SILICON VALLEY INDEX

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ABOUT THE 2020 SILICON VALLEY INDEX

Dear Friends:

And still we grow.

Silicon Valley has now logged nine continuous years of expansion since the epic recession of 2008. Over that period the Bay Area has added 821,000 jobs–the equivalent of dropping another city the size of San Francisco onto our landscape–and the growth is fueled by innovation and ingenuity. Our special combination of engineering savvy, strong universities, deep pools of capital, dense business networks and a risk-taking culture have created an economic engine unlike any other.

So why does it feel so tenuous?

It's mostly because we haven't added appreciably to our housing stock. Over that same nine-year period we permitted 173,000 new housing units, a jobs-housing mismatch of nearly five to one. The result is the nation's highest housing prices, an unsettled workforce, and a transportation system sagging under the weight of 100,000 megacommuters. Add to this the nation's most sharply pronounced income gaps and you have a formula for despair.

It doesn't help that our driving industries are facing a backlash the likes of which we've never seen. As technology plays a deeper and more pervasive role in nearly every aspect of our lives, that role has come under question and the region feels like it's under siege.

But thankfully and at long last there is some cause for hope. After a years-long period of stalling and false starts, our region's leaders are coalescing around a set of plans. "Crisis" has entered into the common parlance and a sense of urgency has replaced our earlier complacency. Bonds for affordable housing are passing at the ballot box. Significant housing legislation is making its way through the state capitol, including even bills that would alter the power balance between the state and our localities. The large tech companies are voluntarily investing billions into local housing projects. Promptly after passing a regional measure for transportation there is serious talk of another, this one a megameasure generating more than \$100 billion for badly needed infrastructure.

Meanwhile Silicon Valley companies are taking aim at futuristic modes of transportation and new forms of housing, and venture capitalists are standing behind them. These have the promise of once again changing the world as we know it, and because it has happened so many times before it doesn't seem unreasonable to think it could happen again.

With all this in mind, we're pleased to provide the available data necessary for a region grappling with dynamism and growth, displacement and inequality. The data tell us where we've been and how we got here; in the hands of innovators and visionaries the data can also tell us where we need to be going.

und Hancalz

Russell Hancock **President & Chief Executive Officer** Joint Venture Silicon Valley Institute for Regional Studies

WHAT IS THE INDEX?

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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PROFILE OF SILICON VALLEY



ADULT EDUCATIONAL ATTAINMENT



AGE DISTRIBUTION 4% 16% 60-79 24% UNDER 20 27% 40-59 29% 20-39

SILICON VALLEY IS DEFINED AS THE FOLLOWING CITIES:

SANTA CLARA COUNTY (ALL)

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

SAN MATEO COUNTY (ALL)

Atherton, Belmont, Brisbane, Burlingame, Colma, Daly City, East Palo Alto, Foster City, Half Moon Bay, Hillsborough, Menlo Park, Millbrae, Pacifica, Portola Valley, Redwood City, San Bruno, San Carlos, San Mateo, South San Francisco, Woodside

ALAMEDA COUNTY

Fremont, Newark, Union City

SANTA CRUZ COUNTY Scotts Valley 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.

ETHNIC COMPOSITION 5% WEITPLE & OTHER 25% HSPANIC & LATINO 33% WHTE



*Oceania includes American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, New Caledonia, New Zealand, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonca, Tuvalu, Vanuatu, Wallis and Futuna.

Note: Area, Population, Jobs, and Average Annual Earnings figures are based on the city-defined Silicon Valley region; whereas Net Foreign Immigration and Domestic Migration, Adult Educational Attainment, Age Distribution, Ethnic Composition, and Foreign Born figures are based on Santa Clara and San Mateo County data only. Percentages may not add up to 100% due to rounding.

Domestic Migration, by Region



Note: Annual estimate of domestic migration to/from Santa Clara and San Mateo Counties. Data Source: United States Census Bureau, County-to-County Migration Flows (using 2013-2017 American Community Survey, 5-Year Estimates) | Analysis: Silicon Valley Institute for Regional Studies



*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, 2019); GDP (Moody's Economy.com, 2019); Venture Capital (Thomson ONE, 2019); Patent Registrations (U.S. Patent and Trademark Office, 2018); Initial Public Offerings (Renaissance Capital, 2019); Jobs (U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages; EMSI, Q2 2019); Angel Investment (Crunchbase, 2019); Mergers & Acquisitions (Factset Research Systems, Inc., 2019).



Data Sources: California Department of Finance; United States Census Bureau Analysis: Silicon Valley Institute for Regional Studies

2020 INDEX HIGHLIGHTS

Silicon Valley continues its upward spiral, with high employment growth, record numbers of patents, eye-popping land transactions, and venture capital flowing into record numbers of megadeals. Against a flourishing economic backdrop, conditions are harsh for the broad peripheries of the population as inequality reaches new dimensions and wage gains are lost to the rising costs of living. Despite recent progress, the region still has the nation's highest housing prices and our transportation challenges continue to mount.

The Silicon Valley economy continues a nine-year expansion, adding jobs, achieving new levels of productivity, amassing venture capital, generating new public companies, and building out record amounts of commercial space.

Silicon Valley added nearly 30,000 new jobs, fueled by technology and related sectors at a rate of increase (1.7 percent) that outpaced the state and the nation. Regional GDP increased by \$17 billion in 2019, which means that labor productivity reached a record \$241,000 in value added per worker, a 53 percent increase since 2001. The unemployment rate (2.1 percent) reached a 19-year low.

The region generated \$42 billion in venture capital, which was invested in a record 92 megadeals (more than \$100 billion each). In addition to software and internet companies, automotive and transport industries emerged as new targets for these investments. Twenty-two VC-backed Silicon Valley companies made their debut on the publicly traded markets, most of which were healthcare or technology firms.

The total amount of newly completed commercial space in the region hit an 18-year high, reaching 8.5 million square feet. Six of Silicon Valley's largest tech firms (Google, Apple, Facebook, LinkedIn, Amazon, and Netflix) have dramatically expanded their footprints despite high asking rates. The total amount of commercial space under construction reached a new high (peaking at 14.8 million square feet in Q2), and the region has seen a resurgence in hotel development with 36 new hotels opened since 2014 and more in the approval process. More people are leaving the region than coming in, with the expansion fueled by foreign-born talent. Though the tech workforce is largely young and male, older workers are remaining in the labor force longer and women – though still underrepresented in numerous sectors – are increasing in number.

Continuing a three-year trend, more people are leaving Silicon Valley than coming in, with a marked outflow to the greater Bay Area, other parts of the state, Washington, Texas, Arizona, Nevada, and New York. Meanwhile, the share of Silicon Valley's foreign-born residents rose to 38 percent, adding to the region's growing diversity and tech talent base, and bolstering overall educational attainment levels. Sixty-seven percent of the new tech talent in the core working age group (25-44) are Asian, the majority of whom are from India and China. More than half of Silicon Valley's residents now speak languages other than English at home.

Older residents (ages 55+) are participating in the workforce at higher rates (making up 21 percent of the workforce). Thirtytwo women were newly elected to city and county seats in the 2018 elections, representing a majority of all newcomers to local elected office. The share of start-ups founded by women has grown to 28 percent (up from eight percent in 1999). Women are gaining an increasing presence in the tech sector (up two percent year-over-year); however, the share of science and engineering degrees conferred to women has been at a level 38 percent for decades.

While the established companies expand, fewer startups are receiving funding.

In contrast to the growing number of megadeals coming out of the venture capital industry, angel investment declined in 2019, and the total number of start-up companies receiving funding continued a five-year downward trend. There were fewer startup companies (130) funded in Silicon Valley in 2019 than at any time over the past two decades.

Despite real progress on the housing front, the region remains unaffordable to most. Homelessness is on the rise.

Home prices in the region declined by six percent in 2019, yet housing costs in Silicon Valley remain the highest in the nation (with median home sale prices remaining well above \$1 million). In a slow turnaround, residential building is keeping pace with current population growth, average household sizes are stabilizing, and the density of approved developments was significantly higher than for any other year on record. There were more affordable housing units approved in the most recent fiscal year (3,258) than in the past twenty. However, most of the permits over the past four years (83 percent) were for units that are unaffordable to most first-time buyers and renters.

Multigenerational and multi-family living arrangements account for 17 and 11 percent, respectively, of Silicon Valley households. Despite concerted efforts to provide relief, 11,200 people across San Mateo and Santa Clara counties are homeless, including more than 1,000 children. San Francisco had a homeless population of 8,011 people in 2019.

Costs are rising, income and wealth inequality are more pronounced than ever, and many residents struggle to meet their basic needs.

Income inequality in Silicon Valley is at a historic high, and 13 percent of households hold more than 75 percent of the region's wealth. Though per capita income and average wages continue their upward trend, rising median household income reflects the shifting distribution of households into the higher income ranges. Thirteen percent of the region's households have more than \$1 million in net assets, while 37 percent have less than \$25,000 in savings.

While Silicon Valley's poverty rate is low compared to elsewhere (7.1 percent), the rate rises to 9.5 percent for young adults (ages 18-34) and as high as 10.7 percent for several racial and ethnic groups. Thirty percent of the region's residents are not meeting self-sufficiency standards. Meanwhile, the cost of goods and services has risen 2.7 percent in the past year, with childcare, housing, and transportation costs rising more precipitously.

Other trends of interest:

Internet speeds. Silicon Valley's average internet upload speeds in 2019 were slow compared to San Francisco, California, and the nation as a whole.

Adult obesity. The proportion of Silicon Valley adults who are obese increased from 17 to 24 percent in 2019, and the share increases to 27 percent for adults living below the poverty line.

Hypertension. The rate of deaths caused by hypertension and hypertensive renal disease has increased by 270 percent since 1999.

Cleantech. In a dramatic shift over the past three years, Silicon Valley's community choice energy programs now serve 89 percent of the region's residential electricity customers and 69 percent of the commercial market. The transition reduced carbon dioxide emissions from electricity use by 64 percent. Meanwhile, electric vehicle adoption and infrastructure has maintained momentum (with the number of cars and charging outlets doubling over the past several years) and installed solar photovoltaic systems reached 550 megawatts in late 2019 - twice what it was four years ago.

City finance. Silicon Valley city revenues rose three percent regionally in the last reporting period. Half of the revenues now come from fees for services. Of municipal expenses, the largest shares went to public safety (30 percent) and building, planning and public works combined (29 percent).

Transit. Silicon Valley commuters continue to favor solo driving in overwhelming percentages (73 percent), despite record levels of congestion. The share utilizing public forms of transit is declining.

PEOPLE Talent Flows and Diversity

Silicon Valley's population is continuing to grow, despite declining birth rates and a significant (and growing) number of domestic out-migrants who are leaving the area for other parts of the state and nation - primarily other parts of the Bay Area, both northern and southern California, and places outside the state such as Seattle, Phoenix, Dallas, Las Vegas, New York City, and Austin. Meanwhile, the significant number of net foreign immigrants who continue to come into the region annually (and over the past five years in particular) is adding to the region's growing diversity and tech talent base, and bolstering overall educational attainment levels. Increasing levels of educational attainment contribute to declining birth rates, as women with a bachelor's degree or higher tend to start having children later in life and have fewer overall.

The share of foreign-born residents continues to rise slowly but steadily, reaching 38% in 2018 (up from 28% in 1960 and 16% in 1940), particularly for employed residents and those working in technical occupations. In conjunction with this rise is an increase in the share of residents speaking languages other than English at home, which reached 51% in 2018.

Universities in and around the region continue to confer tens of thousands of science and engineering degrees annually (with a persistently small share to women). However, more of the region's tech talent in 2018 was from India and China than from California and the rest of the United States combined. Sixty-seven percent of all new tech talent in the core working age group (25-44) were Asian, 30% were White, and a mere fraction of a percent were Black or African-American. Women comprise less than a third of all Silicon Valley tech talent in that age group, and make up less than a quarter of all technical roles at the region's major tech companies.

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. Popula-

The stark year-over-year decline in Silicon Valley's population growth rate was largely due to increased netoutmigration, coupled with a slightly lower rate of natural growth.

Silicon Valley's population rose by less than 7,000 residents between July 2018 and July 2019 – the lowest population growth rate since 2005.

Silicon Valley's population growth has slowed over the past four years – down to one-fifth of the average during the nine-year period of 2006-2015.

Data Source: California Department of Finance | Analysis: Silicon Valley Institute for Regional Studies

Population and Percent Change					
2009 2018 2019 2009-2019 % Change 2018-2019 % Change					
Santa Clara & San Mateo Counties	2.49 M	2.73 M	2.74 M	+9.9%	+0.25%
California	37.08 M	39.82 M	39.96 M	+7.8%	+0.35%

Over the past decade, the population in Santa Clara and San Mateo Counties combined has grown more rapidly (+9.9%) than the state (+7.8%).

The population of Santa Clara and San Mateo Counties combined has grown very slowly over the past year (+0.25%), as has that of the state as a whole (+0.35% year-over-year).



tion 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 – and its newcomers – 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 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.^{1,2} 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. Nu-

 Margaret O'Mara. The Code: Silicon Valley and the Remaking of America, pp. 83-84. Penguin Press, 2019. merous 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.

PEOPLE

Out-migration exceeded in-migration last year by nearly 8,000 people.

Net foreign immigration into Santa Clara and San Mateo Counties declined by 5% year-over-year (approximately 1,100 fewer people); meanwhile, net domestic outmigration jumped by 21% year-over-year (approximately 4,600 more people). Between July 2016 and July 2019 (a three-year period), the region gained 58,738 foreign immigrants but lost 69,208 residents to other parts of California and the United States; the net loss of Silicon Valley residents over that time period was -10,470. Silicon Valley's annual domestic out-migration in each of the past four years were greater than in any other year since 2006.

MIGRATION FLOWS

Foreign and Domestic Migration

Santa Clara & San Mateo Counties

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 14-year low of 0.25% in 2019; 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.



Data Source: California Department of Finance | Analysis: Silicon Valley Institute for Regional Studies

^{1.} Manuel Pastor, Rhonda Ortiz, Marlene Ramos, and Mirabai Auer. *Immigrant Integration: Integration, New Americans and Building Sustainable Communities*. University of Southern California Program for Environmental and Regional Equity (PRER). Restret for the Study of Immigrant Integration (CSIII) Equity Issue Brief. December, 2012.



MIGRATION FLOWS California Counties with the Largest Net Domestic In/Out Migration 2018-2019



Santa Clara County ranked fourth among California's 58 counties for net domestic out-migration between July 2018 and July 2019, with a net loss of nearly 6,000 residents.

Silicon Valley counties were among those with the greatest domestic out-migration in the state between July 2018 and July 2019, with Riverside County, San Joaquin County, and counties in the greater Sacramento area attracting residents from other parts of California and the nation.

Data Source: California Department of Finance | Analysis: Silicon Valley Institute for Regional Studies

Of the estimated 125,000 Santa Clara and San Mateo County residents who move away from the region each year, 29% move to other parts of the Bay Area (primarily Alameda County, 12%, and San Francisco, 8%).



Between 2013 and 2017, Santa Clara and San Mateo Counties combined lost an estimated 125,000 residents to other parts of the state and country each year – amounting to a turnover of approximately 5% of the region's population annually.

Data Source: United States Census Bureau, County-to-County Migration Flows (using 2013-2017 American Community Survey, 5-Year Estimates) | Analysis: Silicon Valley Institute for Regional Studies

Of the nearly 153,000 people who had recently moved to Santa Clara or San Mateo County in 2018, 28% came from out-of-state (other U.S.) and 24% moved to the region from abroad.

