ANALYSIS AND FORECAST OF THE ECONOMIC BASE OF SCOTTSDALE

WITH PARTICULAR EMPHASIS ON THE HOSPITALITY SECTOR AND THE COMBINED AIRPARK/SONORAN REGIONAL CORE CHARACTER AREAS

A Milestone for Economic Development and Proactive Planning

A Report to the City of Scottsdale

from
GRUEN GRUEN + ASSOCIATES
Urban Economists and Market Strategists

in association with

MOSAIC ANALYTIC PLANNING

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EXECUTIVE SUMMARY AND CONCLUSIONS

THE STUDY PURPOSE

Gruen Gruen + Associates (GG+A) was asked to conduct an economic base analysis that would include forecasts of private sector employment and opportunity by major industrial sector, as well as forecasts of the likely demand for the built environment, for the Airpark/Sonoran Regional Core (SRC) area. The purpose of identifying the structure of the local economy and future opportunities and constraints for this core area is to permit the city to properly locate, time, size and finance the public infrastructure needed to complement private residential and non-residential development and develop a planning framework for the SRC area.

THE STRUCTURE AND FUTURE OF THE CITY'S ECONOMIC BASE

The First Step: A comparison of private sector employment in Maricopa County with United States employment in the same sectors in 1995.

Hospitality jobs in the county constitute 10.4 percent of *all* non-governmental jobs, while they account for only 1.5 percent of all private sector jobs in the United States. Tourism is one of the primary industrial sectors within the Valley of the Sun. The visitor industry also plays an important role in strengthening many other sectors of the regional and local economy, because the types of attractions that appeal to visitors also generate a higher quality of life for those who reside in the county. Other sectors that play an important role in the regional economy include Business Services, Construction, High-Tech Manufacturing, Transport, Wholesale Trade and the Health Industry.

The Second Step: Comparing the city of Scottsdale's private sector employment to Maricopa County's 1995 employment.

In 1995, Finance, Insurance and Real Estate (F.I.R.E.) was significantly more important in Scottsdale than in the county. Business Services, Retail Trade, the Health Industry, Personal Services, and Agriculture were also relatively strong in Scottsdale.

The Third Step: An adjusted shift-share analysis for the city of Scottsdale.

A shift-share model was utilized in forecasting the city of Scottsdale's future private sector employment. The end products of the shift-share analysis are simple equations that predict the rate of employment growth in an employment sector of a local area, as a function of the predicted rate of growth of that employment in the larger region. These forecasts were then judgmentally adjusted by GG+A. A sector by sector forecast analysis is presented in Chapter I.

Between 2000 and 2010, 27,615 private sector jobs are estimated to be added in Scottsdale. Between 2010 and 2020, an additional 34,600 new jobs are estimated. For the 20-year period (2000 - 2020), Scottsdale is estimated to gain a total of 62,225 new jobs.

SIGNIFICANT RESULTS FROM THE SHIFT-SHARE ANALYSIS

Historically, Scottsdale has added jobs at a faster rate than population. In 1985, jobs in the city equaled 62 percent of the population, but by 1995 had increased to 70 percent. Our projections assume that Scottsdale will continue to grow by drawing its workforce and markets from beyond the city's boundaries.

The direct impact of the hospitality industry provided 11.3 percent of the city's employment in 1995, and we have forecast that it will account for 11.5 percent in 2020. The indirect effects of a strong hospitality industry are also important, because they improve the quality of residential and working life in Scottsdale by supporting businesses and facilities that could not be supported by the local residential and worker population.

Business Services will continue to be the fastest growing sector in Scottsdale – partly because of the indirect effects of the hospitality industry.

CONCLUSIONS DRAWN FROM THE CITY OF SCOTTSDALE HOSPITALITY ECONOMIC BASE SURVEY

A major component of the economic base was to identify the extent of the labor market. Also of importance is the role that various city and region-wide events play in creating hotel demand. To address both these concerns, a survey was conducted with local hoteliers. Of the 58 hoteliers who were sent questionnaires, 22 responded.

- Annual occupancy ranged from a low of 50 percent to a high of 90 percent for the 22 hoteliers. On average, the 1997 occupancy rate for the five luxury hotels in the sample was 74.3 percent, while the moderate priced accommodations averaged 70.3 percent and economy priced facilities 70.6 percent.

- Hoteliers were asked to rank the attractions that brought business to their hotels. The top 5 ranking events in order of their importance are NASCAR, the Barrett Jackson Car Auction, Spring Training, PGA Golf, and the Arabian Horse Show. The ranking of events differed by type of hotel. The Fiesta Bowl and PGA Golf were ranked highest by the luxury hotels; NASCAR and Spring Training by the moderate hotels; and the Horse Show and Car Auction by the economy hotels.

- With respect to labor market area, 53 percent of the hotel employees reside in Phoenix, 29 percent in Scottsdale, 6 percent in Tempe and 5 percent in Mesa, with smaller percentages located in Paradise Valley, Chandler, Gilbert and Glendale.

CONCLUSIONS DRAWN FROM SURVEY OF AIRPARK/SONORAN REGIONAL CORE EMPLOYERS

A survey was conducted with 194 employers of businesses located in the Airpark/SRC. The primary purpose of the survey was to identify the zip code distributions of the primary labor market area. Other areas of interest were the importance of being proximate to the Scottsdale Municipal Airport and the Pima Freeway, as well as the key business linkages between firms. Fewer than 10 percent of firms surveyed indicated the Scottsdale Airport was the primary reason for their north Scottsdale location. Given that the Pima Freeway is still under construction, it proved to be premature to draw any conclusions about its influence upon individual businesses.

- We found the firms' primary reason for locating in the Airpark/SRC character areas is that north Scottsdale is in proximity to where the owners or managers live. This suggests quality of life is of critical importance to the future economic development of the core character area. Fifteen firms indicated that more than 70 percent of their business originates from outside the county, and only one selected "Close to a desirable labor base" as their primary reason, despite the fact that all regions are currently responding to a labor shortage.

- Approximately 44 percent of the sample firms' business originates outside of Maricopa County.

- The responding firms are housed in a variety of building types, and all sectors reveal a diverse pattern of building types.

- Approximately 69 percent of the firms lease or sub-lease their space, while 31 percent own their facilities.

- The sample averages 33 workers per firm. Of this average, 29 of these 33 workers are located on site.

- The primary labor market area is defined as those zip codes in which approximately 70 percent of all employees reside. The three dominant labor market zip codes are also close to the study area. They are zip codes 85032, 85260, and 85224. These three account for about 31 percent of the total number of employees. For most industrial sectors, the primary commute shed is east-west, not north-south. The primary labor market area differs by SIC category. Low-Tech Manufacturing and F.I.R.E. have the most constricted patterns, while the Construction sector has the most dispersed.

THE STRUCTURE AND FUTURE OF THE AIRPARK/SONORAN REGIONAL CORE ECONOMY

The Economic Future of the Airpark/SRC

The Construction, Low-Tech Manufacturing, High-Tech Manufacturing, Transport and Wholesale Trade sectors each account for a larger proportion of jobs in the Airpark/SRC than those sectors account for in the city's economic base. In 1995, employment in the Airpark/SRC constituted about 17 percent of total employment in the city of Scottsdale. Because we have forecast that employment in the Airpark/SRC will grow at a faster rate than employment elsewhere in the city between now and 2020, our forecast suggests the Airpark/SRC will constitute 27 percent of the city's employment in 2020.

Working closely with the Scottsdale Tax Auditor's office, we estimated employment densities by type of space in the Airpark/SRC and used this relationship to make an independent estimate of employment in the core area between 1995 and 1998. We then augmented a shift-share analysis of the area's relation to the city by completing a regression analysis that considered the relationship between employment in the county and the Airpark/SRC. Both the city/SRC shift-share and the results of the regression analysis were then synthesized in the light of the information drawn from the employer survey and others in the area to forecast sector by sector growth in the core area. Business Services, Health, Hospitality, Personal Services and Retail Trade are forecast to grow at a faster rate relative to the other sectors than they did in the 1985 - 1995 time period. However, all sectors are forecast to grow vigorously in the Airpark/SRC. In 1995, actual employment in the Airpark/SRC was 19,911. This core area is forecast to add 31,844 workers between 1995 and 2020, for a total of 51,755 workers forecast for 2020.

Spatial Implications

The most distinct pattern in the Airpark/SRC is that almost 50 percent of all the structures are mixed warehouse with office and/or retail. This kind of mixed space provides flexibility, which is important to the small and mid-sized firms that locate in the area. While flexible space will continue to be important as the economy of the Airpark/SRC expands, the proportion of mixed use warehouse buildings actually built, as opposed to being remodeled, will decline.

Utilizing employment density ratios of 300 square feet per worker for office, 600 square feet per worker for warehouse, 600 square feet per worker for retail, 500 square feet per worker for industrial, and 400 square feet per worker for office/retail/warehouse combination, GG+A's best judgment estimate of the private sector demand for occupied space in 2020 is 21.4 million square feet. This estimate is about three times the occupied space in 1995.

Just as today's market is building ahead of demand, the amount of space that will be added between now and 2020 is also likely to consist of some unoccupied and some under-construction space. Therefore, we added an amount representing our estimate of vacant and under-construction space in

2020 equal to 10 percent of the projected total space. A total of 15.3 million square feet of space is estimated to be built or under construction between now and 2020.

STRATEGIC IMPLICATIONS

- One of the primary purposes of this study is to enable the city to plan for its public infrastructure needs ahead of development. The costs of providing the proper scale and mix of infrastructure are likely to be minimized if needed property is acquired or designated and plans made well in advance of the expected development. With the forecast rapid growth, it will be necessary to closely align the capital budgeting with those municipal departments responsible for transportation, public works and planning.

- In order to avoid physical and economic obsolescence, it will be important for the city to encourage the appropriate scale and type of development. If development is too small or inappropriately designed to be viable past 2020, future owners will not have the economic strength to properly maintain either the physical structures or the activities they contain. While in some cases such problems can be remedied with private redevelopment, the size of the land holdings and the remaining capital value of obsolete structures frequently make this difficult.

- The scale of population growth in the area suggests the viability of a new regional center with a competitive mix of retail stores and other attractions.

- Over the time period of this study, there will be a shift from the dominance of the lower intensity mixed use warehouse structure to more traditional suburban office buildings in the Airpark/SRC. It will be important to encourage somewhat higher intensity development, which should include connectedness between buildings, the integration of support retail and services, and transportation management techniques such as bike routes and car pooling and/or shuttle service for nearby residents.

CHAPTER I

THE STRUCTURE AND FUTURE OF THE CITY'S ECONOMIC BASE

PURPOSE

The city of Scottsdale has long had a policy of encouraging private real estate development and other actions that complement the long-run health of the city's economic and residential environments. To be effective in planning and acting on that policy, the city needs information about the structure of the local economy and the opportunities and constraints that exist. Forecasts of employment and opportunity by sector, as well as forecasts of the built environment by type, are needed to help guide development so that it is sized to serve the long run economic opportunities likely to exist. Furthermore, such information is needed to encourage the type of development that will attract the kind of economic opportunities that serve the markets the city can profitably attract over the long term. Most importantly, all such economic and market insights and forecasts are sought so that the city can properly locate, time, size, and finance the public infrastructure needed to complement private residential and non-residential development.

This report summarizes the results of the analysis and forecasts that Gruen Gruen + Associates (GG+A) has completed for Scottsdale's Airpark/Sonoran Regional Core (SRC) areas. The Airpark is located with Frank Lloyd Wright Boulevard and the Central Arizona Project Canal on the north, Thunderbird Road on the south, the Pima Freeway and 90th Street on the east, and Scottsdale Road on the west. The Sonoran Regional Core is also located with the Pima Freeway as the eastern boundary and Scottsdale Road as the western boundary. It extends north from the Airpark, having the Central Arizona Project Canal on the south and the Thompson Peak Parkway as the northern limit. However, to provide an economic and market context for consideration of that area, our research began with an analysis and forecast of the citywide economy.

This chapter will summarize our findings with regard to the structure of the city's economy, as well as provide a forecast for Scottsdale employment to the year 2020. The following chapters of this report describe the results of surveys and econometric analysis completed to gain additional insight into the city's critically important hospitality industry, the likely future of the Airpark/SRC area, and present a forecast of employment and space for the Scottsdale Airpark/SRC character areas that are the focus of this study.

THE ECONOMIC STRUCTURE OF THE SCOTTSDALE ECONOMY

Table I-1 presents a comparison of the percentage of all private sector employment in Maricopa County in 1995 with U.S. employment in those sectors in that same year. Please refer to Appendix B of this report for a listing of the sub-sectors we have grouped into the 13 sectors presented in Table I-1 and utilized throughout this report. The reader will not be surprised that hospitality jobs in the county constitute 10.4 percent of all non-governmental jobs, while they account for only 1.5 percent of all private sector jobs in the United States. The Valley of the Sun is a unique attraction to visitors,

and that advantage enables hotels and associated visitor serving businesses to contribute significantly to the economic base. As we will discuss later, the visitors that industry attracts play an important role in strengthening many other sectors of the regional and local economy.

Table I-1
Percentage of Private Employment by Sector
Comparison of Maricopa County to the United States in 1995

	Maricopa County Employment %	United States Employment %	Difference %
Agriculture	1.0	3.8	- 2.8
Mining	0.1	0.7	- 0.6
Construction	8.2	5.9	2.3
Low-Tech Manufacturing	5.7	9.2	- 3.5
Hi-Tech Manufacturing	8.1	6.0	2.2
Transport	7.0	5.6	1.5
Wholesale Trade	6.3	5.3	1.0
Retail Trade	12.5	19.9	- 7.4
F.I.R.E.	8.2	8.4	- 0.2
Business Services	17.9	9.2	8.6
Health Industry	9.1	8.7	0.4
Hospitality	10.4	1.5	9.0
Personal Services	5.5	15.8	- 10.3
Total	100.0	100.0	

Note: Totals may not equal 100% due to rounding
Source: City of Scottsdale; Maricopa Association of Governments; Gruen Gruen + Associates

Other sectors that play a more important role in the region's economy than they do to the private sector economic base of the United States are:

Business Services	Transport
Construction	Wholesale Trade
High-Tech Manufacturing	Health Industry

The local advantages that make these sectors more important in Maricopa County than in the U.S.

will be discussed in the course of describing the GG+A forecast of Scottsdale employment to the year 2020 below. Table I-2 compares the private sector employment in Scottsdale with that of the county. In 1995, Finance, Insurance and Real Estate (F.I.R.E.) was significantly more important in Scottsdale than in the county. Business Services, Retail Trade, the Health Industry, Personal Services and Agriculture also were relatively stronger in Scottsdale's economy than in the county. Less important were Low-Tech Manufacturing, Construction, Hi-Tech Manufacturing, and Wholesale Trade.

Table I-2
Projected Percentage of Private Employment by Sector
Comparison of City of Scottsdale to Maricopa County in 1995

	City Employment 1995 %	County Employment 1995 %	Difference %
Agriculture	1.5	1.0	0.5
Mining	0.1	0.1	0.0
Construction	5.7	8.2	- 2.5
Low-Tech Manufacturing	2.3	5.7	- 3.4
Hi-Tech Manufacturing	6.7	8.1	- 1.4
Transport	3.2	7.0	- 3.8
Wholesale Trade	5.1	6.3	- 1.2
Retail Trade	14.3	12.5	1.8
F.I.R.E.	13.4	8.2	5.2
Business Services	19.8	17.9	1.9
Health Industry	10.1	9.1	1.0
Hospitality	11.3	10.4	0.9
Personal Services	6.4	5.5	1.0
Total	100	100	

Note: Totals may not equal 100% due to rounding
Source: City of Scottsdale; Maricopa Association of Governments; Gruen Gruen + Associates

Because of the important relationships between Maricopa County and the regional economic setting for the Scottsdale economy, we drew heavily on a technique called shift-share to forecast the employment growth of Scottsdale.

While the shift-share analysis did give us a good feel for the relationship between growth in the county and growth in the city, we adjusted the growth rate suggested by the shift-share model in order to derive a final GG+A forecast for Scottsdale. These adjustments considered a variety of factors, including the industry information provided by the 194 employers who responded to the

questionnaires sent to identify the Airpark/SRC area's labor market area and obtain other information. We also reviewed the work of other forecasters, including the projections prepared by MAG. Finally, we considered the database we assembled in order to conduct the shift-share analysis and the differences between historic and anticipated demographic changes. During the 1985-1995 period that we considered in the shift-share analysis, the population of Scottsdale grew at an annual rate of approximately 3.1 percent. We have anticipated that for the period of 2000 to 2020, the population of Scottsdale will grow one-third less, at a rate of 2.1 percent per year. Finally, we have recognized that as growth takes place and the total size of the employment base becomes larger, it is increasingly difficult to expand at a greater rate. While we recognize that the economy will not grow at a constant rate, we have not attempted to show rate changes during the 20-year period, but instead just projected through to 2020 on a linear basis. We did this because the primary purpose of this study was to identify the plans and policies most appropriate to the Airpark/SRC area at 2020 and beyond.

FORECAST OF SCOTTSDALE'S PRIVATE SECTOR ECONOMY, 2000 - 2020

Shift-share is a well accepted econometric methodology designed to build a model to forecast the employment growth for the sectors of a smaller or local economy, based on the acceptance of a forecast for the larger regional entity of which that local area is a part. The methodology accomplishes this by decomposing the observed historic growth of employment into three components: region-wide, industry specific, and locationally specific shares, or separable assumed causes of growth. This breaking apart of historic growth based on statistical attempts to assign causes of growth to unique regional, sector, and local growth pressures suggests the nature of three significant underlying trends in the structure and strength of the studied economies. In this report, we discuss the insights provided by the analysis and review the projections after a brief overview of the shift-share methodology. A more complete description of that methodology is presented in Appendix A to this report.

The end products of the shift-share analysis are simple equations that predict the *rate* of employment growth in an employment sector of a local area as a function of the predicted rate of growth of that employment in a larger region. Appendix A describes these final equations. To derive them, we defined the local area as the city of Scottsdale, and the larger region in this case as Maricopa County. For example, the unadjusted formula for the growth of retail trade in Scottsdale during the entire 15 year period of 1995 and 2010 is equal to the predicted rate of growth for the county plus the predicted rate of shift to the city from the county, in this case a cumulative addition of 22.7 percent. (The equations shown in Appendix A are presented in the form used to predict annual changes in Scottsdale's employment.)

In order to be able to utilize the shift-share methodology, we first built a time series of data on retail employment in the county and the city between 1985 and 1995. Data for 1995 was obtained from a MAG survey. To obtain annual estimates of Scottsdale private employment for earlier years, we purchased tapes with annual data on firms by employment size group produced by the U.S. Census Bureau to prepare the County Business Data Reports. Information from these two sources were then combined by GG+A into a time series of year by year historic employment by the combined sectors

for the city of Scottsdale and the two study areas between 1985 and 1995.

The county annual data was used to calculate the rate of total regional growth in employment, which grew 45.4% for the ten year period. So if Scottsdale's retail employment had been influenced by no other factor than the rate at which the total county employment grew, retailing in Scottsdale would have increased by 5,032 jobs, from 11,089 in 1985 to 16,121 in 1995.

