Average Wage Offered, Fall 2000 | Occupational Employment Statistics Wage Data 1999-2000 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Average Wages |  |  | Percentile Distribution |  |  |  |  |
|  |  |  |  | Entry | Overall | Experienced | 10th | 25th | 50th | 75th | 90th |
| 43-4131.00 | Loan Interviewers and Clerks | 30 | \$14.90 | \$11.04 | \$15.13 | \$17.17 | \$10.11 | \$12.40 | \$14.95 | \$17.00 | \$20.25 |
| 43-9041.00 | Insurance Claims and Policy Processing Clerks | 30 | \$13.80 | \$10.79 | \$16.73 | \$19.70 | \$9.92 | \$11.89 | \$14.65 | \$20.01 | \$29.50 |
| 47-2031.00 | Carpenters | 30 | \$18.20 | \$13.40 | \$16.29 | \$17.74 | \$12.23 | \$14.22 | \$15.94 | \$18.43 | \$20.64 |
| 47-2221.00 | Structural Iron and Steel Workers | 30 | \$10.00 | \$16.26 | \$18.46 | \$19.56 | \$14.69 | \$17.26 | \$18.70 | \$20.15 | \$21.31 |
| 49-2011.01 | Automatic Teller Machine Servicers | 30 | \$14.00 | \$11.13 | \$14.56 | \$16.28 | \$10.77 | \$11.84 | \$13.77 | \$17.51 | \$20.05 |
| 49-2098.00 | Security and Fire Alarm Systems Installers | 30 | \$11.00 | \$12.40 | \$16.89 | \$19.14 | \$11.04 | \$14.15 | \$17.64 | \$19.84 | \$21.15 |
| 49-3043.00 | Rail Car Repairers | 30 | \$11.00 | \$14.26 | \$18.87 | \$21.17 | \$11.90 | \$16.72 | \$18.40 | \$19.99 | \$28.13 |
| 51-4035.00 | Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic | 30 | \$17.00 |  | * |  |  |  |  |  |  |
| 51-6031.00 | Sewing Machine Operators | 30 | \$8.10 | \$6.36 | \$8.33 | \$9.32 | \$5.85 | \$6.81 | \$7.96 | \$9.58 | \$11.34 |
| 51-8031.00 | Water and Liquid Waste Treatment Plant and System Operators | 30 | \$17.20 | \$12.01 | \$16.59 | \$18.89 | \$11.59 | \$12.72 | \$15.80 | \$20.23 | \$23.48 |
| 51-9061.00 | Inspectors, Testers, Sorters, Samplers, and Weighers | 30 | \$14.60 | \$7.68 | \$12.89 | \$15.50 | \$6.99 | \$8.65 | \$11.77 | \$15.98 | \$20.44 |
| 51-9111.00 | Packaging and Filling Machine Operators and Tenders | 30 | \$11.00 | \$8.60 | \$11.44 | \$12.87 | \$7.96 | \$9.16 | \$10.60 | \$14.39 | \$15.96 |
| 53-7061.00 | Cleaners of Vehicles and Equipment | 30 | \$8.20 | \$6.25 | \$9.05 | \$10.45 | \$5.81 | \$6.59 | \$8.17 | \$10.65 | \$14.56 |
| 13-1022.00 | Wholesale and Retail Buyers, Except Farm Products | 20 | \$10.00 | \$10.34 | \$20.98 | \$26.30 | \$9.60 | \$11.43 | \$16.61 | \$25.18 | \$48.03 |
| 13-1041.00 | Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation | 20 | \$22.10 | \$13.22 | \$22.13 | \$26.58 | \$12.01 | \$16.41 | \$21.99 | \$27.62 | \$32.77 |
| 13-1061.00 | Office Machine and Cash Register Servicers | 20 | \$13.20 | \$11.13 | \$14.56 | \$16.28 | \$10.77 | \$11.84 | \$13.77 | \$17.51 | \$20.05 |
| 13-2031.00 | Budget Analysts | 20 | \$16.90 | \$16.41 | \$24.44 | \$28.45 | \$14.81 | \$18.40 | \$23.54 | \$30.86 | \$38.28 |
| 13-2053.00 | Insurance Underwriters | 20 | \$28.80 | \$15.04 | \$21.15 | \$24.20 | \$13.60 | \$16.56 | \$19.15 | \$24.29 | \$35.77 |
| 17-2071.00 | Electrical Engineers | 20 | \$27.20 | \$20.06 | \$28.92 | \$33.35 | \$18.62 | \$21.05 | \$28.69 | \$36.07 | \$41.13 |
| 19-2021.00 | Printing Press Machine Operators and Tenders | 20 | \$12.50 | \$10.32 | \$15.42 | \$17.97 | \$9.55 | \$11.47 | \$15.01 | \$18.75 | \$22.88 |
| 21-1015.00 | Rehabilitation Counselors | 20 | \$17.90 | \$8.76 | \$11.20 | \$12.42 | \$8.57 | \$9.09 | \$9.96 | \$11.52 | \$17.59 |
| 29-2051.00 | Dietetic Technicians | 20 | \$12.40 | \$6.32 | \$9.09 | \$10.48 | \$5.85 | \$6.81 | \$8.69 | \$10.84 | \$13.50 |
| 31-1283.00 | Cutters and Trimmers, Hand | 20 | \$10.00 |  | * |  |  |  |  | * |  |
| 31-1284.00 | Emergency Management Specialists | 20 | \$26.00 |  | * |  |  |  |  |  |  |
| 31-1285.00 | Atmospheric and Space Scientists | 20 | \$35.00 | \$15.64 | \$24.65 | \$29.15 | \$14.54 | \$16.92 | \$21.30 | \$33.49 | \$42.62 |
| 35-2012.00 | Cooks, Institution and Cafeteria | 20 | \$9.30 | \$7.11 | \$8.83 | \$9.69 | \$6.39 | \$7.30 | \$8.51 | \$10.11 | \$12.06 |
| 35-9011.00 | Dining Room and Cafeteria Attendants and Bartender Helpers | 20 | \$5.20 | \$5.71 | \$6.51 | \$6.90 | \$5.55 | \$5.76 | \$6.11 | \$7.02 | \$8.72 |