Selected Characteristics of New* Silicon Valley Residents Santa Clara & San Mateo Counties | 2018

Sex	52% male, 48% female
Age	56% ages 18 to 34 (½ from abroad)
Race/Ethnicity	42% Asian, 33% White (Non-Hispanic), 15% Hispanic or Latino, 5% Black or African-American
Nativity	54% native, 46% foreign-born
Educational Attainment	73% bachelor's degree or higher
Marital Status	48% never married, 42% married (54% of those from abroad, 37% of domestic migrants)
Income	Individual median income \$117,000 with 82% at or above 150% of the poverty level

*Includes residents who moved to the region within the prior year. | Note: Individual median income and marital status are for the population ages 15 and over; married excludes Separated; educational attainment is for the population ages 25 and over. | Data Source: United States Census Bureau, American Community Survey Analysis: Silicon Valley Institute for Regional Studies

San Francisco has a much larger share (39%) of 25-44-year-olds – the core working age group – than California (29%) or the United States (27%); Silicon Valley's share of 25-44-year-olds (30%) is only slightly higher than in the state as a whole.

POPULATION BY AGE

Age Distribution

Santa Clara and San Mateo Counties, San Francisco, California, and the United States 2018



Data Source: United States Census Bureau, American Community Survey Analysis: Silicon Valley Institute for Regional Studies 56% of new Silicon Valley residents in 2018 (nearly 85,000 people) were between the ages of 18 and 34; one out of every five of those 18-34-year-olds was from abroad.

The demographics of new Silicon Valley residents are fairly different from those of established residents in terms of race and ethnicity, educational attainment, and age composition among other population characteristics; as such, the high residential turnover rate in Silicon Valley is rapidly altering the region's demographic profile.

> Silicon Valley's population is aging. The number of residents over age 65 has grown by 34% over the past decade, while the overall population has only grown by 9% and the population under age 24 has declined.

In 2008, Silicon Valley had 587,000 children (under age 18); by 2018, that number had declined to 582,000, amounting to an average of nine fewer children at each of the region's nearly 600 schools.

Population Change, by Age Category Santa Clara & San Mateo Counties			
	2008 -2018	2017 -2018	
under 18	-0.9%	-1.4%	
18-24	-0.9%	0.0%	
25-44	+12.9%	+0.3%	
45-64	+7.2%	-0.6%	
65 and older	+34.2%	+2.1%	
Total	+9.4%	-0.1%	



Whereas a decade ago 40% of Silicon Valley residents were White (Non-Hispanic or Latino), by 2018 that share had decreased to 33%.

Asian residents represent the largest population share in Silicon Valley at 35% in 2018, up from 24% in 2017 and 29% a decade prior (in 2008).



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

The population share of Silicon Valley Black or African-American residents (2.3% in 2018) has remained at 2-3% over the past decade. In 2018, Black or African-American residents represented a slightly larger share (5%) of those who had recently moved to the region.

PEOPLE

Compared to 2008, women are now waiting until later in life to have children (an average of 2.2 additional years) and are having slightly fewer (average of 1.8 children per woman). Despite the fact that foreign-born women of childbearing age are disproportionately married with children compared to native-born women, on average they have children when they are one year older and have about the same number of them overall.

Average Age at Time of First Birth & Number of Children Per Woman, by Educational Attainment Level Santa Clara & San Mateo Counties

	Age		Children	
	2008	2018	2008	2018
Less Than a Bachelor's Degree	24.9	26.6	2.07	2.14
Bachelor's Degree or Higher	31.5	32.1	1.67	1.63
Foreign-Born		31.0		1.84
Native Born		29.9		1.83
All Women	28.3	30.5	1.90	1.84

Note: Only includes women who gave birth during that particular year. | Data Source: U.S. Department of Health and Human Services, CDC WONDER | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley women tend to start having children later in life (age 30) than in California (age 28) or the United States overall (age 27); they also tend to have fewer children (average of 1.8 per woman, compared to 2.1 in both California and throughout the country).

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).



The 2019 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 halfcentury. The birth rate has declined steadily since 1991 when it last peaked at nearly 18 births per 1,000 people.

Data Source: California Department of Finance | Analysis: Silicon Valley Institute for Regional Studies

The annual estimate of births in Santa Clara and San Mateo Counties in 2019 was the lowest it has been since 1980. The total number of births annually in Santa Clara and San Mateo Counties continued to fall between 2018 and 2019 (down 3% year-over-year), and has declined significantly since 2008 (down 21%) to 29,400 babies in 2019.

PEOPLE Talent Flows and Diversity

EDUCATIONAL ATTAINMENT

Percentage of Adults, by Educational Attainment

Santa Clara & San Mateo Counties, San Francisco, California, and the United States | 2018



The share of Silicon Valley residents with a bachelor's degree or higher (53.4%) increased by nearly 10 percentage points over the past decade (from 43.7% in 2008).

Silicon Valley and San Francisco have much higher levels of educational attainment than California or the United States as a whole, with 53% and 60% of adults, respectively, having a bachelor's degree or higher.

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

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

Educational attainment varies significantly across racial and ethnic groups.

EDUCATIONAL ATTAINMENT

Percentage of Adults with a Bachelor's Degree or Higher by Race/Ethnicity

Santa Clara & San Mateo Counties, and California



Note: Categories Black or African American, Asian, and White are non-Hispanic or Latino. | Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies The share of Silicon Valley's Black or African American residents with a bachelor's degree or higher has increased dramatically over the past decade – most notably during the period between 2013 and 2018 – reaching 39% in 2018.

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; 20% of Silicon Valley's Hispanic or Latino residents had a bachelor's degree or higher in 2018, compared to 13% in 2008.

The share of Silicon Valley's population who are foreign born has increased by 1.9 percentage points over the past decade (2008-2018); in contrast, San Francisco's population share of foreignborn residents has declined slightly over that time period by 1.6 percentage points. In 2018, there were 18,695 science and engineering degrees conferred among Silicon Valley's top academic institutions - nearly 900 more 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 19 years and has increased by only a fraction of a percentage point over the past decade.

SCIENCE & ENGINEERING DEGREES

Total Science and Engineering Degrees Conferred

Universities in and near Silicon Valley



Data Source: National Center for Educational Statistics, IPEDS | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley's percentage of foreign-born residents (38%) is significantly higher than in California or the United States, and slightly higher than in San Francisco.

Silicon Valley's foreign-born population share (38%) - which is much higher than the state as a whole - is even higher when looking solely at employed residents (47%), employed residents in the core working age group (49%), and specifically women ages 25-44 in Computer & Mathematical occupations (76%).

Share of Science & **Engineering Degrees Conferred to Women** In and Near Silicon Valley 1988 30.2% 1998 35.4% 2008 38.0% 2018 38.2%

Three-quarters of Silicon Valley's female tech workers ages 25 to 44 are foreignborn. These women are disproportionately married with children, and primarily come from Asian countries.

FOREIGN BORN

Percentage of the Total Population Who Are Foreign Born

Santa Clara & San Mateo Counties, San Francisco, California, and the United States | 2018



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

Foreign Born Share of Employed Residents **Over Age 16, by Occupational Category** Santa Clara & San Mateo Counties, 2018

	All	Ages 25-44			
		Women	Men	Both	
Computer & Mathematical	65%	76%	66%	68%	
Architectural & Engineering	63%	70%	70%	70%	
Natural Sciences	51%	60%	49%	53%	
Medical & Health Services	49%	41%	40%	41%	
Financial Services	47%	61%	44%	53%	
Other Occupations	42%	42%	42%	42%	
Total	47%	48%	67%	49%	

PEOPLE

PEOPLE Talent Flows and Diversity

Nearly two-thirds of Silicon Valley's foreignlanguage speakers speak a language other than Spanish at home (65%) – a higher percentage than in California (35%), or the United States (38%) as a whole.

FOREIGN LANGUAGE

Languages Other Than English Spoken at Home for the Population 5 Years and Over

Santa Clara & San Mateo Counties, San Francisco, California, and the United States | 2018



Only a very small share of new tech talent in Boston, Austin, New York, and Washington D.C. in 2018 were from California (3%, 3%, 2%, and 1%, respectively); in total, those four regions hired 800 new tech workers that year who moved from California.

Of the 25- to 44-yearolds working in private sector technical jobs who moved to Silicon Valley in 2018 from other parts of the United States (i.e., not including foreign immigrants), a large majority (68%) came from another county within the state.

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

Population Share That Speaks a Language at Home Other Than Exclusively English

	2008	2013	2018
Silicon Valley	48%	50%	51%
San Francisco	44%	44%	41%
California	42%	44%	45%
United States	20%	21%	22%

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

The share of Silicon Valley residents who speak a foreign language at home has increased over the past decade, from 48% in 2008 to 51% in 2018; in contrast, San Francisco's share of foreign language-speakers has declined by several percentage points over the same time period. Of Silicon Valley workers in the core working age group (25-44) with a bachelor's degree or higher, women represented 25% of those in technical roles in 2018 – a share that increased by two percentage points over the prior year. While women make up 45% of Silicon Valley's regional civilian workforce, they only account for 32% of employees at the region's largest tech companies.

TECH TALENT

Female Tech Talent in the Core Working Age Group (25-44)

Santa Clara & San Mateo Counties | 2018



Data Source: United States Census Bureau, American Community Survey Analysis: Silicon Valley Institute for Regional Studies 20% of highlyeducated Silicon Valley women ages 25 to 44 worked in technical occupations (compared to 46% of their male counterparts).

In 2018,

7% of the new tech talent that moved to both Denver and Seattle in 2018 were from California, with many of them likely from the Bay Area;¹ 6% of the new tech talent that moved to Portland that year were from California.

Of the new, highly-educated young tech talent that moved to Silicon Valley in 2018, 67% were Asian; 30% were White, and a mere fraction of a percent (amounting to fewer than 200 workers) were Black or African-American.

TECH TALENT Migration of Tech Talent in the Core Working Age Group (25-44) Santa Clara & San Mateo Counties, San Francisco, and Other Top U.S. Tech Centers | 2018



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

Women make up an estimated 24% of employees in technical roles at Silicon Valley's largest tech companies, and 26% of those in leadership positions.

TECH TALENT

Share of Female Employees at Silicon Valley's 10 Largest Technology Companies



Note: Analysis only includes readily available diversity data. | Data Sources: Individual company diversity reports; Silicon

Valley Business Journal; United States Census Bureau | Analysis: Silicon Valley Institute for Regional Studies

workers) were Black or African-American.

New Tech Talent in the Core Working Age Group (25-44) Santa Clara & San Mateo Counties, 2018

Asian	67%
White	30%
Two or More Races	2.0%
Some Other Race	0.9%
Black or African-American	0.4%

The largest shares of Silicon Valley's foreignborn tech talent with a bachelor's degree or higher come from India (25%) and China (15%).

In 2018, a larger share of Silicon Valley's highly-educated tech workers was from India and China combined (40%) than from within the United States (32%).

68% of Silicon Valley's tech talent in 2018 was foreign-born.

TECH TALENT

Share of Residents in Technical Occupations with a Bachelor's Degree or Higher, by Place of Origin

Santa Clara & San Mateo Counties | 2018



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

1. According to data from the LinkedIn Economic Graph (January 2020), the Bay Area was the number one place of origin for Seattle LinkedIn members in 2018 and 2019, and the second and third most common place of origin for new LinkedIn members in Denver in 2018 & 2019, respectively. According to the LinkedIn Economic Graph (January 2020), the Bay Area was the number one place of origin for Seattle LinkedIn members in 2018 and 2019, and the second and third most common place of origin for new LinkedIn members in Denver in 2018 & 2019, respectively. According to the LinkedIn Economic Graph (January 2020), Seattle and Denver sing Seattle and Denver and member counts for the Greater Seattle and Greater Denver Areas (January 2020), Seattle gained approximately 1,900 new workers in 2019 from the San Francisco Bay Area.

ECONOMY Employment

Silicon Valley created nearly 30,000 new jobs between Q2 2018 and Q2 2019, and an additional 37,300 in the latter half of 2019.¹ The Q2 to Q2 annual job growth rate was +1.7%, which also ramped up toward the end of the calendar year; the growth rate for Innovation & Information Products and Services (technology industry) jobs, however, has been higher than the overall rate – with growth of 3.2% (an additional 14,100 jobs).

Job growth in Silicon Valley has slowed over the past two years, although the pace remains higher than the state or nation as a whole. Forty-one percent of new Silicon Valley jobs were in Community Infrastructure & Services - with nearly 7,600 of those jobs created in Healthcare & Social Services alone - and 43% was in the technology industry. 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 pre-recession. Despite slower job growth over the two years, the region's unemployment rate is at a 19-year low (2.1%) and growth of tech jobs has been much greater in terms of sheer numbers 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.

1. Second-half 2019 estimates are based on June through December data for Santa Clara & San Mateo Counties only.



Silicon Valley job growth has slowed over the past two years (2017-2019) compared to the seven years prior (2010-2017), and grew more slowly over the past year (+1.7% between Q2 2018 and Q2 2019) than any other year since before the start of the economic recovery period. However, job growth in the region picked up in the latter half of 2019, with a growth rate of 2.5% in Santa Clara and San Mateo Counties combined over that six-month period (June-December).²

Silicon Valley gained 28,972 jobs between Q2 2018 and Q2 2019; an additional 37,300 were added in Santa Clara and San Mateo Counties alone in the latter half of 2019 (June through December).

Job growth in San Mateo County contributed 39% of the region's new jobs between Q2 2018 and Q2 2019 (+11,354 jobs), compared to only 8% of the region's job growth during the prior year.

2. The most recent data from the California Employment Development Department (FDD) shows an increase in the rate of iob growth in the latter half of 2019 in Santa Clara and San Mateo Counties Combined (not including the additional four Silicon Valley cities in Alameda and Santa Cruz

Counties), with a growth rate of 2.5% from June through December

The total number of jobs in Silicon Valley is 23% higher than pre-recession (2007) levels.

Job growth since the beginning of the economic recovery period in 2010 has been more rapid in San Francisco (up 39%) than in Silicon Valley (+32%), Alameda County (+27%), California (+21%), or the United States overall (+15%).

Jobs in San Francisco grew more rapidly between Q2 2018 and Q2 2019 (+2.6%) than those in Silicon Valley (+1.7%) or Alameda County (+0.5%).

JOB GROWTH Relative Job Growth





Note: Relative growth is from June to June. | Data Sources: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; EMSI | Analysis: BW Research

MAJOR AREAS OF ECONOMIC ACTIVITY Share of Total Employment, by Major Areas of Economic Activity Silicon Valley and San Francisco | 2019 1% **Community Infrastructure** & Services **Business Infrastructure** 16% & Services 50% Innovation and Information 57% **Products & Services** 23% 26% Other Other Manufacturing

Silicon Valley

A larger share of Silicon Valley jobs is in Innovation and Information Products & Services (26%) than in San Francisco (14%); San Francisco has a higher share of Business Infrastructure & Services jobs (23% compared to 16% in Silicon Valley).

Half of all Silicon Valley jobs are in Community Infrastructure & Services; 26% are in Innovation and Information Products & Services.

Note: Definitions of the major areas of economic activity are included in Appendix A. | Data Sources: BW Research; U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; EMSI | Analysis: BW Research

San Francisco

ECONOMY Employment

MAJOR AREAS OF ECONOMIC ACTIVITY

Average Annual Employment, by Major Area of Economic Activity



A larger share of Q2 2018 to Q2 2019 job growth was in the tech industry (43%) compared to the prior year (34%) or the year before that (29%).

