

# ECONOMY OF ORO VALLEY

(ZIP CODES 85737 and 85742)

June 2004



ARIZONA DEPARTMENT OF COMMERCE  
*Our Job is JOBS!*

Prepared by

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## **ECONOMY OF ORO VALLEY (ZIP CODES 85737 AND 85742)**

Oro Valley has a small economic base. Some manufacturing activities and tourism help drive the Oro Valley economy, but Oro Valley is partially dependent on the economy of the broader Tucson area. Government provides the most employment of any sector in Oro Valley.

The availability of economic data by city and industrial sector is severely limited (see the “Data Sources” section on page 9). Zip codes 85737 and 85742 are used as an approximation for Oro Valley and include the Tortolita Census Designated Place. The zip code area is more extensive and has a population greater than within the Town of Oro Valley and Tortolita. The 157-square-mile land area of the zip codes compares to the combined 44 square miles of the Town of Oro Valley (32 square miles) and Tortolita. The 2000 decennial census count of 52,609 residents in these zip codes was 57 percent more than the 33,440 combined population of the Town of Oro Valley (29,700 residents) and Tortolita.

This report presents the results of an “economic base study” for Oro Valley, using employment by industry as the primary measure of the economy. The purpose of this analysis is to identify the area's leading economic activities and to provide useful information for decision-making. Comparing the sectoral distribution of employment in the community to state or national averages helps determine how different or similar the local economy is to the norm, giving some insight into how dependent the community is on certain economic sectors for employment or income. When the economic forces that mold the local economy are understood, strategic decisions for the area's economic future can begin to be made.

### **BACKGROUND**

An economic base study is a description of an economy's structure and composition. Regional economic theory states that a local economy is driven by economic activities that import money into the local area through the sales of goods and services to customers who do not live in the area. Oro Valley's leading economic activities are identified in the economic base study, which compares economic activity (as measured by employment) in the local area to that in broader areas: Arizona and the nation.

Because of the vast differences in size between Oro Valley, Arizona and the United States, employment is divided by the 2000 census population count for each area. This “**per capita employment**” is expressed as employment per 1,000 residents.

To create a comparative measure, per capita employment in the local area is divided by the national average per capita employment. The result is called a “**location quotient**” — a figure greater than 1 indicates that per capita employment in the local area is greater than the national average. For example, a location quotient of 1.32 indicates that per capita employment in the local area is 32 percent *higher* than the national average, while a location quotient of 0.68 shows that per capita employment is 32 percent *less* than the national average. The location quotient calculated relative to the Arizona average typically is similar to the location quotient calculated against the national average, but in some industries it can be considerably different.

When a location quotient is greater than 1, “extra” jobs are present in the local area. This “**excess employment**” is the difference between actual employment and the employment that would exist if employment per capita had equaled the national average. Excess employment is of particular significance in industries that sell their goods and services to companies located

outside the city or to individuals who are not residents of the city (nonresidents include tourists and seasonal residents).

“**Basic**” or “**export**” activities are those involving sales to nonlocal businesses and individuals. Such activities drive the local economy by bringing money into the community. Basic industries with excess employment are the primary forces driving the local economy. Mining, most types of manufacturing, most agriculture, and tourism are classic examples of basic activities.

In contrast, some economic activities primarily serve local residents. Retail trade and services such as health care, finance, and real estate are examples of largely nonbasic, local-support activities, since most sales are to local residents. Similarly, most construction work is purchased by local residents and local businesses. While important components of a local economy, such largely nonbasic activities do not directly bring much money into the community and thus do not drive the local economy.

Excess employment can exist in local-support activities. In some cases, the excess results from local purchasing preferences. For example, per capita sales of air conditioning units are above the national average in much of Arizona because of climatic conditions. In other cases, an excess exists because some cities function as regional trade and service centers. While sales to residents of neighboring communities might be considered to be basic in a particular city, such sales are not basic in the broader area and are not considered to be a driving economic activity in the same way as mining, for example.

Many economic activities, such as wholesale trade and transportation, are a mixture of basic and nonbasic components. If a community has a substantial number of tourists and/or seasonal residents, even retail trade and such services as health care have a basic component. A portion of the construction industry is basic if purchases are made by companies that sell to an external market and/or by individuals migrating to the area to take a job at a basic employer or to retire. Some federal government activities and certain other government activities can be considered to be basic in a city, but most state and local government employment supports the local community primarily with funds raised locally and thus do not qualify as basic activities.

