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Prepared by:
RACHEL MASSARO
Designed by:
JILL MINNICK JENNINGS

2019 Silicon Valley Index
Dear Friends:

This year’s Index is something of a Rorschach test.

There’s certainly plenty to cheer about. We’re an economy at full employment, and yet we continue adding jobs. Venture capitalists generated an astounding $50 billion, and there are so many “unicorn” companies out there that the term is losing its meaning. There was vigorous acquisition activity, a surfeit of IPOs generating billions, and much of this activity was happening in those key trending areas heralded by the futurists: artificial intelligence, augmented reality, and next-generation immunotherapies for cancer treatment. All of this happens during a time of market volatility and policy uncertainty, and it is a testament to our region’s remarkable agility.

Not surprisingly, Silicon Valley’s income gains are fairly stunning. Average annual earnings have reached $140,000, a figure more than double the national average. The number of high-income households grew by 35 percent over the past four years. As a society we’re making significant education gains, we’re becoming even more diverse, women are increasing their presence in the tech sector and in the halls of government, we’re increasingly clean and green, and we’re voting in elections like never before.

And yet we worry.

It’s because there’s also plenty in these pages to give the pessimists a new set of talking points. It’s not just that our transportation woes continue to mount or that we have the nation’s highest housing costs. It’s not the yawning income divide and the persistence of real poverty in our region. All of that is deeply troubling, of course, but it’s old news.

What’s newly disquieting are indicators suggesting our fundamentals might be changing. More people are leaving the region than coming into it. Most of our growth in tech is being driven by a handful of large, established companies. These same companies are acquiring smaller ones at a pace we’ve never seen, changing the messy way innovation has typically happened here, perhaps even stifling it. Fewer startups are getting their seed funding. Our high costs (including salaries) are causing innovative companies to look elsewhere. All of it is happening against a backdrop of bad press.

Making sense of Silicon Valley is never easy because it is a complex and multi-faceted place. As we talk about who we are and who we’re becoming, it will be more important than ever to have the actual facts at our disposal. We’re pleased to provide them, and eager to facilitate a broad regional conversation about where we go from here.

Sincerely,

Russell Hancock

President & Chief Executive Officer
Joint Venture Silicon Valley
Institute for Regional Studies
The Silicon Valley Index has been telling the Silicon Valley story since 1995. Released early every year, the Index is a comprehensive report based on indicators that 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?
An Indicator is a quantitative measure of relevance to Silicon Valley’s economy and community health, that can be examined either over a period of time, or at a given point in time.

Good Indicators are bellwethers that reflect the fundamentals of long-term regional health, and represent the interests of the community. They are measurable, attainable, and outcome-oriented.

Appendix A provides detail on data sources and methodologies for each indicator.

THE SILICON VALLEY INDEX ONLINE
Data and charts from the Silicon Valley Index are available on a dynamic and interactive website that allows users to further explore the Silicon Valley story.

For all this and more, please visit the Silicon Valley Indicators website at www.siliconvalleyindicators.org.
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The geographical boundaries of Silicon Valley vary. Earlier, the region’s core was identified as Santa Clara County plus adjacent parts of San Mateo, Alameda and Santa Cruz counties. However, since 2009, the Silicon Valley Index has included all of San Mateo County in order to reflect the geographic expansion of the region’s driving industries and employment. Because San Francisco has emerged in recent years as a vibrant contributor to the tech economy, we have included some San Francisco data in various charts throughout the Index.
The Region's Share of California’s Economic Drivers

<table>
<thead>
<tr>
<th>Economic Driver</th>
<th>Silicon Valley</th>
<th>San Francisco</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOBS</td>
<td>9.6%</td>
<td>4.2%</td>
</tr>
<tr>
<td>GDP*</td>
<td>10.8%</td>
<td>5.0%</td>
</tr>
<tr>
<td>M&amp;A ACTIVITY</td>
<td>19.1%</td>
<td>18.1%</td>
</tr>
<tr>
<td>PATENT REGISTRATIONS</td>
<td>46.5%</td>
<td>7.2%</td>
</tr>
<tr>
<td>IPOs</td>
<td>45.5%</td>
<td>18.2%</td>
</tr>
<tr>
<td>ANGEL INVESTMENT</td>
<td>19.0%</td>
<td>57.3%</td>
</tr>
<tr>
<td>VENTURE CAPITAL</td>
<td>30.1%</td>
<td>48.4%</td>
</tr>
</tbody>
</table>

*Silicon Valley Percentage of California GDP includes San Mateo and Santa Clara counties only.

Data Sources: Land Area (U.S. Census Bureau, 2010); Population (California Department of Finance, 2018); GDP (Moody’s Economy.com, 2018); Venture Capital (Thomson ONE, 2018); Patent Registrations (U.S. Patent and Trademark Office, 2017); Initial Public Offerings (Renaissance Capital, 2018); Jobs (U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages; EMSI, Q2 2018); Angel Investment (Crunchbase, 2018); Mergers & Acquisitions (Factset Research Systems, Inc., 2018).
Silicon Valley’s hot economy is bumping up against its confines. Venture capitalists are investing at record levels, but overall employment growth fell for a second straight year. Much of the growth is driven by the large, established companies whose eye-popping land deals are transforming the landscape. These same companies are acquiring smaller ones at a rapid pace, changing the face of innovation as fewer startup companies obtain seed or early-stage funding. The income divide is widening, and wage gains are eroded by cost of living increases and the nation’s highest housing prices. Our transportation challenges are unabated.

Silicon Valley’s economy continues to grow, but at a slower rate as the region achieves full employment. The growth is constrained by a housing shortage and our ongoing transportation woes.

Silicon Valley added 35,558 new workers between June 2017 and June 2018. For the second consecutive year the rate of growth (2.2 percent) was slower than the previous year, but unemployment levels (2.3 percent) are so low that the region is effectively at full employment.

Employment gains were largely in community infrastructure and technology, with the region’s major tech companies accounting for a large share of tech job growth. Those same companies also have significant and expanding real estate footprints, with five of them alone – Google, Apple, Facebook, LinkedIn, and Amazon – currently leasing approximately 18 percent of all available office and R&D space.

Silicon Valley’s average monthly housing costs ($2,341) and apartment rental rates ($2,911) are the highest in the nation, inducing employers to locate workers elsewhere. Affordability issues also have a growing impact on transportation as workers locate further from the employment centers. Commute times have increased 20 percent over the past decade (adding 50 minutes weekly to each commuter, on average), with traffic delays resulting in an estimated $2.7 billion yearly loss in productivity.

Twenty-four percent of Silicon Valley renters and 15 percent of mortgage holders spend more than half their gross income on housing. Although the number of new residential units permitted kept pace with population growth the past two years, only 15 percent of these units are affordable to residents with low to moderate incomes.

Meanwhile, the Valley generated record levels of private capital, patents continued apace, and the IPO activity was staggering; yet fewer startups received funding.

Venture capital funding reached $50 billion in 2018 ($19 billion to Silicon Valley and $31 billion to San Francisco), a level higher than any other on record (including 2000). The funding went into a record number of “megadeals” (81) over $100 million each, and one investment alone (JUUL Labs) was $13 billion.

Silicon Valley generated nearly 20,000 patents in 2017, an increase over the previous year, and our share of California patents has increased dramatically (from 37 percent to 47 percent) over the past 20 years.

The Bay Area’s 28 IPOs generated a combined total of $5.9 billion in 2018, nearly quadruple the amount raised in 2017 by 13 IPOs. Thirteen of these newly-public companies were valued at over $1 billion by the end of the year, and the 28 companies had an average 37 percent post-IPO return (compared to negative two percent for all U.S. IPOs).

In 2018 M&A deals involving Silicon Valley or San Francisco companies were worth more than $170 billion in just the 25 percent of deals that disclosed amounts. There were dozens of additional acquisitions by Silicon Valley’s largest tech companies (including Apple, Google, Facebook, Microsoft, and Adobe). These acquisitions have taken innovation out of public view, and play a role in the four-year decline in early-stage funding deals to startups.
The average annual earnings in Silicon Valley reached $140,000 in 2018, a level significantly higher than the state ($81,000) and the nation ($68,000).

The number of high-income households (earning $150,000 or more) in Silicon Valley and San Francisco rose by 35 percent over the past four years, while the number of lower-income households declined. More than a quarter of Silicon Valley households have incomes above $200,000 annually (compared to 11 percent in California and 7 percent nationally), and the top two percent of households claim an estimated 27 percent of the wealth.

Meanwhile the cost of living has increased significantly. Median home prices have soared above $1 million. The cost of childcare has risen 52 percent since 2012 to $20,900 per year for infants, on average; the cost of the most basic transportation needs for a family of four has risen 18 percent since 2014 to $6,300.

It is impossible to be self-sufficient in Silicon Valley at the current statewide minimum wage ($12 per hour). Even in cities with higher minimum wage ordinances, the only family type that could achieve self-sufficiency would be a dual-income family with no children.

The poverty rate in Silicon Valley (7 percent) remains low relative to the state and nation, yet 37 percent of our students receive free or reduced-price meals. Ten percent of Silicon Valley residents lack consistent access to food that is nutritionally adequate.

Thirty percent of Silicon Valley households rely on public or private, informal assistance in order to get by, and more than 57 percent of those headed by a Hispanic or Latino household are not self-sufficient.

Women are gaining some increased presence in tech jobs (25 percent) and in the tech industry (28 percent). Meanwhile, the share of science and engineering degrees conferred to women has yet to exceed 30 percent.

Women are also gaining representation in Silicon Valley’s local governments, with significant gains in the last election cycle. Of the 103 seats up for election in 2018, 54 were won by newcomers (not incumbents) and 32 of these were women.

Other trends of interest

Electric Vehicles. Silicon Valley claims 18 percent of California's electric vehicle rebates, and while the share is high it likely underestimates EV adoption since so many Silicon Valley EV drivers earn incomes exceeding the rebate program eligibility limits.

Health Insurance. Coverage for the working-age population has increased significantly since the Affordable Care Act went into effect (especially for unemployed residents, up 24 percentage points since 2013).

Obesity. 58 percent of Silicon Valley adults and nearly one third of the region’s students are overweight or obese.

Violent Crime. The rate of violent crime increased 10 percent in 2017; reported rapes increased 25 percent in 2018.

Bicycling. Significantly fewer bicycle collisions resulted in injuries or fatalities (590) than during the prior year (756).

Civic Engagement. Eligible voter turnout (53 percent) was higher than any other midterm election in the past 20 years, and turnout of young adults (ages 18-24) was the highest on record; Silicon Valley’s absentee voting rate (83 percent) was also the highest on record.
Silicon Valley’s population growth has slowed over the past three years, primarily due to the region’s low (and declining) birth rate. The influx of foreign immigrants into the region is more than fully offset by the number of Silicon Valley residents moving to other parts of the state and nation; those who choose to stay within California are heading to regions such as the Sacramento and Stockton/Tracy areas where housing costs are significantly lower.

Of those in Silicon Valley’s technical occupations, 26% are from India and 14% are from China. As people come and go, Silicon Valley’s population composition has changed in terms of race and ethnicity (with Asian residents making up the largest population share for the first time), educational attainment (with a rising share of residents having a bachelor’s degree or higher), an increasing share of foreign-born residents, and a corresponding increase in the number of people speaking foreign languages at home (more than half of the population in 2017).

While academic institutions continue to confer more science and engineering degrees locally, only a small share are conferred to women and therefore a large majority of women in technical professions were trained elsewhere. For Black or African American women in particular, those who have come in from outside California are more likely to have an undergraduate degree. Women represent a quarter of all technical roles in Silicon Valley and 18% of those at the region’s largest tech companies, and a similarly small share of leadership positions (19%).

WHY IS THIS IMPORTANT?

Silicon Valley’s most important asset is its people, who drive the economy and shape the region’s quality of life. Population growth is reported as a function of migration (immigration and emigration) and natural population change (the difference between the number of births and deaths). Delving into the diversity and makeup of the region’s people helps us understand both our assets and our challenges.

The number of science and engineering degrees awarded regionally helps to gauge how well Silicon Valley is preparing talent. A highly educated local workforce is a valuable resource for generating innovative ideas, products and services. The region has benefited significantly from Silicon Valley’s population growth has slowed over the past three years – down to less than half the rate of growth experienced during the previous five-year period.

Population gains over the past two years (between July 2016 and July 2018) were entirely due to natural growth (births minus deaths), as the net migration totals were negative.

The population of Santa Clara and San Mateo Counties combined has grown slowly over the past year, as has that of the state as a whole (+0.5% year-over-year).

Over the past decade, the population in Santa Clara and San Mateo Counties combined has grown more rapidly (+10.5%) than the state (+8.1%).
the entrepreneurial spirit of people drawn to Silicon Valley from around the country and the world. Historically, immigrants have contributed considerably to innovation and job creation in the region, state and nation. Maintaining and increasing these flows, combined with efforts to integrate immigrants into our communities, will likely improve the region’s potential for global competitiveness.

Diversity and the coming-together of people with different backgrounds, cultures, genders, races and ethnicities is critical to the success of our businesses and our region itself. These backgrounds shape the perspective by which we undertake any task. By creating inclusive communities and workplaces, we are able to build, succeed, and grow together. Numerous efforts aim to create and maintain equality within our talent pool (and in educating our future workforce), and tracking the progress allows us to reflect and continue to strive for a better, more inclusive region.


For the third year in a row, people are moving out of Silicon Valley nearly as quickly as they are moving in. Between July 2015 and July 2018 (over a three-year period), the region gained 61,977 foreign immigrants, but lost 64,318 residents to other parts of California and the United States.

Population growth in Santa Clara and San Mateo Counties has slowed over the past three years from a rate of 1.2 to 1.5% annually between 2011 and 2015 to a 13-year low of 0.48% in 2018; population growth has not been this slow since the years following the dot.com bust, which were marked by a significant net outflow of more than 124,000 residents.
Silicon Valley counties were among those with the greatest domestic out-migration in the state between July 2017 and July 2018, with Riverside County, San Joaquin County, and counties in the greater Sacramento area attracting residents from other parts of California and the nation.

San Francisco has a much larger share (39%) of 25-44-year-olds – the core working age group – than California (28%) or the United States (26%); Silicon Valley’s share of 25-44-year-olds (30%) is only slightly higher than in the state as a whole.

Silicon Valley’s population is aging. The number of residents over age 65 has grown by 35% over the past decade, while the overall population has only grown by 10%.

