JOINT VENTURE’S 1999 INDEX OF SILICON VALLEY
MEASURING PROGRESS TOWARD SILICON VALLEY 2010
Joint Venture: Silicon Valley Network

Joint Venture: Silicon Valley Network is a nonprofit regional collaborative established to enhance the economic vitality and quality of life in Silicon Valley. Joint Venture brings people together from business, government, education and the community to identify and to act on regional issues.

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Welcome to the Fifth Annual *Index of Silicon Valley*

Joint Venture developed the annual *Index of Silicon Valley* in 1995 to provide a reliable source of objective information about the economy and quality of life in Silicon Valley.

This information has helped create a sense of regional identity. It has also helped Joint Venture and others to continue efforts to improve all aspects of the Silicon Valley community.

We are excited about a significant change in this *1999 Index*.

In October 1998, Joint Venture released *Silicon Valley 2010: A Regional Framework for Growing Together*. This report includes 17 goals for the economy, environment, society and regional stewardship.

More than 2,000 community members participated in developing this vision for our region’s future. *Silicon Valley 2010* is grounded in what people value and want to preserve or enhance about Silicon Valley as a place to live, learn, work and play.

This *1999 Index* establishes important baseline information for tracking annual progress toward *Silicon Valley 2010*. It includes 27 indicators measuring progress on the 17 goals. In this way, over time, we will know whether we are moving toward or away from our goals for 2010.

In addition to the *Silicon Valley 2010* progress measures, the first section of this *1999 Index* includes 10 important Regional Trend Indicators, familiar to readers of past versions of the *Index*. We felt it was important to continue to track these economic trends.

The *Silicon Valley 2010* goals challenge us to work together, grow together and succeed together. We believe that publishing information about how we are progressing as a region is an important catalyst for action.

For a copy of the *Silicon Valley 2010* report, visit www.jointventure.org on the Internet, or call Joint Venture at 408/271-7213.

![Signature]

Ruben Barrales
President & CEO
Joint Venture: Silicon Valley Network
Introduction

WHAT IS SILICON VALLEY?
Joint Venture defines Silicon Valley as Santa Clara County plus adjacent parts of San Mateo, Alameda, and Santa Cruz counties (see map on page 4). This definition reflects the geographic location of the Valley’s driving industries and most of its workforce.
With a population of more than 2.3 million people, this region has more residents than 18 of the U.S. states.
The indicators reflect this definition of Silicon Valley, except where noted.

WHAT IS A GOOD INDICATOR?
Indicators are measurements that tell us how we are doing: whether we are going up or down; forward or backward; getting better, worse, or staying the same. Good indicators meet the following criteria:
• They are bellwethers that reflect fundamentals of long-term regional health.
• They can be understood and accepted by the community.
• They have interest and appeal for use by the media.
• They are statistically measurable on a frequent basis.
• They measure outcomes, rather than inputs.
The 37 indicators that follow were chosen in consultation with the Index Advisory Board, the Joint Venture Board, and more than 60 community experts. 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 firms in related industries,
• representing talent and technology capabilities that are more specialized in Silicon Valley than in other regions, and
• including a significant number of companies that sell their products and services outside the region.
The driving clusters in Silicon Valley are computers/communications, semiconductors/semiconductor equipment, software, bioscience, defense/space, innovation services and professional services.
Together, these clusters represent 40% of all jobs in Silicon Valley.
Healthy, outward-oriented industry clusters are a critical prerequisite for a healthy economy. Clusters are dynamic; over time, existing clusters will transform and new clusters will develop from our region’s talent and technology base.
In addition to tracking clusters, the Index provides employment, wage and value-added data for the other industries in the Silicon Valley economy such as local services and construction.
Appendix B identifies the specific sectors constituting each cluster and the other industries.
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1999 Index Highlights

This year, Joint Venture's *Index of Silicon Valley* tells the story of slowing quantitative economic growth in terms of jobs and exports, but qualitative improvement in innovation, productivity, and average wages. Not all residents are sharing in the good economy, and some young people have limited access to opportunities. The livability of Silicon Valley shows some signs of improvement, but serious challenges remain. Increased regional stewardship—engaging all citizens and sharing responsibility—will be required to meet our regional goals.

**ECONOMY SLOWS**
Economic trend indicators point to slower economic growth.

- In 1998, Silicon Valley added an estimated 19,400 new jobs, compared to 62,000 in 1997.
- In 1997, exports declined for the first time in the 1990s.
- After peaking at 73 in 1996, initial public offerings fell to 32 in 1998.
- Commercial vacancies averaged 5.9% in 1998, up from 4.8% in 1997.

**INNOVATION CONTINUES**
*Silicon Valley 2010* calls for an innovative economy that increases productivity and leads to quality growth.

Even as the economy slows, indicators point to continued vitality and innovation.

- The number of fast-growing gazelle companies increased from 64 to 92.
- Venture capital grew 14% in 1998 to $3.3 billion.
- Value added per employee, a measure of productivity, has been increasing 6% annually in the 1990s.
- The region's average wage is more than 50% above the national average and growing faster. In 1998, the average wage was $49,060 in Silicon Valley, compared to $30,860 nationally.
- Average wages in the software cluster reached $90,380 in 1998, making software the Valley's highest-paying industry.
- R&D-related employment is three times the national average. However, the number of engineering degrees from local universities has decreased 11.7% since 1994.
SOME HAVE LIMITED ACCESS TO OPPORTUNITY

Silicon Valley 2010 calls for an inclusive society that connects people to opportunities and broadens prosperity. All people are not participating fully in the Silicon Valley economy or prepared to participate.

- From 1994 to 1997, households at the lowest 20% of the income distribution saw their real income fall 8%, while households at the top 20% saw their income increase 19%.
- The sector that employs the largest number of workers, local and visitor services, pays an average of $23,000.
- In 1998, less than one-third of ninth- to 12th-grade students were enrolled in math beyond Algebra I.
- The high school graduation rate, 70%, has been declining over the past five years. The graduation rate for Latino students is only 56%.
- On average, 42% of high school students complete the basic courses required for college entrance. Only 19% of Latino students met this college entrance requirement.
- Immunization rates of children ages 18-35 months have fallen from 85% in 1994 to 75% in 1997.
- Both the violent crime rate and the youth crime rate continue to decline.

LIVABILITY IMPROVES, YET CHALLENGES REMAIN

Silicon Valley 2010 calls for communities to protect the natural environment and promote livability.

Some aspects of livability are improving, but signs of strain still show:

- Twenty-five percent of Silicon Valley and surrounding area is permanently protected open space.
- The number of “bad-air days” returned to typical levels, exceeding the federal standard on three days in 1998.
- Housing affordability improved slightly in 1998, but only 38% of Valley houses are affordable to households with the median-income, compared with 66% nationally.
- In 1998, the region started 11,105 new housing units, the second-highest number in the 1990s.
- Fifteen percent of new housing approved in 1998 was affordable housing.
- More than 30% of freeway miles in Santa Clara County received the worst possible congestion rating in 1998, up from 26% in 1997.
- Transit ridership has not grown as fast as the population.
- Twenty-nine percent of new housing units and 26% of new jobs were located within 1/4 mile of rail stations and major bus corridors.

REGIONAL STEWARDSHIP IS WEAK

Silicon Valley 2010 calls for regional stewardship that develops shared solutions.

Regional stewardship requires improvement to meet goals.

- Half of Valley residents believe people in Silicon Valley work well together.
- Thirty-six percent of the region’s voting-age population participated in the 1998 general election.
- Service on nonprofit boards by large-company employees has declined 13% since 1994.
- Total city revenue increased 16% from 1988 to 1996, compared to 14% growth in population and employment. Great disparity exists, however, among cities. Total capital expenditures decreased 10%.
Silicon Valley Job Growth Slows

**Why Is This Important?**
Annual net job gains or losses are a basic measure of economic health. This indicator tracks employment from a unique set of employment data tailored to cover the Silicon Valley region (see Appendix B).

**How Are We Doing?**
In 1998, Silicon Valley added an estimated 19,400 jobs, growing 1.6% in overall employment. This parallels an estimated 1.4% increase in the labor force.
The 1998 job gains compare to 62,000 jobs added in 1997 (5.3% growth rate) and to 54,000 jobs added in 1996 (4.9% growth).
Since 1992, Silicon Valley has added more than 230,000 jobs—a 23% increase. The total number of jobs in the region is more than 1.25 million.
This dataset does not include self-employed people, who are estimated to be at least 7% of the Silicon Valley workforce.

Software Continues to Lead in Job Gains

**Why Is This Important?**
This indicator shows how employment in different clusters changed in the most recent annual period. A cluster is a concentration of complementary industries that generates wealth by exporting from the region. The seven clusters tracked account for 40% of all non-governmental employment in the region.

