Regional Strengths, Weaknesses, Opportunities & Threats

Final Report

April 18, 2002

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1. Introduction

Purpose

This report is a compilation of opportunities and threats for metro Phoenix, as well as site factor strengths and weaknesses. Its purpose is to organize and summarize the facts and conclusions of recent major studies, reports, and strategies about the economy and economic development issues of the region. Thus, this report does not plow new ground – instead, it consolidates findings into a single report.

Sources

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Report Organization

The report is organized in five sections:

1. **Long-Term Changes**. This section addresses long-term change that is neutral – the best judgment of the factual situation over the next 50 years. Its purpose is to orient economic development strategies beyond the near term.

2. **Opportunities.** This section describes trends and possible change in the short to mid-term that present possible economic development opportunities.

3. **Threats.** This section, like the previous, addresses short to mid-term trends that could threaten possible economic development strategies and implementation in metro Phoenix.

4. **Business Climate Strengths**. This section and the following focus on site factors that industry considers when locating to an area. The section is organized according to various site factors, and presents the regional strengths for each of them.

5. **Business Climate Weaknesses.** Similarly, this section focuses on site factor weaknesses of the region.

2. Long Term Change

Population Growth

- World population growth of 3.2 billion by 2050[1]
  - → Decline in death rates most important factor for growth; fertility rates declining, but unevenly
  - → Asia, Africa, Latin America lead growth
  - → North America and Europe grow due to immigration
  - → Growth of mega-cities – either "command & control" or agglomeration of poor

- US population growth of 122.3 million by 2050[2]
  - → US immigration averaging 1.3 million annually – multiethnic society[3]

- Maricopa County population growth of 4.2 million by 2040[4]
  - → Over 40% Latino by 2040[5]

Population (Millions)					
		Projections			
	2000	Low	Medium	High	Build-Out
World, 2050	6,057	7,866	9,322	10,934	NA
US, 2050	281.4	313.5	403.7	552.7	NA
Annual US Immigration, 2050	1.1	0.6	1.3	1.4	NA
Maricopa County, 2040[6]	3.1	NA	7.4	NA	8.5

Global Trading Blocks[7]

- NAFTA likely expand to include South America
- East Asia & Europe emerge as more formal trading blocks
- Growth of huge China market and its entrance into the World Trade Organization will general major shifts in global trade patterns

Technology Change[8]

- Science will be the undisputed primary driver of economic and cultural change in the twenty-first century It is now clear that the entire digital revolution is only the first phase of an even larger, longer process. In the first phase, information technology revolutionizes biology. In the next phase, biology will revolutionize information technology. And

[1] United Nations, medium projections
[2] US Bureau of Census, medium projections
[3] US Bureau of Census, medium projections
[4] Maricopa Association of Governments, draft projections subject to change
[5] Maricopa Association of Governments, *Regional Growing Smarter Implementation Project – Demographic Trends*, 2001
[6] Maricopa Association of Governments, draft projections subject to change.,
[7] State Economic Study, Phase II - Economy.com, unless otherwise footnoted
[8] James Canton, *Technofutures*, 2001. (Unless otherwise footnoted).

that will totally, once again, revolutionize economies. The next 100 years will include the following five general trends:[9]

→ Movement away from a silicon-based electronics economy
→ Increased rates of technical advance and revolutionary breakthroughs on the smallest of scales (even molecular manipulation)
→ The nanotechnology - the science of the extremely small - wave of technology integration and societal transformation (artificial cells, artificial enzymes)
→ Convergence of diverse fields of study and development, such as information technology and biotechnology
→ Genetically modified everything

- Four Power Tools of 21st Century
  → Computers
  → Networks
  → Biotech
  → Nanotech

3. Opportunities

Global Economy[10]

- Emergence of global trading blocks
  → Short Term - increased potential for US exports as trade barriers fall
  → Long term - continue the movement of lower-wage industries from US
  → Long term - improve demand for US-made capital equipment and knowledge intensive services
  → Regional comparative advantages in manufacturing in Asia shift to China
  → Southeast Asian economies shift toward higher-value goods and services, competing with US
  → Growth of China market offers strong potential demand for US goods & services

- Dollar-price effects of globalization
  → Dollar will continue to depreciate in near term and remain near a decade low as foreign investment portfolios become less concentrated in US equities
  → Cheaper prices for US made goods overseas
  → More expensive prices for imported goods in US
  → More pricing power to US firms in domestic market
  → US exports will gain greater acceptance
  → Generally positive effects on US economy
  → Downside effect: moderate boost to inflation

- Aging populations in Japan, Europe and North America, need to fund pension and healthcare will place considerable fiscal burdens on government
  → Without higher saving rates, increased interest rates will follow
  → Provide further competitive advantage to emerging economies

[9] Morrison Institute, *Five Shoes Waiting to Drop,* 2001.
[10] State Economic Study, Phase II - Economy.com, unless otherwise footnoted

- Increased standardization in existing high-tech industries will lead to further transfers of business operations to low-cost economies
  - → Increased importance in US for developing emerging industries
  - → Will require ever improving human capital from which innovation originates

- Mexico
  - → NAFTA contributing factor to maquiladora products decline
  - → Required Mexico to strip maquiladoras of duty free status
  - → Caused prices of some imported raw materials and intermediate goods to rise
  - → Foreign investment in maquiladoras fallen, shift to Asia and Carribbean
  - → Long term
  - → Mexico industries restructure to more high-value industries
  - → These have less reason to locate close to US border
  - → Will create improved comparative advantages to Arizona
  - → Lengthening transport links between production locations as Hermosillo, Guadalajara and even Monterrey with markets in the Southwest and Pacific Northwest place Arizona squarely in the middle of this expanding supply-chain management and marketing distribution pattern

- CANAMEX Corridor
  - → Complete link between Mexico City and Edmunton through the Mountain region of US
  - → In Arizona, 1-10 to Nogales, Highway 93 to Las Vegas
  - → Further improvements of trade links to Mexico would help redefine Arizona as a hub and as an integral part of the CANAMEX region
  - → Completed CANAMEX highway would create a true north-south link that state currently lacks

- Southwest Passage[11]
  - → TEA 21 includes federal funds for planning and constructing transportation corridors of national significance.
  - → The objective of the Southwest Passage is to connect the east-west trade routes along the U.S./Mexico border with a seamless freight transportation system extending between Los Angeles and Houston.
  - → To date, only the California portion of the corridor (the Alameda Corridor) has been identified for funding in TEA 21.

- Southwest Compact Region[12]
  - → Southwestern US well-positioned to take advantage of international trade with Latin America
  - → Proposed "super-region" of 4 US states & 6 Mexican states: Southwest Compact Region
  - → Compact 100 km on either side of border
  - → City-states in NAFTA border region: LA, San Diego, Phoenix, Tucson, El Paso, San Antonio, Dallas, Houston, Tijuana, Mexicali, San Luis, Nogales, Cuidad Juarex, Piedras Degras, Nuevo Laredo, Reynosa, Matamoros
  - → Mexican states: Baja California, Sonora, Chihuaha, Coahila, Nuevo Leon, Tamaulipas
  - → Mexican portion highly productive part of Mexican economy: all 6 states among top 10 Mexican states for productivity
  - → Manufacturing is important and growing part of economy on both sides of border

[11] Maricopa Association of Governments, 1998
[12] Southern California Association of Governments, 2002

- → Industry clusters: apparel, television, auto parts, electronic components, computers
- → Maximizing economic competitiveness of region requires transportation system that facilitates just-in-time production as well as exports to all compass points
- → Seamless freight transportation system - Southwest Passage
- → Provide backbone for a super-regional goods movement network linking Southwestern industries with the world market
- → Side benefits are mitigation of: traffic congestion, air pollution, vehicle delays at grade crossings, noise in residential areas
- → Support the designation of the Southwest Passage by the US Secretary of Transportation as a "high priority corridor" in order to receive federal funds
- → Southern California Association of Governments leading action

National Economy[13]

- US macroeconomic outlook over next decade is bright
  - → GDP - 3 to 3.5% annual growth
  - → Unemployment rate - 5.5%
  - → Inflation - near 2.5%
  - → Productivity - 2 to 2.5%

- Nation's business cycle becoming less volatile
  - → Strong evidence that business cycles have and will increasingly become less pronounced
  - → Result of long-running structural changes in US economy
  - → Increased globalization
  - → Trade flows generally move counter cyclically to US

- Productivity increases expected
  - → Quality of workforce continue to improve - baby boomers in productivity prime -1/4 productivity gain
  - → Capital investment as much as previous decade - 1/4 of productivity gain
  - → Dramatic shift in technologic productivity - 1/2 of gain

- Heightened pace of technological change/diffusion of technology is more rapid
  - → Synergies are developing across technologies
  - → Businesses will increasingly concentrate on their very specific comparative advantage and leave all else to other firms with their own competitive advantages
  - → Product development
  - → Pace of technological change will drive industry to be increasingly research intensive and generate increasingly short product cycles
  - → For any industry to become dynamic, it must have access to R&D capacity and the financing to support it

- Financial deregulation & innovation
  - → Lifting constraints on credit availability to households & businesses
  - → Local and engaged financial services industry, made up of a broad range of traditional and less traditional financial service firms, will be a necessary factor for economic growth

[13] State Economic Study, Phase II - Economy.com, unless otherwise footnoted

- → Flexible sources of financing that respond immediately to research, development & production needs
- → Venture capital & other sources of development capital
- → Sources of financing will have to locate close to operations to respond effectively to flexible financial needs of businesses
- → Increased dependence on real estate on world capital markets imposes discipline on development

- 9/11 effects - global outlays on military and maintaining personal & business safety

- Labor force needs
  - → Employers will search for the most talented workforce available to suport the R&D work needed
  - → By locating where there is an ample and well trained workforce
  - → By importing skilled labor
  - → Use of community colleges to improve workforce quality
  - → Labor force will have to be increasingly flexible to change shifts and responsibilities to adapt to rapid changes in supply-demand relationships
  - → Increased flexibility of in-house workforces
  - → Expanding use of contingent workforce of part-time workers, temporary workers, independent contractors, self-employed
  - → Labor outsourcing will increasingly require the use of off-site labor linked through telecom to a central site

- Supply-chain management
  - → Reduced role of inventory shifts
  - → More technology-intensive applications of telecommunications & software for transportation, warehousing and manufacturing
  - → Quality of transportation links will be critical to avoiding delays
  - → Means substantial investment in telecom and electric utility infrastructure

New Economy[14]

- The twenty-first century economy will favor areas that are "knowledge producers," places flush with research and development activities, the creation of new intellectual products and services and the most recent technologies. Those areas strong in knowledge production will be the white-collar, front-office parts of the new economy.[15]

- The new economy is a shift from a company-centered economy to a people-driven economy

- People or talent is the key factor of production in this new system. Our economic growth, thus, will be shaped much more in the future by the distribution of people or talent than by the distribution of firms. Your region's future will be more decided by your ability to attract people than to attract firms.