41% of all new Silicon Valley jobs created between Q2 2018 and Q2 2019 were in Community Infrastructure & Services; nearly 7,600 new jobs were created in Healthcare & Social Services alone.

Employment in Community Infrastructure & Services has grown steadily since 2010 (up by nearly 189,000 jobs reaching a total of 846,000 in 2019), whereas employment in Other Manufacturing has only grown by 2,400 jobs since then.

Note: Definitions of the major areas of economic activity are included in Appendix A. | Data Sources: BW Research; U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; EMSI | Analysis: BW Research

Silicon Valley jobs in Innovation and Information Products & Services – such as Computer Hardware, Software, Internet & Information Services, and Biotechnology – grew by 3.2% (+14,100) between Q2 2018 and Q2 2019.

Silicon Valley employment has far surpassed pre-recession levels across all major areas of economic activity except Other Manufacturing.

Employment Growth by Major Areas of Economic Activity Silicon Valley			
	2007 -2019	2010 -2019	2018 -2019
Community Infrastructure & Services	+20.6%	+28.7%	+1.6%
Innovation and Information Products & Services	+43.3%	+44.6%	+3.2%
Business Infrastructure & Services	+13.1%	+24.7%	+1.3%
Other Manufacturing	-12.5%	+4.2%	+2.5%
Total Employment	+22.9%	+31.8%	+1.7%

Note: Percent change is from Q2 to Q2. | Data Sources: BW Research; U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; EMSI | Analysis: BW Research

Tech industry jobs have grown significantly since the beginning of the economic recovery period, with a 45% increase in the number of jobs (up by more than 139,000 jobs) between Q2 2010 and Q2 2019.

Between the second quarters of 2018 and 2019, Silicon Valley tech jobs have grown the most quickly of all the major areas of economic activity (+3.2% year-over-year, compared to an overall job growth rate of 1.7%). 85% of Silicon Valley Tier 3 (low-skill/low-wage jobs) are in Community Infrastructure & Services.

MAJOR AREAS OF ECONOMIC ACTIVITY

Employment in Major Areas of Economic Activity, by Tier



Note: Definitions of the major areas of economic activity, and of Tier 1 (high-skill/high-wage), Tier 2 (mid-skill/mid-wage), and Tier 3 (low-skill/low-wage) jobs are included in Appendix A. | Data Sources: BW Research; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages; California Employment Development Department; EMSI | Analysis: BW Research

42% of all Silicon Valley jobs are Tier 2 (mid-skill/mid-wage); 25% are Tier 1 (high-skill/high-wage) and 33% are Tier 3 (low-skill/low-wage).



Note: Definitions of Tier 1 (high-skill/high-wage), Tier 2 (mid-skill/mid-wage), and Tier 3 (low-skill/low-wage) jobs are included in Appendix A. Data Sources: BW Research; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages; California Employment Development Department; EMSI Analysis: BW Research 45% of Community Infrastructure & Services jobs are Tier 3; in contrast, Innovation and Information Products & Services jobs are primarily (76%) Tier 1 (high-skill/high-wage).

While Business Infrastructure & Services jobs are 45% Tier 1 (high-skill/high-wage), there is also a relatively large share (36%) of them that are Tier 2 (mid-skill/mid-wage).

Percent Change in Employment, by Tier				
	2007	7 - 2019	2010	- 2019
	Silicon Valley	San Francisco	Silicon Valley	San Francisco
Tier 1	+28%	+43%	+34%	+45%
Tier 2	+14%	+23%	+27%	+32%
Tier 3	+26%	+35%	+34%	+32%

Employment across all tiers has exceeded prerecession levels, but growth has been uneven with fewer gains for mid-wage/mid-skill (Tier 2) jobs in both Silicon Valley and San Francisco.

> 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 (+34%) have been more rapid than in Tier 2 (+27%).

ECONOMY Employment

EMPLOYMENT BY TIER

Percent of Total Employment by Tier

Silicon Valley



Note: Definitions of Tier 1 (high-skill/high-wage), Tier 2 (mid-skill/mid-wage), and Tier 3 (low-skill/low-wage) jobs are included in Appendix A. Data Sources: BW Research; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages; California Employment Development Department; EMSI Analysis: BW Research The long-term trend indicates that the share of Silicon Valley employment in Tier 2 jobs has decreased by 5% over the past 18 years, although year-toyear changes have been relatively small.

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

Silicon Valley's unemployment rate in September 2019 (2.01%) was lower than any other month since December 1999 (when it was 1.97%), with fewer than 31,000 unemployed workers in the labor force.

Silicon Valley's unemployment rate is at a 19-year low.

San Mateo County continues to have the lowest unemployment rate of all counties in the state (1.8%) in November 2019, followed closely by San Francisco and Marin Counties (both at 2.0%) and Santa Clara County (2.3%).

The unemployment rate in Silicon Valley was 2.1% in November 2019 (compared to 2.0% in San Francisco, 3.7% in California, and 3.3% in the United States overall).

UNEMPLOYMENT

Monthly Unemployment Rate

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



Note: County-level and California data for November 2019 are preliminary; Rates are not seasonally adjusted. | Data Source: U.S. Bureau of Labor Statistics, Current Population Survey (CPS) and Local Area Unemployment Statistics (LAUS) | Analysis: Silicon Valley Institute for Regional Studies Unemployment rates across all racial and ethnic groups in Silicon Valley were below pre-recession (2007) levels by 2016, and remained below them in 2018.

UNEMPLOYMENT

 ${\it Unemployed Residents' Share of the Working Age Population, by Race \& Ethnicity}$

Santa Clara & San Mateo Counties



Note: Other includes Some Other Race and Two or More Races. Data includes workers ages 16 and over. | Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies

ECONOMY

The unemployment rate for Black or African-American Silicon Valley residents (3.9% in 2018) has declined by nearly eight percentage points since it peaked to 11.6% in 2011.

ECONOMY Employment

Silicon Valley labor force participation rates increased by nearly two percentage points overall since 2007, with increases in the 25-54 and 55+ age groups only; the labor force participation rate for 16- to 24-year-olds actually declined by three percentage points over that time period.

Labor Force Participation Rates, by Age Group Santa Clara & San Mateo Counties

	2007	2018
16-24	56.9%	54.4%
25-54	83.0%	86.3%
55+	38.5%	44.3%
Total	66.9%	68.5%

LABOR FORCE PARTICIPATION

Labor Force Participation Rates for Residents Ages 55+

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



Labor force participation rates for workers ages 55+ have increased since pre-recession, with older workers remaining in the workforce longer.

Data Source: United States Census Bureau, American Community Survey Analysis: Center for Continuing Study of the California Economy; Silicon Valley Institute for Regional Studies

In 2007, 38.5% of Silicon Valley residents ages 55+ and older were in the workforce; by 2018, the share had risen to 44.3%.





both total number of tech jobs¹ as well as the percentage of local jobs; Washington, D.C. is a close second by *share* of total jobs, but the total number of jobs is significantly less (65% of the Bay Area).

The Bay Area ranks

#1 among top U.S.

tech talent centers by

Data Source: CBRE 2018 Scoring Tech Talent | Analysis: CBRE Research

TECH TALENT CENTERS

Growth of Tech Talent in Top U.S. Tech Talent Centers 2013-2018

While four U.S. markets attracted tech talent between 2013 and 2018 at a higher rate than the Bay Area, the total number of new tech jobs locally over that time period was significantly higher in the Bay Area than elsewhere.



Data Source: CBRE 2018 Scoring Tech Talent | Analysis: CBRE Research

ECONOMY Income

Per capita personal income in Silicon Valley hit an all-time high in 2018, although it continues to vary significantly by race and ethnicity. Likewise, average wages continued an upward trend, though the wage gap by sex and occupational category remained wide. Median household income rose in 2018 by 2.5% (yearover-year, after inflation-adjustment), although it is likely affected by the shifting distribution of households toward those in higher income ranges. In 2018, 30% of all Silicon Valley households had annual incomes above \$200,000. These gains are mirrored in the trend toward more highnet worth households, with 13% of the region's households having more than \$1 million in net assets. While those wealthy households hold an estimated 75% of the region's overall wealth, 70% of non-affluent households have less than \$25,000 saved. These households struggle to not only meet their most basic needs, but are also less likely to have money available for other daily necessities and long-term goals like owning a house, or sending their children to college.

Trends in the Gini coefficient – a measure of household income inequality – indicate that, particularly since 2011, Silicon Valley has had a greater level of income inequality than any time in the recent past (with regional data going back to 1989). While the poverty rate is still relatively low (7.1%) compared to San Francisco, to California, or to the U.S. overall, that rate rises to 9.5% for young adults (ages 18-34) and to 9.5-10.7% for several racial and ethnic groups. Furthermore, nearly 30% of the region's residents are below the Self-Suf-

ficiency Standard and are unable to meet their most basic needs without public or private/informal assistance. As with the poverty rate, the share of residents living below Self-Sufficiency increases significantly for certain segments of the population including single mothers, Latino non-citizens, and those without a high school diploma. At the 2019 statewide minimum wage of \$12 per hour (which currently applies to 27 of Silicon Valley's 39 cities), it is impossible for anyone of any family type to be self-sufficient in Silicon Valley. Many residents rely on help in a variety of forms - including governmental and other local food assistance programs - in order to make ends meet. The necessity for individuals and families to choose between paying for housing and adequately feeding themselves is becoming

Per capita income has been increasing steadily in Silicon Valley since 2009, rising by an average of \$5,800 nominally per year over that nine-year period (or \$3,900 annually after inflation-adjustment).





in Silicon Valley hit an alltime high in 2018, reaching \$113,000; San Francisco, California, and United States per capita personal income are also the highest on record at \$131,000, \$64,000, and \$54,000, respectively.

Per capita personal income

Silicon Valley per capita personal income rose by \$4,000 annually (or \$334 per person per month) over 2017, after adjusting for inflation.

Per capita income in Silicon Valley is 1.8 times higher than in California overall, and 2.1 times that of the United States as a whole.

Note: Personal income is defined as the sum of wage and salary disbursements (including stock options), supplements to wages and salaries, proprietors' income, dividends, interest, rental income, and personal current transfer receipts, less contributions for government social insurance. Data Source: United States Department of Commerce, Bureau of Economic Analysis | Analysis: Silicon Valley Institute for Regional Studies

ECONOMY

a more prominent issue throughout the region, even for those with incomes well above the poverty limit.

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, sex, 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 overall financial security; it also helps to examine the extent to which income inequality leads to wealth inequality. A lack of equality has been shown to negatively impact the way community members maintain social bonds, put pressure on the achievement of economic success without the means to achieve it in legal

ways, and conjure feelings of unjust deprivation.¹ 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)² and the extent of food insecurity, are key indicators of the challenges facing many Silicon Valley residents.

 Goda, T., & Torres García, A. (2019). Inequality and Property Crime: Does Absolute Inequality Matter? International Criminal Justice Review, 29(2), 121–140. https://doi. org/10.1177/1057567718799829

2. 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 2018 (used to set 2018-2019 FRW eligibility) ranged from \$12,140 for a one-person household to \$42,380+ for a household with eight or more people. The poverty limit for a family of four was \$25,100.

Between 2017 and 2018, inflationadjusted per capita income increased for all racial and ethnic groups in Silicon Valley; the greatest increase was for Asian and Multiple & Other residents, which were up by \$5,500 and \$4,600, respectively.

Silicon Valley per capita income differs significantly among various racial and ethnic group; In 2018, per capita income was \$82,810 for White residents and \$28,960 for Hispanic or Latino residents.

PERSONAL INCOME Per Capita Income by Race & Ethnicity

Santa Clara & San Mateo Counties



Note: Multiple & Other includes Native Hawaiian & Other Pacific Islander Alone, American Indian & Alaska Native Alone, Some Other Race Alone and Two or More Races; Personal income is defined as the sum of wage or salary income, net self-employment income, interest, dividends, or net rental welfare payments, retirement, survivor or disability pensions; and all other income; White, Asian, Black or African American, Multiple & Other are non-Hispanic. | Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies

3. United States Bureau of Economic Analysis, State Personal Income and Employment: Concepts, Data Sources, and Statistical Methods. September 2019 (www.bea.gov/resources/methodologies/spi). 4. The Bureau of Economic Analysis personal income estimates include "nonprofit institutions serving individuals, private noninsured welfare funds, and private trust funds" in addition to individuals.

Per capita income for the highestearning racial/ethnic group, based on Census data (which includes income from cash or cash equivalents only),³ were White residents in 2018, at nearly \$83,000 per year. This number is significantly lower than per capita income estimates from the Bureau of Economic Analysis (\$113,000) due to exclusion of non-monetary compensation, bonuses, and additional employer benefits from the dataset, and because the dataset is limited to individuals only.⁴

Ratio of Per Capita Income of Highest to Lowest Income Racial/Ethnic Groups 2018		
Silicon Valley	3.4	
San Francisco	4.2	
California	2.7	
United States	2.1	

White Silicon Valley residents earn 3.4 times more than residents categorized in the Census data as Some Other Race Alone; the racial/ ethnic disparity is higher in San Francisco, where White residents earn 4.2 times more than Native Hawaiian & Other Pacific Islanders.

ECONOMY Income

In contrast to per capita income (which is often used to compare relative economic prosperity in different locals), median individual income is useful to better understand disparities among segments of the population without skewing the numbers due to other population variables or outliers (as with an average). In 2018, the median individual income was nearly \$123,000 for Silicon Valley residents with a bachelor's degree or higher, and \$29,500 for those without a high school diploma. Between 2017 and 2018, Silicon Valley individual median income rose by 5% for residents with less than a high school diploma (up \$1,300 annually, after adjusting for inflation – equivalent to an hourly-pay increase of approximately 65 cents for full-time workers). This annual growth was likely a result of recent minimum wage increases at both the state and local levels.¹

Median income in Silicon Valley varies significantly by educational attainment level.

Disparity in Median Income between Highest and Lowest Educational Attainment Levels

	2018	
	Gap	Ratio
Silicon Valley	\$93,347	4.2
San Francisco	\$81,385	4.8
California	\$65,941	3.8
United States	\$47,962	3.1

The income gap between residents of varying educational attainment levels is much wider in Silicon Valley and San Francisco than in California or the United States as a whole. PERSONAL INCOME Individual Median Income, by Educational Attainment Santa Clara & San Mateo Counties



*The 2008 value for Graduate or Professional Degree is for San Mateo County only. | Note: Some College includes Less than 1 year of college; Some college, 1 or more years, no degree; Associate degree; Professional certification. | Data Source: United States Census Bureau, American Community Survey Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley residents with a graduate or professional degree earn \$93,000 more than those with less than a high school diploma (a ratio of 4.2); this gap increased by \$5,600 between 2017 and 2018.

1. Between 2017 and 2018, the statewide minimum wage increased from \$10.50 to \$11.00 per hour; additionally, 12 out of 39 Silicon Valley cities have enacted their own minimum wage though ordinances, many of which include a plan to increase it incrementally each year.

ECONOMY

Average wages in Silicon Valley (\$126,000) were 1.9 times higher than in California overall (\$68,000) in 2019.

> Average wages across all industries in Silicon Valley continued an upward trend into 2019, narrowly outpacing inflation and reaching \$126,000 (compared to \$119,000 in San Francisco and \$75,000 in Alameda County).