**How Are We Doing?**
In cluster industries, the biggest job gains were in software, which added 6,970 jobs between the second quarter of 1997 and the second quarter of 1998. The second-largest growth was in semiconductors/semiconductor equipment with 6,710 jobs, followed by computers/communications with 6,210.
Innovation services, the third fastest-growing industry last year, was the only cluster industry to show year over net job losses (-640). Combined, the cluster industries provided 62% of the region's job gains during the period.
For the first time since the inception of the regional dataset in 1992, the defense/aerospace industry gained jobs, growing by 2,040.
Of the other Silicon Valley industries, miscellaneous manufacturing experienced the strongest growth, adding 4,600 jobs. Other strong performers were finance/insurance/real estate (3,160), construction/transportation/public utilities (2,530), and local and visitor services (2,510).
Average Wage More Than 50% Above Nation’s, Growing Faster

WHY IS THIS IMPORTANT?
Growth of the average annual wage in inflation-adjusted terms is an indicator of job quality. It is an important measure of Silicon Valley’s economic vitality as job quantity.

HOW ARE WE DOING?
After stagnating from 1992 through 1994, growth of the average annual per employee wage in Silicon Valley continues to outpace the national average. In 1998, the average real wage grew 2% after accounting for inflation. Nationally, the increase was 1.6%.

In 1998, the average Silicon Valley wage was $49,060, compared to $30,860 nationally.

The Valley’s high productivity allows wages to increase above the rate of inflation.

Average Wage for Software Cluster Reaches $90,000;
Largest-Employing Sector—Local and Visitor Services—Pays $23,000

WHY IS THIS IMPORTANT?
Average annual wage increases in driving cluster industries are an indicator of the wealth-generating impact that outward-oriented industries have on Silicon Valley. Healthy cluster industries can lead to healthy local-serving industries, as companies and the people they employ spend money on goods and services offered locally.

HOW ARE WE DOING?
Of the cluster industries, software continues to have the highest average annual wages, reaching $90,380 in 1997. The second-highest cluster is semiconductors/equipment, at $83,690. Computers/communications ($73,080) now ranks third (after ranking fifth last year), and recorded the largest increase in average wage ($9,020) from 1996 to 1997.

Of the other industries in the Silicon Valley economy, finance/insurance/real estate paid the highest, at $49,270. The largest-employing sector and the one showing the largest employment gains, local and visitor services, paid an average annual wage of $22,970. Although local people in this sector earn 25% more than their counterparts nationally, the local cost of living is estimated to be 37% more than the national cost.
Silicon Valley Manufacturing Exports Decline for First Time in 1990s

**WHY IS THIS IMPORTANT?**
Exports generate wealth and jobs for a region and are an important indicator of global competitiveness. Serving growing global demand for high-tech goods is key to employment and sales growth for existing and new Silicon Valley firms.

**HOW ARE WE DOING?**
In 1997, manufacturing exports from Silicon Valley-based firms decreased 2%, from $40.7 billion to $39.9 billion. Statewide exports grew 2.5%; nationally, exports grew 7.6%.

Driving this decline were reduced sales to Asia, which account for 60% of the region's exports. Semiconductor manufacturers, semiconductor equipment makers and disk drive producers were particularly affected.

Silicon Valley companies accounted for 38% of California's non-agriculture export sales in 1997, a decrease from 40% in 1996.

This dataset does not include exports of services, including most software. Developing a regional dataset that includes services exports is an important area for future work. Nationally, approximately 38% of U.S. exports are in the service sector. Silicon Valley's economy is increasingly driven by software, Internet and leading-edge services.

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**IPOs and M&As Continue Falling**

**WHY IS THIS IMPORTANT?**
Through initial public offerings (IPOs) and mergers and acquisitions (M&As), companies access funds to develop technologies and products to their next level. Also, both IPOs and M&As are important routes to liquidity for entrepreneurs and investors in entrepreneurial companies.

The numbers of IPOs and M&As are indicators of successful entrepreneurship and future high-growth companies.

**HOW ARE WE DOING?**
After peaking at 73 in 1996, IPO activity in Silicon Valley declined to 32 IPOs in 1998. This movement is consistent with national trends. Stock market volatility is a key driver of IPO activity. The resurgence of the stock market in the last part of 1998 encouraged several new IPOs.

In 1998, M&As of Silicon Valley firms fell from 168 to 120, the lowest number since 1993. In 1998, M&As fell 29% in Silicon Valley, compared with 8% nationally.
Commercial Vacancies Average 6% for 1998; Lease Rates Reach New Peak

**WHY IS THIS IMPORTANT?**
Vacancy rates are a leading indicator of economic activity. Declining vacancies for commercial space reflect strong demand by growing companies, typically leading to rate increases and investment in property development. Rising vacancies reflect slowing demand relative to supply.

**HOW ARE WE DOING?**
Through the first three quarters of 1998, the vacancy rate for commercial space—including office, R&D, industrial and warehouse—averaged 5.9%. This rate compares to 4.8% for 1997, and is still well below the historical average of 10% to 12%.

This 5.9% average masks significant change in the third quarter. In the third quarter, vacancies reached 7.1%. The main factor driving up vacancy rates was large companies vacating or subleasing space they no longer need.

Average quoted lease rates for R&D space reached an all-time high of $1.74 per square foot per month (average of first three quarters).

In 1998, 6.5 million square feet of commercial space was added, a 1.9% increase over 1997 space.

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Fewer Engineering Graduates From Local Universities Since 1994

**WHY IS THIS IMPORTANT?**
Regions that are well-served by engineering programs have a strong workforce advantage. This indicator shows the potential local pool of engineering talent for technology-based industries.

**HOW ARE WE DOING?**
Since 1994, the total number of engineering degrees awarded annually from local universities has decreased 11.7%, from 4,312 in 1994 to 3,807 in 1997. Nationally, engineering degrees awarded decreased only 0.7%.

Bachelor's degrees dropped from 1,957 to 1,792. Master's degrees dropped from 1,936 to 1,621. Doctoral degrees have remained constant at around 400.

Within engineering, the major shift at local schools has been away from electrical engineering degrees (which have declined 17% from 1990 to 1997) to computer engineering degrees (which have increased 40% from 1990 to 1997).

Engineering programs serving Silicon Valley include programs at San Jose State University, Santa Clara University, Stanford University, UC-Berkeley, UC-Santa Cruz, Cogswell College and San Francisco State University.

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*Source: Cornish & Carey Commercial/Unico International*

*First three quarters*
Housing Affordability Improves Slightly; Rental Rates Rise With Income

**WHY IS THIS IMPORTANT?**

The affordability, variety and location of housing affect a region’s ability to maintain a viable economy and high quality of life. Lack of affordable housing in a region encourages longer commutes from outside the region, which diminish productivity, curtail family time and increase traffic congestion. Lack of affordable rental housing can cause unsafe occupancy levels and household stress.

**HOW ARE WE DOING?**

In 1998, 38.2% of Silicon Valley houses were affordable for households with median income, up from 35.4% in 1997. This number contrasts, however, with the national average of 65.6%.

The slight improvement in affordability is due primarily to lower interest rates. The median income and median price of a home both increased 10% in the past year. The median home price in Santa Clara County was $304,500 in 1998.

In 1998, average apartment-rental rates increased 9%, compared to a 10% increase in median income. The change this year contrasts with the change in the period from 1995 to 1997, when average apartment-rental rates increased 28%, compared to a 9% increase in median income. The average monthly rent was $1,308.

Current rental stock remains near capacity, though average occupancy rates declined slightly from 97% in 1997 to 96% in 1998.

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Valley’s Freeways Are Increasingly Congested

**WHY IS THIS IMPORTANT?**

Traffic congestion is a key factor affecting quality of life. Traffic congestion is a function of overall economic activity and regional design—the location of jobs and housing and the availability of other travel options, such as public transit, carpooling, biking, walking and telecommuting.

This indicator shows the number and share of freeway miles operating at service level “F” during the afternoon peak travel time. Level “F” is the worst possible rating and means forced flow traffic with travel speed less than 35 miles per hour.

**HOW ARE WE DOING?**

In 1998, 89 miles of freeway in Santa Clara County received the worst possible congestion rating. This amounts to 31% of the total freeway miles. (Santa Clara has just more than 143 miles of freeway, which amounts to 286 miles counting both directions.)

In four years, the number of freeway miles receiving the worst possible ranking has nearly tripled.
This second part of the Index of Silicon Valley is organized according to the four theme areas and 17 goals of *Silicon Valley 2010: A Regional Framework for Growing Together*. Joint Venture released *Silicon Valley 2010* in October 1998, after more than 2,000 residents and community leaders gave input on what they would like Silicon Valley to become by the year 2010. For more information about the *Silicon Valley 2010* vision, goals and recommended progress measures, call 408/271-7213 or visit www.jointventure.org on the Internet.
# Silicon Valley 2010 Goals

## Our Innovative Economy Increases Productivity and Broadens Prosperity

**Goal 1: Innovation and Entrepreneurship.**
Silicon Valley continues to lead the world in technology and innovation.

**Goal 2: Quality Growth.**
Our economy grows from increasing skills and knowledge, rising productivity and more efficient use of resources.

**Goal 3: Broadened Prosperity.**
Our economic growth results in an improved quality of life for lower-income people.

**Goal 4: Economic Opportunity.**
All people, especially the disadvantaged, have access to training and jobs with advancement potential.

## Our Inclusive Society Connects People to Opportunities

**Goal 10: Education as a Bridge to Opportunity.**
All students gain the knowledge and life skills required to succeed in the global economy and society.

**Goal 11: Transportation Choices.**
We overcome transportation barriers to employment and increase mobility by investing in an integrated, accessible regional transportation system.