However, the economy is obviously not that simple. Another factor that was considered is the shift among employment sectors that took place. The proportion of retail jobs as a portion of total jobs actually declined between 1985 and 1995, as the county wide growth of retail jobs in the decade was 35.3%, or approximately 10% *less* than the overall rate of employment growth. If Scottsdale's retail growth had been in lock step with the county, 1,120 jobs would have been lost so that the total of retail jobs in 1995 would have been 15,001. Actually, the city of Scottsdale's retail employment grew by an additional 1,902 jobs between 1985 and 1995, so that by 1995 there were a total of 16,903 retail employees in the city of Scottsdale.

This increase of a little over 17 percent during the ten year period over what could have been expected based only on total job growth in the region (Maricopa County), and the change in the proportion of retail jobs in that region can be attributed to the unique competitive advantages that the city of Scottsdale evidenced during that period. This is what the shift-share methodology refers to as **the competitive shift.** This competitive shift component is specific to each local area and industry and is a factor that is not addressed by the regional forecast (county) which, by design, does not estimate shifts within the region. As such, the competitive shift component is the coefficient that can be used to change the predicted rate of sector by sector employment growth within the region to the rate that can be expected to apply to the local area. What GG+A has done is conduct that methodology for the city of Scottsdale, first in order to project employment by sector between 1996 and 2020 based on a county wide employment forecast through 2006, extended by GG+A to 2020. In order to extend the county forecast to 2020, we assumed that during those 14 years the county rates would move halfway between the indicated trend and the growth rate forecast for each private sector of the U.S. economy by the Bureau of Economic Analysis. There are two reasons for selecting this mid-point rate. First, GG+A estimates that at this point in the future, Scottsdale will not be growing at the same rate as the rest of the county (although absolute grown may still be high), and second, this is a reasonably conservative figure that reflects the inherent difficulty of maintaining a high rate of growth, given the ever-increasing base from which the rate is derived.

The employment forecasts derived directly from the shift-share model were judgmentally adjusted by GG+A for the following sectors: Retail, Agriculture, Mining, Low-Tech Manufacturing, Transport, Wholesale Trade, F.I.R.E., and Business Services. The final forecasts are shown in Tables I-3 and I-4. Table I-3 presents the 2020 forecast and growth rates between 1995 and 2020. Table 1-4 presents the forecasts for 2000, 2005, 2010 and 2020. Between 2000 and 2010, 27,615 private sector jobs are estimated to be added in Scottsdale. Between 2010 and 2020, an additional 34,600 new jobs are estimated. For the 20-year period (2000 - 2020), Scottsdale is estimated to gain a total of approximately 62,225 new jobs.

Table I-3
Employment Forecast for the City of Scottsdale

Sector	Actual Employment 1995	Forecast Employment 2020	Actual Annual Growth Rate 1985 - 1995	Forecast Annual Growth Rate 1995 - 2020	Difference in Growth Rates from 1985-95 to 1995-2020	Sector Percent of 1995 Total Employment	Sector Percent of 2020 Total Employment	Difference in Sector % of Total Employment 1995 & 2020
Agriculture	1,780	2,583	3.4%	1.5%	-1.9%	1.5%	1.3%	-0.2%
Mining	121	124	-7.4%	0.1%	7.5%	0.1%	0.1%	-0.0%
Construction	6,682	8,904	0.2%	1.2%	1.0%	5.7%	4.7%	-1.0%
Low Tech Manuf.	2,704	4,436	5.1%	2.0%	-3.1%	2.3%	2.3%	0.0%
High Tech Manuf.	7,843	9,434	-0.3%	0.7%	1.1%	6.7%	4.9%	-1.8%
Transport	3,747	4,245	0.5%	0.5%	0.0%	3.2%	2.2%	-1.0%
Wholesale Trade	5,957	10,518	3.5%	2.3%	-1.2%	5.1%	5.5%	0.4%
Retail	16,713	29,508	4.3%	2.3%	-2.0%	14.3%	15.5%	1.2%
F.I.R.E.	15,651	20,017	1.1%	1.0%	-0.1%	13.4%	10.5%	-2.9%
Business Services	23,159	48,490	7.9%	3.0%	-4.9%	19.8%	25.4%	5.6%
Health	11,829	17,445	4.8%	1.6%	-3.2%	10.1%	9.1%	-1.0%
Hospitality	13,256	21,868	3.3%	2.0%	-1.3%	11.3%	11.5%	0.2%
Personal Services	7,539	13,304	1.2%	2.3%	1.1%	6.4%	7.0%	0.6%
TOTAL	116,981	190,875	3.6%	2.0%	-1.6%	100.0%	100.0%	0.0%

Source: City of Scottsdale; Gruen Gruen + Associates

Table I-4
Employment Projections by Year
for City of Scottsdale

Industry Group	Year 2000	2005	2010	2015	2020
Agriculture	1,918	2,066	2,225	2,397	2,583
Mining	122	122	123	123	124
Construction	7,077	7,495	7,938	8,407	8,904
Low Tech Manufact.	2,985	3,296	3,639	4,018	4,436
High Tech Manufact.	8,138	8,444	8,762	9,092	9,434
Transport	3,842	3,939	4,038	4,140	4,245
Wholesale Trade	6,674	7,478	8,378	9,387	10,518
Retail Trade	18,725	20,980	23,507	26,337	29,508
F.I.R.E.	16,440	17,270	18,141	19,056	20,017
Business Services	26,848	31,124	36,081	41,828	48,490
Health Industry	12,785	13,818	14,934	16,141	17,445
Hospitality	14,652	16,195	17,900	19,785	21,868
Personal Services	8,446	9,462	10,600	11,875	13,304
Total	128,652	141,688	156,267	172,587	190,875

Note: Totals shown in tables may differ slightly from amounts listed due to rounding.
Source: Gruen Gruen + Associates

In order to provide a feel for the dynamics of change that took place between 1985 and 1995 in the county and the city, Table I-5 is included. This table identifies the components of growth when viewed or measured in terms of the three specific factors that the shift-share analysis considers. Shown in Table I-5 are the proportion of the change or growth during the period caused by the regional component, or total region-wide growth, the shift in industry mix or the proportion that a given sector accounts for in the total regional economy, and the competitive or locational component. As discussed previously, the competitive component refers to the particular locational shift to or away from Scottsdale during this period. This competitive component, converted to an annual growth rate, becomes an element in the forecasting equation for each sector. The three components together account for the total observed change in employment for each sector.

Table I-5
Components of Growth

Industry Group	Change in Scottsdale Total Employment 1985-95	Regional Component	Industry Mix	Competitive Component
Agriculture	372	424	303	- 355
Mining	- 61	52	- 48	- 64
Construction	131	3,316	- 2,913	- 272
Low Tech Manufacturing	968	687	-158	439
High Tech Manufacturint	- 51	697	- 662	- 86
Transport	110	951	990	- 1,832
Wholesale Trade	1,333	1,459	- 624	498
Retail Trade	5,814	5,032	- 1,120	1,902
F.I.R.E.	1,192	4,642	495	- 3945
Business Services	12,894	5,094	8,532	- 733
Health Industry	2,874	2,205	1,769	- 1,100
Hospitality	6,761	7993	15	- 1,247
Personal Services	871	3,109	- 1,824	-414
Total	33,208	35,661	4,755	- 7,208

Note: Totals shown in tables may differ slightly from amounts listed due to rounding.
Source: Gruen Gruen + Associates

Table I-6 indicates the total number of business establishments in 1985 and 1995 in the city of Scottsdale. The individual sectors in Scottsdale's private economic base are briefly discussed below.

Table I-6
Total Number of Business Establishments
in Scottsdale by Industry Group

Industry Group	1985	1995	% Change
Agriculture	117	165	41
Mining	18	10	- 44
Construction	545	624	14
Low-Tech Manufacturing	135	236	75
High-Tech Manufacturing	91	87	- 4
Transport	144	234	63
Wholesale Trade	386	660	71
Retail Trade	941	1,244	32
F.I.R.E.	931	1,194	28
Business Services	754	1,856	146
Health Industry	561	784	40
Hospitality	380	601	58
Personal Services	651	698	7
Total	5,654	8,393	48

Note: Totals shown in tables may differ slightly from amounts listed due to rounding.
Source: Gruen Gruen + Associates; Mosaic Analytical Planning;
United States Department of Commerce, County Business Patterns

The following section provides summaries, on a sector by sector basis, of Scottsdale's economic make-up. For a variety of industry-specific reasons, it was deemed necessary, in some cases, to alter the shift-share model's growth rates in order to arrive at results that are considered to be more realistically attainable. These changes are noted below under their appropriate sector heading. For further information on shift-share methodology, please refer to Appendix C.

Agriculture (landscaping, veterinary services, crops, livestock, agricultural services, forestry, fishing)

In terms of the total job base, agricultural employment makes up less than one percent of the city's economic base. During the last decade, all of the 372 job increase within the city was attributed for by regional growth factors. However, agriculture became less important in terms of the county as a whole. Locational shifts were great with a significant reduction in Scottsdale's comparative role in this sector. The shift-share projection suggests a five percent downward decline with the city's annual growth rate, on its small employment base, declining by 2.3 percent. In the last decade the city's total employment grew by an average annual rate of 3.4 percent. We have altered the shift-share model's

projections to a 1.5 percent per year increase. Because this sector includes services such as landscaping and veterinary medicine, we believe the rate of 1.5 percent is sustainable, given the city's presently small base in this sector.

Mining (metal, coal, mineral, oil and gas extraction)

Mining saw a decline in the number of firms as well as the number of employees in the city. The shift-share projection assumes an even faster decline over the next decade, which would leave this insignificant sector with only 32 employees in the city. Based on the growth in the number of firms in this industrial sector, we have eliminated the suggested decline but assumed a growth of only one-tenth of one percent. We recognize that the small size of this sector makes accurate prediction very unlikely.

Construction (building, heavy construction, general contracting)

Inferences about construction have to be drawn with great care, because the building boom had not gotten into full swing by 1995, the end year for our data. The construction industry made up a smaller portion of the total at the end of the ten year period than it did at the beginning, and thus, not surprisingly, lost relative shares. Nevertheless, while construction will be strong in Scottsdale, it is not likely to be as fast growing as in the rest of the county. Therefore, we have drawn the forecast of growth directly from the shift-share model.

Low-Tech Manufacturing (food, textiles, garments, wood products, furniture, paper, printing, chemicals, petroleum, plastics, leather, glass, primary metals)

The shift-share forecast for Scottsdale was heavily influenced by the fact that the growth in the Low-Tech Manufacturing sector was significantly faster in the city than in the county during the 1985-1995 period. According to the interviews we conducted with entrepreneurs in the Airpark/SRC study area, which will be discussed in more detail in Chapter III, the desirability of living in Scottsdale plays an important role in motivating the owners of smaller, low-tech firms to open, expand, and maintain their businesses in Scottsdale. Noted in Table I-6, the total number of firms within this sector increased from 135 in 1985 to 236. While continuing to provide a high quality residential lifestyle will work to continue expansion of this sector, it seems unlikely to grow at the very high rate seen in the 1985-95 period, partly because of growth in productivity for this sector. Also, as existing firms expand their production, the ability to out-source portions of that production to lower-cost areas, both within and outside the United States, will work as a drag on the rate of growth. Therefore, in the forecast for Scottsdale we have projected a growth rate of 2 percent per year through the year 2020 for this category.

High-Tech Manufacturing (fabricated metals, computer equipment, commercial machinery, electronic motors, vehicle, instruments)

1995, the last year of our shift-share analysis, was not a boom year for high-tech manufacturers, and

this may partially explain the low overall county rate of growth. The city of Scottsdale actually showed a decline in this sector during the period, and this worked to hold down the county rate. As we mentioned above, there are also signs that as this industry matures, some of the larger firms find they can lower their production costs not only by availing themselves of labor-saving productivity gains, but by relocating some of their production to lower-cost areas. Therefore, we have accepted the annual seven-tenths of one percent rate suggested by the model.

Transport (railways, highway passenger transport, freight, air and water transport, pipelines, communications, utilities)

Employment in the transport sector for the county grew at a significant 6.8 percent rate during the period, while that sector grew only an anemic ½ of 1 percent in the city. Nonetheless, the total number of firms in the city increased 63 percent to 234 firms. A significant portion of this growth in transportation took place in the Airpark/SRC area**.** Because of the very significant loss in Scottsdale's comparative share of this industry, the shift-share methodology suggests a projected decline of 6.2 percent per year. In our forecast, we have projected a growth equal to one-half of one percent per year.

Wholesale Trade (durable and non-durable wholesale trade)

Wholesale trade is one of the two sectors with very significant employment, within which the city of Scottsdale showed a strong, competitive increase during the period. The city's total wholesale trade employment grew by about 1,300 jobs, at a rate of 3.5 percent per year, which was about half again as much as what the county had grown overall. We believe 5.86 percent growth would be too high, and project growth at 2.3 percent per year.

Retail Trade (all retail trade except eating and drinking places)

In terms of its ability to capture a more than proportionate share of this sector during the last decade, the city of Scottsdale was extraordinarily successful with an increase in jobs of 5,814 people. This Scottsdale job growth more than offset the fairly significant decline in the share of retail employment for the county as a whole, as Scottsdale stores served more of the region's than they had at the beginning of this decade. Scottsdale's retail growth of 4.3 percent per year stood in contrast to a countywide growth of 3.1 percent, so that for the ten year period the city's growth rate was more than 17 percent higher than the county's growth. As was the case for wholesale trade, the Airpark/SRC's growth rate in retailing was even higher than the city as a whole. Starting with a relatively low base, employment in the Airpark/SRC area grew to close to 2,500 workers at an annual growth of 17.7 percent per year. On a city-wide basis, considering the likely growth of population and the likelihood that over the next 25 years Internet sales will compete with traditional retail sales, we have adjusted the city-wide growth rate to 2.3 percent per year, though some of this e-based commerce may originate from north Scottsdale because it offers a high quality of life to owners/manager of entrepreneurial companies.

F.I.R.E. (Finance, Insurance and Real Estate)

A surprising finding that comes out of this review of employment growth during the ten year period is that Scottsdale firms in finance, insurance and real estate grew more slowly than the county. The county grew at an annual rate of 4.2 percent, expanding its job base in this area by 50 percent during the ten year period. In the city of Scottsdale, the F.I.R.E. sector grew only a little more than 11.7 percent during the period, or about 1.1 percent per year. The city very significantly lost relative shares, but this may be because during this period a great deal of the growth in finance, insurance and real estate employment was in back office space such as call centers. It may also be that this data, again, is affected by the fact that many finance firms were in a contraction or stable position in 1995. The city did increase the number of establishments in this sector somewhat. Furthermore, both the Airpark and the SRC found their establishments in this field doubling. For the city we have projected a growth rate of 1 percent per year for this sector, which accounted for about 8.2 percent of the city's employment base in 1995.

Business Services (advertising, computer programming, legal, engineering, and accounting services)

This sector accounted for the largest single share of employment growth within Scottsdale during the period. The same is true of the county. Business services increased at a sizzling 8.3 percent, a little bit higher than the city of Scottsdale's 7.9 percent per year. This was also where we saw the most significant growth in both the Airpark and SRC area. Because the city of Scottsdale's growth rate was just slightly less than the county, it did lose a very small proportion of its previous share of jobs in this sector. While Business Services is unlikely to continue its hot pace, its net 25 year growth is projected to remain high at 3 percent per year.

Health Industry (all medical operations and services)

This industry showed significant growth during the period in both the county and the city. However, not surprisingly, the city did not grow as quickly as the county, and thereby lost some share of this fast-growing field. As a result, shift-share methodology suggests a projected growth rate of 2.10 percent, which would not seem unreasonable, and we have projected the growth at 2 percent per year.

Hospitality (eating and drinking places, hotels and lodging)

This important sector of employment accounted for more than 11 percent of Scottsdale's almost 117,000 jobs in 1995. It actually grew somewhat more slowly in the city than the county. The city's growth rate was 3.3 percent per year, versus the county growth rate of 3.8 percent per year. This appears to make sense, as the remainder of the region was catching up with hotel facilities during a period when the city of Scottsdale was already an important hotel location. There was a very small, insignificant decline in the proportion of employment region-wide in the hospitality sector, which grew by more than 6,700 jobs during the ten year period. As indicated before, Scottsdale did not keep

up with this growth, but we have projected it to remain strong at 2.3 percent per year, which is just a little under the shift-share suggestion.

Personal Services (automotive repair, recreation, museums, household services)

Personal services also grew at about a half percent per year more in the county than in the city. These jobs grew at about 1.2 percent in the city, versus 1.7 percent in the county. But the number of establishments in the city grew very little, which suggests that the per firm size in this area did expand. There was a drop in the overall or industry share of this sector, and Scottsdale lost shares. We have projected the growth at a rate of 2.3 percent per year, just under the shift-share suggestion.

GROWTH SPURS

We are projecting for the city of Scottsdale a continuation of the economic pattern under which jobs have grown somewhat faster than population. In 1985, the city had a population of approximately 108,000, with local employment or jobs being a little over 68,000. That is, in 1985 jobs in the city equaled 62 percent of the total resident population. Since then, jobs have continued to grow at a faster rate than population, so that by 1995 the local job base of over 118,000 was about 70 percent of the 168,000 population. What this means is that we are predicting that the economy of Scottsdale will continue to grow as it has in the past by drawing its workforce and markets from beyond the city's boundaries. One of the most important reasons that this is possible is because the residents of the city enjoy a desirable quality of life that makes business decision-makers want to work, as well as live, in Scottsdale.

Another important and related factor is the previously discussed breadth and depth of the hospitality industry. The direct impact of this industry, which includes eating and drinking places as well as hotels and their recreational facilities, provided 11.3 percent of the city's employment in 1995, and we have forecast that percentage to increase somewhat to about 11.5 percent by the year 2020. However, the indirect effect of a strong hospitality industry is great, in that it improves the quality of residential and working life in Scottsdale by supporting businesses and facilities that could not be supported simply by the local working and living population. These facilities, including specialty shopping stores, restaurants, entertainment, and cultural venues, prosper in Scottsdale because they can cater to a significant visitor base, as well as the local base. We have forecast that Business Services will continue to be the fastest growing sector in Scottsdale. The ability of this sector to operate advantageously in Scottsdale is impacted by the availability of local restaurant and other hospitality facilities that help them attract and serve their customers and associates. Similarly, all the other industries in the city benefit from the hospitality industry because it is easier to attract capital to places that investors are eager to visit, rather than to places that will only provide them with dollar returns.

Because of the importance of hospitality not only to Scottsdale but to the further development of the Airpark/SRC, the next chapter of this report will describe and summarize the results of a hotel survey conducted as a part of the effort summarized herein. That chapter is followed by a report on a survey

of employers in the Airpark/SRC that was conducted to obtain information on the labor market areas that serve our study area, and obtain additional insights into growth determinants for the city, and particularly the Airpark/SRC.