Table 3: Occupations - Page 7

| O*Net Code | O*Net Occupation Title | Number of Vacancies | Average Wage Offered, Fall 2000 | Occupational Employment Statistics Wage Data1999-2000 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Average Wages |  |  | Percentile Distribution |  |  |  |  |
|  |  |  |  | Entry | Overall | Experienced | 10th | 25th | 50th | 75th | 90th |
| 37-1011.00 | First-Line Supervisors/Managers of Housekeeping and Janitorial Workers | 20 | \$22.90 | \$8.20 | \$11.59 | \$13.29 | \$7.56 | \$8.80 | \$10.54 | \$14.19 | \$16.72 |
| 37-3011.00 | Landscaping and Groundskeeping Workers | 20 | \$8.00 | \$7.21 | \$9.14 | \$10.10 | \$6.90 | \$7.42 | \$8.29 | \$10.39 | \$13.12 |
| 39-1011.00 | Gaming Supervisors | 20 | \$8.00 |  |  |  |  |  |  |  |  |
| 39-3091.00 | Amusement and Recreation Attendants | 20 | \$6.50 | \$5.85 | \$7.18 | \$7.84 | \$5.66 | \$6.42 | \$7.27 | \$7.96 | \$8.38 |
| 41-3031.00 | Securities, Commodities, and Financial Services Sales Agents | 20 | \$13.00 | * | * | * |  |  |  |  |  |
| 43-3011.00 | Bill and Account Collectors | 20 | \$12.30 | \$9.44 | \$12.35 | \$13.80 | \$8.97 | \$10.42 | \$11.81 | \$13.78 | \$16.84 |
| 43-4031.02 | Municipal Clerks | 20 | \$21.40 | \$11.90 | \$14.98 | \$16.51 | \$11.41 | \$12.68 | \$14.62 | \$16.51 | \$19.34 |
| 43-9041.01 | Insurance Claims Clerks | 20 | \$16.90 | \$10.79 | \$16.73 | \$19.70 | \$9.92 | \$11.89 | \$14.65 | \$20.01 | \$29.50 |
| 43-9071.00 | Pump Operators, Except Wellhead Pumpers | 20 | \$11.50 | \$10.19 | \$13.97 | \$15.86 | \$9.72 | \$10.96 | \$13.18 | \$17.09 | \$19.26 |
| 43-9071.00 | Office Machine Operators, Except Computer | 20 | \$8.00 | \$6.95 | \$9.98 | \$11.50 | \$6.15 | \$7.66 | \$9.72 | \$11.59 | \$13.64 |
| 47-1011.00 | First-Line Supervisors/Managers of Construction Trades and Extraction Workers | 20 | \$22.10 | \$15.03 | \$21.15 | \$24.21 | \$14.43 | \$16.03 | \$20.68 | \$25.24 | \$29.63 |
| 47-2151.00 | Pipelayers | 20 | \$11.50 | \$9.96 | \$13.05 | \$14.59 | \$9.33 | \$10.87 | \$12.40 | \$15.20 | \$17.69 |
| 47-2181.00 | Roofers | 20 | \$11.40 | \$8.81 | \$12.20 | \$13.89 | \$7.90 | \$9.92 | \$12.24 | \$13.87 | \$16.66 |
| 47-3013.00 | Helpers--Electricians | 20 | \$8.30 | \$11.38 | \$14.03 | \$15.35 | \$11.13 | \$12.18 | \$13.97 | \$15.93 | \$17.52 |
| 47-4011.00 | Construction and Building Inspectors | 20 | \$19.80 | \$17.88 | \$22.37 | \$24.61 | \$17.15 | \$18.88 | \$22.03 | \$25.27 | \$29.55 |
| 49-2011.03 | Radiologic Technologists | 20 | \$15.80 | \$12.00 | \$16.07 | \$18.11 | \$10.72 | \$13.77 | \$15.97 | \$18.89 | \$21.02 |
| 49-9012.03 | Meter Mechanics | 20 | \$13.20 | \$15.56 | \$20.68 | \$23.24 | \$13.48 | \$17.54 | \$22.06 | \$24.66 | \$26.21 |
| 49-9041.00 | Industrial Machinery Mechanics | 20 | \$14.00 |  |  |  |  |  |  |  |  |
| 49-9098.00 | Helpers--Installation, Maintenance, and Repair Workers | 20 | \$11.50 | \$7.09 | \$10.44 | \$12.12 | \$6.30 | \$7.76 | \$9.89 | \$12.49 | \$15.58 |
| 51-4011.00 | Computer-Controlled Machine Tool Operators, Metal and Plastic | 20 | \$17.30 | \$13.10 | \$15.94 | \$17.37 | \$11.72 | \$14.06 | \$15.78 | \$18.11 | \$20.44 |
| 51-4012.00 | Numerical Tool and Process Control Programmers | 20 | \$16.80 | \$16.68 | \$21.77 | \$24.32 | \$14.54 | \$18.07 | \$20.71 | \$26.11 | \$30.99 |
| 51-4031.03 | Press and Press Brake Machine Setters and Set-Up Operators, Metal and Plastic | 20 | \$8.00 | \$9.08 | \$12.76 | \$14.61 | \$8.78 | \$10.07 | \$12.33 | \$15.04 | \$16.89 |
| 51-5023.03 | Letterpress Setters and Set-Up Operators | 20 | \$9.50 | \$10.32 | \$15.42 | \$17.97 | \$9.55 | \$11.47 | \$15.01 | \$18.75 | \$22.88 |
| 51-5023.09 | Mobile Heavy Equipment Mechanics, Except Engines | 20 | \$18.00 | \$12.90 | \$16.70 | \$18.60 | \$11.71 | \$14.03 | \$16.92 | \$19.20 | \$20.80 |
| 51-9031.00 | Construction Managers | 20 | \$26.40 | \$19.69 | \$29.92 | \$35.04 | \$17.80 | \$21.65 | \$28.56 | \$34.10 | \$46.11 |
| 53-7051.00 | Industrial Truck and Tractor Operators | 20 | \$11.00 | \$9.75 | \$12.92 | \$14.51 | \$9.26 | \$10.62 | \$12.60 | \$14.97 | \$16.70 |
| 53-7072.00 | Welders, Cutters, Solderers, and Brazers | 20 | \$10.00 | \$9.98 | \$13.75 | \$15.63 | \$9.37 | \$11.05 | \$13.13 | \$15.99 | \$19.38 |