WAGES Average Wages

Silicon Valley, San Francisco, Alameda County, Rest of Bay Area, and California



Note: Rest of Bay Area includes Contra Costa, Marin, Sonoma, Solano, and Napa Counties; 2019 average wages were updated to reflect Q2 reported growth. The U.S. Bureau of Labor Statistics strongly discourages the comparison of wage estimates from year to year due to a variety of reasons including classification and other methodological changes. Caution is advised in using this data to draw conclusions about short-term trends. Data Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages; EMSI | Analysis: BW Research

Median wages for Natural Resources, Construction, and Maintenance Occupations increased by \$0.60 per hour in 2019, but the rate of increase did not outpace inflation; after inflation-adjustment, median wages for those occupations declined by 0.6% year-over-year.

WAGES



Greater Silicon Valley*



*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 2016-2019. | Data Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages; EMSI | Analysis: BW Research

2019 median wages varied significantly by occupational category for Silicon Valley workers, with those in Management, Business, Science and Arts Occupations earning 3.3 times more than those in Service Occupations.

Median wage increases across all occupational categories except Natural Resources, Construction, and Maintenance Occupations, as a whole, marginally outpaced inflation into 2019; the greatest growth rate was for those in Service Occupations (with a 2.7% increase yearover-year, after inflationadjustment, representing an additional \$881 annually).

ECONOMY Income

WAGES

Median Wages by Tier

Silicon Valley, San Francisco, Alameda County, Bay Area, California, and the United States | 2019



The median wage for Silicon Valley Tier 1 (highwage/high-skill) workers was \$116,000 in 2019.

> Tier 1 workers in Silicon Valley earn nearly four times more than Tier 3 workers (a gap of \$86,000 in 2019); this compares to a 3:1 wage ratio for Tier 1 to Tier 3 workers in the country as a whole.

> > The 2018 gender-income gap was wider in Silicon Valley – where women were paid an average of \$0.73 for every dollar a man earned – than in San Francisco (\$0.82 on the dollar), California (\$0.79), or the United States as a whole (\$0.75).

Men in Silicon Valley with a bachelor's degree or higher earn an average of \$161,500 annually – 43% 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. For full-time workers with a bachelor's degree or higher, the genderincome gap was \$48,700 in 2018 (\$5,200 more than the previous year); in comparison, the gap was \$9,200 for workers without a high school diploma.

Note: Definitions of Tier 1 (high-skill/high-wage), Tier 2 (mid-skill/mid-wage), and Tier 3 (low-skill/low-wage) jobs are included in Appendix A. Data Sources: BW Research; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages; California Employment Development Department; EMSI Analysis: BW Research

Based on 2018 data, the gender-income gap in Silicon Valley is greatest for women with a graduate or professional degree, those in private for-profit companies, and those working in Computer & Mathematical and Natural Science occupations.¹



Note: Includes all full-time workers over age 15 with earnings. Some College includes Less than 1 year of college; Some college, 1 or more years, no degree; Associate degree; Professional certification. | Data Source: United States Census Bureau, American Community Survey PUMS | Analysis: Silicon Valley Institute for Regional Studies

1. Data on the gender-income gap by geographic area, occupational category, and class of worker are available online at www.SiliconValleyIndicators.org.

Silicon Valley median household income reached an all-time high in 2018 at nearly \$126,000 (up by 2.5% year-over-year, after inflation-adjustment). Median household income in Silicon Valley is 1.7 times higher than in California overall, and twice the national figure.

HOUSEHOLD INCOME

Median Household Income

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



Note: Household income includes wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income from estates and trusts; Social Security or railroad retirement income; Supplemental Security income; public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income; excluding stock options. Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies

Over the four-year period between 2014 and 2018, the share of Silicon Valley and San Francisco households earning \$200,000 or more annually increased significantly – up by 47% and 66%, respectively.

HOUSEHOLD INCOME



Note: Household income includes wage and salary income, net self-employment income, interest dividends, net rental or royalty income from estates and trusts, Social Security or railroad retirement income, Supplemental Security Income, public assistance or welfare payments, retirement, survivor, or disability pensions, and all other income excluding stock options.

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

Median household income in Silicon Valley grew by 2.5% in 2018, after adjusting for inflation; the nominal increase was 6.4%.

Percent Change in Inflation-Adjusted Median Household Income: 2017-2018

Silicon Valley	+2.5%
San Francisco	-2.4%
California	+1.1%
United States	+0.6%

While Silicon Valley has had seven progressive years of annual gains outpacing inflation, San Francisco median household income declined in 2018 by 2.4% (after inflation-adjustment).

Over a four-year period between 2014 and 2018, the number of high-income households (earning \$150,000 or more) in Silicon Valley and San Francisco rose by 33% combined, while the number of lower-income households declined.

Between 2017 and 2018, the greatest decline in number of Silicon Valley households by income category was for those earning \$35,000 - \$50,000 (down by 11% year-over-year, or nearly 6,700 households).

ECONOMY Income

HOUSEHOLD INCOME

Share of Households With Income of \$200,000 or More Annually

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

In contrast to the Gini coefficient, which is a relative measure of income inequality, the Absolute Gini² accounts for differences in mean household income and indicates that income inequality in Silicon Valley is actually 1.5 times higher than in the state and 1.9 times higher than in the United States overall.



Note: Household income includes wage and salary income, net self-employment income, interest dividends, net rental or royalty income from estates and trusts, Social Security or railroad retirement income, Supplemental Security Income, public assistance or welfare payments, retirement, survivor, or disability pensions, and all other income excluding stock options. Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies

Income inequality, as measured by the Gini coefficient, has been on the rise in Silicon Valley and throughout the state and nation for decades. In Silicon Valley specifically, relative income inequality hit a peak in 2013 (at 47.4) and was only slightly below that number in 2018.

HOUSEHOLD INCOME



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



The Gini coefficient (a relative measure of income inequality) for household income in Silicon Valley was 47.3 in 2018. The Gini coefficients were slightly higher for the Bay Area (48.5), California (49.1) and the United States as a whole (48.5) that year.

Using the relative measure, Income inequality in Silicon Valley (San Mateo and Santa Clara counties) is lower than in the Bay Area, California, and the United States overall; this may be due to lower-income workers having slightly higher wages in Silicon Valley relative to other places. It may also be influenced by the Census income data only including cash income,¹ whereas many of the higherincome earners in Silicon Valley receive significant non-monetary compensation, bonuses, and additional employer benefits.

Data Source: United States Census Bureau, American Community Survey | Analysis: Jon Haveman

1. United States Bureau of Economic Analysis, State Personal Income and Employment: Concepts, Data Sources, and Statistical Methods. September 2019 (www.bea.gov/resources/methodologies/spi). 2. Bandyopadhyay, S. (2018). The absolute Gini is a more reliable measure of inequality for time dependent analyses (compared with the relative Gini). Economics Letters, 162, 135–139.

30% of Silicon Valley households earn \$200.000 or more annually; 42% earn \$150,000 or more.

Continuing a six-year upward trend, Silicon Valley gained nearly 22,700 high-income households in 2018 (earning \$150,000 or more).

Regional Distribution of Wealth Silicon Valley Households | 2018

	% Households	% Wealth
Non-Affluent <\$100,000	53%	2%
Affluent \$100,000 - \$1 million	34%	23%
High Net Worth >\$1 million >\$10 million	13% 0.6%	75% 10%

More than half (53%) of all Silicon Valley households combined hold a mere 2% of the region's total wealth as measured by investable assets.

The top 13% of Silicon Valley households hold an estimated 75% of all the wealth; the top 0.6% hold an estimated 10% of all the wealth.

The share of Silicon Valley households with more

ECONOMY

than \$1 million in investable assets increased from 8% in 2015 to 13% in 2018 (representing more than 121,000 households, 5,800 of which have more than \$10 million in investable assets).

> A conservative estimate of the total wealth in all Silicon Valley households combined was \$587 billion in 2018.

> > One-ninth of all California's millionaire households are located in either Santa Clara or San Mateo County.

WEALTH Share of Households, by Investable Assets Santa Clara & San Mateo Counties \geq \$10 million \$5 - \$9.99 million <\$100,000 \geq \$1 million \$100,000 - \$499,000 \$500,000 - \$999,000 \$3 - \$4.99 million 63% 1,000,000 \$1 - \$2.99 million 900,000 13% 8% 8% 800,000 9% 700,000 Number of Households 600,000 500,000 400,000 \$75,000 - \$100,000 300,000 61% \$50,000 - \$75,000 53% \$25,000 - \$50,000 200,000 70% <\$25,000 100,000 ٥ 2015 2018

Note: Investable assets include education/custodial accounts, individually-owned retirement accounts, stocks, options, bonds, mutual funds, managed accounts, hedge funds, structured products, ETFs, cash accounts, annuities, and cash value life insurance. | Data Source: Phoenix Global Wealth Monitor | Analysis: Kelly Costa; Silicon Valley Institute for Regional Studies

Silicon Valley has a larger share of high-income households earning \$200,000 or more annually (30%) than San Francisco (29%), California (12%), or the United States as a whole (8%).

Silicon Valley has a higher share of "millionaire" households (13%) than San Francisco (11%) or in the state overall (8%).

More than half (53% of all Silicon Valley households have less than \$100,000 in investable assets.

Of the 53% of all Silicon Valley households that have less than

\$100,000 in investable assets, an overwhelming majority of

them (70%, amounting to nearly 350,000 households) had less

than \$25,000 total saved in 2018; this compares to 74% in San

Francisco and California, and 75% in the United States overall.

ECONOMY Income

The poverty rate in Silicon Valley remained steady between 2017 and 2018, at a rate lower than any other year since 2008.

Silicon Valley's poverty rate remains low (7%) compared to San Francisco (10%), to California (13%), or the United States as a whole (13%); however, these poverty estimates do not take into consideration the region's high cost of living (housing in particular).



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

The poverty rate in Silicon Valley is highest for young adults ages 18-34 (9.5%), and lowest for residents ages 35-64 (5.5%).

Silicon Valley's childhood poverty rate was 6.9%, which is relatively low compared to California (17.4%), and the United States overall (18%); still, nearly 40,000 Silicon Valley children – one out of every 14 – live in poverty.

POVERTY STATUS

POVERTY STATUS

Poverty Status by Age

Santa Clara & San Mateo Counties | 2018



Children account for 21% of all Silicon Valley residents who live in poverty (40,000 out of 190,000).

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

Percentage of Households Living in Poverty and Below Self-Sufficiency Standards

Santa Clara & San Mateo Counties, San Francisco, Bay Area, and California 2018



Note: The Self-Sufficiency Standard defines the amount of income necessary to meet basic needs without public subsidies or private/informal assistance. | Data Source: Center for Women's Welfare, University of Washington | Analysis: Silicon Valley Institute for Regional Studies

2018 marks the first year in at least 14 years that children are not disproportionately living in poverty in Silicon Valley; the decline of the childhood poverty rate (from 7.7% in 2017 to 6.9% in 2018) was largely due to a 17% decline in Santa Clara County children living below the poverty level.

Poverty Status by Race/Ethnicity
Santa Clara & San Mateo CountiesHispanic or Latino10.7%Multiple and Other10.7%Black or African American9.5%

Asian	6.0%
White	5.3%

Note: Multiple and Other includes Some Other Race Alone, Two or More Races, and American Indian and Alaska Native Alone (Santa Clara County only). White is non-Hispanic or Latino. | Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies

household poverty rate, nearly 30% of all Silicon Valley households do not earn enough money to meet their basic needs without public or private/informal assistance.

Despite a relatively low

The share of households living below Self-Sufficiency is slightly higher in Silicon Valley (29.6%) than in San Francisco (28.3%), but is lower than in the Bay Area (30.3%) or in California as a whole (35.2%).

> Silicon Valley poverty rates vary significantly by race/ethnicity; the poverty rates for some racial/ethnic groups are more than double that of White residents.

ECONOMY Income

More than 57% of all Silicon Valley households with a Hispanic or Latino householder 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. This share rises to nearly nine out of ten for women (particularly White women) without a high school diploma.

SELF-SUFFICIENCY Share of Households Living Below the Self-Sufficiency Standard

Santa Clara & San Mateo Counties | 2018

Self-sufficiency varies significantly by race and ethnicity, educational attainment level, family-type, citizenship status, and many other factors. Among the Silicon Valley household types that were most likely to live below Self-Sufficiency in 2018 were Latino non-citizens (81% below the Standard) and single parents with three or more children (>83%).

Among family households in Silicon Valley, those led by a single mother struggle the most to meet their most basic needs without assistance. In 2018, 73% of single mothers were below the Self-Sufficiency Standard.









Note: The Self-Sufficiency Standard defines the amount of income necessary to meet basic needs without public subsidies or private/informal assistance. Asian/Pacific Islander, Black, White, and Other are non-Hispanic or Latino. | Data Source: Center for Women's Welfare, University of Washington | Analysis: Silicon Valley Institute for Regional Studies

In 2019, the estimated wages needed in order to meet a family's most basic needs without assistance in Silicon Valley ranged from \$15/hour for a two-adult household with no children to \$21/ hour per adult in a family of four (with two adults and two school-aged children), and higher.

It was impossible to be above the Self-Sufficiency Standard in Silicon Valley at the 2019 statewide minimum wage (\$12 per hour in California), which applies to 27 of Silicon Valley's 39 cities.



Even in the 11 out of 12 Silicon Valley cities with minimum wage ordinances at or above \$15 per hour, the only family type that would be self-sufficient earning minimum wage would be a dualincome family with no children.¹

Self-Sufficiency wages increase significantly when there are fewer adults (earners) per household, or younger children that require costlier childcare.

*2019 estimate based on 2018 Self-Sufficiency Standard wages. | Note: The Self-Sufficiency Standard defines the amount of income necessary to meet basic needs without public subsidies or private/informal assistance. | Data Source: Center for Women's Welfare, University of Washington | Analysis: Silicon Valley Institute for Regional Studies

Based on Self-Sufficiency Wages, a family in Santa Clara County with two adults, an infant, and a preschooler would need a combined income of \$131,600 annually in order to have met their own basic needs in 2019; in comparison, the federal poverty limit for a family of four that year was \$25,750.² Likewise, Self-Sufficiency wages for a single adult were \$48,100 annually, while the federal poverty limit for an individual was only a quarter of that (\$12,490) in 2019.

^{1.} Twelve out of 39 Silicon Valley cities have enacted their own minimum wage though ordinances, ranging from \$13.50 to \$16.05 per hour in January 2020 (with eleven out of the twelve cities at \$15+ per hour). 2. United States Department of Health & Human Services, Office of the Assistant Secretary for Planning and Evaluation. 2019 Poverty Guidelines (https://aspe.hhs.gov/2019-poverty-guidelines).

ECONOMY Income

HUNGER

Silicon Valley, California

Percentage of Students Receiving Free or Reduced Price School Meals

Silicon Valley California 70% 60% 50% 40% 30% 20% 10% 0% '08 '09 '10 '11 '12 '13 '14 '15 '16 '17 '18 '19

Data Source: California Department of Education | Analysis: Silicon Valley Institute for Regional Studies

The share of students receiving free or reduced-price school meals in Silicon Valley and statewide has remained relatively steady over the past several years. California Senate Bill 138² allowed students on Medi-Cal to be qualified for free or reduced-price meals, which may have increased the number of students qualifying but also may be counterbalanced by factors such as out-migration or fears about applying for school meals. SB138 also required high-poverty schools to take advantage of the Universal Meal Service.³ In Santa Clara & San Mateo Counties, only Ravenswood City Elementary District fits this criteria (and signed up for the Community Eligibility Provision for the first time for the 2019-2020 school year). More than a third of Silicon Valley students ages 5-17 (a total of nearly 140,000 students) applied for and qualified to receive free or reduced-price school meals (FRPM). It is widely believed that additional students would have qualified for the program but may not have applied due to a variety of possible reasons including stigma and fear of using government programs due to Public Charge.¹

While 34% of Silicon Valley students applied for and qualified to receive the FRPM, it is unknown how many of them actually received those meals.