**Goal 12: Healthy People.**
All people have access to high quality, affordable health care that focuses on disease- and illness-prevention.

**Goal 13: Safe Places.**
All people are safe in their homes, workplaces, schools and neighborhoods.

**Goal 14: Arts and Culture that Bind Community.**
Arts and cultural activities reach, link and celebrate the diverse communities of our region.

## Our Communities Protect the Natural Environment and Promote Livability

**Goal 5: Protect Nature.**
We meet high standards for improving our air and water quality, protecting and restoring the natural environment, and conserving natural resources.

**Goal 6: Preserve Open Space.**
We increase the amount of permanently protected open space, publicly accessible parks and green space.

**Goal 7: Efficient Land Re-use.**
Most residential and commercial growth happens through recycling land and buildings in existing developed areas. We grow inward, not outward, maintaining a distinct edge between developed land and open space.

**Goal 8: Livable Communities.**
We create vibrant community centers where housing, employment, schools, places of worship, parks and services are located together, all linked by transit and other alternatives to driving alone.

**Goal 9: Housing Choices.**
We place a high priority on developing well-designed, housing options that are affordable to people of all ages and income levels. We strive for balance between growth in jobs and housing.

## Our Regional Stewardship Develops Shared Solutions

**Goal 15: Civic Engagement.**
All residents, business people and elected officials think regionally, share responsibility, and take action on behalf of our region’s future.

**Goal 16: Transcending Boundaries.**
Local communities and regional authorities coordinate transportation and land use planning for the benefit of everybody. City, county and regional plans, when viewed together, add up to a sustainable region.

**Goal 17: Matching Resources and Responsibility.**
Valley cities, counties and other public agencies have reliable, sufficient revenue to provide basic local and regional public services.
**GOAL 1: INNOVATION AND ENTREPRENEURSHIP**
Silicon Valley continues to lead the world in technology and innovation.

**Fast-Growth Gazelle Companies Increase from 64 to 92**

**WHY IS THIS IMPORTANT?**
Gazelles are publicly traded companies that have grown at least 20% for each of the last four years, starting with at least $1 million in sales. High numbers of gazelles reflect high levels of innovation in the Valley. By generating accelerated increases in sales, these firms stimulate the development of other businesses and personal spending throughout the region.

**HOW ARE WE DOING?**
In 1998, the number of gazelle firms increased to 92 from 64 in 1997.

Twenty-one percent of the Valley's public firms were gazelles. This figure compares with 17 percent in 1997.

Of the 500 fastest-growing technology companies in the United States as measured by Deloitte & Touche LLP (including privately held companies), 62 are based in Silicon Valley (12% of the total). The next closest technology hub is Greater Washington, D.C., which has 58 companies in the top 500 (11% of the total).

**Venture Capital Grows 14% in 1998 to $3.3 Billion**

**WHY IS THIS IMPORTANT?**
Companies that have passed the screen of venture capitalists usually are innovative, entrepreneurial and have growth potential. Typically, only firms with potential for exceptionally high rates of growth over a five- to 10-year period will attract venture capital. These firms are usually highly innovative in their technology and market focus.

**HOW ARE WE DOING?**
From 1997 to 1998, venture capital investments in Silicon Valley firms increased 14% from $2.9 billion to $3.3 billion.

Software/Internet attracted the largest share of total investment, at 45% (up from 38% in 1997). Communications captured the second-largest investment share at 22%.

The size of the average investment in 1998 was $5.8 million, up slightly from $5.7 million in 1997.

Source: PricewaterhouseCoopers LLP
*Estimate*
R&D-Related Employment Is Three Times the National Average

**WHY IS THIS IMPORTANT?**
To lead the world in innovation, Silicon Valley must maintain a strong concentration of engineering, scientific and technical personnel relative to that of other leading innovation regions.

**HOW ARE WE DOING?**
Over the last 10 years, the share of Silicon Valley workforce in R&D-related occupations has held steady at around 13%, compared to 5% nationally. This share compares with 12.2% in Greater Washington, D.C., 10.7% in Austin, Texas, and 7.8% in Boston, Massachusetts.

In Silicon Valley, the R&D-related occupation employing the most workers is engineers (7.2%), followed by computer scientists (3%), and engineering technicians (2.4%).

Sources: Regional Financial Associates, Bureau of Labor Statistics

**GOAL 2: QUALITY GROWTH** Our economy grows from increasing skills and knowledge, rising productivity and more efficient use of resources.

Real Per Capita Income Is Growing Faster Than the Nation’s

**WHY IS THIS IMPORTANT?**
Real per capita income is a bottom-line measure of a growing, competitive economy and people’s ability to live in Silicon Valley.

For this indicator, total personal income from all sources is adjusted for inflation and divided by population.

**HOW ARE WE DOING?**
From 1990 to 1998, the real per capita income for Santa Clara County increased faster than the nation’s. The county’s real per capita income increased 58%, compared to 37% for the nation. This increase indicates that Silicon Valley was generating wealth faster than population growth compared to the nation. This differential has been especially pronounced during the 1995-98 economic boom.

Source: Regional Financial Associates
Value Added Per Employee Increases 6% Annually in the 1990s

WHY IS THIS IMPORTANT?

Increased value added is a prerequisite for increased wages. Innovation, process improvement and industry/product mix drive value added. Value added is a proxy for productivity and reflects how much economic value is created by a company. It is derived by subtracting the costs of a company’s materials, inputs and contracted services from the revenue earned from its products.

HOW ARE WE DOING?

Overall value added per employee increased steadily from 1990 to 1997, from $75,963 to $113,066. This increase was 49% overall, and a 5.8% average annual increase, after adjusting for inflation.

In 1997, four clusters had value added per employee significantly above the average. Computers/communications had the highest value added, at $248,808 per employee. Semiconductors/equipment had the second-highest value added, at $228,958. Software had $171,233, and innovation services had $142,977.

In all cases, value added generated by Silicon Valley clusters is higher than the national average. This differential is particularly pronounced in the four clusters named above, and accounts for their exceptionally high wages.

Of the other industry sectors, finance/insurance/real estate and wholesale trade had a higher value added per employee than the regional average—$153,374 and $129,299, respectively. All sectors add more value than the nation except for construction/transportation/public utilities.

Source: Regional Financial Associates
GOAL 3: BROADENED PROSPERITY Our economic growth results in a higher standard of living for lower-income people.

Income Distribution Widens in 1990s; Standard of Living For Poorest Households Drops

**WHY IS THIS IMPORTANT?**

This progress measure looks at inequality and absolute change at the top, middle and bottom of the distribution.

The first indicator looks at household income, which includes wage income, investment income, Social Security and welfare payments for all people in the household. The second indicator examines hourly earnings, the effectiveness of the economy at allowing an individual to earn a living through work.

The indicators compare the income available to a representative household (or hourly earnings available to a representative individual) at identical points in the distribution over different periods of time (the 80th percentile, the median and the 20th percentile).

In fact, over time, specific households and individuals move up and down the distribution. Data on this “mobility” is not yet available at the regional level, and is an important area for future work.

**HOW ARE WE DOING?**

The best available data suggest widening income inequality during the 1990s and an absolute decline in standard of living of the poorest households.

From 1991 to 1997, representative households at the lowest 20th percentile level of the income distribution saw their real (inflation adjusted) income fall 8%, from $37,686 to $34,752.

During this same period, households at the 80th percentile level of the distribution saw their income increase 19%, from $109,883 to $130,755. The median income (i.e., the income level at which half of the region’s households are above and half below) increased 3.5%, from $71,547 to $74,030.

In the most current year available, 1997, household income increased 2% at the 20th percentile, and 23% at the 80th percentile. Median income increased 7%.

California’s income distribution differs from Santa Clara County in two aspects. First, the standard of living at California’s 20th percentile level increased 2%, rather than decreased, during the 1990s. Second, income gains by Californians at the 80th percentile level were less than half those of Santa Clara County—9% compared with 19%.

Inflation-adjusted Silicon Valley hourly earnings also show a widening gap between those at the top 80th percentile and those at the bottom 20th percentile. Hourly earnings for those at the top increased 25% since 1991, from $23.49 to $29.37. Hourly earnings for those at the bottom 20% slowly declined throughout the 1990s, then jumped 26% in 1997 to $8.74—near the 1991 level (net growth of .8% from 1991 to 1997). The median hourly earnings level increased 20% to $16.83 since its low in 1994.

Widening inequality and absolute decline among the poorest people could suggest a region that is not producing enough quality jobs and/or is not providing adequate access to opportunity.
GOAL 4: ECONOMIC OPPORTUNITY All people, especially the disadvantaged, have access to training and jobs with advancement potential.

More Than Half of Residents Have Access to E-Mail; Access Varies Greatly by Income

WHY IS THIS IMPORTANT?
Computer literacy, along with literacy in English, is a typical requirement for accessing jobs with advancement potential. This indicator uses access to e-mail as a surrogate for computer literacy.

HOW ARE WE DOING?
Overall, 52% of Silicon Valley residents have access to e-mail at home or work through which they can send or receive electronic-mail messages via computer.

However, access to e-mail varies widely by income. Twenty-eight percent of people in households earning less than $40,000 have access to e-mail, compared with 81% of households earning more than $100,000.

