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## Prepared By:

## COLLABORATIVE ECONOMICS

Doug Henton John Melville Tracey Grose Angelina Aguirre Bridget Gibbons Hope Ebangi

#### Dear Friends:

#### Silicon Valley has entered a new phase in its dynamic evolution.

The economy is clearly growing and transforming, evidenced by the region adding more than 30,000 jobs over last year's total. Moreover, the employment gains are quite broadly based, spanning most sectors of the economy and not just our driving industry clusters. Per capita income, average pay, and value-added per worker have been on the rise now for three years running, but over the past year they showed substantial increases.

Venture capital, always our strength, is showing a shift into some important new areas like renewable energy and clean technology. Is Silicon Valley leading America to a new energy future? It's too early to tell, but it is interesting that local entrepreneurship in these new sectors is being matched by some significant trends in the way we develop, and the way we live. The density of new housing units is at a historic high, and continues to increase. Forty percent of new units are located near transit. Valley residents are embracing alternative energy, in their vehicles and in their homes. Protected and accessible open space continues to grow.

Yes, there's a great deal that is encouraging in our report, and yet we have some major challenges to address.

Some of these challenges are old and familiar: though our income averages are impressive, we all know that averages don't tell the whole story. The portion of residents unable to afford median-level housing is increasing, and foreclosures are spiking upward. Too many are unprepared to compete in today's economy. It's alarming to see juvenile crime on the increase. Our cities, overly dependent on the most volatile revenue sources, face shrinking budgets. Our educational institutions are straining under the demands heaped upon them.

But some of our challenges feel new, or at least less familiar. They relate to our competitive position in the global economy, and our transformation as a global region. You can read about them in our *Special Analysis* section, where we observe that Valley companies are now thoroughly global—including even our start-ups, from the time of their inception. You'll also read that Silicon Valley now ranks among the world's most culturally diverse regions, with forty percent of our workforce coming from overseas. These are developments to celebrate, because they go to the heart of our success, but they also raise important questions: how do we address local issues when our companies and even our people are increasingly less tied down to place? Are we looking at a future where our companies do well in the global scheme, and yet the region doesn't prosper?

At *Joint Venture* we want to be as innovative about these broad community challenges as the Valley's entrepreneurs have been with their commercial challenges. We invite you to join us.

Sincerely,

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Russell Hancock President & Chief Executive Officer





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Area: 1,500 square miles Population: 2.44 million **Jobs:** 1,184,061 **Average wage:** \$74,302

edwood City

Atherton

East Palo Alto

Menlo Park

Palo Alto

Woodside

Los Altos Hills

Portola Valley

Los Altos

MountainView

sunnyvale Cupertin Age distribution: 0-9 years old, 14% 10-19, 13% 20-44. 37% 45-64, **25%** 65 and older.

#### **Adult educational attainment:**

- **14%** Less than High School 17% High School Graduate
- 25% Some College 26% Bachelor's Degree
- 18% Graduate or Professional Degree

#### **Ethnic composition:**

- 42% White, non-Hispanic
- 29% Asian, non-Hispanic
- 24% Hispanic; 3% Other
- 3% Black, non-Hispanic
- 1% American Indian, Alaskan Native

Union City

Fremont

Newark

Milpitas

San Jose

Campbell

Santa Clara

Morgan Hill

otts Valley

Joint Venture defines Silicon Valley as Santa Clara County plus adjacent parts of San Mateo, Alameda and Santa Cruz counties. This definition reflects the core location of the Valley's driving industries and most of its workforce. Where possible the indicators in the Index of Silicon Valley use the following definition of Silicon Valley:

#### Santa Clara County (all)

Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, Sunnyvale

# **Alameda County**

Fremont, Newark, Union City

### San Mateo County

Atherton, Belmont, East Palo Alto, Foster City, Menlo Park, Portola Valley, Redwood City, San Carlos, San Mateo, Woodside

Santa Cruz County Scotts Valley

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# THE 2007 INDEX

# AT A GLANCE

## WHAT IS THE INDEX?

Joint Venture's Silicon Valley Index has been telling the Silicon Valley story since 1995. Released every January, the indicators measure the strength of our economy and the health of our community—highlighting challenges and providing an analytical foundation for leadership and decision making.

### WHAT IS AN INDICATOR?

Indicators are measurements that tell us how we are doing: whether we are going up or down, going forward or backward, getting better or worse, or staying the same.

#### **Good indicators:**

- are bellwethers that reflect fundamentals of long-term regional health;
- reflect the interests and concerns of the community;
- are statistically measurable on a frequent basis; and
- measure outcomes, rather than inputs.

Appendix A provides detail on data sources for each indicator.

## WHAT IS AN INDUSTRY CLUSTER?

Several of the economic indicators relate to "industry clusters." An industry cluster is a geographic concentration of interdependent, internationally competitive firms in related industries, and includes a significant number of companies that sell their products and services outside the region. Healthy, outward-oriented industry clusters are a critical prerequisite for a strong economy.

Appendix B identifies the specific subsectors included in each cluster.

# PEOPLE

Silicon Valley's population is growing and becoming increasingly more global in character than in California or the US, as the region continued to draw more foreign immigration.



Silicon Valley's population grew by 1.28%, larger than the previous year. Immigration doubled and emigration decreased by 40%



Foreign households moving to SV 2004-2005: **+15%** 



Region's population that speaks language other than exclusively English at home: **48%** 

# ECONOMY

Silicon Valley continues to reinvent itself. Employment is growing. Innovation continues but is shifting to new areas. Average pay is up, and for the first time since 2001, median household income increased after a period of decline.



# Silicon Valley's share of all US venture capital investment





**Six of top 10** U.S. cities for patents in 2005 are located in Silicon Valley



### First increase since 2001





Growth	in Arts	Organi	zations
	2000-2	2004	

10% 0% -----

2003

Silicon Valley

2006

California

SV	+25%
CA	+22%
US	+20%

since downt	urn – 2000-2004
SV	+21%
CA	+22%
US	+20%
Human Services 31%	Arts & Culture
27 Education	19% Public Benefit/ Health
Top Activities Chari	s of Silicon Valley ties 2004
Human Serv	rices 31%
	27%
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# SPECIAL ANALYSIS

Global Competition and Collaboration

Silicon Valley's Place in the Global Network of Regions

In a seeming paradox, Silicon Valley must both compete and collaborate with other global regions. In the past, Silicon Valley has been a center of technology innovation acting as an "engine" creating new products and services by commercializing new ideas. As other regions both in the United States and around the world have developed into innovative regions, the relationship between those regions and Silicon Valley has changed.

Glearly, competition for talent, technology and capital has increased dramatically as a result of globalization, especially with the rise of Asia.' This competition has promoted a restructuring of the Valley's economy with a shift toward higher value added activities. The future prosperity of Silicon Valley is not guaranteed and must be earned through continued innovation.

# The World is Spiked

How can Silicon Valley compete and collaborate at the same time with other innovative regions? The answer is: although the global competitive field is "flattening",<sup>2</sup> regions still vary by their relative strengths and weaknesses from which regional specializations and comparative advantage emerge—creating "spikes"<sup>3</sup> in a flat world.

- Our challenge is to recognize our own strengths, identify other regional "spikes" based on their strengths, and then connect to those "spikes" for mutual benefit. In addition to a region's own technological and business capacities, its comparative advantage will be determined by its openness toward other regions. Although the openness created through global linkages increases exposure to the turmoil of globalization, it also speeds and expands learning by firms and institutions.<sup>4</sup>
- Thus, in an integrated world, specialization combined with an outward-orientation transforms the regional "spikes" into nodes for global activity. Along with its technological and business capacities, Silicon Valley's cultural diversity becomes yet another asset in the context of an increasingly integrated global economy. In fact, Silicon Valley's increasingly global character is visible in its streets and homes as foreign talent and foreign businesses relocate to the region.
- The following map of global regions identifies "spikes" based on relative rankings in three critical areas: employment in information technology per capita, patents per capita and venture capital per capita.<sup>5</sup> These "spikes" represent important strengths in the knowledge based economy: talent, ideas and investment.



# **Special Analysis**

Silicon Valley's Place in the Global Network of Regions

- While Silicon Valley still ranks highest in IT employment and venture capital, other regions also rank high in these categories. In patent registrations, other regions rank as high or even higher.<sup>6</sup> Clearly, ideas are being generated from many regions. In addition, according to a recent OECD survey, China is now the world's second largest investor in R&D, surpassing Japan for the first time.<sup>7</sup>
- The bottom line is that Silicon Valley still has strong innovation assets but other global regions also have strong assets and are moving forward in key areas such as idea generation which is critical to innovation.
- The perceived zero-sum game between regions vying to out-compete each other can be transformed into the pursuit of integration with each other for the purpose of mutual gain. While competing for talent, technology and capital, regions can also benefit from sharing these assets across national boundaries in order to grow the economy in each region. Because none of these assets are fixed resources, they are the critical elements of an idea economy. In fact, AnnaLee Saxenian argues that it is "brain circulation" among regions that is driving global integration.<sup>8</sup> By integrating globally, regions can achieve higher productivity and higher wages for their workers as well as higher profits for their firms. As productivity and prosperity rises in regions, the demand for new products and services grows, which drives the regional and global economy.
- Global integration is the critical prerequisite to what Jon Hagel and John Seely Brown contend is the new imperative for firm survival in today's world markets.<sup>9</sup> The authors argue that the competitive edge is not sustained simply with expanding business locations abroad or even collaborating with contractors along value chains. Rather, in today's market firms form creation networks that act as "process orchestrators" for a wide range of designers, manufacturers and distributors on a global basis. Further, the authors caution the world's established firms (and regions) that the firms presently growing in emerging economies are those that are at the forefront of this process revolution.
- Where does Silicon Valley stand in this latest wave of globalization? Through the examination of Silicon Valley's linkages with other innovative regions in the world and the comparative flows of talent, ideas and capital between these regions, this analysis aims to shed light on Silicon Valley's present and potential for greater global integration. Tracking these cross-boundary flows will help establish the interconnectivity and possible complementary relationships across regions. Further, this analysis aims to provide greater understanding specifically of Silicon Valley's role and strengths in the world's idea economy.

# **Talent Flows**

The educational attainment of a region's workforce represents the quality of its talent base and potential for high productivity and value-added growth. This measure is also indicative of the activities a region is carrying out in the global economy. A region that can both produce high-level university graduates and attract the highly-skilled from other countries not only benefits from steady streams of talent but also creates valuable opportunities for closer integration with other countries. As Saxenian has observed, because of their shared language, culture, and professional and educational experiences, these global professionals possess the skills necessary for long-distance collaboration and global product management.<sup>10</sup> In a recent survey, Saxenian and others found a high percentage of key founders of Silicon Valley firms were immigrants.<sup>11</sup>

With 40% of its population with at least a Bachelor's Degree, Silicon Valley is one of the most highly-educated regions in the country. Less-widely understood is the fact that over half of the region's science and engineering (S&E) talent was born abroad. In 2000, this group constituted 49%, and by 2005, it expanded to 55% of the region's science and engineering occupations. Foreign-born talent in Silicon Valley represents roughly three-times the national shares in S&E and in all occupations. There was similar growth over this period in the share of foreign-born workers in all occupations; however, the shares are not as high as for S&E occupations.



A critical component to assessing a region's talent base in today's economy is in its ability to attract talent from other countries. Despite the economic downturn after 2000, Silicon Valley has continued to draw talent from abroad. The top countries of origin of the region's foreign S&E professionals are primarily from Asia. Up from ten percent in 2000, S&E professionals born in India constituted 14% of the region's total S&E workforce in 2005. Also of significant size, China's representation in Silicon Valley's S&E workforce grew from five to eight percent during the same period.