<table>
<thead>
<tr>
<th>Age Category</th>
<th>2007-2017</th>
<th>2016-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>under 18</td>
<td>+2.2%</td>
<td>-1.1%</td>
</tr>
<tr>
<td>18-24</td>
<td>+0.7%</td>
<td>-0.7%</td>
</tr>
<tr>
<td>25-44</td>
<td>+10.4%</td>
<td>+1.8%</td>
</tr>
<tr>
<td>45-64</td>
<td>+9.9%</td>
<td>+0.2%</td>
</tr>
<tr>
<td>65 and older</td>
<td>+35.2%</td>
<td>+4.8%</td>
</tr>
<tr>
<td>Total</td>
<td>+10.3%</td>
<td>+0.9%</td>
</tr>
</tbody>
</table>

Silicon Valley’s population under age 18 has grown more slowly than other age groups since 2007, and actually declined by 6,700 children between 2016 and 2017.
For the first time, Asian residents represent the largest population share in Silicon Valley at 34%, up from 28% in 2007.

The 2018 birth rate (11 births per 1,000 people) in Santa Clara and San Mateo Counties combined was lower than any other year over the last half-century. The birth rate has declined steadily since 1991 when it last peaked at 17.8 births per 1,000 people.

The total number of births annually in Santa Clara and San Mateo Counties has declined significantly since 2008 (down 19%), and in 2018 was the lowest it has been since 1980.

Compared to 2007, women are now waiting until later in life to have children (an average of 2.1 additional years) and are having slightly fewer (average of 1.8 children per woman).

Women with higher levels of educational attainment are waiting longer to have their first child (an average of 5.5 additional years for those with a bachelor’s degree or higher).

Silicon Valley women tend to start having children later in life (age 30) than in California or the United States overall (average of 28 and 27 years old, respectively); they also tend to have fewer children (average of 1.88 per woman, compared to 2.09 in California and 2.13 throughout the country).
The share of Silicon Valley residents with a bachelor's degree or higher (51.6%) increased by more than seven percentage points over the past decade (from 44.2% in 2007).

Silicon Valley and San Francisco have much higher levels of educational attainment than California or the United States as a whole, with 51% and 58% of adults, respectively, having a bachelor's degree or higher.

24% of Silicon Valley adults have a graduate or professional degree.

While educational attainment levels for Silicon Valley's Hispanic or Latino residents remain low relative to other racial and ethnic groups, they have increased over time; 18% of Silicon Valley’s Hispanic or Latino residents had a bachelor’s degree or higher in 2017, compared to 13% in 2007.

Among Silicon Valley’s Hispanic or Latino residents ages 25-44, the share with a bachelor’s degree or higher is larger for those who were born in California (particularly women).
In 2017, there were 17,809 science and engineering degrees conferred among Silicon Valley’s top academic institutions – only marginally more (by 88 graduates) than during the previous year.

The share of Silicon Valley science and engineering degrees conferred to women has remained in the 37-39% range for 18 years and has increased by only 1.5 percentage points over the past decade.

Nearly ¾ (74%) of Silicon Valley’s female tech workers ages 25 to 44 are foreign born. These women are disproportionately married with children, and primarily come from Asian countries.

European Union

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More than half of Silicon Valley’s population over age five speaks a language other than exclusively English at home.

Silicon Valley’s foreign language-speakers are more likely to speak languages other than Spanish (64%) than in California (35%) or the United States overall (38%).

The share of Silicon Valley residents who speak a foreign language at home has increased over the past decade, from 49% in 2007 to 52% in 2017; in contrast, San Francisco’s share of foreign language-speakers has declined by one percentage point over the same time period.

In 2017, 18% of highly-educated Silicon Valley women ages 25 to 44 worked in technical occupations (compared to 43% of their male counterparts).
7% and 5%, respectively, of the new tech talent that moved to Seattle and Austin in 2017 were from California, with many of them likely from the Bay Area.¹

Of the 25- to 44-year-olds working in private sector technical jobs who moved to Santa Clara County in 2017, 70% were from another county within the state and 30% were from elsewhere.

Of Silicon Valley’s new tech talent in 2017 coming from places outside of California, the largest shares were from India (14%), Illinois (9%), New Jersey (8%), Texas (8%), and Washington (6%).

Women make up an estimated 28% of the workforce at Silicon Valley’s largest tech companies, and a mere 19% of technical roles and leadership positions.

In 2017, there were more high-skilled workers in technical roles in Silicon Valley from India (26%) than from within California (16%) or the rest of the country (16%).

The largest shares of Silicon Valley’s foreign-born tech talent come from India (26%) and China (14%).

1. According to data from the LinkedIn Economic Graph (January 2019), 8.1% of all new LinkedIn members in Austin in 2018 were from the San Francisco Bay Area; the Bay Area was the number one place of origin for new Seattle LinkedIn members in 2018.

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In 2017, there were more high-skilled workers in technical roles in Silicon Valley from India (26%) than from within California (16%) or the rest of the country (16%).

The largest shares of Silicon Valley’s foreign-born tech talent come from India (26%) and China (14%).
Silicon Valley created nearly 36,000 new jobs in 2018 at a year-over-year growth rate (+2.2%) that was slower than any other year since the start of the economic recovery period between 2010 and 2011. This compares to a 3.4% growth rate in San Francisco over the same time period. Eighty-one percent of new Silicon Valley jobs were created in Santa Clara County; more than half were in Community Infrastructure & Services, and 34% were in the tech industry (compared to 29% the prior year). The largest share of job growth since 2010 has been in Tier 1 (high-skill/high-wage, mostly tech industry) and Tier 3 (low-skill/low-wage, mostly Community Infrastructure & Services) jobs, with a lower growth rate of jobs in the middle. Older Silicon Valley residents are participating in the workforce at higher rates than a decade ago. Despite slower job growth over the past year, the region’s unemployment rate is at an 18-year low (2.3%) and growth of tech jobs has been much larger in terms of sheer growth in the greater San Francisco Bay Area than in any of the other major U.S. tech talent centers.

WHY IS THIS IMPORTANT?

Employment gains and losses are a core means of tracking economic health and remain central to national, state, and regional conversations. Over the course of the past few decades, Silicon Valley (like many other communities) has experienced shifts in the composition of industries that underlie the local economy. The types of jobs we have and the composition of the region’s workforce affect the availability of opportunities and uncover potential skills gaps. Examining employment by wage and skill level allows for a higher level of granularity to help us understand the changing composition of jobs within the region. While employment by industry and by wage/skill level provides a broader picture of the region’s economy as a whole, observing the unemployment rates of the population residing in the Valley reveals the status of the immediate Silicon Valley-based workforce. The way the region’s industry patterns change shows how well our economy is maintaining its position in the global economy.

The total number of Silicon Valley jobs grew more slowly between 2017 and 2018 (+2.2%) than any other year since before the start of the economic recovery period (2010).

Silicon Valley gained 35,558 jobs between Q2 2017 and Q2 2018.

81% of Silicon Valley’s 2017-2018 employment growth was from jobs in Santa Clara County (28,768 of them), and a mere 8% from San Mateo County (2,792 jobs).
The total number of jobs in Silicon Valley is 21% higher than pre-recession (2007) levels.

Jobs in San Francisco grew more rapidly between Q2 2017 and Q2 2018 (+3.4%) than those in Silicon Valley (+2.2%) or Alameda County (+1.9%).

Half of all Silicon Valley jobs are in Community Infrastructure & Services; 26% are in Innovation and Information Products & Services.
Silicon Valley jobs in Innovation and Information Products & Services – such as Computer Hardware, Software, Internet & Information Services, and Biotechnology – grew by 2.8% (+14,908) between Q2 2017 and Q2 2018.

A larger share of Q2 2017 to Q2 2018 job growth was in the tech industry (34%) compared to the prior year (29%).

More than half (53%) of all new Silicon Valley jobs created between Q2 2017 and Q2 2018 were in Community Infrastructure & Services; nearly 8,000 new jobs were created in Healthcare & Social Services alone.

Tech industry jobs have grown significantly since the beginning of the economic recovery period, with a 40% increase in the number of jobs (up by 125,000 jobs between Q2 2010 and Q2 2018).

Silicon Valley employment has far surpassed pre-recession levels across all major areas of economic activity except Other Manufacturing.
85% of Silicon Valley Tier 3 (low-skill/low-wage jobs) are in Community Infrastructure & Services.

46% of Community Infrastructure & Services jobs are Tier 3; in contrast, Innovation and Information Products & Services jobs are primarily (75%) Tier 1 (high-skill/high-wage).

Silicon Valley employment gains since the beginning of the economic recovery period have occurred across all Tiers, but job gains in Tiers 1 and 3 (+30% and +31%, respectively) have been more rapid than in Tier 2 (+25%).

43% of all Silicon Valley jobs are Tier 2 (mid-skill/mid-wage).
San Mateo County had the lowest unemployment rate of all counties in the state (2.0%) in November 2018, followed closely by San Francisco and Marin Counties (both at 2.2%) and Santa Clara County (2.4%).

Silicon Valley’s unemployment rate in May 2018 (2.15%) was lower any other month since December 1999 (when it was 1.97%), with fewer than 38,000 unemployed workers in the labor force.

Since 2012, the share of Silicon Valley jobs in each tier has remained almost unchanged.

The long-term trend indicates that the share of Silicon Valley employment in Tier 2 jobs has decreased by 4.8% over the past 17 years, although year-to-year changes have been relatively small.

Silicon Valley’s unemployment rate is at an 18-year low.

San Mateo County had the lowest unemployment rate of all counties in the state (2.0%) in November 2018, followed closely by San Francisco and Marin Counties (both at 2.2%) and Santa Clara County (2.4%).

The unemployment rate in Silicon Valley was 2.3% in November 2018 (compared to 2.2% in San Francisco, 3.9% in California, and 3.5% in the United States overall).
Unemployment rates across all racial and ethnic groups in Silicon Valley were below pre-recession levels in 2017.

The unemployment rate for Black or African American Silicon Valley residents (5% in 2017) has declined by seven percentage points since it peaked to nearly 12% in 2011.
Labor force participation rates for workers ages 55+ have increased over the past decade, with older workers remaining in the workforce longer.

Silicon Valley labor force participation rates increased by 2.2 percentage points overall since 2007, with increases in the 25-54 and 55+ age groups only; the labor force participation rate for workers ages 16-24 remained relatively steady over the past decade.

In 2007, 38.5% of Silicon Valley residents ages 55+ and older were in the workforce; by 2017, the share had risen to 43.2%.

Data Source: United States Census Bureau, American Community Survey
Analysis: Center for Continuing Study of the California Economy; Silicon Valley Institute for Regional Studies
The Bay Area ranks #1 among U.S. top tech talent centers by both total number of tech jobs\(^1\) as well as the percentage of local jobs; Seattle is a close second by share of total jobs, but the total number of jobs is less than half.

\(^1\) Tech talent workers comprise 20 different occupations, which are highly concentrated within the high-tech services industry but are spread across all industry sectors.

While five top U.S. tech talent centers have attracted talent between 2012 and 2017 at a higher rate than the Bay Area, the total number of new tech jobs locally over that time period was significantly more.
Silicon Valley continues to be a high-income, low-poverty region relative to the rest of the state and the nation as a whole. Income gains have outpaced inflation over the past several years, per capita income rose above $100,000 for the first time, and median household income reached an all-time high of $118,000. Individual median income rose by nearly $1,000 annually for residents without a high school diploma, likely as a result of recent minimum wage increases at both the state and local levels. The share of Silicon Valley households with incomes above $200,000 annually has grown to 26%, and the share of "millionaire" households (households where total investable assets exceeds $1 million) has reached 9%. However, income disparities persist between residents of various races and ethnicities, and between men and women at the same levels of educational attainment. The income gap continues to widen and is reflected in the changing share of households in each income category - with the region shifting to a larger share of high-income households. While these high-income households are able to provide for their basic needs and more (e.g., going on vacations, saving for their children's college education, owning more than one car per household), a large share of the region's households cannot earn the wages they require in order to do so.

**WHY IS THIS IMPORTANT?**

Income growth is as important a measure of Silicon Valley's economic vitality as job growth. Considering multiple income measures together provides a clearer picture of regional prosperity and its distribution. Real per capita income rises when a region generates wealth faster than its population increases. The median household income is the income value for the household at the middle of all income values. Examining income by educational attainment, gender, race/ethnicity, and occupational groups reveals the complexity of our income gap, and the changing distribution of households by income category sheds light on income inequality within the region. Looking at the shares of households by investable assets indicates the amount of income that is set aside and available for consumer and discretionary spending, higher education, retirement, philanthropy, and providing overall financial security; it also helps to examine the extent to which income inequality leads to wealth inequality. The share of households living under the federal poverty limit and Self-Sufficiency Standard, as well as the percentage of public school students receiving free or reduced-price meals (FRPM)1 and the extent of food insecurity, are indicators of family poverty.

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1. To be eligible for the FRPM program, family income must fall below 130% of the federal poverty guidelines for free meals and below 185% for reduced price meals. The federal poverty limit for California in 2017 (used to set 2017-2018 FRPM eligibility) ranged from $12,060 for a one-person household to $41,320 for a household with eight or more people. The poverty limit for a family of four was $24,600.

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**Per capita income in Silicon Valley is 1.7 times higher than in California overall.**

Per capita personal income in Silicon Valley was above $100,000 for the first time in 2017 after rising by nearly $4,200 annually (or $349 per person per month) over 2016, after adjusting for inflation.

Per capita income has been increasing steadily in Silicon Valley since 2009 and rose by $27,300 annually over that eight-year period (after inflation-adjustment).
Between 2016 and 2017, Silicone Valley individual median income rose by 4% for residents with less than a high school diploma (up $934 annually, after adjusting for inflation, equivalent to an hourly pay increase of approximately 70 cents). This annual growth was likely a result of recent minimum wage increases at both the state and local levels.¹

¹ Between 2016 and 2017, the statewide minimum wage increased from $10.00 to $10.50 per hour; additionally, 11 out of 39 Silicon Valley cities have enacted their own minimum wage through ordinances, many of which include a plan to increase it incrementally each year.

Between 2016 and 2017, inflation-adjusted per capita income increased for all racial and ethnic groups in Silicone Valley.

Silicon Valley residents with a graduate or professional degree earn nearly $88,000 more than those with less than a high school diploma (a ratio of 4.2); this gap narrowed by $1,800 between 2016 and 2017.

The income gap between residents of varying educational attainment levels is greater in Silicone Valley and San Francisco than in California or the United States as a whole.

White Silicon Valley residents earn three times more than Hispanic or Latino residents; the racial/ethnic disparity is slightly higher in San Francisco, where White residents earn 3.2 times more than those of Multiple & Other races.

Silicon Valley per capita income differs significantly among various racial and ethnic groups; in 2017, per capita income was $77,209 for White residents and $26,001 for Hispanic or Latino residents.

### Ratio of Per Capita Income of Highest to Lowest Income Racial/Ethnic Groups

<table>
<thead>
<tr>
<th>Region</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicone Valley</td>
<td>3.0</td>
</tr>
<tr>
<td>San Francisco</td>
<td>3.2</td>
</tr>
<tr>
<td>California</td>
<td>2.7</td>
</tr>
<tr>
<td>United States</td>
<td>2.4</td>
</tr>
</tbody>
</table>
Average wages in Silicon Valley ($119,000) were 1.8 times higher than in California overall ($66,000) in 2018.