## **RESULTS**

Total employment in Oro Valley is estimated to have been approximately 8,750 in 2001. This is the sum of nonagriculture private-sector employment in 2001 (the latest data available) reported by the U.S. Census Bureau, an estimate of agriculture employment in 2001, and an estimate of government employment in 2001-02. Total employment was a low 167 per 1,000 residents — approximately 65 percent less than the national and state averages, and the tenth-lowest figure among 82 Arizona cities. The low per capita figure resulted from the large number of Oro Valley residents who commuted into Tucson to work. The number of jobs located in Oro Valley was barely more than a third of the 24,150 employed Oro Valley residents counted in the 2000 census.

### **Agriculture and Government**

Employment data by community are not available for the agriculture and government sectors. Thus, the data discussed in this section are estimates with less reliability than the data in the following section on the nonagriculture private sector. See the “Data Sources” section for details on how agriculture and government employment were estimated.

Agriculture largely is a basic activity that includes agricultural support activities as well as farming and ranching. Agriculture employment in the Oro Valley zip codes in 2001 is estimated to have been between 50 and 75. With employment per 1,000 residents a very low 1, agriculture's location quotient was approximately 0.1 relative to the national average and 0.2 versus the state average.

The government sector represents a mix of basic and nonbasic activities, but most of the 1,700 government employees in Oro Valley in 2001-02 supported the local population. Though government employment was the most of any sector, government employment per 1,000 residents was a low 32 in Oro Valley — 60 percent less than the state and national averages, and the tenth-lowest figure among Arizona cities.

Federal government employment was between 75 and 100 and combined state and county government employment was less than 25. The Town of Oro Valley employed 275 and the Golden Ranch Fire District had 50 workers. Two school districts operating in part in Oro Valley — Amphitheatre Unified and Marana Unified — employed a total of nearly 1,300 within Oro Valley. The two school districts and the town were among the largest employers in Oro Valley.

### **Nonagriculture Private-Sector Economy**

Nonagriculture private-sector employment in Oro Valley was nearly 7,000 in 2001. Employment was a low 133 per 1,000 residents — approximately 65 percent less than the national and state averages, and considerably less than the median value of Arizona cities.

Employment estimates for 2001 for the broad sectors of the Oro Valley economy are shown in Table 1. Other than government, the manufacturing sector employed the most, followed by accommodation and food services and retail trade. Per capita employment was above the national average only in the arts, entertainment and recreation sector (see the "location quotient relative to nation" column of the table). The location quotient was less than 0.6 in the other 19 sectors. Arts, entertainment and recreation employed more than if the sector's per capita employment had been equal to the national per capita average (see the "excess employment relative to nation" column of the table). Compared to the per capita Arizona average, location quotients and excess employment were similar to those calculated against the national average.

Oro Valley did not have excess employment in any largely basic sector. Per capita employment in manufacturing was only half of the national average, and few were employed in mining, wholesale trade, and transportation and warehousing. Tourism, however, had some presence in Oro Valley, with per capita employment in the accommodation subsector nearly 40 percent more than the U.S. average. However, the figure in the food services subsector was 60 percent less than the U.S. average.

More sectorally detailed data show that 13 industries provided excess employment of at least 60 in Oro Valley in 2001, the majority of which have at least a moderate basic component (see Table 2). Providing by far the most excess employment was a manufacturer of search, detection and navigation instruments, which according to the Census Bureau was the largest private-sector employer in 2001 with between 500 and 999 employees. Three other manufacturing industries also were among the largest sources of excess employment. The electromedical apparatus manufacturer was one of two private-sector employers with between 250 and 499 employees. The aircraft engine manufacturer and the general purpose machinery manufacturer were among 10 private-sector establishments with between 100 and 249 employees in 2001. A lesser amount (less than 60) of excess employment existed in the semiconductor industry. Research and development (part of the professional, scientific and technical services