Table 3: Occupations - Page 8

| O*Net Code | O*Net Occupation Title | Number of Vacancies | Average Wage Offered, Fall 2000 | Occupational Employment Statistics Wage Data1999-2000 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Average Wages |  |  | Percentile Distribution |  |  |  |  |
|  |  |  |  | Entry | Overall | Experienced | 10th | 25th | 50th | 75th | 90th |
| 11-1011.02 | Private Sector Executives | 10 | \$52.90 | \$35.45 | \$55.74 | \$65.89 | \$30.33 | \$43.38 | \$65.37 |  |  |
| 11-3040.00 | Human Resources Managers | 10 | \$39.70 | \$18.86 | \$29.66 | \$35.05 | \$17.40 | \$20.87 | \$28.52 | \$38.71 | \$47.13 |
| 11-3041.00 | Compensation and Benefits Managers | 10 | \$57.00 |  | * |  |  |  |  |  |  |
| 11-3051.00 | Industrial Production Managers | 10 | \$33.70 | \$18.78 | \$28.94 | \$34.02 | \$16.41 | \$21.30 | \$28.45 | \$38.11 | \$45.21 |
| 11-3071.02 | Storage and Distribution Managers | 10 | \$18.50 | \$19.69 | \$27.48 | \$31.37 | \$18.08 | \$21.57 | \$25.49 | \$32.37 | \$40.47 |
| 11-9151.00 | Social and Community Service Managers | 10 | \$13.80 | \$10.03 | \$17.25 | \$20.86 | \$8.79 | \$12.44 | \$16.85 | \$21.04 | \$26.38 |
| 13-1023.00 | Purchasing Agents, Except Wholesale, Retail, and Farm Products | 10 | \$21.60 | \$14.69 | \$19.65 | \$22.13 | \$13.98 | \$16.06 | \$18.66 | \$22.29 | \$27.40 |
| 13-1041.01 | Environmental Compliance Inspectors | 10 | \$36.10 | \$13.22 | \$22.13 | \$26.58 | \$12.01 | \$16.41 | \$21.99 | \$27.62 | \$32.77 |
| 13-1051.00 | Cost Estimators | 10 | \$21.60 | \$15.28 | \$23.55 | \$27.69 | \$13.92 | \$17.60 | \$21.83 | \$29.38 | \$39.83 |
| 13-1073.00 | Training and Development Specialists | 10 | \$17.50 | \$12.65 | \$19.42 | \$22.80 | \$11.27 | \$14.22 | \$18.35 | \$23.75 | \$29.04 |
| 13-2061.00 | Financial Examiners | 10 | \$22.10 | \$18.51 | \$25.43 | \$28.88 | \$17.68 | \$19.44 | \$24.29 | \$31.27 | \$35.52 |
| 19-1020.01 | Biologists | 10 | \$31.00 |  |  |  |  |  |  |  |  |
| 19-3021.00 | Market Research Analysts | 10 | \$32.40 | \$15.79 | \$24.78 | \$29.28 | \$14.20 | \$17.44 | \$24.38 | \$31.13 | \$34.30 |
| 19-4021.00 | Biological Technicians | 10 | \$22.20 | \$11.98 | \$14.74 | \$16.12 | \$11.40 | \$12.40 | \$14.17 | \$16.14 | \$19.47 |
| 19-4031.00 | Chemical Technicians | 10 | \$13.70 | \$12.75 | \$16.92 | \$19.01 | \$11.75 | \$13.63 | \$16.15 | \$19.90 | \$23.85 |
| 19-4061.00 | Social Science Research Assistants | 10 | \$13.00 |  |  |  |  | * |  |  |  |
| 23-1011.00 | Lawyers | 10 | \$44.40 | \$34.19 | \$42.83 | \$47.14 | \$31.79 | \$36.66 | \$41.11 | \$49.63 | \$63.47 |
| 25-4021.00 | Librarians | 10 | \$19.30 | \$13.78 | \$19.59 | \$22.50 | \$13.02 | \$15.09 | \$18.69 | \$23.65 | \$27.85 |
| 25-4031.00 | Library Technicians | 10 | \$10.70 | \$9.22 | \$12.59 | \$14.28 | \$8.75 | \$10.29 | \$12.47 | \$14.99 | \$16.77 |
| 25-9031.00 | Instructional Coordinators | 10 | \$10.00 |  |  |  |  |  |  |  |  |
| 27-2022.00 | Coaches and Scouts | 10 | \$8.00 |  |  |  | * | * | * | * |  |
| 27-3022.00 | Reporters and Correspondents | 10 | \$12.00 |  | * |  |  | * | * |  |  |
| 27-3041.00 | Editors | 10 | \$9.50 | \$13.90 | \$22.14 | \$26.26 | \$12.48 | \$15.80 | \$21.72 | \$27.28 | \$33.51 |
| 29-1122.00 | Occupational Therapists | 10 | \$23.70 | \$16.78 | \$22.37 | \$25.16 | \$15.66 | \$18.15 | \$21.30 | \$25.43 | \$35.05 |
| 29-2033.00 | Nuclear Medicine Technologists | 10 | \$11.70 | \$15.00 | \$18.44 | \$20.17 | \$14.07 | \$16.04 | \$18.42 | \$20.49 | \$23.40 |
| 29-2053.00 | Psychiatric Technicians | 10 | \$11.10 | \$7.59 | \$10.89 | \$12.53 | \$7.06 | \$8.34 | \$10.33 | \$12.25 | \$15.62 |
| 31-1194 | Sales Managers | 10 | \$39.70 | \$22.16 | \$36.49 | \$43.65 | \$20.11 | \$25.26 | \$32.91 | \$44.57 | \$68.68 |
| 31-1211 | Industrial Engineers | 10 | \$20.40 | \$19.54 | \$25.83 | \$28.98 | \$18.08 | \$21.30 | \$25.36 | \$30.47 | \$34.11 |
| 31-1223.00 | Janitorial Supervisors | 10 | \$11.40 | \$8.20 | \$11.59 | \$13.29 | \$7.56 | \$8.80 | \$10.54 | \$14.19 | \$16.72 |
| 31-2021.00 | Physical Therapist Assistants | 10 | \$13.20 | \$11.39 | \$14.31 | \$15.76 | \$10.97 | \$12.05 | \$13.90 | \$16.04 | \$18.86 |