CHAPTER II

RESULTS AND CONCLUSIONS DRAWN FROM THE CITY OF SCOTTSDALE HOSPITALITY ECONOMIC BASE SURVEY

THE HOSPITALITY ECONOMIC BASE SURVEY

A major component of the economic base analysis conducted as a part of the GG+A study summarized in this report was to identify the extent of the labor market. We also evaluated the roles that various city and region-wide events play in creating hotel demand. Fifty-eight hotels/motels were mailed questionnaires. We received 22 completed questionnaires, or a 38% response rate. Of the 58 hotels that were mailed questionnaires, nine or 16% were located north and 49, or 84% south of Cactus. Of the 22 that responded, 23% were located north and 77% south of Cactus. Thus, north Scottsdale hotels are somewhat over represented in our final sample. But this over representation can be attributed to the fact that the study is most concerned with the economic development future of two north Scottsdale character areas: the Airpark and Sonoran Regional Core (SRC) character areas. A copy of the questionnaire can be found in Appendix D.

The 22 hotels were divided into three categories based on their advertised rack rates. Five, or 23% of the hotelier sample were defined as luxury. Nine, or 41% of the sample were defined as moderate priced facilities. And 8, or 36% were defined as economy accommodations. These three classifications were originally established by the Scottsdale Chamber of Commerce Visitor Industry Advisory Committee (VIAC) in the early 1990's. That committee began with a classification based on rack rate, then adjusted by the individual and collective experience of the committee.

Length of Time at Present Location, Number of Rooms, and Square Feet of Conference and/or Meeting Space

Three of the 22 hotelier respondents have been at their present location one year or less, while 3 have been at their present site 40 years or more. The average (mean) number of years at present site is 19.5, and the median (the point at which half the sample falls above and half below) is 17.0 years. The number of rooms per facility ranges from a low of 11 to a high of 654, with a mean average of 192 rooms.

With respect to meeting/conference space, 3 hotelier respondents indicated they have none, while 5 indicated under 1,000 square feet of meeting space. At the other end of the spectrum, 8 facilities specified they have more than 10,000 square feet of meeting space. The average ranges between 1,000 and 2,000 square feet of meeting space.

Occupancy Rate

The year round occupancy rate for the 22 visitor accommodation sample ranges from a low of 50% to a high of 90%. Three hoteliers indicated occupancy rates under 65%, 10 hoteliers specified

occupancies ranging from 67% to 75%, and 6 hoteliers indicated occupancies greater than 75%. A rule of thumb in the hotel industry is that hotels achieve profitability at 65% occupancy or better.

The luxury hotels have about a 4% higher occupancy than do either the moderate or economy facilities. On average, the 1997 occupancy rate for the 5 luxury hoteliers was 74.3%, while the moderate priced accommodations average 70.3% and the economy 70.6%.

Visitation Patterns

Each hotelier was asked, "In 1997, of your total visitors, approximately what percent were (a) attending a convention or conference? (b) on a business trip? (c) vacationers? (d) attending a special event such as the Phoenix Open or baseball spring training?" Table II-1 presents the percent of visitors whose primary purpose is a conference/convention, business trip, vacation, or special events. Two of the 22 respondents did not answer this question.

Table II-1
Visitor Patterns

Percent of Visitation	Convention/Conference		Business		Vacation		Special Events	
	#	%	#	%	#	%	#	%
None	2	10	1	5	0	-	2	10
10% and under	6	30	7	35	1	5	12	60
11% - 25%	3	15	5	25	7	35	5	25
26% - 50%	3	15	6	30	12	60	1	5
51% - 75%	5	25	1	5	0	-	0	-
76% and above	1	5	0	-	0	-	0	-
Total	20	100	20	100	20	100	20	100

Source: Gruen Gruen + Associates

All of the 20 hoteliers who responded to this question accommodate vacation travelers. However, 1 of the 20 indicated they have no business travelers and 2 each specified no conference attendees and/or no travelers attending special events. *Of the 6 hotels who indicated more than 50% of their customers stay at their facility to attend a conference or meeting, 4 are luxury facilities.*

The Importance of Special Events

With respect to special events, 12 hoteliers, or 60% of those who responded to this question, indicated that special events account for 10% or less of their total business. Five of the 20 hotelier respondents specified that special events account for between 11% and 25% of their total occupancy, and 1 respondent specified 26% - 50% of their customer base is accounted for by this category.

Table II-2 ranks the special events hoteliers indicated encouraged visitation. Twenty-one of the respondents provided responses to this question. A score of 6 was given to those respondents indicating an activity encouraged zero visitation to their facility. Therefore, scores between 5.0 and 6.0 indicate that only a small number of hotelier respondents believe special evens such as the Balloon Classic, Dixieland Jazz Festival, or the Senior Baseball League encouraged visitation at their establishment.

The right hand column in Table II-2 specifies the number of hotels that mentioned the activity as being one that stimulated visitation at their facility. NASCAR not only received the highest mean ranking for the sample as a whole, but 18 out of the 21 hotels responding to this question indicated this event was responsible for visitors staying overnight at their facility. The Arabian Horse Show was cited by 15 hoteliers as encouraging visitation, but this activity received only a 4.0 ranking. The Barrett Jackson Car Auction received the second highest mean ranking (3.81), as well as being cited by 13 of the 21 respondents as contributing to their overnight guest stays.

Table II-2
Events Encouraging Visitation
Ranked with 1 being the highest and 5 the lowest

Event	Ranking	Number of Hotels Identifying the Event
NASCAR	3.57	18
Car Auction	3.81	13
Spring Training	4.00	11
PGA Golf	4.00	15
Arabian Horse Show	4.00	13
Fiesta Bowl	4.48	8
Balloon Classic	5.52	5
Dixieland Jazz Festival	5.71	2
Senior Baseball League	5.86	1

Source: Gruen Gruen + Associates Hospitality Survey

Table II-3 ranks and presents the means for the special events by the quality of the hotel facility. For the luxury hotel establishments, the four most important special events, in order of their importance, are: 1) the Fiesta Bowl, 2) the PGA Golf Tournament, 3) the Barrett Jackson Car Auction, and 4) the Arabian Horse Show. The other activities shown in Table II-3 were mentioned by few to no hoteliers.

Table II-3
Ranking and Attendance at Special Events
by Quality of Hotel Facility

Luxury Hotels	Mean*	Moderate Hotels	Mean*	Economy Hotels	Mean*
Fiesta Bowl	2.20	NASCAR	2.63	Arabian Horse Show	3.13
PGA Golf	2.40	Spring Training	3.63	Barrett Jackson Car Auction	3.38
Barrett Jackson Car Auction	3.20	PGA Golf	3.88	NASCAR	3.50
Arabian Horse Show	4.60	Arabian Horse Show	4.50	Spring Training	3.63
		Barrett Jackson Car Auction	4.63	PGA Golf	4.13
		Fiesta Bowl	4.75		

*Events were ranked from 1-5 with 1 being the highest and 5 being the lowest ranking. When an event received no ranking at all it received a score of 6. In the table above, events have been ranked for all those events which received above a 5.0 ranking.

Source: Gruen Gruen + Associates

Six special events received higher than 5.0 ranking by moderate priced hotel respondents. However, these special events receive different ordinal ranking with the top two including the NASCAR Races and Spring Training. The Fiesta Bowl was ranked sixth.

The economy hoteliers' ordinal rankings, once again, differ from the other two types of facilities, with their top two special events being the Arabian Horse Show and the Barrett Jackson Car Auction.

Activities found on all three hotel facility top ranked activities list include the Arabian Horse Show, the Barrett Jackson Car Auction, and the PGA Golf Tournament.

Customer Shifts

Hoteliers were asked whether there had been a major change or shift in the make up of their visitor base since 1990. Four, or 27%, of the 15 who were in business in 1990 responded yes. (Seven of the 22 hoteliers had not been in business in 1990.) Of these 4, 2 indicated increased conference attendance and 1 each more corporate business and more upscale business.

Airport Usage

Respondents were asked two questions concerning the usage of the Scottsdale Airport. We first asked, "What percentage of your total visitors, if any, fly in and out of the Scottsdale Airport?" The second question was whether the percentage increased, decreased, or remained the same since 1990.

Six of the 20 respondents indicated that none of their visitors arrived at the Scottsdale Airport. Of the remaining 14 hoteliers, the estimated usage ranged from a low of .50 percent to a high of 12.00 percent. The median usage is 2 percent, and the average Scottsdale Airport estimated use is 3.11 percent.

Five respondents said they had noted an increase of Scottsdale Airport usage since 1990, while the remainder indicated that usage had remained the same.

THE LABOR MARKET AREA

Table II-4 shows the cities from which hotel employees originate for the 20 hoteliers who provided this information to us. A more definitive zip code area will be defined when comparing the primary labor market area for hoteliers to the other major SIC groupings drawn from the Employer Survey. The primary labor market area for each SIC grouping will also be mapped to pictorially show similarities and differences between the primary industrial categories.

Table II-4 breaks apart the primary labor market area for the smaller north Scottsdale and the far larger south Scottsdale hotel sub-samples. Ninety percent of the north Scottsdale hoteliers sample employees originate from either Phoenix (72%) or Scottsdale (17%), and 82% of the south Scottsdale employees also originate from Phoenix (52%) or Scottsdale (30%). It is not surprising that south Scottsdale hotels draw a far larger number of hotel employees from the city of Scottsdale, because south Scottsdale has a higher proportion of moderately priced housing. Tempe and Mesa together contribute an additional 11% to the labor market area of south Scottsdale hotels.

The 76 employees attributed to north Scottsdale hoteliers are affiliated with 4 smaller sized establishments that provided this information. These 4 ranged in size from 2 to 55 employees. The one luxury hotel in the north Scottsdale sample indicated a total of 500 full-time and 180 part-time workers, but would not provide the requested zip code breakdown. In reviewing the zip code information for those hoteliers providing information, zip codes 85022 and 85032 are the two dominant zip codes. These two zip codes also house a large number of Hispanic households who are a primary labor source for the hotel industry. We suspect that had the large-size north Scottsdale luxury hotel provided us with their employee zip code data that the residential pattern would not differ substantially, since they draw from the same labor base.

Table II-4

HOTEL SURVEY
ZIP CODE RESULTS BY CITY
NORTH SCOTTSDALE HOTELS*

City	FTE Employees	%
Phoenix	55	72
Scottsdale	13	17
Mesa	2	3
Chandler	2	3
Tempe	1	1
Glendale	1	1
Other	2	3
TOTAL	76	100

HOTEL SURVEY
ZIP CODE RESULTS BY CITY
SOUTH SCOTTSDALE HOTELS

City	FTE Employees	%
Phoenix	1057.0	52
Scottsdale	604.0	30
Tempe	121.0	6
Mesa	110.0	5
Paradise Vly	49.0	2
Chandler	36.0	2
Gilbert	25.0	1
Glendale	15.0	1
Other	23.5	1
TOTAL	2040.5	100

HOTEL SURVEY
ZIP CODE RESULTS BY CITY
ALL HOTELS

City	FTE Employees	%
Phoenix	1112.0	53
Scottsdale	617.0	29
Tempe	122.0	6
Mesa	112.0	5
Paradise Vly	49.0	2
Chandler	38.0	2
Gilbert	25.0	1
Glendale	16.0	1
Other	25.5	1
TOTAL	2116.5	100

*The zip code information is based on 4 smaller-sized north Scottsdale facilities. The one larger-sized luxury hotel in the north Scottsdale sample did not provide a zip code breakdown for their 500 full-time and 180 part-time employees.

Source: Gruen Gruen + Associates

Hospitality Industry Employment Effects

The employment projections in Chapter I provide a means of estimating overall tourism-driven employment in Scottsdale. Three sectors can be considered to have measurable employment that is directly influenced by the activities and expenditures of overnight hotel guests in Scottsdale. Retail Trade is significantly impacted by tourism, and this impact has been documented in a series of reports prepared for the city by Behavior Research Associates, citing shopping as the number one activity engaged in by Scottsdale tourists.[1] In the past decade, over 70% of Scottsdale visitors have cited this activity. Further, analysis of tax records by city staff indicates that approximately 18% of total sales tax is derived from tourists.[2] The Transportation and Personal Services sectors are also significantly impacted by tourism. While not subject to the same tax-based analysis as the Retail sector, city staff estimate that 18% of employment in these sectors is attributable to tourism. Table II-5 identifies tourism-driven employment in the city of Scottsdale.

Table II-5
Tourism-Driven Employment Projection Year 2000
for City of Scottsdale

Sector	Total Employment	Percent Attributable to Tourism	Number Attributable to Tourism
Hospitality	14,652	100%	14,652
Retail Trade	18,725	18%	3,371
Transportation	3,842	18%	692
Personal Services	8,446	18%	1,520
Total			20,235

Source: City of Scottsdale; Gruen Gruen + Associates

[1] *Scottsdale Visitor Study*, 1995, Behavior Research Associates, Phoenix, AZ.

[2] *Estimated Sources of Scottsdale Privilege Tax Collections*, 1999, City of Scottsdale.

CONCLUSIONS DRAWN FROM THE HOTELIER SURVEY

- The 22 Scottsdale hotels in the sample range in size from a low of 11 to a high of 654 rooms, with a mean average of 192 rooms.

- Nineteen of the 22 hotels offer at least minimal conference space, with 5 hoteliers indicating under 1,000 square feet and 8 more than 10,000 square feet.

- Annual occupancy ranged from a low of 50% to a high of 90% for the 22 hoteliers. On average, the 1997 occupancy rate for the five luxury hotels was 74.3%, while the moderate priced accommodations average 70.3% and economy priced facilities 70.6%.

- Of the 20 hoteliers responding to the visitor pattern question, only 1 indicated no business travelers and 2, each, no conference attendees and/or no travelers whose trip purpose is to attend a special event. Of the 6 hotels that indicated more than 50% of their customers stay at their facility to attend a conference or meeting, 4 are luxury facilities.

- The top 5 ranking (the lower the mean ranking, the more important the event) special events in order of their ranking are NASCAR (3.57), the Barrett Jackson Car Auction (3.81), Spring Training (4.00), PGA Golf (4.00), and the Arabian Horse Show (4.00). The ranking of events differed by the type of hotel. The Fiesta Bowl (2.20) and PGA Golf (2.40) were ranked highest by the luxury hotels. NASCAR (2.64) and Spring Training (3.63) were ranked highest by the moderate quality hoteliers, while the Arabian Horse Show (3.13) and Barrett Jackson Car Auction (3.38) were ranked highest by the economy hoteliers.

- The fourteen hoteliers indicating at least some of their visitors arrived at the Scottsdale Airport estimated a usage that ranked from a low of .50 to a high of 12.00 percent. Average Airport usage is 3.11 percent.

- Out of a total of 2,116.5 full time equivalent hotel employees, 53% reside in Phoenix, 29% in Scottsdale, 6% in Tempe, and 5% in Mesa, with smaller percentages located in Paradise Valley, Chandler, Gilbert, Glendale, and other. When the sample is broken down for establishments located north and south of Cactus, however, the proportion of employees living in Phoenix and Scottsdale shifts. Of the north Scottsdale FTE hotel employees, 72% reside in Phoenix and only 17% in Scottsdale. While in south Scottsdale, 52% of the hotel FTE workers reside in Phoenix and 30% in the city of Scottsdale. The availability of moderately priced housing is the primary reason for the increased percentage of hotel workers residing in south Scottsdale.

CHAPTER III

RESULTS AND CONCLUSIONS DRAWN FROM SURVEY OF AIRPARK/SONORAN REGIONAL CORE EMPLOYERS

INTRODUCTION AND PURPOSE

The Scottsdale Community Planning Department randomly selected 248 employers from those firms located in the Airpark and Sonoran Regional Core (SRC) character areas to participate in a survey. Of these, 194 questionnaires were received (the others were returned to sender). Fifty-one usable questionnaires were returned. One questionnaire was not utilized because there was so little information provided. The response rate for eligible respondents is 26%, not atypical for a relatively lengthy mailed questionnaire. A copy of the questionnaire can be found in Appendix E.

The primary purpose of the survey was to identify the zip code distributions of the primary labor market area. Other areas of interest are the importance of being proximate to the Scottsdale Municipal Airport and the Pima Freeway, as well as the key business linkages between firms.

Table III-1 presents a comparison of businesses in the core character areas by the number of received questionnaires and the number of completed usable questionnaires by SIC grouping. *All SIC groupings with 80+ enterprises located in the two character areas are represented in the final sample.* With the exception of one hospitality service company, those SIC categories with 52 or fewer businesses in the study area are not represented.

The top five SIC categories, with respect to number of firms located in the Airpark/SRC character areas, are Business Services 425 (20%), Retail Trade 368 (17%), Wholesale Trade 323 (15%), FIRE 286 (13%), and Construction 196 (9%). These five industries together account for 74% of the firms located in the two character areas and 68% of the sample. A separate survey was taken with hoteliers located in Scottsdale. Zip code data from this hotel employer survey has been incorporated in the analysis of the employer labor market area, which is discussed in the last section of this chapter.

Length of Time in Core Study Area

Table III-2 shows the location of those firms responding to the Airpark/SRC Employer Survey. The bulk of firms (96%) are located in the Airpark study area. Only one, or 2% of the respondents, is located in the SRC character area and one is located in North Phoenix.

Table III-1
Comparison of Total Airpark/Sonoran Core
Business Population to Questionnaire Recipients and to Responses Received
By SIC Grouping

		All Businesses		Questionnaires Sent		Responses Received	
	SIC Codes Included	# of Firms	%	# of Firms	%	# of Firms	%
Business Services	73,81,82,83, 86,87	425	20%	26	13%	11	22%
Retail Trade	52-57,59	368	17%	29	15%	9	18%
Wholesale Trade	50-51	323	15%	32	16%	5	10%
FIRE	60-65,67	286	13%	24	12%	5	10%
Construction	15,16,17	196	9%	31	16%	4	8%
Personal Services	72,75,76,78, 79,84,88,89	161	7%	12	6%	4	8%
Low Tech Manuf.	20-33,39	156	7%	12	6%	6	12%
High Tech Manuf.	34-38	86	4%	6	3%	6	12%
Transport	40-49	52	2%	7	4%	0	0%
Hospitality	58,70	47	2%	6	3%	1	2%
Agriculture	1,2,7,8,9	32	1%	6	3%	0	0%
Health Industry	80	30	1%	3	2%	0	0%
Mining	10,12,13,14	2	0%	0	0%	0	0%
Government	91-97	2	0%	0	0%	0	0%
Total		2166	100%	194	100%	51	100%

Note: Businesses whose questionnaires were returned as undeliverable (return to sender) were removed from this table.

Source: City of Scottsdale, Gruen Gruen + Associates.

Table III-2
Location of Employer Sample

	#	%
Airpark Character Area	49	96.3
SRC Character Area	1	2.0
North Phoenix	1	2.0
Total	51	100.3

*Total does not equal 100% due to rounding.
Source: Gruen Gruen + Associates

Percent of Total Business Conducted with Visitors from Outside Maricopa County

Respondents were asked specifically, "What percent of your total business, if any, is conducted with customers from outside Maricopa County?"

The percentage ranged form zero to 100% for the sample as a whole. The mean for the 51 employer sample is 44.53%, and the median (the point at which half the sample falls above and half below) is 25.00.

This differential between mean and median reflects a bi-polar pattern with few firms falling in the middle range and 15 firms specifying 90% or more of their business originates outside the county. These firms are most likely to be in the manufacturing sector, as shown in Table III-3.