**TABLE 1**  
**EMPLOYMENT BY SECTOR**  
**Oro Valley (Zip Codes 85737 and 85742), 2001**

Sector	Number of		Relative to Nation		Relative to Arizona	
	Establishments	Employment	Location Quotient	Excess Employment	Location Quotient	Excess Employment
<b>TOTAL</b>	600	8,762	0.33	0	0.36	0
AGRICULTURE	9	65	0.09	0	0.16	0
GOVERNMENT	6	1,706	0.39	0	0.42	0
TOTAL, NONAGRICULTURE PRIVATE SECTOR	585	6,991	0.33	0	0.35	0
Mining	1	2	0.02	0	0.02	0
Utilities	0	0	0.00	0	0.00	0
Construction	98	682	0.56	0	0.39	0
Manufacturing	15	1,530	0.51	0	0.77	0
Wholesale Trade	33	132	0.11	0	0.15	0
Retail Trade	53	940	0.34	0	0.34	0
Transportation and Warehousing	11	54	0.08	0	0.07	0
Information	8	76	0.11	0	0.13	0
Finance and Insurance	35	181	0.15	0	0.16	0
Real Estate and Rental and Leasing	33	154	0.41	0	0.36	0
Professional, Scientific and Technical Services	81	322	0.24	0	0.27	0
Management of Companies and Enterprises	2	15	0.03	0	0.03	0
Administrative, Support, Waste Management, Remediation Services	37	202	0.12	0	0.10	0
Educational Services	5	108	0.22	0	0.39	0
Health Care and Social Assistance	53	495	0.18	0	0.24	0
Arts, Entertainment and Recreation	14	453	1.36	120	1.26	94
Accommodation and Food Services	38	1,067	0.57	0	0.51	0
Other Services (except public administration)	54	554	0.55	0	0.67	0
Auxiliaries (except corporate, subsidiary and regional management)	0	0	0.00	0	0.00	0
Unclassified Establishments	14	23	1.18	4	1.38	6

Source: Nonagriculture private sector estimated from U.S. Department of Commerce, Census Bureau, *Zip Business Patterns 2001*. Agricultural production employees, most government employees, railroad employees, self-employed individuals and employees of private households are not included in this data source. Government employment estimated from government agencies and local sources and may understate actual figures. Agriculture employment is a rough estimate — see the "Data Sources" section for details. The concept of establishment for government and agriculture differs from that used for the nonagriculture private sector.

**TABLE 2**  
**INDUSTRIES WITH EXCESS EMPLOYMENT OF AT LEAST 60\***  
**Oro Valley (Zip Codes 85737 and 85742), 2001**

Industry			Relative to Nation		Relative to Arizona	
	Number of Establishments	Employment	Location Quotient	Excess Employment	Location Quotient	Excess Employment
<b>Search, detection &amp; navigation instrument manufacturing</b>	<b>1</b>	<b>758</b>	<b>22.98</b>	<b>725</b>	<b>11.72</b>	<b>693</b>
<b>Electromedical apparatus manufacturing</b>	<b>1</b>	<b>359</b>	<b>37.83</b>	<b>350</b>	<b>25.92</b>	<b>345</b>
Golf courses & country clubs	3	259	4.69	204	2.85	168
<b>Hotels (except casino hotels) &amp; motels</b>	<b>6</b>	<b>453</b>	<b>1.76</b>	<b>196</b>	<b>1.12</b>	<b>47</b>
<b>All other general purpose machinery manufacturing</b>	<b>1</b>	<b>166</b>	<b>15.61</b>	<b>155</b>	<b>44.39</b>	<b>162</b>
<b>Aircraft engine &amp; engine parts manufacturing</b>	<b>1</b>	<b>166</b>	<b>11.05</b>	<b>151</b>	<b>2.66</b>	<b>103</b>
Organizations (except religious, civic, business, labor, political)	3	165	6.10	138	5.69	136
Racetracks	1	136	16.05	127	11.30	124
Home centers	1	151	2.19	82	2.05	78
Homes for the elderly	6	115	2.37	66	2.31	65
Land subdivision & land development	5	81	4.87	64	1.97	40
<b>Research &amp; development in physical, engineering &amp; life sciences</b>	<b>4</b>	<b>112</b>	<b>1.75</b>	<b>48</b>	<b>4.02</b>	<b>84</b>
Religious organizations	18	270	0.90	0	1.49	89

\* Relative to either the national or Arizona average

Note: Those entries in bold with a gray background have a high proportion of sales to customers outside the region and are considered basic (export) economic activities. Those not in bold with a gray background have a moderate proportion of sales to non-residents. Other industries largely serve local residents.