The share of Silicon Valley students qualifying for free or reduced-price meals remains significantly lower than the state overall, at 34% in the 2018-19 school year (compared to 59% throughout California).

1. Public Charge, under U.S. immigration law, is possible grounds for inadmissibility and deportation due to an individual being deemed too dependent on public assistance programs. U.S. Citizenship and Immigration Services, Public Charge Fact Sheet (www.uscis.gov/news/fact-sheets/public-charge-fact-sheet).

2. California Senate Bill 138 went into effect on January 1, 2018. The bill was intended to increase 'direct certification' of students in Medi-Cal for FRPM and required Universal Meal Service in high-poverty school districts.

3. California Department of Education, Senate Bill 138: Universal Meal Service (www.cde.ca.gov/ls/nu/sn/mbsnp012018.asp).

e	Meals	than half of their students enrolled in the Free or Reduced-Price Meal Program (FRPM); of those seven, three are in San
	Percentage	Jose. Within those 50 districts, 29 have at least one school with more than 50%
	86%	Whisman School District (one school with 75% enrollment). Alum Rock Elementary
	82%	(26 schools with an average 69% enrollment), East Side Union (14 schools
	74%	averaging 65% enrollment), San Jose Unified (17 schools averaging 66%), and
	73%	Franklin-McKinley Elementary (20 schools averaging 66%), among others.
	62%	
	FF0(

Ten School Districts with the Highest Percentage of Students Receiving Free or Reduced-Price Meals Silicon Valley, 2019

District	City	County	Percentage
Ravenswood City Elementary	East Palo Alto	San Mateo	86%
Alum Rock Union Elementary	San Jose	Santa Clara	82%
Franklin-McKinley Elementary	San Jose	Santa Clara	74%
Mount Pleasant Elementary	San Jose	Santa Clara	73%
Redwood City Elementary	Redwood City	San Mateo	62%
Gilroy Unified	Gilroy	Santa Clara	55%
Jefferson Elementary	Daly City	San Mateo	53%
East Side Union High	San Jose	Santa Clara	49%
Newark Unified	Newark	Alameda	49%
New Haven Unified	Union City	Alameda	45%

Of the 50 school districts in Silicon Valley

(with > 1,000 students), seven have more

Note: Table includes school districts with more than 1,000 students enrolled. | Data Source: California Department of Education Analysis: Silicon Valley Institute for Regional Studies

ECONOMY Income

An estimated one out of every twelve Silicon Valley residents (9%) lacks access, at times, to food and/or food that is nutritionally adequate.



Data Source: Feeding America, Map the Meal Gap | Analysis: Feeding America; Silicon Valley Institute for Regional Studies

While the 2017 estimate of food insecurity at the regional level (based on state and county-level data) for Silicon Valley was 9%, less conservative estimates based on the actual amount of food assistance provided that year put the food insecurity rate at closer to 27%.1 National measures of food insecurity do not take into account the cost of living in Silicon Valley - particularly the high cost of housing. The need for individuals and families to choose between paying for housing and adequately feeding themselves is becoming a more prominent issue throughout the region.

1. Estimate based on food assistance provided in 2017 (The Hunger Index, Santa Clara University, Leavey School of Business) and the Feeding America findings (2018) of an average 5.6 meals per person per week (www.feedingamerica.org).

California.

There was less food assistance distributed to Silicon Valley residents in 2017 than during the prior year by nearly all governmental providers.³ However, Second Harvest of Silicon Valley actually provided more food assistance in 2017 than in 2016 (up 2% yearover-year, amounting to an additional 1,100 meals and totaling approximately 1,300 more added pounds of food). This increased need for assistance from Second Harvest may be due to people switching from other assistance programs, a need by people who do not qualify for federal nutrition programs (mostly only available to those below 185% of the Federal Poverty Level), a greater need by a smaller number of individuals (who can only receive a limited amount from other programs), and driven by the rising costs of living. In contrast to more stringent government program eligibility limits, Second Harvest of Silicon Valley now serves families up to 275% of the Federal Poverty Level in order to reach those who are struggling with the cost of living and need occasional help.

HUNGER Number of Meals Provided by Food Assistance Programs

Santa Clara & San Mateo Counties



Data Source: The Hunger Index | Analysis: Santa Clara University, Leavey School of Business

While the total amount of food assistance provided to residents in 2017 was significantly lower than the two previous years, the decline is not necessarily indicative of a decline in need. Based on the number of meals provided by assistance programs in 2017, an estimated 740,000 Silicon Valley residents were served that year.²

In 2017, food assistance programs provided a total of 217 million meals to Silicon Valley residents in need. Of these meals, nearly 40% were from Second Harvest of Silicon Valley and other non-governmental sources (an increase from 28% in 2012). In FY 2017, Second Harvest provided the equivalent of 55 million meals and even more in FY 2019 (58 million meals) to meet the increase in need.

2. Estimate based on the Feeding America findings (2018) of an average 5.6 meals per person per week (www.feedingamerica.org).

3. Including Senior Nutrition, Summer Meals, Free and Reduced-Price School Meals, Supplemental Nutrition Assistance Program (CalFresh in California, formerly Food Stamps), and WIC (Women, Infants, and Children).

ECONOMY Innovation & Entrepreneurship

Silicon Valley's regional GDP continues to grow, with estimated gains of nearly 5% year-over-year amounting to an additional \$17 billion dollars and an estimate of value added per employee of \$241,000 in 2019. Since 2001, inflation-adjusted labor productivity has increased by 53%, and the number of patents registered to Silicon Valley inventors each year has more than doubled. San Jose ranked first in 2018 for California's top patent-generating cities; San Francisco ranked third, and growth in patents registered per capita has been rapid compared to elsewhere.

Meanwhile, venture capital investments flowing into the region's companies have been remarkably high over the past two years, with 2019 totals falling slightly short of the prior year. Most of the money is flowing into Internet, Software (non-internet/ mobile), and Mobile & Telecommunication companies, with a 2019 surge of funding into the Automotive & Transportation industry - primarily as a result of funding to Mountain View-based Nuro and Palo Alto-based Aurora Innovation. While the top venture capital deals of 2019 were all significantly less than the top deals during the prior year, there were still a record-setting 92 megadeals (over \$100 million each) in Silicon Valley and San Francisco combined that year.

In contrast to the growing number of megadeals, Angel investment declined

in 2019 and the total number of startup companies continued a five-year decline with fewer funded startups in Silicon Valley than anytime over the past two decades (at least). While fewer startups are finding funding, the share of funded startups founded by women has increased from a mere 8% in 1999 to 28% in 2019.

There were two more Silicon Valley IPOs in 2019 than during the prior year with 22 total, mostly in Healthcare (73%) and Technology (18%) - and the total amount raised (\$3.9 billion) was \$700 million more than the prior year; yet, the \$3.2 billion was miniscule in comparison to the amount of private capital infusing Silicon Valley companies.

Inflation-adjusted labor productivity in Silicon Valley - which had been increasing steadily since 2001 - declined slightly in

Silicon Valley labor productivity was nearly \$241,000 per employee in 2019 (equivalent to approximately \$116 per hour per employee).

Value added per Silicon Valley employee declined slightly in 2019 (down 0.6% year-over-year), with similar declines in San Francisco and the state overall; meanwhile, labor productivity throughout the United States as a whole increased slightly in 2019 (up 0.8%).

Percent Change in Inflation-Adjusted Value Added Per Employee

	2001 -2019	2018 -2019	
Silicon Valley	+53%	-0.6%	
San Francisco	+29%	-0.8%	
California	+22%	-0.6%	
United States	+23%	+0.8%	

Silicon Valley labor productivity (inflationadjusted) was 53% higher in 2019 than it was in the year 2001.

2019 (-0.6% year-over-year).

PRODUCTIVITY

Value Added Per Employee

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



Data Source: Moody's Economy.com | Analysis: Silicon Valley Institute for Regional Studies

In 2018, there were 18,455 patents registered to Silicon Valley inventors (compared to 2,954 to San Francisco inventors); this number represents 1,084 fewer patents than the prior year.

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.

The number of 2018 Silicon Valley patent registrations in Communications (5,219) was six times higher than in 1998, and the Communications share of Silicon Valley patents increased from 21% to 45% over that 20-year time period.



Data Source: United States Patent and Trademark Office | Analysis: Silicon Valley Institute for Regional Studies

ECONOMY Innovation & Entrepreneurship

Per capita patent registrations in San Francisco were up by 133% since 2011, despite a slight year-over-year decline in the total number of patents registered in 2018.

Patents Per Capita Patents Granted per 100,000 People			
2011 2018 2011-20 Percent Ch			
Silicon Valley	476	596	+25.1%
San Francisco	144	334	+132.6%
California	75	100	+33.0%

Data Source: United States Patent and Trademark Office; California Department of Finance | Analysis: Silicon Valley Institute for Regional Studies

Top 10 Patent Generating Cities in California 2018			
City	Count	Share	
San Jose	4,198	11%	
San Diego	3,167	8%	
San Francisco	2,955	7%	
Sunnyvale	1,799	5%	
Mountain View	1,555	4%	
Palo Alto	1,467	4%	
Cupertino	1,228	3%	
Santa Clara	1,123	3%	
Fremont	1,112	3%	
Los Angeles	732	2%	
California Total	39,813	100%	

Data Source: United States Patent and Trademark Office | Analysis: Silicon Valley Institute for Regional Studies

Seven of the top ten patentgenerating cities in California in 2018 were in Silicon Valley. San Jose ranked highest on the list, and San Francisco ranked third among the ten. In 2018, more than half (54%) of California patents were registered to Silicon Valley or San Francisco inventors.

Share of California and United States Patents

Over the past 20 years, Silicon Valley's share of California and U.S. patent registrations has increased dramatically (from 41% to 46%, and from 8% to 13%, respectively), although most of the increase occurred in the 1990s.



Data Source: United States Patent and Trademark Office | Analysis: Silicon Valley Institute for Regional Studies

PRIVATE EQUITY

PATENT REGISTRATIONS

Venture Capital Investment

Silicon Valley and San Francisco



Data Sources: PricewaterhouseCoopers/National Venture Capital Association MoneyTreeTM Report (2000-2015); Thomson ONE (2017-2019) Analysis: Silicon Valley Institute for Regional Studies

Internet companies received 48% of all Q1-3 2019 venture capital funding to the greater Silicon Valley region.

The share of VC funding to Silicon Valley Software (non-internet/mobile) companies remained relatively high in the first three quarters of 2019 (7%) with a total of \$2.8 billion. Meanwhile, funding to Automotive & Transportation companies shot up to nearly 8% of all VC funding with \$2.9 billion – a sharp increase for that industry driven primarily by the \$940 million infusion to Mountain View-based Nuro Inc., and the \$600 million (in two deals) to Palo Alto-based Aurora Innovation. Since 1996, the share of VC funding to Silicon Valley electronics companies has declined from 11% to 1%; likewise, the share of VC funding to Computer Hardware & Services companies has declined from 13% to 6% in 2019.

ECONOMY

PRIVATE EQUITY Venture Capital by Industry





*Includes Q1-3. | Note: The category Other includes Agriculture, Environmental Services & Equipment, Financial, Leisure, traditional Media, Metals & Mining, non-internet/mobile Retail, and Risk & Security. Industry definitions are provided in Appendix A. | Data Source: PricewaterhouseCoopers/National Venture Capital Association MoneyTreeTM Report, Data: CB Insights | Analysis: Silicon Valley Institute for Regional Studies

2019 Silicon Valley and San Francisco venture capital investments totaled nearly \$42 billion (\$18 billion in Silicon Valley and \$24 billion in San Francisco).

While total venture capital (VC) investments in Silicon Valley and San Francisco companies in 2019 were slightly lower than during the prior year, the total is still significantly higher than any year between 2001 and 2017. Funding to Silicon Valley and San Francisco companies remained strong through the end of 2019, as did funding throughout the United States. The total number of fourth-quarter VC deals to Silicon Valley companies represented 24% of the year's deals and 22% (\$3.8 billion) of the annual total. San Francisco's venture capital activity slowed slightly in Q4, representing 18% (\$4.2 billion) of the annual dollar amount and 21% of the deals in 2019. VC investments to Silicon Valley companies declined by 11% year-over-year, while investments in San Francisco companies were down by 26%.

The region's share of California VC investments remained at 79% in 2019, and the share of U.S. investments declined slightly to 40%.

ECONOMY Innovation & Entrepreneurship

Top Venture Capital Deals of 2019						
Silicon Valley			San	Francisco		
Investee Company Name	City	Amount (millions)	Quarter	Investee Company Name	Amount (millions)	Quarter
Nuro	Mountain View	\$940.00	1	Flexport	\$1,000.00	1
Aurora Innovation	Palo Alto	\$530.00	1	JUUL Labs	\$785.18	3
Robinhood Financial	Palo Alto	\$323.00	3	DoorDash	\$600.00	2
Carta (formerly eShares)	Palo Alto	\$300.00	2	1debit (Chime)	\$500.00	4
Impossible Foods	Redwood City	\$300.00	2	Uber Technologies	\$500.00	2
BridgeBio Pharma	Palo Alto	\$299.20	1	SoFi	\$500.00	2
Automation Anywhere	San Jose	\$290.00	4	JUUL Labs	\$445.67	2
Rubrik	Palo Alto	\$261.00	1	Pax Labs	\$420.00	2
Carbon	Redwood City	\$260.00	2	Databricks	\$400.00	4
Next Insurance	Palo Alto	\$250.00	4	DoorDash	\$400.00	1

Data Sources: PricewaterhouseCoopers/National Venture Capital Association MoneyTreeTM Report (2000-2015); Thomson ONE (2017-2019); crunchbase | Analysis: Silicon Valley Institute for Regional Studies

The largest Silicon Valley VC investment of 2019 was the \$940 million to Mountain Viewbased Nuro Inc., a company developing technologies for autonomous local goods transportation. The largest San Francisco deal of 2019 was also in a company dealing with goods movement: the first-quarter, \$1 billion round led by SoftBank's Vision Fund in Flexport, a global freight logistics provider. The largest venture capital deals in 2019 were all significantly less than the two largest deals of 2018 (the \$12.8 billion infusion from Altria Group, Philip Morris' parent company, into JUUL Labs Inc. in the fourth quarter, and the \$1.25 billion to Uber Technologies Inc. in the first quarter).

> Of all the venture capital funding to Silicon Valley and San Francisco companies in 2019 (nearly \$42 billion, combined), nearly half of it (\$20.5 billion) was in the form of megadeals.

Total Angel investments in Silicon Valley Companies in 2019 (\$121 million) were \$88 million less than during the prior year, after inflation-adjustment.

PRIVATE EQUITY

Angel Investment

Silicon Valley, San Francisco, and California



nearly two and a half times more Angel investment dollars in 2019 (\$301 million) than Silicon Valley companies (\$121 million).

companies received

San Francisco

Angel investments in Silicon Valley and San Francisco declined in 2019 by 42% and 21%, respectively (after inflationadjustment); California and the U.S. as a

whole experienced similar declines (-31%

and -29%, year-over-year, respectively).