Average wages across all industries in Silicon Valley continued an upward trend into 2018, reaching $119,000 (compared to $109,000 in San Francisco and $74,000 in Alameda County).

2018 median wages varied significantly by occupational category, with those in Management, Business, Science and Arts Occupations earning 3.4 times more than those in Service Occupations.

While there was an uptick in the number of Service jobs in Silicon Valley in 2018 (+13% year-over-year), median wage gains for Service Occupations did not keep pace with inflation (down 2.5% after inflation adjustment).

*Greater Silicon Valley includes the San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area (Santa Clara and San Benito Counties) plus the San Francisco-San Mateo-Redwood City MSA (Marin, San Francisco, and San Mateo Counties) through 2015, and the San Francisco-Redwood City-South San Francisco Metropolitan Division (San Francisco and San Mateo Counties) for 2016-2018. Data Sources: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; EMSI | Analysis: BW Research
Men in Silicon Valley with a bachelor’s degree or higher earn an average of $145,100 annually – 43% ($43,400) more than women with the same level of educational attainment.

The gender-income gap in Silicon Valley is wider at higher levels of educational attainment.

The median wage for Silicon Valley Tier 1 (high-wage/high-skill) workers was $114,000 in 2018.

Tier 1 workers in Silicon Valley earn four times more than Tier 3 workers (a gap of $86,900 in 2018); this compares to a 3:1 wage ratio for Tier 1 to Tier 3 workers in the country as a whole.
Increases in median household income between 2016 and 2017 outpaced inflation in Silicon Valley, San Francisco, California, and throughout the United States.

Median household income in both Silicon Valley and San Francisco grew by 5% in 2017, after adjusting for inflation.
The number of Silicon Valley households earning less than $75,000 declined by 15,500 in 2017 alone.

Over a four-year period between 2013 and 2017, the number of high-income households (earning $150,000 or more) in Silicon Valley and San Francisco rose by 35% combined, while the number of lower-income households declined.

26% of Silicon Valley households earn $200,000 or more annually; 39% earn $150,000 or more.

Silicon Valley has a larger share of high-income households earning $200,000 or more annually (26%) than California (11%) or the United States as a whole (7%).

Continuing a five-year upward trend, Silicon Valley gained nearly 20,700 high-income households in 2017 (earning $150,000 or more).
The 2017 poverty rate in Silicon Valley was lower than any other year since 2008.

Silicon Valley’s poverty rate remains low (7%) compared to San Francisco (11%), California (13%), or the United States as a whole (13%).

More than half of all Silicon Valley households have less than $100,000 in investable assets.

<table>
<thead>
<tr>
<th>Share of Children Living in Poverty</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Clara &amp; San Mateo Counties</td>
<td>7.7%</td>
</tr>
<tr>
<td>San Francisco</td>
<td>11.4%</td>
</tr>
<tr>
<td>California</td>
<td>18.1%</td>
</tr>
<tr>
<td>United States</td>
<td>18.4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Poverty Status by Race/Ethnicity</th>
<th>Santa Clara &amp; San Mateo Counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black or African American</td>
<td>11.3%</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>10.8%</td>
</tr>
<tr>
<td>Native Hawaiian and Pacific Islander</td>
<td>10.7%</td>
</tr>
<tr>
<td>Multiple and Other</td>
<td>9.9%</td>
</tr>
<tr>
<td>Asian</td>
<td>6.4%</td>
</tr>
<tr>
<td>White</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies
Despite a relatively low household poverty rate, 30% of all Silicon Valley households do not earn enough money to meet their basic needs without public or private, informal assistance.

The share of households living below Self-Sufficiency is slightly higher in Silicon Valley (29.6%) than in San Francisco (28.3%), but lower than in California as a whole (35.2%).

Self-sufficiency varies significantly by race and ethnicity; more than 57% of all Silicon Valley households with a Hispanic or Latino household live below the Self-Sufficiency Standard, amounting to nearly 80,000 households.

Self-sufficiency is highly tied to educational attainment; eight out of ten Silicon Valley households where the householder is not a high school graduate have incomes below the Self-Sufficiency Standard.
Nearly 40% of Silicon Valley students ages 5-17 receive free or reduced-price school meals.

The share of students receiving free or reduced-price school meals in Silicon Valley and statewide increased by two percentage points in 2018; this is likely due to the passage of California Senate Bill 138, indicating that there was not necessarily more need, but that the existing need was met to a greater degree.1

1. The increase in enrollment for FRPM in 2018 may be due to the passing of California Senate Bill 138, which went into effect on January 1, 2018. The bill eliminated the application hurdle to enrollment, required universal meal service in high-poverty school districts, and automatically qualified children enrolled in Medi-Cal as eligible for FRPM.
One out of every ten Silicon Valley residents lacks access, at times, to food and/or food that is nutritionally adequate.

There was a need for 345 million meals in 2016 for the most vulnerable Silicon Valley residents.

While 2016 data showed an increase in the share of needed meals provided to the most vulnerable Silicon Valley households (67%, up from 63% in 2015), there were still more than 115 million "missing meals" that were needed and not provided.
Silicon Valley inventors continue to register patents at a remarkable rate, generating nearly half of all patents registered in the state and 13% of those across the country. The total number of patents registered, though, has remained relatively steady over the past four years, while the increase in patents granted per capita in San Francisco has been phenomenal (+140% over a six-year period). Labor productivity, too, has stalled over the past several years as increases in regional GDP were matched by continued (though slowing) employment growth.

The amount of venture capital investments in Silicon Valley and San Francisco companies shot up to a record high of $50 billion in 2018, with $19 billion of it to Silicon Valley. The largest share of investments (38%) went to Internet companies, as well as Mobile & Telecommunications, Healthcare, and Software companies. The total amount of funding was highly influenced by the unprecedented number of extremely large deals (81 over $100 million in Silicon Valley and San Francisco combined), including a nearly $13-billion-dollar investment in one San Francisco company (JUUL Labs Inc.). While the total amount of venture capital investments shot up, funding to startups continued a downward trend from the recent peak in 2015. In 2018, there were 661 Silicon Valley seed or early-stage investment deals (107 of which were to startups founded by women). Angel investment within the region also declined somewhat during the year, although the statewide total did as well.

There were more than twice as many Silicon Valley IPOs in 2018 than during the prior year - mostly in Healthcare (65%) and Technology (25%) - and the total amount raised ($3.2 billion) was nearly quadruple the amount raised in 2017; yet, the $3.2 billion was miniscule in comparison to the amount of private capital infusing Silicon Valley companies.

**WHY IS THIS IMPORTANT?**

Innovation, a driving force behind Silicon Valley’s economy, is a vital source of regional competitive advantage. It transforms novel ideas into products, processes, and services that create and expand business opportunities. Entrepreneurship is an important element of Silicon Valley’s innovation system. Entrepreneurs are the creative risk takers who create new value and new markets through the commercialization of novel and existing technology, products and services. A region with a thriving innovation habitat supports a vibrant ecosystem to start and grow businesses.

Entrepreneurship, in both new and established businesses, hinges on investment and value generated by employees. Patent registrations track the generation of new ideas, as well as the ability to disseminate and commercialize these ideas. The activity of mergers and acquisitions (M&As) and initial public offerings (IPOs) indicate that a region is cultivating successful and potentially high-value companies. And, growth in firms without employees indicates that more people are going into business for themselves.

Finally, tracking both the types of patents and areas of venture capital (VC) investment over time provides valuable insight into the region’s longer-term direction of development. Changing business and investment patterns could point to a new economic structure supporting innovation in Silicon Valley.

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**Value added per Silicon Valley employee held steady in 2018, with a 2.4% increase in inflation-adjusted GDP balanced by a similar rate of employment gains.**

<table>
<thead>
<tr>
<th>Percent Change in Inflation-Adjusted Value Added Per Employee</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2001-2018</strong></td>
</tr>
<tr>
<td>Silicon Valley</td>
</tr>
<tr>
<td>San Francisco</td>
</tr>
<tr>
<td>California</td>
</tr>
<tr>
<td>United States</td>
</tr>
</tbody>
</table>

Labor productivity in Silicon Valley has been increasing steadily over the past 17 years, reaching $207,000 of regional GDP per employee in 2018 (equivalent to approximately $100 per hour per employee).
Over the past 20 years, the number of Silicon Valley patent registrations in Communications has increased tenfold (reaching 5,496 in 2017) and the share of all Silicon Valley patents increased from 13% to 28%.

In 2017, 19,539 patents were registered to Silicon Valley inventors (compared to 3,013 to San Francisco inventors); this number represents only 153 more patents than the prior year.

Silicon Valley labor productivity (inflation-adjusted) was 36% higher in 2018 than it was in the year 2001.

In 2017, more than half (54%) of California patents were registered to Silicon Valley or San Francisco inventors.

Over the past 20 years, Silicon Valley’s share of California and U.S. patent registrations has increased dramatically (from 37% to 47%, and from 7% to 13%, respectively), although most of the increase occurred in the late 1990s.

Per capita patent registrations in San Francisco have shot up by 140% since 2011.
2018 venture capital investments in Silicon Valley and San Francisco companies totaled nearly as much as the prior two years combined, and significantly more than any other single year since 2000.

VC investments to Silicon Valley companies increased by 31% year-over-year (up $4.6 billion after inflation-adjustment), while the 2018 San Francisco VC investment total was nearly three times higher than the year before.

2018 Silicon Valley and San Francisco venture capital investments totaled $50 billion ($19 billion in Silicon Valley and nearly $31 billion in San Francisco).

Internet companies received 38% of all 2018 venture capital funding to Silicon Valley.

The share of VC funding to Silicon Valley healthcare companies remained relatively high in 2018 (15%) with a total of $5.1 billion.

Since 2002, the share of VC funding to Silicon Valley electronics companies has declined from 18% to less than 2%.


The largest Silicon Valley VC investment of 2018 was $0.9 billion to Menlo Park-based Katerra Inc., a technology-driven building design and construction company. The largest San Francisco deal of 2018, by far, was the $12.8 billion infusion from Altria Group (Philip Morris parent company) into JUUL Labs Inc. – a manufacturer of electronic cigarettes.

Silicon Valley had a record 44 megadeals (more than $100 million each) in 2018, up from 23 the previous year. San Francisco had 37 megadeals in 2018.

The number of extremely large venture capital deals has been rising for the past five years, reaching 107 deals over $100 million each throughout California in 2018 (up from 11 in 2013).
Since 2010, there have been more seed or early-stage funding deals in San Francisco than in all the Silicon Valley cities combined.

San Francisco companies received three times more Angel investment dollars in 2018 ($302 million) than Silicon Valley companies ($100 million).

Angel investments in Silicon Valley and San Francisco represented 76% of the statewide total in 2018.

While San Francisco and Santa Clara County Angel investments showed small year-over-year declines in 2018 (down 13% and 5%, respectively), San Mateo County investments were down by 86% ($92 million) in 2018.

Angel investments in Silicon Valley and San Francisco declined in 2018 by 50% and 13%, respectively (after inflation-adjustment); California as a whole experienced a similar decline (-26% year-over-year).

The share of Silicon Valley seed or early-stage funding deals to companies founded by women has increased significantly over the past decade, reaching 16% in 2018.

The number of Silicon Valley seed or early-stage funding deals declined for the third year in a row.

<table>
<thead>
<tr>
<th>Share of Seed and Early-Stage Deals to Companies Founded by Women</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Silicon Valley</strong></td>
</tr>
<tr>
<td>2008</td>
</tr>
<tr>
<td>2018</td>
</tr>
</tbody>
</table>

*2018 data as of December 12. | Data Source: Crunchbase | Analysis: Silicon Valley Institute for Regional Studies
Whereas 2018 IPO pricings on U.S. stock exchanges were spread across ten different industry areas, Silicon Valley IPOs were predominantly in healthcare and technology (13 and five out of 20, respectively).

Silicon Valley IPOs raised a total of $3.2 billion – nearly quadruple the amount of the prior year (by nine IPOs) – representing 6% of the $54 billion national total.

Silicon Valley and San Francisco had twice as many IPO pricings in 2018 (a total of 20 and eight, respectively) than in either of the two years prior, while the total number of U.S. IPO pricings only increased by 10%. These 28 companies had an average post-IPO return of 37% (compared to -2% for all U.S. IPOs).

In 2018, there were 20 IPO pricings of Silicon Valley companies, representing 15% of all IPOs on U.S. stock exchanges during that year. Of those 20, 13 were valued at more than $1 billion by the end of the year.
The slight increase in total Silicon Valley M&A deals between 2017 and 2018 was due to 34 more acquisitions (18 of which were acquisitions of local companies).

68% of San Francisco’s 2018 M&A activity was Acquirer Only deals (compared to 55% in Silicon Valley).

19% of all 2018 California M&A deals involved at least one Silicon Valley company (a total of 658 deals).

Silicon Valley’s largest M&A deal of 2018 was the acquisition by San Jose-based Broadcom Inc. of CA Technologies (a company in the IT/Software industry based in New York, with a local office in Santa Clara) for $18.6 billion in cash. The largest San Francisco M&A deal with the Microsoft acquisition of San Francisco-based GitHub (a software development platform) for $7.5 billion in cash and stock.
**ECONOMY**

**NONEMPLOYER TRENDS**

**Relative Growth of Firms Without Employees**
Santa Clara & San Mateo Counties, San Francisco, Alameda County, California, and the United States

Indexed to 2008 (100=2008 values)

<table>
<thead>
<tr>
<th>Year</th>
<th>Silicon Valley</th>
<th>San Francisco</th>
<th>Alameda County</th>
<th>California</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>'08</td>
<td>100</td>
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<td>'16</td>
<td>140</td>
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<td>140</td>
<td>140</td>
<td>140</td>
</tr>
</tbody>
</table>

Data Source: United States Census Bureau, Nonemployer Statistics | Analysis: Silicon Valley Institute for Regional Studies

The number of nonemployer firms in Silicon Valley grew by 22% between 2008 and 2016, compared to +25% in San Francisco and +33% in Alameda County.

