Economic Change in Greater Phoenix - Executive Summary
May 30, 2003
Maricopa Association of Governments, in cooperation with Greater Phoenix Economic Council and Salt River Project

PROJECT PURPOSE

To provide an objective assessment of the economy and economic development issues of the region and its communities; and

To be used by various stakeholders in prioritizing industry targets and supporting policies needed to bring Greater Phoenix, its municipalities and its private sector to a sustainable, high value-added economy in the future

SHEER GROWTH

The outstanding characteristic of the Greater Phoenix economy is its sustained rapid growth. For the past 30 years, its growth rate has been nearly three times greater than the nation.

However, as strong as is economic growth in Greater Phoenix, it has not kept up with population growth. There is somewhat of a disconnect between population growth and job growth in Greater Phoenix; even during the current economic slowdown, population growth has averaged 110,000 persons annually.

What does that mean for the regional economy?

- It disproportionately contains industries that respond to sheer growth – construction, real estate & utilities
- It is disproportionately weighted to industries that are supported by consumer demand – retail, personal services, health services, and local government

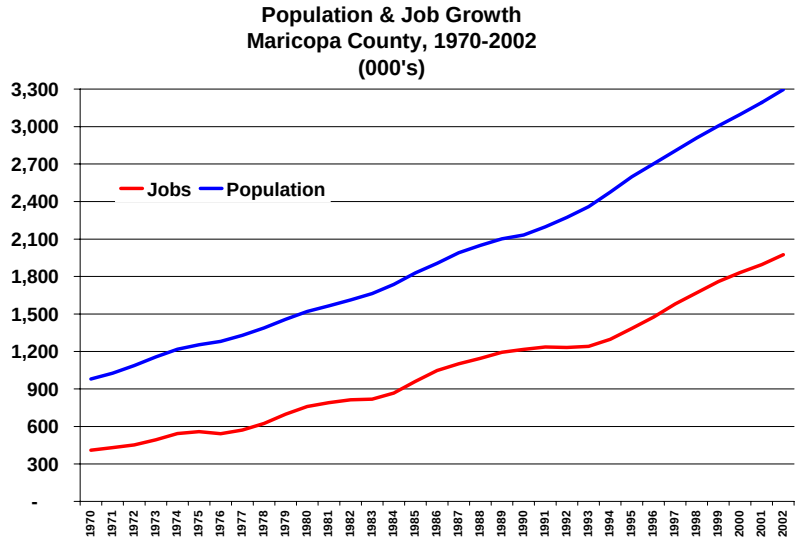
Despite the magnitude of growth, the Greater Phoenix economy has certain weaknesses:

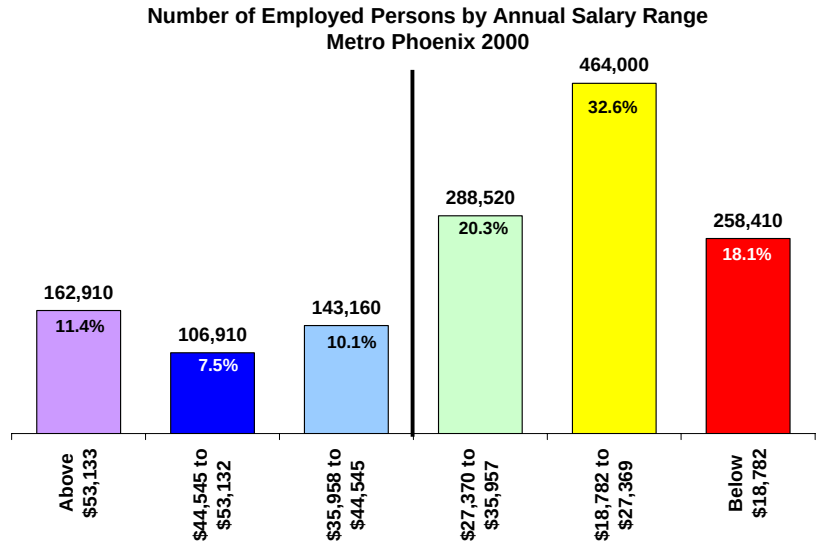
- A low-cost, low wage economy
- A weak economic base
- Little economic diversity