Table 3: Occupations - Page 9

| O*Net Code | O*Net Occupation Title | Number of Vacancies | Average Wage Offered, Fall 2000 | Occupational Employment Statistics Wage Data1999-2000 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Average Wages |  |  | Percentile Distribution |  |  |  |  |
|  |  |  |  | Entry | Overall | Experienced | 10th | 25th | 50th | 75th | 90th |
| 33-1021.01 | Municipal Fire Fighting and Prevention Supervisors | 10 | \$32.70 | \$24.88 | \$29.98 | \$32.53 | \$22.19 | \$27.06 | \$30.97 | \$35.22 | \$41.13 |
| 37-1012.00 | First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers | 10 | \$14.50 | \$11.84 | \$16.90 | \$19.43 | \$11.33 | \$12.83 | \$16.84 | \$20.02 | \$23.31 |
| 39-9032.00 | Recreation Workers | 10 | \$10.70 | \$6.87 | \$9.39 | \$10.65 | \$6.46 | \$7.58 | \$9.01 | \$10.20 | \$12.88 |
| 41-3011.00 | Advertising Sales Agents | 10 | \$9.60 | \$11.58 | \$20.08 | \$24.34 | \$10.88 | \$12.96 | \$17.33 | \$23.94 | \$36.98 |
| 43-2021.02 | Central Office Operators | 10 | \$13.20 | \$6.92 | \$9.08 | \$10.16 | \$6.25 | \$6.97 | \$8.29 | \$11.18 | \$12.98 |
| 43-4071.00 | File Clerks | 10 | \$11.30 | \$7.53 | \$9.19 | \$10.02 | \$7.03 | \$7.73 | \$8.90 | \$10.28 | \$12.00 |
| 43-4151.00 | Order Clerks | 10 | \$10.20 | \$9.06 | \$12.54 | \$14.27 | \$8.81 | \$9.93 | \$12.01 | \$14.74 | \$16.90 |
| 43-4161.00 | Human Resources Assistants, Except Payroll and Timekeeping | 10 | \$15.80 | \$10.37 | \$13.69 | \$15.34 | \$9.57 | \$11.35 | \$13.49 | \$15.71 | \$18.06 |
| 43-5011.00 | Cargo and Freight Agents | 10 | \$15.00 | \$10.23 | \$15.64 | \$18.35 | \$8.56 | \$12.34 | \$17.44 | \$19.14 | \$20.16 |
| 43-5061.00 | Production, Planning, and Expediting Clerks | 10 | \$15.00 | \$9.49 | \$15.33 | \$18.25 | \$8.01 | \$11.48 | \$15.44 | \$19.03 | \$21.28 |
| 43-5081.00 | Stock Clerks and Order Fillers | 10 | \$9.00 | \$7.16 | \$11.18 | \$13.18 | \$6.60 | \$7.92 | \$10.25 | \$14.01 | \$17.44 |
| 43-9011.00 | Computer Operators | 10 | \$9.00 | \$11.23 | \$14.69 | \$16.41 | \$10.70 | \$12.08 | \$14.01 | \$16.54 | \$19.53 |
| 43-9051.02 | Mail Clerks, Except Mail Machine Operators and Postal Service | 10 | \$12.10 | \$7.19 | \$9.58 | \$10.77 | \$6.70 | \$7.66 | \$9.16 | \$10.72 | \$13.29 |
| 47-2042.00 | Floor Layers, Except Carpet, Wood, and Hard Tiles | 10 | \$14.00 | \$8.94 | \$13.49 | \$15.76 | \$8.52 | \$9.15 | \$10.19 | \$16.90 | \$24.97 |
| 47-2043.00 | Floor Sanders and Finishers | 10 | \$15.00 | \$9.67 | \$12.18 | \$13.44 | \$9.29 | \$9.75 | \$10.53 | \$13.57 | \$18.49 |
| 47-2071.00 | Paving, Surfacing, and Tamping Equipment Operators | 10 | \$10.70 | \$11.12 | \$14.37 | \$16.00 | \$10.83 | \$11.75 | \$14.32 | \$16.39 | \$19.11 |
| 47-2141.00 | Painters, Construction and Maintenance | 10 | \$11.00 | \$8.89 | \$12.08 | \$13.68 | \$8.45 | \$9.88 | \$11.92 | \$14.07 | \$16.36 |
| 47-2152.00 | Plumbers, Pipefitters, and Steamfitters | 10 | \$22.50 | \$10.37 | \$16.47 | \$19.52 | \$9.39 | \$11.73 | \$15.42 | \$20.86 | \$24.87 |
| 47-4031.00 | Fence Erectors | 10 | \$11.00 | \$10.23 | \$11.88 | \$12.71 | \$10.39 | \$10.78 | \$11.42 | \$13.01 | \$14.00 |
| 47-4071.00 | Septic Tank Servicers and Sewer Pipe Cleaners | 10 | \$15.80 | \$9.15 | \$13.21 | \$15.24 | \$8.80 | \$9.67 | \$11.88 | \$16.70 | \$19.27 |
| 49-2022.00 | Telecommunications Equipment Installers and Repairers, Except Line Installers | 10 | \$12.00 | \$16.77 | \$21.78 | \$24.28 | \$14.68 | \$19.72 | \$23.20 | \$25.30 | \$26.57 |
| 49-2095.00 | Electrical and Electronics Repairers, Powerhouse, Substation, and Relay | 10 | \$33.00 | * |  | * | * |  |  |  |  |
| 49-3031.00 | Bus and Truck Mechanics and Diesel Engine Specialists | 10 | \$14.00 | \$12.47 | \$16.67 | \$18.77 | \$11.26 | \$13.71 | \$16.64 | \$19.53 | \$22.30 |
| 49-9021.01 | Heating and Air Conditioning Mechanics | 10 | \$10.00 | \$12.30 | \$17.34 | \$19.87 | \$11.21 | \$13.66 | \$16.29 | \$20.51 | \$24.26 |
| 49-9091.00 | Coin, Vending, and Amusement Machine Servicers and Repairers | 10 | \$10.00 | \$8.51 | \$11.48 | \$12.97 | \$7.50 | \$9.28 | \$11.84 | \$13.07 | \$15.19 |
| 51-2022.00 | Electrical and Electronic Equipment Assemblers | 10 | \$13.00 | \$6.33 | \$9.78 | \$11.50 | \$5.87 | \$7.07 | \$9.72 | \$12.16 | \$14.07 |