- The place is the fundamental organizing unit of the New Economy, not the firm.

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[14] Dr. Richard Florida, speech at Greater Phoenix Economic Council Summit, 2001, unless otherwise footnoted

[15] Morrison Institute, *Five Shoes Waiting to Drop*, 2001

→ People can move and people have choice, and they wan to choose nice places to live with other exciting people and exciting things to do. You can't bribe knowledge workers. Knowledge workers are not only motivated by money and stock, but by a set of strong, intrinsic motivations to make a difference, to be challenged, to participate, and to do great work, and to work around great people.

→ Where do companies locate: Near their raw materials and their markets. If people are the most important factor of production, companies will locate near the factor of production. Going back to the year 1850, regional growth can be predicted by the percentage of highly educated or knowledgeable or high human capital people.

- What do places have to do to attract people?
  → People move for lots of jobs. We increasingly move to regions that have lots of jobs; call them a thick labor market. People understand that the realities of the new labor market are temporary attachments between people and companies. They won't work there for life in most cases. They will move up by moving on. And they want to be situated in a labor market that is thick with opportunities because we're quite rational.
  → The second thing is that places become an important demarcater of status in people's lives. They want to live in a cool place with lifestyle amenities, and they want them all: sunshine, climbing rocks, riding bikes, sporting events, theater, going out at night. The bohemian index: the ability of a region to attract high-technology industry is directly correlated to its ability to attract and nurture a Bohemian, creative, artistic, music community.
  → Low entry barriers for people: a place that can afford new entrance, immediate access to building lives and building communities.
  → Quality of place: the unique and authentic character of place. Natural beauty, authenticity of building stock, physical stock, natural environment, diversity of people, visual cues that anyone can plug in and make a life in that community, and what's going on -- vibrancy of street life, cafe culture, arts and music, people engaging in outdoor activities.

- Three T's of economic development: technology, talent, and tolerance.
  → Top ranked regions in terms of high technology location and growth score top marks on all three: San Francisco, Boston, Austin, Seattle
  → There are 3 regions in the country poised to challenge the top tier of high tech regions: Denver/Boulder, Atlanta, and Phoenix

- The logic underpinning of many industry clusters is tenuous[16]
  → Advanced telecommunications makes coordination between disparate individuals and companies, even on a global level, increasingly easy
  → Dispersion of talent and technology to various parts of the country and the world has altered the once-fixed geographies of talent

- Terrorism demolishes agglomeration economies[17]
  → This dispersion further accelerated by the fallout from 9/11.
  → Many major securities companies have moved operations out of Manhattan, and financial and other business service firms are also migrating to the Hudson Valley, New Jersey and Connecticut

[16] Joel Kotkin, The Declustering of America, *The Wall Street Journal*, August 15 2002
[17] Joel Kotkin, The Declustering of America, *The Wall Street Journal*, August 15 2002

→ Over time, we can expect a similar outflow from other high-profile locales like Chicago's Loop or Washinton's M Street
→ Firms there pay more for insurance and for elaborate securities and communications systems

- Workers, particularly those with families, are increasingly reluctant to labor in a possible terrorist target[18]
  → With new telecommunications technology, it is increasingly easy for a firm to operate in a dispersed manner
  → It would be foolish to accept the now-fashionable assumption that most high-end workers want to live in big, "hip" cities
  → When they reach their 30's and start having children most seem to prefer a squarer existence in one of the nation's burgeoning "nerdistans" located on the outskirts of major cities

- To attract the best workers, managers in a de-clustered economy need to let their skilled workers live where they like -- people want to stay in their own comfort zone[19]
  → In the future, we can expect more companies -- not only in services but also manufacturing and technology -- to follow this approach
  → Even in Silicon Valley, often used to illustrate the virtues of clustering, major firms now scatter the majority of their top research and development facilities across many locations

- Implications of the de-clustering of America – Areas that want to hold onto their current economic supremacy can only do so by improving their quality of life, services, and tax structures[20]

Arizona Economy[21]

- Short term recessionary impacts
  → Per capita income steady
  → Consumer spending steady
  → Credit quality - indicator that economy is able to withstand periods of downturn or slow growth and maintain a steadier pace
  → State credit quality in fairly good shape as indicated by delinquency rate of mortgages and on consumer credit, equal to national average
  → Household balance sheets in good shape as measured by bankruptcy filings, about at national average

- Population growth
  → Through 2010, US regional differences in economic performance will remain smaller than usual
  → Cause steady in-migration to Arizona
  → Population - racial composition more diverse than nation

- Trade with Mexico the only diversified trade pattern in the state

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[18] Joel Kotkin, The Declustering of America, *The Wall Street Journal*, August 15 2002
[19] Joel Kotkin, The Declustering of America, *The Wall Street Journal*, August 15 2002
[20] Joel Kotkin, The Declustering of America, *The Wall Street Journal*, August 15 2002
[21] State Economic Study, Phase II - Economy.com, unless otherwise footnoted

- Expansion of southern California economy toward the east diminishes the distance between that vast economy and Arizona

Metro Phoenix Economy[22]

- Phoenix exemplifies the people-driven economy. It is, in large measure, built on the fact that people wanted to be here and initially chose it as a retirement center and now choose it as a place to live and work because they enjoy the lifestyle.[23]

- Economic outlook over next decade
  - → Per capita income growth of 2% annually
  - → Employment growth of 3.8% annually
  - → Population growth of 3% annually

- Population growth
  - → Net migration accounts for half of population growth
  - → Fueled retail, consumer service and construction industries
  - → Population increase should continue to amount to 90,000 to 95,000 annually
  - → Steady level of increase means that impact of migration on total economy eases moderately and rate of population growth also begins to slow
  - → Population is young compared to rest of state - share over 55 is lowest of all Arizona counties
  - → Phoenix ability to attract migrants that do have high educational attainment

- High degree of credit stability
  - → Bankruptcy filings below national average
  - → Growth in filings has been low

- Regional economy is most diverse of all Arizona's regions

- Stable industries of the coming decade
  - → Air transportation
  - → Electronic components & accessories manufacturing
  - → Measuring & controlling instruments
  - → Aircraft & parts manufacturing
  - → Restaurants
  - → Insurance carriers - increasing number of regional and back-office operations in the region
  - → Real estate & insurance agents
  - → Federal government
  - → Farm labor & management services

- Current dynamic industries
  - → Construction
  - → Consumer and business finance
  - → Amusement and recreation
  - → Management and public relations

[22] State Economic Study, Phase II - Economy.com, unless noted otherwise
[23] Dr. Richard Florida, speech at Greater Phoenix Economic Council Summit, 2001

- Growth industries of the coming decade
  - → Amusement & recreation
  - → Public relations & management services
  - → Missiles and space vehicles
  - → Banking industry
  - → Business services, including software & temporary help services
  - → Defense spending impact on aircraft & parts industry
  - → Tourism would have more upside potential to drive the economy if it had a larger component within cultural activities and the arts
  - → Hotels and lodging - after current oversupply wears off
  - → Trucking & general transport services
  - → Arrangement of transportation services

- Certain industries no change from trend line
  - → Construction and management/public relations are reflective of overall growth of economy
  - → Tourism related amusement services will grow but not intensify
  - → Commercial banking follows overall growth of economy
  - → If more regional or national commercial banking were focused in region, would provide greater potential to support the economy

- Economic opportunities
  - → Software
  - → Healthcare/biotech
  - → Industrial machinery
  - → Communications services
  - → High tech instruments
  - → Engineering services - research & testing
  - → Transportation/logistics
  - → Defense/aerospace/electronics
  - → Tourism

- Software
  - → Production and distribution of software & computer systems, as well as Internet systems design and networking
  - → Will increasingly become more of a consulting business as firms across all industries outsource this type of work
  - → University research programs supporting software development
  - → Favorable business costs and cost of living compared to Silicon Valley & New England
  - → Good upside potential for exports

- Health care/biotech
  - → Healthcare - services of dentists, physicians and other practioners, as well as hospitals and related research centers that create centers of excellence
  - → Biotech - pure research and application of research
  - → Demand increasing
  - → Technology provides further upside potential
  - → Translational Genomics Research Institute - bring $100 million in research funding
  - → Broad and sometimes deep resources in universities and public-private ventures
  - → Pentup demand

→ Potential of TGRI to attract venture capital investors

- Industrial machinery
  → Construction & related machinery, metalworking machinery, and special industry machinery
  → Increasingly use high tech equipment in production processes and serve regional/national markets
  → Weaker dollar will bring back some of former export competitiveness
  → High concentration in southern California to recruit
  → Especially with increased power costs or indirect costs
  → Already shifted from coast to Inland Empire
  → Cost advantages compared to California - power, more stable power, workers' compensation
  → Education and training for skilled workforce

- Communications services
  → Radio and telecommunications services including cellular, paging, wired, satellite and other telecom services, plus manufacture of communications equipment
  → Long term the industry is critical and will be rationalized to be consistent with demand
  → Long term outlook is positive, especially for wireless and data segments
  → Consumers and businesses already spending larger share of income on telecom services
  → Substitute for business travel
  → Continued expansion of Internet and wireless technologies
  → Metro Phoenix current substantial base of broadband infrastructure
  → Telecommunications will continue to have export potential, particularly in Latin America, Asia, and Africa where telecom technology is leapfrogging traditional wired services
  → Technology based and research intensive industry - ASU Telecommunications Research Center

- High-tech instruments
  → Optical, medical and measuring instruments
  → Long -term demand for process related instruments will be maintained
  → Increased complexity of manufacturing will create expanded demand for industrial automation and electronic testing equipment, especially optical inspection systems, bioscience materials and defense-related instruments
  → Foreign markets will provide considerable upside potential as well
  → Greater trade flows with China
  → Other emerging economies
  → Highly productive, technology based and research intensive industry with good export potential
  → Good potential to expand as TGRI becomes established and as genomic and proteomic research programs are established elsewhere
  → Builds on existing resources at UA

- Engineering services - research & testing
  → Commercial and noncommercial research of engineering systems and products and the testing laboratories that support research and product development
  → Related to technology, grown rapidly in Arizona
  → Moderate size but projected to be one of the most rapidly growing industries nationwide in the coming ten years