Table III-3
Percent of Total Business Originating from Outside Maricopa County

	Mean Percentage
Manufacturing	61.25
Wholesale/Retail Trade	24.69
Services	44.00
Total	44.53

Source: Gruen Gruen + Associates

A pattern that can be inferred from those respondents with the bulk of their customers located outside Maricopa County is the desire on the part of the owner to live in north Scottsdale. This is an important factor to consider, since quality of life serves as an important economic development inducement. This assumption tends to be confirmed by the responses to the question which asked the

respondents, "What is the primary reason you located in the Airpark/Sonoran Regional Core area?" The choices and responses to this question are shown in Table III-4 below. Of the 48 employers who provided an answer to this question, 29 or 60% selected business/top management reside in area. Today this response is not as common as it was 10 to 15 years ago when the country was facing a far less severe labor shortage. It is, therefore, surprising to find only one employer who specified their primary reason was being close to a desirable labor base.

Table III-4
Primary Reason for Locating in
Airpark/Sonoran Regional Core Area

Primary Reason	#	%
Close to desirable labor base	1	2.1
Owners/top management reside in area	29	60.4
Close to primary customer base	13	27.1
Close to suppliers	0	-
Accessibility to the Scottsdale Airport	4	8.3
Accessibility to the Pima Freeway	1	2.0
Total*	48	99.9

*Total does not equal 100% due to rounding.

Source: Gruen Gruen + Associates

One of the study purposes was to ascertain the importance of the airport and freeway. While 4 firms indicated the Scottsdale Airport was the primary reason for their north Scottsdale location, only one firm noted the freeway to be a primary reason. Once the new freeway system is completed, the importance of freeway accessibility would be expected to increase.

Building Types

In order to plan for the amount and type of space that would be needed to accommodate future economic development in north Scottsdale, it is important to identify the types of space firms are now occupying. Table III-5 lists the types of buildings in which the 49 respondents who answered the question are located. All building types are represented within the study area. Approximately a quarter of the firms are located in low-rise or garden office (typically 1-2 stories), and 18% in mid-rise office (typically 3-5 stories). Fourteen percent are located in a commercial center or are a freestanding restaurant or a restaurant in a commercial building.

Table III-5
Building Types

Building Type	#	%
Industrial (Tilt-up construction with concrete walls and no windows)	6	12.2
Hybrid (high-tech and R&D buildings)	4	8.2
Low-Rise or Garden Office	12	24.5
Mid-Rise Office	9	18.4
Commercial Retail Center	7	14.3
Freestanding Restaurant or Commercial Building	7	14.3
Other	4	8.2
Total*	49	100.1

*Total does not equal 100% due to rounding.

Source: Gruen Gruen + Associates

The four "other" building types include a half hangar, half office; a school; combination office and warehouse; and a converted house.

Table III-6 cross-tabulates industrial sectors by building types. Firms identifying a manufacturing SIC are about equally split, with one-third located in industrial tilt-up or hybrid, one-third in either low- or mid-rise office, and one-third in commercial or other facilities. Those firms in either wholesale or retail trade are most likely located in a commercial facility, while those north Scottsdale service firms in the sample are most likely to be located in either a low-rise office or commercial building.

Table III-6
Industry Group by Building Type

	Building Type Groups									
Industry Groups	Industrial tilt-up and hybrid		Low-rise Office		Mid-rise Office		Commercial		Total	
	#	%	#	%	#	%	#	%	#	%
Manufacturing	5	33.3	2	13.3	3	20.0	5	33.3	15	99.9
Wholesale/Retail Trade	2	14.3	3	21.4	2	14.3	7	50.0	14	100.0
Services	3	15.0	7	35.0	4	20.0	6	30.0	20	100.0

Source: Gruen Gruen + Associates

Employment and Employee Density

Employer respondents were asked how many full and part time employees work in their North Scottsdale building.

Of the 51 firms who provided information on the number of full and part time employees, 21 firms, or 39% of the sample, indicated 10 or fewer full-time employees, 9 firms or 18% from 10-25 employees, 8 firms or 18% 25-50 employees, 10 firms or 20% from 51-100 employees, and only 4 firms or 8% over 100 full-time employees. Only 23, or 45% of the 51 firms, indicated they employed part time workers, and 22 or these 23 firms employed 10 or fewer part time workers. One firm, however, indicated they employed 125 part-time workers.

This pattern of having a large number of smaller-sized firms and a relatively few firms employing large numbers of workers is reflected in the differential between the full time employees mean and median. The mean for the sample was 33.59 and the median 17.00 full time workers.

Respondents were also asked how many of their workers spend most of the working hours on site, as opposed to working elsewhere. On average, these companies employ 28.75 workers on site, which suggests that, on average, about 5 workers per firm work off-site.

A more useful measurement is the average number of on-site workers per square foot of building space. To derive these employee density estimates, it is first necessary to obtain a measure of the gross and/or net square feet of building space occupied by the employer respondents. Thirty-nine respondents provided their gross square footage, while only 25 respondents were able to provide a net square footage of building space estimate.

Table III-7 shows the amount of gross square footage of building space provided by 39 respondents. Eight respondents, or one-fifth of the sample, occupy 2,000 square feet or less of building space. Six, or 15% of the respondents, occupy between 2,000 and 5,000 square feet of space, 9 or 23% of those who responded occupy between 5,000 and 10,000 square feet, 10 or somewhat over a quarter of the sample occupy between 10,000 and 20,000 square feet, 3 or 8% between 20,000 and 50,000 square feet, and the remaining 3 or 8% over 50,000 square feet. Once again, the small number of large space users pulls up the mean. The mean amount of gross square footage is 17,154 square feet, while the median is less than half of the mean, or 8,000 square feet.

Table III-7
Gross Square Footage of Building Space

	Respondent Firms	
Square Feet	#	%
2,000 or less	8	20
2,001 - 5,000	6	15
5,001 - 10,000	9	23
10,001 - 20,000	10	26
20,001 - 50,000	3	8
over 50,000	3	8
Total	39	100

Source: Gruen Gruen + Associates

Table III-8 identifies the mean on-site employee density for employers identifying their industry classification as manufacturing, wholesale/retail trade, or services. The gross density estimates were used because these data were more robust than the net building space estimates. Those employees not working on site were excluded from the mean estimates.

Table III-8
Mean Employee Densities by Major Industrial Sector

Industrial Sector	Number of Square Feet per Employee
Manufacturing	554
Wholesale/Retail Trade	1,388
Services	573
Average for Total	797

Source: Gruen Gruen + Associates

Across the industrial spectrum, the employer respondents in our north Scottsdale sample average approximately 800 square feet of gross building space.

Ownership Status

If the 51 responding employers, 16 or 31% own their space, 33 or 65% lease their facilities, and 2 or 4% of the sample sub-lease their space.

Table III-9 shows ownership status by major industrial sector. Of the three sectors, half of those in

wholesale/retail trade own their facility, as compared with 29% of those in services and 19% of those in manufacturing.

Table III-9
Ownership Status by Industrial Sector

	Own %	Lease/Sub-Lease %	Total %
Manufacturing	19	81	100
Wholesale/Retail Trade	50	50	100
Services	29	71	100
Average for Sample	31	69	100

Source: Gruen Gruen + Associates

THE PRIMARY LABOR MARKET AREA

A major purpose for conducting the survey with employers located in the Airpark and SRC character areas was to identify the primary labor market area from which these firms draw their employees. Respondents were asked to fill out a zip code table for all their full-time and part-time workers. We combined the two categories by creating a full-time equivalency ratio assuming two part-time workers equaled one full-time worker. All 51 respondents provided this information and together with the four north Scottsdale hoteliers accounted for a total of 1,368 employees. Table III-10 presents the employee zip codes by their city of residence. These data also include the zip code data from the 4 north Scottsdale hotelier respondents. Approximately half (49%) of the employees reside in the city of Phoenix, and almost a third (31%) in the city of Scottsdale. Five percent live in Glendale and Mesa, each.

Table III-10
FTE Employee Zip Codes by City of Residence*

City	FTE Employees	Percentage
Phoenix	675.1	49
Scottsdale	425.5	31
Glendale	63.0	5
Mesa	62.0	5
Cave Creek	30.0	2
Tempe	23.0	2
Peoria	19.0	1
Fountain Hills	15.0	1
Chandler	14.0	1
Paradise Valley	12.0	1
Gilbert	11.0	1
Other	18.5	1
Total	1,368.0	100

*This 1,368 total includes the 76 employees who are employed by four North Scottsdale hotelier respondents.

Source: Gruen Gruen + Associates

We have identified the primary labor market area for the following industrial Sectors: Hospitality, Business Services, Construction, F.I.R.E., High-Tech Manufacturing, Low-Tech Manufacturing, Personal Services, Retail and Wholesale Trade, as well as for all combined sectors. ***The primary labor market area is defined as those zip codes from which approximately 70% of all employees reside.*** These primary market areas are shown in Maps 1 - 10. These maps identify the percentage of employees located within each of the zip codes comprising the primary labor market. The outer boundary depicts the boundary of this labor market area. The city of Scottsdale is also outlined. Both the current and future freeway patterns are also shown.

Map 1 shows the residential zip codes that constitute the primary trade area (70% of the total employees) for the 1,368 employees in the sample including the 76 employees of four north Scottsdale hoteliers that are included in the hospitality sector. The dominant residential zip code for all industrial sectors is 85032, which accounts for 14% of the sample. The second dominant zip code is 85260. This zip code accounts for 10% of the sample. The third ranked zip code for all industrial sectors is 85254. This zip code accounts for 7% of the total number of employees in the sample.

While all three are in close proximity to the Airpark/SRC character areas, only zip code 85260 is located in the city of Scottsdale. ***Zip codes 85255 and 85259 only contain 3% of the employee sample, but this is due to the fact that these two zip codes contain limited residential development. Zip code 85255 is anticipated to experience significant growth over the next 20 years. It is also important to point out that the primary commute pattern is east-west, not north-south.***

Maps 2-10 present the primary labor market areas for nine industrial sectors. The primary labor market area is most compact in the Low-tech Manufacturing and F.I.R.E. sectors (refer to Map 2 and 4) and most scattered for the Construction industry (see Map 10).

Over half of all the Low-Tech Manufacturing employees in our sample reside in two dominant zip codes, 85260 (27%) and 85032 (26%). The three dominant F.I.R.E. employee zip codes are 85258 (14%), 85260 (13%), and 85024 (12%). High-Tech Manufacturing (shown on Map 3) has a more scattered pattern than the Low-Tech primary labor market area. Twenty percent of the 154 employees in the High-Tech sample reside in zip code 85032. Business Services' (shown on map 5) most dominant zip code is 85021, with 12% of this sector's employment located in this zip code. Zip code 85032 holds 20% of the 74 employees in the Personal Services primary labor market area, as shown on Map 6.

The primary labor market area for Wholesale Trade (see Map 7) is more constricted than is the primary labor market area for the Retail Trade sector, as shown on Map 8. Twenty-three percent of the Wholesale Trade workers are located in zip code 85032, and an additional 14% in zip code 85020. The 309 employees in Retail Trade have a labor market boundary that is quite similar to the pattern for the combined industrial sectors, but this sector also accounts for over one-fifth of the total employee sample with its 309 workers. Business Services and the Retail Trade sector, if combined, would account for over 40% of the FTE employee sample. Therefore, the All Industries primary labor market area would be expected to be influenced by the pattern of these two sectors.

The Hospitality Services sector has a distinct pattern in that its workers are not located in those zip codes closest to the two character areas. Zip codes 85008 and 85022 together account for 43% of those workers employed in the hospitality industry in north Scottsdale (refer to Map 9). Map 10, showing the primary labor market area for the Construction industry, has the most scattered pattern. Such a pattern would be expected given the fact that a high proportion of construction workers can be expected to be highly mobile throughout the Valley.

CONCLUSIONS TO BE DRAWN FROM THE AIRPARK/ SONORAN REGIONAL CORE CHARACTER AREAS EMPLOYER SURVEY

The following section lists the primary conclusions to be drawn from the survey results. The large number of substitutions of firms included in the survey precludes absolute verification of the survey's statistical representativeness. However, the survey is proportionally representative of the industries

now located in the study area. This proportional representation permits the assumption that total employment for Scottsdale can be allocated to the ZIP codes identified in the results.

- The primary reason for locating their firms in the Airpark/SRC character areas is because north Scottsdale is where the owners or managers want to live. This suggests that quality of life is of critical importance to the future economic development of the core character areas. Some firms indicated their foot-looseness in their responses. This affinity for living in north Scottsdale also helps to explain why 15 firms indicate that more than 70% of their business originates from outside the county. It is also interesting to note that only one respondent selected "Close to a desirable labor base" as their primary reason, despite the fact that all regions are currently responding to a labor shortage.

- Approximately 44% of the sample firms' business originates outside of Maricopa County. The same percentage for firms in the service sector also originates outside the county. The manufacturing sector had the highest percentage (61%) of business originating outside the county, while the wholesale/retail trade sector firms had the lowest (25%).

- The respondents are housed in a variety of building types, including a few in non-standard structures like a school or half hanger/half office. All sectors reveal a diverse pattern of building types. For example, one-third of the manufacturing respondents are located in industrial tilt-ups or hybrids, an additional third in commercial type facilities, 20% in mid-rise and 13% in low-rise office space. This pattern suggests a diversity of functions that are being performed.

- The sample averages approximately 33 workers per firm. The median (the point at which half the sample falls above and half below) of only 17 reflects the bi-polar nature on the size of firms, with over 50% of the sample employing 25 or fewer workers and four firms employing more than 100. These same firms average about 29 on-site workers.

- Approximately 69% of the firms lease or sub-lease their space, while 31% own their facilities. Wholesale/retail trade firms have the highest ownership rate (50%) and manufacturing firms the lowest (19%).

- Employee density ratios on the amount of *gross* building space per worker averages approximately 800 square feet per employee for the 39 firms in the sample who provided this information. The highest sector mean was 1,388 gross square feet per on-site wholesale/retail trade employee. The average gross square feet per employee is similar for the service (573 square feet) and manufacturing (554 square feet) sectors.

- About half (49%) of the employees working in the Airpark/SRC character areas reside in the city of Phoenix; 31% in the city of Scottsdale; 5% each in the cities of Glendale and Mesa. The primary labor market area is defined as those zip codes in which approximately 70% of all employees reside. The three dominant labor market zip codes are also close to the study

area. They are zip codes 85032, 85260, and 85254. These three account for 31% of the total number of employees in the sample. For most industrial sectors, the primary commute is east-west, not north-south. While adjacent zip code 85255 only contains 3% of the current employees, over the next 20 years this situation is likely to dramatically alter through increasing development. The primary labor market area differs by SIC category. Low-Tech Manufacturing and F.I.R.E. have the most constricted patterns, while the Construction sector has the most dispersed.

ANALYSIS AND FORECAST OF THE ECONOMIC BASE OF SCOTTSDALE

WITH PARTICULAR EMPHASIS ON THE HOSPITALITY SECTOR AND THE COMBINED AIRPARK/SONORAN REGIONAL CORE CHARACTER AREAS

A Milestone for Economic Development and Proactive Planning

A Report to the City of Scottsdale

Maps 1 - 10

(report pgs. 40 - 49)