Seventy-three percent of people employed in high-tech industries have access to e-mail, compared with 33% of people who work in other sectors.

High School Graduation Rate Continues Decline

WHY IS THIS IMPORTANT?
Increasingly, accessing quality jobs requires not only graduating high school, but education or training beyond. The high school graduation rate is a risk indicator that warns of lost potential and future societal costs resulting from people being un- or under-employed.

A multicultural, highly skilled workforce has unique advantages for a globally competitive region. Providing a quality education for all ethnic groups should be a prime objective in Silicon Valley; improving graduation rates for all ethnic groups is a basic measure of success.

HOW ARE WE DOING?
The high school graduation rate for students in Santa Clara and San Mateo counties has declined over the past five years. In 1998, 70% of the students who enrolled as freshmen in public high schools in 1994 graduated as seniors. The region's graduation rate is about seven points higher than the statewide average.

Graduation rates vary widely by ethnicity and are correlated with socioeconomic conditions. Asian students achieved the highest rate, at 94% (1997 data). The graduation rate among Hispanic students was the lowest, at 56%. Filipino and Pacific Islander students graduated at lower rates than did their counterparts statewide.

*Estimate

Source: Santa Clara County and San Mateo County Offices of Education
GOAL 5: PROTECT NATURE  We meet high standards for improving our air and water quality, protecting and restoring the natural environment, and conserving natural resources.

Bad-Air Days Increase

WHY IS THIS IMPORTANT?
High-quality air is fundamental to the health of people, nature and our economy.

The number of days Silicon Valley air exceeds ozone standards is an indicator of air contamination. Ozone is the main component of smog and is created when organic emissions are exposed to sunlight. Vehicles are the primary source of organic emissions.

HOW ARE WE DOING?
In 1998, Silicon Valley experienced three “bad-air days” as measured against the federal standard, up from zero in 1997. The region exceeded the stricter state standard 21 days, compared to eight days in 1997.

1997 was an unusually clean year, because El Niño brought strong winds before the rainy season. The weather during the 1998 ozone season was more normal for the region.

Water Use Declines 10% in 1998; Less Than 1% of Water Use Is Recycled Water

WHY IS THIS IMPORTANT?
Water is a limited resource, because water supply is subject to changes in climate and state and federal regulation. The quantity and quality of water are essential to citizens and to technology manufacturing industries. Sustainability in the long term requires that workplaces and households efficiently use and re-use water.

HOW ARE WE DOING?
Santa Clara County’s annual consumption of water declined in 1998. Residents and businesses consumed an estimated 349,000 acre-feet of water, a 10% decrease from consumption in 1997. The decrease is due primarily to unusually wet weather early in the year, which helped reduce demand for water for agricultural and landscape uses.

On a per capita basis, the county reduced water use from 235 acre-feet per 1,000 residents to 207 acre-feet per 1,000 residents, a 12% decrease.

Currently, less than 1% of water use is recycled water. Recycled water is mainly for irrigation and construction purposes.
GOAL 6: PRESERVE OPEN SPACE

We increase the amount of permanently protected open space, publicly accessible parks and green space.

Open Space Baseline Is Established; 25% of Valley and Surrounding Area Is Permanently Protected

WHY IS THIS IMPORTANT?
Preserving open space protects natural habitats, provides recreational opportunities, focuses development and safeguards the visual appeal of our region.

This indicator tracks lands permanently protected through public ownership or conservation easements. This is the first year open space data have been collected for Silicon Valley and its perimeter.

HOW ARE WE DOING?
In 1998, Silicon Valley and its perimeter included 480,900 acres of permanently protected open space. This space represents 25% of the land area of Santa Clara, San Mateo and Santa Cruz counties, and Alameda County south of Oakland.

Fifty-three percent of this permanently protected open space is accessible to the public (255,700 acres). This amount of land accommodates 13.5 people per acre.

Recently, a court ruled that the Santa Clara County Open Space Authority can spend the proceeds of an annual voter-approved property tax assessment to acquire open space in the county. This ruling sets the stage for significant increases in open space acquisition in Santa Clara County, especially along the eastern foothills near city borders and along the agricultural lands in southern Santa Clara County.

GOAL 7: EFFICIENT LAND RE-USE

Most residential and commercial growth happens through recycling land and buildings in developed areas. We grow inward, not outward, maintaining a distinct edge between developed land and open space.

Region Using Land More Efficiently, But Development Grows Outward in South Valley

WHY IS THIS IMPORTANT?
Directing growth into already developed areas provides more efficient use of land and infrastructure resources than does sprawling into green areas and building more infrastructure. By directing growth to already developed areas, local jurisdictions can reinvest in existing neighborhoods, develop more efficient transportation systems and preserve nearby rural settings.

HOW ARE WE DOING?
Urban service areas expand when cities plan to annex land and provide infrastructure services such as water, sewer and roads. From 1983 to 1998, Silicon Valley's urban service area expanded only 4% (13.3 square miles). This expansion occurred in southern Silicon Valley—Gilroy (area expanded 114%), Morgan Hill (11%) and San Jose (3%).

Indicators show that scarce land resources are being used more intensely. In 1997-98, the average density of new housing approved by Silicon Valley cities was 6.6 units per acre. This compares to 4.9 housing units per acre overall. Also in 1997-98, cities authorized 1,610 acres of land to be re-used at higher intensity.

BASELINE MEASURES
OF EFFICIENT LAND RE-USE

- Increase in urban service area: 4% since 1983
- Average units per acre of new residential development in 1997-98: 6.6
- Average units per acres of overall residential development: 4.9
- Acres of developed land authorized for re-use at higher density in 1997-98: 1,610

Sources: Congestion Management Program/VTA, Joint Venture: Silicon Valley Network
GOAL 8: LIVABLE COMMUNITIES We create vibrant communities where housing, employment, places of worship, parks and services are located together and are linked by transit and other alternatives to driving alone.

29% of New Housing, 26% of New Jobs Are Located Near Transit

WHY IS THIS IMPORTANT?
Focusing new economic and housing development near rail stations and major bus corridors reinforces the creation of compact, walkable communities linked by transit.

HOW ARE WE DOING?
Cities are encouraging residential, and commercial/industrial development along transit corridors.
In 1997-98, 29% of new housing developments in Silicon Valley took place within one-quarter mile of a rail station or major bus corridor. Twenty-six percent of new commercial/industrial developments took place within this area.

NEW HOUSING UNITS AND NEW JOBS WITHIN 1/4 MILE OF RAIL STATIONS AND MAJOR BUS CORRIDORS, SANTA CLARA COUNTY, 1998

- HOUSES WITHIN 1/4 MILE OF TRANSIT
- HOUSES OUTSIDE 1/4 MILE OF TRANSIT
- INDUSTRIAL/COMMERCIAL WITHIN 1/4 MILE OF TRANSIT
- INDUSTRIAL/COMMERCIAL OUTSIDE 1/4 MILE OF TRANSIT

Size of circle indicates the relative number of housing units or amount of commercial square footage
Sources: Center for Urban Analysis, Congestion Management Program/VT3
GOAL 9: HOUSING CHOICES We place a high priority on developing well-designed housing options that are affordable to people of all ages and income levels. We strive for balance between growth in jobs and growth in housing.

15% of New Housing Is Affordable to Lower-Income Households

WHY IS THIS IMPORTANT?
Our economy and community life depend on a broad range of jobs. Building housing affordable to lower- and moderate-income households provides access to opportunity and maintains balance in our communities.

HOW ARE WE DOING?
In 1997-98, Silicon Valley cities approved 1,611 new affordable housing units. This number represents 15% of all housing units approved (10,606).
Affordable rental housing is available to households making up to 60% of the median income. These are primarily units developed by non-profit housing developers, or units set aside as “affordable” in market-rate developments. The waiting list for affordable rental housing is more than 10,000 names long in Santa Clara County alone.
In addition to approving affordable housing, approving multi-family market-rate projects near work sites and transit also helps bring balance to the housing supply.

| NUMBER OF NEW AFFORDABLE HOUSING COMPARED TO TOTAL |
| NEW HOUSING APPROVED, SILICON VALLEY REGION, 1990 |
| All other housing units 85% |
| Affordable housing units 15% |

Sources: Congestion Management Program/VTA, Joint Venture: Silicon Valley Network
One Housing Start for Every Two New Jobs; Ratio Varies Widely Within Region

**WHY IS THIS IMPORTANT?**

Building housing commensurate with job growth helps mitigate commute traffic, moderate housing price increases and ease workforce shortages.

**HOW ARE WE DOING?**

In 1998, Silicon Valley had an estimated 11,105 housing starts. This number is down from 12,051 in 1997, but is the second-highest level of annual starts in the 1990s. Multifamily housing was 49% of total starts.

Since 1992, jobs have grown much faster than housing in Silicon Valley. The region has added more than 230,000 jobs and created 45,000 housing units (5 jobs for every 1 housing unit). In the latest year, the ratio of new jobs to new housing was approximately 2 to 1, because of the slowing economy and the sustained high levels of housing production.