Table 3: Occupations - Page 10

| O*Net Code | O*Net Occupation Title | Number of Vacancies | Average Wage Offered, Fall 2000 | Occupational Employment Statistics Wage Data 1999-2000 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Average Wages |  |  | Percentile Distribution |  |  |  |  |
|  |  |  |  | Entry | Overall | Experienced | 10th | 25th | 50th | 75th | 90th |
| 51-2031.00 | Engine and Other Machine Assemblers | 10 | \$13.50 | \$7.08 | \$9.85 | \$11.24 | \$6.84 | \$7.63 | \$9.01 | \$10.54 | \$15.77 |
| 51-3022.00 | Meat, Poultry, and Fish Cutters and Trimmers | 10 | \$11.50 | \$9.18 | \$10.04 | \$10.47 | \$8.73 | \$9.35 | \$9.96 | \$10.57 | \$11.69 |
| 51-4032.00 | Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic | 10 | \$10.00 | \$10.78 | \$13.39 | \$14.69 | \$9.88 | \$11.22 | \$12.56 | \$15.41 | \$19.09 |
| 51-4062.00 | Patternmakers, Metal and Plastic | 10 | \$15.00 | \$16.95 | \$21.17 | \$23.27 | \$15.36 | \$18.10 | \$22.10 | \$24.68 | \$26.22 |
| 51-4072.00 | Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic | 10 |  | \$6.87 | \$9.67 | \$11.06 | \$6.46 | \$7.62 | \$9.25 | \$10.95 | \$14.14 |
| 51-4072.02 | Plastic Molding and Casting Machine Operators and Tenders | 10 | \$8.00 | \$6.87 | \$9.67 | \$11.06 | \$6.46 | \$7.62 | \$9.25 | \$10.95 | \$14.14 |
| 51-4191.00 | Heat Treating, Annealing, and Tempering Machine Operators and Tenders, Metal and Plastic | 10 | \$10.50 | \$11.13 | \$15.20 | \$17.23 | \$10.80 | \$12.78 | \$15.68 | \$18.16 | \$19.55 |
| 51-5011.01 | Bindery Machine Operators and Tenders | 10 | \$11.00 | \$5.94 | \$9.55 | \$11.35 | \$5.69 | \$6.49 | \$8.44 | \$12.07 | \$15.17 |
| 51-5022.01 | Hand Compositors and Typesetters | 10 | \$15.00 | \$11.57 | \$16.94 | \$19.63 | \$10.51 | \$12.90 | \$16.55 | \$20.84 | \$24.63 |
| 51-5023.08 | Engraver Set-Up Operators | 10 | \$7.00 | \$10.32 | \$15.42 | \$17.97 | \$9.55 | \$11.47 | \$15.01 | \$18.75 | \$22.88 |
| 51-6011.00 | Laundry and Dry-Cleaning Workers | 10 | \$8.30 | \$6.69 | \$7.65 | \$8.13 | \$6.17 | \$7.00 | \$7.66 | \$8.33 | \$9.61 |
| 51-6021.02 | Pressing Machine Operators and Tenders- Textile, Garment, and Related Materials | 10 | \$6.80 | \$6.96 | \$8.44 | \$9.18 | \$6.18 | \$7.29 | \$8.88 | \$9.66 | \$10.16 |
| 51-7041.01 | Sawing Machine Setters and Set-Up Operators | 10 | \$10.00 | \$8.99 | \$10.17 | \$10.75 | \$8.57 | \$9.08 | \$9.94 | \$10.76 | \$12.76 |
| 53-3022.00 | Bus Drivers, School | 10 | \$9.00 | \$8.21 | \$10.28 | \$11.32 | \$7.29 | \$9.08 | \$9.97 | \$11.66 | \$13.74 |
| 53-3032.02 | Tractor-Trailer Truck Drivers | 10 | \$14.00 | \$11.41 | \$15.63 | \$17.75 | \$10.95 | \$12.31 | \$14.71 | \$17.53 | \$20.66 |
| 53-7041.00 | Hoist and Winch Operators | 10 | \$9.00 | \$9.62 | \$12.17 | \$13.44 | \$9.03 | \$10.68 | \$11.40 | \$13.31 | \$16.33 |
| 53-7064.00 | Packers and Packagers, Hand | 10 | \$7.40 | \$5.77 | \$7.42 | \$8.24 | \$5.60 | \$5.97 | \$6.74 | \$8.62 | \$10.70 |
| 53-7071.01 | Gas Pumping Station Operators | 10 | \$15.00 | \$17.93 | \$19.80 | \$20.74 | \$17.06 | \$17.98 | \$19.51 | \$21.75 | \$24.21 |