Source: Estimated from U.S. Department of Commerce, Census Bureau, *Zip Business Patterns 2001*. Agricultural production employees, most government employees, railroad employees, self-employed individuals and employees of private households are not included in this data source.

sector) was another high-technology activity with excess basic employment. It had an employer of between 50 and 99 in 2001.

Three tourism industries are included in Table 2. The hotels and motels industry included an establishment with between 250 and 499 employees in 2001 (the Sheraton El Conquistador Resort). Since some of the sales at golf courses, racetracks, and restaurants are made to tourists, these industries are partially basic. The golf courses and country clubs industry (including the El Conquistador Country Club and the Oro Valley Country Club) and the racetracks industry accounted for most of the employment in the arts, entertainment and recreation sector, the only one with excess employment. The racetrack and one of the golf courses/country clubs employed between 100 and 249 in 2001; another golf course/country club had between 50 and 99 employees. One restaurant employed between 100 and 249 and three others had a workforce of between 50 and 99.

The other industries in Table 2 are in various sectors, but none have much of a basic component. Land development and other construction activities have a small basic component because of sales made to seasonal residents or in-migrating retirees. Oro Valley had slightly above average shares of both seasonal residents and senior citizens according to the 2000 census.

The other establishments with between 100 and 249 employees in 2001 were a grocery store, a department store (Target), a retail home center, a religious organization, and another organization. Currently, local sources indicate that Aventis-Selectide (a pharmaceuticals company), Vanguard Automation, Husky Nozzle, and Childrens World Learning Center are among the community's largest employers.

Oro Valley has relatively little excess employment, but most of the excess is in basic industries. Certain manufacturing activities (each consisting of one large employer) and tourism drive the Oro Valley economy. The mismatch between the number of jobs located in Oro Valley and the number of employed Oro Valley residents reveals a dependence on the economy of the broader Tucson area.

### **Oro Valley v. Comparison Cities**

Oro Valley is one of four incorporated cities in the southern region of Arizona (Pima County). Per capita employment in Oro Valley in 2001 was the lowest in the region by a considerable margin (see Chart 1). Oro Valley ranked last in the nonagriculture private sector and in government.

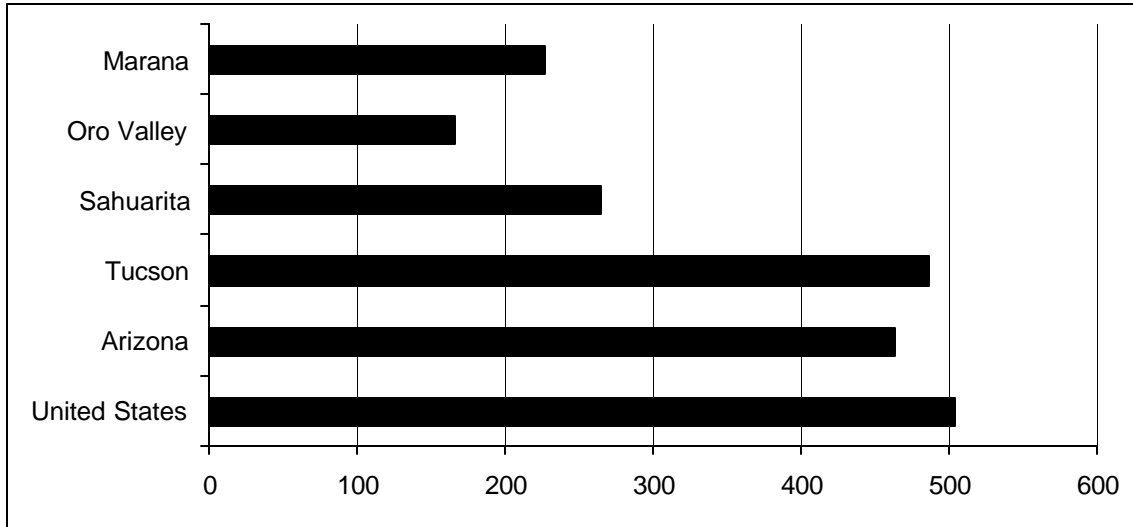
Average nonfarm private-sector payroll per employee in Oro Valley in 2001 was \$29,000 — 18 percent less than the national average and only 6 percent less than the Arizona average, and the 11th-highest figure among Arizona cities. Oro Valley's figure was barely less than Marana's average and higher than in Tucson and Sahuarita (see Chart 2).