Angel investments in Silicon Valley and San Francisco represented 76% of the statewide total in 2019 – a slightly larger share than during the prior year (74% in 2018).

Note: Only includes disclosed financing data for all deals that were designated specifically as Angel funding rounds and seed stage investments that included at least one Angel investor. | Data Source: Crunchbase | Analysis: Silicon Valley Institute for Regional Studies

PRIVATE EQUITY

Megadeals

Silicon Valley, San Francisco, Rest of California



The number of Silicon Valley and San Francisco megadeals (more than \$100 million each) in 2019 was higher than ever before (at 92 total, compared to 81 during the prior year).

The number of extremely large venture capital deals has been rising for the past six years (with the exception of 2016), reaching 115 deals over \$100 million each throughout California in 2019 (up from 11 in 2013).

ECONOMY

Data Sources: PricewaterhouseCoopers/National Venture Capital Association MoneyTreeTM Report (2000-2015); Thomson ONE (2017-2019) Analysis: Silicon Valley Institute for Regional Studies

ECONOMY Innovation & Entrepreneurship

While Silicon Valley has historically had more startup companies than San Francisco, since 2010 that has no longer been the case: in 2019, there were 257 startup companies headquartered in San Francisco that received funding, and only half that number (130) in all of Silicon Valley.

The number of Silicon Valley startup companies declined for the fifth year in a row, with only 45 companies headquartered in the region receiving seed or early-stage investments in 2019 – a mere 12% of the number that received seed or early-stage funding in 2014.

The share of startups founded by women in 2019 was slightly higher in Silicon Valley (28%) than in San Francisco (23%) or California as a whole (22%).

startups Number of Seed or Early-Stage Startups, and Total Number of Startup Companies

Silicon Valley, San Francisco, and California



Data Source: Crunchbase | Analysis: Silicon Valley Institute for Regional Studies

INITIAL PUBLIC OFFERINGS

Total Number of U.S. IPO Pricings

Silicon Valley, San Francisco, Rest of California, Rest of U.S., and International Companies



Note: Location based on corporate address provided by IPO ETF manager Renaissance Capital; Rest of California includes all of the state except Silicon Valley for 2007-2013, and all of the state except Silicon Valley and San Francisco for subsequent years. Data Source: Renaissance Capital | Analysis: Silicon Valley Institute for Regional Studies

Share of Startups founded by Women

	Silicon Valley	San Francisco	California
1999	8%	14%	10%
2009	13%	16%	16%
2019	28%	23%	22%

The share of female-founded Silicon Valley startup companies (receiving seed or early-stage funding) has increased significantly over the past two decades, up to 28% in 2019 from 8% in 1999 and 13% in 2009.

Silicon Valley had 22 IPOs in 2019 that raised a total of nearly \$3.9 billion – \$726 million more than the amount raised by the prior year's 20 IPOs – representing 7% of the \$54 billion national total.

Silicon Valley and San Francisco had a few more IPOs in 2019 (two and four, respectively) than during the prior year; the total number of U.S. IPO pricings, however, declined slightly in 2019 (down from 191 in 2018 to 161 in 2019). Among Silicon Valley's 16 Health Care companies that went public in 2019, most were relatively small with an average of 106 employees per company at the time of their IPO, and a range of 10 employees (Akero Therapeutics in South San Francisco) to 471 at Livongo in Mountain View.

San Francisco companies that went public on U.S. stock exchanges in 2019 were primarily (75%) in Technology (nine companies including Uber, Lyft, Pinterest, Slack, and others), 17% Health Care (89bio and Vir Biotechnology), and 8% Materials (Levi Strauss).



Note: Location based on corporate address provided by IPO ETF manager Renaissance Capital. | Data Source: Renaissance Capital | Analysis: Silicon Valley Institute for Regional Studies

The 22 Silicon Valley companies that went public in 2019 on U.S. stock exchanges had a total of nearly 9,000 employees at the time of their IPO; among the 12 San Francisco companies with 2019 IPOs, there were just over 50,000 employees (with 22,300 of them at Uber alone, and another 14,400 at Levi Strauss). Whereas 2019 IPO pricings on U.S. stock exchanges were spread across 11 different industry areas, Silicon Valley IPOs were predominantly in healthcare (73%, or 16 out of the 22 companies) and technology (18%, four companies); there was one Silicon Valley IPO in Financials (Oportun Financial in San Carlos), and one Consumer Discretionary (Sonim in San Mateo).

In 2019, there were 22 IPO pricings of Silicon Valley companies, representing 14% of all IPOs on U.S. stock exchanges during that year.

ECONOMY Innovation & Entrepreneurship

17% of all 2019 California M&A deals involved at least one Silicon Valley company (a total of 630 deals). Silicon Valley's largest completed M&A deal of 2019 was the November acquisition by San Jose-based Broadcom of Mountain View-based Symantec Corporation's enterprise security business and assets for \$10.7 billion; San Francisco's largest M&A deal of 2019 was the Salesforce acquisition of Seattle-based Tableau Software for \$14.9 billion in stock, which completed in August.

> 68% of San Francisco's 2019 M&A activity was Acquirer-Only deals (compared to 57% in Silicon Valley).

MERGERS & ACQUISITIONS

Number of Deals and Share of California Deals

Silicon Valley and San Francisco



Data Source: FactSet Research Systems, Inc. | Analysis: Silicon Valley Institute for Regional Studies

Of the 2019 M&A deals involving a Silicon Valley or San Francisco company, just the ten largest deals combined totaled \$59 billion in base equity value at the time of completion.

The total number of M&A deals involving a Silicon Valley company remained relatively steady from 2018 to 2019, as did the share of total California M&A deals; however, there was a slight increase in the number of San Francisco M&A deals (719 in 2019, up from 623 in 2018).

MERGERS & ACQUISITIONS

Percentage of Merger & Acquisition Deals, by Participation Type

Silicon Valley and San Francisco



Data Source: FactSet Research Systems, Inc. | Analysis: Silicon Valley Institute for Regional Studies

The slight decrease in total Silicon Valley M&A deals between 2018 and 2019 was due to 28 fewer target deals.



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 number of nonemployer firms in Silicon Valley grew by 24% between 2008 and 2017, compared to +26% in San Francisco and +36% in Alameda County.

Firms Without Employees in 2017		
Silicon Valley	218,832	
San Francisco	100,087	
Alameda County	146,922	
California	3,374,050	
United States	25,701,671	

In 2017, Silicon Valley had nearly 219,000 businesses without paid employees (primarily consisting of self-employed individuals operating very small, unincorporated businesses).

NONEMPLOYER TRENDS

NONEMPLOYER TRENDS

Relative Growth of Firms Without Employees

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



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

ECONOMY Commercial Space

The total amount of new commercial space completed in Silicon Valley hit an 18-year high in 2019, reaching 8.5 million square feet. This surge was bolstered by significant industrial space development (53% of the 8.5 million square feet), plus new office space and R&D space (40% and 7% of the total, respectively). More than half of the 8.5 million square feet completed was accounted for by the five largest developments alone, including three buildings leased to Synopsys in Fremont and another three to Facebook in Sunnyvale.1 Continued growth of the biotech sector in South San Francisco was evident in the three newly-public, homegrown biotech companies that moved into

their Class A Lab space during the second quarter.

In addition to booming commercial space completions, the amount under construction reached a 19-year high in 2019. Among other projects, large Silicon Valley tech companies with office space under construction at the end of 2019 included LinkedIn, Google, Microsoft in Mountain View, Adobe in downtown San Jose, and NVIDIA in Santa Clara.

Office space vacancy rates declined sharply in 2019 to 12% as tenants moved into their leased spaces, and the supply of large-block space remained tight; rates remained even lower at locations near public transit. In contrast, industrial space vacancy rates increased in the latter half of 2019 largely due to the completion of nearly 1.8 million square feet of unoccupied space in Fremont.

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 an increasing real estate footprint. The migration of downtown San Jose tenants in response to major development plans is driving increases in rental rates in the San Jose airport submarket. 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.

1. Moffett Park Business Group, Facebook Moves Into Moffett Park. September 27, 2019 (www.mpbg.org/facebook-moves-into-the-moffett-park).

An extraordinary amount of new commercial construction in Silicon Valley was completed in 2019 (8.5 million square feet) – more than any other year since 2001 – primarily driven by a boom in industrial space development. The pace of new office development has remained brisk, though completions in 2018 and 2019 were slightly lower than the previous several years.

> More new Silicon Valley commercial space has been constructed over the past five years (32.5 million square feet) than during the previous 14 years combined (31.1 million total between 2001 and 2014).

Two of the Cove at Oyster Point buildings in South San Francisco were completed in Q3 2019 and preleased to several newly-public biotech companies (Alector, Harpoon Therapeutics, and Denali Therapeutics).



Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

Why is this important?

Changes in the supply of commercial space, vacancy rates and asking rents provide leading indicators of regional economic activity. A decline in available commercial space may suggest 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, can 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 can be indicative of either consolidation or expansion/contraction, with the latter thereby impacting regional employment levels. Tech company preleasing activity is also indicative of overall real estate demand and affects optimism toward speculative development.

Net absorption of Silicon Valley office space was extremely high in 2019 due to a significant number of tenants moving into their leased space that year. While net absorption was negative in 2018 due to space that was delivered but unoccupied and space that was vacated due to consolidation and rightsizing (consolidation combined with more efficient utilization of space), it rose to 1.8 million square feet in 2019 - indicating tenants physically moving into their space. By the end of 2019, more than 1.8 million square feet of pre-leased Class A space was occupied by tenants such as Facebook,² Synopsys, the County of Santa Clara, Google, and others.



Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

Industrial space development has surged in Silicon Valley, with 4.5 million square feet completed in 2019 (40% of which was accounted for by the Pacific Commons Industrial Center and Pacific Commons South developments in Fremont). Notable industrial completions included five warehouse/distribution developments in Milpitas, Newark, and Fremont. Commercial space has been in such demand that many of these developments were constructed with no tenant secured in advance (e.g., Pacific Commons in Fremont, Gateway84 in Newark, the Morton Commerce Center in Newark, and McCarthy Creekside in Milpitas), though some may still be preleased prior to completion. Of the 8.5 million square feet of commercial space that was completed in 2019, 40% was office, 53% industrial, and 7% R&D; more than half of the 8.5 million square feet was accounted for by the five largest development projects alone, two of which were in Fremont (including three of the six buildings at Pathline Park preleased to Synopsys) and three of which were in Sunnyvale (including three buildings at Moffett Towers II, all preleased to Facebook²).

2. Moffett Park Business Group, Facebook Moves Into Moffett Park. September 27, 2019 (www.mpbg.org/facebook-moves-into-the-moffett-park).

ECONOMY Commercial Space

There was more commercial space under construction in Q2 2019 (14.81 million square feet) than during any other quarter since Q4 2000.

R&D

Quarterly In-Progress Commercial Space Development

Industrial

Large Silicon Valley tech companies with office space under construction at the end of 2019 included LinkedIn (three buildings in Mountain View totaling 763,000 square feet), Google (595,000 square feet on Shoreline Boulevard in Mountain View), Adobe (650,000 square feet in downtown San Jose), Microsoft (436,000 at its Mountain View campus), and NVIDIA (755,000 square feet on San Tomas Expressway in Santa Clara).

> Of the 12.8 million square feet of Silicon Valley commercial space under construction, a large share (8.6 million square feet) is office space; 3.2 million is R&D, and one million square feet is industrial space.



Total

Major construction projects underway at the end of 2019 include the 259,000 square foot Thirty75Tech office project in Santa Clara (0% preleased), three LinkedIn buildings on Middlefield Road in Mountain View. and two Coleman Highline buildings in the San Jose Airport submarket - an area that has been attracting displaced downtown San Jose tenants.

Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

COMMERCIAL SPACE

18

Office

Silicon Valley

In contrast to the 12% regional office space vacancy rate in 2019, vacancy remained low in prime submarkets such as Palo Alto, Redwood City, Menlo Park, Mountain View, and Sunnyvale (3-7% direct vacancy rates).

Silicon Valley industrial space vacancy rates increased in the latter half of 2019, while the 2019 annual average (3.6%) remained just one percentage point above the 18-year low of 2018 (2.5% in Q2-3); much of the gain in regional industrial space vacancy was due to the completion of the Pacific Commons developments on Cushing Parkway in Fremont during the third quarter, since none of the nearly 1.8 million square feet of warehouse/ distribution space was preleased at the time of delivery.





Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley industrial space rental rates increased again in 2018 as part of an eight-year upward trend, reaching \$1.25 per square foot. Much of this increase is likely due to the limited availability of space relative to demand. Increases in office space rental rates have been driven both by continued demand, and by displacement of tenants (such as Heritage Bank in downtown San Jose, which moved slightly northward to the airport submarket). In response to Jay Paul's redevelopment plans for CityView Plaza, and in preparation for Google's transit village as well as other development proposals, many downtown San Jose tenants are moving northward, driving up costs in those areas. However, increases in the overall average office rental rates have been tempered by lower-end space that tends to sit on the market longer.

Bay area office space located within a tenminute walk of public transit rents at one and a half times the rate of locations not near transit.

Average Office Space Rental Rates by Proximity to Transit Bay Area | Q4 2019

Near Transit	\$9.28
Not Near Transit	\$6.41

ECONOMY



Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

Average Office Space Vacancy Rates by Proximity to Transit Bay Area Q4 2019		
Near Transit	4.8%	
Not Near Transit	8.2%	

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).

Office space vacancy rates fell dramatically in 2019 – reaching 12% from nearly 18% the prior year – as tenants moved into their leased spaces. Relatively low office space vacancy rates have been affected by the tight supply of large-block space (i.e. more than 100,000 square feet), as many maturing Silicon Valley companies are looking to move their employees into campus-style developments. For example, Micron Technology leased more than 600,000 square feet of block space in North San Jose in Q2 (though some of that space was later subleased). In Q3, 8x8 signed a lease for a new corporate headquarters on Creekside in Campbell, and Roku signed one of the biggest leases of the year (a total footprint of more than 730,000 square feet) for a new headquarters at Coleman Highline, neighboring Avaya Stadium in San Jose.

Average Asking Rents for Office Space, by Region Q4 2019

	Average Rental Rate per Square Foot (FSG)
New York City	\$6.62
Silicon Valley	\$4.95
Austin	\$3.93
Los Angeles	\$3.69
Boston	\$3.69
Seattle	\$3.62
Portland	\$2.79
Denver	\$2.54

Q4 2019 rental rates for Silicon Valley office space were higher than many other regions of the country, such as Austin and Seattle, and were nearly twice the cost of space in places like Portland and Denver.

ECONOMY Commercial Space

Three new Silicon Valley hotels were opened in the first half of 2019, including the 155-room Home2 Suites in South San Francisco, the 148-room Hyatt House in Cupertino, and the 104-room Staybridge Suites in Newark.

There has been a resurgence in hotel development since 2014, with 36 new Silicon Valley and San Francisco hotels (totaling 5,181 rooms) opened over a five-anda-half-year period.







*through June | Note: Data for 2009-2013 was unavailable (reports were not published due to lack of significant hotel development). Data Source: Atlas Hospitality Group | Analysis: Silicon Valley Institute for Regional Studies Google, Apple, Facebook, LinkedIn, Amazon, and Netflix combined occupy approximately 20% of all available commercial space in Silicon Valley.