Part of what causes commute traffic is the structural imbalance in the creation of jobs and housing within Silicon Valley’s six major subregions. In 1998, for example, the southern San Mateo County region produced 12 jobs for every one housing unit. Communities in northern Santa Clara County produced 4.5 jobs for every one housing unit. All other regions generated jobs more commensurate with their housing growth.

Sources: Construction Industry Research Board, Employment Development Department
GOAL 10: EDUCATION AS A BRIDGE TO OPPORTUNITY

All students gain the knowledge and life skills required to succeed in the global economy and society.

Third-Grade Reading Levels Similar to National Benchmarks; Limited-English Proficient Students Fare Much Worse

WHY IS THIS IMPORTANT?

Research shows that students who do not achieve reading mastery by the end of third grade are at risk of falling behind in school.

Silicon Valley does not have a standardized way to measure mastery of reading at the end of third grade. The only measure available regionally is the Stanford Achievement Test Series, Ninth Edition (SAT 9). SAT 9 does not measure how well a student does absolutely; rather, it measures performance relative to a national distribution. Development and widespread acceptance of a third-grade literacy test is needed.

HOW ARE WE DOING?

Fifty-one percent of Silicon Valley third-graders scored at or above the national median for reading comprehension. Slightly more Silicon Valley third-graders are found at the top and bottom of the distribution compared to the nation: 28% fall below the bottom quartile (lowest 25%) and 26% are at or above the top quartile.

These scores contrast dramatically with those of students with limited English proficiency (the SAT 9 tests reading only in English). More than 60% of all limited-English proficient students scored below the national bottom quartile mark. Only 15% scored at or above the national median.

Less Than One-Third of Students Enroll in Math Beyond Algebra I

WHY IS THIS IMPORTANT?

Silicon Valley 2010 recommends tracking the share of students mastering Algebra I by 10th grade. Successfully completing Algebra I early in a high school career is a generally accepted indicator of future success. The only measure currently available at the regional level, however, is the enrollment of students in Intermediate Algebra/Algebra II and other advanced math courses.

Mastering Algebra I and moving on to advanced math courses are important for students planning to enter post-secondary education as well as for students entering the workforce after high school, especially for technology jobs.

HOW ARE WE DOING?

In 1998, only 28% of the ninth through 12th grade population in Santa Clara County was enrolled in math courses beyond Algebra I. This is down from 32% in 1995.

Wide disparity in enrollment exists across ethnicity. Slightly more than 50% of Asian students are enrolled in an advanced math course. White and Filipino students are a distant second and third with 30% and 28% of students enrolled. Only 11% of Hispanic students are enrolled in an advanced math class.

Compared to statewide averages, Filipino, Pacific Islander, and Hispanic students are all enrolled at slightly lower rates. All other groups are above their statewide averages.
Overall Gains in Meeting Basic College Entrance Requirements, But Wide Disparity Across Ethnicity

**PERCENTAGE OF STUDENTS COMPLETING COURSE REQUIREMENTS FOR UC/CSU ENTRANCE**

<table>
<thead>
<tr>
<th>Year</th>
<th>Santa Clara County</th>
<th>California</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992-93</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>1993-94</td>
<td>45%</td>
<td>55%</td>
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<tr>
<td>1994-95</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>1995-96</td>
<td>55%</td>
<td>35%</td>
</tr>
<tr>
<td>1996-97</td>
<td>60%</td>
<td>30%</td>
</tr>
</tbody>
</table>

**PERCENTAGE OF STUDENTS COMPLETING COURSE REQUIREMENTS FOR UC/CSU ENTRANCE, BY ETHNICITY**

- **Asian**: 70%
- **White**: 50%
- **Filipino**: 40%
- **African American**: 30%
- **Native American**: 20%
- **Pacific Islander**: 10%

Source: Santa Clara County Office of Education

**WHY IS THIS IMPORTANT?**
Passing a breadth of core courses required for college entry is a measure of achievement, capacity and readiness. Completing some type of education beyond high school is increasingly important for participating in the high-wage sectors of the Silicon Valley economy. A survey of the region's fastest-growing companies finds that 84% of positions require education or training beyond high school.

**HOW ARE WE DOING?**
The share of high school students who complete the courses required for entrance to the University of California (UC) or California State University (CSU) systems has increased from 37% in 1993 to 42% in 1997. Santa Clara County compares favorably with the state average (35%).

Performance, however, varies widely by ethnicity. Only 19% of Hispanic students and 26% of African-American students completed these courses in 1997, compared with 65% of Asian students and 50% of white students.

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**GOAL 11: TRANSPORTATION CHOICES**
We overcome transportation barriers to employment and increase mobility by investing in an integrated, accessible regional transportation system and other alternatives to driving alone.

**Transit Ridership Per Capita Is Down Slightly**

**NUMBER OF RIDES ON REGIONAL TRANSPORTATION SYSTEM, SANTA CLARA AND SAN MATTEO COUNTIES, PER CAPITA**

<table>
<thead>
<tr>
<th>Year</th>
<th>Rides Per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>34</td>
</tr>
<tr>
<td>1991</td>
<td>35</td>
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<tr>
<td>1992</td>
<td>33</td>
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<td>1995</td>
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<td>1996</td>
<td>31</td>
</tr>
<tr>
<td>1997</td>
<td>32</td>
</tr>
<tr>
<td>1998*</td>
<td>Estimate</td>
</tr>
</tbody>
</table>

Source: California Department of Transportation

**WHY IS THIS IMPORTANT?**
The development and use of public transit helps decrease traffic congestion and pollution. Public transit also provides access to job and education opportunities for people without cars and for the disabled, the elderly and youth. Ridership per capita indicates whether use of public transit is intensifying.

**HOW ARE WE DOING?**
Regional ridership per capita decreased from 34.3 to 33.7 since last year; population grew faster than transit use.

Total ridership increased 0.2%, from 80.8 million in 1997 to 81 million in 1998. CalTrain experienced a 3.9% increase in ridership from last year. Ridership on buses and light rail remains steady.

Bus systems are the most widely used form of public transportation, accounting for 81% of the total annual rides in Santa Clara and San Mateo counties. Less than 5% of Santa Clara County commuters use public transit.
GOAL 12: HEALTHY PEOPLE  All people have access to high-quality, affordable health care that focuses on disease and illness prevention.

Child Immunization Declines, Low-Weight Births Fall Short of Goal, Heart Disease Surpasses Goal

WHY IS THIS IMPORTANT?
The proportion of children with low birth weight is a predictor of future costs that communities will incur for preventable health problems, special education and crime. Timely childhood immunizations promote long-term health, save lives, prevent significant disability and lower medical costs. Coronary health disease is the cause of death that is most preventable through proper nutrition, exercise, not smoking and access to basic health care.

Disaggregating health data helps uncover areas of need and monitor at-risk populations. Poor health outcomes are generally correlated with poverty, which is correlated with poor access to preventive health care and education.

HOW ARE WE DOING?
The share of low-weight births in Santa Clara County declined slightly in 1997, from 6% in 1996 to 5.85%. The region is not showing strong improvement toward surpassing the Year 2000 objective. Across ethnicity, African American mothers experienced the highest rate of low-weight births at 10.7%, followed by Filipino mothers at 8.1%. Hispanic and white mothers had the lowest rates at 5.3% and 5.5%, respectively.

According to a National Centers for Disease Control survey, immunization rates of Santa Clara County children ages 18-35 months fell from 85% in 1994 to 75% in 1997. In 1997, the county lost its leadership position compared to California and the United States.

The county’s death rate due to coronary heart disease, 76 per 100,000, is more than 20% below the state average and the Year 2000 objective set by the U.S. Public Health Service.

Across ethnicity, whites in Santa Clara County have the highest rate of deaths due to coronary heart disease at 203 per 100,000. The next closest group is African Americans at 77 deaths per 100,000. Hispanics have the lowest rate at 49 per 100,000.

Sources: Santa Clara County Public Health Department, State of California Department of Health Services
GOAL 13: SAFE PLACES All people are safe in their homes, workplaces, schools and neighborhoods.

Crime Rate Continues Decline

**WHY IS THIS IMPORTANT?**
The level and perception of crime in a community are significant factors that affect quality of life. Crime has wide-ranging effects on communities. In addition to economic costs, the fear, frustration and instability resulting from crime chip away at our sense of community and undermine people’s ability to get ahead.

**HOW ARE WE DOING?**
In 1998, the violent crime rate continued its decline, falling 18% from 557 crimes per 100,000 residents to 454.
Santa Clara County has the lowest crime rate of California’s seven most populated counties. In these areas, crime fell 6% in 1998.
Juvenile felony arrests declined 10% from 1995 to 1997, from 615 to 551 per 100,000 for 10- to 17-year-olds. Driving this decline were decreased assault arrests.

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**Sources:** FBI, California Department of Justice

*Estimate*
GOAL 14: ARTS AND CULTURE THAT BIND COMMUNITY

Arts and cultural activities reach, link and celebrate the diverse communities of our region.

Youth Face Few Opportunities for School-Based Arts Education; Some Get Exposure Through Arts Organizations

WHY IS THIS IMPORTANT?

Sustained exposure to the arts at a young age is important for nurturing creativity, stimulating cognitive skills, and sparking lasting interest in creative endeavors.

HOW ARE WE DOING?