from

GRUEN GRUEN + ASSOCIATES

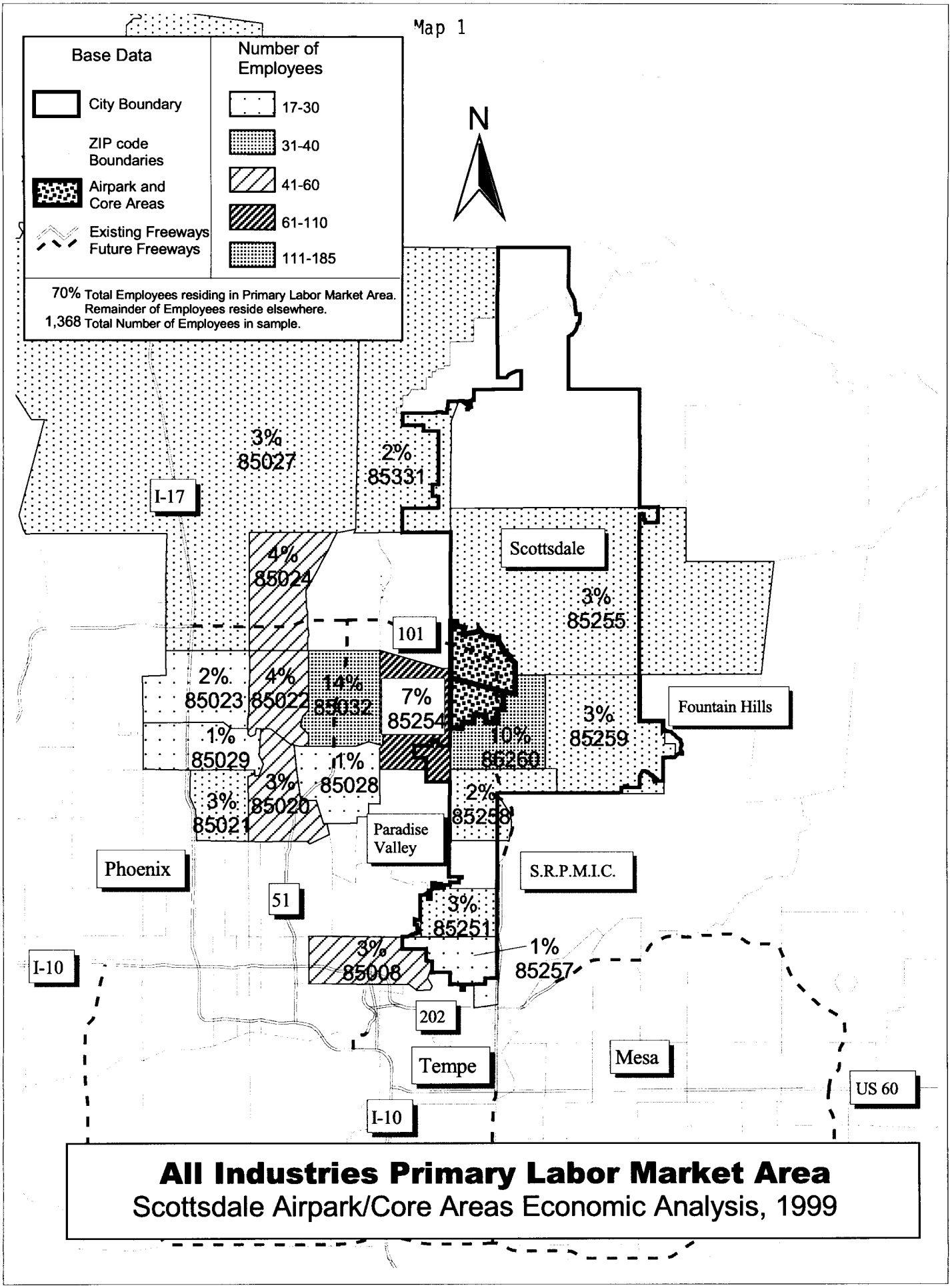
Urban Economists and Market Strategists

in association with

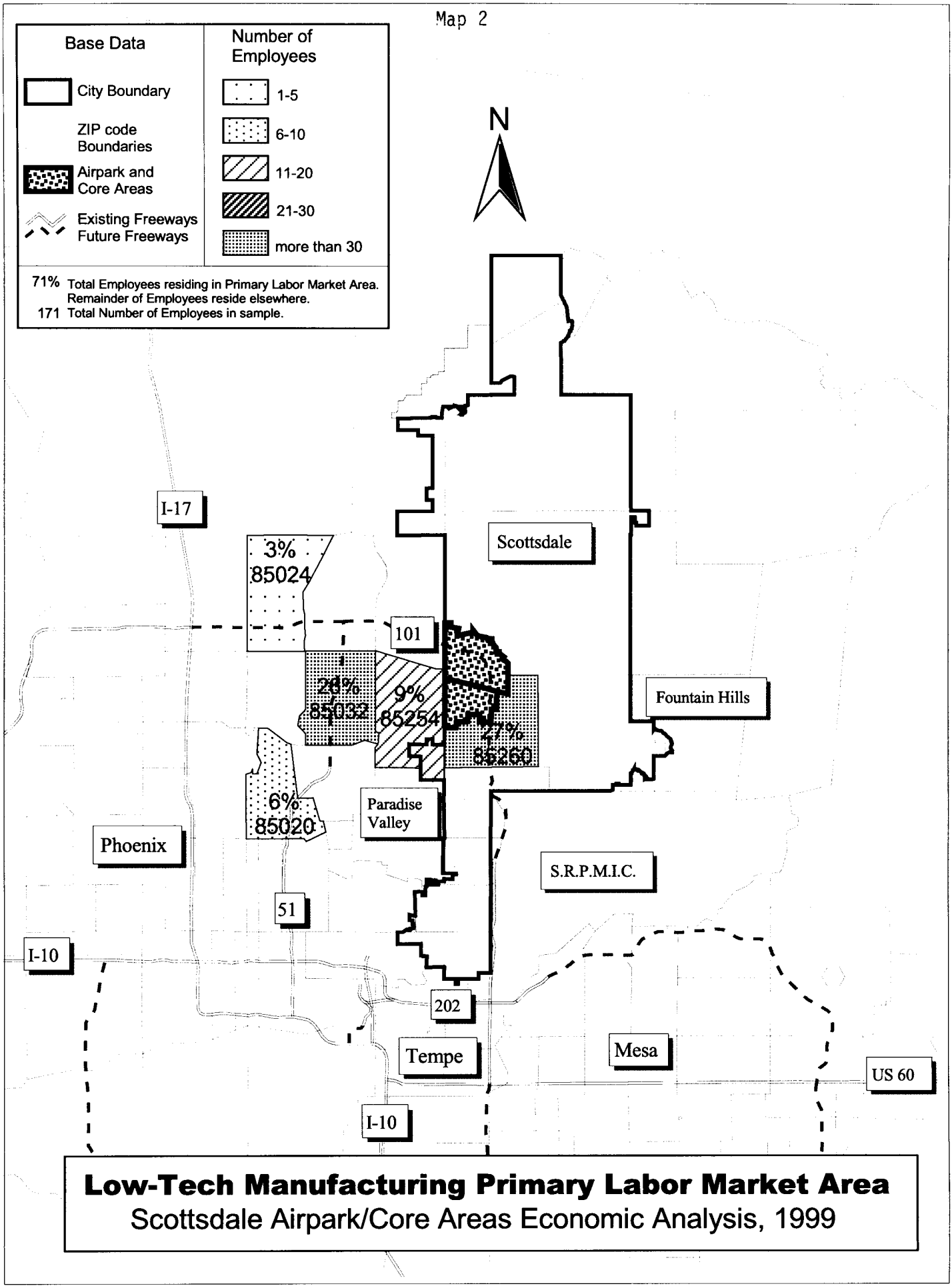
MOSAIC ANALYTIC PLANNING

June, 1999

C961

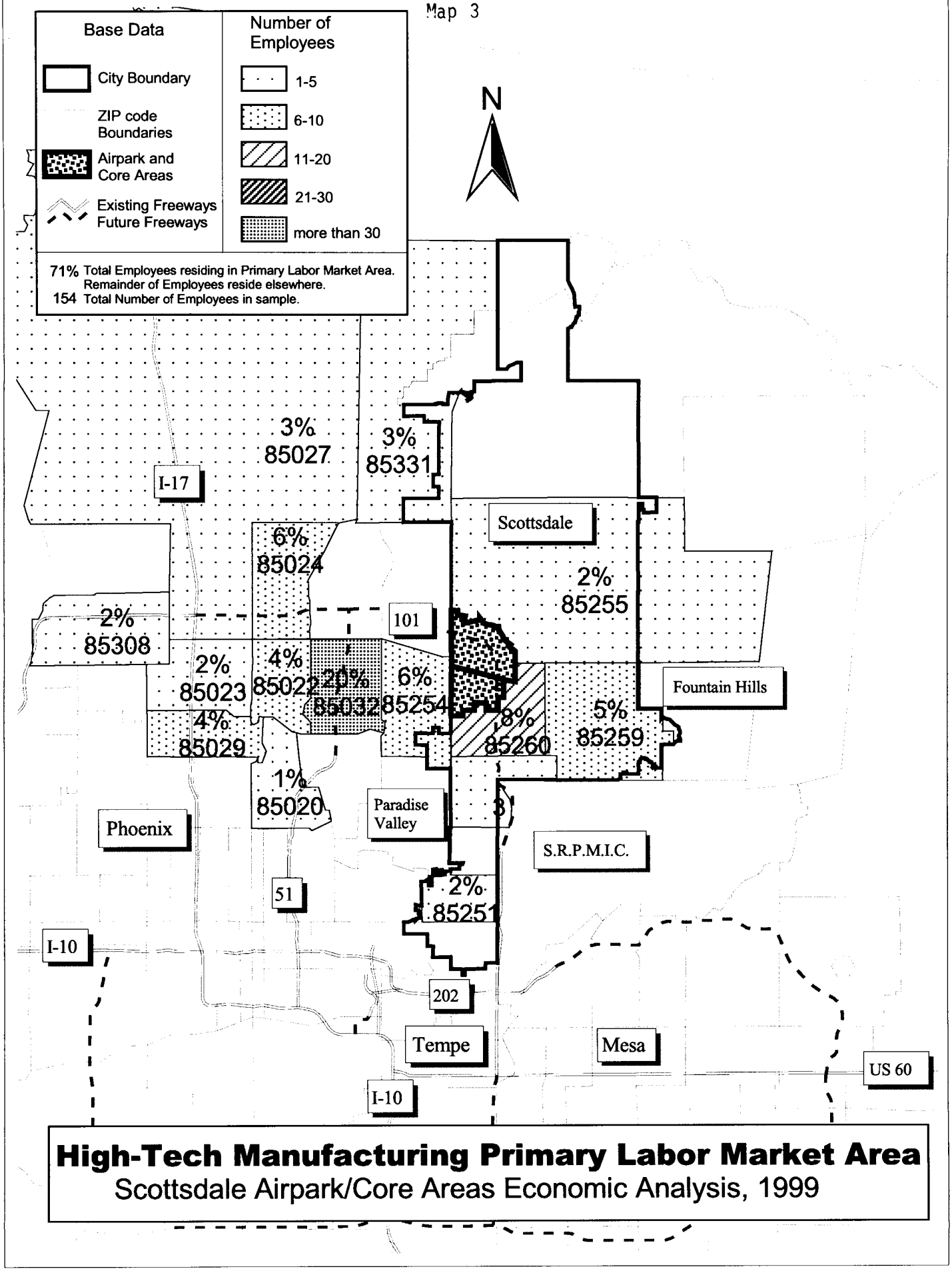

Map 1
Base Data
City Boundary
ZIP code Boundaries
Airpark and Core Areas
Existing Freeways
Future Freeways
Number of Employees
17-30
31-40
41-60
61-110
111-185
70% Total Employees residing in Primary Labor Market Area.
Remainder of Employees reside elsewhere.
1,368 Total Number of Employees in sample.
N
3% 85027
2% 85331
I-17
4% 85024
Scottsdale
3% 85255
101
2% 85023
4% 85022
14% 85032
7% 85254
10% 85260
3% 85259
Fountain Hills
1% 85029
1% 85028
3% 85020
3% 85021
2% 85258
Paradise Valley
Phoenix
S.R.P.M.I.C.
51
3% 85251
3% 85008
1% 85257
I-10
202
Tempe
Mesa
US 60
I-10
All Industries Primary Labor Market Area
Scottsdale Airpark/Core Areas Economic Analysis, 1999

Map 2



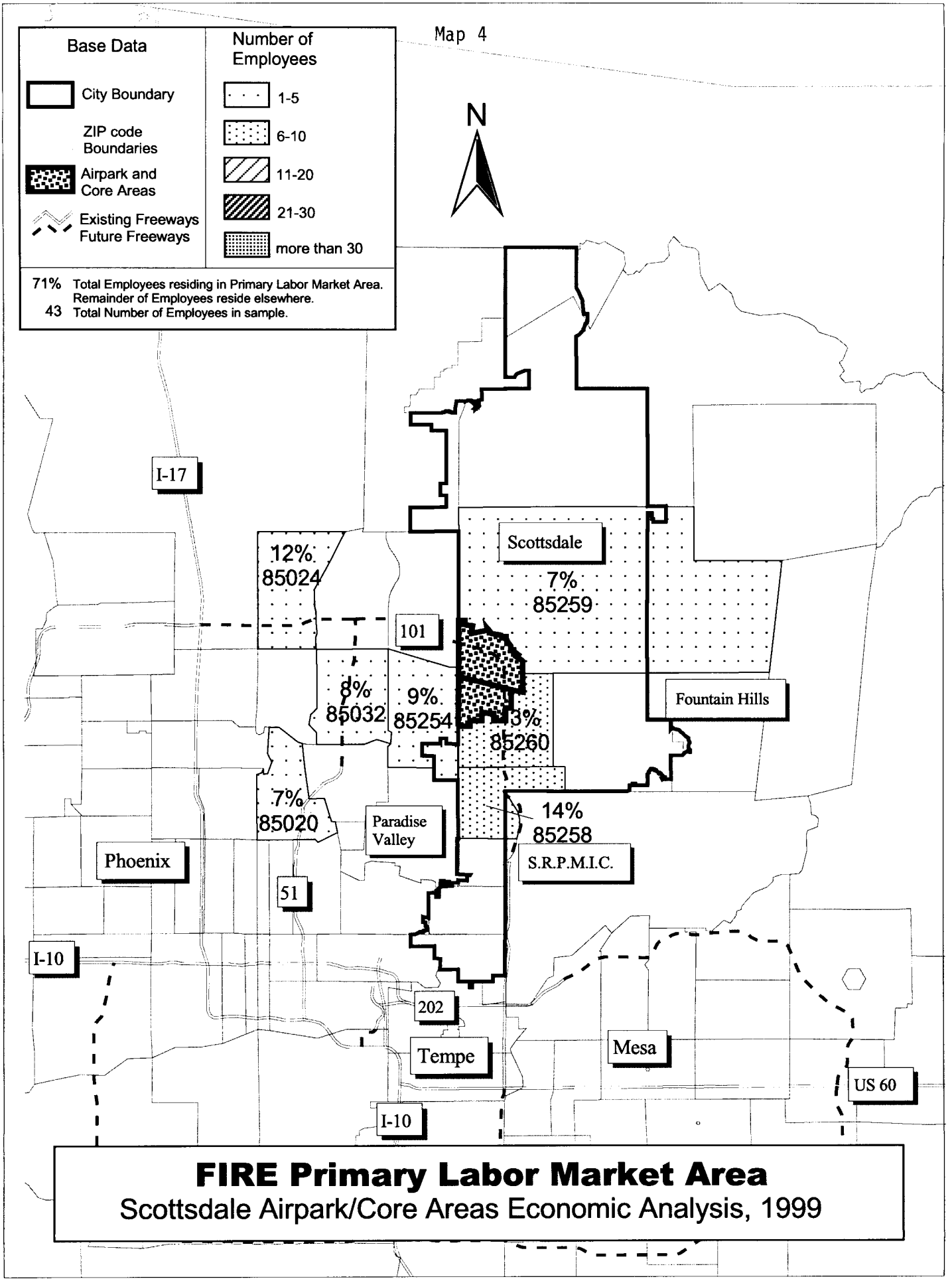
Low-Tech Manufacturing Primary Labor Market Area

Scottsdale Airpark/Core Areas Economic Analysis, 1999



High-Tech Manufacturing Primary Labor Market Area

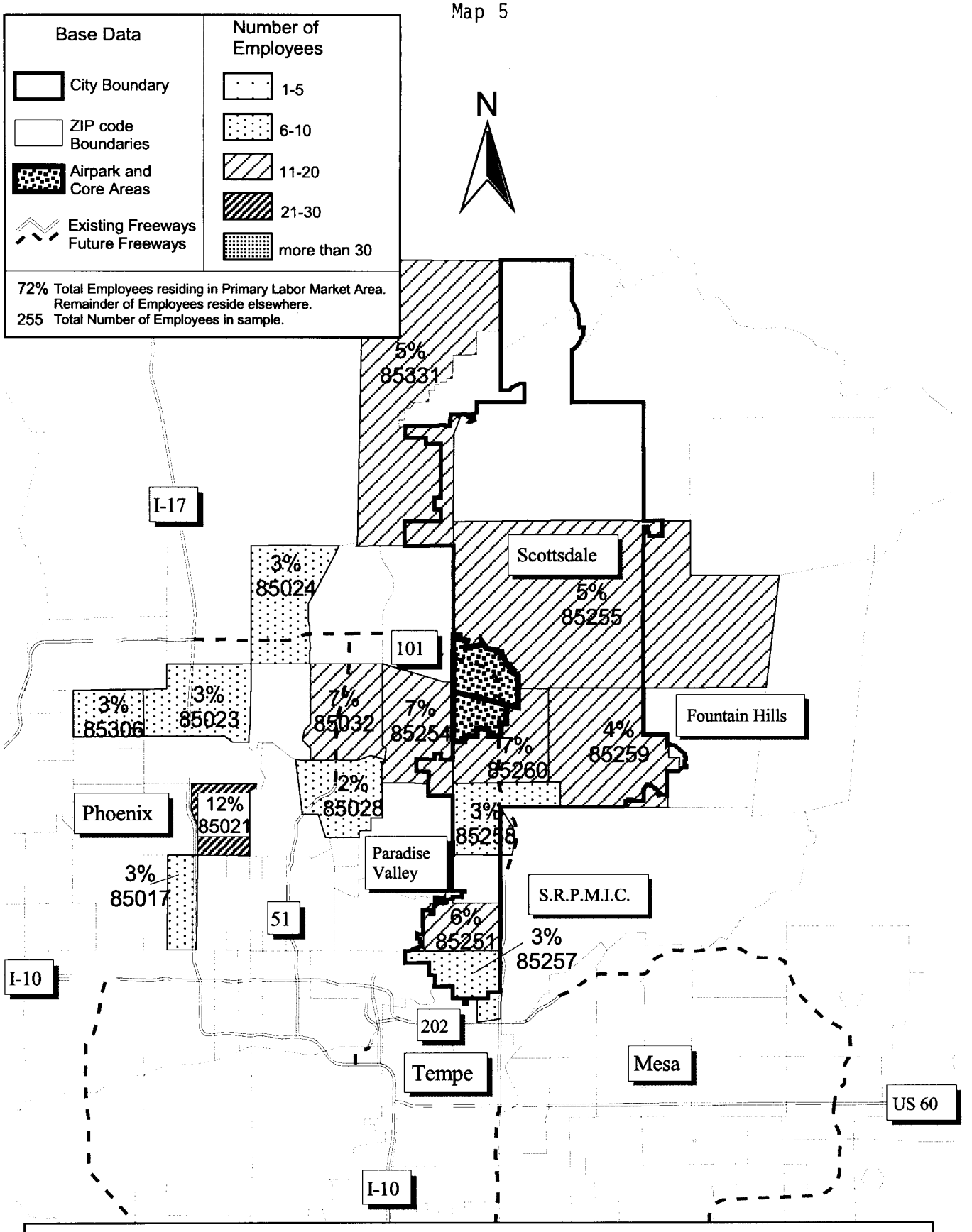
Scottsdale Airpark/Core Areas Economic Analysis, 1999