- → Arizona head start
- → Expanding market in southern California and also in Mountain states
- → Links to research in biotechnology, medical equipment and services and other high-tech activities
- → Significant high tech industry base in metro Phoenix
- → College of Engineering at ASU and UA - numerous research centers and institutes supporting testing and product development
- → Endogenous workforce with state university graduates
- → Sufficient innovation to support expanded industry
- → Historic partnership between AZ universities and private industry

- Transportation/logistics
  - → Trucking, warehousing, railroad and broader logistics industry often classified as miscellaneous transportation services
  - → Bright long term outlook nationwide
  - → Economic activity is expected to become increasingly dispersed as produces continually seek more advantageous and lower cost locations
  - → Will support continued gains in need for transportation services
  - → Dispersion will transform transportation demand to more service-oriented, smaller freight movement
  - → Inventory management will increase demand and value of time-definite distribution
  - → Versatility of trucking industry should enable it to follow any technological developments or demand shifts
  - → Increased efficiency of intermodal shipping coordinating modes of freight movement provides further upside potential
  - → Phoenix area is currently the major hub
  - → Increasingly technology-intensive industry closely linking manufacturing, distribution and retail activities
  - → Arizona poised to link own markets, Mexico, Southern California, Texas and the Gulf Coast
  - → Telecommunications and Internet applications increasingly used to manage logistics services; UA program
  - → Improvements at Ports of Los Angeles and Long Beach combined with Alameda Corridor shorten economic distance to Arizona
  - → Mexican manufacturing will go to Baja California, Hermosillo and Guadalajara, passing through southern Arizona
  - → Hoover Dam bypass complete by 2007 will provide Arizona safe and reliable all-weather access to Las Vegas and points north

- Defense/aerospace/electronics
  - → Aircraft, aircraft parts, weaponry, navigation, guidance and aeronautical systems
  - → Logical driving industries in the coming years
  - → Industry poised to expand due to Defense Department procurements, with double-digit annual growth rates through 2005 and high single-digit growth rates to 2010
  - → Testing and deployment of missile defense system and manufacture of new fleets of advanced fighter craft
  - → War on terrorism potential
  - → Improved cash flow, rising productivity, and greater product diversification offer potential for pace of industry growth not seen in a decade
  - → Much potential for smaller firms to participate in defense procurement due to Pentagon policy change

→ Further expansion of commercial aircraft parts and space vehicle offers some potential for reducing the risk of industry volatility

- Tourism
  → Will be a defining factor of the economy without much need for policy action
  → Factors supporting tourism also underlie the basic quality of life that attracts and retains a high-quality workforce

- Phoenix challenge in the technology arena is to move from a low-cost affordable branch plant economy to the kind of economy that can create new technology businesses bases on indigenous assets, particularly assets at your universities and technical institutes and in combination with some of these great companies.[24]

- Phoenix has been attracting people here for lifestyle options for decades and people still see the lifestyle here as attractive. Phoenix is diverse and has the ability to attract people from all over the country and the world. Phoenix is a multi-nodal region -- all with different kinds of packages and bundles of attractiveness and options. Need to think about complementarities among those nodes, not duplication.[25]

- Phoenix challenges: five of them[26]
  → Have to increase investments in technology -- R&D budget of universities and technical institutes, couple them with technical excellence of companies here (especially big companies) and create effective technology transfer mechanisms
  → Go after the best and brightest professors in the world. Build talent magnets. Build the areas the communities, the places that talent wants to be. Use what you've learned about building retirement communities to build the same kind of lifestyle meccas, but for people of different ages and different demographics.
  → Invest even more than you're doing in your lifestyle options.
  → Make sure that people know that you're a tolerant and diverse place and be and even more tolerant and diverse place. Make your leadership inclusive; Reposition your youth leadership programs to make sure they're reflective of the diversity of your young population.
  → Finally, build real regional leadership and collaboration.
  → Key to Phoenix future is to build the best people climate in the work. Think about the business climate, the low taxes, the affordability, the good transportation, the infrastructure you've done. Now: how to we couple that with the world's best people climate and define the investment you need to make in creating that people climate?

4. Threats

Global Economy[27]

- Emergence of global trading blocks

- Long term - continue the movement of lower-wage industries from US

[24] Dr. Richard Florida, speech at Greater Phoenix Economic Council Summit, 2001
[25] Dr. Richard Florida, speech at Greater Phoenix Economic Council Summit, 2001
[26] Dr. Richard Florida, speech at Greater Phoenix Economic Council Summit, 2001

[27] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)

→ Southeast Asian economies shift toward higher-value goods and services, competing with US
→ Without higher saving rates, increased interest rates will follow, provide further competitive advantage to emerging economies
→ Increased standardization in existing high-tech industries will lead to further transfers of business operations to low-cost economies

- Increased importance in US for developing emerging industries, will require ever improving human capital from which innovation originates

- Mexico -- short-term decline in maquiladoras will create further incentives for Mexican immigration

- Factors in place to lessen direct foreign investment in US - higher US interest rates, depreciating dollar, accelerating productivity in Europe, uncertainties due to accounting irregularities and potential terrorist attacks

National Economy[28]

- Significant long term risks
  → Future terrorist attacks
  → Significant disruptions to energy supplies
  → Mounting government fiscal problems
  → Retirement of baby boom generation later in decade
  → Anticipated slowing of labor force growth
  → Globalization exposes national economy to external exogenous shocks
  → Rising household debt burdens, personal bankruptcy filings and credit losses for lenders due to provision of greater credit - threat to consumer spending

- 9/11 impacts
  → Government surpluses will not come to pass and military outlays and public spending will deplete reserve funds
  → Undermine recent efforts to open US economy more fully to foreign immigration
  → Stronger immigration needed to support large number of retired baby boomers

- Pace of technological change will drive industry to be increasingly research intensive and generate increasingly short product cycles
  → Shorter product cycles caused by tech change causes manufacturing plants to become obsolete more quickly than in the past
  → Product manufacturing will be an increasingly volatile activity in terms of capacity and location
  → Slower labor force growth means domestic workforce needs to become increasingly productive in order to compete with the increasing ability to tap into foreign sources of skilled labor

- Labor force needs
  → Employers will search for the most talented workforce available to support the R&D work needed
  → By locating where there is an ample and well trained workforce

[28] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)

→ By linking to global sources of skilled labor

New Economy[29]

- The logic underpinning of many industry clusters is tenuous
  → Advanced telecommunications makes coordination between disparate individuals and companies, even on a global level, increasingly easy
  → Dispersion of talent and technology to various parts of the country and the world has altered the once-fixed geographies of talent

- Terrorism demolishes agglomeration economies
  → This dispersion further accelerated by the fallout from 9/11.
  → Many major securities companies have moved operations out of Manhattan, and financial and other business service firms are also migrating to the Hudson Valley, New Jersey and Connecticut
  → Over time, we can expect a similar outflow from other high-profile locales like Chicago's Loop or Washinton's M Street
  → Firms there pay more for insurance and for elaborate securities and communications systems

- Implications of the de-clustering of America – Areas that want to hold onto their current economic supremacy can only do so by improving their quality of life, services, and tax structures

State Issues[30]

- **State revenue policy: the revenue sieve**
  → Arizona no longer has a balanced and efficient tax structure.
  → Cuts in income and vehicle license taxes and other moves have left the state heavily dependent on collections from a sales tax base that is already narrow - and getting narrower because of e-commerce and the shift to a service economy.
  → This weakened, unbalanced tax system could harm the state - at the exact time when Arizona must upgrade its public services to ensure a prosperous future.

- Two equally distasteful scenarios are possible.
  → Local governments and the state may each be forced to increase their sales tax rates repeatedly to generate revenue for basic services.
  → Holding the line on rate increases may simply preclude necessary investments, whether in education, quality amenities or well-targeted tax cuts.

- Economic, technological, social and political forces are undermining the viability of Arizona's tax system.
  → Deep-set and structural, the threats to the system center on the growing obsolescence of Arizona's present mix of revenue sources, with its heavy reliance on sales taxes.
  → Tax experts, whether liberal or conservative, generally agree that wide, diverse tax bases (income, property and sales) yield the most stable revenue flows.

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[29] Joel Kotkin, The Declustering of America, *The Wall Street Journal*, August 15 2002.
[30] Morrison Institute, *Five Shoes Waiting to Drop*, 2001.

- Arizona in fact rated well on measures of balance, fairness and diversity of sources in comparison to other states as late as the mid-1990s. But the state has lost its balance.
  - → In 1997, for example, just nine states raised larger percentages of their combined state and local revenues from general sales taxes than Arizona's 35 percent.
  - → In 1999, only eight state governments depended more on sales taxes

- Years ago, a more industrial economy traded mostly in tangible goods, so focusing taxation on purchases of goods made sense. The state's continuing shift to a service economy, the rise of e-commerce and the simultaneous aging and Latinization of Arizona's population all could reduce state and local tax collections as service needs increase.

- Five key trends
  - → The shift to a service economy is moving more purchases beyond the reach of sales taxes.
  - → E-commerce continues to grow and bypass the state's tax system.
  - → Demographic changes such as the Latinization of Arizona and the aging of the baby boom could constrain revenue growth further.
  - → The coming crash of capital gains collections adds another variable.
  - → The proliferation of tax credits, exemptions and other breaks has subtracted billions of dollars from current and future tax revenues.

- To be blunt, an outmoded tax system is leaking hundreds of millions of dollars each year that might otherwise be applied more systematically to investments in the state's future.

- A Talent Shake Up
  - → In today's "knowledge economy," what matters is the intellectual capacity of the workforce
  - → Arizona is not positioned well to attract and keep the knowledge workers it needs. The state's immigrants tend toward lower skill levels.
  - → Arizona suffers from an image problem among the cutting-edge young knowledge workers Arizona lacks the urban fabric, "coolness" and public schools they want.
  - → It's unclear whether, Arizona can continue to attract the one well educated group with which it has a track record: retirees
  - → To fill the gaps, Arizona must boost its quality of life.

- The best and the brightest in three demographic groups:
  - → Yuppie baby boomers, who, at the peak of their productivity, may be anticipating an "active retirement" with perhaps a different career, a new business or a return to school
  - → Young knowledge workers, who, in their 20s and 30s, want to do cutting-edge work in exciting places
  - → Highly skilled immigrants, who are choosing places with inclusive communities, fast-growing economies and numerous options

- Uncertainty of Boomer work force participation
  - → In-state boomers' aging and retirement could create shortages of skilled workers. The inevitable aging of the state's resident boomers prompts concern because more and more of Arizona's most experienced workers are hitting retirement age. No one really knows whether boomers will continue the current trend toward earlier retirement or stay in the workforce longer. In the next 20 years businesses and organizations will face replacing hundreds of thousands of employees at the top of their games from the smaller "baby bust" that followed the boom.