In most sectors, location quotients in Oro Valley ranked between second and fourth in the region. Only in the arts, entertainment and recreation sector was the location quotient in Oro Valley the highest. Looking specifically at basic activities at the industry level, Oro Valley had high location quotients in each of the four manufacturing industries listed in Table 2 and in the racetracks industry.

Comparison cities were selected in four categories, based largely on population size and proximity though industrial mix also was considered:

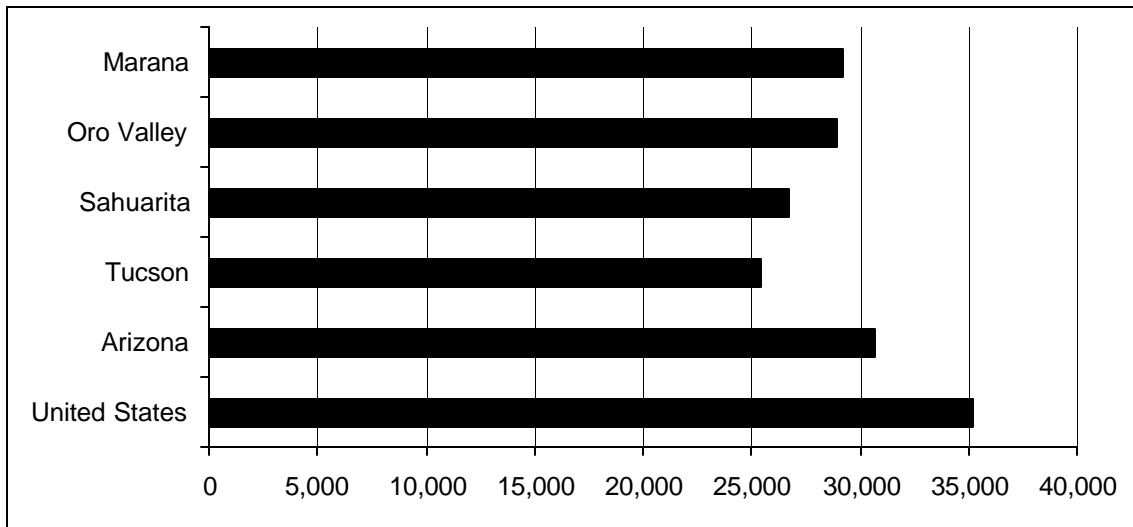
- Nearby city (within 50 miles) of similar size (a resident count between 50 and 150 percent of Oro Valley's population): No city meets these criteria.
- Nearby larger city (a population two-to-five times as large): No city meets these criteria.

**CHART 1**  
**TOTAL EMPLOYMENT PER 1,000 RESIDENTS**  
**Cities in Southern Region**



Source: Estimated from U.S. Department of Commerce, Census Bureau, *Zip Business Patterns 2001* and 2000 census, and estimates of agriculture and government employment.