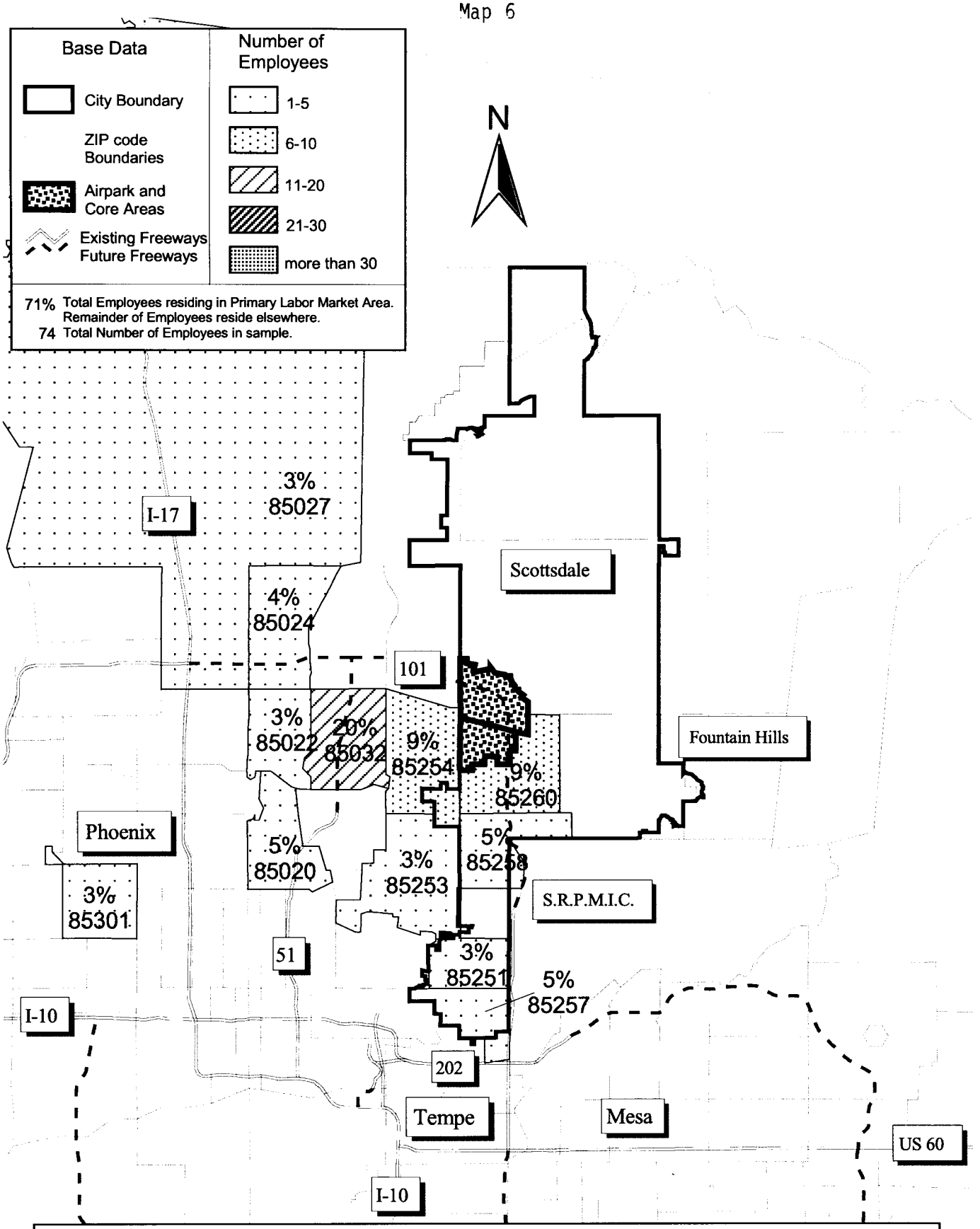
FIRE Primary Labor Market Area

Scottsdale Airpark/Core Areas Economic Analysis, 1999

Map 5



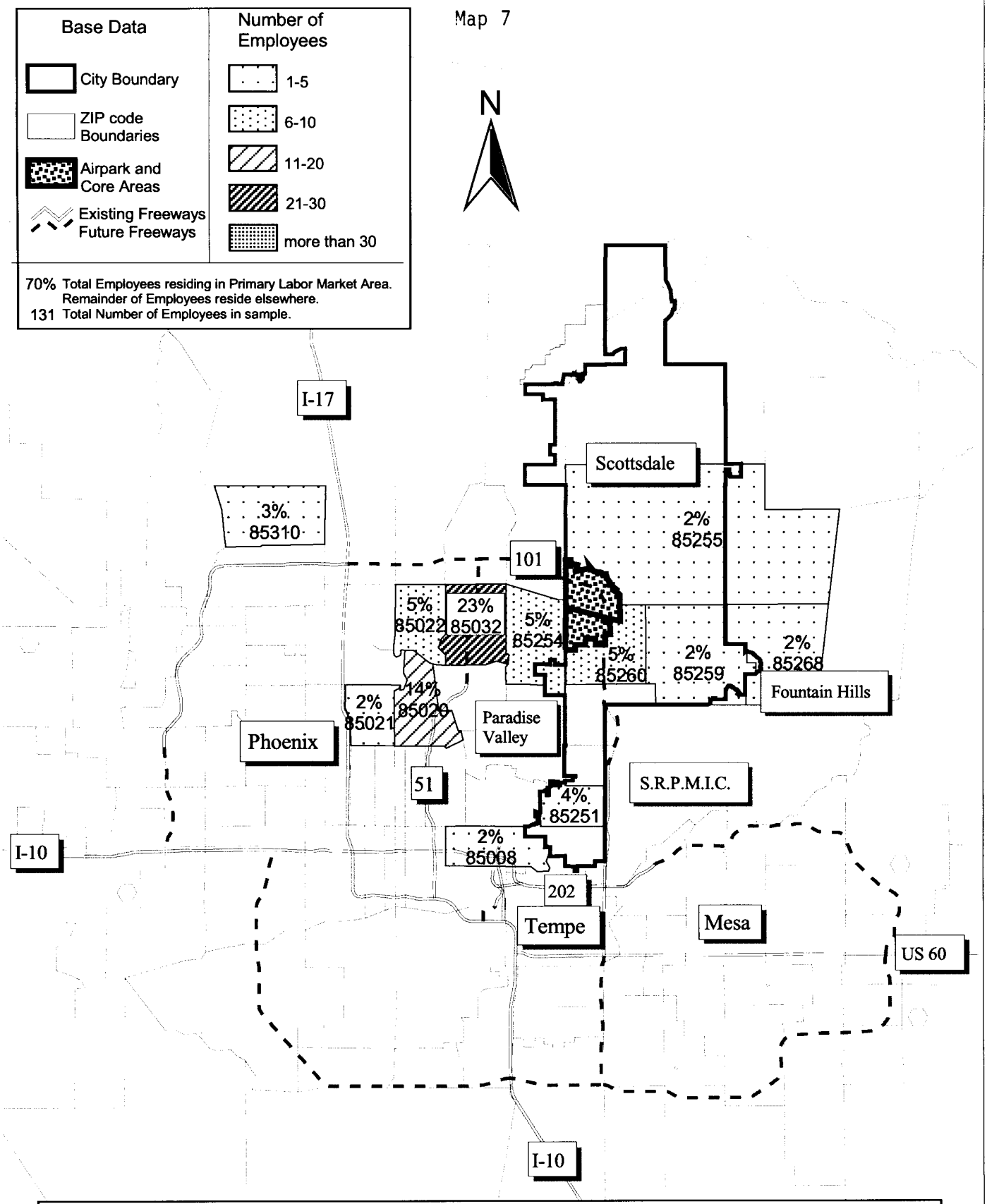
Business Services Primary Labor Market Area
Scottsdale Airpark/Core Areas Economic Analysis, 1999



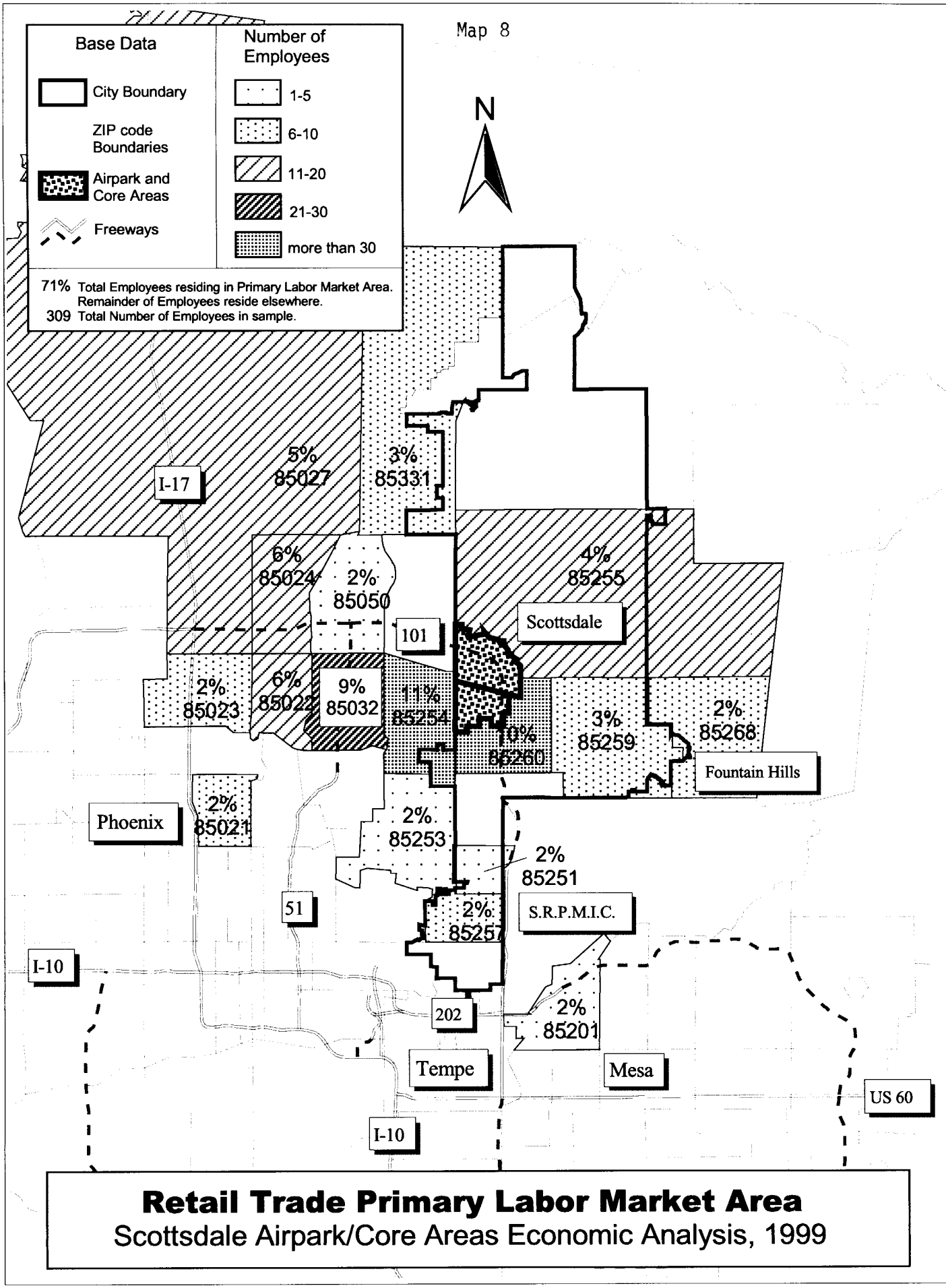
Personal Services Primary Labor Market Area

Scottsdale Airpark/Core Areas Economic Analysis, 1999

Map 7

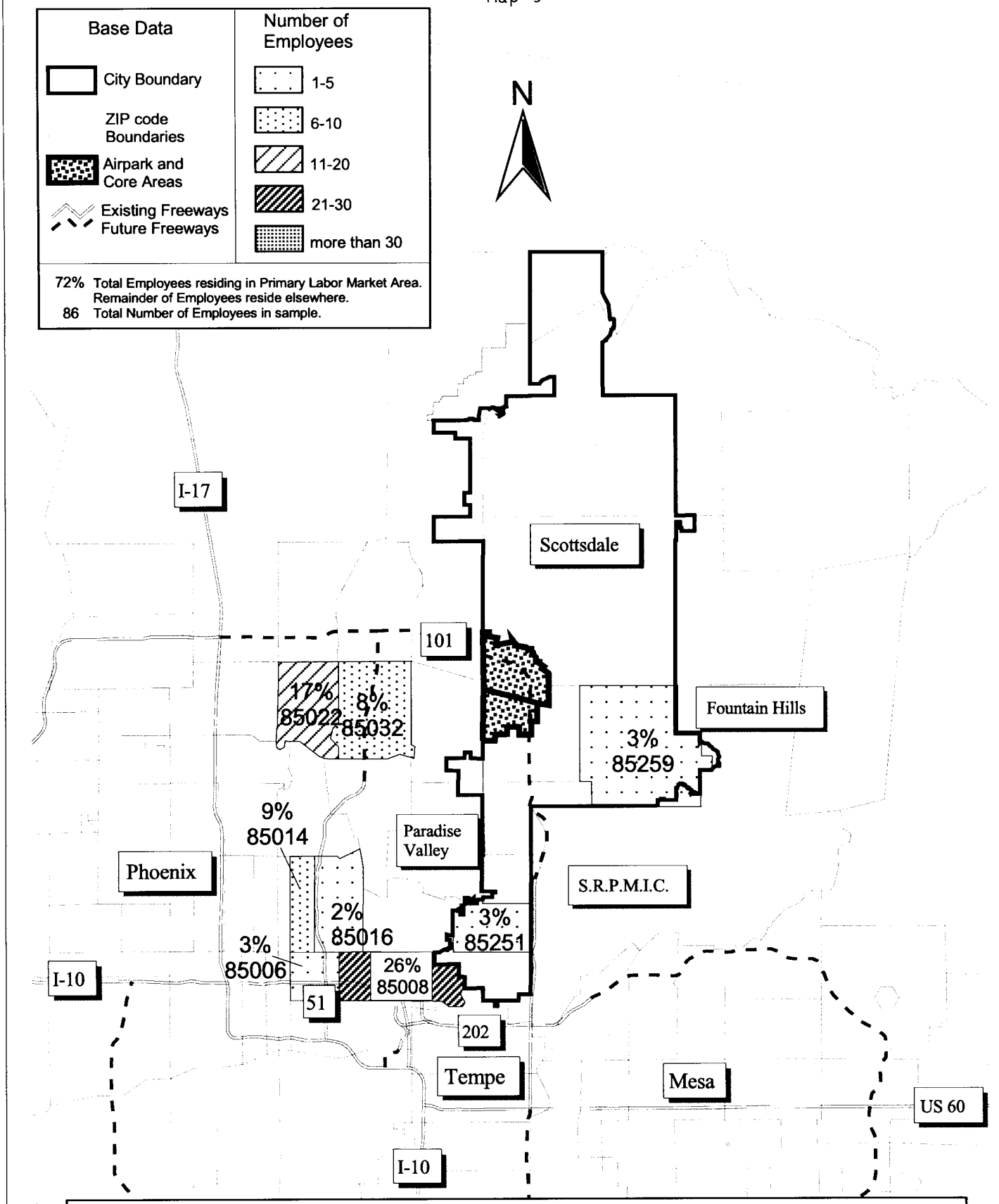


Wholesale Trade Primary Labor Market Area
Scottsdale Airpark/Core Areas Economic Analysis, 1999



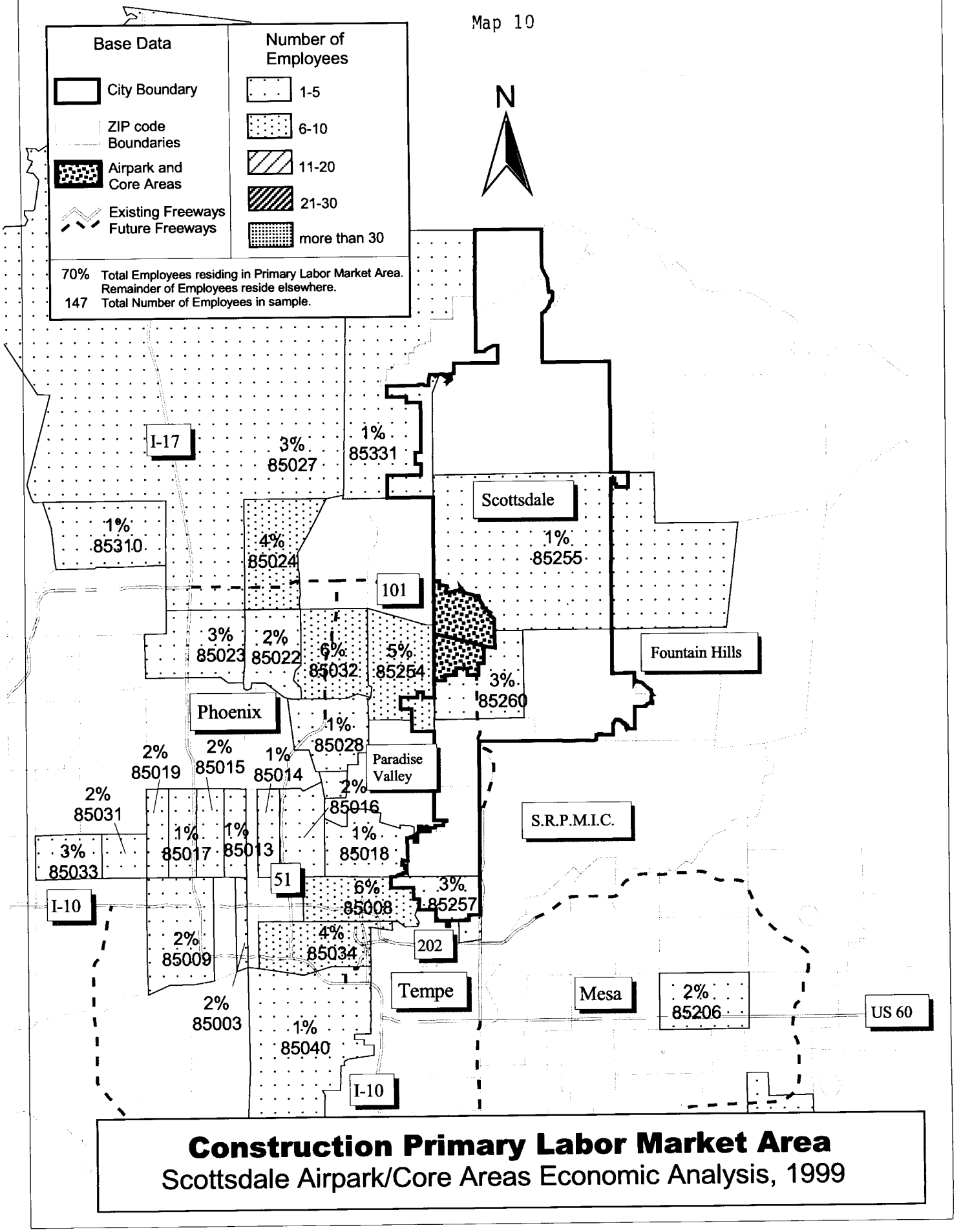
Retail Trade Primary Labor Market Area

Scottsdale Airpark/Core Areas Economic Analysis, 1999



Hospitality Primary Labor Market Area
Scottsdale Airpark/Core Areas Economic Analysis, 1999

Map 10



Construction Primary Labor Market Area

Scottsdale Airpark/Core Areas Economic Analysis, 1999

CHAPTER IV

THE STRUCTURE AND FUTURE OF THE AIRPARK/SONORAN REGIONAL CORE ECONOMY

The region's three strongest employment centers are Downtown Phoenix, the Sky Harbor area, and the Scottsdale Airpark/Sonoran Regional Core (SRC). The completion of the Pima Freeway Loop 101 will increase the accessibility of the Regional Core to customers within the larger region, and even more importantly, it will have the effect of increasing the accessibility and expanding the size of the area from which the Airpark/SRC attracts labor.

Table IV-1 compares the percent of employment in the various sectors for the Airpark/SRC with the proportion of each sector of Scottsdale's total employment. The Construction, Low-Tech Manufacturing, High-Tech Manufacturing, Transport and Wholesale Trade sectors each account for a larger proportion of jobs in the Airpark/SRC than these sectors account for in the city's economic base. Overall, in 1995, employment in the Airpark/SRC constituted about 17 percent of total employment in the city of Scottsdale. However, because we have forecast that employment in the Airpark/SRC will grow at a faster rate than employment elsewhere in the city between now and 2020, our forecast suggests the Airpark/SRC will constitute 27 percent of the city's employment in that year.

Table IV-1
Percentage Private Sector Employment by Sector
Comparison of Airpark/Sonoran Regional Core to City of Scottsdale

	Airpark/Core Employment 1995 %	City Employment 1995 %	Difference %	Airpark/Core Employment 2020 %	City Employment 2020 %	Difference %
Agriculture	2.2	1.5	0.7	0.8	1.4	- 0.5
Mining	0.2	0.1	0.1	0.1	0.1	0.0
Construction	13.0	5.7	7.3	13.6	4.7	9.0
Low-Tech Manufacturing	7.2	2.3	4.9	4.8	2.3	2.5
Hi-Tech Manufacturing	6.9	6.7	0.2	3.6	4.9	- 1.3
Transport	4.2	3.2	1.0	3.3	2.2	1.1
Wholesale Trade	11.7	5.1	6.6	10.2	5.5	4.7
Retail Trade	12.5	14.3	- 1.8	19.0	15.5	3.6
F.I.R.E.	7.3	13.4	- 6.1	7.1	10.5	- 3.4
Business Services	18.2	19.8	- 1.6	18.4	25.4	- 7.0
Health Industry	1.0	10.1	- 9.1	1.3	9.1	- 7.9
Hospitality	9.9	11.3	- 1.4	11.4	11.5	- 0.1
Personal Services	5.7	6.4	- 0.7	6.3	7.0	- 0.6
Total	100	100		100	100	

Note: Totals may not equal 100% due to rounding

Source: City of Scottsdale Tax Auditor's Office; Maricopa Association of Governments; Gruen Gruen + Associates

Table IV-2 shows an estimate in the increase in the number of business establishments in the Airpark/SRC between 1985 and 1995. Only High-Tech Manufacturing had fewer firms in 1995 than in 1985 within the Airpark/SRC, and even that sector had only one firm fewer. All the other sectors showed an increase in firms, most of them quite substantially. For the ten-year period, the total number of firms in the Airpark/SRC increased by 1,099 firms, or by 184 percent, versus an increase of 48 percent of firms within the city of Scottsdale as a whole, which added 2,739 business

establishments. The Airpark/SRC area accounted for about 40 percent of the city's new business establishments during the decade ending in 1995.