→ The changing tastes of out-of-state "empty nesters" and high-end retirees could leave Arizona out of the game of attracting them. Yuppie" seniors appear to be different from their predecessors. Better-educated and increasingly affluent aging boomers are also healthier, choosier and less group-oriented in comparison to previous generations. Amenities, aesthetics and the environment count for a lot with them, since economic security is not an issue. Fewer boomers may settle for Arizona's traditional menu of retirement options Some retirees, even now, are being turned off by the congestion, pollution and loss of open space affecting Arizona's retirement communities. Others might avoid metro Phoenix's worsening "heat island." Other boomers may spurn senior-only settings altogether. In all this, local amenities and quality of life will be critical selection factors. A final draw will be opportunities for selfimprovement and engagement.

- Talent for a New Economy
  - → Arizona now has fewer of the prized, young knowledge workers than it should have, and the state lags behind on the assets, amenities and reputation that might attract them.
  - → The problem is twofold: Arizona ranks only moderately well on measures of current workforce skill, and it fares poorly on the sort of factors that young knowledge workers say affect their location decisions.
  - → New economy observers have documented the preferences of these vanguard workers. "vital centers" that provide opportunities to get together, vibrant street scenes and quick access to urban greenspace. "entertainment machines" full of such things as parks, bohemian arts scenes, and dense neighborhoods filled with exotic cuisine and nightclubs. interest in diversity; subways or light rail; places to see "visibly active young people;" and casual gathering places. Morrison Institute's recent survey
  - → According to a Morrison Institute survey, respondents under age 30 were more likely than older ones to support promoting the state for its "great quality of life," its "smart people" and its arts scene.
  - → The institute's employer survey showed that a third to a half of Arizona companies that recruit workers from out of state thought that recruits did not perceive Arizona as a "cool," vibrant place for young professionals. Fourteen percent of companies thought this a major barrier to attracting the types of workers they want and need.

- Immigrants: Potential Sources of Skills and Strength
  - → The issue for Arizona, though, is that while foreign-born residents bring benefits, the state's newcomers come with a wide array of educational experiences.
  - → Arizona's current immigrant population tilts to the low end of the education spectrum. Specifically, the vast majority of Arizona's foreign-born immigrants arrive from Mexico, where they commonly receive no more than nine years of education.
  - → By contrast, large flows of Asian and Indian immigrants, with far higher rates of college attendance and with approximately 20 percent having advanced degrees, give a potent talent edge to California.

- Latino Education Dilemma
  - → Arizona's fast-growing, layered Latino population offers the state tremendous promise – and a challenge
  - → Not only are Latinos growing in population, they are also upwardly mobile – when they get a good education. U.S.-born Latinos - including the sons and daughters of recent immigrants to Arizona close much of the education gap.

→ Far too many of Arizona's Latinos drop out of high school or fail to obtain the sound basic education needed for more advanced study. As a result, educational deficits are holding back many Latinos –
→ The educational uplift of Arizona's huge Latino population, therefore, must move to the center of the state's agenda.
→ Within 10 years in the state's biggest cities, the number of Latino high school graduates will equal the number of white graduates. Within 20 years Hispanics will make up approximately half of the homegrown, entry-level labor pool in the state's largest economies.

- Latinos and other minority groups represent a tremendous opportunity for Arizona that other states do not have.
  → Unaddressed, the unmet education needs of Arizona's Latino population could cramp their prospects and undercut the state's ability to prosper in an increasingly demanding economy. Currently, Arizona companies can hire skilled workers from a talent pool enriched by the in-migration of relatively well-educated workers from other states and leave others to fill unskilled jobs. But the retirement of the baby boomers combined with Latino deficits points toward difficulties.
  → The bottom line: Latinos' low education levels could leave the state with too many low-end laborers and too few skilled ones.

- Lost Stewardship
  → Every flourishing place has people who act as its stewards.
  → But, most Arizonans, according to a statewide survey, think the state lacks such leadership today.
  → Stewards of place seem like they are harder to find in Arizona than they are elsewhere. In part, that is due to the state's rapid growth and dramatic changes. Fewer people in Arizona than in some other states have deep roots here. In part, too, it's because Arizona is not a first-tier corporate center.

- There is ignificant churn in the public companies but not the private ones. Comparing The Business Journal Company Rankings for 2000 and 1996, Morrison Institute found:
  → Of the largest 25 Arizona-based public companies appearing in both lists, slightly more than half (52%) experienced at least one CEO or principal turnover in the last four years.
  → Of the largest 25 appearing in both lists, 65 percent experienced at least one CEO or principal turnover between 1996 and 2000.
  → Of the 34 largest private companies in Arizona appearing in both lists, 22 percent experienced CEO or principal turnover from 1996 through 2000.
  → privately held companies. In fact, Arizona's CEO stability among this latter group is better than in Georgia

Metro Phoenix Economy[31]

- Short term recessionary impacts in Metro Phoenix
  → 9/11 impacts
  → Airline layoffs and flight cutbacks
  → Phoenix hotels, restaurants & resorts hard hit

- Population growth drives normally non-basic industries

[31] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)

→ Real estate, construction, local financial and business services, retail & personal services
→ Low value-added and low-wage industries

- Labor in Metro Phoenix
  → Weak labor market conditions
  → Rise in personal bankruptcy filings

- Industries subject to waning demand in Metro Phoenix
  → Semiconductors & other electronic equipment
  → Aerospace
  → Real estate impact
  → Office vacancies

- Current de-concentrating industries
  → Hotels & lodging
  → Communications
  → Real estate
  → Lack of bank headquarters
  → Agricultural services

- Arizona's current economic structure poses some significant downside risks for the remainder of the decade
  → Transportation services will have to change rapidly as ticketing & freight brokerage services & logistics come to rely increasingly on the Internet
  → Medical & health insurance carriers will face severe cost pressures in coming years as medical costs rise and the ability to raise rates diminishes
  → Banking industry - not likely to accelerate unless regional or national financial service operations stake a greater presence in Arizona and adapt to changing financing needs of emerging industries
  → Airline industry in serious financial trouble
  → Electronics manufacturing faces serious competitive threats from overseas producers. Depends on amount of research & development work that continues locally and that generates new products
  → Narrow range of export products - electronics, aircraft & aerospace equipment

- Pro-cyclical nature of Phoenix area economy
  → Exposure to cyclical volatility
  → Exposure to cutbacks in electronics industry

- Though most diverse economy in Arizona, metro Phoenix still dependent on relatively narrow economic base[32]
  → High reliance on narrow band of high-tech sectors
  → Need to expand high-tech base beyond manufacturing
  → Non-high tech image among business media and location specialists
  → Lack of availability and access to early-stage business capital
  → Need building business cases to attract such capital
  → Need region's and state's commitment to and confidence in its early stage companies:
  → Providing incentives for venture capital to enter the state

[32] GPEC Competitiveness Committee, *Framing the First Year Charge: 2002 Report & Recommendations*, 2002

→ Directly providing seed capital
→ Relatively low university research funding

- Migration may slow
  → Through 2010, regional differences in economic performance will remain smaller than usual
  → Minimizing cyclical surge in migration that might drive unusually strong growth in Arizona
  → Domestic migration provide valuable skilled labor; should it slow, local workforce will need to fill the gap
  → Population growth drives normally non-basic industries: real estate, construction, local financial and business services, retail & personal services

- Population - more age cohorts under 20 and over 64 years
  → Distorts measures of productivity

- Composition of income is changing as wage and salary income constitutes an increasing share of total personal income and transfer payments declining share
  → Transfer payments - high of 15.6% of total personal income in 1993 to 13% in 2000
  → Impact on population-driven industries
  → Exposure to cyclical risks in economy

- Software
  → Low rates of educational attainment of workforce
  → Lack of venture capital

- Healthcare/Bioindustry
  → Direct impact of biotechnology can be limited
  → By end of fifth year, TGRI will employ only 275
  → Not profitable business in the aggregate
  → Probably remain unprofitable in the next decade while exceptional advances in life sciences discovery are finally transformed into useful and practical applications
  → Arizona industry faces long-term battle to establish itself versus high concentrations elsewhere
  → Medium-term outlook is uncertain and remains dependent on steady stream of sponsors

- Industrial machinery
  → Does not have to locate in major metro area
  → High tax rate on real and personal business property, especially due to industry reliance on large amount of capital investment
  → Communications services
  → Near term oversupply

- High-tech instruments
  → Very small industry
  → Much housed in university research programs
  → Depends on active research programs through public or private institutions
  → Depends on public research grants and private investment capital
  → Venture capital the problem here
  → Demand remains uncertain until improved corporate profits can support long-term capital investments

- Engineering services - research & testing
  - → Financing
  - → State property tax structure, given industry need for considerable lab space and equipment

- Transportation/logistics
  - → Need to further improve transportation links to California, Nevada, Mexico, and points east to provide opportunities for rural Arizona
  - → Southern Arizona will increasingly become a one-day drive from points of origin in central Mexico, making it a logical point for transshipments and logistics management
  - → Lacking fourth compass point to the north - long term CANAMEX
  - → Need to widen congested highways in Phoenix
  - → Further road improvements needed (I-10) if Congress eases regulations regarding maximum truck weight limitations. Improvements: widening and road quality

- Defense/aerospace/electronics
  - → Industry will need to adapt quickly to new priorities that focus on technology, systems, and long-range delivery of weapons and personnel
  - → Cold War aircraft and weapons systems may have to be scrapped
  - → Long-term downside risk: rapid consolidation due to unforeseen consequences

- Airline industry
  - → Currently in such financial difficulty that consolidation and cutbacks in the near term cannot be ruled out

- Housing affordability
  - → Median income households can afford to purchase a house priced 26% above the region's median sales price
  - → National affordability is 37%
  - → At risk in Phoenix, as housing affordability due to a large degree to low mortgage interest rates
  - → Every year since 1995, increase in median sales price of single family housing has outpaced household income growth

- Infrastructure
  - → Highway congestion cost economy $1.39 billion in 1999 (Texas Transportation Institute)
  - → Real challenge is to keep pace of infrastructure development in line with pace of population and economic growth

5. Business Climate Strengths

Economic Vibrancy

- Economic growth[33]
  - → Attracting new companies
  - → Economic dynamism and high quality of life that have heretofore attracted skilled workers to help drive economic growth

[33] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.