Foreign born include foreign residents, naturalized citizens and citizens born abroad to American parent(s) Source: U.S. Census Bureau

# **Talent Flows and Diversity**

Silicon Valley's population is increasingly more global in character than in California or the U.S.

# WHY IS THIS IMPORTANT?

- Silicon Valley's most important asset is its people. They drive the economy and shape the quality of life of the region. The region has benefited significantly from the entrepreneurial spirit of people drawn to Silicon Valley from around the country and around the world. In particular, immigrant entrepreneurs have contributed considerably to innovation and job creation in the region.<sup>1</sup>
- A region that can draw talent from other parts of the country and other regions of the world vastly expands its potential for closer integration with other innovative regions and thereby bolsters its global competitiveness.

## HOW ARE WE DOING?

- Silicon Valley's population increased by 1.28% with a net increase of 31,869 people over 2005. In 2006, Silicon Valley experienced positive net migration for the first time since 2000, and surpassed the state's growth rate for the first time in over a decade. Net migration includes all legal foreign immigrants, residents who left the state to live abroad, and the balance of hundreds of thousands of people moving to and from the region from within the United States.
- Foreign immigration is on the rise again, domestic emigration is slowing. After three consecutive years of decline, the period 2004-2005 witnessed both an increase in gains and a decrease in losses of foreign migrants. Over the last decade, the draw from other states as well as the exodus to other states has been closely linked to the business cycle with a net in-migration prior to 2001 and a net out-migration to other states since 2001. In contrast, Silicon Valley residents leaving for other parts of the state has far outweighed the number of Californians relocating to Silicon Valley for at least a decade not only due to economic dislocation but higher cost of living and other factors. Typically, the average income of migrants entering Silicon Valley is below the income of current residents; whereas, the income of households leaving the region is close to current residents.
- Silicon Valley has cultural ties around the world. With 36% of its population born in another country, the San Jose area tops every other U.S. metro area, besides Miami, in its percentage of foreignborn residents.<sup>2</sup> Silicon Valley residents are much more likely than U.S. residents to speak a language other than English. While the shares of residents that speak a language other than English in California and the U.S. have remained relatively constant, the share in Silicon Valley is increasing. English proficiency is also relatively high. In Silicon Valley, 80% of these residents speak English well or very well, while in California the share is 73%. In another contrast, Silicon Valley's population growth among speakers of Asian languages is out-pacing that of Spanish-speakers.

Anderson, S. & M. Hatzer, 2006. "American Made The Impact of Immigrant Entreprenuers and Professionsal on U.S. Competitiveness." National Venture Capital Association.
2. U.S. Census Bureau
2. Casus Bureau



\* Provisional population estimates for 2006 Source: California Department of Finance

	2005	2006	% Change
Silicon Valley	2,489,366	2,521,235	1.28%
California	36,981,931	37,444,385	I.25%



Saxenian, A. 2002. Local and Global Networks of Immigrant Professionals in Silicon Valley.
 San Francisco: Public Policy Institute of California.
 Anderson, S. & M. Plazzer. 2006. "American Made The Impact of Immigrant Entreprenuers and Professionsal



# Foreign Immigration

doubled in 2004-2005

# Household migration over the last decade

Net losses to other parts of CA	-110,334
Net losses to other states	-12,278
Net gains from abroad	17,443

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**Talent Flows and Diversity** 





#### **Growing Language Diversity**

Population Share That Speaks Language Other Than Exclusively English at Home Santa Clara and San Mateo Counties

# Growing language diversity 2002-2005

2002 2003	
Silicon Valley	+ 7%
California	+ 2%
United States	+ 6%



Source: U.S. Census Bureau, American Community Survey





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# Innovation

Silicon Valley continues to innovate, and its mix of technology specializations continues to evolve. Reinventing itself once again, the region is emerging as a leader in consumer & social networking websites as well as in clean technology.

# WHY IS THIS IMPORTANT?

Innovation drives the economic success of Silicon Valley. More than just in technology products, innovation includes advances in business processes and business models. The ability to generate new ideas, products and processes is an important source of regional competitive advantage. To measure innovation, we examine the investment in innovation, the generation of new ideas, and the value-added across the economy. The early adoption of technology is critical for achieving and maintaining a competitive edge, and broadband internet allows better access to newer technologies and quickly developing web-based services. Additionally, tracking the areas of venture capital investment over time provides some indication of the region's longer term direction of development.

## How ARE WE DOING?

- Silicon Valley continues to innovate and raise productivity. Productivity continued its climb above levels reached at the peak of the expansion and increased by four percent, the largest year-to-year growth since 2000. Over 80% of active Web users in the Bay Area used broadband at home in June of 2006. Though ahead of the U.S., the Bay Area lags behind Boston, Seattle and San Diego.
- Six of the top ten cities in the nation for patent registrations are located in Silicon Valley, and San Jose tops the list. For 2005, the U.S. Patent & Trade Office (USPTO) reported an overall drop in number of patents registered due to administrative factors along with a 10% increase in the total number of patent applications. Total registrations dropped seven percent for the region as well as for California. Nonetheless, in 2005 Silicon Valley's share of total U.S. patents continued its gradual climb, and the region's share of total patents granted in California held.
- While total U.S. investment dropped in 2006, Silicon Valley's share increased to 27%. Compared to Q3 2005, Valley investment is up in Q3 2006. New areas of growth have emerged in venture capital investment. As a share of total investment, growth has been strongest in Industrial/Energy and in Media & Entertainment. Encompassing the realm of consumer websites and social networking sites, investment in the region's Media & Entertainment industries represents the region's strength in Web 2.0. Investment shares are also growing in Electronics/Instrumentation, Medical Devices & Equipment, and in Biotechnology. Further, investment in environmental technologies grew by 178% between Q1 2005 and Q3 2006. The bulk of this investment went into Energy Generation, Energy Storage, and Advanced Materials.
- Silicon Valley has emerged as one of the top regions in the country for clean technology investment. In 2005, the region accounted for 23% of the deals in California and 5% of the deals in the nation. Compared to other regions, Silicon Valley reported more VC deals than Maryland, the top state after California and Massachusetts for clean technology investment.



Source: Economy.com

## **Rate of Increase**

2005-2006	
Silicon Valley	4.1%
U.S.	I. <b>9</b> %



Source: Nielsen/NetRatings Netspeed Report

June 20	005–
June 20	006
Boston	+1 <b>9</b> %
Bay Area	+14%
U.S.	+14%





Source: US Patent and Trademark Office

## 46%

of California patents granted to Silicon Valley in 2005

## 1%

of U.S. patents granted to Silicon Valley in 2005

# Top Cities

Registered Patents – 2005

I	San Jose	1960
2	Austin	1221
3	Boise	1028
4	San Diego	900
5	Sunnyvale	842
6	Palo Alto	766
7	Fremont	698
8	Houston	661
9	Cupertino	633
10	Mountain View	522

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# Innovation

# ECONO



Silicon	Valley	VC in	actment.	

2005 Q1-Q3: **\$4.6 billion** 2006 Q1-Q3: **\$5.2 billion** 



Source: PricewaterhouseCoopers/National Venture Capital Association

MoneyTree<sup>™</sup> Report based on data from Thompson Financial

Venture Capital by Industry

Venture Capital Investment in Silicon Valley by Industry 100% Other Computers and Peripherals 90% Electronics/ nstrumentatio 80%) IT Services Media and Entertainmen 70% 60% Networking and Equipment 50% 40% 30%)--Semiconductors Software 20% 10%) 0%)… ..... 2001 2002 2003 2004 2005 2006\*

# Growth in Funding 2001-2006

\* Current as of Q3 2006

Industrial/Energy	776%
Electronics/Instrumentation	72%
Media and Entertainment	70%
Biotechnology, Medical Devices & Equipment	27%

Source: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report based on data from Thompson Financial



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Current as of Q3 2006

Source: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report based on data from Thompson Financial



Deals		Dollars	
SV	13	\$141,040,600	
CA	57	484,000,000	
MA	28	246,800,000	
MD	4	56,700,000	
US	246	I ,598,000,000	

	Deals	Dollars
CA	23%	29%
US	5%	9%

# Silicon Valley – 2005-2006\*

Energy Generation	\$354,000,000
Energy Storage	129,015,000
Advanced Materials	91,740,600
Transportation, Logistics	40,000,000
Energy Efficiency	18,350,000
Energy Infrastructure	12,500,000
Water Purification, Management	6,400,000
Manufacturing/Industrial	5,000,000
Air, Environmental Quality	250,000

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\*Q4 2006 incomplete

# **Employment**

Once again, employment is growing in Silicon Valley. Yet structural changes continue as people increasingly start businesses but do not hire employees.

# WHY IS THIS IMPORTANT?

Job gains or losses are a basic measure of economic health. These numbers are the primary measure of jobs within Silicon Valley. We also examine the number of residents in Silicon Valley who are employed and the rate of unemployment within the Silicon Valley-base workforce. In addition to the fluctuations of employment over the course of the business cycle, permanent shifts in employment develop with structural changes in the economy as entire industries grow or shrink.

# HOW ARE WE DOING?

- Jobs increased by 2.9% over the previous year (2005 Q2). The increase was broad-based. All cluster and other industries except Hardware and Corporate Offices added jobs. Industries with a higher than average growth rate include Software, Creative & Innovation Services, Building/Construction/Real Estate, Financial Services, Health Care, and Business Services.
- For Silicon Valley residents, the unemployment rate continued to fall. Resident employment grew but not at the same rate as total employment. This suggests that many new jobs are being filled by people commuting from other regions.
- Structural changes are evident in Silicon Valley's cluster employment. Industry cluster businesses with no employees grew in number by 26% between 2002 and 2004. In contrast, during this period employment in cluster firms with employees did not grow but halted its three years of net losses in 2005.



### Silicon Valley Employment Number of Silicon Valley Residents Who Are Employed, And Silicon Valley\* Rate of Unemployment

\*Does not include Los Altos Hills, Monte Serano, Portola Valley or Woodside Source: California Employment Development Department



Source: California Employment Development Departn

# + 26,351 jobs

between QI 2005 and QI 2006 (final)

# + 33,252 jobs

between Q2 2005 and Q2 2006 (preliminary)



\* These consist of individual proprietorships, partnerships, and corporations. 2005 data not available. Source: U.S. Census Bureau, Nonemployer Statistics; California Employment Development Department

# Businesses with no employees

00% IT Creative
and Innovative Services
employment

Software **up by 19%** since 2000 Equivalent in number to **14% of total** cluster employment



# Industry Cluster Employment



\*Preliminary Estimate

Source: California Employment Development Department

CLUSTERS	Job Change Q2 2005 to Q2 2006	Jobs in Q2 2006
Software	4,919	101,368
Creative and Innovation Services	4,107	77,403
Semiconductor and Semiconductor Equipment Manufacturing	1,166	57,357
Computer and Communications Hardware Manufacturing	-1,253	54,268
Electronic Component Manufacturing	399	24,448
Biomedical	307	21,433
Corporate Offices	-1,197	13,803

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with Change Over Prior Year Silicon Valley Cities 260,000 240,000 220,000 200,000 180,000 160,000 140,000 120,000 100,000 80,000 5.6% 60,000 % 6% 40,000 S 20,000 HealthCare Cons \*Preliminary Estimate Source: California Employment Development Department

Other Industry Employment
Employment in Other Industries in Second Quarter 2006\*

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# Income

Industry earnings are increasing in hardware industries. While per capita income remains sluggish, median household income increased for the first time since the downturn.