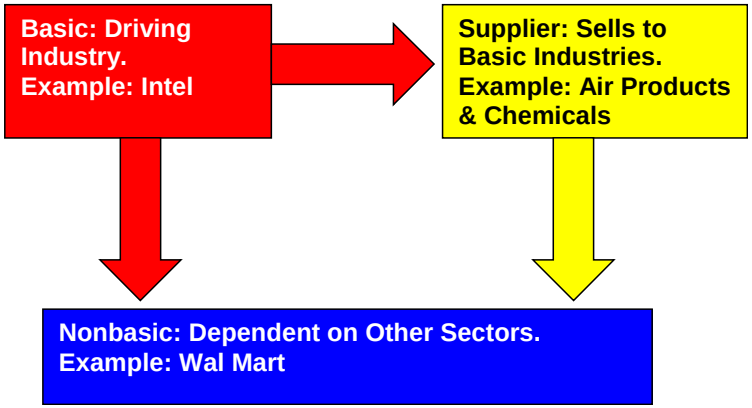
LOW WAGE ECONOMY

One of the major economic issues for Greater Phoenix is that its economy produces low-wage jobs.

- 70% of wage and salary jobs were below average for Greater Phoenix in 2000
- 18% of these jobs were below $8/hour







The concept of *economic base* is fundamental for economic development.

Basic industries support the entire regional economy. They produce goods or services that are sold to customers *outside the region*; these exports bring new wealth into the region. *Without strong basic industries, a region's economy is weak.*

Supplier industries sell intermediate goods or services to basic industries, which use these inputs to produce exports. Supplier industries depend on basic industries.

Nonbasic industries sell consumer goods or services to the employees of basic industries, supplier industries, and nonbasic industries. They serve the local regional market, and are dependent on basic and supplier industries to maintain the vibrancy of the regional economy.

GREATER PHOENIX INDUSTRY CLUSTERS

There are 17 industry clusters that make up the economic base of Greater Phoenix.

12 of these are composed of basic industries and their suppliers

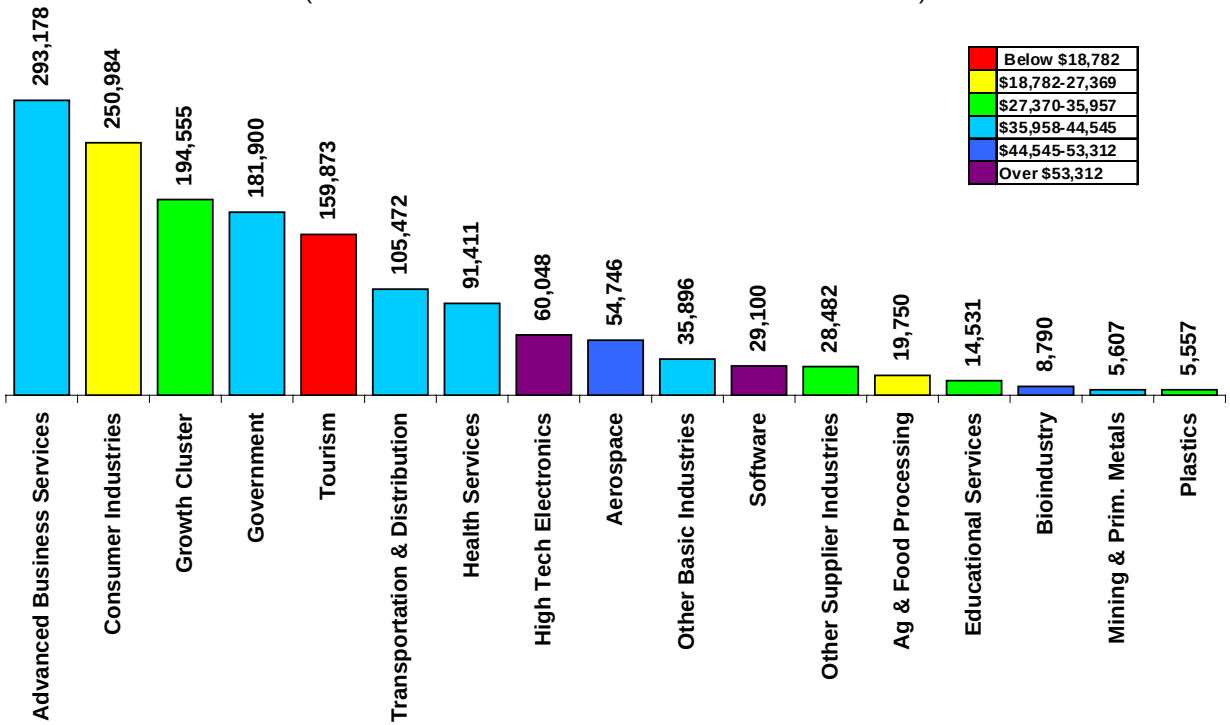
Nonbasic clusters include consumer industries, growth cluster, government, health services and educational services.