**Firms Without Employees in 2016**

<table>
<thead>
<tr>
<th>Region</th>
<th>Firms Without Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon Valley</td>
<td>214,994</td>
</tr>
<tr>
<td>San Francisco</td>
<td>99,307</td>
</tr>
<tr>
<td>Alameda County</td>
<td>143,612</td>
</tr>
<tr>
<td>California</td>
<td>3,277,415</td>
</tr>
<tr>
<td>United States</td>
<td>24,813,048</td>
</tr>
</tbody>
</table>

**NONEMPLOYER TRENDS**

**Percentage of Nonemployers by Industry**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Silicon Valley</th>
<th>San Francisco</th>
<th>Alameda County</th>
<th>California</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wholesale trade</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Information</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Other*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance and insurance</td>
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<td>Educational services</td>
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<td>Arts, entertainment, and recreation</td>
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<td>Construction</td>
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<td>Retail trade</td>
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<td>Administrative and support and waste management and remediation services</td>
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<td>Health care and social assistance</td>
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<td>Real estate and rental and leasing</td>
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<td>Other services (except public administration)</td>
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<tr>
<td>Transportation and warehousing</td>
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<tr>
<td>Professional, scientific, and technical services</td>
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</tbody>
</table>

24% of Silicon Valley nonemployer firms are in Professional, Scientific, and Technical Services.

*Other includes Accommodation & Food Services; Mining, Quarrying and Oil & Gas Extraction; Agriculture, Forestry, Fishing & Hunting; and Utilities.

Data Source: United States Census Bureau, Nonemployer Statistics | Analysis: Silicon Valley Institute for Regional Studies
The pace of new development in Silicon Valley has remained brisk – measured by the total amount of new space completed (3.9 million square feet, most of which was due to a small number of notable projects) and the staggering amount currently under construction (10.4 million square feet).

Though office space vacancy rates rose sharply in 2018, they are not necessarily indicative of a lack of demand; they reflect occupancy losses in specific industries and some consolidation activity of dominant tenants, as well as preleased spaces that have yet to be occupied. Furthermore, vacancy rates remained low in prime submarkets such as Palo Alto and Mountain View, and areas near public transit.

Asking rents were relatively stable in 2018 for office space, though industrial space rental rates continued a seven-year upward trend due to a limited supply in relation to demand. Although asking rents in Silicon Valley are relatively high compared to some other growing tech regions across the nation, the region’s major tech companies have continued to expand their presence with a growing real estate footprint. Strong preleasing activity by local tech firms is supporting continued development, and the resurgence of local hotel development is a positive indicator of the region’s overall economic health and outlook on the future.

Why is this important?

Changes in the supply of commercial space, vacancy rates and asking rents provide leading indicators of regional economic activity. A negative change in the available supply of commercial space suggests strengthening economic activity and tightening in the commercial real estate market. Increases in vacancy (the amount of space that is not physically occupied), as well as declines in rents, reflect slowing demand relative to supply. Rents and vacancy rates near transit illustrate the value that those prime locations provide to tenants and their employees. Changes in the real estate footprint of major tech companies show whether they are expanding or contracting, which affect regional employment levels. Tech company preleasing activity is also indicative of overall real estate demand and affects optimism toward speculative development.

More new Silicon Valley commercial space has been constructed over the past four years (nearly 24 million square feet) than during the previous 13 years combined (18.6 million total between 2002 and 2014).
Office space availability did not change significantly between 2017 and 2018; while a large amount of new space was constructed, much of that space was preleased at the time of delivery or leased shortly thereafter.

While net absorption was negative during the first half of the year due to preleased space that was yet to be delivered (or occupied) and space that was vacated due to consolidation and rightsizing (consolidation combined with more efficient utilization of space), it rose to 1.4 million square feet in Q4 – indicating tenants physically moving into their space. By the end of 2018, more than one million square feet of pre-leased Class A space was occupied by tenants such as Apple, Amazon, and MachineZone.

While commercial space deliveries were slightly lower in 2018 than the prior two years, there is still a phenomenal amount of space under construction (10.4 million square feet, primarily office space but also some R&D, and an unprecedented amount of industrial space).

Major projects include 1.05 million square feet at Moffett Towers (slated to be occupied by Facebook), Microsoft’s campus in Mountain View (450,000 square foot renovation), Splunk’s new building at Santana Row (300,000 square feet), 250,000 square feet of new space at Google in Mountain View, and the new 200,000-square-foot County of Santa Clara building in downtown San Jose. Industrial space underway includes the Pacific Commons in Fremont (1.8 million square feet) and the Gateway Project in Newark (410,000 square feet).

While no R&D space was delivered to the market in 2018, 1.17 million square feet is underway – a large part of which are life science buildings in South San Francisco (including 850,000 square feet expected to be completed in Q1 2019) and 326,000 square feet at 1050 Kifer Road in Sunnyvale, which is owned (and will be occupied) by Intuitive Surgical.
Bay Area office space vacancy rates are much lower at locations near public transit (within a ten-minute walk of a Caltrain, BART, or VTA station).

**Average Office Space Vacancy Rates by Proximity to Transit**

<table>
<thead>
<tr>
<th>Bay Area</th>
<th>Q4 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near Transit</td>
<td>11.0%</td>
</tr>
<tr>
<td>Not Near Transit</td>
<td>17.8%</td>
</tr>
</tbody>
</table>

Despite a high regional office space vacancy rate in 2018, vacancy remained low in prime submarkets such as Palo Alto, Redwood City, Menlo Park, Mountain View, and Sunnyvale (3-6% direct vacancy rates).

**Silicon Valley industrial space vacancy rates are at an 18-year low, reaching 2.6% in 2018; the last time industrial vacancy was this low was in Q4 2000.**

While industrial and R&D space vacancy rates showed small declines over the past year, office vacancy rose from 14% in 2017 to nearly 18% in 2018. Much of this increase was due to occupancy losses in the airline and finance industries in San Mateo County – including space released by Visa, MasterCard, and Virgin Airlines – as well as continued M&A and consolidation activity by some of Silicon Valley’s dominant tenants, particularly networking and telecommunications firms in North San Jose and Milpitas.

**Office space vacancy rates rose sharply in 2018 – reaching nearly 18%.**
Bay area office space located within a ten-minute walk of public transit rents at nearly two times the rate of locations not near transit.

### Average Office Space Rental Rates by Proximity to Transit

<table>
<thead>
<tr>
<th></th>
<th>Q4 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near Transit</td>
<td>$8.08</td>
</tr>
<tr>
<td>Not Near Transit</td>
<td>$4.10</td>
</tr>
</tbody>
</table>

Asking rents for commercial office space remained relatively stable in 2018 (down 1% year-over-year, six cents per square foot after inflation-adjustment).

Silicon Valley industrial space rental rates increased again in 2018 as part of a seven-year upward trend, reaching $1.21 per square foot. Much of this increase is likely due to the limited availability of space relative to demand.

2018 rental rates for Silicon Valley office space were higher than many other regions of the country, such as Austin and Seattle, and were 1.5 to 2 times the cost of space in places like Portland and Denver.
There has been a resurgence in hotel development since 2014, with 23 new Silicon Valley and San Francisco hotels (totaling 3,280 rooms) opened over a four-year period.
Google, Apple, Facebook, LinkedIn, and Amazon combined have leased approximately 18% of all available office and R&D space in Silicon Valley.

Bay Area tech companies are responsible for the majority of office space preleasing activity.

Five of the region’s largest tech companies have executed leases and sales totaling 43.6 million square feet of commercial space, including (primarily) office and R&D space, as well as some industrial and warehouse.

A total of 11.3 million square feet of new commercial office space was under construction throughout the Bay Area in Q4 2018 (59% of which was in Silicon Valley). Of that total, 7.6 million square feet was preleased, primarily (93%) to tech companies.
Silicon Valley high school graduation rates and the share meeting UC/CSU requirements has increased since 2012, and the dropout rate has declined. Both graduation rates and the share meeting UC/CSU requirements continue to vary significantly by race and ethnicity, though the gap narrowed for Silicon Valley Hispanic or Latino students (with a sharp increase in the share meeting UC/CSU requirements, reaching to 39% in 2018). Eighth-grade math proficiency rose for the third year in a row to 56% of students meeting or exceeding the standard.

A greater share of Silicon Valley and San Francisco households has access to a computer with internet connectivity than in the state or nation as a whole, though connectivity varies by household income level. In 2017, 25% of Silicon Valley’s low-income households did not have broadband internet access (compared to 8% of households overall).

**WHY IS THIS IMPORTANT?**

The future success of Silicon Valley’s knowledge-based economy depends on younger generations’ ability to prepare for and access higher education; it also depends on providing all residents with a fundamental requirement for 21st century life – robust, high-speed network connectivity.

High school graduation and dropout rates are an important measure of how well our region prepares its youth for future success. Preparation for postsecondary education can be measured by the proportion of Silicon Valley youth that complete high school and meet entrance requirements for the University of California (UC) or California State University (CSU). Educational achievement can also be measured by proficiency in math, which is correlated with later academic success. Breaking down high school graduation rates and the share meeting UC/CSU entrance requirements by race and ethnicity sheds light on the inequality of educational achievement in the region. And, whether the region’s residents have access to a computer with broadband internet connectivity is indicative of their ability to engage in the community, look for jobs, do homework, manage finances, interact with government, access a wide variety of resources, and conduct the business of everyday life.

Silicon Valley’s high school dropout rate (8%) in 2018 was nearly two percentage points lower than in the state overall (10%).

Silicon Valley’s high school graduation rate increased slightly in 2018 (reaching nearly 87%), as did the share of students meeting UC/CSU requirements (reaching 59%).
High school graduation rates vary by race/ethnicity, with Asian students nine percentage points above the regional average.

59% of Silicon Valley high school graduates in 2018 met the UC/CSU entrance requirements.

The share of Silicon Valley’s Hispanic or Latino high school graduates meeting UC/CSU entrance requirements rose from 27% in 2012 to 39% in 2018 (though a portion of that increase may have been due to changes in the cohort outcome calculation methodology).
56% of Silicon Valley eighth-graders are proficient in math, compared to only 37% in California overall.

*Math proficiency data is not available for 2014. Note: Beginning with the 2013–14 school year, the California Assessment of Student Performance and Progress (CAASPP) became the new student assessment system in California, replacing the Standardized Testing and Reporting (STAR) system.

Data Source: California Department of Education | Analysis: Silicon Valley Institute for Regional Studies
Silicon Valley has a greater share of households with computers and broadband internet access than San Francisco, California, or the United States overall.

The share of Silicon Valley households with a computer and broadband internet access increased between 2013 and 2017 (up by four and six percentage points, respectively).

8% of all Silicon Valley households did not have broadband internet access in 2017; this share jumps to 25% for low-income households (earning less than $35,000 annually).
Preschool enrollment rates in Silicon Valley and San Francisco are higher than in the state and nation as a whole, and a greater share attend private preschools. Average preschool costs are significantly higher (and rising sharply), though, as are costs for infant care (which reached nearly $21,000 per year at licensed care facilities in Silicon Valley in 2018). A larger share of the region’s third-graders is proficient in English Language Arts (60% in Silicon Valley and 53% in San Francisco) than in the state overall (48%), though proficiency varies significantly by race and ethnicity.

WHY IS THIS IMPORTANT?

Early education provides the foundation for lifelong accomplishment. Research has shown that quality preschool-age education is vital to a child’s long-term success. Private versus public school enrollment illustrates the economic structure of our community when compared to California and the United States. Reading and writing abilities function as important indicators for a child’s future, as they are strongly correlated with continued academic achievement. Child care costs affect the ability of Silicon Valley parents to send their children to preschool, and to provide quality care for their infants while they work.

### PRESCHOOL ENROLLMENT

**Percentage of the Population 3 to 4 Years of Age Enrolled in School**

Santa Clara & San Mateo Counties, San Francisco, California, and the United States

![Graph showing preschool enrollment rates](chart)

*Note: Data includes enrollment in private and public schools.*

Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies

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Forty-two percent of Silicon Valley 3- and 4-year-olds are enrolled in private preschool (up from 34% in 2007).

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Preschool enrollment rates in Silicon Valley rose by seven percentage points since 2013.

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Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies
Third grade English language arts proficiency in Silicon Valley varies significantly by race/ethnicity, with Asian students having the highest share (80%) meeting or exceeding the standard.

Silicon Valley has a higher share of third-graders meeting or exceeding the English language arts standard than San Francisco or the state as a whole.

Data Source: California Department of Education, California Assessment of Student Performance and Progress (CAASPP)
Analysis: Silicon Valley Institute for Regional Studies

Average child care costs at licensed care facilities in Silicon Valley were an estimated $20,900 per year for infants and $15,300 per year for preschoolers in 2018; infant care centers in San Francisco charge an estimated $22,800 per year.

Child care costs in Silicon Valley rose by 30-57% (after inflation-adjustment) between 2012 and 2018, depending on the type of care facility and age group.

The cost of care for children under age five rose significantly since 2012 in Silicon Valley, San Francisco, and California.

The cost of preschool is 28% higher at Silicon Valley child care centers than at those throughout the state.
There are more than 400 nonprofit arts organizations in Santa Clara and San Mateo Counties combined. The region had 9,200 employees working in arts and culture industries in 2013, representing less than one percent of regional employment (compared to 5% in San Francisco). Silicon Valley residents spend more money on arts and culture consumption than those in many other regions across the United States, and 28% of all households donate money to public broadcasting or the arts (compared to 35% in San Francisco).

WHY IS THIS IMPORTANT?

Arts and culture play an integral role in Silicon Valley’s economic and civic vibrancy. As both creative producers and employers, nonprofit arts and culture organizations are a reflection of regional diversity and quality of life. In attracting people to the area, generating business throughout the community and contributing to local revenues, these unique cultural activities have considerable local impact.

The number of local arts nonprofits is indicative of a region’s ability to organize and make arts programs available to the community. Local employment is one of the most substantial ways that arts and culture affect our community. Spending on arts and culture activities reflects the public’s interest, as well as the amount of money for which producers of the arts must compete. And the share of households donating indicates how much the community values the arts and is willing to support it.

San Francisco has significantly more nonprofit arts organizations per capita (57 per 100,000 residents in 2012) than either Santa Clara or San Mateo Counties (17 and 16 per 100,000, respectively); this amounts to approximately 431 nonprofit arts organizations in Santa Clara and San Mateo Counties combined.

In 2012, there were 5.1 and 6.3 nonprofit performing arts organizations per 100,000 residents in San Mateo and Santa Clara Counties, respectively (compared to 19.2 per 100,000 in San Francisco).
San Mateo County residents spend more, on average, on arts and culture activities than Santa Clara County residents.

Silicon Valley residents spend nearly $500 annually, on average, on arts and culture products/activities including recorded media, reading materials, photographic equipment, musical instruments, and admissions to entertainment venues such as theaters, stadiums, and concert halls.

Santa Clara and San Mateo Counties had a combined total of more than 9,200 arts and culture employees in 2013 (representing less than one percent of all employees), compared to 22,900 (5% of all employees) in San Francisco.

The share of households donating to the arts declined between 2011 and 2014 in Santa Clara and San Mateo Counties, and in San Francisco.
The share of residents ages 18-64 covered by health insurance remained high in 2017 following a three-year upward trend in Silicon Valley, San Francisco, California, and across the nation. In particular, the share of Silicon Valley unemployed residents with health insurance coverage has increased by 24% since the implementation of the Affordable Care Act in 2014 and its early expansion program, the Low Income Health Program (which enrolled over 30,000 Silicon Valley residents in Medi-Cal by the end of 2013).