# WHY IS THIS IMPORTANT?

- Earnings growth is as important a measure of Silicon Valley's economic vitality as job growth. A variety of income measures presented together provides an indication of regional prosperity and the distribution of prosperity.
- Real per capita income rises when a region generates wealth faster that its population increases. Household income distribution tells us more about concentrations of income, and if economic gains are reaching all members of the region. The median household income is the income value at the middle of all income values.
- Growth of average annual pay in inflation-adjusted terms is an indicator of job quality. Average pay in Silicon Valley's driving industry clusters reflects in part the wealth-generating impact of outwardoriented industries (industries that sell to customers outside the region). Across all industries, the region's average pay reflects too the level of demand for skilled workers.

# HOW ARE WE DOING?

- Growing less than one percent, real per capita income held in the region while growing by three percent in the U.S. Twenty-two percent of all households in the Valley earned less than \$35,000 in 2005 falling two percent from 2004. These households make up larger shares in California (33%) and the U.S. (38%). The share of households in the mid range dropped by one percent; while the share earning \$100,000 or more grew two percent.
- Over the course of the recent business cycle, the components of income in the region have varied. At the height of the economic expansion, income from wages and salaries accounted for only 66% of total income; after the downturn, this share shifted back to the national average of roughly 75%. This reflects the added income from stock sales during the boom. The increase in dividend income over this period relative to the U.S. suggests that income in the region has become more closely tied to the stock market since 2000.
- Earnings growth over the previous year was strongest in Hardware (15%) and in Semiconductors (14%). While Software and Creative/Innovation Services experienced significant employment growth, these industries reported the smallest earnings growth. In other industries, the strongest earnings growth was in Financial Services (10%). Overall, average pay per employee increased by nine percent since 2003 and by four percent 2005 to 2006.
- While average pay suggests that the region enjoys relatively steady earnings, the median household income, a measure less skewed by extreme values, reveals greater income volatility. Between 2001 and 2004, median household income in Santa Clara Co. dropped by 13% from \$83,000 to \$72,000. Up six percent in 2005, median household income increased for the first time since the downturn.



## Growth

$   \mathbf{\bullet} $	Silicon Valley	0.01%
Ð	United States	<b>2.8</b> %



Source: American Community Survey, U.S. Census Bureau

# 2004-2005 Change

	Silicon Valley	CA	U.S.
\$100,000 or more	+ 2%	+2%	+ 1%
\$35,000-\$99,000	- 1%	0%	-1%
Under \$35,000	- 2%	- 1%	-1%



## **Components of Income**



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Source: Internal Revenue Service, County Income Files

# During height of boom,

wages and salaries made up a smaller share of total income

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# Income

# ECONO

## Industry Cluster Pay



Source: California Employment Development Department

CLUSTERS	Average Wage FY 2006	Percent Change Q2-05 to Q2-06
Computer and Communications Hardware Manufacturing	\$ 160,379	15%
Software	148,935	۱%
Semiconductor and Semiconductor Equipment Manufacturing	145,464	14%
Corporate Offices	110,053	4%
Creative and Innovation Services	101,764	3%
Biomedical	98,797	7%
Electronic Component Manufacturing	80,683	4%



## 22

FY 2005 - FY2006

## Other Industry Pay



CLUSTERS	Average Wage FY 2006	Percent Change Q2-05 to Q2-06
Financial Services	\$ 104,037	10%
Transportation/ Distribution	74,328	6%
Miscellaneous Manufacturing	72,878	7%
Health Care	59,990	5%
Industrial Supplies Services	57,336	8%
Civic	56,536	3%
Building/Construction/ Real Estate	55,526	7%
Business Services	44,715	7%
Retail/ Consumer Services	29,031	2%
Visitor	25,702	6%

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\*Estimate based on Quarter I & 2 data for 2006 Source: California Employment Development Department

# **Preparing for Economic Success**

Graduation rates as well as share of students who met UC/CSU requirements declined, and disparities persist by race and ethnic group. New training opportunities emerge as technological advance diversifies the fields of allied health.

# WHY IS THIS IMPORTANT?

- The future success of the region's young people in a knowledge-based economy will be determined largely by how well elementary and secondary education in Silicon Valley prepares its students for higher levels of education. In 2004, school funding in Santa Clara County was 88% of the national average. Although higher for California (93%), Santa Clara County has been bridging the gap with the nation at a faster pace than the state.
- How well the region is preparing its youth for postsecondary education can be observed in graduation rates and the share of graduates completing courses required for entrance to the University of California (UC) or California State University (CSU). Likewise, high school dropouts are significantly more likely to be unemployed and earn less when they are employed than high school graduates. Variations by race/ethnicity reveal disparity in opportunity.
- Tracking Silicon Valley's high school graduates to higher education by race/ethnicity offers an impression of how access to California's postsecondary systems is changing for different groups. The region's community colleges shoulder a major responsibility for preparing residents to participate in our competitive economy. By offering programs that teach high-value skills, community colleges help individuals gain economic mobility and prepare a workforce to meet employer needs.

# HOW ARE WE DOING?

- Preliminary figures for 2005-06 indicate that Silicon Valley's high school graduation rate dropped for the second year in a row, falling 3% from 2004-05. The share of graduates who met UC/CSU entrance requirements also fell slightly, reversing a steady upward trend since 2000-01. Certain groups are less prepared to enter college upon graduation. Only 22% of Latino graduates met UC/CSU requirements compared to 65% of Asians and 53% of Whites. Dropout rates for most continue to climb. Although Latinos have the highest dropout rate, the rate decreased 4%.
- For college freshmen originating from Silicon Valley high schools, distinct enrollment patterns in California's three postsecondary systems exist by race. Results suggest that many African American and Latino youth are not prepared to gain access to the UC and CSU systems. In contrast, the region's Latino Freshmen are rapidly increasing their shares at community colleges.
- Community colleges in Silicon Valley are highly constrained, particularly in high-demand occupations such as health care. After years of increase since 2001, the ratio of applicants to openings declined from 2005 to 2006 for most nursing programs. In 2006, applications exceeded enrollment in most allied health programs at the region's community colleges, particularly in radiology technology.

# SOCIETY

#### High School Graduation

Rate of Graduation and Share of Graduates Who Meet UC/CSU Requirements Silicon Valley High Schools





Source: California Department of Education, Silicon Valley School Districts

# **Drop-out rates +1%**

Although Latinos are **2.5 times more likely** to dropout from high school than Whites, their **dropout rate fell 1%** during the 2004/05–2005/06 time period

## Fullfillment of UC/CSU Requirements

Share of Graduates Who Meet UC/CSU Requirements by Ethnicity 2004/05, Silicon Valley High Schools

Asian	65%
White	53%
Filipino	41%
American Indian	40%
African American	26%
Pacific Islander	23%
Hispanic	22%

Source: California Department of Education, Silicon Valley School Districts

#### Access to Higher Education

Full Time Freshmen Enrollment by Race/Ethnicity Students Originating from San Mateo and Santa Clara County High Schools

Asian freshmen account for **half** of enrollment at the University of California and **less than 20%** at California Community Colleges

From 2000 to 2005, the share of Latinos at community colleges **increased from 18% to 24%** 





Nursing Program	# of Applicants per class seat 2005 2006	
Registered Nurse (AS)	6.35	6.82
Registered Nurse (AA)	8.40	6.75
Licensed Vocational Nurse	7.00	6.54

Allied Health		
Silicon Valley Community Colleges <b>2006</b>	Applicants	Enrollment
Pharmacology	60	35
Respiratory Therapy	379	88
Medical Lab Technician	917	917
Radiology Technology	438	81

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# Early Education

Kindergarten readiness and third grade reading scores made improvements though disparities by race and ethnic group persist.

# WHY IS THIS IMPORTANT?

- When children are subject to positive early childhood experiences that enhance their physical, social, emotional and academic wellbeing and skills, they enter school ready to learn and are more likely to perform better in later school years. Preschool attendance is linked to higher kindergarten readiness. How prepared children are when they enter kindergarten relative to teacher expectations is an indication of children's readiness for school and future school success.
- Children's school success is in part a function of increasing literacy. Research shows that children who read well in the early grades are far more successful in later years; and those who fall behind often stay behind when it comes to academic achievement (Snow, Burns and Griffin, 1998). Success and confidence in reading are critical to long-term success in school.

# HOW ARE WE DOING?

- Although about half of children in Silicon Valley were primarily cared for by a stay-at home parent, about one in four children entering kindergarten in 2005 had experienced a mix of regular, nonparental care in the preceding year.<sup>1</sup> Preschool was the most common type of child care arrangement.
- San Mateo County's overall kindergarten school readiness scores have continued to improve while scores in Santa Clara County decreased slightly between 2004 and 2005 (Santa Clara County first conducted its assessment in 2004). Although there are likely many reasons for the decline in Santa Clara County, one contributor may be the higher proportion of English Language Learners students that were assessed in 2005.<sup>2</sup>
- Kindergarten Academics reflects a child's ability to engage with books and recognize letters among other skills. Readiness scores along this dimension were lower than overall readiness scores in both counties, but showed improvement in San Mateo County since 2001, the year it first conducted the assessment.
- The percentage of children falling short of teacher's expectations in overall kindergarten readiness was 12% in San Mateo County and 22% in Santa Clara County in 2005. San Mateo County children are more likely to enter kindergarten on par with or better than their teachers expect in overall readiness and Kindergarten Academics.
- Third grade reading proficiency is improving, and for the second year in a row, the share of students scoring above the median score increased while the share in the lowest-scoring quartile shrunk. Stark disparities in reading proficiency exist by race and ethnic group. Forty-five percent of Latino and 38% of African American students scored in the lowest quartile. Of all groups, ethnic Chinese children had the largest share (46%) with top reading scores.
- Applied Survey Research, Peninsula Community Foundation, and Santa Clara County Partnership for School Readiness, Assessment of Kindergarten Readiness in San Mateo and Santa Clara Counties (San Mateo and Santa Clara County, California, 2006) 66.
   Ibid 101.



#### Childcare Arrangements

Types of Childcare Arrangements (including multiple care settings) Used the Year Prior to Kindergarten Santa Clara and San Mateo Counties – 2005



\*A formal, curriculum-based, child care center

Note: Percentages sum to more than 100% because of cases of multiple care settings

Source: Peninsula Community Foundation, Santa Clara County Partnership for School Readiness, Applied Survey Research, 2005



Source: Peninsula Community Foundation, Santa Clara County Partnership for School Readiness, United Way Silicon Valley, Applied Survey Research

Overall kindergarten readiness in

San Mateo County increased 8% from 2001 to 2005, while readiness in Santa Clara County fell 1.5% from 2004 to 2005





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# Arts and Culture

Although revenue challenges continue, Silicon Valley's number of arts organizations is growing faster than in the rest of the state.

# WHY IS THIS IMPORTANT?

Art and culture are integral to Silicon Valley's economic and civic future. Participation in arts and cultural activities spurs creativity and increases exposure to diverse people, ideas and perspectives. Creative expression is essential for an economy based on innovation. This indicator tracks growth in revenue and expenses for the region's arts & cultural nonprofits as well as growth in the number of arts organizations since 1995.

## How ARE WE DOING?

Although revenue for Silicon Valley's arts & cultural nonprofits is down since 2001, arts nonprofits continue to grow in number. Between 1995 and 2004 the number of arts organizations increased by 54%, and even since the economic downturn, arts nonprofits have grown in number at a faster rate than in California or the U.S. Since 1995, median contributions including private gifts and public grants increased by 18%. Fifty-four percent of the region's arts organizations were founded after 1996, and a quarter are older than 20 years.



\*Includes contributions made by individuals and groups as well as government grants Source: National Center for Charitable Statistics, Core Trend File

# Growth in Arts Organizations

### 2000-2004

Silicon Valley	+25%
California	+22%
United States	+20%





\*Includes contributions made by individuals and groups as well as government grants Source: National Center for Charitable Statistics, Core Trend File







Source: National Center for Charitable Studies, Business Master File



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# Health

Child immunization rates improve; however, disparities continue by race and ethnic group across all measures of health and access to care.