10 clusters pay average wages that are above the region's mean, and 4 clusters pay average wages that are in the highest two categories:

- High tech/electronics
- Aerospace
- Software
- Bioindustry

In terms of jobs, 3 of the top 5 clusters pay average wages below the mean.

Industry Cluster Jobs by Wage Category
Maricopa County, 2000
(Source: Minnesota IMPLAN & U.S. Bureau of Labor Statistics)



ECONOMIC CHANGE DURING THE 1990'S

The concentration of job change was pronounced during the 1990's – 87% of all new jobs were in just 7 of the 17 industry clusters.

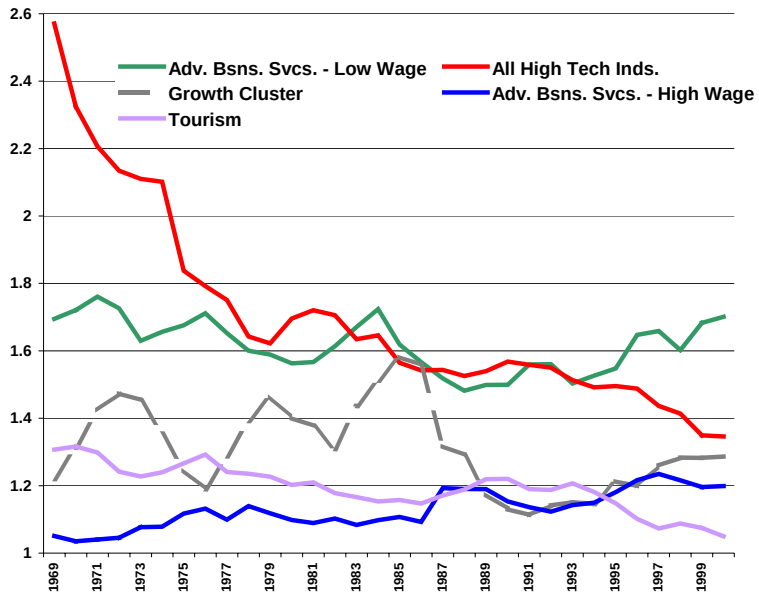
- The top 3 non-basic industries accounted for 44% of all job growth
- The highest wage basic industry clusters accounted for only 8% of job growth

Thus, the 1990's were not good to Greater Phoenix's basic industries, especially its traditional high tech electronics and aerospace industries.

In general, Greater Phoenix did not just "not grow" some elements of a diversified, vibrant economy; instead, it "lost share" of high value-added elements that had previously existed:

- Digital Equipment & Honeywell computer operations
- Motorola's Semiconductor regional headquarters
- Goodyear Aerospace/Loral
- Several castings companies that used to supply copper mines
- Williams Air Force Base

Location Quotients, Selected Industry Clusters
Maricopa County, 1969-2000
Source: Regional Economic Models, Inc.



Change in Industry Cluster Jobs, 1990's

Industry Clusters	1990's Job Change	Basic	Nonbasic	Share	Cumulative Share
Advanced Business Services	**156,750**	**156,750**		**28.2%**	**28.2%**
Growth Cluster	**92,137**		**92,137**	**16.6%**	**44.7%**
Consumer Industries	**79,022**		**79,022**	**14.2%**	**58.9%**
Government	**47,300**		**47,300**	**8.5%**	**67.4%**
Tourism	**47,032**	**47,032**		**8.4%**	**75.9%**
Transportation & Distribution	**36,013**	**36,013**		**6.5%**	**82.3%**
Health Services	**27,991**		**27,991**	**5.0%**	**87.4%**
Software	19,303	19,303		**3.5%**	90.8%
High Tech/Electronics	10,249	10,249		**1.8%**	92.7%
Other Supplier Industries	9,006	9,006		**1.6%**	94.3%
Aerospace/Aviation	8,888	8,888		**1.6%**	95.9%
Other Basic Industries	8,120	8,120		**1.5%**	97.3%
Educational Services	7,536		7,536	**1.4%**	98.7%
Bioindustry	3,975	3,975		**0.7%**	99.4%
Agriculture & Food Processing	2,080	2,080		**0.4%**	99.8%
Plastics & Advanced Composites	1,446	1,446		**0.3%**	100.0%
Mining & Prim. Metals	(193)	(193)		**0.0%**	100.0%
Total Wage & Salary Jobs	556,655	302,669	253,986	**100.0%**	100.0%

The cumulative effect of these losses, combined with their replacement by other kinds of industries, is dramatically shown by the historical concentration of basic industry clusters.

All high tech industries (electronics, aerospace, bioindustry & software) fell from a concentration ratio of 2.6 times greater than the nation in 1969 to below 1.4 in 2000.