Obesity is becoming more prevalent among Silicon Valley adults and throughout the state. The share of Silicon Valley adults who are overweight or obese rose to 58% in 2017, and nearly one-third of Silicon Valley’s students are above a healthy Body Mass Index. Nearly all (97%) of the region’s kindergarten students have had all of their required immunizations, a rate that has remained high following state legislation in 2016 that eliminated the exemption based on personal or religious beliefs. Pregnant women in the Bay Area experience poverty at higher rates than the overall population, with 26% falling below the federal poverty guideline. Twelve percent experience food insecurity, and 15% receive food stamps. Silicon Valley’s infant mortality rate remains lower than in the state overall, though the rate varies significantly by race and ethnicity; Black or African American women in Silicon Valley are nearly three times more likely to have an infant die before his or her first birthday than White women.

**WHY IS THIS IMPORTANT?**

Early and continued access to quality, affordable health care is important to ensure that Silicon Valley’s residents are thriving. Given the high cost of health care, individuals with health insurance are more likely to seek routine medical care and preventive health-screenings.

Being overweight or obese increases the risk of many diseases and health conditions, including Type 2 diabetes, hypertension, coronary heart disease, stroke, and some types of cancers. These conditions decrease residents’ ability to participate in their communities, may increase medical expenses, and have significant economic impacts on the nation’s health care system as well as the overall economy due to declines in productivity.

Improving the well-being of mothers, infants, and children is an important public health goal for any region. Maternal and infant health statistics provide information about how well we are preparing the next generation of healthy young residents. Timely childhood immunizations promote long-term health, save lives, prevent significant disability, and reduce medical costs.

58% of Silicon Valley adults are overweight or obese, compared to 41% in San Francisco and 60% in California.

In 2016 and 2017, 94% of Silicon Valley’s 18- to 64-year-olds were covered by health insurance.

The share of adults who are overweight or obese has increased in Silicon Valley and throughout the state over the past decade, while declining slightly in San Francisco.

Nearl 1/3 of Silicon Valley students are overweight or obese.

A smaller share of Silicon Valley students (32%) is overweight or obese than in San Francisco (34%) or the state overall (39%).

The share of Silicon Valley students who are overweight or obese has remained steady (around 32%) since 2014.
Health insurance coverage for the working age population has increased significantly since 2013, influenced by the availability of coverage through the Affordable Care Act.1

1. Changes in the share of the population with health insurance coverage between 2013 and 2016 were highly influenced by the availability of coverage through the 2010 Patient Protection and Affordable Care Act (PPACA, also known as Obamacare), which became effective on January 1, 2014 for the earliest enrollees. Increases in coverage between 2012 and 2013 were likely related to the Low Income Health Program (LIHP) – an early coverage expansion program administered prior to implementation of the ACA.

Since the Affordable Care Act became effective for its earliest enrollees, the share of unemployed Silicon Valley residents with health insurance coverage jumped twenty-four percentage points, with a similar increase (+25%) throughout the state; there has also been an increase (though smaller) in the coverage of Silicon Valley employed workers and those not in the labor force (+7% and +2%, respectively, between 2013 and 2017).
More than a quarter of all pregnant women in the Bay Area had incomes below the federal poverty guideline in 2015 (compared to 10% of the population as a whole), 12% experienced food insecurity (the same rate as for all residents), and 15% received CalFresh (compared to 6% overall).

The infant mortality rate in Silicon Valley (3.3 deaths per 1,000 live births) was lower than in the state overall (4.2 per 1,000) in 2016.

1. Data collected between 2013 and 2015.
2. According to 2015 food insecurity estimates from Feeding America, Map the Meal Gap.
3. The figure of 6% of all residents in the Bay Area receiving CalFresh is from the California Department of Social Services, Administration Division, CalFresh Dashboard (updated 01/10/19).

Infant Mortality Rate by Race & Ethnicity
Number of Infant Deaths per 1,000 Live Births
Santa Clara & San Mateo Counties | 2007-2016

<table>
<thead>
<tr>
<th>Race &amp; Ethnicity</th>
<th>2007-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black or African American</td>
<td>6.9</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>3.6</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>2.8</td>
</tr>
<tr>
<td>White</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Note: Black or African American, Asian or Pacific Islander, and White are Non-Hispanic.

Data Source: U.S. Department of Health and Human Services, Centers of Disease Control and Prevention (CDC) | Analysis: Silicon Valley Institute for Regional Studies
Over the past decade, Black or African American women in Silicon Valley were nearly three times more likely than White women to have an infant die before his or her first birthday.
Silicon Valley has a lower rate of violent crimes than in the state overall; however, in 2017 there were still more than 8,700 violent crimes reported locally. The rate increased by 10% over the prior year, with a 25% increase in the number of rapes reported. The felony arrest rate remained much lower than prior to the passage of California Proposition 47 (in 2014). Though the juvenile felony arrest rate in Silicon Valley is very similar to the state overall, the adult felony arrest rate is significantly lower.

Silicon Valley had more public safety officers in 2018 than any other year over the past decade, with more than 5,000 sworn full-time and reserve personnel.

**WHY IS THIS IMPORTANT?**

Public safety is an important indicator of societal health. The occurrence of crime erodes our sense of community by creating fear and instability and poses an economic burden as well. The number of Silicon Valley public safety officers provides a unique window into the changing infrastructure of our city and county governments and affects the public’s perception of safety.

Silicon Valley’s violent crime rate increased by 10% in 2017 (compared to 1% increase throughout the state).

The number of reported rapes in Silicon Valley increased by 25% (+244) in 2017 over the prior year.

85% of 2017 violent crimes in Silicon Valley were aggravated assault or robbery.

There were more than 8,700 violent crimes reported within the region in 2017.

In 2017, there were 237 more aggravated assaults in Silicon Valley (reaching a total of 4,645 reported) than were reported during the prior year.
Silicon Valley had more public safety officers in 2018 than in any other year over the past decade, with 5,070 sworn full-time and reserve personnel throughout the region (70% in Santa Clara County).

Felony arrest rates in Silicon Valley and throughout the state dropped significantly in 2015 (-31% year-over-year) due to the passage of Proposition 47, then remained relatively steady through 2016 and 2017.

Of Silicon Valley’s 109 additional public safety officers in 2018, 102 were added by just two agencies (the San Jose Police Department and the County of Santa Clara Sheriff’s Office).
Median home sale prices in Silicon Valley skyrocketed in 2018 (+21%) – reaching nearly $1.2 million - and the share of potential first-time homebuyers that could afford a median-priced home declined. The inventory of homes on the market has remained relatively low, as has the total number sold each year.

Average rental rates have remained relatively steady (after adjusting for inflation), though the rental rate per square foot remains higher than any other U.S. metro area. Median monthly housing costs are also the highest among metro areas in the country (at more than $2,000 per month), and the housing burden for Silicon Valley homeowners is higher than in the nation overall.

Local housing affordability issues are being exacerbated by inadequate new residential development. Although a large number of units have been built over the past two years, they have not made up for the lack of building over the prior decade; and, new residential building is predominantly for high-income residents, with only 8% of newly approved residential units affordable to those earning less than 80% of the area median income. Housing affordability is a contributor to the rise in multigenerational households, multifamily households, and young adults living with their parent(s). Affordability, evictions, and other factors are also leading causes of homelessness within the region.

WHY IS THIS IMPORTANT?

The housing market impacts a region’s economy and quality of life. An inadequate supply of new housing negatively affects prospects for job growth. A low for-sale inventory drives up prices. And a lack of affordable housing results in longer commutes, diminished productivity, curtailment of family time, and increased traffic congestion. It also restricts the ability of crucial service providers—such as teachers, registered nurses, and police officers—to live near the communities in which they work. Additionally, high housing costs can limit families’ ability to pay for basic needs, such as food, health care, transportation, childcare, and clothing. They can push residents to live with one another for economic reasons and can increase homelessness. Being evicted from a rental unit can also cause a rise in multifamily households and is a leading cause of homelessness in our region. As a region’s attractiveness increases, average home prices and rental rates tend to increase. Higher levels of new housing and attention to increasing housing affordability are critical to the economy and quality of life in Silicon Valley.

Silicon Valley median home sale prices have increased by $300,000 over the past two years alone, reaching nearly $1.2 million in 2018.

While California home price increases were modest in 2018 (up 3.4% year-over-year, after inflation adjustment), Silicon Valley home prices rose sharply in 2018 (a 21% year-over-year increase).

In 2018, the median sale price of a Silicon Valley home was $1.18 million, compared to $1.31 million in San Francisco, $485,000 statewide, and $221,000 nationwide.
The number of homes sold annually in Silicon Valley continued a six-year downward trend (reaching an estimated 25,000 per year in 2018) from the most recent peak of 29,500 homes sold in 2012.

The average monthly for-sale inventory in Silicon Valley is less than one-half of what it was in 2011.

The number of Silicon Valley homes listed for sale each month increased slightly in 2018 (up 15% over the prior year), exceeding 3,000 homes per month.
The rate of residential building accelerated in 2017, then fell slightly in 2018 with fewer than 8,400 units permitted.

The share of multi-family units in Silicon Valley residential building permits (72% in 2018) has remained relatively steady over the past few years.

Silicon Valley had 1,240 fewer residential units permitted in 2018 than during the prior year, and 3,200 fewer than the recent peak in 2014.

85% of Silicon Valley’s residential units permitted thus far in the 2015-2023 RHNA cycle were in the Above Moderate (120%+ of the Area Median Income) category.

In the first three years of the 2015-2023 RHNA Cycle, Silicon Valley permitted 31% of the residential units needed to reach its goal.

Note: Data is for RHNA reporting in 2015-2017, and do not include units permitted in 2014 that are being applied toward the current RHNA cycle.

Data Source: Association of Bay Area Governments (ABAG) | Analysis: Silicon Valley Institute for Regional Studies
There were only 614 affordable housing units approved in FY 2017-18, 489 of which were affordable for households earning less than 50% of the area median income.

Data Source: City Planning and Housing Departments of Silicon Valley | Analysis: Silicon Valley Institute for Regional Studies
The median rental rate in Silicon Valley was $3,728 for an apartment and $4,498 for a single-family residence (or condo/coop) in 2018.

San Jose and San Francisco are the two most expensive of the country’s major metropolitan regions, based on median monthly housing costs in 2017.

The San Francisco and San Jose metro areas ranked 1st and 2nd, respectively, for apartment rental rates per square foot; these rates are twice as much as in the U.S. overall, and nearly three times the cost of living in places such as Pittsburgh or Las Vegas.
Nearly half of all Silicon Valley households who rented in 2017 were burdened\(^1\) by housing costs.

In 2017, 24% of Silicon Valley households who rented (and 15% of homeowners with a mortgage) spent more than half of their gross income on housing costs.

While the housing burden for Silicon Valley renters is relatively similar to that of the nation as a whole, the burden for Silicon Valley owners is higher (35% of Silicon Valley owners, compared to 28% across the country).

The share of Silicon Valley owners burdened by housing costs has declined by 16 percentage points over the past decade (amounting to nearly 70,000 fewer burdened households), while the share of renters burdened has declined by only 1%.

Only 22% of potential first-time homebuyers in San Mateo County can afford a median-priced home; this compares to 30% in Santa Clara County, 22% in San Francisco, and 47% statewide.

The Silicon Valley Housing Affordability Index continued to fall in the first three quarters of 2018 – down three percentage points in both Santa Clara and San Mateo Counties – reaching the lowest level since 2007.

\(^1\) According to the U.S. Department of Housing and Urban Development, housing costs greater than 30% of household income pose moderate to severe financial burdens.
OCCUPANCY CHARACTERISTICS

Average Household Size & Additional Units Needed to Accommodate Population Growth
Santa Clara & San Mateo Counties

Data Source: California Department of Finance; Construction Industry Research Board and California Homebuilding Foundation
Analysis: Center for Continuing Study of the California Economy; Silicon Valley Institute for Regional Studies

Although the number of new residential units permitted has kept pace with population growth over the past two years, a large shortage (as much as 108,000 units) has accumulated.

Between 2007 and 2016, Silicon Valley created a housing shortage of approximately 38,000 units that would be needed to accommodate the region’s growing population even with increases in the number of residents per household, and despite the offset in 2014 (with excess units permitted that year beyond the number needed to accommodate annual population growth).

More than a quarter of all Silicon Valley residents live in multigenerational households (amounting to nearly 17% of all households).

Living in multigenerational households is more common in Silicon Valley compared to San Francisco, where residents are more likely to live with non-family members (one in five San Francisco residents lives in a multifamily household).

Silicon Valley has a slightly lower share of residents living in multigenerational households (25%) than in the state as a whole (27%).

Note: Multigenerational households include all households with two or more adult generations, where an adult is defined as age 25 and over.
Data Sources: IPUMS-USA, University of Minnesota; Pew Research Center | Analysis: Kyle Neering; Silicon Valley Institute for Regional Studies

Average Silicon Valley household size rose steadily through 2013 despite declining birth rates and an increasing share of the population in older age groups that typically have smaller households; more recently, average household size has leveled off around 2.95 to 2.97.
The share of Silicon Valley young adults living with their parent(s) has increased by four percentage points (+50,000 people) since 2010.

A greater share of Silicon Valley residents lives in multifamily households (11%) than a decade ago (9.5% in 2007), and the share has risen more than in the state overall.
In 2018, nearly 8,500 people in Santa Clara and San Mateo Counties combined were homeless (approximately 100 people fewer than the previous year) including more than 500 unaccompanied minors and 1,400 individuals in families; San Francisco had a homeless population of approximately 6,850 people in 2018.
Half of Santa Clara County’s homelessness is due to lost jobs or evictions.

In 2016, there were more than 1,200 court-enforced evictions of renters in Santa Clara and San Mateo Counties.
The average number of miles driven by Silicon Valley residents declined for the third year in a row, reaching 22 miles per day in 2017. There was a slight uptick in gas prices that year, contributing to the rising costs of transportation (which reached $6,300 annually for a family of four in 2018, covering only the most basic needs).

Though a smaller share of Silicon Valley residents drives to work alone than a decade ago (72%, down from 75%), solo-commuting is still the most common way to get to work. Average commute times have increased by 20% over the past decade – adding an additional 43 hours of driving time per commuter annually – due to more drivers on certain commute paths, a doubling in the amount of time spent in traffic, and people living farther from their workplaces. In 2017, 6.5% of local employees (nearly 95,000 people) spent more than three hours commuting to and from work on a daily basis.

A larger share of commuters is choosing to ride bicycles instead of driving, likely influenced by significant increases in the miles of bicycle paths/routes throughout the region.