The arts are playing an increasingly important role in the region. A 1998 survey of 17 major arts organizations found a 32% increase in total attendance from 1993 to 1998, to more than 2 million annually.

Public schools in Santa Clara County, however, offer very little in arts education. A fall 1996 survey found that schools spend only 2% of per student expenditures, or $171 per student, on school-based arts and cultural education. The target set by the Regional Cultural Plan is 5%. This target would approach funding levels for comprehensive school arts programs in place before Proposition 13 undermined the funding base.

Arts and cultural organizations in the region have tried to address this deficit by increasing their budgets for arts education and their offerings for youth. Participation by youth — through attendance at performances and exhibitions or through outreach programs at the 17 major arts organizations — increased 19% from 1993 to 1998. Youth make up more than one-third of arts participants.

This exposure, however, is not a replacement for sustained instruction offered as part of a school curriculum.
GOAL 15: CIVIC ENGAGEMENT Residents, businesspeople and elected officials think regionally, share responsibility and take action on behalf of the region’s future.

Half Believe Valley People Work Well Together; 
Less Than Half Think of the Region as a Community

WHY IS THIS IMPORTANT?
Regional stewardship requires a high degree of participation from residents who feel a responsibility to get involved and have confidence that they can make a difference.

The first indicator measures the extent to which people who live in Silicon Valley think regionally. The second tracks the perception of how well people are working together to improve Silicon Valley. Both provide first-year baselines.

HOW ARE WE DOING?
Half of Silicon Valley residents rate the region “excellent” (11%) or “good” (39%) as a place where people work together to improve living conditions. “Only fair” ratings were given by 37% of survey respondents, and 8% ranked the region poor.

When Silicon Valley residents define “their community,” they think “very often or often” about their city or their neighborhood—61% and 60%, respectively. Fifty-five percent think of the Bay Area, while only 42% think of Silicon Valley “very often or often” as their community. (Survey respondents could provide more than one answer.)

Service on Nonprofit Boards by Large-Company Employees 
Declines 13% Since 1994

WHY IS THIS IMPORTANT?
Silicon Valley has many different kinds of professional and social networks based on shared identity and interest. These networks provide opportunity to connect and leverage diverse networks for mutual benefit. Linking diverse networks requires individuals who can be “boundary crossers.”

This indicator measures the number of businesspeople from the largest 100 companies who serve on nonprofit boards (outside their trade or industry) as a measure of linking social networks.

HOW ARE WE DOING?
In 1994, 307 employees of the 100 largest companies in Silicon Valley served on the boards of 85 representative nonprofits. By 1997, the number had dropped 13% to 267.

The decline is due to reduced community involvement by employees of just five firms, whose collective number of board positions dropped from 75 to 29. One-third of the 100 firms studied had no one serving on any of the 85 nonprofit boards.
36% of Residents Voted in 1998 General Election

WHY IS THIS IMPORTANT?
Voter participation is an indicator of civic engagement and reflects commitment to a democratic system, confidence in political institutions and optimism about the ability of individuals to affect public decision-making.

HOW ARE WE DOING?
Thirty-six percent of the voting-age population in Santa Clara and San Mateo counties participated in the 1998 general election—a 20-year low.

The counties' 36% participation rate is comparable to the statewide average. From 1988 to 1996, however, the participation rate was 2 to 7 percentage points lower than the statewide average.

A higher percentage of registered voters in Santa Clara and San Mateo counties actually vote, compared to the California average. In the 1998 general election, 61% of registered voters participated, compared to 58% statewide.

Latinos are voting more. In Santa Clara County, among registered voters born in a Spanish-speaking country, voter participation increased from 27% in June 1994 to 49% in June 1998.
GOAL 16: TRANSCENDING BOUNDARIES | Local communities and regional authorities coordinate their transportation and land use planning for the benefit of everyone. City, county and regional plans, when viewed together, add up to a sustainable region.

Montague Expressway Provides Good Example of Government Collaboration

WHY IS IT IMPORTANT?
Solving the Valley’s most pressing problems in transportation and land use requires collaboration across jurisdictions. This indicator provides a best-in-class example of interjurisdictional partnering: collaboration among cities, the county and regional transportation authority to plan improvements to a traffic problem.

HOW ARE WE DOING?
In January 1998, congestion levels on Montague prompted the San Jose Mercury News to declare it “the No. 1 bottleneck in Silicon Valley.”

Santa Clara County maintains Montague Expressway, but decisions over land development projects and traffic mitigation requirements are made by the three cities through which Montague runs, Santa Clara, San Jose and Milpitas.

As it became apparent that the booming development along Montague was going to dramatically worsen congestion and that development mitigations would fall far short of the mark, the various jurisdictions convened to consider solutions. Together, the county, the Congestion Management Program of the Valley Transportation Authority and the cities of Milpitas, San Jose and Santa Clara agreed to collaborate and jointly fund studies to support land development traffic mitigation requirements and to define larger-scale improvements that will be pursued by the county.

The study of potential alternatives is nearly complete. Alternatives range from $33 million (widen the expressway to four lanes in each direction) to $300 million (add grade separations at six key locations).

The study is a good example of working collaboratively to quantify needs and agree on solutions. The challenge and ultimate value of collaboration will be in financing the improvements.
GOAL 17: MATCHING RESOURCES AND RESPONSIBILITY

Valley cities, counties and other public agencies have reliable, sufficient revenue to provide basic local and regional public services.

Overall Municipal Revenue Growth Is Keeping Up with Population and Jobs, But Revenues Are Volatile and Capital Expenditures Are Falling Behind

WHY IS THIS IMPORTANT?

To maintain local service levels, growth in the local tax base and capital expenditures must keep up with both population and employment growth.

This indicator shows the revenue available to local governments to fund general services and capital expenditures. It also shows the actual amount spent on capital expenditures. Local government revenues fund local roads and bridges, police and fire services, parks, libraries and community facilities.

HOW ARE WE DOING?

Over the last eight years, growth in the combined revenue of all cities in Silicon Valley has been generally keeping up with population and employment growth. Adjusting for inflation, total revenue increased 16% from fiscal year 1988 to 1996, from $1.3 billion to $1.5 billion. During this period, population and employment increased 14%.

The situation varied widely, however, by city. In nine cities, representing 55% of the region’s population, revenue grew slower than population and employment: Foster City, Los Altos, Los Gatos, Milpitas, Morgan Hill, Newark, Redwood City, San Jose and San Mateo.

Capital expenditures of Valley cities fall far short of population and employment growth. Annual capital expenditures decreased 10% in real terms from 1988 to 1996. The most common capital expenditures are for renovation and construction of roads and bridges, and for parks and park facilities.

Local government revenue sources are marked by volatility from year to year. Sales tax is the primary source of tax revenue and closely tracks changing economic conditions. Also, from 1992 to 1995, the state reduced the allocation of property tax to the cities.

Since the traditional sources of local government revenue (property and sales tax) do not track population and job growth, cities increasingly rely on other taxes (e.g., utility, hotel) and on fees.

Source: California State Controller’s Reports
Appendix A: Data Sources

REGIONAL TREND INDICATORS

SILICON VALLEY JOB GROWTH SLOWS
The California Employment Development Department (EDD) and Joint Venture: Silicon Valley Network have constructed a unique data set to track employment and wages in the Silicon Valley region based on unemployment insurance filings. This data series begins in 1992 and is updated quarterly. This data set does not cover self-employment, agriculture workers or military personnel.

SOFTWARE CONTINUES TO LEAD IN JOB GAINS
Cluster and other industry grouping employment estimates are drawn from the EDD/Joint Venture: Silicon Valley Network data set and are based on federal Standard Industrial Code (SIC) classifications. These codes track economic activity by sector and have been arranged by Joint Venture: Silicon Valley Network to best encompass the employment activity found in Silicon Valley.

AVERAGE WAGE MORE THAN 50% ABOVE NATION’S, GROWING FASTER
Data are derived from the EDD/Joint Venture: Silicon Valley Network data set, the *Average Annual Pay Levels in Metropolitan Areas* report of the Bureau of Labor Statistics and Regional Financial Associates. This information comes from individual firm reporting of payroll amounts in compliance with unemployment insurance rules. All wages have been adjusted into 1998 dollars using the All Urban Consumers CPI published by the Bureau of Labor Statistics.

AVERAGE WAGE FOR SOFTWARE CLUSTER REACHES $90,000; LARGEST-EMPLOYING SECTOR—LOCAL AND VISITOR SERVICES—PAYS $23,000
Mean payroll per employee wages for each cluster derived from the EDD/Joint Venture: Silicon Valley Network data set. Cost of living data provided by Regional Financial Associates.

SILICON VALLEY MANUFACTURING EXPORTS DECLINE FOR FIRST TIME IN 1990s
Data are provided by the U.S. Department of Commerce, International Trade Administration, from the Exporter Location Series. Data is sales by exporters in the geographic area with ZIP codes beginning 940, 945, 950, and 951. Data include manufactured and non-manufactured goods, but not services.

IPOs AND M&As CONTINUE FALLING
The number of initial public offerings is tracked throughout the year by the San Jose Mercury News. Data on mergers and acquisitions is provided by Securities Data Corporation. The estimate for 1998 is based on actual numbers through Nov. 17, 1998. M&As are assigned to the location of the “acquiree.”