This high-value added segment of the region's economy was replaced by the low-wage part of advanced business services, by the growth cluster (which is not basic), by high-wage advanced business services, and by tourism.

REGIONAL ECONOMIC DEVELOPMENT STRATEGY

In response to the various challenges that face the regional economy, the Greater Phoenix Economic Council's regional economic development strategy is to develop a targeted number of direct jobs in each of the high-wage target clusters by 2010:

- Advanced business services – 27,700 new jobs
- Aerospace & aviation – 12,300 new jobs
- High tech electronics – 20,500 new jobs
- Software – 32,500 new jobs
- Bioindustry – 12,900 new jobs

The goal is that one of every six new jobs created will be in the high wage clusters.These goals will be accomplished by the regional and local organizations in Greater Phoenix involved in economic development working cohesively together to ensure that all activities of business development in the region – attraction, expansion & retention, and new company start-ups – are aligned with the strategy.

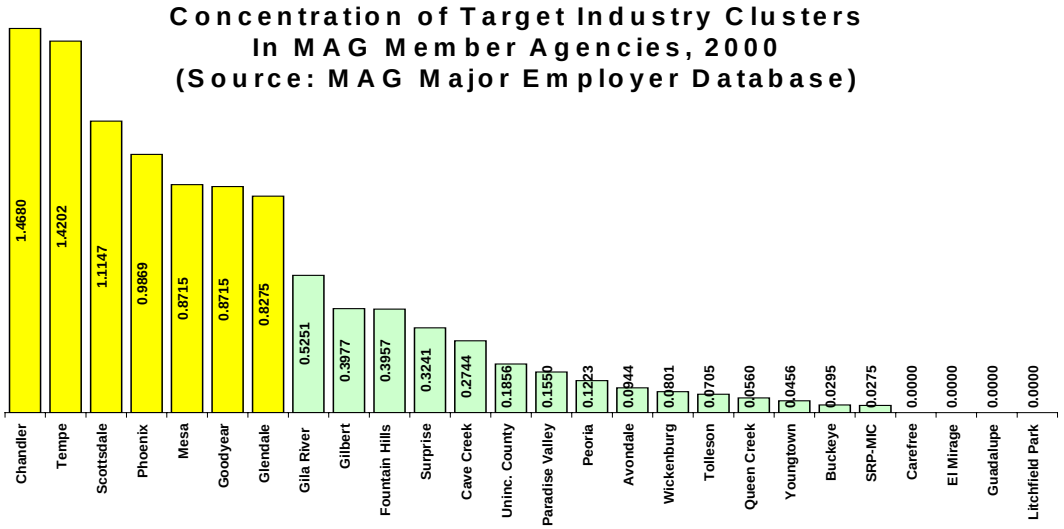
SUB-REGIONAL ECONOMIES

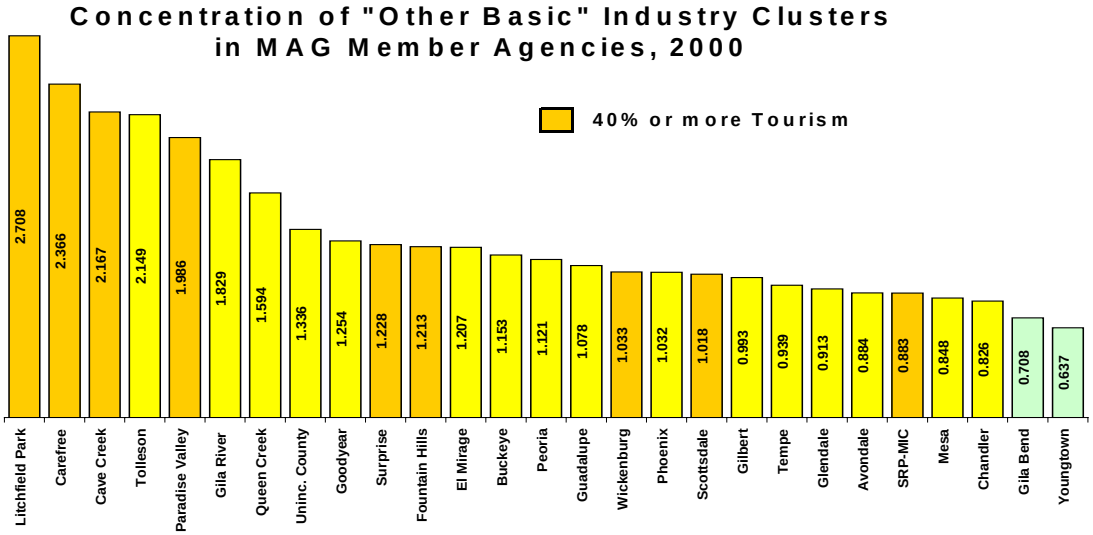
A key point about the GPEC target industry clusters is that there are a handful of communities in Maricopa County that are most competitive.