TECH COMPANY PRESENCE

Amount of Commercial Space Occupied by Major Tech Tenants

Silicon Valley



*through Q3. | Note: Includes Santa Clara County and the City of Fremont, plus Menlo Park (Facebook). Data Source: Colliers International Silicon Valley | Analysis: Colliers International Silicon Valley

Six of the region's largest tech companies occupy 49.2 million square feet of commercial space in Silicon Valley, including (primarily) office and R&D space, as well as some industrial and warehouse; Of these six, Google occupies the most space (approximately 21.9 million square feet in Q3 2019). Bay Area tech companies are responsible for the majority of office space preleasing activity.

Commercial Office Space Under Construction and Share Pre-Leased to Tech Firms

Bay Area | Q4 2019



Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

A total of 10 million square feet of new commercial office space was under construction throughout the Bay Area at the end of 2019 (86% of which was in Silicon Valley). Of that total, 6.6 million square feet (60%) was preleased, primarily (91%) to tech companies.

SOCIETY Preparing for Economic Success

Silicon Valley experienced slight changes among high school cohorts in 2019: there was a negligible increase in graduation rates compared to the 2018 cohort, while the share of students meeting UC/ CSU requirements declined by three percentage points (to 56% in 2019). The high school dropout rate also declined for those in the class of 2019. Both graduation rates and the share meeting UC/CSU requirements continue to vary significantly by race and ethnicity, with Asian, White, and Filipino students tending to be the most likely to graduate having taken the UC/CSU required courses. The share of Hispanic or Latino students graduating high school has increased steadily since 2011, reaching 76% in 2019; however, only 35% of Hispanic or Latino students met UC/CSU requirements that year.

Eighth-grade math proficiency showed a minimal decline following three years

of increases, with 54% of eighth-graders meeting or exceeding the standard in 2019.

A greater share of Silicon Valley households has access to a computer with internet connectivity than in San Francisco, the state, or the nation as a whole, though connectivity varies significantly by household income level. In 2018, 24% of Silicon Valley's low-income households had no access to broadband internet (compared to 7% of households overall); among the region's children, 6% (nearly 34,200) had no access at all, a factor that can have significant repercussions on students' ability to do homework and access resources online.

Silicon Valley's average internet upload speeds in 2019 were relatively slow compared to San Francisco, to California, and to the nation as a whole, while download speeds were similar.

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



Silicon Valley's high school graduation rate increased slightly in 2019 (reaching 87%), although the share of students meeting UC/CSU requirements declined by three percentage points (from 59% for the 2018 cohort to 56% for the 2019 cohort).

Silicon Valley's high school dropout rate (8%) in 2019 remained slightly lower than in the state overall (9%).

*Due to changes in the California Department of Education methodology for 2017 and subsequent years, caution should be used in comparing cohort outcome data to prior years. | Note: Graduation and dropout rates are four-year derived rates. | Data Source: California Department of Education | Analysis: Silicon Valley Institute for Regional Studies

High school graduation rates vary by race and ethnicity, with Asian students nine percentage points above the regional average and Hispanic or Latino students 11% below it.

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.



*Due to changes in the California Department of Education methodology for 2017 and subsequent years, caution should be used in comparing cohort outcome data to prior years. | Note: Graduation rates are four-year derived rates. Multi/None includes students of two or more races, and those who did not report their race. All racial/ethnic groups aside from Hispanic or Latino are non-Hispanic. | Data Source: California Department of Education | Analysis: Silicon Valley Institute for Regional Studies



56% of Silicon Valley high school graduates in 2019 met the UC/CSU entrance requirements – three percentage points lower than during the prior year.

The only racial or ethnic group in which a higher share of graduates meeting UC/CSU requirements in 2019 than the prior year were those with two or more races, or who did not report their race or ethnicity; in 2019, 62% of these Multi/None graduates had taken the UC/CSU required courses (up nearly three percentage points over 2018).

SOCIETY

*Due to changes in the California Department of Education methodology for 2017 and subsequent years, caution should be used in comparing cohort outcome data to prior years. | Note: Multi/None includes students of two or more races, and those who did not report their race. All racial/ethnic groups aside from Hispanic or Latino are non-Hispanic. | Data Source: California Department of Education | Analysis: Silicon Valley Institute for Regional Studies

SOCIETY Preparing for Economic Success

54% of Silicon Valley eighth-graders are proficient in math, compared to only 40% in California overall.

> Eighth-grade math proficiency has risen over the past four years in Silicon Valley, San Francisco, and statewide (by four, four, and seven percentage points, respectively).

Share of Eighth-Graders Who Met or Exceeded the Standard in Math

Santa Clara & San Mateo Counties, San Francisco, and California

MATH PROFICIENCY



7% of all Silicon Valley households did not have broadband internet access in 2018; this share jumps to 24% for low-income households (earning less than \$35,000 annually).

Share of Households Without Internet Access At Home, by Income Range

Santa Clara & San Mateo Counties, San Francisco, California, and the United States | 2018

	Low- Income	Moderate- Income	High- Income
Silicon Valley	24%	9%	3%
San Francisco	35%	12%	3%
California	27%	11%	4%
United States	31%	13%	5%

The share of Silicon Valley households with a computer and broadband internet access increased between 2013 and 2018 (up by five and seven percentage points, respectively). *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.

COMPUTER & INTERNET ACCESS

Share of Households with a Computer and Broadband Internet Access

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



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

COMPUTER & INTERNET ACCESS

Share of Children With Computers and Internet Access at Home

Santa Clara & San Mateo Counties, 2014-2018

While the overall average upload speed in Silicon Valley

had much faster average

upload speeds. For example,

San Bruno internet users had an average upload speed of 69 Mbps in 2019, and San

Carlos users had an average

of 32 Mbps. San Mateo County cities, in general,

tended to be on the higher end of upload and download

speeds among Silicon Valley cities, with a few exceptions.

Download speeds in Silicon Valley are outpaced by San

Francisco, and upload speeds

lag behind San Francisco, the

state, and national averages.

(19 Mbps) was relatively low compared to the state and nation as a whole, some cities



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

Silicon Valley's average internet upload speeds in 2019 (19 megabits per second) were slower than in San Francisco (33 Mbps), California (20 Mbps), or the nation as a whole (22 Mbps), based on 1.23 million speed tests conducted that year by users throughout the region.







Data Source: M-Lab | Analysis: Silicon Valley Institute for Regional Studies

Average upload speeds in Silicon Valley are relatively slow, possibly due to the high prevalence of home-based businesses and smart home devices – both of which tend to make heavy use of cloud storage and cloud computing, thereby putting heavy loads on upload capacity.

Among the region's children, 94%

have a computer and broadband

internet access at home; 4% (more than 24,000 children)

have a computer without an

internet subscription, and 1.5%

(nearly 9,000 children) have no

computer in their home at all.

SOCIETY Early Education & Care

Preschool enrollment rates in Silicon Valley and San Francisco are higher than in the state and nation as a whole. In particular, San Francisco has had a recent spike in preschool enrollment with rates jumping up from 57% in 2005 (prior to the implementation of a Preschool for All program and supplementary scholarship program) to 83% in 2018. Both Silicon Valley and San Francisco have higher shares of 3- and 4-year-olds attending private preschools compared to California and the United States, and also a higher share of third-graders meeting English Language Arts standards (though proficiency varies significantly by race and ethnicity). Childcare costs have risen significantly over the past decade, and the cost of preschool at a licensed childcare center is 29% higher in Silicon Valley than in the state overall. In-home childcare costs are even higher, with average monthly costs above \$3,300 per month (amounting to nearly \$40,000 annually).

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.

Childcare costs affect the ability of Silicon Valley parents to send their children to preschool, and to provide quality care for their children and infants while they work.

Preschool enrollment rates in Silicon Valley have remained relatively steady since 2005.

4-year olds attend preschool; prior to the implementation of the city's Preschool for All program, that share was at

(-36% year-over-year).

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

Silicon Valley and San Francisco preschool enrollment rates (60% and 83%, respectively)

are higher than in California (49%), or the

United States overall (48%).



57% (in 2005). San Francisco had a spike in preschool enrollment rates in 2018 (up from 71% in 2017 to 83% in 2018), largely due to an increase in public preschool enrollment (+56% year-over-year) and a decline in the share of 3and 4-year-olds that did not attend preschool

83% of San Francisco's 3- and

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

San Francisco has a much larger share of 3- and 4-year-olds attending public preschool than Silicon Valley, California, or the nation as a whole; this is likely due to the city's Preschool for All program,¹ which was implemented in 2005 and supplemented by the 2017 launch of an Early Learning Scholarship Program.²

PRESCHOOL ENROLLMENT



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

A greater share of Silicon Valley and San Francisco preschoolers attend private schools than in the state or the nation.

Thirty-nine percent of Silicon Valley 3- and 4-year-olds are enrolled in private preschool (up from 36% in 2005).

1. San Francisco Office of Early Care and Education (http://sfoece.org/preschool-for-all).

2. San Francisco Office of Early Care and Education, Early Learning Scholarship and Preschool for All Program Operating Guidelines, Fiscal Year 2018-2019, Updated July 2018 (http://sfoece.org/wp-content/uploads/2018/08/ELS-PFA-Operating-Guidelines-English_FINAL070118.pdf).

SOCIETY Early Education & Care

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.

Share of Third-Graders Meeting or Exceeding the Standard in English Language Arts 2019	
Silicon Valley	60%
San Francisco	52%
California	49%

Third-grade English language arts proficiency in Silicon Valley varies significantly by race and ethnicity, with Asian students having the highest share (79%) meeting or exceeding the standard.

ENGLISH LANGUAGE ARTS PROFICIENCY

Third Grade English Language Arts Proficiency, by Race/Ethnicity

Santa Clara & San Mateo Counties | 2019



Data Source: California Department of Education, California Assessment of Student Performance and Progress (CAASPP) Analysis: Silicon Valley Institute for Regional Studies Average childcare costs at licensed care facilities in Silicon Valley were an estimated \$21,900 per year for infants and \$16,200 per year for preschoolers in 2019; infant care centers in San Francisco charge an estimated \$23,700 per year (\$1,980 per month).

Childcare costs in Silicon Valley rose by an average of 11% (after inflation-adjustment) between 2009 and 2019, depending on the type of care facility and age group.

SOCIET

The cost of preschool is 29% higher at Silicon Valley childcare centers than at those throughout the state.



*2019 estimate based on 2018 market rate data. | Data Sources: Kidsdata.org; California Department of Education; California Child Care Resource and Referral Network Analysis: Kidsdata.org; Silicon Valley Institute for Regional Studies Monthly In-Home Child Care Costs San Jose and San Francisco Metro Areas California and

Silicon Valley	\$3,312
San Francisco	\$3,389
California	\$2,840
United States	\$2,536

*2019 estimate based on 2015 data. | Data Source: Care.com Care Index | Analysis: Silicon Valley Institute for Regional Studies

> The average costs of an in-home nanny in Silicon Valley and San Francisco (\$3,312 and \$3,389 per month, respectively] are higher than throughout the state and the nation as a whole.

The cost of care for children under age five has risen significantly over the past decade in Silicon Valley, San Francisco, and California.

SOCIETY Arts & Culture

There were nearly 900 nonprofit arts organizations in Santa Clara and San Mateo Counties combined in 2019 - a significantly higher number than in 2012, largely due to an increase in Humanities & Heritage organizations in Santa Clara County - 69 of which have annual revenues above \$1 million. Silicon Valley residents spend more money on arts and culture consumption than those in many other regions throughout the United States. Universities in and around the region conferred thousands of arts degrees to students each year in areas such as visual and performing arts, dance, film, and photography. Women receive visual and performing arts degrees at a much higher rate than men - a trend that is particularly pronounced at the master's level. Annual attendance at the region's major sporting events totaled nearly 5.4

million in 2018, nearly half a million of which was for college sports. Sixty-one percent of home-game attendance was at baseball games, primarily attributable to the San Francisco Giants.

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 cultural 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

In 2019, there were 667 nonprofit arts and culture organizations in Santa Clara County, 228 in San Mateo County, and 704 in San Francisco. community. Spending on arts and cultural activities reflects the public's interest, as well as the amount of money for which producers of the arts must compete. As with arts and cultural events, sporting events bring the community together for both enjoyment and enrichment. And, higher education provides arts and cultural interaction in a variety of ways, with campuses serving as arts destinations, through the community life of the faculty, and through student participation in local arts and cultural activities.

> Whereas in 2012, there were significantly more nonprofit arts organizations in San Francisco than either Santa Clara or San Mateo Counties (472 compared to 312 and 119, respectively), the gap was much smaller in 2019; this was largely due to an increase in Humanities & Heritage organizations in Santa Clara County, as well as newly-founded organizations in Performing and Other Arts.

Among the 895 Santa Clara and San Mateo County nonprofit arts and culture organizations in 2019, there were 69 organizations with annual revenues over \$1 million. Those with the highest revenues included Minority Television Project Inc. (the owner of the education television station, KMTP), The Tech Interactive, the San Mateo County Exposition and Fair Association, the Computer History Museum, Theatreworks Silicon Valley, the San Jose Children's Discovery Museum, and the Filoli Center.

> Women are receiving visual and performing arts degrees in and near Silicon Valley at a much higher rate than men (166 per 100,000 women, compared to 106 per 100,000 men in 2018). This is particularly pronounced at the master's level.



Santa Clara & San Mateo Counties, and San Francisco | 2012 & 2019



Data Sources: Americans for the Arts; National Center for Charitable Statistics; Internal Revenue Service | Analysis: Silicon Valley Institute for Regional Studies

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.

ARTS & CULTURE

Consumer Expenditures on Arts & Culture Consumption

by Region | 2015



Data Source: Americans for the Arts | Analysis: Silicon Valley Institute for Regional Studies

The number of visual and performing arts degrees conferred per capita at postsecondary institutions in and around Silicon Valley has declined slightly over the past decade, from 138 per 100,000 people in 2008 to 136 per 100,000 in 2018.

In 2018, women received 513 out of 820 (63%) of the visual and performing arts master's degrees awarded at universities in and near Silicon Valley.

136

Total

Annual attendance at the region's major sporting events totaled nearly 5.4 million in 2018, a 7% increase over attendance a decade prior.

SOCIET

College sports (including teams at Stanford, Santa Clara University, and San Jose State) attracted half a million attendees in 2018, representing 9% of all attendances at major sporting events that year.

61% of all Silicon Valley major sporting event home game attendance is at baseball games, primarily San Francisco Giants games which attracted 3.2 million attendees in 2018.



ARTS & CULTURE

Sporting Event Home Game Attendance

Major Silicon Valley Collegiate and Professional Teams



Data Sources: National Collegiate Athletic Association (NCAA); ESPN; WorldFootball.net; The Baseball Cube Analysis: Silicon Valley Institute for Regional Studies

Data Sources: National Center for Educational Statistics, IPEDS; United States Census Bureau Analysis: Silicon Valley Institute for Regional Studies

Women

Men

20

0

SOCIETY Quality of Health

The share of residents ages 18-64 covered by health insurance remained high in 2018 following an upward trend since 2013 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 19% 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).¹ Obesity is becoming more prevalent among Silicon Valley adults and throughout the state over the past 15 years. While the total share of Silicon Valley adults who are overweight or obese rose by only one percentage point, the proportion that are obese increased from 17% to 24% over that time period. This share increases to 27% for adults living below the poverty level. Among Silicon Valley's student population, nearly one-third were either overweight or obese in 2018 based on their 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 the 2016 state legislation that eliminated the exemption based on personal or religious beliefs. While infant and maternal mortality rates in Silicon Valley remain relatively low, Black or African-American women are nearly seven times more likely to die from pregnancy, childbirth, and postpartum complications than White women; they

1. California Department of Health Care Services, Low Income Health Program Enrollment Data, Quarter 2 of Fiscal Year 2013-2014.