COMMERCIAL VACANCIES AVERAGE 6% FOR 1998; LEASE RATES REACH NEW PEAK
Data from Cornish and Carey Commercial/OnCor International, Santa Clara office. Data cover Santa Clara County plus the southern portion of Alameda County. Vacancy rate is calculated by dividing space available through either direct lease or sublease by total inventory. Data for R&D space are provided “triple net” or “NNN,” which is a base lease rate that excludes the costs of utilities, janitorial services, taxes, maintenance and insurance.

FEWER ENGINEERING GRADUATES FROM LOCAL UNIVERSITIES SINCE 1994
Data are provided by the American Association of Engineering Societies.

HOUSING AFFORDABILITY IMPROVES SLIGHTLY; RENTAL RATES RISE WITH INCOME
Housing affordability data are from the National Association of Home Builders, Housing Opportunity Index. The Index is based on the median home price, median family income and interest rates. The 1998 figure is the average of the first three quarters.

Apartment data are from surveys conducted by Realfacts of all apartment complexes in Santa Clara county of 40 or more units. Excluded are subsidized housing, Section 8 or HUD housing and senior complexes. Rates are the average of all types of units. Rates are the prices charged to new residents when apartments turn over. The 1998 figure is as of Sept. 30.

VALLEY’S FREeways ARE INCREASINGLY CONGESTED
Data are from the Congestion Management Program of the Valley Transportation Authority. Data are for the afternoon peak period.
PROGRESS MEASURES FOR SILICON VALLEY 2010

FAST-GROWTH GAZELLE COMPANIES INCREASE FROM 64 TO 92
Data for deriving the number of gazelle firms are from the San Jose Mercury News, “How Local Companies Fared,” a quarterly report that tracks publicly traded firms in the Valley. Gazelles are measured from first quarter to first quarter. The Fast 500 program is sponsored by Deloitte & Touche L.L.P.

VENTURE CAPITAL GROWS 14% IN 1998 TO $3.3 BILLION
Data come from the quarterly report of the San Jose Mercury News, “The Money Tree,” based on research by PricewaterhouseCoopers. For the Index of Silicon Valley, only investments in firms located in Silicon Valley were included. Collaborative Economics estimated the 1998 total venture capital funding level based on the first three quarters and historical growth patterns in the fourth quarter.

R&D-RELATED EMPLOYMENT IS THREE TIMES THE NATIONAL AVERAGE
Data are from Regional Financial Associates based on data collected from the Bureau of Labor Statistics. R&D related occupations include the following occupational categories: engineers and architects, mathematical and computer scientists, natural scientists, engineering technicians, science technicians, and other technicians.

REAL PER CAPITA INCOME IS GROWING FASTER THAN THE NATION’S
Data are from the Bureau of Economic Analysis and Regional Financial Associates and are for Santa Clara County.

VALUE ADDED PER EMPLOYEE INCREASES 6% ANNUALLY IN THE 1990s
Value added is derived by subtracting the total cost of inputs, other than direct labor costs, from the stated value of the final goods produced. Estimates are from Regional Financial Associates and are for Santa Clara County only.

INCOME DISTRIBUTION WIDENS IN 1990s; STANDARD OF LIVING FOR POOREST HOUSEHOLDS DROPS
Data are from the March Supplement of the Census Bureau’s Current Population Survey (CPS). The CPS sample was determined representative of Santa Clara County by comparing variables of income, age, gender, and race/ethnicity to data reported in the 1990 Census.

Household income includes both earned and unearned income for all people living in the same household. Household income is adjusted for household size by dividing total household income by the square root of the number of household residents. Hourly earnings are calculated for all Santa Clara County residents reporting any earnings by dividing their total earnings by the number of weeks worked including paid time off and their typical number of hours worked in a week.

For an in-depth analysis of income distribution in California, see “The Distribution of Income in California” (Reed, Haber, Mameesh, 1996) published by the Public Policy Institute of California. Joint Venture followed this methodology to prepare this indicator.

MORE THAN HALF OF RESIDENTS HAVE ACCESS TO E-MAIL; ACCESS VARIES GREATLY BY INCOME
Data are from a survey of 734 Silicon Valley residents on giving and volunteering, conducted in English and Spanish and sponsored by Community Foundation Silicon Valley and conducted by Field Research Corporation.

HIGH SCHOOL GRADUATION RATE CONTINUES DECLINE
Data include the graduation rates for students in Santa Clara County and San Mateo County. Graduation rates are compiled by comparing the number of ninth-graders enrolled to the number that receive their diploma four years later. This information was compiled by the Office of Education in each county in accordance with California Basic Educational Data System. Data for the San Jose Unified School District is estimated.

BAD-AIR DAYS INCREASE
The Bay Area Air Quality Management District takes daily measurements of air quality monitoring stations in Silicon Valley. The indicator reflects the number of days that at least one of these stations exceeds the federal or state standards. Stations included Fremont, Mountain View, Los Gatos, San Jose 4th Street, Gilroy, Redwood City, San Martin and San Jose East.
WATER USE DECLINES 10% IN 1998; LESS THAN 1% OF WATER USE IS RECYCLED WATER
Water use data come from Santa Clara Valley Water District. An acre-foot of water is about 326,000 gallons and is enough to meet the needs of two typical families for one year.

OPEN SPACE BASELINE IS ESTABLISHED; 25% OF VALLEY AND SURROUNDING AREA IS PERMANENTLY PROTECTED
Data are for Santa Clara, San Mateo and Santa Cruz counties and for all of Alameda County excluding the cities of Alameda, Albany, Berkeley, Emeryville, Oakland and Piedmont. Regularly updated information is not yet available for Monterey and San Benito counties. Data include lands owned by the public and lands in private ownership protected by conservation easements. Not included are lands that are protected as open space solely through local General Plans and zoning regulations. Parcels of open space land less than five acres also are not included. “Publicly accessible open space” is defined as lands that are open to the public with no special permit required.

REGION USING LAND MORE EFFICIENTLY, BUT DEVELOPMENT GROWS OUTWARD IN SOUTH VALLEY
Land use data for cities in Santa Clara County were compiled by the Valley Transportation Authority, Congestion Management Program as part of the annual Land Use Monitoring Survey. Joint Venture also surveyed all cities outside of Santa Clara County. Survey compilation and analysis were completed by Center for Urban Analysis and Collaborative Economics. Data are for fiscal year 1997-98.

Participating cities include: Atherton, Campbell, Cupertino, East Palo Alto, Foster City, Fremont, Gilroy, Los Altos, Los Altos Hills, Milpitas, Monte Sereno, Mountain View, Newark, Palo Alto, Redwood City, San Carlos, San Jose, San Mateo, Santa Clara, Santa Cruz, Saratoga, Scotts Valley, Sunnyvale and Union City. Unincorporated Santa Clara County is also included.

29% OF NEW HOUSING, 26% OF NEW JOBS ARE LOCATED NEAR TRANSIT
Same as previous indicator.

15% OF NEW HOUSING IS AFFORDABLE TO LOWER-INCOME HOUSEHOLDS
Sources same as previous indicator. For rental housing, “affordable” is for households earning up to 60% of median income. For owned housing, “affordable” is for households making up to 120% of median income. Median household income for Santa Clara County was approximately $77,000 in 1998.

ONE HOUSING START FOR EVERY TWO NEW JOBS; RATIO VARIES WIDELY WITHIN REGION
Data on housing starts by city from the Construction Industry Research Board. Silicon Valley employment data created by California Employment Development Department. Compilation and analysis by Collaborative Economics.

“South San Mateo County” includes Atherton, Belmont, East Palo Alto, Foster City, Menlo Park, Redwood City, San Carlos and San Mateo. “North Santa Clara County” includes Cupertino, Los Altos, Los Altos Hills, Milpitas, Mountain View, Palo Alto, Santa Clara and Sunnyvale. “Central Santa Clara County” includes Campbell, Los Gatos, Monte Sereno, San Jose and Saratoga. “Southwest Alameda County” includes Fremont, Newark and Union City. “South Santa Clara County” includes Gilroy, Morgan Hill and the unincorporated area of Santa Clara County.

THIRD-GRADE READING LEVELS SIMILAR TO NATIONAL BENCHMARKS, LIMITED-ENGLISH PROFICIENT STUDENTS FARE MUCH WORSE
Data are from the SAT 9 test of the California Department of Education. The test was given in spring of 1998. SAT 9 is a norm-referenced test, rather than a criterion-referenced test. Students' scores are compared to national norms, rather than to absolute achievement.

LESS THAN ONE-THIRD OF STUDENTS ENROLL IN MATH BEYOND ALGEBRA I
Data are from the California Basic Educational Data System (CBEDS) annual report of the California Department of Education.

OVERALL GAINS IN MEETING BASIC COLLEGE ENTRANCE REQUIREMENTS, BUT WIDE DISPARITY ACROSS ETHNICITY
Data are from the California Department of Education.