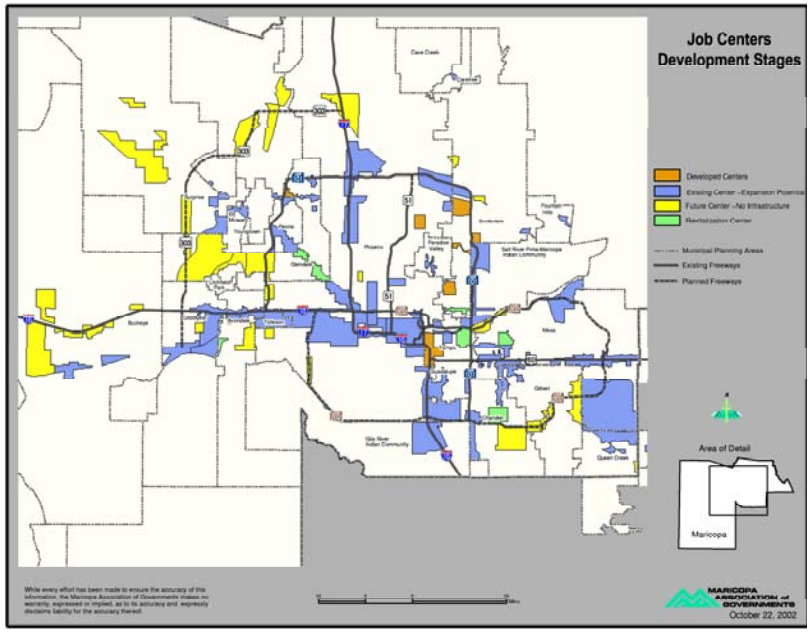
Based on MAG's employer database, these figures show concentration ratios for all GPEC target industry clusters and for all other basic industry clusters by community in 2000.

> After the top seven communities – Chandler, Tempe, Scottsdale, Phoenix, Mesa, Goodyear, and Glendale – there is a significant drop of concentration for the high-wage target clusters.
>
> In contrast, there is a widespread distribution of all other basic industry clusters among other communities. In many of these, tourism is the most prominent sector.

This indicates the need for continued regional development of the non-priority industry clusters.







JOB CENTERS

There are 106 community job centers in Maricopa County – concentrations of existing or planned nonresidential land uses. They contained 55% of all County jobs in 2000, and will contain 55% of all County jobs at build-out, according to community general plans. These are where the future economic base of the region will be located, and it is a critical economic development issue to protect them from conversion to residential development.

SUMMARY OF RESEARCH ON INDUSTRY CLUSTERS IN GREATER PHOENIX

	Jobs in Metro Phoenix, 2000	Average Phoenix Wages, 2000	National Industry Output Growth, 2000-2010	Metro Phoenix Competitiveness Rank Compared to Other Metro Regions	Geographic Distribution in Metro Phoenix	Area of Heaviest Concentrations	Comments
Advanced Business Services	**293,178**	$ 37,108	**31%**	**First Tier**	Moderate dispersion throughout all sub-regions	Multiple nodes, but highest concentration is central	40% jobs below mean wage
High Tech/Electronics	**60,048**	**$ 69,439**	**137%**	Third Tier	Wide dispersion in east part of region	Multiple nodes, north & southeast regions	Offshore production risk
Aerospace & Aviation	**54,746**	**$ 47,898**	23%	Third Tier	Widely dispersal, concentrated at airports & industrial zoned land	Multiple nodes throughout region	9/11 Impact
Software	29,100	**$ 63,639**	**73%**	Third Tier	Dispersed in central parts of region, both north & south	Highest concentrations in central & northeast	Opportunity
Bio-Industry	8,790	**$ 49,886**	**46%**	**Second Tier**	Wide dispersal, excepting west sub-region	Highest concentrations in central, southeast & northeast	Opportunity
Tourism	**159,873**	$ 17,471	**35%**	**Second Tier**	Very widely dispersed	Concentrations throughout entire region	Low wages,high taxes, 9/11 impact
Transportation & Distribution	**105,472**	**$ 42,801**	**32%**	**Second Tier**	Wide distribution throughout region, except far east sub-regions	Highest concentrations in west sub-region, along rail lines, airports & industrial zoned land	Opportunity
"Other Basic" Industries	35,896	$ 35,811	20%	**Second Tier**	Widely dispersed; concentrated in few locations	Greatest concentrations in center of region, both west & south; concentrations on industrial zoned land	Selected opportunities
Agriculture & Food Processing	19,750	$ 26,431	5%	Fourth Tier	Wide distribution throughout region, mainly in south	Greatest concentrations in west valley; concentrations on industrial zoned land	Produces for local regional market; low wages
"Other Supplier" Industries	28,482	$ 34,704	26%	**First Tier**	Contained within central corridor, north to south	Several concentrations within that corridor; concentrations on industrial-zoned land	Opportunity
Plastics & Advanced Composites	5,557	$ 33,687	**41%**	**Second Tier**	Wide dispersion across region, west to east & north to south	Concentrations on industrial zoned land in urban core, suburban & exurban	Opportunity
Mining & Primary Metals	5,607	**$ 43,360**	10%	**Second Tier**	Little dispersion; concentrated along freeway & rail corridors	Greatest concentrations in west & south; concentrations on industrial zoned land	Contracting nationally, but may be regional opportunity