**CHART 2**  
**AVERAGE NONFARM PRIVATE-SECTOR PAYROLL PER EMPLOYEE (\$) IN 2001**  
**Cities in Southern Region**



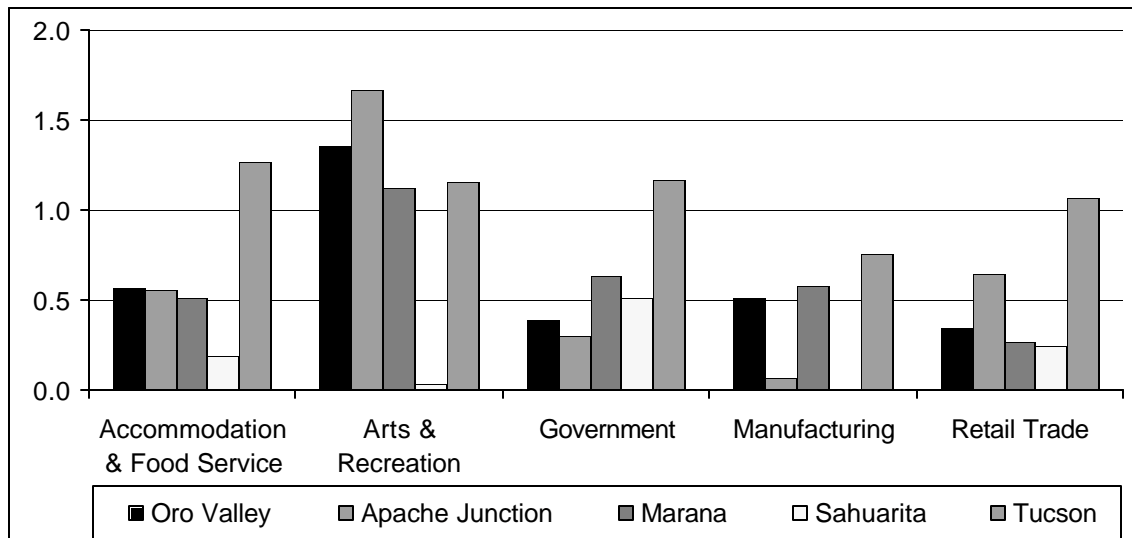
Note: The figures for Marana and Tucson-South Tucson are estimated.

Source: Estimated from U.S. Department of Commerce, Census Bureau, *Zip Business Patterns 2001*.

- Other proximate cities: Neighboring Tucson is more than 10 times as large. Marana, another city bordering Tucson on the north is smaller than Oro Valley. Sahuarita, to Tucson's south, is much smaller.
- Similarly sized city farther away: Apache Junction is at the fringe of the Phoenix urbanized area.

Per capita employment in Oro Valley was the fourth highest of the five cities in this comparison group. Per capita nonfarm private-sector employment in Oro Valley was the lowest, though only barely less than in Apache Junction. Oro Valley's location quotient ranked between second and fourth among the five cities in each of the major sectors shown in Chart 3. Average nonfarm private-sector payroll per employee in Oro Valley was the second highest of this group.

**CHART 3  
LOCATION QUOTIENTS IN 2001  
Selected Sectors in Comparison Cities**



Source: Estimated from U.S. Department of Commerce, Census Bureau, *Zip Business Patterns 2001* and 2000 census, and estimates of agriculture employment.

## DATA SOURCES

National and state economic data were obtained from the latest edition (2001 data released in 2003) of *County Business Patterns*, which is produced annually by the U.S. Department of Commerce's Census Bureau. Data for Oro Valley came from a companion product of the Census Bureau, *Zip Business Patterns*; two zip codes (85737 and 85742) were combined to approximate the town.

*County Business Patterns* and *Zip Business Patterns* use the hierarchical North American Industry Classification System to provide data by industrial category: broad sectors, subsectors, industry groups, and specific industries. Agricultural production employees, most government employees, railroad employees, self-employed individuals, and employees of private households are not included in either Census Bureau report.

The number of establishments (by employment size: 1 to 4, 5 to 9, 10 to 19, etc.), employment, and payroll are reported in *County Business Patterns* by industrial category. An establishment is a physical location at which business is conducted; a company may consist of one or more establishments. When only a small number of establishments are present in an industrial category (particularly if one establishment within the category is dominant), the Census Bureau withholds the employment and payroll data to protect company confidentiality. Undisclosed data are most frequent at the industry level, but in less populous areas even sectoral data may be withheld. Unlike *County Business Patterns*, employment and payroll data are released *only* for the zip code total in *Zip Business Patterns*.

For industrial categories for which data were not disclosed (including all categories at the city level), employment by sector, subsector, industry group, and industry had to be estimated. For Oro Valley, these estimates were made using the establishment by employment-size class data for each industrial category for each zip code and average employment per establishment by employment-size class by sector for the state. The estimates by industrial category for Oro Valley's zip codes then were forced to add to the total employment of the zip code.

The data from *Zip Business Patterns* were supplemented by *estimates* of employment in the agriculture and government sectors. No source of either agriculture or government employment by zip code or city exists.

The agriculture sector has two major parts: agricultural production (farms and ranches), and agricultural support, which consists of such activities as cotton ginning and crop harvesting. Forestry, logging, fishing, hunting and trapping activities also are included in the agriculture sector. *Zip Business Patterns* includes only a portion of the agricultural support category.