Table IV-2
Total Number of Business Establishments
for Airpark/Sonoran Regional Core Area
by Industry Group

Industry Group	1985	1995	Percent change
Agriculture	19	28	47
Mining	2	3	50
Construction	108	180	67
Low-Tech Manufacturing	32	84	163
Hi-Tech Manufacturing	49	49	0
Transport	20	54	170
Wholesale Trade	101	238	136
Retail Trade	44	177	302
F.I.R.E.	83	210	153
Business Services	56	377	573
Health Industry	14	77	450
Hospitality	21	84	300
Personal Services	49	136	178
Total	598	1,697	184

Source: Gruen Gruen + Associates; Mosaic Analytical Planning;
United States Department of Commerce, County Business Patterns

We judgmentally synthesized the results of several analytical methods in order to forecast employment in the various private sectors for the Airpark/SRC in 2020. The shift-share methodology that we had employed as a part of our procedure for forecasting the city's employment was used again, except that this time we compiled data for the 1985 - 1995 period for the city and the two character areas that constitute the Airpark/SRC. When we began our work, we considered the possibility of forecasting the two areas separately. But as we gained an understanding of the dynamics that applied, they suggested that the economic pressures and opportunities that exist apply to both areas with relatively equal force. Table IV-3 presents the results of a shift-share comparison of growth in the Airpark/SRC compared to the city for the 1985 - 1995 period. All sectors except Agriculture show a positive competitive component, which is what one would expect given the much more rapid rate of growth within the Airpark/SRC than the city as a whole.

Table IV-3
Components of Growth
for Combined Airpark/Sonoran Regional Core Area

Industry Group	Change in Employment 1985 - 1995	Regional Component	Industry Mix	Competitive Component
Agriculture	- 10	93	- 5	- 97
Mining	33	2	- 5	36
Construction	994	964	- 923	953
Low-Tech Manufacturing	980	290	149	541
Hi-Tech Manufacturing	282	251	- 271	302
Transport	617	87	- 77	606
Wholesale Trade	737	421	- 8	324
Retail Trade	1,721	163	39	1,519
F.I.R.E.	590	285	- 206	511
Business Services	2,984	369	634	1,981
Health Industry	1,104	34	14	1,056
Hospitality	3,771	184	- 17	3,604
Personal Services	1,645	231	- 162	1,575
Total	15,448	3,375	- 838	12,911

Note: Totals shown in tables may differ slightly from amounts listed due to rounding.
Source: Gruen Gruen + Associates

FORECAST OF PRIVATE SECTOR JOBS, 1995 - 2020

Working closely with the Scottsdale Tax Auditor's office, we estimated employment densities by type of space in the Airpark/SRC, and then used that relationship to make an independent estimate of employment in the Airpark/SRC between 1995 and 1998. This provided us with time series data running from 1985 through 1998, and we augmented the information provided by the shift-share analysis by completing a regression analysis that considered the relationship between employment in the county and the Airpark/SRC.

Both the shift-share and the results of the regression analysis were then synthesized in the light of the information drawn from employers and others in the area to prepare the forecast shown on Table IV-4. Business Services, Health, Hospitality, Personal Services and Retailing are forecast to be growing at a faster rate relative to the other sectors than they did in the 1985 - 1995 period. However, all sectors are forecast to grow vigorously, as we believe the employment base that has developed in the Airpark/SRC will thrive as the quality of life and the other currently present advantages of the region

are maintained, while the local population that can be served from businesses in this area expands and the accessibility of the core to the remainder of the region is enhanced. In 1995, actual employment in the Airpark/SRC was 19,991. This core area is forecast to add 31,844 workers between 1995 and 2020, for a total of 51,755 workers forecast for 2020.

Table IV-4
Employment Forecast for the Airpark/Sonoran Regional Core Area

Sector	Actual Employment 1995	Forecast Employment 2000	Forecast Employment 2010	Forecast Employment 2020	Actual Annual Growth Rate 1985 - 1995	Forecast Annual Growth Rate 1995 - 2020	Sector Percent of 2020 Total Employment	Sector Percent of 1995 Total Employment
Agriculture	440	514	703	960	-0.5%	3.2%	1.9%	2.2%
Mining	36	38	44	50	22.5%	1.3%	0.1%	0.2%
Construction	2,590	2,815	3,324	3,925	3.7%	1.7%	7.6%	13.0%
Low Tech Manuf	1,442	1,629	2,077	2,650	9.3%	2.5%	5.1%	7.2%
High Tech Manufacturing	1,378	1,551	1,965	2,490	4.0%	2.4%	4.8%	6.9%
Transport	829	874	971	1,080	14.8%	1.1%	2.1%	4.2%
Wholesale Trade	2,333	2,675	3,515	4,619	5.7%	2.8%	8.9%	11.7%
Retail	2,482	3,050	4,608	6,961	18.5%	4.2%	13.4%	12.5%
F.I.R.E.	1,455	1,682	2,246	3,000	6.5%	2.9%	5.8%	7.3%
Business Services	3,619	4,811	8,500	15,020	16.0%	5.9%	29.0%	18.2%
Health	200	303	696	1,600	30.8%	8.7%	3.1%	1.0%
Hospitality	1,973	2,413	3,610	5,400	25.4%	4.1%	10.4%	9.9%
Personal Services	1,134	1,459	2,416	4,000	14.9%	5.2%	7.7%	5.7%
TOTAL	19,911	23,814	34,676	51,755	11.4%	3.2%	100.0%	100.0%

Source: City of Scottsdale; Gruen Gruen + Associates

SPATIAL IMPLICATIONS

Table IV-5 presents an estimate of the amount and type of private, non-residential space in the Airpark/SRC in 1995. The table also indicates the number of employees that were in the identified types of buildings, as well as the number of businesses. Perhaps the most unusual thing about buildings in the area, when contrasted to other character areas, is that almost 50 percent of all the structures are mixed. They include some warehouse, office, and retail space within the same buildings. The second largest amount of space is occupied by office buildings, followed by industrial warehouse, and retail space. The large amount of mixed space is accounted for partially by the history of the area that was built up around the airport in years when industry, distribution and the airport-related uses were the most important sectors. This kind of space also permits flexibility, which is important to relatively small sized firms that had needs for office, storage, and processing within the same or adjacent space. Some of these firms added retail to their other activities, while in other cases retail firms added wholesale and processing activities. While flexible space will continue to be important as the economy of the Airpark/SRC expands, the proportion of buildings actually built, as opposed to being remodeled, to serve warehouse, office and retail uses, will decline.

Table IV-5
1995 Employment Distribution within Types of Building Space in Airpark/Sonoran Regional Core Area

Types of Building Space	Square Feet	Percent of Total	Employees	Percent of Total	Number of Businesses	Percent of Total
Office	1,116,787	21%	3,802	24%	338	24%
Retail	255,170	5	1,135	7	32	2
Industrial	666,018	13	1,483	9	75	5
Warehouse	574,898	11	1,097	7	95	7
Warehouse with Office/Retail	2,617,807	50	8,605	53	874	62
Total	5,230,679	100%	16,122	100%	1,414	100%

Note: Totals shown in tables may differ slightly from amounts listed due to rounding.
Source: City of Scottsdale Tax Auditor's Office; Gruen Gruen + Associates

To gain some estimate as to the amount of space that will be added in future years, we have drawn on data in the Assessor's records to estimate the percentage of employees in each sector that are currently employed within the five types of structures the Assessor's records track in the region. Table IV-6 shows the percent of the workers employed by firms occupying space within each category of buildings in the Airpark/SRC.

Table IV-6
Distribution of Employees by Industrial Sector within Airpark/Sonoran Regional Core Buildings in 1995

		Percent of Employment by Type of Building					
Industrial Sector	**Sq. Ft.**	**Office**	**Retail**	**Industrial**	**Warehouse**	**Warehouse with Office/Retail**	**Total**
Agriculture	101,405	6%	0%	16%	9%	70%	100%
Mining	1,189	100%	0%	0%	0%	0%	100%
Construction	427,686	14%	0%	2%	3%	82%	100%
Low Tech Manuf.	360,684	8%	1%	23%	8%	60%	100%
Hi-Tech Manuf.	487,611	12%	0%	35%	2%	51%	100%
Transport	253,465	51%	1%	3%	23%	22%	100%
Wholesale Trade	791,694	14%	0%	6%	11%	70%	100%
Retail Trade	721,180	11%	36%	2%	16%	34%	100%
FIRE	463,986	63%	0%	1%	1%	35%	100%
Business Services	1,129,767	43%	2%	12%	2%	41%	100%
Health Industry	46,020	24%	3%	0%	0%	73%	100%
Hospitality	70,422	6%	29%	1%	0%	64%	100%
Personal Services	375,571	12%	12%	18%	1%	57%	100%
Total	5,230,679	24%	7%	9%	7%	53%	100%

Source: City of Scottsdale Tax Auditor's Office; Gruen Gruen + Associates

Estimates of the amount and distribution of workers employed by sector working in or out of the five categories of buildings located within the Airpark/SRC can be combined with forecasts of employment and estimates of employee density to estimate the amount of building space that will be demanded in future years. To make such a forecast, we first multiplied the percentage of workers within each sector and within a given building type by the number of that sector's employees forecast to be in the Airpark/SRC in 2020. Finally, we multiplied the results of these calculations by estimates of the amount of space within each building likely to be used by people working in or out of each type of structure.

These square feet per worker, or density, estimates must consider the space used by workers who occasionally come into the firm's building space but frequently work outside the building in selling, construction, servicing, or other occupations. Because we are estimating demand for ***all employees***, some of whom will ***not actually be housed within the buildings*** of the Airpark/SRC for any significant amount of time, some of these estimates are lower than traditional employee density estimates. For example, many of the construction workers employed in the area are actually on site all or most of their time. Thus, very little space is required for them at their home base in the Airpark/SRC. This works to drag down employment densities from measurements based on actually estimating how many workers per square foot there are within a given building.

The employment densities used were 300 square feet per worker for office, 600 square feet per worker for retail, 500 square feet per worker for industrial, 600 square feet per worker for warehouse, and 400 square feet per worker for the office/retail/warehouse combination category. The GG+A best judgment estimate of the private sector demand for occupied space in 2020 is 21.4 million square feet, or about three times the occupied space in the area in 1995. We estimate, furthermore, that our error range is likely to be about plus or minus ten percent. Table IV-7A shows approximate building space demand in 2010 and table IV-7B shows demand in 2020.

Table IV-7A
Approximate Demand for Building Space in Year 2010
By Building Type
for Airpark/Sonoran Regional Core Area

Industry Group	Office Square Feet	Retail Square Feet	Industrial Square Feet	Warehouse Square Feet	Warehouse/ Office/Retail Square Feet	Total
Agriculture	13,000	0	55,000	37,000	196,000	301,000
Mining	13,000	0	0	0	0	13,000
Construction	136,000	0	25,000	61,000	1,087,000	1,309,000
Low Tech Manufacting	49,000	9,000	239,000	105,000	499,000	901,000
Hi-Tech Manufacturing	70,000	0	345,000	24,000	400,000	839,000
Transport	149,000	4,000	14,000	136,000	86,000	389,000
Wholesale Trade	148,000	0	98,000	224,000	980,000	1,450,000
Retail Trade	155,000	1,005,000	37,000	453,000	634,000	2,284,000
F.I.R.E.	422,000	3,000	6,000	20,000	316,000	767,000
Business Services	1,097,000	89,000	492,000	114,000	1,409,000	3,201,000
Health Industry	50,000	13,000	0	0	204,000	267,000
Hospitality	70,000	632,000	14,000	0	919,000	1,635,000
Personal Services	87,000	169,000	221,000	13,000	552,000	1,042,000
Total	2,459,000	1,924,000	1,546,000	1,187,000	7,282,000	14,398,000

Note: Totals shown in tables may differ slightly from amounts listed due to rounding.
Source: Gruen Gruen + Associates

Table IV-7B
Approximate Demand for Building Space in Year 2020
By Building Type
for Airpark/Sonoran Regional Core Area

Industry Group	Office Square Feet	Retail Square Feet	Industrial Square Feet	Warehouse Square Feet	Warehouse/ Office/Retail Square Feet	Total
Agriculture	17,000	0	76,000	5,000	267,000	410,000
Mining	15,000	0	0	0	0	15,000
Construction	161,000	0	30,000	72,000	1,283,000	1,546,000
Low-Tech Manufacturing	62,000	12,000	305,000	134,000	637,000	1,150,000
Hi-Tech Manufacturing	89,000	0	438,000	31,000	507,000	1,065,000
Transport	165,000	5,000	16,000	151,000	95,000	432,000
Wholesale Trade	195,000	0	129,000	294,000	1,288,000	1,906,000
Retail Trade	234,000	1,519,000	57,000	684,000	958,000	3,452,000
F.I.R.E.	563,000	4,000	8,000	27,000	422,000	1,024,000
Business Services	1,938,000	157,000	870,000	201,000	2,489,000	5,655,000
Health Industry	114,000	31,000	0	0	468,000	613,000
Hospitality	104,000	945,000	20,000	0	1,375,000	2,444,000
Personal Services	144,000	279,000	365,000	22,000	914,000	1,724,000
Total	3,801,000	2,952,000	2,314,000	1,666,000	10,703,000	21,436,000

Note: Totals shown in tables may differ slightly from amounts listed due to rounding.
Source: Gruen Gruen + Associates

One analytical test of both the employment forecast and space demand forecast that is the end product of this study was a comparison of the retail employment and space demand and the anticipated growth of the demand for retail and food services within a 20-minute driving radius of the area in 2020. Between now (1999) and 2020, household income within 20 minutes of the area is projected to increase by about $760,000,000 (1995 constant dollars). When this is added to the demand based on the size of the existing population, that total demand can reasonably be expected

to support the forecast retail employment and space.[3]

SPACE AND LAND ABSORPTION 1999 - 2020

The estimate of 2020 built space that was described above is an approximation of the total amount of space that will be occupied by the private sector in approximately 21 years from when this report was written. Because we are forecasting the total amount of space that would be occupied, the estimate of additional space likely to be built between now and 2020 has to subtract from the previous estimate of the amount of space that exists today. This estimate of current space includes that portion of the developed space that is currently unoccupied and under construction. Data from the city of Scottsdale Tax Auditor's Office was used to estimate currently occupied space. To this estimate was applied an estimate of a 4 percent average vacancy rate and an estimate of space currently under construction, representing 11 percent of the existing total. This estimate was obtained from the "2010 Report" published in the *Scottsdale Airpark News,* December 1998. While this vacancy and construction data is valid for this analysis, readers familiar with the 2010 Report will notice that the existing building space estimates used here are different from those in the 2010 Report. This can be accounted for by the fact that the Airpark boundaries used by the 2010 Report differ from those used in this report, primarily in that the 2010 Report boundary extends into the city of Phoenix, into the densely developed area to the west of Scottsdale Road. When this difference is accounted for, the existing square footage estimates are comparable.

Just as today's market is building ahead of demand, and has been doing so for the last several years, the amount of space that will be added between now and 2020 is also likely to consist of some unoccupied space and some under construction development. In Tables IV-8A and IV-8B, therefore, we have deducted this estimate of the current inventory. We have then *added* an amount representing our estimate of vacant and under construction space in 2020, equal to 10 percent of the projected total space. A total of 15.3 million square feet of space is estimated to be built or under construction between now and 2020. We consider the estimate of total space as more likely to be accurate than the estimates for each individual building type as these types will evolve over time in response to changing economic forces in the Airpark/SRC. Given the assumptions described in the text and used to derive the employment forecast, it would appear no additional warehouse construction would be required through 2010. Table IV-8A contains an estimate of building space and vacant land required in 2010

[3]This $760,000,000 estimate was derived from the following calculations:

1) There will be a net addition of 55,896 households between 1995 and 2020 (257,571 - 201,65 = 55,896).

2) Assuming they expend 20% of their 2020 median household income ($67,911) on the type of retail goods that can be purchase in shopping centers (the typical family expends from 18% to 22% of their household income on retail goods), per household expenditures would average $13,582.

3) Total additional potential expenditures = $759,190,651.

4) Number of employees per square foot = 600 sq. ft. per employee x $300 per sq. ft. sales = $180,000 sales per employee.

5) $759,190,651 ÷ 180,000 sales per employee = 4,218 employees.

6) GG+A forecast 4,479 net additional retail employees between 1995 and 2020.

and Table IV-8B contains the estimate for 2020.

Table IV-8A
Estimate of Building Space and Vacant Land Required 1999-2010
for Airpark/Sonoran Regional Core Area

	Office	Retail	Industrial	Warehouse	Warehouse with Office/Retail	Total
Sq. Ft. Estimate of Occupied Space 2010	2,459,000	1,924,000	1,546,000	1,187,000	7,282,000	14,398,000
Sq. Ft. Estimate of Space Currently Available and Under Construction (subtracted from above figure)	1,516,000	553,000	858,000	718,000	4,671,000	8,316,000
Sq. Ft. Estimate of Vacant Space 2010 (added to above figure)	246,000	192,000	155,000	119,000	728,000	1,440,000
Sq. Ft. of Total Added Building Space	1,189,000	1,563,000	842,000	588,000	3,340,000	7,522,000
Additional Acres of Land Required	91	179	64	45	256	635

Source: City of Scottsdale; Scottsdale Airpark News; Gruen Gruen + Associates

Table IV-8B
Estimate of Building Space and Vacant Land Required 2010-2020
for Airpark/Sonoran Regional Core Area

	Office	Retail	Industrial	Warehouse	Warehouse with Office/Retail	Total
Sq. Ft. Estimate of Occupied Space 2020	3,801,000	2,952,000	2,314,000	1,666,000	10,703,000	21,436,000
Sq. Ft. Estimate of Space Currently Available and Under Construction (subtracted from above figure)	2,705,000	2,116,000	1,701,000	1,306,000	8,010,000	15,838,000
Sq. Ft. Estimate of Vacant Space 2020 (added to above figure)	380,000	295,000	231,000	167,000	1,070,000	2,144,000
Sq. Ft. of Total Added Building Space	1,476,000	1,131,000	845,000	527,000	3,763,000	7,742,000
Additional Acres of Land Required	113	130	65	40	288	636
Total Additional Acres of Land Required since 1999	204	309	129	85	544	1,271

Source: City of Scottsdale; Scottsdale Airpark News; Gruen Gruen + Associates

As also shown in Table IV-8A, we have attempted to provide an indication of the amount of currently vacant land that will be absorbed by the new development likely to be built in response to anticipated private sector demand. In making these estimates, we have assumed the following floor area ratios, or FARs:

	FAR
Office	.30
Retail	.20
Industrial	.30
Warehouse	.30
Warehouse/Office/Retail Mixed Use	.30

These FARs are an approximation reflecting a more intense use of land than is currently the case. We have also not attempted to estimate how much of the additional development will be required purely to replace existing space, or how much space will be developed as existing buildings are remodeled and expanded. These factors are particularly hard to estimate, and their exclusion does contribute to the error range that applies to our estimate.