STRENGTHS, WEAKNESSES, OPPORTUNITY, THREATS & TRENDS ANALYSIS

Long Term Trends	Continued high population growth rates for next 50 years	Global trading blocks - expanded NAFTA (Latin America), East Asia, Europe, China	Technology change & convergence create new products & industries	Major technologies: computers, networks, biotech, nanotech, space
	Opportunities		**Threats**	
Global Economy	Demand for US knowldege-intensive industries & capital equipment		Terrorism & war; East Asia & Europe compete directly with US; more transfers of cost-minimizing operations offshore	
Expanded NAFTA	Lengthened transport links between production locations in Mexico; Arizona benefit: hub, integral part of CANAMEX		Maquiladoras less reason to locate near US border	
US Economy	Less volatile business cycles; heightened pace of technological change; rapid diffusion of technologies		Product manufacturing increasingly volatile; manufacturing plants become obsolete quicker	
Greater Phoenix Economy	Attractive to people due to lifestyle		Image problem among young knowledge workers; state no longer has balanced & efficient tax structure; key industries hard hit by 9/11	
Greater Phoenix Industries	Growth industries to 2010: Bioindustry, amusements, public relations, management, space vehicles, banking, business services, software, temporary help, lodging, trucking, transport management		Airline industry health; overseas competition for electronics manufacturing; Internet impact on transportation cause rapid industry change; banking not accelerate unless regional or national headquarters; bioindustry competition & long-term payoff	
	Site Factor Strengths		**Site Factor Weaknesses**	
Economic Vibrancy & Image	Ranks well on innovation; top ranked high tech location; positive image by corporate execs, site selectors		3d tier in several industry R&D measures & growth of high tech; economic base dependent on only few driver industries, mainly "old economy;" potential for blue collar economy	
Markets	Multi-state regional markets; proximity to international markets; Sky Harbor & Williams Gateway; robust freight trucking industry		Location: way station between Texas & California; airport downsides from urbanization; Union Pacific abandonment of rail line	
Telecommunications	Plentiful access of telephone & broadband; 2d tier share of households with Internet access; 2 communications satellites can be "seen"		Access to best telecom still problem in some communities	
Energy	Ample electric generation supply; electricity costs 20% lower than California		Electricity costs for industrial users 8% higher than US; single natural gas & gasoline pipelines	
Real Estate & Infrastructure	Ample infrastructured land of appropriate size; favorable prices; exisitng space availability is good; substantial infrastructure investments by local governments		Prospects go to built space, some communities lack it; continual pressure to convert industrial land needed for economic base to residential; physical infrastructure & funding needs to keep up with growth	
Workforce	Favorable demographic trends; overall availability is good; strong on engineers, information science experts, share of population with college degrees, science & engineering post-doctorates; doctoral engineers		Shortages: some skilled machine trades, technical & professional occupations; 3d tier population with PhD's	
Education	2d tier average SAT scores; strong community college system; dynamic university/college presence; high share of college degrees conferred; significant assets in state university system		Last in terms of high school completions; 47th for HS grads on to college; funding deficiences for state higher education	
Quality of Life	Lower living costs than other tech centers; trend of less air pollution; considerable cultural & recreational opportunities		Increase in housing costs outstripping increase in household incomes; air quality improvement needed as economy grows; crime rate 50% higher than nation; teen pregnancy among highest	

LOCAL SITE FACTORS

In this project, databases of local site factors were developed for each of the 106 job centers.