# WHY IS THIS IMPORTANT?

- Poor health outcomes generally correlate with poverty and poor access to preventative health care and education. Early and continued access to quality, affordable health care is important to ensure that Silicon Valley's residents are healthy and prosperous. For instance, timely childhood immunizations promote long-term health, save lives, prevent significant disability and reduce medical costs. Health care is expensive, and individuals with health insurance are more likely to seek routine medical care and to take advantage of preventative health-screening services.
- Over the past two decades, obesity has risen dramatically in the United States and its occurrence is not just limited to adults-the percentage of young people who are overweight has more than tripled since 1980. Being overweight or obese increases the risk of many diseases and health conditions, including Type 2 diabetes, hypertension, coronary heart disease, stroke and some type of cancers. These conditions have a significant economic impact on the nation's health care system as well as the overall economy due to declines in productivity.

# How ARE WE DOING?

- Between 2002 and 2006, the share of children receiving the required immunizations by 24 months of age increased by 1.8% in the region. This increase trailed the improvement of 2.7% at the state level. Differences by race and ethnic group persist. African Americans have the worst rates and they continue to worsen in the region and statewide. Conversely, since 2004 immunization rates for Latinos have improved and at the state level, have surpassed the rate for Whites.
- For Silicon Valley and the state, 14% of 12-17 year-olds are overweight or obese according to the 2005 California Health Information Survey, and since 2001, this share has decreased in Silicon Valley at a faster rate than for the state. Results of the Physical Fitness Test administered statewide in public schools suggest too that modest improvements are evident among the region's students in grades 5, 7, and 9. Results from the schools' test suggest that disparities in health exist along ethnic and racial lines with Pacific Islander students reporting the largest shares of youth not meeting the standard for body composition and Asian students reporting the lowest.
- Forty-nine percent of Silicon Valley adults and 56% of adults statewide were overweight or obese in 2005. Since 2001, adult obesity has expanded in both regions but at a faster rate in Silicon Valley. Rates (in 2003) were highest among African Americans and Latinos.
- Since 2001, the source for health insurance has been shifting primarily from employer-based coverage to publicly funded programs. The share of individuals under 65 covered through employers dropped five percent. While individuals with private insurance increased two percent, those covered through public programs increased four percent.

# SOCIETY

## Immunization by Ethnicity



The rate of immunization for African Americans **fell 14%** in SCC and **4%** in California from 2002 to 2006 Hispanic immunization rate

**increased 4%** in Santa Clara County and California from 2002 to 2006



+2%

Privately purchased





Source: 2001 and 2005 California Health Interview Survey

# 2005

Silicon Valley	<b>49</b> %
California	<b>56</b> %

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#### **Overweight Youth** Percentage of Youth Determined to be Overweight or Obese by Body Mass Index Santa Clara/San Mateo Counties and California 20% 15% ------10% ------5% 0%)------..... 2001 2001 2005 2005 Silicon Valley California \*"Overweight or obese" includes the respondents who have a BMI in the highest 95th percentile

# of youth overweight/obese

#### 2005

Silicon Valley	-4%
California	-1%

"Overweight or obese" includes the respondents who have a BMI in the highest 95th percentile with respect to their age and gender.

Source: California Health Interview Survey

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# Safety

Child abuse as well as juvenile and adult crime increased. The number of drug rehabilitation clients served also increased.

# WHY IS THIS IMPORTANT?

The level of crime is a significant factor affecting the quality of life in a community. Incidence of crime not only poses an economic burden, but also erodes our sense of community by creating fear, frustration and instability. Occurrence of child abuse is extremely damaging to the child and increases the likelihood of drug abuse, poor education performance and of criminality later in life. Research has also linked adverse childhood experiences, such as child abuse/neglect, to poor health outcomes including heart disease, depression, and liver and sexually transmitted diseases. Safety for the community starts with safety for children in their homes.

## How ARE WE DOING?

- The rate of substantiated cases of child abuse in Silicon Valley rose again in 2006, while the rate for California continued to decline slightly. California's rate is about seventy-three percent higher than Silicon Valley's, but this gap is steadily narrowing.
- The rate of juvenile felony offenses rose in Silicon Valley for the fourth consecutive year and is now on par with California for the first time since 1996, which is the time period for which this indicator has been reported for the Index. Adult felony offenses increased slightly for Silicon Valley and California, but at a higher rate for the region.
- After four years of consecutive decline, juvenile felony drug offenses increased by 12% between 2005 and 2006, while juveniles receiving county drug and alcohol rehabilitation services also increased during this time period. Adult felony drug offenses in Silicon Valley continued to increase, continuing a four year trend, while adults treated by county drug and alcohol rehabilitation services also increased between 2005 and 2006.
- Generally, there has been an increase in both adult and juveniles being served by county drug and alcohol rehabilitation programs relative to 2000, which can in part explained by the passage of Proposition 36 in 2000, which is a law that diverts non-violent defendants, probationers and parolees charged with simple drug possession or drug use offenses, from incarceration into substance abuse treatment programs. Treatment is provided in several formats, ranging from non-residential to residential to acute care services.



# Substantiated

Case	S	
2004	2005	% change
3,732	3,964	6%



Silicon Valley juvenile felony offenses per 100,000 **increased 22%** since 2002 compared to a **10% decline** in California



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# Environment

Improvements in the region's environmental quality were achieved in protected lands and water use. Ahead of the pack, Silicon Valley's residents switched to hybrid vehicles and renewable energy sources.

# WHY IS THIS IMPORTANT?

- Environmental quality directly affects the health of all residents and the ecosystem in the Silicon Valley region, which is in turn affected by the choices that residents make about how to live—how we chose to access work, other people, goods and services; where we build our homes; how we use our natural resources; and how we enforce environmental guidelines.
- Water is one of the region's most precious resources, serving a multitude of needs, including drinking, recreation, supporting aquatic life and habitat, and agricultural and industrial uses. Water is also a limited resource because water supply is subject to changes in climate and state and federal regulations. Sustainability in the long-run requires that households, workplaces and agricultural operations efficiently use and reuse water.
- Preserving open space protects natural habitats, provides recreational opportunities, focuses development, and maintains the visual appeal of our region. Protected lands include habitat and wildlife preserves, waterways, agricultural lands, flood control properties, and parks.
- The modes of transportation we use to access work, other people, goods, and services, including the type of cars we drive, impacts the quality of our air and the region's transportation infrastructure. Motor vehicles are the major source of air pollution for the Bay Area. By utilizing alternative modes of transportation, such as public transit and walking, as well as choosing vehicles that use alternative sources of fuel, residents can reduce their ecological footprint.
- Shifting from carbon-based fuels to renewable energy sources has the potential for wide-reaching impact on our environmental quality in terms of local air quality and global climate change.

# HOW ARE WE DOING?

- Residential and non-residential water use dropped between 2004 and 2005 while recycled water increased its share of total consumption. A significant factor contributing to the region's lower water use was the wet weather experienced during this time period. However, the increase in recycled water use suggests that conservation efforts could also be contributing to changing patterns in water use and reuse.
- Open space and the share that is accessible to the public continue to increase, due in part to concerted efforts by the Mid-Peninsula Regional Open Space District and the Land Trust of Santa Clara Co. While the region's total acreage of protected lands grew by 3,281 acres between 2005 and 2006, accessible protected lands grew by 4,639 acres. In 2006, for every 1.45 acres of accessible open space, there were 2.54 acres of urban/developed land.
- Most residents drive alone to work; however, since 2002, the number of residents walking to work has increased by 36%. Roughly 50,000 working residents work from home–an increase of 35% since 2002.
- The number of miles of bike lanes is a measure of an alternative transportation mode. Silicon Valley has a total of 1,212 miles of bike lanes, representing 37% of the nine-county Bay Area's bike mileage.
- Revenue hours, a measure of public transit operating time/service, and rides per capita were both up slightly in 2006, reversing the trend of continuous decline since 2002 and 2000 respectively.
- Silicon Valley is ahead of the rest of the state in the registration of hybrid vehicles, but lags behind the rest of the Bay Area. In addition to investing in environmental technologies, the region's residents and businesses are installing solar systems. In 2005, the number of applications approved for the California State sponsored rebates increased by 73%.



Source: Green Info Network

# From 2005 to 2006

protected lands **increased 1.5%** and accessible protected lands **increased 3.3%** 



Source: California Energy Commission

# Rebates

Approved	2005	2006	Increase
Silicon Valley	526	911	73%
California	4286	7921	85%



Recycled Water as Share of Total Water Consumption

Gross per capita consumption fell by 6% between 2003/04 and 2004/05 while the share of total water consumption that is recycled increased 0.1%

Source: Bay Area Water Supply & Conservation Agency Annual Survey

Total Water Usage

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# Environment

#### Transit Use and Availability Number of Rides Per Capita and Change in Revenue Hours on Regional Transportation System Santa Clara and San Mateo Counties 40 1.2% 1.0% (00.1 2000 = 0.8% **Rides Per Capita** (Index 0.6% Ì 0.4% 0.2% 0.0% 2006 2001 2002 2004 2005

0-

Revenue Hours

\* Estimate

Sources: Altamont Commuter Express, Caltrain, SamTrans, Valley Transportation Authority

Rides Per Capita

# 2% increase

in rides per capita and revenue hours from 2005 to 2006

#### Alternative Fuel Vehicles\* as Share of all Operational Vehicles By Region and Fuel Type 1.2% 1.0% 0.8% 0.6% 0.4% 0.2% 0.0% 2000 2001 2002 2003 2000 2001 2002 2003 2004 2004 2004 Bay Area Rest of CA Silicon Rest of Rest of CA Valley Bay Area All Alcohol Hybrid Natural Gas Electric

**Alternative Fuel Vehicles** 

\*Includes hybrid and electric vehicles as well as vehicles running on all alcohol based and gaseous noncarbon fuels. Does not include diesel engine vehicles. Source: California Department of Motor Vehicles

> Though closely trailing the rest of the Bay Area, Silicon Valley residents are twice as likely to use hybrid vehicles as the rest of California

# 1,212 miles

of bike lanes in Silicon Valley San Jose 182 miles Portland 200 miles Seattle 140 miles

\*Data for cities listed above include trails

SONOMA NAPA SOLANO ONTRA ALAMEDA SANTA

## 36



The number of workers
walking to work is up 36%
since 2002; since then, workers
working at home increased 35%





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# Land Use

The average density of newly approved residential development and the share of approved housing near transit both continued to increase.

# WHY IS THIS IMPORTANT?

By directing growth to already developed areas, local jurisdictions can reinvest in existing neighborhoods, use transportation systems more efficiently, and preserve the character of adjacent rural communities. Focusing new commercial and residential developments near rail stations and major bus corridors reinforces the creation of compact, walkable, mixed-use communities linked by transit. This helps to reduce traffic congestion on freeways and preserve open space near urbanized areas. By creating mixeduse communities, Silicon Valley gives workers alternatives to driving alone and increases access to jobs

## How ARE WE DOING?

- The average density of newly approved development increased for the fourth consecutive year to a record 22.75 units per acre, over three times the density of approved development in 1998, the first year the Joint Venture Land Use Survey was conducted.
- The share of newly approved housing that will be near transit increased for the third year in a row to 40% in 2006. This share is 24 percentage points lower than the peak in 2001, but eleven percentage points higher than the share approved in 1998.
- In 2006, approved non-residential net development near transit decreased 50% from the prior year and was at its lowest since 1998.