- → Spawning "gazelles" (publicly traded companies grown at average compound rate of 20% or more over the last four years)

- 2d tier of states technology concentration and dynamism composite of State Technology & Science Index[34]
  - → 2d tier net formation of high tech establishments per 10,000 businesses 1998
  - → 2d tier number of patents issued per 100,000 people
  - → 2d tier number of Technology Fast 500 companies
  - → 2d tier percent of business births in high tech SIC codes
  - → 2d tier percent of businesses in high tech SIC codes
  - → 2d tier percent of employment in high tech SIC codes
  - → 2d tier percent of payroll in high tech SIC codes
  - → Top ten high tech industries employment growing faster than US, 1996-2000
  - → Well established high-tech base, including manufacturing

- Rank order of innovation among surveyed metro regions (13/22)[35]

- State ranks well on measures of innovation[36]
  - → Patents for inventions per capita right on US average
  - → State has kept up on national increase in inventions/capita since mid-70's
  - → State in second tier of states that compete with tech related industries - New York, Illinois, Washington and Texas
  - → State equal to or better than median for all states on R&D spending per payroll worker from 1997-2000

- Top ranked regions in terms of high technology location and growth score top marks on all three: San Francisco, Boston, Austin, Seattle[37] Phoenix on Florida Index of top 50 metros:
  - → 9th on classic Milken Institute tech poll index
  - → 12th on Forbes technology stock
  - → 16th on New Economy index by Progressive policy institute
  - → 15th in patents according to Florida innovation index

Access to Markets

Geographic Proximity

- Multi-State Regional Markets[38]

- Export trade[39]

- Proximity to international markets[40]
  - → NAFTA corridor
  - → Mexican state of Sonora

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[34] Milken Institute, *State Technology and Science Index*, September 2002.
[35] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.
[36] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[37] Dr. Richard Florida, *Speech on Metro Phoenix at GPEC Annual Summit*, May 2001.
[38] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.
[39] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.
[40] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.

Transportation Services – Rail
- Rail Access[41]

Transportation Services – Truck
- Freeway Access[42]
- Central access to I-10 and I-17[43]

Transportation Services – Air
- Airport Access[44]
- Direct air flights - 126[45]
- Sky Harbor positive factor, with sufficient capacity including parallel runways and ample gate and terminal space over next ten years[46]
- Above average government outlays on air transport[47]

Telecommunication Services
- Telecommunications Infrastructure[48]

- Telecommunications access is plentiful for both telephone and broadband service[49]
  - → Highest ratios in the nation of actual cable laid for high-speed internet access
  - → Telecommunications State ranked 7th by CED
  - → Highest ratios in the nation of actual cable laid for high-speed internet access

- 2d tier percent of households with computers, 2000[50]
- 2d tier percent of households with Internet access, 2000[51]

Access to Resources

Energy Cost
- Energy costs 20% lower than California[52]

Work Force

- Favorable demographic trends[53]
  - → Attract migrants from other states
  - → Phoenix ability to attract migrants that do have high educational attainment

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[41] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.
[42] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.
[43] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[44] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.
[45] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[46] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[47] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.
[48] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.
[49] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[50] Milken Institute, *State Technology and Science Index*, September 2002.
[51] Milken Institute, *State Technology and Science Index*, September 2002.
[52] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[53] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)

- Population growth[54]
  - → Net migration accounts for half of population growth
  - → Population increase should continue to amount to 90,000 to 95,000 annually
  - → Steady level of increase means that impact of migration on total economy eases moderately and rate of population growth also begins to slow
  - → Biggest asset: Phoenix size. Bigness allows you to attract lots more people[55]

- Population is young compared to rest of state - share over 55 is lowest of all Arizona counties[56]
  - → High school graduates annually: 19,000
  - → College graduates annually: 18,0000

- Phoenix is a very diverse place[57].
  - → 19th on basic melting pot index
  - → 24th on Bohemian index
  - → 22d in gay index
  - → 21st in composite diversity measure
  - → 9th in percentage of people in interracial marriages

- Workforce availability is good[58]
  - → Skilled workforce availability
  - → Semi-skilled workforce availability
  - → Unskilled workforce availability

- Top ten technology and science workforce composite of State Technology and Science Index[59]
  - → Top ten states for intensity of engineers, 2000
  - → 2d tier intensity of computer and information science experts, 2000
  - → 2d tier percent of population with advanced degrees, 2000
  - → 2d tier percent of population with bachelor's degrees, 20002d tier science & engineering post-doctorates awarded per 100,000 people, age 24-35 cohort 1998
  - → 2d tier doctoral engineers per 100,000 people

- Talent scores for Phoenix[60]
  - → 16th in nation in percentage of scientists or engineers in your labor force
  - → 20th in percentage of professional technical workers in labor force
  - → 35th in the base capital measure, percentage with a BA or above

- Workforce quality is favorable[61]
  - → 83% of adults over 25 have high school diploma, compared to 80% for the nation
  - → Share of adults with bachelor's degree is 26%, ahead of national rate of 24%

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[54] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[55] Dr. Richard Florida, *Speech on Metro Phoenix at GPEC Annual Summit,* May 2001.
[56] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[57] Dr. Richard Florida, *Speech on Metro Phoenix at GPEC Annual Summit,* May 2001.
[58] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[59] Milken Institute, *State Technology and Science Index,* September 2002.
[60] Dr. Richard Florida, *Speech on Metro Phoenix at GPEC Annual Summit,* May 2001.
[61] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)

→ Region's workforce productivity is very good
  - Output per worker in 2001 is $79,000, compare to national average of $77,000
  - Productivity overtook nation in 1997 and metro Phoenix has widened the gap since
  - Better productivity than other company locations
→ Excellent work ethic of employees
→ Technologically current workforce
→ Moderate to low absenteeism
→ High commitment to employers
→ Good levels of on-the-job flexibility
→ Broad range of resident workforce skills
→ Managerial & professional talent is easy to recruit, especially from high cost locations
→ Excellent blend of labor cost and availa bility for high-end white collar support and manufacturing operations
→ Positive labor relations in Arizona: No current state legislation exceeding federal mandates
→ 2002: untapped pool of employable but non-working job seekers
→ Beginning to build thick labor market
→ Expansive spousal employment opportunities

- Favorable wage rates[62]
- Labor costs 2% above national average[63]

Space Availability & Cost

- Infrastructured land of appropriate size[64]
- Favorable real estate prices[65]
- Existing building space availability is good[66]
- Office rental rates only 70% of national average in 2001[67]
  → Higher than most Western metros, including Denver, Salt Lake and Albuquerque
  → Well below most tech-related metro areas

Financial Capital

- Second tier among states for certain financial measures[68]
  → 2d tier average annual Small Business Investment Company program funds disbursed per $1,000 of GPS 1998-2000
  → 2d tier Initional Public Offering proceeds as percent of GSP, 1998-20002d tier number of companies receiving venture capital investment per 10,000 firms
  → 2d tier risk capital and infrastructure component of State Technology & Science Index
  → 2d tier Small Business Innovation Research awards per 100,000 people
  → 2d tier Small Business Technology Transfer awards per $100,000 of GSP
  → 2d tier Small Business Technology Transfer awards per 10,000 businesses

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[62] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[63] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[64] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[65] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[66] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[67] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[68] Milken Institute, *State Technology and Science Index,* September 2002.

→ 2d tier venture capital investment as percent of 2000 GSP

Public Sector Investments

Secondary Education Quality

- Compared to most other Arizona counties, most indicators of education in Phoenix region are favorable[69]
  - → 9% dropout rate in 2001
  - → Academic proficiency levels highest in state
  - → These achievement levels reached even as average educational spending per student in Phoenix is below state average

- 2d tier among states - average math SAT scores 2001[70]
- 2d tier average SAT scores 2001[71]

Higher Education Quality

- Strong community college system[72]
- Dynamic university & college presence[73]
- High share of college degrees conferred[74]

- Significant assets in state university system[75]
  - → ASU -56th in nation in terms of total R&D funding received
  - → Universities higher than asverage for quality of students, as measured by SAT scores of incoming freshmen

- 2d tier composite research and development inputs to State Technology & Science Index[76]
  - → 2d tier competitive National Science Foundation funding rate
  - → 2d tier National Science Foundation funding per $100,000 of GSP, 2000
  - → 2d tier federal R&D dollars/capita
  - → 2d tier R&D expenditures on Engineering dollars/capita
  - → 2d tier R&D expenditures on Environmental Science dollars/capita
  - → Top ten National Science Foundation research funding per $100,000 of GSP, 2000
  - → Top ten R&D expenditures on physical science dollars/capita

Infrastructure Capacity

- Infrastructure investments by local governments[77]

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[69] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[70] Milken Institute, *State Technology and Science Index*, September 2002.
[71] Milken Institute, *State Technology and Science Index*, September 2002.
[72] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[73] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[74] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.
[75] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[76] Milken Institute, *State Technology and Science Index*, September 2002.
[77] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.

- Above average government outlays on highways[78]
- Lower levels of traffic congestion[79]
- Completely developed highway system [80]

- Above average government outlays on water utilities facilities investment[81]
- Water availability[82] **Dennis Donovan**
- Well served by water, assuming water conservation[83]
- Excellent watershed quality indicator[84]

- Water/wastewater treatment capacity[85]

- Above average government outlays on sewerage facilities[86]
- Above average government outlays on solid waste management facilities[87]

Public Sector Costs[88]

- Overall tax burden is 6% below national average
- Excluding business real and personal property tax
- Overall business tax burden 3% below national average

Quality of Life

- High quality of life[89]

Cost of Living[90]

- Lower cost of living[91]
- Cost of living just slightly above national average
- Cost of living is 4% above national average, 40th in the nation out of 318 metro areas
- Cost of living below that of most California metro areas
- When compared to other tech centers nationwide, metro Phoenix fares better on living costs

Housing Costs

- Above average housing affordability index[92]

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[78] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.
[79] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.
[80] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[81] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.
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[85] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.
[86] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.
[87] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.
[88] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[89] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.
[90] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[91] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.

- Housing affordability is near average for US[93]
- One of most affordable housing markets among nation's top metro areas[94]
- Very high home ownership rates[95]

Personal/Property Security[96]

- Poverty rate in 1999 was 11.7% compared to national average of 12.4%
- Health status equal to or better than national average on most measures
- Overall, Arizona provides police protection at a rate near the US average

Climate/Physical Environment

- Trend of less air pollution measured by number of days not meeting US EPA air quality standards[97]
- Climate[98]

Recreational &Cultural Amenities

- Geographic and recreational amenities[99]
- Considerable cultural and recreational activities[100]

Area Image

- Attractive for businesses looking to relocate from southern California[101]

- Corporate executives' positive images of metro Phoenix (more than 50% of respondents)[102]
  - → Reasonable Cost of Living
  - → Outdoor Activities
  - → Affordable Housing
  - → Great Weather
  - → Sporting Events

- National site selection consultants & real estate executives' positive images of metro Phoenix[103]
  - → Reasonable Cost of Living
  - → Competitive Salaries/Wages

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[92] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[93] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[94] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[95] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[96] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[97] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[98] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[99] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[100] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[101] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[102] Greater Phoenix Economic Council, *Survey of Corporate Executives,* Summer 2002.
[103] Greater Phoenix Economic Council, *Survey of Site Selection Consultants,* Summer 2002.