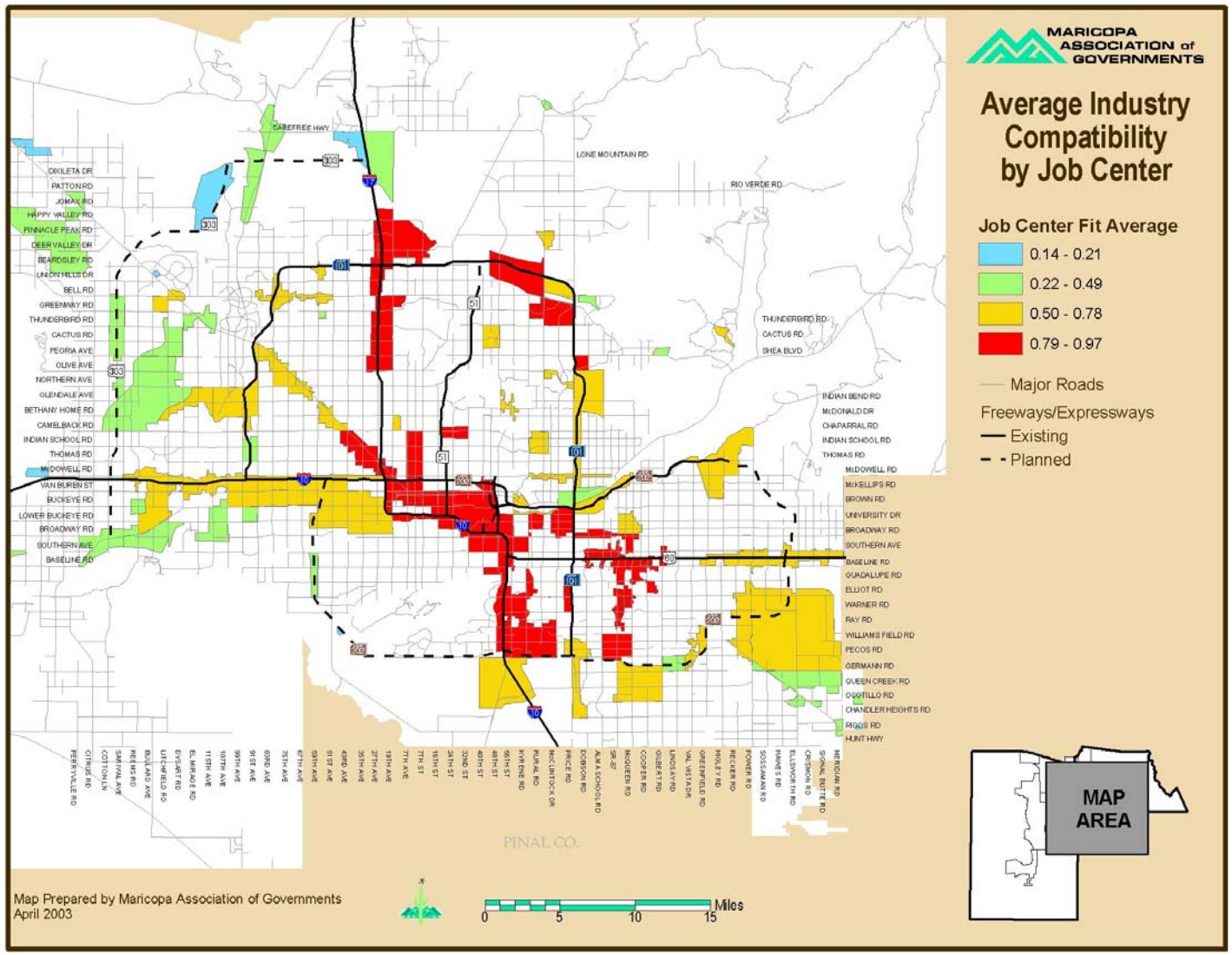
- For job centers, data included transportation access, proximity to suppliers and availability of built nonresidential space
- For commute sheds, data included work force accessibility by broad occupational category, educational quality and housing availability.

A model was constructed that matches industry cluster *need* for local site factors with the *competitiveness* of job center site factors.