# Average Units Per Acre of Newly Approved Residential Development Silicon Valley

**Residential Density** 

Source: City Planning and Housing Departments of Silicon Valley

Density of newly approved housing increased 10% from 2005 to 2006



	_
40% of housing approved	
will be near transit	
	-
Share of housing that will	
be near transit <b>increased 1%</b>	

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**Development Near Transit** Change in Non-Residential Development Near Transit Silicon Valley 7,500,000 6,500,000 5,500,000 4,500,000 Feet 3,500,000 Commercial Space Square 2,500,000 1,500,000 500.000 (500,000) GOVERNANCE 44 | 47 (1,000,000) 2006 1998 2002 2004 Special Analysis continued 48 | 55 Net Development Further Than 1/4 mile from Transit Net Development Within 1/4 mile from Transit

from 2005 to 2006

#### Source: City Planning and Housing Departments of Silicon Valley

of non-residential development that is far from transit

of non-residential space near transit

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# Housing

The share of newly approved residential units that are affordable increased 5% since 2005. While rental rates have improved since 2002, home affordability remains a challenge in the region. Residential foreclosures increased but remain below state rates.

# WHY IS THIS IMPORTANT?

The affordability of housing affects a region's ability to maintain a viable economy and high quality of life. Lack of affordable housing in a region encourages longer commutes, which diminish productivity, curtail family time and increase traffic congestion. Lack of affordable housing also restricts the ability of crucial service providers such as teachers, registered nurses and police officers—to live in the communities in which they work.

## How ARE WE DOING?

- The number of affordable units approved for construction in 2006 was the lowest number approved since the beginning of the survey in 1998. However, the share of new residential units that are affordable increased 5% since 2005.
- Apartment rental rates rose 5% from 2005 to 2006 in Silicon Valley after years of decline. Factors that could be contributing to the increase in average rents include the region's high housing prices combined with the slowdown in home appreciation that may be deterring renters from pursuing homeownership, as well increases in job growth and a dwindling supply of apartments.
- Home affordability is dropping nationally, but at a faster rate in California and Silicon Valley. Since 2004, the percentage of potential firsttime home buyers that can afford to purchase the median-priced home has been higher in Silicon Valley than for California, which is seeing affordability decline in other areas such as Los Angeles, San Diego and Santa Barbara.
- A higher share of households in Silicon Valley are paying 30% or more of their household income on mortgage costs than in California and the nation. The 30% threshold, recommended by the U.S. Department of Housing and Urban Development, is widely used as an affordability measure. In 2005, 49% of Silicon Valley households spent 30% or more of their household income on mortgage costs, which was slightly higher than the state and fourteen percentage points greater than the nation. In contrast, the rental cost burden in Silicon Valley is at the national average and below the California average.
- Residential foreclosure activity in Silicon Valley and California, measured by the quarterly percentage increase in the number of residential foreclosure sales, surged to its highest level in more than four years in the third quarter of 2006. Foreclosures occur when homeowners cannot meet their mortgage payments. Thus, an increase in foreclosures is an indication of financial stress among households due to any variety of factors, including job loss, income decline, and adjustments of variable rate mortgages.



Source: City Planning and Housing Departments of Silicon Valley

The share of new units that are affordable **increased from 6%** in 2005 **to 11%** in 2006



Source: Real Facts, United States Census Bureau, American Community Survey

Rental rates rose 5% from 2005 to 2006,

the first increase since 2002



In 2005, **49%** of Silicon Valley households were paying 30% or more of their household income on mortgage costs

The share of households in the region paying 30% or more of their household income on rental costs

was lower than the nation

in 2005 and on par with the state

#### Housing Cost Burden

Percentage of Households Spending 30% or More of Household Income on Housing\* Santa Clara/San Mateo Counties, California and United States

	Rental Costs		Mortgag	ge Costs
	2002	2005	2002	2005
Silicon Valley	46%	46%	43%	49%
California	47%	52%	40%	48%
United States	41%	46%	29%	36%

\* Families who pay more than 30 percent of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care. Source: U.S. Census Bureau, American Community Survey 61

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# **Commercial Space**

Demand for commercial space is growing. Commercial vacancy rates continue to decline while rental rates climb.

# WHY IS THIS IMPORTANT?

This indicator tracks the supply of commercial space, rates of commercial vacancy, and cost, which are leading indicators of regional economic activity. In addition to office space, commercial space includes R&D, industrial and warehouse space. The change in the supply of commercial space shows the impact of absorption and new construction added. A negative change in the supply of commercial space shows a tightening in the commercial real estate market. The vacancy rate measures the amount of space that is not occupied. Increases in vacancy, as well as declines in rents, reflect slowing demand relative to supply.

# How Are We Doing?

The rate at which commercial space is being absorbed continues to outstrip new construction added for the second year in a row, showing an increase in demand relative to supply. The overall annual rate of commercial vacancy declined for the third year in a row, but remains well above the vacancy rate exhibited during the economic peak in 2000. Between 2005 and 2006, annual office vacancy rates for office space showed the steepest decline, decreasing 26%, followed by warehouse and R & D, which decreased by 22% and 19% respectively. Rental rates are up slightly since 2006, reversing a general pattern of decline since 2000.



\* as of October 2006

Note: Commercial space includes office, R&D, industrial and warehouse space Source: Colliers International





Source: Colliers International

\* as of October 2006 Source: Colliers International The vacancy rate for commercial space **declined 2.5%**, but remains **7.7 times the rate** than in 2000

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# **Civic Engagement**

Largely a legacy of the boom years, Silicon Valley's vital non-profit sector is making valuable contributions to the community.

# WHY IS THIS IMPORTANT?

- An engaged citizenry shares in the responsibility to advance the common good, is committed to place and has a level of trust in community institutions. Voter participation is an indicator of civic engagement and reflects community members' commitment to a democratic system, confidence in political institutions and optimism about the ability of individuals to affect public decision making.
- Civic institutions, such as the non-profit sector, are important threads in a community's civic fabric. They provide a safety-net for the community and inspire a spirit of giving and volunteering to tackle complex challenges facing a region. Measuring their growth over time gives an indication of a community's willingness to invest in its civic institutions.

# HOW ARE WE DOING?

- Especially since the downturn there has been strong growth in Silicon Valley's nonprofit sector. Between 2000 and 2004, the number of public charities grew by 21%, and the number of private foundations grew by 32%. The region's growth in the nonprofit sector exceeded that of the nation but slightly lagged California's growth. The primary activities of the region's charities are concentrated in the areas human services and education.
- Silicon Valley voter turnout increased 5% since the previous mid-term election in 2002 and the region's lead over the state also widened since then. The share of Silicon Valley voters who vote absentee has grown dramatically in recent years, increasing 20% since 1998. Most of the increase in absentee voting has taken place since 2002.

# GOVERN

## Voter Participation



# **Voted Absentee**

2006	
Silicon Valley	44%
California	42%

# ANCE



# **Growth in Nonprofits**

2000-2004

	Public Charities	Private Foundations
Silicon Valley	21%	32%
California	22%	41%
United States	20%	29%



# Growth in Number of Charities

+44%

**1998–2004** Environment

# Top Charitable Activities

in 2004	
Human services	31%
Education	27%

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# Revenue

While revenue from property tax leveled out in 2004, revenue from more volatile sales and other taxes increased modestly.

# WHY IS THIS IMPORTANT?

- Governance is defined as the process of decision-making and the process by which decisions are implemented. The ability of local government to govern effectively is influenced by many factors, including the availability and management of resources. To maintain service levels and respond to a changing environment, local government revenue must be reliable. Local revenues are affected by economic fluctuations and by state takings of locally generated revenue.
- Property tax revenue is the most stable source of city government revenue, fluctuating much less over time than do other sources of revenue, such as sales, hotel occupancy and other taxes. Since property tax revenue represents less than a quarter of all revenue, other revenue streams are critical in determining the overall volatility of local government funding.

# HOW ARE WE DOING?

- Silicon Valley city revenues declined 6% from a total of \$2.21 billion in 2003 to \$2.07 billion in 2004. This is the third year overall Silicon Valley city revenues are in decline. After eight years of growth, property tax revenue dipped slightly by 1%, while sales and other taxes increased by 4%.
- Silicon Valley cities derive most of their revenue from the most volatile sources: sales tax, other taxes and other sources of revenue. Sales tax revenue and "other taxes" saw their shares increase between 2003 and 2004 to 18% and 20% respectively. While property tax revenue declined in 2004, its share of total revenue increased slightly to 16%, due primarily to the shrinking share of "other revenue" sources, which fell 5% from 2003 to 2004. Despite its declining share, "other revenue" sources continue to make up 45% of overall city revenue. "Other revenue" sources include intergovernmental transfers, special benefit assessments, fines, as well as permits and investments.

#### City Revenue by Source Silicon Valley 53,000 5,5000 5,5000 5,5000 5,5000 5,500

# In 2004,

cities derived **84%** of their revenue from the most volatile sources



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# **Special Analysis**

Silicon Valley's Place in the Global Network of Regions

continued from page 7

# Talent Flows continued

In addition to a region's educational levels and draw of foreign talent, a region's ability to attract talented students from abroad to local universities helps sustain a continued draw, generation and circulation of global talent, ideas and business practices. Since foreign-born S&E graduates from Bay Area universities tend to find jobs in Silicon Valley technology companies, following the trends in foreign graduates from local universities can help indicate developing trends in the region's workforce. The number of S&E degrees conferred to foreign students in the region's universities continues to grow as a share though the rate of growth is slowing slightly. Compared to the nation, the region's as well as the state's universities are far more globally oriented and the difference is growing.



Universities serving Silicon Valley include: Menlo College, Cogswell Polytechnic College, University of San Francisco, University of California (Berkeley, Davis, Santa Cruz, San Francisco), Santa Clara University, San Jose State University, and Stanford University

U.S. data only available up to 2002

Source: National Center for Education Studies; National Science Board

# **Idea Flows**

The number of patents generated by the companies located in a specific region is an indicator for the region's creative capacities. Patents are often registered by multiple parties and increasingly, by people or entities from multiple countries. The extent of this cross-border collaboration can be measured by the propensity of a region's inventors to register patents with inventors from other regions of the world.<sup>14</sup>



Between 1993 and 2005, international co-patenting increased six-fold in Silicon Valley. As a share of all patents with an inventor in Silicon Valley, registries with foreign inventors increased from four percent to close to seven percent in the same period. By country, co-patenting activities have increased the most with India growing by 35% between 1993 and 2005. Large growth rates were witnessed by other emerging economies including China (27%) and Finland (24%).



Analysis includes all patents with an inventor from Silicon Valley, regardless of sequence number of in Source: US Patent & Trade Office

# **Special Analysis**

Silicon Valley's Place in the Global Network of Regions

> Looking at collaboration between regions below the national level, clear patterns in co-patenting emerge that point to Silicon Valley's relationships with other regions across the globe. Further, viewing these patterns over time helps to explain how these relationships are evolving. Shifts in Silicon Valley's co-patenting partner regions have made the strongest shift since 2001. While in 2001 co-patenting activities were highest with Singapore, Greater Tokyo, and Haifa (Israel), by 2005, two different regions in Taiwan, Hsinchu and Taipei were first and second in number of patents co-registered with Silicon Valley inventors.

> The growth in patent activity before and after the economic expansion differed for most regions and points to newer, evolving collaborative relationships. Over the entire time period, instances of co-patenting with inventors in the Greater Tokyo Area were most numerous; however, in 2005, co-patenting between Silicon Valley and Hsinchu, Taiwan was greatest though no activity had been reported in 1993. The regions with the greatest increase in co-patenting with Silicon Valley between 2001 and 2005 – Helsinki, Bangalore and Shanghai – participated in little patent activity with the region in the past. Other regions with strong collaboration with Silicon Valley between 1995 and 2000 experienced a drop in co-patenting with the Valley after 2000 such as Tel Aviv and Singapore. Strong growth was reported during both periods for Munich, Seoul and both regions of Taiwan.