Public transit use per capita has been on the decline since 2015, though ridership on some systems has risen. Caltrain ridership, for instance, reached an all-time high in 2018, with peak trains regularly operating at or above capacity. Ridership on private shuttles has increased in recent years on a large scale, with annual ridership rivaling that of the region’s existing public transit systems.

**WHY IS THIS IMPORTANT?**

Adequate highway capacity and improved transportation options, both public and private, are important for the mobility of people and goods as the economy expands. Investments in public transportation, walking and bicycling infrastructure, along with improving automobile fuel efficiency and shifting from fossil fuels to electric vehicles are crucial.

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**Silicon Valley residents drove an average of 22 miles per day in 2017 – down from 25 miles per day a decade prior; this compares to 11 miles/day in San Francisco, 25 miles/day in Alameda County, and 24 miles/day statewide.**

**Gas prices locally (and statewide) increased slightly in 2017 to $3.08 per gallon but remained $1.42 per gallon (32%) less than the recent peak in 2012 after adjusting for inflation.**
vehicles, are important for meeting air quality and carbon emission reduction goals. Further, creating safe conditions for active modes of transportation, such as biking and walking, is important for helping residents get around within the region as well as promoting healthy lifestyles and enhancing quality of life. How much residents are driving their cars, how they commute, and changes in overall commuting behavior affect congestion on the region’s roadways. Changing transportation costs affect our residents’ ability to get around and still afford their other basic needs. And the amount of time wasted due to long commutes and traffic delays affects the everyday lives of our residents – taking time away from work, participating in the community, or being with family and friends.

The cost of transportation needs in Silicon Valley rose by 4% over the past four years (after adjusting for inflation); this compares to a decrease in the cost of transportation needs of 12% statewide over the same time period.

The cost of basic transportation needs for a Silicon Valley family of four was $6,300 per year in 2018.

Data Source: Center for Women’s Welfare, University of Washington | Analysis: Silicon Valley Institute for Regional Studies

1. Includes only one trip for shopping and errands each week, driving to and from work and school/daycare.
Silicon Valley commute times have increased by 20% over the past decade, reaching an average of 59 minutes per commuter per day in 2017.

The share of commuters using public transportation to get to work has increased 44% over the past decade, amounting to an additional 29,000 commuters utilizing public transit in 2017 compared to 2007.

Nearly three-quarters of Silicon Valley residents drive to work alone (73%, compared to 74% statewide).

Commute time increases since 2007 have added an additional 43 hours of driving time per commuter annually (or 50 minutes weekly, assuming a 5-day workweek).

6.5% of Silicon Valley employees (nearly 95,000 people) travel more than three hours each day to/from work.

Megacommuting (commuting more than 90 minutes to or from work) rates have been increasing steadily in Silicon Valley, the Bay Area, and California since 2009 – more than doubling in Silicon Valley over that time period.
The number of commuters in/out of Silicon Valley has increased significantly over the past decade (up by 4% to 178% since 2007, depending on the commute path).

Between 2016 and 2017, the number of people commuting from Santa Clara County into San Francisco increased by approximately 10,000 workers (+56% year-over-year).

On a typical weekday there are 169,000 Silicon Valley residents commuting to San Francisco or Alameda County.

42% of workers living in San Mateo County commute to a different county.

Over the past decade, the number of people commuting from Santa Clara County into San Francisco has increased by 178% (up by 18,000 commuters); the number of commuters traveling from Alameda County into San Francisco rose by nearly 37,000 people over the same time period.

Between 2016 and 2017, the number of commuters traveling from Santa Clara County to work in San Mateo County increased by 12% (approximately 5,600 people).

### Change in the Number of Cross-County Commuters

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Alameda</td>
<td>San Francisco</td>
<td>+36,627</td>
<td>+53.8%</td>
</tr>
<tr>
<td></td>
<td>San Mateo</td>
<td>+9,253</td>
<td>+29.4%</td>
</tr>
<tr>
<td></td>
<td>Santa Clara</td>
<td>+15,428</td>
<td>+23.6%</td>
</tr>
<tr>
<td></td>
<td>Alameda</td>
<td>+4,303</td>
<td>+20.8%</td>
</tr>
<tr>
<td></td>
<td>San Mateo</td>
<td>+8,018</td>
<td>+18.5%</td>
</tr>
<tr>
<td></td>
<td>Santa Clara</td>
<td>+4,477</td>
<td>+19.9%</td>
</tr>
<tr>
<td>San Mateo</td>
<td>Alameda</td>
<td>+558</td>
<td>+4.1%</td>
</tr>
<tr>
<td></td>
<td>San Francisco</td>
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</tr>
<tr>
<td></td>
<td>Santa Clara</td>
<td>+16,606</td>
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</tr>
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<td>Santa Clara</td>
<td>Alameda</td>
<td>+4,061</td>
<td>+10.8%</td>
</tr>
<tr>
<td></td>
<td>San Francisco</td>
<td>+18,067</td>
<td>+177.8%</td>
</tr>
<tr>
<td></td>
<td>San Mateo</td>
<td>+12,768</td>
<td>+33.0%</td>
</tr>
</tbody>
</table>

### Share of Commuters Who Cross County Lines, by County of Residence

<table>
<thead>
<tr>
<th>County of Residence</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Clara County</td>
<td>14%</td>
</tr>
<tr>
<td>San Mateo County</td>
<td>42%</td>
</tr>
<tr>
<td>San Francisco</td>
<td>23%</td>
</tr>
<tr>
<td>Alameda County</td>
<td>36%</td>
</tr>
<tr>
<td>Bay Area</td>
<td>29%</td>
</tr>
</tbody>
</table>

Between 2016 and 2017, the number of people commuting from Santa Clara County into San Francisco increased by approximately 10,000 workers (+56% year-over-year).
### Number of Bicycle Commute Trips Per Day

**Santa Clara & San Mateo Counties**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>27,766</td>
<td>43,143</td>
<td>43,705</td>
<td>+57%</td>
</tr>
</tbody>
</table>

In 2017, Silicon Valley had nearly 44,000 daily bicycle commute trips utilizing the region’s roadways and other bicycle facilities (representing a 57% increase over the past decade).

### Share of Commuters Who Bike to Work

**Santa Clara & San Mateo Counties**

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2012</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.2%</td>
<td>1.8%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

Between 2007 and 2017, the share of Silicon Valley commuters who bike to work increased from 1.2% to 1.6%, amounting to an additional 8,000 people biking to/from work most weekdays.

### Share of Jurisdictions with a Bicycle or Pedestrian Master Plan

**Silicon Valley | 2016 & 2018**

<table>
<thead>
<tr>
<th>Year</th>
<th>Bicycle</th>
<th>Pedestrian</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>44%</td>
<td>17%</td>
</tr>
<tr>
<td>2018</td>
<td>61%</td>
<td>2%</td>
</tr>
</tbody>
</table>

The majority of Silicon Valley cities and counties have a Bicycle Master Plan in place, in the planning stage, or in-progress.

### Bicycle Collisions, by Severity

**Santa Clara & San Mateo Counties**

<table>
<thead>
<tr>
<th>Year</th>
<th>Severe Injury</th>
<th>Visible Injury</th>
<th>Complaint of Pain Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>445</td>
<td>568</td>
<td>1,036</td>
</tr>
<tr>
<td>2016</td>
<td>367</td>
<td>517</td>
<td>657</td>
</tr>
<tr>
<td>2017</td>
<td>320</td>
<td>456</td>
<td>616</td>
</tr>
</tbody>
</table>

Significantly fewer Santa Clara County bicycle collisions resulted in an injury or fatality in 2017 (590) than during the prior year (756 in 2016).

Data Source: Statewide Integrated Traffic Records System (SWITRS); Transportation Injury Mapping System (TIMS)
Analysis: Silicon Valley Institute for Regional Studies

In 2017, Silicon Valley had nearly 44,000 daily bicycle commute trips utilizing the region’s roadways and other bicycle facilities (representing a 57% increase over the past decade).
Silicon Valley gained 94 additional miles of bicycle facilities in 2018, including four miles of protected bikeways (the “gold standard” for bicyclists’ comfort and safety) in San Jose.

Silicon Valley has more than 1,500 miles of bicycle facilities, the majority (46%) of which are Class 2 (bike lanes).

The number of vehicle hours wasted due to traffic congestion in Silicon Valley and the Bay Area has more than doubled over the past decade.

In 2017, Silicon Valley commuters lost more than 75,000 hours to traffic congestion every day; using the 2017 estimate of regional labor productivity ($100 per employee per hour), Silicon Valley traffic delays could amount to as much as a $2.7 billion loss in productivity on an annual basis.

In 2017, six Silicon Valley bicycle collisions resulted in a fatality, and another 66 resulted in severe injuries.

Silicon Valley had 848 bicycle collisions in 2017 resulting in injury or death – down from 1,090 in 2015.

Between 2015 and 2017, the bicycle collision rate declined significantly in Santa Clara County.

Of every 10,000 daily bicycle commuters in Silicon Valley, 388 experienced a collision in 2017 that resulted in some sort of injury.
Public transit use per capita in Silicon Valley is lower than it has been over the past 16+ years.

Caltrain ridership has been increasing steadily since the beginning of the economic recovery period in 2010, and reached an all-time high in 2018 with peak trains regularly operating at or above capacity (especially north of Palo Alto).

Between 2017 and 2018, Caltrain ridership increased by nearly 1,000 boardings per day (+1.5% year-over-year). Assuming riders take the train two ways, this amounts to an additional 500 people utilizing Caltrain each weekday.

Despite an overall decline in public transit use, per capita ridership on ACE in Santa Clara County rose by 16% in FY 2017-18.
On an average weekday, there are 474 private shuttle trips between Santa Clara County and San Francisco, and 194 trips between Santa Clara and Alameda Counties.

Private shuttles represent the Bay Area’s 7th largest mass transit system, with annual ridership just below that of SamTrans and Caltrain.
The pace of non-residential development approvals remained brisk in the 2017-18 fiscal year despite the total amount of space approved falling slightly short of the prior year. Over the past five years combined, more non-residential development was approved (54.3 million square feet) than over the eleven years prior. With industrial space vacancy rates low and industrial rents increasing with higher overall demand, planned development of light industrial has increased (much of it accounted for by the Fremont Technology Business Center). There has also been a resurgence in hotel development throughout the region, with more than one hundred hotels with over 18,000 rooms in various stages of planning.

The density of newly approved residential units in Silicon Valley fell for the second year in a row. The total number of new units approved near transit declined year-over-year, as did the share of total approvals near transit (71%).

**WHY IS THIS IMPORTANT?**

By directing growth to already developed areas, local jurisdictions can reinvest in existing neighborhoods, increase access to transportation systems, and preserve the character of adjacent rural communities while reducing vehicle miles traveled and associated greenhouse gas emissions. 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, preserve open space near urbanized areas, and improve energy efficiency. By creating mixed-use communities, Silicon Valley gives workers alternatives to driving and increases access to workplaces.
Silicon Valley cities approved slightly more than 4,700 new housing units near transit in FY 2017-18, representing 71% of all newly approved residential units.

Pockets of high-density residential development approvals in FY 2017-18 included nearly 1,200 units in San Jose, a 632-unit mixed-use development near San Antonio Road in Mountain View, a 443-unit transit-oriented housing project in Union City, a repurposing of a former auto dealership site in Redwood City as well as a seven-story, 117-unit low-income senior apartment complex downtown with a co-located childcare facility.
More non-residential development was approved over the past five years (54.3 million square feet) than over the previous eleven years combined.

The pace of Silicon Valley non-residential development approvals remained brisk in FY 2017-18, despite the total falling slightly short of the previous four years.

Approved non-residential development projects were spread throughout Silicon Valley, with pockets of significant development planned in San Jose (2.7 million square feet with major projects including a 24-story mixed-use development of residential, office, hotel, and museum space in the current location of Parkside Hall), Fremont (including the 2.5 million square foot Fremont Technology Business Center for industrial use), Gilroy (700,000 square feet of light industrial development), Santa Clara (671,000 square feet combined for two data centers, and a new Santa Clara University dormitory), and Sunnyvale (558,000 square feet including some demolition of older tilt-up industrial/office buildings and replacement with new Class A office space).

Net non-residential development approvals (after planned demolition) in FY 2017-18 totaled 8.7 million square feet – 20% of which was within 1/3 of a mile of rail stations or major bus corridors (down from 43% near transit during the previous fiscal year).
Half of all newly approved non-residential development was light industrial space – the majority of which was accounted for by the Fremont Technology Business Center, as well as smaller projects in Santa Clara, Gilroy, Newark, San Jose, and Santa Clara. This compares to only 18% and 21% over the previous two fiscal years.

There are 116 hotels (with a total of more than 18,000 rooms) throughout Silicon Valley and San Francisco in various stages of planning; while not all of these projects will necessarily be built, the total represents more than quadruple what has been developed over the entire past decade.
Water consumption by Silicon Valley residents remained relatively low in 2018 at 110 gallons per person per day. Electricity consumption stayed fairly constant year-over-year as well, as did electricity productivity.

Installed solar capacity shot up to 481 MW (with 58,000 installed residential systems throughout the region) in 2018, the number of residents driving electric vehicles rose to more than 48,000 drivers, and the number of electric vehicle charging stations exceeded 3,000 (amounting to 18% of the state’s charging outlets). Due to the recent California wildfires and other factors, there were more unhealthy air days in Silicon Valley over the past two years than over the entire decade prior.

WHY IS THIS IMPORTANT?

Environmental quality directly affects the health and well-being of all residents as well as the Silicon Valley ecosystem. The environment is affected by the choices that residents make about how to live, how to get to work, how to purchase goods and services, where to build homes, our level of consumption of natural resources, and how to protect our environmental resources.

Energy consumption affects the environment through the emission of greenhouse gases (GHGs) and atmospheric pollutants from fossil fuel combustion. Sustainable energy policies include increasing energy efficiency and the use of clean renewable energy sources. For example, more widespread use of solar generated power diversifies the region’s electricity portfolio, increases the share of reliable and renewable electricity, and reduces GHGs and other harmful emissions. Electricity productivity is a measure of the degree to which the region’s production of economic value is linked to its electricity consumption, where a higher value indicates greater economic output per unit of electricity consumed. Electric vehicle infrastructure and adoption provide indicators on the extent to which Silicon Valley residents are utilizing a cleaner transportation alternative to fossil fuel combustion.

Water consumption and the use of recycled water are particularly important indicators given California’s recent drought conditions. Local emissions and other contributing factors, such as wildfires, have an effect on regional air quality which can have health implications.

Silicon Valley per capita water consumption – lower in 2016 than it had been in 15+ years – remained relatively low in 2018 at 110 gallons per person per day.
Silicon Valley electricity consumption per capita remained relatively steady between 2015 and 2017, though it has declined by 11% since the last peak in 2008.

Electricity consumption per capita in Silicon Valley is higher than in San Francisco and the rest of California.