→ Strong Job Market
→ Affordable Housing
→ Outdoor Activities
→ Sporting Events
→ Strong Labor Market
→ Quality of Higher Education Facilities

6. Business Climate Weaknesses

Economic Vibrancy

- An economic base dependent on only a few driver industries[104]
- Need to find Greater Phoenix economic niche[105]
  → Identify high growth, high wage industry clusters
  → Support these industries

- Composite research and development inputs to State Technology & Science Index[106]
  → 3d tier industry R&D dollars/capita
  → 3d tier academic R&D dollars/capita
  → 3d tier R&D expenditures on math and computer science dollars/capita
  → 3d tier R&D expenditures on life sciences dollars/capita

- Technology concentration and dynamism composite of State Technology & Science Index
  → 3d tier average yearly growth of high-tech industries
  → 3d tier high tech industries with location quotient higher than 1, 2000
  → 3d tier number of Inc. 500 Companies per 10,000 businesses 2000
  → 3d tier Phase I Small Business Innovation Research awards per 10,000 businesses

- Rank order of innovation (13/22) [107]

- Start-up coordination[108]

Access to Markets

- In terms of geographic location, Phoenix is in many ways more of a way station between southern California and Texas rather than a node or hub[109]

- Local economic developers survey[110]
  → Need to become more global
  → Take better advantage of NAFTA opportunities
  → Improve relationship with Mexico:

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[104] GPEC Competitiveness Committee, *Framing the First Year Challenge,* September 2002.
[105] GPEC Competitiveness Committee, *Framing the First Year Challenge,* September 2002.
[106] Milken Institute, *State Technology and Science Index,* September 2002.
[107] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[108] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[109] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[110] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001

Transportation Services – Air

- Local economic developers survey[111]
  - → Airport issues: more international flights and need for satellite airports.
  - → Sky Harbor will need a reliever airport to protect its effectiveness.
  - → Traffic at the airport, congestion within the airport, and complaints regarding air travel could become a barrier to growth.
  - → Airport issues-- stronghold of the City of Phoenix and major revenue generator. Needs to be evaluated.
  - → More regional airports
  - → Assure thoughtful handling of airport, any overburdening of Sky Harbor will reduce the ease of travel and affect our competitive edge.
  - → Increase international air service.

- Many ongoing and proposed near-term airport improvements have be shelved or postponed at Sky Harbor due to budget constraints, the weakened travel environment in the wake of 9/11 and community concerns about congestion and noise[112]

Telecommunication Services

- Local economic developers survey[113]
  - → Access to fiber- telecommunications
  - → Telecommunications infrastructures move to top-ten in importance.
  - → Lack of infrastructure-- all types especially fiber in a timely manner.

Access to Resources

Energy Dependability

- Single natural gas pipeline to metro area – from Texas
- Single gasoline pipeline to metro area – from California

Energy Cost

- Cost of electricity for industrial users 8% above national average[114]
- If power costs increase, AZ would be a difficult place to operate[115]

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Suppliers

- Availability of suppliers[116]

Work Force

- Low share of higher education students as % of population[117]

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[111] *Maricopa County Regional & Local Economic Developers Survey*, Summer 2001
[112] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[113] *Maricopa County Regional & Local Economic Developers Survey*, Summer 2001
[114] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[115] *Maricopa County Regional & Local Economic Developers Survey*, Summer 2001
[116] *Maricopa County Regional & Local Economic Developers Survey*, Summer 2001
[117] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.

- Educational attainment[118]
- Educational attainment of persons 25 years and older[119]
- Workforce quality[120]
  - → Low proficiency of local labor pool adds to the costs of doing business and limits future economic growth
  - → Share of adults with college degrees at national average
  - → Low share of higher education students as % of population[121]
  - → 35th in the base capital measure, percentage with a BA or above

- Local economic developers survey[122]
  - → Lack of skilled people. Pipeline only so big
  - → Enhance all of the skills of the labor force--technology companies now chase skilled labor
  - → Improve skill level of workforce.
  - → We need to retain, grow good talent and excellence
  - → Unskilled workforce availability

- Technology and science workforce composite of State Technology and Science Index[123]
  - → 3d tier human capital investment composite index to State Technology and Science Index
  - → 3d tier percent of population with PhD degree, 2000
  - → 3d tier percent of graduate students in science and engineering in 25-34 year cohort, 1999
  - → 3d tier intensity of life and physical scientists, 20003d tier doctoral scientists per 100,000 people
  - → 3d tier science & engineering PhD's awarded per 100,000 people, age 24-35 cohort 1999
  - → Bottom tier bachelor's degrees granted in science and engineering as % of all bachelor's degrees, 1998
  - → 3d tier recent degrees awarded in science & engineering as percent of all degrees awarded

- Technical Skills Shortage[124]
  - → Shortages in some skilled machine trades, technical & professional occupations
  - → Mechanics & machinists
  - → Information systems professionals

- Higher labor turnover rate[125]

- Entry Level Wages[126]
- Wage rates below average, need to increase productivity to raising them[127]

- Prepare for the talent crunch[128].

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[118] GPEC Competitiveness Committee, *Framing the First Year Challenge,* September 2002.
[119] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[120] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[121] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[122] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001
[123] Milken Institute, *State Technology and Science Index,* September 2002.
[124] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[125] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[126] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[127] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[128] Morrison Institute, *Five Shoes Waiting to Drop,* Summer 2001.

→ Put ambitious, Arizona-style quality of life upgrades near the center of state and regional economic development efforts.
→ Ease the coming skills crunch by keeping boomers engaged through initiatives to promote "productive aging," "rehiring" and retraining.
→ Assets alone do not guarantee a place at the winner's table. The key is to connect them to create regional advantage. Arizona will lead - or not - depending on its desire and discipline to:
  - Build the technology and knowledge assets that will advance technology and launch high-value new ventures
  - Develop and grab talent in every way possible
  - Build desirable places to live and work

Space

- Local economic developers survey[129]
  → Existing building space
  → Projects usually locate into existing space. Need to encourage investment into speculative space.

Financial Capital

- Weak capital formation[130]

- There is a mismatch between the amount of innovation that takes place in the economy and the financial resources available to turn the innovation into commercial products[131]
  → Flexible sources of financing that respond immediately to research, development & production needs
  → Venture capital & other sources of development capital
  → Sources of financing will have to locate close to operations to respond effectively to flexible financial needs of business
  → Local and engaged financial services industry, made up of a broad range of traditional and less traditional financial service firms, will be a necessary factor for economic growth
  → Lack of venture capital indicates the difficulty that state industries may face in commercializing innovation
  → Lack of venture capital even worse when compared to states that compete for technology industries - at very bottom of these states
  → Serious shortcoming to state economic competitiveness going forward
  → Small and mobile entreprenuers in state may move elsewhere to be near sources of venture capital

- Risk capital and infrastructure component of State Technology & Science Index[132]
  → Low & declining business investment (VC funding & IPO funds) share of GMP[133]
  → Low business investment (VC funding & IPO funds) share of GMP[134]

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[129] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001
[130] GPEC Competitiveness Committee, *Framing the First Year Challenge,* September 2002.
[131] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[132] Milken Institute, *State Technology and Science Index,* September 2002.
[133] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[134] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.

- Bottom tier Phase II Small Business Innovation Research awards per 10,000 businesses[135]
  - → 3d tier venture capital investment growth 1999-2000
  - → 3d tier number of business incubators per 10,000 business establishments
  - → Bottom tier business starts per 100,000 people

- Local economic developers survey[136]
  - → Venture capital, which represents the research and innovation capacity of a region.
  - → Need alternative sources of capital-- businesses too dependent upon banking institutions, need venture capital and other pools of capital
  - → Venture capital shortage Affects ability to grow business
  - → Capital problems-- typical entrepreneur cannot obtain credit.
  - → Need to develop an infrastructure for entrepreneurs
  - → Availability of financing- need access to capital for smaller businesses, especially those perceived as risky

Public Sector Investments

State/Local Government Quality

- Local economic developers survey[137]
  - → The proliferating political battles between governments
  - → Quiting the infighting.
  - → The competitiveness between the east and west sides.
  - → Need to eradicate the isolationism and elitist attitudes.
  - → Need to eradicate parochialism of decision-making methods.
  - → More cohesiveness, less infighting among communities.
  - → Rework the current spirit of parochialism
  - → Acknowledge and address local philosophies: "Bigger is better," "Rugged individualism" and political infighting problems
  - → Politics-- need to shift focus. "Are we going to start behaving" in collaboration as opposed to fighting for the benefits from growth.
  - → The state, utilities, GPEC and all other ED entities need to work together.
  - → We need to be able to solve regional problems.

  - → Need to separate the symptoms of local problems from the cause. The root cause of many local issues stems from mindsets that often translate into laws and policies. Need to minimize the independent "Arizona Territorial" mindset that refuses to acknowledge that we cannot continue to work in the short-term, using up resources, without facing negative repercussions.
  - → Lack of vision-- more cohesive focus extending more than 3 years
  - → We need to support officials/leaders with the courage to see long-term and stand up against short-term pressures. This would include transforming government policies that are "behind the times" to those that respond to changing times and look to the future.
  - → We need vision, both public and private. But also, the people with the vision need to have the authority to "cut the deal".

[135] Milken Institute, *State Technology and Science Index,* September 2002.
[136] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001
[137] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001

→ Leadership-- elected leadership has the "power to create the pulse" for the area
→ Raising the pay of legislators to increase the caliber.
→ Mentoring programs to fill gaps in leadership.
→ Need to increase wisdom of residents/officials, not just the educational levels.
→ Attitude of government--not funding for marketing the state, no sizable job training.
→ Ourselves-- leadership problems and desire and courage to do what needs to be done!