# **Capital Flows**

Access to capital resources is vital to the innovation process. Patterns in the global flows of venture capital suggest interconnectivity in investment and also ideas as business plans are vetted. In addition, as firms locate in foreign regions in order to take advantage of local labor markets and local synergies, they bring talent, ideas and capital to the region.



Source: California Employment Development Department; Uniworld Business Publications, Inc.

### Foreign Firms in Silicon Valley

Primarily in the hardware industries, Silicon Valley has a strong presence of foreign firms in its cluster industries. Roughly 13% of the region's Computing & Communications Hardware cluster is made up of foreign firms. In contrast, statewide, foreign firms make up less than one percent of firms in this industry.

The primary activities of the region's foreign firms vary by country of origin. These patterns reflect in part the technological specializations of these other regions and suggest too where possible areas of collaboration between regions exists. For instance, about eighty-percent of India's affiliates in the Valley are in Software; whereas, fifty-seven percent of firms from Taiwan are in Computing & Communications Hardware. Almost half of Israeli firms are in Semiconductors & Semiconductor Equipment Manufacturing. Furthermore, these companies create thousands of jobs in the region; Taiwanese and Japanese firms account for the largest numbers.



SV Cluster Employment		
	2000	
Taiwan	7275	
Japan	5750	
Germany	3209	
Canada	3048	
India	3196	
China	1539	
Israel	1513	
United Kingdom	1003	
Singapore	885	
Netherlands	662	
Sweden	537	
Switzerland	339	
France 284		
South Korea 265		
Finland	107	

Source: Halpern Info Services; Uniworld Business Publications, Inc.

Source: Uniworld Business Publications, Inc

Silicon Valley's Place in the Global Network of Regions

## Venture Capital Flows between Silicon Valley and Abroad

Silicon Valley received 14% of the world's venture capital (VC) in 2005 and compares to the United Kingdom in total value.<sup>15</sup> Investment in Silicon Valley includes venture capital from across the globe. Likewise, venture capital firms in the region are increasingly investing far from home. Patterns of capital flows suggest interconnectivity between regions not only in terms of investment but likely also in terms of talent and technology. Varying levels of VC activity across regions could suggest differences in core competencies between activities centered on process and activities centered on innovation creation. Observing the growth in VC activity over the two periods of time, 1995-2000 and 2001-2006 reveals the emergence of new partners of Silicon Valley in the global network of regions.



Venture capital flows to and from Silicon Valley<sup>16</sup> are growing and new regional connections of investment are emerging. Relationships vary as some countries are top recipients for VC from the Valley, and other countries invest more in the region than they attract VC from the region. Additionally, these relationships have been shifting since 1995.

The heaviest investment activity occurs with the U.K. Since 1995, the U.K. continues to be the top investor in the region; however, it dropped below China as a favored investment location. Presently the top destination outside the U.S. for Silicon Valley investors, China attracted \$1 billion over the last six years from the Valley, growing roughly by ten times from the earlier period. Though they are growing, flows of VC from China into the Valley are some of the lowest. Over the two time periods, investment from Israel doubled and from Sweden tripled. Likewise, investment from Silicon Valley into each of these regions doubled.



Venture Capital Investment

On the regional level, Seoul and Singapore are the two regions with relatively strong venture capital flows in both directions with Silicon Valley. For Seoul, these flows are growing while they are shrinking back with Singapore. A new relationship is also emerging with Helsinki as its investment flows to and from the Valley increased.

Shanghai, Beijing and Seoul have received the greatest VC investment since 2001. Shanghai and Beijing combined represent 55% of the Valley's VC investment in China between 2001 and 2006 (Q3). Although the relative levels are low, VC investment in the Valley from Shanghai and Beijing is growing. Conversely, while investment flows from Silicon Valley are either low or not reported, VC investment in Silicon Valley has increased significantly from Taipei, Munich, Tel Aviv, Jerusalem and Stockholm.

# **Special Analysis**

Silicon Valley's Place in the Global Network of Regions



The interconnections among Silicon Valley and other global regions can best be illustrated as linkages between "nodes on a global network" that connect regional "spikes" representing talent, ideas and investment. Other regions are connected to each other independent of their relationship to Silicon Valley (e.g. Helsinki, Taiwan and Shanghai in telecommunications). Each of these elements in the knowledge economy now flow easily across boundaries.

# Implications

Regardless of a region's area of specialization, globally competitive regions that are also integrated with other regions learn better and develop faster in the fast-paced evolution of the global economy. These regions are rich in concepts, competence and connections; namely, they possess the best and latest ideas and knowledge, the ability to operate at the highest global standards, and the best relationships with people and organizations around the world.<sup>17</sup> The results of this analysis shed light on the complex integration of regional players and their diverse activities in the global economy and provides a greater understanding of Silicon Valley's role and strengths in the world's idea economy. The role for the Valley is not only to connect itself to other innovative regions, but to access, leverage and integrate the best of the best for highest-value added innovation in technologies and business models. By continuing to invest in talent and new ideas and connecting with other regions, Silicon Valley can prosper by competing and collaborating in the global economy.

#### Endnotes

- I "In 2003, the value of final consumption of IT goods worldwide, encompassing computers, telecommunications and components was about \$1,500 billion with Asia (including Japan) comprising about 20 percent of the total. Howev Asia produced about 40 percent of these goods, exporting the difference largely to the United States and Europe. The Asian shares of both consumption and production were rising rapidly." Making IT:The Rise of Asia in High
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- 3 The use of the term "spike" in this context is attributed to Richard Florida, "The World Is Spiky Globalization has changed the economic playing field, but hasn't leveled it." The World in Numbers The Atlantic Monthly (October 2005) pages 50-51.
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- 6 There are limitations to measuring the value of regional patent counts. Patents registered vary widely in their significance to technological advance, and the address of the first-named inventor does not reveal whether the company
- is local or in what way the company is linked to a foreign entity.
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- 10 Saxenian, A. 2006, page 328.
- 11 Wadhwa, V., Saxenian, A., Rissing, B., Gereffi, G. 2007. America's New Immigrant Entrepreneurs. Master of Engineering Management Program, Duke University; School of Information, U.C. Berkeley (January 4, 2007).
- In U.S. Census data, foreign-born include foreign residents, naturalized citizens and children born abroad of American parent(s).
   Saxenian, A. 1999, Silicon Valley's New Immigrant Entrepreneurs. San Francisco: Public Policy Institute of California. Page 15.
- 14 When patents are counted by region, only the address of the first-named inventor is used. Like in academic publishing, the order of names listed relates to seniority and/or relative contribution. Typically, a patent is registered, or co-patented, by more than one inventor.
- 15 PriceWaterhouseCoopers, Global Private Equity Report 2005
- 16 In this analysis, venture capital firms located outside the U.S. include some foreign affiliates of U.S. firms. 17 Kanter, Rosabeth Moss. 1995, World Class Thriving Locally in the Global Economy. New York: Simon & Schuster. Page 23.

# World Knowledge Competitiveness 2005

## **Ranking of 125 Regions**

	Employment in IT & computer manufacturing per capita	Patent Registrations per capita	Venture Capital per capita
Silicon Valley	l.	4	I
Boston	17	П	3
Seattle	61	19	12
Austin	2	37	18
Raleigh	39	41	39
Токуо	12	I.	73
Shanghai	*	2	117
Beijing	*	12	117
Seoul	*	88	75
Singapore	3	80	25
Taiwan	11	50	98
Bangalore	*	117	121
Israel	41	66	22
Helsinki	26	71	15
Stockholm	27	45	7
Munich	18	52	51

\*Not ranked

Source: World Knowledge Competitiveness Index 2005

# APPENDIX A

# People

Data for educational attainment, age, ethnicity/race, domestic emigration and foreign immigration (front page statistics) are for Santa Clara and San Mateo counties and are derived from the United States Census Bureau, 2005 American Community Survey. Domestic emigration and foreign immigration data looks at residence one year prior to when the survey was completed by the respondent. All respondents who self-reported "Hispanic" origin are counted as such in that category only.

Data for the Silicon Valley population (front page statistic) come from the E-1: City/County Population Estimates with Annual Percent Change report by the California Department of Finance and are for Silicon Valley cities.

Data for the composite population table, including birth and death figures, come from the E-6: County Population Estimates and Components of Change by County report by the California Department of Finance and are for Santa Clara and San Mateo counties. Net migration includes all legal and unauthorized foreign immigrants, residents who left the state to live abroad, and the balance of hundreds of thousands of people moving to and from California from within the United States.

#### Migration Patterns

The County-to-County Income data files were provided by the Statistics on Income division of the Internal Revenue Service. Data are for Santa Clara and San Mateo counties were combined for Silicon Valley.

Population shares that speak language other than English at home Data are from the United States Census Bureau, 1990 and 2000 Summary Files and the 2005 American Community Survey. The data are for Santa Clara and San Mateo counties.

# Economy

#### Innovation

#### Value Added

Value added is the sum of compensation paid to labor within a sector and profits accrued by firms. Value-added estimates are constructed using productivity estimates at higher geographic levels (state and national) and applying them to employment and wage/income data at the metropolitan level.

#### Broadband Penetration

Data are from Nielsen//NetRatings NetSpeed Report. This indicator measures the share of active internet users over two years of age who connected at home with a broadband connection. Broadband, defined as a connection greater than 56,000 bits per second, refers to the communications medium that uses wide-bandwidth channels for sending and receiving large amounts of data, video or voice information. Bay Area data is based on the San Francisco-Oakland-San Jose Designated Market Area (DMA) used by Nielson//Net Ratings.

#### Patents

Patent data is provided by the US Patent and Trademark Office and consists of utility patents granted by inventor. Population figures are from Economy.com. Geographic designation is given by the location of the first inventor named on the patent application. Silicon Valley patents include only those patents filed by residents of Silicon Valley cities.

#### Venture Capital

Data are provided by PricewaterhouseCoopers/Thomson Venture Economics/National Venture Capital Association MoneyTree(tm) Survey. For the Index of Silicon Valley, only investments in firms located in Silicon Valley, based on Joint Venture's ZIP-code-defined region, were included. Total 2006 venture capital funding level is an estimate based on the first three quarters of data and historical growth patterns in the fourth quarter. Values are inflation-adjusted and reported in 2006 dollars, using the CPI for the San Francisco-Oakland-San Jose CMSA from the Bureau of Labor Statistics. Data on VC investment in clean technology was provided by the Clean Tech Venture Network.

#### Employment

#### Workforce and Unemployment

Labor force and unemployment data are for the month of September and are civilian employment figures from the Labor Market Information Division of the California Employment Development Department. Civilian employment counts the number of working people by where they live. This includes business owners, the self-employed, unpaid family workers, private household workers, and wage and salary workers. A person with more than one job is only counted once. Unemployment measures the share of residents in the workforce actively looking for work. County labor force data are not adjusted for seasonality.

#### Overall Employment

Silicon Valley employment data are provided by the California Employment Development Department and are from Joint Venture: Silicon Valley Network's unique data set. The data set counts jobs in the region and uses data from the Quarterly Census of Wages and Employment program that produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance (UI) laws and Federal workers covered by the Unemployment Compensation for Federal Employees (UCFE) program. Employment data exclude members of the armed forces, the self-employed, proprietors, domestic workers, unpaid family workers, and railroad workers covered by the railroad unemployment insurance system. Covered workers may live outside of the Silicon Valley region. Multiple jobholders (i.e., individuals who hold more than one job) may be counted more than once.

#### Employment by Cluster and Industry

Figures were derived from the EDD/Joint Venture: Silicon Valley Network data set and are based on the North American Industry Classification System (NAICS). Appendix B provides NAICS-based definitions for each of Silicon Valley's industry clusters.