Agriculture employment at the county level is available for 2001 from the U.S. Bureau of Economic Analysis (BEA), divided into the categories of farm proprietors, farm workers, and agricultural support and other agricultural employment. Some figures had to be estimated in some counties because of the federal government's disclosure restrictions. The county totals were allocated to cities and unincorporated areas within each county by a combination of methods.

To estimate farm and ranch employment in cities and unincorporated areas, the number of farms and ranches by zip code from the 1997 agricultural census (the 2002 census data are not yet available) of the U.S. Department of Agriculture were used. The zip code data were found to be incomplete, with some farms assigned to incorrect zip codes, when the sum of the zip code data by county was compared to the county total provided separately by the Department of Agriculture. Thus the zip code data were adjusted to sum to the county total. Only those farms and ranches with agricultural sales of at least \$10,000 in 1997 were included, but even some of

these farming operations likely do not provide the main source of income for their owners, much less employ others. Thus, average employment (proprietors and farm laborers) per farm and ranch was only 6.6 in Arizona (calculated as 2001 employment divided by the number of farms and ranches in 1997). In each county, average employment per farm and ranch was multiplied by the number of farms and ranches in each city or unincorporated area. The city and unincorporated county estimates were adjusted in some counties if farming operations with significant employment were reported by local sources in particular communities.

County employment in agricultural support and other agricultural activities reported by the BEA were allocated to cities and unincorporated areas using the ratio of BEA agricultural support employment to the agricultural support employment included in *Zip Business Patterns*.

For this report, the government sector was divided into several levels of government: federal (including civilian and military), state, county, municipal or tribal government, school district, and special district (such as an irrigation or fire district). Universities and community colleges are shown as a separate category; depending on the source of government data, they may be included either in state government or as a school district. The inclusion of all or a portion of tribal operations in government varies by source of data.

Several methods had to be used to estimate government employment by city and unincorporated area. The 2002 Census of Governments provides employment by level of government, but does not allocate that employment by community if the government entity crosses jurisdictional boundaries. For example, it provides no indication of federal government employment in Arizona and provides only the overall state government figure (which includes universities). Community colleges are included as a school district and tribal government is not included.

The census figures were used as the starting point for school district employment, special district employment, municipal employment, and county employment. If a school district extends across city boundaries, Arizona Department of Education employment data by individual school were used to allocate the overall school district employment by city. Most of the community colleges have multiple campuses. Data on employment at each campus was collected from the community college district office, and used to allocate the overall community college employment by community.

While most county government employment is located within the boundaries of the county seat, county offices commonly are found in other communities as well. Generally, county governments in Arizona could not provide employment by location, so county offices outside the county seat were individually contacted to obtain employment. In most counties, employment in the county seat was calculated as the difference between the county total from the 2002 census and the number tallied in other locations. This process probably understates county government employment outside the county seat and overstates it at the seat.

State government employment figures by city also are not available. County totals for 2001 were obtained from the Arizona Department of Administration (DOA). State offices were contacted across the state to obtain employment, but in most counties it was not possible to identify all of the county employment reported by the DOA. In these counties, each community's estimate was increased so that the sum of state employment by community equaled the DOA county total.

Military employment figures at each of the major facilities were obtained from the May 2002 report "Economic Impact of Arizona's Principal Military Operations," prepared by the Maguire Company. Smaller military facilities were contacted directly. Similarly, federal civilian

employment was collected directly from local federal offices. Like state government, it was not possible to identify all federal workers by this process. The community estimates were increased to sum to the 2001 BEA county totals.

Complete economic data for Oro Valley are available in an EXCEL file consisting of two spreadsheets. The first sheet provides the number of establishments by employment-size class for those sectors, subsectors, industry groups, and industries with at least one establishment in Oro Valley. Estimated employment also is shown.

The second spreadsheet compares employment in Oro Valley to that in Arizona and the nation. All sectors, subsectors, industry groups, and industries are included. For the United States, Arizona, and Oro Valley, per capita employment (expressed as employment per 1,000 residents) is calculated for each industrial category. The per capita figures for Oro Valley (and Arizona) are divided by the national average for each industrial category to create the location quotient. For industrial categories with location quotients greater than 1, excess employment in Oro Valley (and Arizona) is calculated from employment and the location quotient. For Oro Valley, the location quotient and excess employment by industrial category also is calculated relative to the Arizona average.