Due to the wildfires throughout the state in 2017 and 2018 and other factors, Silicon Valley experienced 16 unhealthy air days during those years (and 30 unhealthy days for sensitive groups); the region has not experienced this number of unhealthy air days since 2001.
Silicon Valley electricity productivity has been rising slowly since 2009 (up 36% over an eight-year time period), reaching more than $13,000 per megawatt-hour in 2017.

Electricity productivity is significantly higher in San Francisco than in Silicon Valley, with nearly double the GDP per megawatt-hour of electricity consumed.

More than 6,000 new solar photovoltaic (PV) systems were installed in Silicon Valley in 2018, 97% of which were residential systems.

The amount of solar PV installed in Silicon Valley has more than doubled over the past four years, reaching a cumulative installed solar capacity of 481 megawatts in late 2018.

There are 58,000 solar PV systems on residential rooftops throughout Silicon Valley, plus another 1,500 non-residential installations.

*2018 data are through mid-December for the municipal utility data, and through September for the PG&E data. | Data Sources: Palo Alto Municipal Utilities; Silicon Valley Power; Pacific Gas & Electric | Analysis: Silicon Valley Institute for Regional Studies*
Since 2014, the number of public EV charging outlets in Silicon Valley has more than tripled (reaching nearly 3,300 in 2018).

18% of all California electric vehicle rebates have been issued to Silicon Valley drivers (36% to Bay Area drivers). While this share is high, it is likely still an underestimate of electric vehicle adoption given the share of Silicon Valley and Bay Area residents whose income makes them ineligible for the state rebate program (gross annual income limit of $150,000 for single filers, $204,000 for heads-of-household, and $300,000 for joint filers).1, 2

California has issued more than 48,000 electric vehicle rebates to Silicon Valley EV owners since the start of the rebate program, amounting to a total of nearly $110 million.

2. For instance, according to the ICCT report “California’s continued electric vehicle market development” (May 2018, www.theicct.org), vehicle registration data showed that more than 1,000 Teslas were sold to Palo Alto residents alone in 2017. During that year, Palo Alto residents only claimed 130 California EV rebates for Teslas.

Note: Data include public stations only. | Data Source: United States Department of Energy, Alternative Fuels Data Center | Analysis: Silicon Valley Institute for Regional Studies

Note: Only includes electric vehicles for which the owner applied for a California rebate. | Data Source: California Air Resources Board Clean Vehicle Rebate Project | Analysis: Silicon Valley Institute for Regional Studies
Silicon Valley city revenue increased by 4% regionally in FY 2016-17 (reaching $6.85 billion total). Total expenses increased slightly as well, but revenues still exceeded expenses by $751 million. Nearly half of all city revenues were from charges for services, while investment earnings continued to provide a very small share (1%).

**WHY IS THIS IMPORTANT?**

Many factors influence local government’s ability to govern effectively, including the availability and management of resources. To maintain service levels and respond to a changing environment, local government revenue must be reliable.

Property tax revenue is the most stable source of city government revenue, fluctuating much less over time than other sources, such as sales 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.

Nearly half (48%) of all Silicon Valley city revenue comes from charges for services.

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**Investment earnings in FY 2016-17 ($36 million) continued to provide a very small share (1%) of total regional city revenues. They amounted to only one eighth of what they were a decade ago ($304 million in FY 2006-07, half of which came from six cities alone - Mountain View, Palo Alto, San Jose, Santa Clara, Sunnyvale, and Fremont).**
Silicon Valley cities, in aggregate, are doing much better financially on an annual basis than a decade ago, with revenues in FY 2016-17 exceeding expenses by $751 million (compared to $240 million in FY 2006-07).
An increasing share of Silicon Valley voters is choosing to register with no political party preference (up to 33%), and a majority participate via absentee ballot. The absentee voting rate for the November 2018 election was the highest it has ever been for a general election, and the eligible voter turnout was 53% - higher than any other midterm election in the recent past. Eligible voter turnout is highest among Silicon Valley’s eldest residents, with much lower turnout rates for residents ages 18-24; however, young adult eligible voter turnout in November 2018 (36%) was the highest on record for any midterm general election.

WHY IS THIS IMPORTANT?

An engaged citizenry shares in the responsibility to advance the common good, is committed to place, and holds 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 decision-making.

The percentage of registered voters with no political party affiliation continued to increase in Silicon Valley, while the share registered as Republicans decreased.
Silicon Valley’s absentee voting rate for the November 2018 election (81%) was the highest ever for a general election, and the eligible voter turnout (53%) was higher than any other midterm general election since (at least) the 1980s.

81% of Silicon Valley voters cast absentee ballots in the 2018 general election (compared to 65% in California as a whole); 84% voted absentee in the June 2018 primary election.

53% of eligible Silicon Valley voters cast ballots in the 2018 general election – much higher than the 35% who voted in November 2014.

Eligible voter turnout of young adults ages 18 to 24 in Silicon Valley (36%), San Francisco (39%), and statewide (28%) is low compared to other age groups.

Eligible voter turnout in Silicon Valley is higher than in the state overall, across all age groups.

Voter turnout of young adults ages 18 to 24 in Silicon Valley (36%), San Francisco (39%), and statewide (28%) is low compared to other age groups.
While women are still underrepresented in local elected offices, the share of female officials serving on Silicon Valley’s city and town councils and county boards of supervisors has increased significantly over the past two years. Of the 103 seats up for election in 2018, 54 were won by newly-elected officials (not incumbents), and 32 of them were women (59% of all newly elected officials). Representation by elected officials identifying as Asian or Pacific Islander is much higher in Silicon Valley than throughout the state, as are the shares with professional backgrounds in engineering, technology, and science.

The share of elected officials identifying as Hispanic or Latino have increased slightly since 2017.

**WHY IS THIS IMPORTANT?**

Local government is considered the closest level of government to the people; yet, there is little scholarship and reporting on the activities and identities of local elected officials. In Silicon Valley, each local elected official represents, on average, more than 13,000 residents. By examining these local representatives, we are able to illustrate the extent to which Silicon Valley’s constituency is represented, and gain insight on the backgrounds that may shape their decisions as representatives of our communities. The composition of a region’s local elected officials is also critical because it represents the future cohort of state and regional leadership.¹ If any given constituency is not cultivating at the local level, they are unlikely to gain increased representations at the State and Federal levels.

¹ For example, in 2015, 58% of California Senators and Assemblymembers had previously served in local government — in the Assembly alone, 67% of members were former local government officials. This means that broadly, more than half of the California State legislature is comprised of former local elected officials.

Of the 48 women elected in 2018, 32 were newly-elected (not incumbents) — significantly increasing the share of women in local elected office.

59% of those newly elected to local office in 2018 were women.
Asian and Pacific Islander representation is relatively high in Silicon Valley, with 15% of local elected officials identifying as such (compared to 5% of local elected officials throughout the state).

The share of local elected officials identifying as Black or African American remained at 4%, while there was a slight increase in the share identifying as Hispanic or Latino between 2017 and 2019 (up from 10% to 12%).

15% of Silicon Valley’s local elected officials are Republicans, compared to 17% of the electorate.

An overwhelming majority of City and County officials in both Silicon Valley and California identify as working in Business, Law, Education, and Government; however, representatives in Silicon Valley show a much higher affinity towards careers in Engineering, Technology, and Science than those throughout the state as a whole.
Area

The San Francisco-Oakland-San Jose Metropolitan Statistical Area includes the following counties: Alameda, Contra Costa, Marin, Napa, San Benito, San Francisco, San Mateo, Santa Clara, and Santa Cruz. The area also includes the U.S. Census-designated Counties of San Mateo County, Santa Clara County, and Santa Cruz County.

Population

Data for the San Francisco-Oakland-San Jose Metropolitan Statistical Area includes the following counties: Alameda, Contra Costa, Marin, Napa, San Benito, San Francisco, San Mateo, Santa Clara, and Santa Cruz. The area also includes the U.S. Census-designated Counties of San Mateo County, Santa Clara County, and Santa Cruz County.

Jobs

The employment data for the San Francisco-Oakland-San Jose Metropolitan Statistical Area is from the Bureau of Labor Statistics Quarterly Census of Employment and Wages. This data has been adjusted for seasonality and modified as per the Bureau of Labor Statistics methodology. The employment data includes the number of people employed in the private sector, divided into different economic sectors.

Average Annual Earnings

The average annual earnings data is from the Bureau of Labor Statistics Quarterly Census of Employment and Wages. This data includes the average annual earnings of employed workers in the private sector, adjusted for seasonality and modified as per the Bureau of Labor Statistics methodology.

Foreign Immigration and Domestic Migration

Data for the San Francisco-Oakland-San Jose Metropolitan Statistical Area includes the following counties: Alameda, Contra Costa, Marin, Napa, San Benito, San Francisco, San Mateo, Santa Clara, and Santa Cruz. The area also includes the U.S. Census-designated Counties of San Mateo County, Santa Clara County, and Santa Cruz County.

Science and Engineering Degrees

Data for the San Francisco-Oakland-San Jose Metropolitan Statistical Area includes the following counties: Alameda, Contra Costa, Marin, Napa, San Benito, San Francisco, San Mateo, Santa Clara, and Santa Cruz. The area also includes the U.S. Census-designated Counties of San Mateo County, Santa Clara County, and Santa Cruz County.

Employment

Total Number of Jobs and Percent Change over Prior Year

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Education

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ECONOMY

Unemployed Residents’ Share of the Working Age Population, by Race & Ethnicity

Data for the San Francisco-Oakland-San Jose Metropolitan Statistical Area includes the following counties: Alameda, Contra Costa, Marin, Napa, San Benito, San Francisco, San Mateo, Santa Clara, and Santa Cruz. The area also includes the U.S. Census-designated Counties of San Mateo County, Santa Clara County, and Santa Cruz County.

ECONOMY

Unemployed Residents’ Share of the Working Age Population, by Race & Ethnicity

Data for the San Francisco-Oakland-San Jose Metropolitan Statistical Area includes the following counties: Alameda, Contra Costa, Marin, Napa, San Benito, San Francisco, San Mateo, Santa Clara, and Santa Cruz. The area also includes the U.S. Census-designated Counties of San Mateo County, Santa Clara County, and Santa Cruz County.

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NIHON KOSHUHEIKAKU, INC. 2019 Silicon Valley Index

APPENDIX A ECONOMY continued

APPENDIX A

PREPARING FOR ECONOMIC SUCCESS

Graduation and Dropout Rates: College Preparation

Sudman’s Longitudinal Education Outcomes (LEO) includes all 12th grade graduates completing all course credits for California’s Statewide college readiness examination. Education attainment refers to the percentage of the 18-24 year olds who have completed high school or higher. Dropout rates are defined as the number of students who have left school without earning a high school diploma or GED.
Students Overweight or Obese

Data are from the California Department of Education, Fuzzy Group Research, Inc. and exclude public school students in 7th, 8th, and 10th grades in San Mateo and Santa Clara Counties, and those who were transferred during the reporting assessment.

In 2015–2016, the performance standards changed from the Body Mass Index (BMI), with a body mass index category corresponding to the year in which the test was administered.

Housing Burden

Data are from the United States Census Bureau, American Community Survey 2017. Evictions are based on responses to the question “In the past 12 months, has the landlord or owner of the property where you have been living at any time evicted you?”, excluding people who either were not in the United States or did not provide a response.

APPENDIX A

### EARLY EDUCATION & CARE

Preschool Enrollment

Data are from the California Department of Education, American Community Survey 2017. Preschools are considered as the number of children ages 3 and 4 that are enrolled in public or private

### ARTS & CULTURE

### QUALITY OF HEALTH

### OCCUPATIONS

### PLACE

### HOUSING

 Median Home Sales Prices: Number of Homes Sold

Data are from the California Department of Business, Consumer Services & Small Business. The median sales price of homes sold in a month is the price for which the middle 50% of homes sold are between the value of the 50th percentile and the value of the 90th percentile. Data include single family and multi-family homes, including homes sold in principal cities and rural areas.

Residential Burden

Data are from the Census Bureau’s American Housing Survey and the California Department of Public Health. According to the U.S. Census Bureau, housing burden is the number of people who are experiencing affordability difficulties, including those who are paying more than 30% of their income on housing costs.

Affordable Share of Newly Approved Residential Units

Data are from the U.S. Census Bureau, American Community Survey 2017.

### LAW ENFORCEMENT & Courts

Felony Offenses

Data are from the California Department of Justice, Office of the Attorney General. The California Department of Justice compiles data from the California Attorney General’s Office, the California Department of Corrections and Rehabilitation, and the California Department of Corrections and Rehabilitation. Data are for all counties in California, and do not include federal offenses.

### IMMUNIZATION

### APPENDIX A

### SAFETY

Violent Crimes

Data are from the Federal Bureau of Investigation, Uniform Crime Reporting Program. Violent crimes are offenses of murder, forcible rape, robbery, and aggravated assault.

 ### SCHOOLS

English Language Arts Proficiency

Data are from the California Department of Education, California Department of Education’s California Dashboard. The California Department of Education recently revised the English Language Arts Proficiency standards to reflect the new CAAP assessments.

Data are from the California Department of Education, California Department of Education’s California Dashboard. The California Department of Education recently revised the Science Proficiency standards to reflect the new CAAP assessments.

Data are from the California Department of Education, California Department of Education’s California Dashboard. The California Department of Education recently revised the Math Proficiency standards to reflect the new CAAP assessments.