#### Structural Changes in Employment

County-based data stem from the U.S. Census Bureau's Nonemployer Statistics and California's Employment Development Department. Values represent the rates of change in the number of nonemployer establishments and the number of employees in Silicon Valley's cluster industries. A nonemployer business is one that has no paid employees, has annual business receipts of \$1,000 or more and is subject to federal income taxes. Such businesses include the three legal forms of organization: individual proprietorships, partnerships, and corporations.

#### Income

#### Real per capita income

Data are from Economy.com. Data for Santa Clara and San Mateo counties are inflation adjusted by Economy.com to 2006 dollars.

#### Average pay per employee

Data are provided by the California Employment Development Department and are from Joint Venture: Silicon Valley Network's unique data set. The data set uses data from the Quarterly Census of Wages and Employment program that produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance (UI) laws and Federal workers covered by the Unemployment Compensation for Federal Employees (UCFE) program. All wages have been adjusted into 2006 dollars.

Included in wages are pay for vacation and other paid leave, bonuses, stock options, tips, and the cash value of meals and lodging. Pay per employee is calculated by dividing annual (quarter two to quarter two) payroll for each industry by annual average employment (quarter two to quarter two).

#### Average Pay by Cluster and Industry

Figures were derived from the EDD/Joint Venture: Silicon Valley Network data set and are based on the North American Industry Classification System (NAICS). Appendix B provides NAICS-based definitions for each of Silicon Valley's industry clusters. Average pay per employee in the clusters and industries is calculated by summing quarterly payroll (quarter two to quarter two) and dividing by average annual (quarter two to quarter two) employment in the cluster. All wages have been adjusted into 2006 dollars.

#### Distribution of Income and Median Household Income

Because of definitional changes for Santa Clara County in the Census Bureau's Current Population Survey (CPS), household income data is based on the American Community Survey from the U.S. Census Bureau for the 2007 Index.

#### Distribution of Income by Type

County Income data files were provided by the Statistics on Income division of the Internal Revenue Service. Data are for Santa Clara and San Mateo counties were combined for Silicon Valley.

# **Society**

#### High School Graduation Rate

Data for the most current year are preliminary and are from a survey of Silicon Valley high school districts and the Santa Clara and San Mateo County Offices of Education. Historical data are final and are from the California Department of Education. A new methodology was employed this year based on the aggregate-level completer calculation used by the United States Department of Education's National Center for Educational Statistics. Essentially it calculates an approximate probability that one will graduate on time by looking at the number of 12th grade graduates and number of 12th, 11th, 10th and 9th grade dropouts over a four year period.

#### Dropout rates

Data for the most current year are preliminary and are from a survey of Silicon Valley high school districts and the Santa Clara and San Mateo County Offices of Education. Historical data are final and are from the California Department of Education. The methodology uses a 4-year derived dropout rate that is an estimate of the percent of students who would drop out in a four year period based on data collected for a single year. Beginning in 2002-03, the California Department of Education adopted the National Center for Educational Statistics (NCES) Dropout definition. Following the new guidelines, the California Department of Education now defines a dropout as a person who:

1) Was enrolled in grades 7, 8, 9, 10, 11 or 12 at some time during the previous school year AND left school prior to completing the school year AND has not returned to school as of Information Day. OR

2) Did not begin attending the next grade (7, 8, 9, 10, 11 or 12) in the school to which they were assigned or in which they had pre-registered or were expected to attend by Information Day.

#### Spending Per Student

Expenditure data for Santa Clara County are from the Santa Clara County Office of Education's Statistical Report for the School Districts of Santa Clara County while enrollment data for the county was collected from the Education Data Partnership. California and national data are from the United States Census Bureau, Annual Survey of Local Government Finances. To calculate this measure, total reported expenditures are divided by fall enrollment. Definitions of expenditure may vary for Santa Clara County compared to the state and nation. Expenditure data for Santa Clara County are compiled for the districts' General Funds only.

#### Flows of Silicon Valley high school students to CA colleges and universities

The analysis of college freshmen from Santa Clara and San Mateo County public high schools is based on data from the California Postsecondary Education Commission, the California Department of Education. The analysis was limited to first-time, full-time students.

#### Community College Training Programs

Data on the number of applicants and enrollment were collected for the following health care related programs: nursing, radiology technology, pharmacology, medical lab technician, and respiratory therapy. Data were provided by eleven community colleges in the Silicon Valley region; Cabrillo College, Canada College, Chabot College, De Anza College, Evergreen College, Foothill College, Gavilan College, Mission College, Ohlone College, College of San Mateo and Skyline College.

#### Third Grade Reading

Data are from the California Department of Education, CAT/6 Research Files and are compiled specifically for the Silicon Valley region. In 2003, the California Achievement Test CAT/6 replaced the Stanford Achievement Test, ninth edition (SAT/9), as the national norm-referenced test for California public schools. CAT/6 is a norm-referenced test; student's scores are compared to national norms and do not reflect absolute achievement. This indicator tracks third grade reading scores on the California Achievement Test, sixth edition (CAT/6), which measures performance relative to a national distribution.

#### Kindergarten Readiness

Applied Survey Research conducted kindergarten readiness studies for San Mateo and Santa Clara Counties. The studies were conducted for the Santa Clara County Partnership for School Readiness, Peninsula Partnerships for Children, Youth and Families, and United Way of Silicon Valley. Teachers and parents of kindergarten children reported on the types of child care arrangements children experienced the year prior to entering kindergarten. Percentages are based on the weighted sample size of 1174-1149 for Santa Clara and San Mateo counties. Percentages sum to more than 100% because children were cared for in more than one setting.

Readiness Scores are based on a representative sample of kindergarten children from San Mateo and Santa Clara counties. San Mateo County scores are based on 527 students in 2001, 545 students in 2002, 486 students in 2003, and 632 students in 2005 (weighted Ns). Santa Clara County scores are based on 699 students in 2004 and 769 students in 2005 (weighted Ns). Averages adhere to a 1 to 4 scale, where 1 is equivalent to Not yet, 2 is equivalent to Beginning, 3 is equivalent to In progress, and 4 is equivalent to Proficient.

Teacher expectation data is based on the level of proficiency teachers think children must have to successfully transition into kindergarten and uses the same proficiency scale used to evaluate children's proficiency levels. In 2005, teacher expectations data was based on 31 San Mateo County teachers and 35 Santa Clara County teachers. While child data are representative of each county, teacher-level data are not.

#### Arts & Culture

The analysis of the region's arts nonprofits is based on the Core Files from the National Center for Charitable Statistics (NCCS) at the Urban Institute. The NCCS produces the database based on IRS tax return data for public charities, private foundations, and non-501(c)(3) organizations filing IRS Forms 990.

#### Child Immunizations

Data on child immunizations are from the Santa Clara County Public Health Department, Immunization Program and the California Department of Health Services, Immunization Branch. The data are from the annual Kindergarten Retrospective Survey that provides state and regional estimates of immunization coverage among kindergarten students at various age checkpoints. The immunization chart provides estimates for Santa Clara County and California of kindergarten students at 24 month of age immunized with the 4:3:1 series. Data are collected from California School Immunization Records (blue cards) of children enrolled in kindergarten during the school year.

#### Overweight Youth

Data on youth obesity are drawn from the 2005 California Health Information Survey. For adolescents, "Overweight or Obese" includes the respondents who have a BMI in the highest 95 percentile with respect to their age and gender.

#### School Fitness

The indicator measures the share of students who did not meet the criterion-referenced standard for the body composition component of the California Fitness Test. Data are for Santa Clara and San Mateo counties. The Physical Fitness Test is administered in grades five, seven and nine in California public schools by the California Department of Education. The test used for physical fitness testing is the FITNESSGRAM®, designated for this purpose by the State Board of Education.

#### Overweight Adults

Data on adult obesity are drawn from the 2005 California Health Information Survey. For adults, "Overweight or Obese" include the respondents who have a Body Mass Index (BMI) of 25 or greater:

#### Health Insurance Coverage by Source

All data on insurance coverage are drawn from the 2005 California Health Interview Survey, located at . For health insurance coverage, the indicator measures the share of people under 65 years of age who answered "yes," when asked by the interviewer whether or not they are covered by health insurance in the last 12 months. Data are for Santa Clara and San Mateo counties. The indicator gives no indication of the quality or comprehensiveness of insurance coverage.

#### Child Abuse

Child maltreatment data are from the Child Welfare Services (CWS/CMS) Reports for Child Abuse Referrals: Referral & Substantiation Rates, 2006 Quarter 2 Extract. Data are downloaded from the Center for Social Services Research at the University of California at Berkley. Population data comes from the California Department of Finance.

#### Adult & Juvenile Violent Offenses/Drug & Alcohol Rehabilitation Services

Crime data are from the FBI's Uniform Crime Reports, as reported by the California Department of justice in their annual "Criminal Justice Profiles" (). Felony offenses include violent, property and drug offenses. Drug rehabilitation data include the number of clients utilizing residential and outpatient drug and alcohol rehabilitation services provided by Santa Clara and San Mateo counties. Data are an unduplicated count of residents served.

# **Place**

#### Protect Open Space

Data are from GreenInfo Network's Bay Area Protected Lands Database, and are for Silicon Valley excluding Santa Cruz county zip code. Santa Cruz county data was excluded because of data inconsistency. Data include lands owned by public agencies and non-profit organizations that are protected primarily for open space uses and that are accessible to the general public without any special permission. Previously, parks less than 10 acres were excluded from the dataset, but in the 2006 update, there was no acreage cut-off.

#### Water Consumption

Data for this indicator were provided by the Bay Area Water Supply and Conservation Agency (BAWSCA). Data is compiled annually among BAWSCA agencies to update key information and assist in projecting suburban demand and population. Gross per capita consumption includes residential, non-residential, recycled and unaccounted for water use among the Santa Clara and San Mateo County BAWSCA agencies.

#### Means of Commute

Data on the means of commute to work are from the United States Census Bureau, American Community Survey. Data are for workers 16 years old and over residing in Santa Clara and San Mateo counties commuting to the geographic location at which workers carried out their occupational activities during the reference week whether or not the location was inside or outside the county limits.

#### Rides Per Capita & Change in Revenue Hours

Data are the sum of annual ridership on the light rail and bus systems in Santa Clara and San Mateo counties and rides on Caltrain. Data are provided by Sam Trans, Valley Transportation Authority, Altamont Commuter Express and Caltrain. Revenue hours are the amount of time that a bus or train is in service. The sum of revenue hours across the region aggregates data provided by Sam Trans, Valley Transportation Authority, Altamont Commuter Express and Caltrain. Monthly estimates were made for July through December 2006 using a rolling average of the past three years from the January-June share of ridership and revenue hours.

#### Miles of Bike Lanes

Silicon Valley bike lane data are from the Metropolitan Transportation Commission (MTC), Planning Section. The bike lane data set was created by the MTC in 2004 and was last appended July of 2006. Bike lane data for San Jose, Seattle and Portland were collected from each city.

#### Alternative Fuel Vehicles

Statistics are from the California Energy Commission (CEC), compiled using vehicle registration data from the California Department of Motor Vehicles. Alternative fuel vehicles include all hybrids and electric vehicles as well as vehicles using any type of diesel (carbon or biological), alcohol-based (ethanol, methanol, flex fuel), or gaseous fuels (natural gas, propane, other gaseous). Diesel engine vehicles are not included in the analysis, because there is no differentiation given between vehicles running on carbon and those running on biological fuels.

#### Renewable Energy

The number of rebates granted for the installation of renewable energy systems in California and Santa Clara and San Mateo Counties was provided by the California Energy Commission, California Department of Energy. The analysis was limited to completed systems.