*No wage data available

| O*Net Code | O*Net Occupation Title | Occupational Employment Statistics Wage DataAverage Wages |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Entry | Overall | Experienced | 10th | 25th | 50th | 75th | 90th |
| 13-1071.02 | Personnel Recruiters | \$13.94 | \$19.60 | \$22.43 | \$13.45 | \$14.58 | \$16.40 | \$21.98 | \$29.97 |
| 17-3023.02 | Calibration and Instrumentation Technicians | \$15.44 | \$24.92 | \$29.66 | \$14.22 | \$17.01 | \$21.42 | \$31.17 | \$43.72 |
| 17-3031.00 | Surveying and Mapping Technicians | \$11.48 | \$16.35 | \$18.79 | \$10.87 | \$12.35 | \$15.64 | \$19.39 | \$23.15 |
| 21-2021.00 | Directors, Religious Activities and Education | \$13.55 | \$18.80 | \$21.43 | \$10.81 | \$16.69 | \$18.88 | \$22.70 | \$25.15 |
| 29-1131.00 | Veterinarians | \$21.55 | \$34.56 | \$41.07 | \$18.78 | \$21.44 | \$35.13 | \$45.49 | \$51.66 |
| 29-9012.00 | Occupational Health and Safety Technicians |  |  |  |  |  |  |  |  |
| 31-1306.00 | Anesthesiologists |  |  |  |  |  |  |  |  |
| 37-1011.01 | Housekeeping Supervisors | \$8.20 | \$11.59 | \$13.29 | \$7.56 | \$8.80 | \$10.54 | \$14.19 | \$16.72 |
| 39-6011.00 | Baggage Porters and Bellhops | \$5.73 | \$8.13 | \$9.33 | \$5.59 | \$5.98 | \$7.24 | \$9.08 | \$10.19 |
| 41-9011.00 | Demonstrators and Product Promoters | \$7.36 | \$10.10 | \$11.46 | \$7.04 | \$7.61 | \$8.55 | \$11.20 | \$15.28 |
| 43-1011.01 | First-Line Supervisors, Customer Service | \$11.97 | \$17.85 | \$20.79 | \$11.15 | \$13.46 | \$16.74 | \$20.66 | \$26.04 |
| 43-3041.00 | Gaming Cage Workers |  |  |  |  |  |  |  |  |
| 47-2081.02 | Drywall Installers | \$11.98 | \$14.45 | \$15.68 | \$10.96 | \$13.58 | \$14.86 | \$16.15 | \$16.91 |
| 49-3092.00 | Recreational Vehicle Service Technicians |  |  |  |  |  |  |  |  |
| 13-1121.00 | Meeting and Convention Planners | \$13.37 | \$18.51 | \$21.08 | \$12.20 | \$14.37 | \$17.48 | \$21.33 | \$25.67 |
| 13-2021.00 | Appraisers and Assessors of Real Estate | \$18.76 | \$26.72 | \$30.71 | \$17.48 | \$20.57 | \$23.37 | \$30.83 | \$49.44 |
| 13-2041.00 | Credit Analysts | \$13.76 | \$20.50 | \$23.86 | \$12.80 | \$14.78 | \$18.67 | \$23.71 | \$32.04 |
| 15-1071.01 | Computer Security Specialists | \$17.33 | \$25.45 | \$29.51 | \$15.96 | \$19.62 | \$24.36 | \$30.36 | \$37.95 |
| 17-2131.00 | Materials Engineers | \$17.90 | \$27.34 | \$32.06 | \$17.65 | \$19.60 | \$28.08 | \$36.31 | \$42.91 |
| 19-2031.00 | Chemists | \$13.18 | \$22.81 | \$27.62 | \$12.40 | \$14.41 | \$21.72 | \$30.34 | \$39.10 |
| 21-1012.00 | Educational, Vocational, and School Counselors | \$11.48 | \$20.08 | \$24.39 | \$9.78 | \$13.80 | \$18.41 | \$27.73 | \$34.76 |
| 25-9021.00 | Farm and Home Management Advisors | \$11.25 | \$17.53 | \$20.67 | \$9.86 | \$13.15 | \$16.32 | \$22.21 | \$26.08 |
| 43-5031.00 | Police, Fire, and Ambulance Dispatchers | \$13.24 | \$15.80 | \$17.08 | \$12.32 | \$13.85 | \$15.64 | \$17.71 | \$19.68 |
| 51-9132.00 | Photographic Processing Machine Operators | \$7.69 | \$10.99 | \$12.64 | \$7.19 | \$8.35 | \$10.06 | \$12.53 | \$16.60 |