### APPENDIX A

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<thead>
<tr>
<th></th>
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<tbody>
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<td>COMMUNITY INFRASTRUCTURE &amp; SERVICES</td>
<td>832,450</td>
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<td>18.7%</td>
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<td>HEALTHCARE &amp; SOCIAL SERVICES1</td>
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<td>ACCOMMODATION &amp; FOOD SERVICES</td>
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<td>EDUCATION1</td>
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<td>LOCAL GOVT. ADMINISTRATION2</td>
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<td>BANKING &amp; FINANCIAL SERVICES</td>
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<td>ARTS, ENTERTAINMENT &amp; RECREATION</td>
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<td>PERSONAL SERVICES</td>
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<td>FEDERAL GOVT. ADMINISTRATION</td>
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<td>NONPROFITS</td>
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<td>INSURANCE SERVICES</td>
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<td>WAREHOUSING &amp; STORAGE</td>
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<td>UTILITIES1</td>
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<td>INNOVATION AND INFORMATION PRODUCTS &amp; SERVICES</td>
<td>436,827</td>
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<tr>
<td>COMPUTER HARDWARE DESIGN &amp; MANUFACTURING</td>
<td>176,722</td>
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<td>SEMICONDUCTORS &amp; RELATED EQUIPMENT MANUFACTURING</td>
<td>43,804</td>
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<td>-3.1%</td>
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<td>INTERNET &amp; INFORMATION SERVICES</td>
<td>71,376</td>
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<td>188.4%</td>
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<tr>
<td>TECHNICAL RESEARCH &amp; DEVELOPMENT (INCLUDES LIFE SCIENCES)</td>
<td>38,928</td>
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<td>SOFTWARE</td>
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<td>TELECOMMUNICATIONS MANUFACTURING &amp; SERVICES</td>
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<tr>
<td>INSTRUMENT MANUFACTURING (NAVIGATION, MEASURING &amp; ELECTROMEDICAL)</td>
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<td>-27.6%</td>
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<td>PHARMACEUTICALS (LIFE SCIENCES)</td>
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<td>OTHER MEDIA &amp; BROADCASTING, INCLUDING PUBLISHING</td>
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<td>MEDICAL DEVICES (LIFE SCIENCES)</td>
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<td>BIOTECHNOLOGY (LIFE SCIENCES)</td>
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<td>BUSINESS INFRASTRUCTURE &amp; SERVICES</td>
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<td>WHOLESALE TRADE</td>
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<td>PERSONNEL &amp; ACCOUNTING SERVICES</td>
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<tr>
<td>ADMINISTRATIVE SERVICES</td>
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<td>2.9%</td>
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<td>FACILITIES</td>
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<td>TECHNICAL &amp; MANAGEMENT CONSULTING SERVICES</td>
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<td>18.1%</td>
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<tr>
<td>MANAGEMENT OFFICES</td>
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<td>67.2%</td>
<td>72.8%</td>
<td>1.7%</td>
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<tr>
<td>DESIGN, ARCHITECTURE &amp; ENGINEERING SERVICES</td>
<td>20,839</td>
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<td>12.2%</td>
<td>25.6%</td>
<td>3.3%</td>
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<td>GOODS MOVEMENT</td>
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<tr>
<td>LEGAL</td>
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<td>INVESTMENT &amp; EMPLOYER INSURANCE SERVICES</td>
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<td>MARKETING, ADVERTISING &amp; PUBLIC RELATIONS</td>
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<td>1.7%</td>
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<td>PRIMARY &amp; FABRICATED METAL MANUFACTURING</td>
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<td>0.3%</td>
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<tr>
<td>MACHINERY &amp; RELATED EQUIPMENT MANUFACTURING</td>
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<td>OTHER MANUFACTURING</td>
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<td>TRANSPORTATION MANUFACTURING INCLUDING AEROSPACE &amp; DEFENSE</td>
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<td>5.9%</td>
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<tr>
<td>FOOD &amp; BEVERAGE MANUFACTURING</td>
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<td>2.5%</td>
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<td>TEXTILES, APPAREL, WOOD &amp; FURNITURE MANUFACTURING</td>
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<td>14.9%</td>
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<tr>
<td>PETROLEUM AND CHEMICAL MANUFACTURING (NOT IN LIFE SCIENCES)</td>
<td>364</td>
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<td>-0.8%</td>
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<tr>
<td>OTHER</td>
<td>76,527</td>
<td>4.6%</td>
<td>42.1%</td>
<td>57.9%</td>
<td>-9.7%</td>
</tr>
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</table>

1. Includes government jobs (state and local).
2. Excludes government jobs in Healthcare & Social Services, Education, and Utilities.

Note: Table includes annual industry employment data for Silicon Valley from the United States Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW) for 2007, 2010, 2017 and 2018, modified slightly by EMSI, which removes suppressions and reorganizes public sector employment. Data for Q2 of 2018 was estimated at the industry level by BW Research using Q1 2018 QCEW data and updated based on Q2 2018 reported growth and totals, and modified slightly by EMSI.

Due to rounding, individual industry employment may not sum to industry group or overall job total.

Data Sources: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages, EMSI
Analysis: BW Research
## EMPLOYMENT Q2 2018

<table>
<thead>
<tr>
<th>Category</th>
<th>Employment</th>
<th>Percent of Total</th>
<th>Percent Change</th>
<th>2007-2018</th>
<th>2010-2018</th>
<th>2017-2018</th>
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<td><strong>TOTAL EMPLOYMENT</strong></td>
<td>741,590</td>
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<td>33.2%</td>
<td>35.8%</td>
<td>3.4%</td>
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<tr>
<td><strong>COMMUNITY INFRASTRUCTURE &amp; SERVICES</strong></td>
<td>420,862</td>
<td>56.8%</td>
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<tr>
<td><strong>HEALTHCARE &amp; SOCIAL SERVICES</strong></td>
<td>427,707</td>
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<td><strong>ACCOMMODATION &amp; FOOD SERVICES</strong></td>
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<td><strong>BANKING &amp; FINANCIAL SERVICES</strong></td>
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<tr>
<td><strong>ARTS, ENTERTAINMENT &amp; RECREATION</strong></td>
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<td></td>
<td>25.2%</td>
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<td><strong>PERSONAL SERVICES</strong></td>
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<td>50.7%</td>
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<td><strong>FEDERAL GOVT. ADMINISTRATION</strong></td>
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<td>-10.3%</td>
<td>-7.0%</td>
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<tr>
<td><strong>NONPROFITS</strong></td>
<td>13,614</td>
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<td>15.9%</td>
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<td>1.9%</td>
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</tr>
<tr>
<td><strong>INNOVATION AND INFORMATION PRODUCTS &amp; SERVICES</strong></td>
<td>102,082</td>
<td>13.8%</td>
<td></td>
<td>177.7%</td>
<td>160.5%</td>
<td>8.5%</td>
</tr>
<tr>
<td><strong>COMPUTER HARDWARE DESIGN &amp; MANUFACTURING</strong></td>
<td>52,651</td>
<td>7.1%</td>
<td></td>
<td>285.9%</td>
<td>216.4%</td>
<td>9.4%</td>
</tr>
<tr>
<td><strong>SEMICONDUCTORS &amp; RELATED EQUIPMENT MANUFACTURING</strong></td>
<td>56</td>
<td>0.0%</td>
<td></td>
<td>8.0%</td>
<td>28.5%</td>
<td>4.2%</td>
</tr>
<tr>
<td><strong>INTERNET &amp; INFORMATION SERVICES</strong></td>
<td>26,941</td>
<td>3.6%</td>
<td></td>
<td>1020.6%</td>
<td>584.5%</td>
<td>12.6%</td>
</tr>
<tr>
<td><strong>TECHNICAL RESEARCH &amp; DEVELOPMENT (INC. LIFE SCIENCES)</strong></td>
<td>2,447</td>
<td>0.3%</td>
<td></td>
<td>119.3%</td>
<td>126.0%</td>
<td>7.4%</td>
</tr>
<tr>
<td><strong>SOFTWARE</strong></td>
<td>4,303</td>
<td>0.6%</td>
<td></td>
<td>131.9%</td>
<td>93.7%</td>
<td>8.6%</td>
</tr>
<tr>
<td><strong>TELECOMMUNICATIONS MANUFACTURING &amp; SERVICES</strong></td>
<td>3,437</td>
<td>0.5%</td>
<td></td>
<td>-25.7%</td>
<td>-12.1%</td>
<td>-4.7%</td>
</tr>
<tr>
<td><strong>INSTRUMENT MANUFACTURING (NAVIGATION, MEASURING &amp; ELECTROMEDICAL)</strong></td>
<td>1,745</td>
<td>0.2%</td>
<td></td>
<td>1919.4%</td>
<td>2768.1%</td>
<td>14.3%</td>
</tr>
<tr>
<td><strong>PHARMACEUTICALS (LIFE SCIENCES)</strong></td>
<td>477</td>
<td>0.1%</td>
<td></td>
<td>1195.7%</td>
<td>109.9%</td>
<td>10.0%</td>
</tr>
<tr>
<td><strong>OTHER MEDIA &amp; BROADCASTING, INCLUDING PUBLISHING</strong></td>
<td>7,926</td>
<td>1.1%</td>
<td></td>
<td>-26.9%</td>
<td>-13.0%</td>
<td>-1.8%</td>
</tr>
<tr>
<td><strong>MEDICAL DEVICES (LIFE SCIENCES)</strong></td>
<td>149</td>
<td>0.0%</td>
<td></td>
<td>-26.1%</td>
<td>34.5%</td>
<td>-1.3%</td>
</tr>
<tr>
<td><strong>BIOTECHNOLOGY (LIFE SCIENCES)</strong></td>
<td>1,802</td>
<td>0.2%</td>
<td></td>
<td>0.0%</td>
<td>5.0%</td>
<td>0.3%</td>
</tr>
<tr>
<td><strong>LEGAL</strong></td>
<td>148</td>
<td>0.0%</td>
<td></td>
<td>59.6%</td>
<td>55.4%</td>
<td>6.7%</td>
</tr>
<tr>
<td><strong>BUSINESS INFRASTRUCTURE &amp; SERVICES</strong></td>
<td>172,051</td>
<td>23.2%</td>
<td></td>
<td>27.2%</td>
<td>36.7%</td>
<td>3.1%</td>
</tr>
<tr>
<td><strong>WHOLESALE TRADE</strong></td>
<td>15,439</td>
<td>2.1%</td>
<td></td>
<td>38.9%</td>
<td>62.4%</td>
<td>4.1%</td>
</tr>
<tr>
<td><strong>PERSONNEL &amp; ACCOUNTING SERVICES</strong></td>
<td>19,608</td>
<td>2.6%</td>
<td></td>
<td>18.6%</td>
<td>24.3%</td>
<td>2.9%</td>
</tr>
<tr>
<td><strong>ADMINISTRATIVE SERVICES</strong></td>
<td>15,413</td>
<td>2.1%</td>
<td></td>
<td>17.0%</td>
<td>26.2%</td>
<td>2.2%</td>
</tr>
<tr>
<td><strong>FACILITIES</strong></td>
<td>16,051</td>
<td>2.2%</td>
<td></td>
<td>88.0%</td>
<td>41.5%</td>
<td>5.1%</td>
</tr>
<tr>
<td><strong>TECHNICAL &amp; MANAGEMENT CONSULTING SERVICES</strong></td>
<td>21,788</td>
<td>2.9%</td>
<td></td>
<td>75.4%</td>
<td>79.5%</td>
<td>5.6%</td>
</tr>
<tr>
<td><strong>MANAGEMENT OFFICES</strong></td>
<td>23,085</td>
<td>3.1%</td>
<td></td>
<td>47.3%</td>
<td>57.6%</td>
<td>3.3%</td>
</tr>
<tr>
<td><strong>DESIGN, ARCHITECTURE &amp; ENGINEERING SERVICES</strong></td>
<td>14,629</td>
<td>2.0%</td>
<td></td>
<td>1.3%</td>
<td>40.8%</td>
<td>2.3%</td>
</tr>
<tr>
<td><strong>GOODS MOVEMENT</strong></td>
<td>6,331</td>
<td>0.9%</td>
<td></td>
<td>35.2%</td>
<td>65.0%</td>
<td>3.8%</td>
</tr>
<tr>
<td><strong>LEGAL</strong></td>
<td>14,182</td>
<td>1.9%</td>
<td></td>
<td>-2.6%</td>
<td>4.7%</td>
<td>0.8%</td>
</tr>
<tr>
<td><strong>INVESTMENT &amp; EMPLOYER INSURANCE SERVICES</strong></td>
<td>16,053</td>
<td>2.2%</td>
<td></td>
<td>-9.8%</td>
<td>1.7%</td>
<td>0.3%</td>
</tr>
<tr>
<td><strong>MARKETING, ADVERTISING &amp; PUBLIC RELATIONS</strong></td>
<td>9,471</td>
<td>1.3%</td>
<td></td>
<td>50.7%</td>
<td>41.7%</td>
<td>2.9%</td>
</tr>
<tr>
<td><strong>OTHER MANUFACTURING</strong></td>
<td>6,827</td>
<td>0.9%</td>
<td></td>
<td>-21.5%</td>
<td>9.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td><strong>PRIMARY &amp; FABRICATED METAL MANUFACTURING</strong></td>
<td>524</td>
<td>0.1%</td>
<td></td>
<td>-3.8%</td>
<td>-11.0%</td>
<td>2.2%</td>
</tr>
<tr>
<td><strong>MACHINERY &amp; RELATED EQUIPMENT MANUFACTURING</strong></td>
<td>224</td>
<td>0.0%</td>
<td></td>
<td>433.8%</td>
<td>308.2%</td>
<td>9.1%</td>
</tr>
<tr>
<td><strong>TRANSPORTATION MANUFACTURING INCLUDING AEROSPACE &amp; DEFENSE</strong></td>
<td>330</td>
<td>0.0%</td>
<td></td>
<td>-57.0%</td>
<td>-43.4%</td>
<td>-1.5%</td>
</tr>
<tr>
<td><strong>FOOD &amp; BEVERAGE MANUFACTURING</strong></td>
<td>3,062</td>
<td>0.4%</td>
<td></td>
<td>58.5%</td>
<td>67.3%</td>
<td>4.0%</td>
</tr>
<tr>
<td><strong>TEXTILES, APPAREL, WOOD &amp; FURNITURE MANUFACTURING</strong></td>
<td>1,750</td>
<td>0.2%</td>
<td></td>
<td>-60.3%</td>
<td>-27.1%</td>
<td>-8.2%</td>
</tr>
<tr>
<td><strong>PETROLEUM AND CHEMICAL MANUFACTURING (NOT IN LIFE SCIENCES)</strong></td>
<td>16</td>
<td>0.0%</td>
<td></td>
<td>-88.1%</td>
<td>-79.2%</td>
<td>-10.0%</td>
</tr>
<tr>
<td><strong>OTHER</strong></td>
<td>39,769</td>
<td>5.4%</td>
<td></td>
<td>-4.6%</td>
<td>-23.1%</td>
<td>0.6%</td>
</tr>
</tbody>
</table>
ACKNOWLEDGMENTS

This report was prepared by Rachel Massaro, Vice President and Sr. Research Associate at Joint Venture Silicon Valley and the Silicon Valley Institute for Regional Studies. She received invaluable assistance from Stephen Levy of the Center for Continuing Study of the California Economy, who provided ongoing support and served as a senior advisor.

Jill Jennings created the report’s layout and design; Duffy Jennings served as copy editor.

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BW Research  Kyle Neering
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Caltrain  Pew Research Center
CBRE Research  Phoenix Global Wealth Monitor
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Washington  Santa Clara Valley Water District
Chris Benner and the University of California, Santa  Scotts Valley Water District
Cruz  SPUR
Cities of Silicon Valley  Silicon Valley Clean Cities
Colliers International Silicon Valley  Silicon Valley Power
CoreLogic  United States Patent and Trademark Office
Drew Starbird and the Santa Clara University,  
Leavey School of Business
Elaine Kurtz
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Joint Venture Silicon Valley

Established in 1993, Joint Venture Silicon Valley 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.

Silicon Valley Institute for Regional Studies

Housed within Joint Venture, the Silicon Valley Institute for Regional Studies provides research and analysis on Silicon Valley's economy and society.