STRATEGIC IMPLICATIONS

The estimates of employment and the amount and type of space and land required by the private economy likely to locate in the Airpark/SRC will be used by the city of Scottsdale and other public agencies to provide for the timely needed expansions of public infrastructure to serve the economic base of the area, while simultaneously maintaining and/or improving the quality of the infrastructure and services (including transportation) serving the area's present and future residents. Planning and implementing needed public sector infrastructure components, such as streets, water and sanitary services, ahead of, or at least in step with development, will help make the economic potential described and forecast in this report a reality. At the same time, it will facilitate the important goal of continuing to preserve and enhance the quality of life for Scottsdale residents, workers, and visitors to the area. The costs of providing the proper scale and mix of infrastructure are likely to be minimized if needed property is acquired or designated and plans made well in advance of the expected development. With the rapid forecast growth, it will be necessary to closely align the capital budgeting with those municipal departments responsible for transportation, public works and planning.

Give the rapid rate and amount of economic growth that we believe will take place in the Airpark/SRC in the future, it is important that the type and scale of future development be designed to serve the needs of those who will be living, working, and visiting in the area in the first twenty years of the 21st century. To build facilities that relate only to the demands that can be captured in the area over the next decade or so would build in obsolescence in the longer term. If development is too small or inappropriately designed to be viable past 2020, future owners will not have the economic strength to properly maintain either the physical structures or the activities they contain. While in some cases such problems can be remedied with private redevelopment, the size of the land holdings and the remaining capital value of obsolete structures frequently make this difficult. If private redevelopment does not take place, the city is left with obsolete uses and marginal businesses, or is forced to pay the costs associated with assisting redevelopment.

We hope that the information about the future of the area contained in this report will encourage projects to be at the scale that will be viable in the long run. However, it is also important that the character of future development be attuned to the economic and technological environment of the next century. Fortunately, the growth in size and income of the businesses and households that can be served from the Airpark/SRC makes this feasible in the long run, but it may sometimes be necessary to take steps to encourage this in the near term. A recent example of this was the proposed retail project at Scottsdale Road and Frank Lloyd Wright Boulevard, which could have been a "power

center" with discount stores of the type that will be very vulnerable to Internet (e-commerce) competition, as well as competition from multiple smaller sized and freestanding stores. By encouraging development that will offer a mix of desirable uses, including entertainment, food service, and specialty retail, the resulting 83-acre development should be able to remain viable throughout the time period of this study. The alternative patterns of multiple smaller sized centers and strip retail development is one that siphons off demand, frequently precluding the development of a larger, more viable center.

The scale of population growth in the area suggests the viability of a new regional center. Strategically, the city would be best served if such a center were developed in the area and tenanted with a mix of store and other attractions that will be able to withstand the competition from cyberspace, as well as larger, more viable centers that are or will be locating in the city of Phoenix.

Over the time period of this study, there will be a shift from the dominance of the lower intensity mixed use warehouse structure to more traditional suburban office buildings in the Airpark/SRC. It will be important to encourage somewhat higher intensity development, which should include connectedness between buildings, the integration of support retail and services, and transportation management techniques such as bike routes and car pooling and/or shuttle service for nearby residents.

Gruen Gruen + Associates (GG+A) is a firm of economists and market analysts providing land use policy research and consulting. Since its founding in 1970, GG+A has pioneered the use of economic, social and fiscal impact analysis. GG+A impact studies accurately and comprehensively portray the effects of public and private real estate developments, land use plans, regulations, annexations and assessments on the affected treasuries, taxpayers, consumers, other residents and property owners. For more information, please visit our web site at www.ggasf.com.

APPENDIX A

APPENDIX A

SHIFT-SHARE METHODOLOGY

A shift-share analysis compares economic growth in a local area to a larger regional area. This is accomplished by comparing historical data on employment growth, by industry, for the given areas and using this data to make meaningful estimates of future growth. The local area in this case is the city of Scottsdale, with Maricopa County as the region. All analysis and projections were performed on an "industry group" or "sector" basis where the data for each study area were grouped, by SIC code, into one of 13 industry groups. Appendix B contains a list of industry groups with the SIC codes that comprise each group.

Considerable data collection and manipulation is required in order to conduct a shift-share analysis. It is necessary to have employment data, for the regions and local areas, for a historical period. Employment data by 2-digit SIC code for Maricopa County and for the city of Scottsdale, for the period 1985-1995, were collected.

GG+A obtained the necessary employment totals by 2-digit SIC code for Maricopa County from the Bureau of Labor Statistics (BLS). These same employment totals are not available for areas smaller than Maricopa County so, for the city of Scottsdale comparable data were obtained from County Business Patterns (CBP). CBP data provide the number of businesses within employee size ranges, by SIC code (e.g. 10 businesses in SIC 79 in the 5-9 employee range) for a given area. GG+A arranged these raw data into SIC groups that match the 13 industry groups. To accompany the CBP data, a measure of the mean size of firm within each employee size range is needed. GG+A contracted with Mosaic Analytical Planning (MAP) to provide these measures of mean firm size. Using data obtained from the Maricopa Association of Governments, MAP compiled a matrix of mean firm size, by SIC code, by employee size range, for the City. GG+A multiplied the CBP data by the appropriate measure in the matrix to derive an estimate of total employment, by industry group. The CBP data is provided by ZIP code. GG+A obtained these data for every ZIP code in Scottsdale for the necessary years which, taken as a whole, provided the necessary data for the City.

Shift-Share Components

A shift-share analysis separates growth into three components. These components are commonly known by the following names:

1) regional growth measure
2) industry mix
3) competitive (or local) share

The formulas for deriving these components are outlined below. These calculations are repeated for each industry that is analyzed:

let:

E_L = local area beginning year employment in specific industry
T_R = regional % change in total employment between beginning and ending year

I_R = regional % change in specific industry employment between beginning and ending year
I_L = local % change in specific industry employment between beginning and ending year

Regional Growth Measure

Regional Growth = E_L x T_R

This calculation estimates the amount of employment growth in the specific industry that is attributable to overall economic growth in the region. A local area located in a fast growing region will have a relatively high regional growth component, regardless of the industry.

example:

Scottsdale retail employment 1985: 11,089
Scottsdale retail employment 1995: 16,903
Maricopa County overall employment growth 1985-95: 45.38%

Regional Growth = 11,089 x .4538

= 5,032

Due solely to overall growth in the County, Scottsdale's retail employment increased by 5,032. If no other factors were at work, retail employment in Scottsdale would have increased by this amount.

Industry Mix

Industry Mix = E_L x (I_R - T_R)

This result is an estimate of the regional employment growth in the given industry that is specific to the industry alone, as distinct from regional growth. Any industry that is growing faster than the overall regional rate will have a positive industry mix measure.

example:

Scottsdale retail employment 1985: 11,089
Maricopa County retail employment growth 1985-1995: 35.3%
Maricopa County overall employment growth 1985-95: 45.38%

Industry Mix = 11,089 x (.353 - .4538)

= - 1120

Because our example sector, retail, grew slower than the overall economy's growth rate, retail as a percentage of overall employment declined. The industry mix measure is therefore negative. Due to this change in industry makeup, retail employment in Scottsdale declined by 1120.

Competitive Share

Competitive Share = E_L x (I_L - I_R)

This result is an estimate of the employment growth in the specific industry in the local area as compared to the regional area. This measure provides an estimate of how successful the local area has been in promoting growth in the given industry, compared to the surrounding region. In other words, this provides a measure of how competitive the local area is in this industry.

example:

Scottsdale retail employment 1985: 11,089
Scottsdale retail employment growth 1985-1995: 52.4%
Maricopa County retail employment growth 1985-95: 35.3%

Competitive Share = 11,089 x (.524 - .353)

= 1902

This measure represents the rate that the industry is shifting to the local area from the region. Industries with a positive competitive component are growing faster than the region. Industries with a negative competitive component are growing slower than the region. Because Scottsdale retail employment is growing faster than the region, this measure is positive. Again, if no other factors were at work, Scottsdale retail employment would have increased by this amount. The competitive share measure forms an integral part of the equation used to estimate employment growth.

Summing the results of these three calculations gives the total change in employment for the specific industry in the local area. That is, the regional growth, industry mix, and competitive share amounts together equal the total industry growth for the time period in question.

example:

Scottsdale retail employment 1985: 11,089
Scottsdale retail employment 1995: 16,903

Change in retail employment = **5,814**

Regional Growth = 5,032
Industry Mix = -1,120
Competitive Share = 1,902
Total = **5,814**

Employment Projections Using Results Of Shift-Share Analysis

Once the competitive component is established and an expected rate of growth for each industry is obtained, estimates of future employment are possible. This competitive component, expressed as an annual rate, represents the shift to the local area, in this case the City of Scottsdale, from the regional area, in this case, Maricopa County. The expected rate of growth by industry is an exogenous factor (one that is independent of any other data or calculation in the analysis) and must be obtained from an outside source. This was obtained from the Arizona Department of Economic Security (DES). This expected rate of growth is DES's estimated growth rate by industry for the county as a whole. This expected rate embodies the regional growth and industry mix measures and so these measures are not required as variables in the estimation equation.

The competitive component of the above shift-share calculation was then used to form the basis for employment projections by industry. The following formula outlines how this was accomplished:

$$E_{ijt+1} = E_{ijt}(1 + B_{it+1} + C)$$

where,

E = employment
i,j,t = industry, region, and time period, respectively
B = expected growth rate for the region. Supplied by the Arizona Department of Economic Security for Maricopa County.
C = the annual growth rate of the competitive component for the given industry, from the above results.

The equation to estimate employment in the first year after the base year can also be written as follows:

$$\text{Employment}_{1996} = \text{Employment}_{1995} \text{ x } (1 + \text{Expected Growth Rate} + \text{Competitive Component})$$

The equation to estimate employment in 2020 is:

$$\text{Employment}_{2020} = \text{Employment}_{1995} \text{ x } (1 + \text{Expected Growth Rate} + \text{Competitive Component})^{25}$$

The exponent, in this case 25, represents the number of years in the future, counting from the base year, for which an estimate is being made. This equation can be used to estimate employment for any year.

Testing of Projections

Prior to using these results to estimate future employment growth, the statistical significance of the projection equation for each industry was tested. The projection equation was subjected to a regression analysis to test the significance of the correlation between local and regional growth. Using the R-square test for correlation, the results of the above equation (by now extending the projection backwards) can be compared to the actual regional data for the sample years. If the relationship is significant, then the local growth pattern can be assumed to vary with the regional pattern. The expected growth rate and the competitive share can then be assumed to provide a statistically significant basis for estimating future employment. For industries that do not show a statistically significant

relationship with the regional pattern, local and regional growth can be assumed to vary independently of one another. The projection equation can not be assumed to form a statistically significant basis for estimating future employment. In such a case, some other element to growth is responsible for the local pattern and is not explained by the competitive portion of the shift-share result. For these industries, an alternative growth scenario is applied in order to estimate future employment levels. In general, an R-square value of .80 and greater is considered significant. With the exception of mining and retail, all industry groups in this analysis have an R-square result higher than .80. Due to its small size, mining is not an important industry to Scottsdale and it does not substantially affect the overall employment picture of the City. In some cases, GG+A subjected the shift-share results, including those for retail, to modifying assumptions based on specific knowledge of local industry behavior. Modifying assumptions are outlined in Appendix C.

Additionally, another statistical tool was applied, the F-test. This test returns the probability that the two data sets (the actual regional numbers and the projected local numbers) have the same variance. In effect, this test returns the probability that the correlation between the data sets (shown by the R-square) is due to chance. The lower the F-test result, the lower the probability that correlation between the data sets is random chance. All of the F-test results are low (<5%). Table A-1 below contains the results of the R-square and F-tests.

Table A-1
R-square and F-test Results for City of Scottsdale

Industry Group	*R-Sq.*	*F-test*
Agriculture	0.97	0.7%
Mining	0.74	3.8%
Construction	0.81	0.0%
Low-tech Manufacturing	1.00	0.2%
Hi-tech Manufacturing	0.96	0.1%
Transport	0.94	2.5%
Wholesale Trade	0.86	2.3%
Retail Trade	0.72	4.6%
F.I.R.E.	1.00	0.3%
Business Services	0.98	1.3%
Health Industry	1.00	0.6%
Hospitality	0.99	1.4%
Personal Services	0.97	1.5%

APPENDIX B

APPENDIX B

Table B-1
Industry Groups

Industry Group	SIC Codes Included	Business Types
Agriculture	1,2,7,8,9	landscaping, veterinary services, crops, livestock, agric. services, forestry, fishing
Mining	10,12,13,14	metal, coal, mineral, oil & gas extraction
Construction	15,16,17	building, heavy construction, general contracting
Low Tech Manufacturing	20-33,39	food, textiles, garments, wood products, furniture, paper, printing, chemicals, petroleum, plastics, leather, glass, primary metals
Hi-Tech Manufacturing	34-38	fabricated metals, computer equipment, commercial machinery, electronics, motor vehicles, instruments
Transport	40-49	railways, highway passenger transport, freight, air & water transport, pipelines, communications, utilities
Wholesale Trade	50-51	durable and non-durable wholesale trade
Retail Trade	52-57,59	all retail trade, except eating and drinking places
Fire	60-65,67	finance, insurance, and real estate businesses
Business Services	73,81,83,86,87	advertising, computer programming, legal, engineering, and accounting services,
Health Services	80	all medical operations and services
Hospitality Services	58,70	eating and drinking places, hotels and lodging
Personal Services	72,75,76,78,79,84 ,88,89	automotive repair, recreation, museums, household services
Government*	91-97	all government operations

*The Government sector was not included in the actual analysis due to a lack of data.

APPENDIX C

APPENDIX C

Adjustments to Shift-Share Projection Methodology

Based on information obtained through GG+A research and interviews with City officials, modifying assumptions about the growth of certain industry groups were applied to the shift-share results. The report text notes these adjustments when they are applied to a given industry. Table C-1 summarizes the growth assumption modifications incorporated in the analysis.

Table C-1
Modifying Assumptions for
City of Scottsdale Employment Projections

Industry Group	Adjusted Annual Growth Rate	Change from Shift-Share Rate
Agriculture	1.5%	3.98%
Mining	0.1%	8.64%
Construction	1.2%	No change
Low Tech Manufacturing	2.0%	-1.17%
Hi-Tech Manufacturing	0.7%	No change
Transport	0.5%	7.08%
Wholesale Trade	2.3%	-2.72%
Retail Trade	2.3%	-1.30%
F.I.R.E.	1.0%	2.48%
Business Services	3.0%	-0.94%
Health Industry	1.6%	No change
Hospitality	2.0%	No change
Personal Services	2.3%	No change
Total	2.0%	-0.41%

Source: Arizona Department of Economic Security; Gruen Gruen + Associates

APPENDIX D

APPENDIX D

City of Scottsdale
Hospitality Economic Base Survey

Name of Hotel_____

Street Address _____

Name and Title of Respondent:

_____ _____
(name) (title)

Respondent's telephone number: (_____)_____

1. How long has your hotel been located at the above address? _____ *years*

2. How many rooms are in this facility? _____ *number of rooms*

3. How many square feet of conference and/or meeting room facility do you have?

_____ *square feet*

4. What was your overall occupancy rate in 1997? _____*%*

5. In 1997, of your total visitors, approximately what percent were:

   A. Attending a convention or conference? ____*%*

   B. On a business trip? ____*%*

   C. Vacationers? ____*%*

   D. Attending a special event, such as the Phoenix Open? ____*%*

For D above (if D = 0% then write *none* below):

Please list up to five special events that encouraged visitation to your hotel in order of their importance, with the first identified encouraging the largest number of visitors:

1st _____

2nd _____

3rd _____

4th _____

5th _____

6. Has there been a major shift in the make-up of your visitors since 1990?

_____ *not in business in 1990* ____ *no* ____ *yes*
(If yes, please describe the change in the space provided below.)

_____

_____

7. What percentage of your total visitors, if any, fly in and out of the City of Scottsdale Airpark Airport? _____%

Has this percentage ____ increased ____ decreased ____ remained the same since 1990?

10. How many full time and part time employees do you currently employ?

_____ *full time employees* _____ *part time employees*

11. Please provide a summary of the residential zip codes of your full- and part-time employees.

For all employee zip codes	Full time employees #	Full time employees %	Part time employees #	Part time employees %

Thank you for taking the time and trouble to complete this questionnaire. The data you have provided will be used to improve Scottsdale's future city-wide planning efforts.

APPENDIX E

APPENDIX E

City of Scottsdale
Airpark/Sonoran Employer Questionnaire

Name of Employer: _____

Street Address: _____

Name and Title of Respondent:

_____ _____
(name) (title)

Respondent's telephone number: (_____)_____

1. How long have you been located at the above address? _____ *years*

2. Which of the following categories best describes your firm's work?

A. _____ Manufacturing/durable goods
B. _____ Manufacturing/non-durable goods
C. _____ Mining
D. _____ Transportation, communication, and public utilities
E. _____ Wholesale trade
F. _____ Retail trade
G. _____ Services
H. _____ Agriculture, forestry, fisheries
I. _____ Government

3. We would appreciate a one or two sentence description of the products or services provided by your firm *at this address*.

_____
_____

4. Which of the following best describes your building type?

A. _____ Industrial (tilt-up construction with concrete walls and no windows)
B. _____ Hybrid (high-tech and R&D buildings)
C. _____ Low rise or garden office
D. _____ Mid-rise office
E. _____ Commercial retail center
F. _____ Freestanding restaurant or commercial building
G. _____ Other (*please specify* _____)

5. What is the primary reason you have located in the Airpark/Sonoran area?

A. _____ Close to desirable labor base
B. _____ Owners/top management reside in area
C. _____ Close to primary customer base (please specify: _____)
D. _____ Close to suppliers (please specify: _____)

6. How many full-time and part-time employees currently work in this building? (Part-time workers are those who work fewer than 35 hours per week.)

_____ *full-time employees* _____ *part-time employees*

7. How many of these workers would you estimate spend most of their work hours on site and therefore require specific workplace at this address (i.e. as opposed to on-the-road salesmen, truck drivers, employees working primarily from their home)?

_____ *number of full-time employees who spend most of their work hours on site*
_____ *number of part-time employees who spend most of their work hours on site*

8. Do you own, lease, or sublease the space at this address?

_____ *own* _____ *lease* _____ *sublease*

9. How many **gross and net square feet** of building space does your firm occupy at this address?
_____ *gross square feet* _____ *net square feet*

10. Please provide a summary of the residential zip codes of your full- and part-time employees.

For all employee zip codes	Full time employees #	%	Part time employees #	%
etc.				

Thank you for taking the time and trouble to complete this questionnaire. The data you have provided will be used to improve Scottsdale's Airpark and Sonoran planning efforts.