Secondary Education Quality

- Perception of a weak educational system[138]
- High school graduates[139]
- Low rank of pre-school children enrolled in early childhood educational programs[140]
- 3d tier average verbal SAT scores 2001

- Education & workforce quality is one of state's weakest components[141]
  → Last in nation in terms of high school completions
  → 47th in nation for high school grads going to college
  → Measures of student proficiency and achievement at K-12 level are below average
  → School funding is a problem
  → Mean SAT scores for Arizona high school students

- Local economic developers survey[142]
  → K-12 educational quality needs to improve. 301 does not help the teachers in coping in every day
  → Improve educational system- both K-12 and higher education
  → Education skill levels need to improve.
  → Education-- create more partnerships with companies so as to merge corporate needs with curriculum and research.
  → Need to recognize the importance of education for all communities.
  → Educational barriers and lack of educational improvements.
  → More diverse and educated population-- assurance that we do not become a Northern Nogales, e.g., a state of "haves" and "have nots"
  → Apprenticeship programs need to be developed for non-university students
  → Need to develop apprentice program to "grow our own" talent.
  → Work on job training requirements--most of the funding is not utilized
  → Need to work on the educational system, lowering the drop-out rate

- Broad education policies[143]
  → Make high-quality early childhood programs universal and implement them first in Latino neighborhoods.
  → Recognize that one-size-fits-all funding and curricula formulas are not doing the job. Launch an rban schools initiative to ensure that every Latino student obtains the K-12 education he or she needs to succeed in the new economy.

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[138] GPEC Competitiveness Committee, *Framing the First Year Challenge,* September 2002.
[139] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[140] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[141] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[142] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001
[143] Morrison Institute, *Five Shoes Waiting to Drop,* Summer 2001.

→ Improve the "pipeline" that moves Latino students from high school into higher education, particularly in technical fields.
  - Development Fees for Literacy
  - Nurturing Connections
  - Guaranteed College Financial Aid
  - Rewards for More Graduates
  - Send a Signal of Welcome

→ Press for a federal education initiative for border states.

Higher Education Quality

- Morrison Institute's recent statewide survey of Arizona employers confirmed the importance and challenge of attracting talent. More than half (52%) of the firms who recruit workers out of state rated poor schools, as well as other perceived quality of life deficits, as "major barriers" to attracting quality employees.

- State spending for higher education - 41st on per capita basis[144]
  → State-run universities operating under tight budget constraints
  → Funding deficiencies for Arizona's higher-education facilities compromises its competitiveness as a center for research & innovation in the nation
  → State university salaries are below average
  → University student-teacher ratios are higher than average

- Very low level of R&D expenditures at univeristies and colleges[145]
- Lowest share of R&D spending at universities & colleges as % of GMP[146]
- 3d tier among states per capita state spending on student aid, 2000[147]
- 3d tier State appropriations for higher education per capita 2001[148]
- 3d tier State appropriations for higher education percent change 2000-01[149]

- Local economic developers survey[150]
  → Work to raise ASU to a world-class educational institution.
  → Improve higher education.
  → ASU needs to get more involved in pushing new, emerging technologies and research development. Expand our competitiveness through tech transfers.
  → Education in the fields of high value
  → Education- upgrade the university including adding specialty colleges to ASU
  → Educational improvements-- more biotech, research and development
  → We need a specialized school (for example: pharmaceutical colleges, engineering colleges, bioindustry or flight schools).
  → ASU need to focus on specialties rather than the "bigger is better" philosophy.
  → The university needs to work on:
    - High-tech departments such as engineering
    - Building closer links with what companies need.

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[144] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[145] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[146] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[147] Milken Institute, *State Technology and Science Index,* September 2002.
[148] Milken Institute, *State Technology and Science Index,* September 2002.
[149] Milken Institute, *State Technology and Science Index,* September 2002.
[150] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001

Growth Management

- Physical infrastructure will have to keep pace with the growth of metro Phoenix[151]

- Local economic developers survey[152]
  - → Management of growth.
  - → No geographic or water barriers
  - → Long-term barrier: lack of privately-owned land
  - → Biggest barrier to growth: "We better have our act together" or that will deter us. We should have defined criteria for growth.
  - → Biggest challenge: Policy incongruency for healthy expansion and growth.
  - → More strategy in development
  - → Developer speculation has run the metro with no synergy and planning. This has brought on downtown vacancies and infill problems.
  - → Attitudes on growth and diversity. We need to "mellow out" by providing cultural awareness and educational opportunities on the positive impacts of growth.
  - → Growth becomes a barrier itself.
  - → Growth itself is a barrier for two reasons:
    - Communities struggle to keep up with infrastructure, service needs
    - Investing in infrastructure takes funding away from other services areas.
  - → Timing issues for improvements-- in the past, more time could be allocated for infrastructure requirements-- not so today.
  - → Government needs to work on policies addressing growth issues such as: 202
  - → Inflexibility to new ideas: Higher densities More regional planning processes
  - → Work on district systems: actions in one municipality could counter the deliberate planning of another
  - → Encourage REGIONAL problem solving.
  - → Collaborative efforts statewide to deal with infrastructure
  - → Need to perform a "Growing Smarter" version of ED in ADOC
  - → Collaborative efforts need to increase on five fronts: 1) Interconnecting parks to create continuous open space; 2) Pool research for important data and gauges: 3) Historical revitalization with statewide priorities: 4) Revenue sharing: 5) Cost sharing on infrastructure
  - → Promoting creative, "soft-side" solutions to problems versus physical solutions.

Physical Planning

- Local economic developers survey[153]
  - → Need to bolster downtown and central city and encourage infilling and higher densities.
  - → Working on housing densities, do we want "grow out or grow up"? Encourage more multifamily
  - → Higher density communities-- place limits on land, provide more creative solutions.
  - → Need to balance edge growth with a healthy center city
  - → Revitalize downtown.
  - → Work on downtown
  - → Upgrade downtown and encourage other work centers

[151] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[152] *Maricopa County Regional & Local Economic Developers Survey*, Summer 2001
[153] *Maricopa County Regional & Local Economic Developers Survey*, Summer 2001

→ Give downtown Phoenix the attributes of a big city--need to create a fun, cosmopolitan image.
→ Revitalizing downtowns - encourage multi-modal transportation, assuring that the central core is not abandoned, redevelopment is not a dirty word
→ We need to figure out what is smart infill and make downtown viable.
→ Redevelopment issue
→ Tax increment financing

→ Commercial property possibilities are finite due to past development process, yet people want self-sustained communities and more control
→ If we continue to allow planned zoning classes of commercial/ industrial to be converted to residential growth will not be healthy, manageable, "smart".
→ Need to develop market solutions to land-use problems.

→ Cities with "uniqueness" benefit the most in tech era.
→ Style of development: homogeneity, sprawl, unreasonable commutes.
→ Diminish the homogeneity and lack of distinctiveness by elevating design specifications.
→ Assuring preservation of landmarks and economic centers such as Luke Air Force Base
→ Preserving and enhancing what is special, look for character and distinctiveness
→ Building "NEIGHBORHOODS"
→ Recognition of the distinctness of areas

→ Provide more diverse housing-- change design specifications, development fees and encourage more "traditional" housing.

→ Encourage more regional parks.
→ Preserves imply less land, higher cost of housing, real estate.
→ Open space (20 acres of park land per 1,000 residents, supporting mountain preserves)
→ Preserving open space (a great resource)
→ Maintain foresight in the importance of open space.

Local Transportation/Commuting

- Transportation[154]
- Traffic Congestion[155]
- Sprawl[156]
- High traffic congestion[157]
- Highway congestion cost economy $1.39 billion in 1999 (Texas Transportation Institute)[158]

- Low rank of government outlays for mass transit[159]
- Very low share of public transport[160]

- Local economic developers survey[161]

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[154] GPEC Competitiveness Committee, *Framing the First Year Challenge*, September 2002.
[155] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.
[156] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix*, April 2000.
[157] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.
[158] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[159] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.
[160] San Diego Association of Governments, *Indicators of Sustainable Competitiveness*, May 2002.

→ Transportation issues.
→ Transportation problems.
→ Congestion
→ Improve transportation infrastructure and planning.
→ Transportation improvements are critical

→ Inadequacy of freeway infrastructure.
→ Transportation - not simply rail.
→ Improve private transportation systems-- Mass transit will not work with current culture

→ Mass Transit Access
→ Mass transit.
→ Transportation-- light rail, bus system and gaps in taxi system
→ Mass transit-- light rail system correctly planned.
→ Regional transit system
→ Transit issues--other modes than auto
→ Public transit - including airport.
→ Mass transit- need to serve the whole west valley. I-10 becoming very congested and more jobs/residents being added

Business Incentives

- Incentives[162]
- Local economic developers survey[163]
  → State incentive system, state leadership and better access to federal funding
  → Reduce bureaucracy in county and state
  → Permitting times need to fall-- online permitting systems
  → Quicker turn-around within government arena -- "E-government"
  → Barriers in some Southeast communities: anti-business sentiments
  → Become more business friendly
  → Anti-business environment.
  → Create a mathematical, objective incentive system that evaluates the return on investment given a company's presence
  → Studying the business climate to uncover who is breaking new ground and how.

Public Sector Costs

Revenues

- Lack of funds for competitive research and development efforts[164]
- Need investments in economic foundations for quality economy[165]
- Revising the state's tax and fiscal policy[166]

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[161] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001
[162] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[163] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001
[164] GPEC Competitiveness Committee, *Framing the First Year Challenge,* September 2002.
[165] GPEC Competitiveness Committee, *Framing the First Year Challenge,* September 2002.
[166] GPEC Competitiveness Committee, *Framing the First Year Challenge,* September 2002.

- Local economic developers survey[167]
  - → Tax structure needs to be addressed.
  - → Rethink the revenue system
  - → Tax and regulatory environment need to be friendlier
  - → Balancing of fiscal flows and outflows.
  - → Increases in federal investment. Arizona has been overlooked due to a cultural bias against "pork and barrel
  - → Attitude of government--not funding for marketing the state, no sizable job training.
  - → Regional governance to stop battle for sales tax and federal funds. Shared revenues and shared business targeting needed

- The Revenue Sieve[168]
  - → Arizona must update its tax systems for the new economy by rebalancing its revenue mix and broadening its tax bases.
  - → Sales taxes should be applied to services, as well as goods.
  - → Lawmakers should close dozens of the exemptions, credits and other tax breaks that cost the state millions of dollars each year.
  - → Personal income tax increases and the use of more impact fees should be considered to finance reductions in high business and sales taxes.

- Four Policies to Craft a 21st Century Tax[169]
  - → Close or limit tax exemptions and special preferences.
  - → Widen the sales tax base to include services.
  - → Join the "streamlined sales tax" movement to improve collections in the digital age.
  - → Widen the use of impact fees; raise some low rates.

Business Taxes

- Selected tax rates[170]

- For Arizona to remain competitive in the market for mobile business capital, business taxes need to be reduced, especially property taxes[171]

  - → When compared to other tech centers nationwide, metro Phoenix fares worse on business cost
  - → High corporate tax burden in AZ
  - → High real and personal property tax for commercial and industrial properties
  - → State relies heavily on sales taxes
  - → Need balanced tax structure
  - → Tax burden should be shared equitably between households, businesses & visitors
  - → Exposure to cyclical risks in economy should be spread widely, e.g. sales taxes

- Local economic developers survey[172]
  - → Property tax.