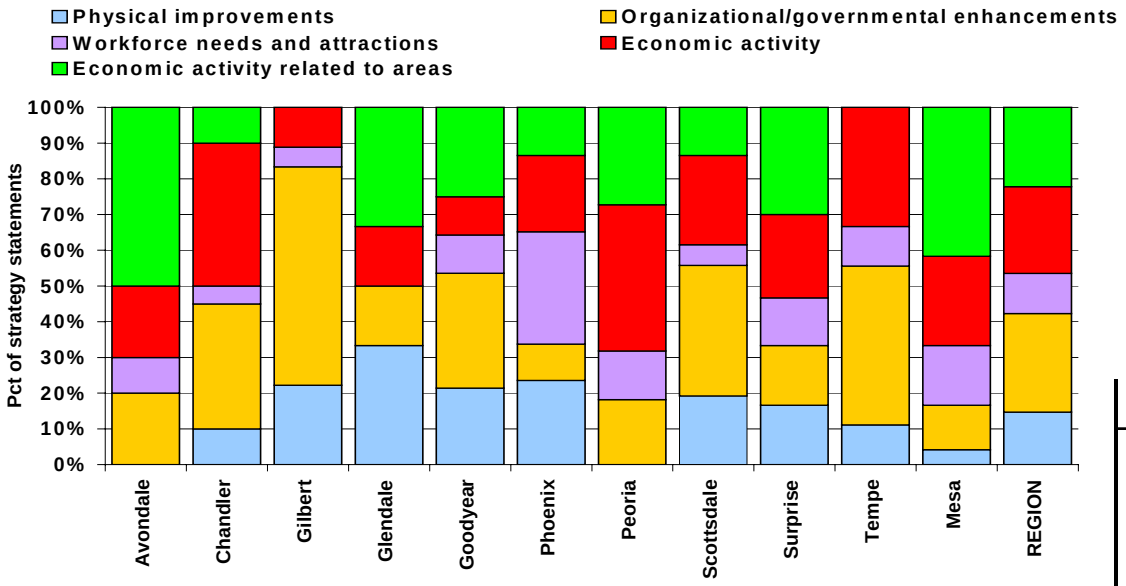
This map shows the competitiveness of job centers, as measured by their average match with all industry clusters, both basic and nonbasic.

A clear pattern is evident: job centers that are more centrally located in the more maturely developed parts of the urban area are the most competitive. The reason: strengths in site factors that are especially important to industry – availability of work force and availability of building space and improved sites.

As the region's population grows, job centers that are currently near the periphery of the urban area will improve their access to work force, and real estate investment will follow once they are in a clear path of development.



Strategy Emphasis by Community



Drilling down beneath the five major categories, the top local priorities are:

- Target specific industry cluster or industry type – 12.7% of mentions
- Build up organizational/community responsiveness to economic development process – 11% of mentions
- Coordinate growth areas/industries with community development policies/actions – 10.7% of mentions
- Enhance quality of life – 8.8% of mentions
- Build up physical capacity – 8.4% of mentions
- Revitalize existing areas – 8.1% of mentions
- Focus on citizen job/training needs and income enhancement – 6.8% of mentions
- Promote retention/expansion through outreach and other programs – 5.8% of mentions
- Promote certain areas (including undeveloped) – 4.9% of mentions
- Enhance fiscal strength/stability – 3.9% of mentions
- Leverage/protect existing assets – 3.9% of mentions

LOCAL ECONOMIC DEVELOPMENT STRATEGIES

Using documents provided by local economic developers that currently guide economic development policy, 27 themes emerged under five major headings. The regional composite:

- Physical improvements – 17% of mentions
- Organizational/governmental enhancements – 24% of mentions
- Workforce needs & attractions – 16% of mentions
- Economic activity – 24% of mentions
- Economic activity related to geographic areas – 20% of mentions

Comparing the regional composite to individual cities, it is clear that the focus of strategies varies substantially among cities.

City/Clusters	GPEC Priority Clusters					Non-Priority Basic Industry Clusters								Nonbasic Industry Clusters				
	Advanced Business Services	Aerospace & Aviation	High Tech Electronics	Software	Bio-industry	Optics	Tourism	Plastics, Advanced Composite Materials	Transp., Distrib. & Wholesale Trade	Agriculture & Food Processing	Minerals & Mining	Other Basic Industries	Other Supplier Industries	Consumer Industries	Educational Services	Government	Health Services	Growth Cluster
GPEC Target Clusters	*X*	*X*	*X*	*X*	*X*													
Avondale	X		X	X	X		X							X		X	X	
Chandler	X	X	X	X	X													
El Mirage	X								X	X		X		X				
Gilbert	X	X	X	X	X							X	X	X				X
Glendale	X																	
Goodyear	X	X			X			X		X				X				
Mesa	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X
Peoria		X	X	X	X		X											
Phoenix	X	X	X		X				X	X		X						
Scottsdale	X	X	X		X		X							X				
Surprise			X		X													
Tempe	X (ins.)	X	X	X	X			X	X									
Tolleson														X				

Source is cities' data for target clusters, and MAG, for LQ values.

Legend:

X = target
= LQ value of .5 to 1 in one or more job centers or elsewhere in the city
= LQ value of more than 1 in one or more job centers or elsewhere in the city