#### Land Use Density

Joint Venture: Silicon Valley network conducted a land-use survey of all cities within Silicon Valley. Collaborative Economics completed survey compilation and analysis. Participating cities include: Atherton, Belmont, Cupertino, East Palo Alto, Fremont, Gilroy, Hillsborough, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Newark, Palo Alto, Portola Valley, Redwood City, San Carlos, San Jose, Saratoga, Sunnyvale, Santa Clara and Union City. Unincorporated Santa Clara and San Mateo counties are also included. Most recent data are for fiscal year 2006 (July '05–June '06). The average units per acre of newly approved residential development are reported directly for each of the cities and counties participating in the survey.

#### Development Near Transit

Data are from the Joint Venture: Silicon Valley Network Survey of Cities. The number of new housing units and the square feet of commercial development within one-quarter mile of transit are reported directly for each of the cities and counties participating in the survey. Places within one-quarter mile of transit are considered "walkable" (i.e. within a 5- to I 0-minute walk, for the average person).

#### New Affordable Housing

Data are from the Joint Venture: Silicon Valley Network Survey of Cities. Affordable units are those units that are affordable for a four-person family earning up to 80% of the median income for a county. Cities use the U.S. Department of Housing and Urban Development's (HUD) estimates of median income to calculate the number of units affordable to low-income households in their jurisdiction.

#### Rental Affordability

Data on average rental rates are from RealFacts survey of all apartment complexes in Santa Clara and San Mateo counties of 40 or more units. Rates are the prices charged to new residents when apartments turn over and have been adjusted into 2006 dollars.

#### Home Affordability

Data are from the California Association of REALTORS' (CAR) Housing Affordability Index. CAR stopped producing the Housing Affordability Index for all home buyers since the end of 2005 and now produces a Housing Affordability Index for first-time buyers that has been updated historically to 2003. The data for Silicon Valley includes Santa Clara and San Mateo County and is based on the median price of existing single family homes sold from CAR's monthly existing home sales survey, the national average effective mortgage interest rate as reported by the Federal Housing Finance Board, and the median household income as reported by Claritas/NPDC.

#### Housing Cost Burden

The indicator measures the share of households spending 30% or more of their monthly household income on housing costs. The 30% threshold, recommended by the U.S. Department of Housing and Urban Development, is widely used as an affordability measure. Data are from the United States Census Bureau, American Community Survey.

#### Home Ownership

Home ownership data are from the United States Census Bureau, American Community Survey. The data is for Santa Clara and San Mateo Counties.

#### Residential Foreclosure Activity

Silicon Valley foreclosure data is for all home types and comes from DataQuick Information Systems. The foreclosure chart presents the quarterly percent change in the number of actual residential foreclosure sales.

#### Commercial Space

Data are from Colliers International and cover Santa Clara County. Commercial space includes office, R&D, industrial and warehouse space. The vacancy rate is the amount of unoccupied space and is calculated by dividing the sum of the direct vacant and sublease vacant space by the building base. The vacancy rate does not include occupied space that is presently being offered on the market for sale or lease. Average asking rents have been adjusted into 2006 dollars using the annual average Consumer Price Index (CPI) of all urban consumers in the San Francisco–Oakland–San Jose region, published by the Bureau of Labor Statistics.

# Governance

#### City Revenue

Data for city revenue are from the State of California Cities Annual Report. Data include all cities and towns and dependent special districts and do not include redevelopment agencies and independent special districts. Data include all revenue sources to cities except for utility-based services (which are self-supporting from fees and the sales of bonds), voter-approved indebtedness property tax and sales of bonds and notes. The "other taxes" and "other revenue" include revenue sources such as transportation taxes, transient lodging taxes, business license fees, other non-property taxes and intergovernmental transfers.

#### Voter Participation

Data are from the California Secretary of State, Elections and Voter Information Division and the California State Archives Division. The eligible population is determined by the Secretary of State using Census population data provided by the California Department of Finance. Data are for Santa Clara and San Mateo counties.

#### Nonprofit sector and fields of charitable giving

The analysis of the region's nonprofit organizations is based on the Core Files from the National Center for Charitable Statistics (NCCS) at the Urban Institute. The NCCS produces the database based on IRS tax return data for public charities, private foundations, and non-501 (c)(3) organizations filing IRS Forms 990.

# **Special Analysis**

#### **Talent Flows**

#### Foreign-born Science & Engineering Talent:

For Santa Clara and San Mateo counties, occupational data for foreign-born were derived from the United States Census Bureau, 2000 Decennial Census and 2005 American Community Survey. The category of foreign-born includes foreign-born residents, naturalized citizens, and citizens born abroad to American parent(s).

#### Engineering and Science Degrees

Data are from the National Center for Education Statistics. Regional data includes the following post secondary institutions: Menlo College, Cogswell Polytechnical College, University of California at Berkeley, Davis, San Francisco and Santa Cruz, Stanford University, San Francisco State University, Santa Clara University, San Jose State University and University of San Francisco. The academic disciplines include: computer and information sciences, engineering, engineering-related technologies, biological sciences/life sciences, mathematics, physical sciences and science technologies. Data were analyzed based on citizenship and level of degree (bachelors, masters or doctorate). U.S. totals came from the National Science Board Science and Engineering Indicators 2006.

#### Idea Flows

### International Co-Patenting

Information on international cooperation by inventors is based on data for utility patents from the United States Patent and Trade Office (USPTO). Unlike regional patent counts reported in the Index, this analysis included all patents with at least one inventor as located in Silicon Valley regardless of the listing sequence of the inventors.

#### **Capital Flows**

#### Foreign Firms and Employment

Information on foreign firms located in Silicon Valley came from Uniworld Business Publications. Employment numbers for these firms were provided by Halpern Info Services.

#### Venture Capital

Thomson Financial produced the special tabulations on venture capital investment for regions defined by area codes. The data was aggregated for two time periods, 1995-2000 and 2001-2006. Data for 2006 include Q1-Q3.

# APPENDIX B:

# Definitions

### **Industry Clusters**

#### Computer and Communications Hardware Manufacturing

- 334111\* Electronic Computer Manufacturing
- 334112 Computer Storage Device Manufacturing
- 334113 Computer Terminal Manufacturing
- 334119 Other Computer Peripheral Equipment Manufacturing
- 334210 Telephone Apparatus Manufacturing
- 334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
- 334290 Other Communications Equipment Manufacturing
- 334511 Search, Detection, Navigation, Guidance, Aeronautical and Nautical System and Instrument Manufacturing
- 334613 Magnetic and Optical Recording Media Manufacturing

#### Semiconductor and Semiconductor Equipment Manufacturing

- 333295 Semiconductor Machinery Manufacturing
- 333314 Optical Instruments and Lens Manufacturing
- 334413 Semiconductor and Related Device Manufacturing
- 334513 Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables
- 334515 Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals
- 334519 Other Measuring and Controlling Device Manufacturing

#### Electronic Component Manufacturing

- 334411 Electron Tube Manufacturing
- 334412 Bare Printed Circuit Board Manufacturing
- 334415 Electronic Resistor Manufacturing
- 334416 Electronic Coil, Transformer and Other Inductor Manufacturing
- 334417 Electronic Connector Manufacturing
- 334418 Printed Circuit Assembly (Electronic Assembly) Manufacturing
- 334419 Other Electronic Component Manufacturing
- 3359 Other Electrical Equipment and Component Manufacturing

#### Software

- 334611 Software Reproducing
- 511210 Software Publishers
- Internet Service Providers, Websearch Portals 518
- and Data Processing Services
- 541511 Custom Computer Programming Services 541512 Computer Systems Design Services
- 541519 Other Computer-Related Services

#### Biomedical

- 325411 Medicinal and Botanical Manufacturing
- 325412 Pharmaceutical Preparation Manufacturing
- 325413 In-Vitro Diagnostic Substance Manufacturing
- 325414 Biological Product (except Diagnostic) Manufacturing
- 334510 Electromedical and Electrotherapeutic Apparatus Manufacturing
- 334516 Analytical Laboratory Instrument Manufacturing
- 334517 Irradiation Apparatus Manufacturing
- 339111 Laboratory Apparatus and Furniture Manufacturing
- 339112 Surgical and Medical Instrument Manufacturing
- 339113 Surgical Appliance and Supplies Manufacturing
- 339114 Dental Equipment and Supplies Manufacturing
- 541710 Research and Development in the Physical, Engineering and Life Sciences (50%)
- 62151 Medical and Diagnostic Laboratories

#### Creative+Innovation Services

523910 Miscellaneous Intermediation

- 5411 Legal Services
- 5412 Accounting, Tax Preparation, Bookkeeping and Payroll Services
- 54131 Architectural Services
- 54132 Landscape Architecture Services54133 Engineering Services
- 54134 Drafting Services
- 541370 Surveying and Mapping (except Geophysical)
- 541380 Testing Laboratories
- 541410 Interior Design Services

- 541420 Industrial Design Services
- 541430 Graphic Design Services
- 541490 Other Specialized Design Services
- 541611 Administrative Management and General Management Consulting Services
- 541612 Human Resources and Executive Search Consulting Services
- 541613 Marketing Consulting Services
- 541614 Process, Physical Distribution and Logistics Consulting Services
- 541620 Environmental Consulting Services
- 541690 Other Scientific and Technical Consulting Services
- 541710 Research and Development in the Physical, Engineering
- and Life Sciences (50%)
- 5418 Advertising and Related Services
- 54191 Marketing Research and Public Opinion Polling
- 54192 Photographic Services
- 7111 Performing Arts Companies
- 711510 Independent Artists, Writers and Performers

#### Corporate Offices

551114 Corporate, Subsidiary and Regional Managing Offices

\*The numbers correspond to North American Industry Classification System (NAICS) codes.

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Altamont Commuter Express	National Center for Health Statistics		
American Leadership Forum Silicon Valley	National Venture Capital Association		
Applied Survey Research	Nielsen//NetRatings		
Bay Area Water Supply and Conservation Agency	Peninsula Community Foundation		
California Air Resources Board	PricewaterhouseCoopers/National Venture Capital Association		
California Association of Realtors	MoneyTree™ Report/Thomson Financial		
California Department of Education	Public Policy Institute of California		
California Department of Finance	RealFacts		
California Department of Health Services	SamTrans		
California Department of Justice	San Mateo County		
California Employment Development Department	San Mateo County Human Services Agency, Planning & Evaluation		
California Energy Commission	Santa Clara County		
California Secretary of State	Santa Clara County Department of Alcohol & Drug Services, Alcohol & Drug Services Research Institute		
California State Controller			
Center for Social Services Research, School of Social Welfare, University of California, Berkeley	Santa Clara County Partnership for School Readiness		
City of San Jose Bike/Ped Program	Silicon Valley City Managers		
City Planning and Housing Departments of Silicon Valley	Silicon Valley Community Colleges		
Cleantech Venture Network	Silicon Valley School Districts		
Colliers International	The David and Lucile Packard Foundation		
DataQuick Information Systems	The James Irvine Foundation		
Federal Bureau of Investigation	The William and Flora Hewlett Foundation		
Gordon and Betty Moore Foundation	U.S. Bureau of Labor Statistics		
GreenInfo Network	U.S. Census Bureau		
Henderson Group	U.S. Patent and Trademark Office		
Internal Revenue Service, Statistics of Income Division	UCLA Center for Health Policy Research		
John S. and James L. Knight Foundation	United Way Silicon Valley		
Kids in Common	Valley Transportation Authority		
Metropolitan Transportation Commission			

# JOINT VENTURE: SILICON VALLEY NETWORK

Established in 1993, Joint Venture: Silicon Valley Network provides analysis and action on issues affecting our region's economy and quality of life. The organization brings together established and emerging leaders—from business, government, academia, labor and the broader community—to spotlight issues, launch projects, and work toward innovative solutions.

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#### JOINT VENTURE: SILICON VALLEY NETWORK

84 West Santa Clara Street, Suite 440 San Jose, California 95113-1820 t: 408 271-7213 f: 408 271-7214 email: info@jointventure.org

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