TRANSIT RIDERSHIP PER CAPITA IS DOWN SLIGHTLY
Data are the sum of the total rides sold annually on the light rail, the bus systems in Santa Clara and San Mateo counties, and CalTrain in each calendar year. Calendar year 1998 annual estimate is based on the first three quarters.
CHILD IMMUNIZATION DECLINES, LOW-WEIGHT BIRTHS FALL SHORT OF GOAL, HEART DISEASE SURPASSES GOAL

Data on low birth-weight infants are from the State of California, Department of Health Services. Weight of less than 2,500 grams (5 pounds, 6 ounces) for babies is considered “low birth weight.” Data on child immunizations are from the Centers for Disease Control. Data on coronary heart disease are from the Santa Clara Valley Health and Hospital System. Regional and state time series data have been age-adjusted. Data by ethnicity are from the California Department of Health Services.

CRIME RATE CONTINUES DECLINE

Violent crime data are from the FBI’s Uniform Crime Reports. Arrest data are from the California Attorney General’s Office, Department of Justice, “Juvenile Felony Arrests.” Violent offenses include homicide, forcible rape, assault and kidnapping.

YOUTH FACE FEW OPPORTUNITIES FOR SCHOOL-BASED ARTS EDUCATION: SOME GET EXPOSURE THROUGH ARTS ORGANIZATIONS

Data on school spending are from an arts education survey of elementary, middle and high schools conducted for 20121: A Regional Cultural Plan for the New Millennium. School spending includes arts instruction taught by specialist teachers, artists, extra-curricular arts programs and special programs such as field trips and exposure programs.

Data on youth participation are from a survey conducted by Collaborative Economics of 17 major arts organizations in the region. These organizations were American Musical Theatre, The Tech Museum of Innovation, Children’s Discovery Museum, San Jose Museum of Art, TheatreWorks, Opera San Jose, San Jose/Cleveland Ballet, Community School of Music and Art, San Jose Symphony, San Jose Repertory Theatre, Villa Montalvo, San Jose Jazz Society, Young Audiences of San Jose, San Jose Children’s Musical Theater, Chinese Performing Artists of America, Stanford Jazz Workshop, and California Youth Symphony.

HALF BELIEVE VALLEY PEOPLE WORK WELL TOGETHER; LESS THAN HALF THINK OF THE REGION AS A COMMUNITY

Data are from a survey conducted by Field Research Corporation on behalf of Community Foundation Silicon Valley, November 1997.

SERVICE ON NONPROFIT BOARDS BY LARGE-COMPANY EMPLOYEES DECLINES 13% SINCE 1994

Data are from a Community Foundation Silicon Valley/Stanford University survey of the largest 100 companies in Silicon Valley and 85 selected nonprofits. The surveys were conducted by Kirk Hansen of Stanford University in 1994 and 1997.

36% OF RESIDENTS VOTED IN 1998 GENERAL ELECTION

Data provided by Registrar of Voters, Santa Clara and San Mateo counties.

MONTAGUE EXPRESSWAY PROVIDES GOOD EXAMPLE OF GOVERNMENT COLLABORATION

Case study developed in consultation with the County of Santa Clara and the Valley Transportation Authority.

OVERALL MUNICIPAL REVENUE GROWTH IS KEEPING UP WITH POPULATION AND JOBS, BUT REVENUES ARE VOLATILE AND CAPITAL EXPENDITURES ARE FALLING BEHIND

Data are from Financial Transactions Concerning Cities of California, Annual Reports, Fiscal Year 1987-88 to 1995-96, Employment Development Department, Department of Finance and Bureau of Labor Statistics. Data include all revenue sources to cities except for utility-based services (which are self-supporting from fees and the sale of bonds: water, sewer, garbage, gas, electric, airport and cemetery), voter approved indebtedness property tax and sales of bonds and notes. Data include dependent special districts and do not include redevelopment agencies and independent special districts.

The growth in population and employment is calculated by adding to population growth 50% of the employment growth. The assumption is that two employees make demands on city services equivalent to one resident. This is a conservative assumption of the support that cities provide to companies (e.g., police, fire, roads).
Appendix B: Definitions

**SILICON VALLEY**
Where possible, Silicon Valley Indicators collected data for the economic region of Silicon Valley. This region includes all of Santa Clara County as its core and extends into the following adjacent ZIP codes:

<table>
<thead>
<tr>
<th>CITY</th>
<th>ZIP CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda County</td>
<td></td>
</tr>
<tr>
<td>Fremont</td>
<td>94536-39, 94555</td>
</tr>
<tr>
<td>Union City</td>
<td>94587</td>
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<tr>
<td>Newark</td>
<td>94560</td>
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<td>San Mateo County</td>
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<td>Atherton</td>
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<tr>
<td>Redwood City</td>
<td>94061-65</td>
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<tr>
<td>San Carlos</td>
<td>94070</td>
</tr>
<tr>
<td>Belmont</td>
<td>94002</td>
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<td>San Mateo</td>
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<tr>
<td>Foster City</td>
<td>94044</td>
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<tr>
<td>East Palo Alto</td>
<td>94033</td>
</tr>
<tr>
<td>Santa Cruz County</td>
<td></td>
</tr>
<tr>
<td>Scotts Valley</td>
<td>95066-67</td>
</tr>
</tbody>
</table>

**INDUSTRY CLUSTERS**

**Semiconductor/Semiconductor Equipment Industry**
- 3559* Special industry machinery
- 3674 Semiconductors and related devices
- 3825 Instruments for measuring and testing electricity and electrical signals

**Computers/Communications Industry**
- 3571 Electronic computers
- 3572 Computer storage devices
- 3577 Computer peripheral equipment, n.e.c.
- 3672 Printed circuit boards
- 3679 Electronic components, n.e.c.
- 3695 Magnetic and optical recording media

**Software Industry**
- 7371 Computer programming services
- 7372 Prepackaged software
- 7373 Computer integrated systems design
- 7374 Computer processing and data preparation and processing services
- 7375 Information retrieval services

**Innovation/Manufacturing Related Services**
- 5045 Computers and computer peripheral equipment and software (wholesale trade)

**BioScience Industry**
- 283 Drugs
- 384 Surgical medical and dental instruments and supplies
- 8071 Medical laboratories
- 382 Laboratory apparatus and analytical, optical, measuring, and controlling instruments (except 3822, 3825, and 3826)

**Defense/Aerospace Industry**
- 348 Small arms ammunition
- 3671 Electron tubes
- 372 Aircraft and parts
- 376 Guided missiles and space vehicles
- 3795 Tanks and tank components
- 381 Search, detection, navigation, guidance, aeronautical, and nautical systems, instruments, and equipment

**Other Industry Groups**

**Agriculture/Resource Extraction**
- 0111-0779
- 0791-1499

**Construction/Transportation/Public Utilities**
- 1511-1799
- 4000-4949
- 4961-4999

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**Professional Services**
- 275 Printing
- 276 Manifold business forms
- 279 Service industries for the printing trade
- 731 Advertising
- 732 Consumer credit reporting agencies
- 733 Mailing, reproduction, commercial art and photography, and stenographic services
- 736 Personnel supply services
- 81 Legal services
- 8712 Architectural services
- 8713 Surveying services
- 872 Accounting, auditing, and bookkeeping services
- 874 Management and public relations services
**Misc. Manufacturing**
2011-2749 3696-3699
2771-2789 3711-3719
2811-2829 3731-3759
2841-3479 3791-3794
3491-3558 3796-3799
3561-3564 3822
3565-3569 3826
3573-3576 3831-3839
3578-3589 3851-3999
3591-3659 Wholesale Trade, Durable
3662 5011-5044
3664-3668 5046-5064
3673 5066-5099
3675-3678 Finance/Insurance/Real Estate
3681-3694 6011-6799

**Health Services**
8011-8069
8072-8099

**Federal, State, Local Government/Education**
8211-8299

**Local and Visitor Services**
Other SIC codes not specified above.

*The numbers correspond to federal Standard Industrial Classification (SIC) codes.

**n.e.c. means "not elsewhere classified"

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**Acknowledgments**

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- American Association of Engineering Societies
- Arts Council Silicon Valley
- Arts Roundtable
- Bay Area Air Quality Management District
- Bay Area Open Space Council
- California Department of Education
- California Department of Finance
- California Department of Health Services
- California Department of Justice
- California Department of Transportation
- California Employment Development Department, San Francisco
- California Office of State Controller
- Community Foundation Silicon Valley
- Construction Industry Research Board
- County of Santa Clara, Center for Urban Analysis
- Cornish & Carey Commercial/Onor International
- Cultural Initiatives Silicon Valley
- Deloitte & Touche LLP
- Federal Bureau of Investigation
- Field Research Corporation
- GreenInfo Network
- Local Agency Formation Commission
- National Association of Home Builders
- National Science Foundation
- PricewaterhouseCoopers LLP
- Realfacts
- Regional Financial Associates
- San Jose City Arts Commission
- San Jose Mercury News
- San Mateo County Office of Education
- Santa Clara County Office of Education
- Santa Clara County Public Health Department
- Santa Clara County Registrar of Voters
- Santa Clara Valley Water District
- SmartSchools
- Stanford University
- U.S. Bureau of Economic Analysis
- U.S. Bureau of Labor Statistics
- U.S. Bureau of the Census
- U.S. Department of Commerce International Trade Administration
- U.S. Department of Housing and Urban Development
- Valley Transportation Authority, Congestion Management Program

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KLA-Tencor
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