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## Methodology

## Survey Instrument and Redesign

The Job Vacancy Survey was initiated in the Denver Metro area by Arapahoe/Douglas Works! through funding from the Employment and Training Administration in cooperation with Labor Market Information. The Denver Metro pilot studies were conducted along with pilot studies in five other metropolitan areas across the nation. As a result of the success of the Denver Metro Job Vacancy Survey, the Colorado Department of Labor and Employment initiated a plan to expand the studies across the entire state.

After the first two Denver Metro pilot studies, the survey instrument was evaluated and redesigned. In choosing questions, considerations were made regarding various forms and gradations. Decisions were made to address the core of what was required in order to stay within the defined limits. Page one (Part A) of the survey was expanded not only to state the purpose of the survey, but also to collect employer information; verifying addresses, number of employees, and establishing contact names. Email and fax numbers were added to provide a means of contacting employers for notification of the availability of survey results. A review of page two (Part B) survey questions follows:

A-The "Job Title" section remained relatively the same, although a definition of Full- versus Parttime was included.

B-"Number of vacancies for which your firm is actively recruiting": The objective was to get a measure of the job market from the employer's point of view. A variant of this question was, "Number of vacancies that your firm currently has." Actively recruiting was queried due to the possible presence of vacancies that were deliberately left vacant. Also revised was the query for Permanent vs. Temporary identification.

C-Wages/Salary: This question was revised to request the maximum and the minimum rates of
pay to evaluate variations in pay given different applicant qualifications.

D-"Is a sign-on bonus offered to the person hired to fill this vacancy. In addition to noting whether or not a bonus is offered, the revised survey allows a dollar amount to be entered.

E-"Is medical insurance offered?" In addition, the revised survey prompted for the portion (if any) that the firm contributed. To better understand the relationship between types of positions, pay, vacancies, and the existence of medical insurance, it was important to note to what degree the firm contributes to the insurance premium.

F-What is the typical education level required to fill this vacancy?" Examination of the nature of the job market and the needs of employers included the query of educational requirements.

G-"What is the typical type of experience required to qualify for this vacancy?" This also adds to the characteristics that employers are looking for in applicants. It was important to expand this question, allowing the firm to note the nature of the experience requested. During times of excess labor supply, qualifications demanded of applicants tend to increase. During periods of limited supply, the reverse tends to occur.

H-"How long has this vacancy been open?" This question was added to the revised survey to gauge the tightness of the labor market. It provides an objective measure that can be tracked and compared across time.

I-"How difficult is this vacancy to fill?" Questions H and I together help to evaluate the challenges employers face in the timely hiring of personnel and the degree to which the supply of labor falls short of demand.

## Survey Sample Methodology

This survey is designed to find frequency of job vacancies in the Denver Metro region and characteristics of those vacancies. Firms were ordered into groups, or stratifications by employment size, county, and industry, and the resulting percentages of vacancies for each category were used to estimate total job vacancies for each group. Only firms with five or more employees were surveyed. The list of Denver Metro firms used for this survey, with their contact information, staff size and industry classification was obtained from the American Labor Market Information System (ALMIS) database.

The survey was conducted by telephone. In some cases copies of the survey form were faxed to employers upon request. A sample of the survey form can be found in the Appendix section of this report.

## Stratifications

Employers in Agriculture and Mining were not stratified by county, as there are not enough firms in either of these sectors to draw conclusions from the survey data at that level of detail.
For each of the six counties firms within the remaining industry divisions with 5 to 249 employees were grouped as follows:

- Construction
- Durable Goods Manufacturing
- Non-Durable Goods Manufacturing
- Transportation, Communication, and Public Utilities (TCPU)
- Wholesale Trade
- Retail Trade
- Finance, Insurance, and Real Estate (FIRE)
- Services
- Government

The lists of small to mid-sized employers were randomized and a sample of sufficient size to achieve a predictable level of accuracy for the estimates of job vacancies was taken. Attempts were made to contact all large employers.

## Indexing

Indexing was used in the following cases to estimate the number of vacancies:
${ }^{1}$ See O*NET occupation codes in Definitions section
A.Employers with less than five employees: The indices used were derived, whenever statistically possible, from the vacancy rate of firms with employment size of 5-20 employees. In other cases it was necessary to adjust the employment size of firms from which the indices were derived to a statistically sound level.
B.For industries such as Mining, Agriculture, and Services (for some counties) the response rate was not sufficient to draw conclusions about the whole population. In these cases, indices were derived from other counties industry data to estimate the number of vacancies.

## Data Editing

After data collection was completed, a few measures were taken to prepare data for analysis.

## Data Cleaning

In cases where a job title was reported without a number of vacancies associated with it, it was assumed that only one vacancy was open for hire. However, this vacancy was used only in calculation of total number of vacancies with no further break down such as full-time or part-time, etc.

## Occupational Coding

Job title and descriptions were used to match the vacancy with the appropriate $\mathrm{O}^{*}$ NET occupational title ${ }^{1}$. In some cases a second interview with the employer was necessary to decide on a specific occupational title.

## Wage Conversion

Standard conversions were used to convert salaries into hourly wages: 2,080 hours for annual salaries, 173 hours for monthly salaries.