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[167] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001
[168] Morrison Institute, *Five Shoes Waiting to Drop,* Summer 2002.
[169] Morrison Institute, *Five Shoes Waiting to Drop,* Summer 2002.
[170] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[171] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[172] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001

- → Lower personal property taxes.
- → Personal property disincentives need to be worked on. "Property tax kills us" the other taxes tend to wash out
- → Work on property taxes.
- → Restructured state tax policy-- more focused on sales versus property, more fee-based
- → Maintain an atmosphere of favorable operating costs

Quality of Life

- Tourism should further enhance quality of life for all demographic and income groups[173]

- Local economic developers survey[174]
  - → Degradation of quality of life
  - → Preserve the quality of life
  - → Maintain our main competitive factor: quality of life
  - → Problem faced in NW valley Create a quality of life attractive to the labor force: education, active/open space

- To succeed in the new economy world, Arizona must put ambitious, Arizona-style quality of life upgrades near the center of state and regional economic development efforts. [175]

Cost of Living

- Ratio of Mean to Median Houshold Income (Income distribution equity) [176]
- Low per capita income - standard of living[177]

Housing Costs

- Median income household can afford to purchase a house priced 26% above the region's median Sales price, compared to national affordability of 37%[178]
- At risk in Phoenix, as housing affordability due to a large degree to low mortgage interest rates[179]
- Every year since 1995, increase in median sales price of single family housing has outpaced household income growth[180]

- Affordable housing-- Growing Smarter+ increases costs of housing, yet wages are not keeping up[181]

Personal/Property Security

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[173] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[174] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001
[175] Morrison Institute, *Five Shoes Waiting to Drop,* Summer 2002.
[176] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[177] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[178] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
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[180] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[181] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001

- High crime rate[182]
  - → High violent crime rate
  - → Very high property crime rate

- Crime rate[183]
  - → Crime rate at 63.7 reported crimes per 1,000 person, well above national rate of 42.7
  - → High crime rate - Arizona second in the nation
  - → Poverty rate consistently higher than US average

- Health and welfare [184]
  - → Teen pregnancy rate highest in Arizona, among highest nationwide
  - → Healthcare employment as share of total is consistently below average
  - → Impact on social and economic well being of the state
  - → Relates to ability to attract quality workforce
  - → Very high share of population not covered by health insurance[185]

- Local economic developers survey[186]
  - → Crime rates
  - → Living conditions such as crime, pollution, traffic, etc

Climate/Physical Environment

- Air pollution[187]
- Air quality in Phoenix may be a constraint, and measures to improve air quality will be increasingly important as the economy expands[188]
- Number of days not meeting US EPA air quality standards[189]

- Local economic developers survey[190]
  - → Environmental pressures.
  - → Environmental Issues.
  - → Hold farmers accountable for particulate and other air pollution
  - → Air quality

Recreational &Cultural Amenities

- Local economic developers survey[191]
  - → Support culture and the arts
  - → Celebrating diversity.
  - → Cultural opportunity

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[182] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[183] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[184] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[185] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[186] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001
[187] The Wadley-Donovan Group, *Labor Market Analysis of Greater Phoenix,* April 2000.
[188] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[189] San Diego Association of Governments, *Indicators of Sustainable Competitiveness,* May 2002.
[190] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001
[191] *Maricopa County Regional & Local Economic Developers Survey,* Summer 2001

- Improve quality of life factors - cultural infrastructure[192]

Area Image

- National Site Selectors Survey
  - → Vacation Destination/Too Touristy – 81%
  - → Retirement Area – 81%
  - → Technologically Advanced – 72%
  - → Too Hot – 45%
  - → Low Crime Rate – 20%
  - → Quality K-12 Schools – 100%

- A Fuzzy Economic Identity[193]
  - → Our state's prosperity isn't based on sustainable high-tech job growth yet.
  - → Arizona has for years posted stunning numbers in both population growth and job growth. But the state isn't strong in fast-growth technology sectors - and it has an image that may not fit the times.
  - → Arizona must create a strong, clear economic identity.
    - The state must define a clear set of goals that matches the high-potential opportunities of the future - one that depends not just on the traditional Arizona advantages of weather, scenery, and so forth, but also emphasizes investment in cutting-edge sectors and the development of a strong and educated labor force.
    - As we enter the twenty-first century, Arizona has a solid foothold in the new economy - but the state is not well positioned to take advantage of the "next wave." Meanwhile, Arizona's deep, broad and longstanding economic sectors - tourism, golf, construction and retirement - are based on the state's traditional "old economy" assets such as climate and low costs.
    - Taken together, these realities set Arizona up for "blue collar" status in the new economy. The trajectory must be altered.
- But these high rankings hide two big problems.
    - First, Arizona's high-tech strength rests on a narrow base. The state has developed technology clusters in only four of 14 sectors: electronic components, aircraft, space vehicles and navigational equipment. Furthermore, Arizona does not have a competitive strength in software, plastics or bioscience - three areas in which Arizona has focused its strategy in the past 10 years.
    - Second, Arizona's technology growth is based mostly on manufacturing. In Arizona, we "make," much more than we "think" and thinking is where future economic growth. Phoenix represents the classic case of a 'middle-tier' tech region. Companies locate production and customer support facilities to take advantage of low costs and relatively cheap labor, but few place their top scientists and engineers there.

- Need for Economic Identity[194]
  - → What are the areas in which Arizona has a strong concentration of jobs? They're all in the backside of the economy: administrative support, construction services, travel and reservation services, telephone call centers, and collection agencies.
  - → Does it matter that Arizona - and its largest region - is lacking a strong, distinct identity?

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[192] State Economic Study, Phase II - Economy.com (unless otherwise footnoted)
[193] Morrison Institute, *Five Shoes Waiting to Drop*, Summer 2001.
[194] Morrison Institute, *Five Shoes Waiting to Drop*, Summer 2001.

→ The defining question of the twenty-first century is likely to be: “Who wants to live where?"
→ When it comes to the new economy, no metropolitan area is without assets - and precious few have a monopoly on success.
→ The message is clear: All economic hot spots are now competing in a global race.
→ Metropolitan regions are overtaking states as the drivers of economic growth. Arizona
→ The time has come to decide on the Phoenix region's economic identity and goals.

- What does the Phoenix region want to be known for?[195]
  → What economic identity and lifestyle goals is it striving to achieve?
  → Morrison Institute asked the region's residents those questions in a representative survey.
  → In June 2001 Morrison Institute surveyed metropolitan Phoenix residents to understand more about what matters to them and what image they would like the region to project to the rest of the world.
  → Metropolitan residents are most likely to feel the Phoenix area should promote itself as a region characterized by its great quality of life and unique environment. Fewer than half felt that it was desirable to promote metropolitan Phoenix as a real estate boom town or an area of fast growth.
- Valley residents were asked to pick one image they would most like for the Phoenix region on a scale of "0" to "10" with "10" meaning the Phoenix region should actively promote the image, and "0" meaning it should not promote the image at all.[196]
  - Great quality of life.- 8.3
  - Sonoran Desert, mountain preserves and open spaces -. 8.1
  - Smart people and education opportunities -. 8.0
  - Technology leadership - 7.7
  - Art and cultural entertainment - 7.6
  - Diverse ethnic and cultural heritages -. 7.5
  - Western heritage - 7.2
  - Low taxes -. 7.0
  - Professional sports - 6.8
  - Real estate booms - 6.0
  - Fast growth - 5.4
  - Conservative politics - 5.5

- Going further, the Morrison Institute survey asked residents to distinguish between an economic identity and a lifestyle identity for the region[197].
  → For an economic identity:
    - A third of Valley residents want the region to be viewed as technology savvy.
    - Another one in five prefers the talent and education image.
    - Taken together, a majority of residents appear to favor a "knowledge-based" or new economy image for metropolitan Phoenix.
  → Survey respondents were split on their outlooks on lifestyles.
    - Approximately one quarter of respondents selected a causal lifestyle image
    - Another one in four selected the desert environment and outdoors as the primary lifestyle image for the region.

- Local economic developers survey - image[198]

[195] Morrison Institute, *Five Shoes Waiting to Drop*, Summer 2001.
[196] Morrison Institute, *Five Shoes Waiting to Drop*, Summer 2001.
[197] Morrison Institute, *Five Shoes Waiting to Drop*, Summer 2001.

→ Image and strategy for marketing ourselves: "We are at a critical stage in our growth and how we are perceived is critical. We can be seen as another 'hick-town' or we can cut out our own niche." Also, government attitude: if we sell ourselves as cheap location/land we attract money-driven companies, not loyal, strong companies. Eventually we will lose our strength.
→ AZ has an identity crisis-- we need a theme, product image--"What is Arizona?"
→ Need to change image of the metro.
→ Need to focus on a core competency.
→ Work on globalizing our market.
→ We need to be more selective about the types of companies recruited.
→ Image changes:
  - Our tech corridors have not been able to induce visions of high-tech urbanism by prospective high-tech companies
  - Need to attract some corporate headquarters and the prestige attached to them.
  - Focusing economic growth on something other than real estate
→ Create a solid gauge of the business community's perception of the region. We do not have the image of a "first tier" city
→ Defining clusters on regional basis
→ Retaining and growing what we have
→ Attracting suppliers for primary industries
→ Too much emphasis on high-tech hardware, we need to diversify and push the software cluster.
→ We need a headquarters company to foster a sense of community and character.

- Local economic developers survey – economic development practice in metro Phoenix[199]
  → Data collection efforts need to improve
  → More economic development, planning training/skill improvement opportunities for smaller communities
  → More sharing of research efforts for smaller communities
  → Improve linkage between community's information and prospect presentation. Understand and present more product specifics for each community
  → Recognition that each community has specific needs. GPEC needs to collaborate more with community economic development officials for 1--finding prospects, 2--building community character, 3--finding market niches.
  → Customer service within a region needs to appear seamless
  → A prospecting focus on the region as a whole will help to steer prospects to communities that are a "natural fit" without having to plug certain communities
  → More promotion of the West Valley has been a political problem
  → More interactions between communities
  → Need to refine and implement new planning processes, skills
  → Boosting the knowledge base and alleviating the "lack of staff" problems in smaller communities.
  → Take advantage of trade and business travel.
  → Business connections.

[198] *Maricopa County Regional & Local Economic Developers Survey*, Summer 2001
[199] *Maricopa County Regional & Local Economic Developers Survey*, Summer 2001