All wages bellow the minimum wage level were adjusted upwards to $\$ 5.15$ per hour. When necessary employers were contacted a second time for more information on questionable wages.

## Definitions

## Annual Salary

The monetary return for one year's work. The definition does not include benefits (e.g. insurance, retirement program, or stock plans).

## Average

The arithmetic average (also called the mean) for a group of items is defined as the sum of the values of the items divided by the number of items. For example: Consider three households A, B and C, with annual income of $\$ 30,000, \$ 44,000$ and $\$ 40,000$ respectively. The average income for the three households will be calculated as follows:

## Average Household income

$$
\begin{aligned}
& =\frac{\text { The sum of individual households income }}{\text { The number of households }} \\
& =\frac{\$ 30,000+\$ 44,000+\$ 40,000}{3}=\$ 38,000
\end{aligned}
$$

## Full-time and Part-time Employment

To be classified as full-time employment a position must require a minimum of 35 hours of work a week. Part-time employment refers to cases where a position requires less than 35 hours of work a week.

## Job Vacancy Rate

Is the number of openings in a specific occupation expressed as a share of total employment in that same occupation.

## Level of Education

Refers to completed programs of work. High school diplomas, associate, professional, vocational, bachelors, and graduate degrees all are examples of programs of work.

## Medical Insurance Premium

Refers to the monthly payments that a holder of an insurance policy pays in order to keep his/her policy current.

## Mid-Point

For the purpose of this survey, the Mid-Point refers to the wage halfway between the average minimum
and average maximum wages as reported by survey respondents.

## O*Net Occupation Codes

The O*NET database includes information on skills, abilities, knowledge, work activities, and interests associated with occupations. This information can be used to facilitate career exploration, vocational counseling, and a variety of human resources functions, such as developing job orders and position descriptions and aligning training with current workplace needs.

Information on $\mathrm{O}^{*} \mathrm{NET}$ is available for over 950 occupations. Each occupational title and code is based on the most current version (1999) of the Standard Occupational Classification system.

Definition from the O*NET Welcome web page: http://online.onetcenter.org/

## Permanent and Temporary Employment

Employment is classified as permanent if it will be filled for more than six months. Temporary employment on the other hand refers to those positions, which will be filled for six months or less.

## Sign-on Bonus

An additional financial incentive offered by a firm to new employees in order to influence their decisions to agree to employment with that firm. The bonus, for purposes of this survey, is a monetary lump sum.

## Vacancy

An established position that is currently unfilled for which the firm is actively recruiting to fill. The definition does not include positions that are anticipated, but not yet created.

## Wage

The monetary return per hour of work. The definition does not include benefits (e.g. insurance, retirement program, or stock plans).

## Appendix - Survey Instrument



DEPARTMENT OF LABOR AND EMPLOYMENT<br>LABOR MARKET INFORMATION WORKFORCE RESEARCH AND ANALYSIS<br>Two Park Central, Suite 300<br>1515 Arapahoe Street<br>Denver, Colorado 80202-2117<br>(303) 620-4852 (303) 620-4988

## Dear Employer,

The State of Colorado is conducting a survey the results of which will assist business leaders, policy makers, and education professionals in addressing the current worker shortage. Your participation in the study is essential to developing accurate, useful information.

All responses to the survey are considered confidential. No data identifying individual firms directly or indirectly will be published or released. If you have any questions regarding this survey, feel free to contact Joseph Winter or Yasir Ahmed, the Workforce Research and Analysis unit's administrators for this survey, at (303) 620-4852.

The aggregate results of this survey will be made available to the public. The final publication will provide information on:

- The number of vacancies by industry, occupation, and education requirements for your labor market area
- Average wage or salary being offered by occupation
- Whether or not firms are offering health insurance and/or sign-on bonuses for those vacancies, and
- How much, on average, those sign-on bonuses are

If you provide us with a fax number or e-mail address, we will send you notification when it becomes available. At that time you may either order a copy at no cost to you, or download the publication from our website, which will be printed on the announcement.

Thank you for your time and participation in this important study.
Sincerely,

Alexandra E. Hall<br>Senior Economist<br>Workforce Research and Analysis



## Denver Metro

 Job Vacancy SurveySurvey ID: 208010001
Company ID:

## Survey Instructions

- Please direct this survey to the manager or human resources professional responsible for hiring and recruitment at your business.
- Please respond within three business days. Your assistance will allow us to complete this survey in a timely manner.
- Return this survey by fax to (877) 222-0921. This number is toll-free.

For the purposes of this survey, a vacancy at your company is a job opening for which your firm is actively recruiting. For job sites in different counties, please list vacancies on separate forms. Only provide information for job vacancies in the following counties, which make up the Denver Metro area:

Adams Arapahoe Boulder Denver Douglas Jefferson

## Part A: About Your Firm

1. Who may we contact regarding job vacancies at your location and at other Denver Metro area locations? $\qquad$
2. Contact's:
a. Job Title
b. Phone \#
$\qquad$
c. Fax \#
d. E-Mail Address $\qquad$
3. Company Name: $\qquad$
4. Number of Employees working within the Denver Metro area: $\qquad$
5. Do you have any job vacancies for which your firm is actively recruiting?

$$
\square \text { Yes } \quad \square \text { No }
$$

6. Would you like to be notified when the survey results are released?

$$
\square \mathrm{Yes} \quad \square \text { No }
$$

If you answered yes to question number five, please complete the next page of this survey. If you have more vacancies than will fit on the next page or, if you have job sites in different metro counties, please make copies before you begin filling out the form and list vacancies by county. Thank you very much for your participation in the survey. We look forward to providing you with a final copy of the study.

## Part B: About Your Vacancies , See next page $\boldsymbol{\rightarrow}$




[^0]:    *No wage data available