Health insurance coverage for the working age population has increased significantly since 2013, influenced by the availability of coverage through the Affordable Care Act.³

HEALTHCARE

Share of the Population Ages 18-64 with Health Insurance Coverage

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



Data Source: United States Census Bureau, American Community Survey Analysis: Silicon Valley Institute for Regional Studies 85% of Silicon Valley's unemployed workers had health insurance coverage in 2018 (compared to 86% in San Francisco, 82% in California, and 73% throughout the United States).

Insurance, by Employment Status 2018			
	Unemployed	Employed	Not In Labor Force
Silicon Valley	85%	95%	93%
San Francisco	86%	96%	94%
California	82%	90%	89%
United States	73%	89%	85%

In 2018, 95% of Silicon Valley's 18- to 64-year-olds were covered by health insurance (compared to 96% in San Francisco, 90% in California, and 88% in the U.S. as a whole).

Change in the Percentage of Individuals with Health Insurance, by Employment Status		
Santa Clara & San Mateo Counties, 2013-2018		
Unomenioused	+ 100/	

Unemployed	+19%
Employed	+7%
Not in Labor Force	+3%

3. 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 (ACA, also known as Obamacare), which became effective on January 1, 2014 for the earliest enrollees. Increases in coverage between 2013 and 2013 were likely related to the Low Income Health Program (LIHP) – an early coverage expansion program administered prior to implementation of the ACA.

are also three times more likely to have an infant die before his or her first birthday.

While Silicon Valley's leading causes of death such as cancer, heart disease, and chronic lower respiratory diseases have declined over the past two decades, the rate of deaths caused by hypertension and hypertensive renal disease have increased by 270% since 1999; a large increase (133%) has also been documented throughout the state.

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

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

53% of Silicon Valley adults are overweight or obese, compared to 47% in San Francisco and 60% in California.

Since the Affordable Care Act became effective for its earliest enrollees, the share of unemployed Silicon Valley residents with health insurance coverage jumped nineteen percentage points, with an even larger increase (+24%) 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 +3%, respectively, between 2013 and 2018).

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 – all of which are among Silicon Valley's leading causes of death. 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.

Hypertension, in particular, is responsible for one out of every three deaths in California and is a risk factor for a number of other diseases. Additionally, the prevalence of hypertension has been closely tied to inequities in access to healthcare throughout the state.²

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.

 California Department of Health, Hypertension & Health Equity Issue Brief 2017 (https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDCB/ CDPH%20Document%20Library/142711-CDPH-Hypertension-Brief-2017-ADA-v1-ADA.pdf).

In 2018, the share of all Silicon Valley adults who were obese (defined by a Body Mass Index of 30 or higher) was 24%; this share increases slightly to 27% for adults living below the poverty level. In San Francisco, the share of overweight adults (BMI of 25-30) also increases for adults living in poverty (36% compared to 31% of the overall adult population).

While the total share of Silicon Valley adults who are overweight or obese has not changed significantly since 2003 (up from 52% to 53% in 2018), the proportion of those adults who are obese – as opposed to just overweight – has increased (from 17% in 2003 to 24% in 2018).



Data Sources: California Health Interview Survey | Analysis: Silicon Valley Institute for Regional Studies

SOCIETY

SOCIETY Quality of Health

OBESITY

Students Overweight or Obese

Santa Clara & San Mateo Counties, San Francisco, and California



Nearly one-third of Silicon Valley students are overweight or obese.

The share of Silicon Valley students who are overweight or obese has remained steady (around 32%) since 2014.

A smaller share of Silicon Valley students (32%) is overweight or obese than in San Francisco (34%) or the state overall (40%). Over the past decade, Black or African American women in Silicon Valley were more than three times more likely than White women to have an infant die before his or her first birthday.

Infant Mortality Rate by Race & Ethnicity

Number of Infant Deaths per 1,000 Live Births Santa Clara & San Mateo Counties | 2007-2017

Black or African American	7.0
Hispanic or Latino	3.5
Asian or Pacific Islander	2.8
White	2.3

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



Black or African American women in Silicon Valley are significantly more likely to die of pregnancyrelated complications than women of other races/ethnicities; this is also the case in California overall, where Black or African American women are 4.3 times more likely to die of pregnancy-related complications than White women.

Maternal Mortality by Race & Ethnicity Greater Silicon Valley* Number of Deaths Related to Pregnancy, Childbirth, and the Puerperium Per 100,000 People, 1999-2017	
Black or African American	0.59
Hispanic or Latino	0.23
Asian or Pacific Islander	0.14
White	0.09
All	0.16

*Santa Clara and San Mateo Counties, and San Francisco | Note: Black or African American, Asian or Pacific Islander, and White are Non-Hispanic. The infant mortality rate in Silicon Valley (3.1 deaths per 1,000 live births) was lower than in the state overall (4.2 per 1,000) in 2017.

MATERNAL, INFANT, AND CHILDREN'S HEALTH

Infant Mortality Rate

Santa Clara & San Mateo Counties, San Francisco, and California



Data Source: U.S. Department of Health and Human Services, Centers of Disease Control and Prevention (CDC) | Analysis: Silicon Valley Institute for Regional Studies
The share of kindergarten students with all required immunizations has not changed significantly in Silicon Valley, San Francisco, or California overall since 2017 – likely due to the passage of California Senate Bill 277 in mid-2016, which eliminated the ability of students to receive immunization exemptions based on personal or religious beliefs.

MATERNAL, INFANT, AND CHILDREN'S HEALTH

Kindergarten Immunization Rates

Santa Clara & San Mateo Counties, San Francisco, and California



Data Source: California Department of Public Health | Analysis: Silicon Valley Institute for Regional Studies

Over the 19-year period between 1999 and 2017, the crude rate of deaths caused by hypertension or hypertensive renal disorders in Silicon Valley has nearly tripled, while the rates of deaths due to the other leading causes—cancer, heart disease, and chronic lower respiratory diseases—have declined by 12% to 33%; the crude deaths rate due to diabetes and accidents increased over that time period, too, but to a lesser degree (+30% and +39%, respectively).

DEATHS

Leading Causes of Death

Santa Clara & San Mateo Counties



The share of Silicon Valley kindergarteners with all required immunizations has increased significantly since 2014, reaching more than 97% in the 2018-19 school year.

SOCIETY

In 2017, the segments of the Silicon Valley population most at risk of death due to hypertension or hypertensive renal disorders were African-American residents (27.9 per 100,000), women (23.3 per 100,000), and those who are non-Hispanic (22.9 per 100,000); the rate of hypertension-related deaths of African-American residents that year was 34% higher than the overall rate of 20.8 per 100,000.

The rate of deaths caused by hypertension and hypertensive renal disease in Silicon Valley have increased by 270% since 1999; in comparison, the death rate due to hypertension throughout the state has increased by 133% over that same time period.

The leading causes of death for Silicon Valley residents of all ages in 2017 were – in order of prevalence – cancer, heart diseases, cerebrovascular diseases, accidents, chronic lower respiratory diseases, diabetes, and hypertension.

Data Source: U.S. Department of Health and Human Services, CDC WONDER | Analysis: Silicon Valley Institute for Regional Studies

SOCIETY Safety

Silicon Valley has a lower rate of violent crimes than in the state overall; however, in 2018 there were still more than 8,800 violent crimes reported locally. The rate of reported rapes in Silicon Valley has more than doubled since 2013, and has not been this high at any time in the current dataset (back to 1985). This sharp increase may be due to more rapes occurring, more being reported (bolstered by a growing societal support for women to speak up), or a combination of both. The felony arrest rate remains much lower than it was prior to the passage of California Proposition 47 (in 2014), although there was a slight increase between 2016 and 2018

due primarily to property offenses in Santa Clara County. While there is some debate among experts as to whether growing income and wealth inequality lead to an increase in the number of property crimes,¹ the incidence of certain types of property crimes in Silicon Valley have increased in number over the past decade of growing inequality – including motor vehicle theft, bicycle theft, and theft of items from vehicles.

Silicon Valley had more public safety officers in 2019 than any other year over the past decade, with more than 5,000 sworn

1. Goda, T., & Torres García, A. (2019). Inequality and Property Crime: Does Absolute Inequality Matter? International Criminal Justice Review, 29(2), 121–140. https://doi. org/10.1177/1057567718799829 full-time and reserve personnel; nearly half of the region's officers are employed by just two of the 42 agencies - the San Jose Police Department and the Santa Clara County Sheriff's Department.

Why is this important?

Public safety is an important indicator of societal health. 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 has a lower violent crime rate (286 crimes per 100,000 people) than in the state as a whole (445 crimes per 100,000), but a slightly higher rate of reported rapes (40 compared to 39 per 100,000 people).

The rate of reported rapes in Silicon Valley (40 per 100,000 people) has more than doubled since 2013, and has not been this high since prior to 1985 (if ever). This increase may be due to more rapes occurring, more rapes being reported, or a combination of both.

In 2018 there were 1,249 reported rapes in Silicon Valley.

There were 8,829 violent crimes reported within the region in 2018, 85% of which were either aggravated assault or robbery. Bicycles are six times more likely to be stolen than wallets/purses in Silicon Valley, with more than 3,000 reported stolen each year.

Nearly half of all property crimes in Silicon Valley are vehicle-related, either theft of a motor vehicle or theft of items from within vehicles.

CRIMES

Violent Crime Rate

Silicon Valley and California



Note: Violent crimes include homicide, rape, robbery, and aggravated assault. | Data Sources: California Department of Justice; California Department of Finance | Analysis: Silicon Valley Institute for Regional Studies

CRIMES

Property Crimes, by Type

Silicon Valley | 2018



Data Source: California Department of Justice | Analysis: Silicon Valley Institute for Regional Studies

There was a slight increase in Silicon Valley juvenile felony offenses between 2016 and 2018 (up by 26%, or 304 arrests), due in large part to an increased number of property offenses in Santa Clara County.

ARRESTS Felony Offenses

Santa Clara & San Mateo Counties, and California



*The felony arrest rates for 2015 and subsequent years were affected by the passage of Propositions 47 and 64, so caution is advised in comparing to previous years. Data Sources: California Department of Justice; United States Census Bureau | Analysis: Silicon Valley Institute for Regional Studies

Nearly half (48%) of Silicon Valley's public safety officers are employed by just two of 42 total agencies – the San Jose Police Department and the Santa Clara County Sheriff's Department.



Data Sources: California Commission on Peace Officer Standards and Training; California Department of Finance Analysis: Silicon Valley Institute for Regional Studies Felony arrest rates in Silicon Valley (and throughout the state) fell by 31% between 2014 and 2015 due to the passage of Proposition 47.

The total number of public safety officers in Silicon Valley rose to 5,144 in 2019, up by 74 officers over the prior year.

Silicon Valley had more than five thousand sworn full-time and reserve public safety officers employed throughout the region in 2019.

Over the past decade, the total number of sworn full-time and reserve public safety officers in Silicon Valley increased by 9.1% (+429 officers), while the resident population increased by 10%.

Percent Change in Public Safety Officers & Population 2009-2019

Officers	Population
+9.1%	+10.0%

SOCIETY Philanthropy

The amount of philanthropy in Silicon Valley among top corporate philanthropists, foundations, and individuals is astounding - with billions of dollars in annual donations. There are nearly 1,800 foundations located in Silicon Valley, with a total of \$65 billion in total assets, and the top 50 corporate philanthropists alone donated \$186 million to local organizations in the 2018 fiscal year.

The share of local philanthropy that went to locally-based nonprofit organizations in 2017 was approximately 20% for foundation grants, 7% of Silicon Valley Community Foundation donor-advised grants, 6% of its corporate-advised grants, and 52% of its discretionary grants. Silicon Valley residents who itemize their tax returns donate to charity at a higher rate (4.2% of itemizers) than in the state overall (3.2%).

INDIVIDUAL GIVING

Among local nonprofit foundation grant recipients, organizations in Education and Social & Human Services were among those receiving the greatest number grants; however, average amounts were significantly less than received by organizations in other categories such as education, international giving, and miscellaneous philanthropy.

Why is this important?

A region's community-based nonprofit organizations serve a vital role by providing needed services and resources across a wide variety of sectors such as social and human services, arts and culture, education, health, and the environment. These organizations rely on local philanthropy in addition to other revenue and sources outside the region, and many are struggling to fund their work.¹ Local philanthropy - particularly in a region with as much wealth as Silicon Valley - is therefore a critical component sustaining the work of these nonprofits and hence the vitality of the community.

Nationally there has been a decline in the propensity to give to charities post-recession, attributed to behavioral changes from economic uncertainty and changing attitudes about giving more than a lack of wealth or income.² Additionally, recent tax reform has had a significant impact on giving behavior. While national trends may be reflected on the regional level, tracking local philanthropy provides a clearer picture of Silicon Valley nonprofit organizations and their ability to grow and thrive over time and through fluctuations in the economy.

1. Alexa Cortes Culwell and Heather McLeod Grant. The Giving Code: Silicon Valley Nonprofits and Philanthropy. Open Impact, 2016.

2. Jonathan Meer, David Miller, and Elisa Wulfsberg. The Great Recession and charitable giving Applied Economics Letters, 2017

Share of Individual Taxable Income Donated to Charity

While not all tax returns are itemized.³ the share of itemizers who deduct charitable contributions increased between 2011 and 2017 in Silicon Valley (from 3.2% to 4.2%).

Based on those who itemize deductions on their tax returns, a slightly larger share of individuals donates to charity in Silicon Valley (4.2%) than in California overall (3.2%).

> Among the top 50 corporate philanthropists alone, \$186 million was donated to local organizations in the 2018 fiscal year.

Santa Clara & San Mateo Counties, and California 2011 2017 5% 4% 3% 2% 1% 4.2% 3.1% 3.2% 3.2% 0% Silicon Valley California

Note: Data is by tax return (includes single and joint filers); only includes returns with itemized deductions. | Data Source: United States Internal Revenue Service Analysis: Silicon Valley Institute for Regional Studies

3. Based on 2011 and 2017 county-level data from the IRS 501 Tax Stats, 43% and 45%, respectively, of returns in Santa Clara and San Mateo Counties were itemized; of those, 80% and 78%, respectively, donated to charity. The share of tax returns with itemized deductions fell nationally in 2018 from 30% to 10% and was skewed toward those with higher annual incomes (\$75,000+) according to the IRS Mid-July Filing Season Statistics by AGI. In 2017, 98% of Silicon Valley itemizers with an adjusted gross income of \$200,000+ deducted some amount of charitable contributions. While only 45% of returns were itemized, those returns represented 86% of the regional adjusted gross income. Donor-advised grants through the Silicon Valley Community Foundation to local organizations totaled nearly \$89 million in 2018, representing 7% of the foundation's national donor-advised grants that year.

INDIVIDUAL GIVING

Silicon Valley Community Foundation Donor-Advised Grants to Local Recipients & Local Share of National Donor-Advised Grants

Santa Clara & San Mateo Counties



Note: Data includes all donor-advised grants through the Silicon Valley Community Foundation, with the exception of a \$550 million grant in 2016 to the Chan Zuckerberg Biohub, Inc. Annual totals also exclude grants to Stanford University of \$21 million in 2015 and \$8.4 million in 2016. Local organizations include those in Santa Clara and San Mateo Counties. | Data Source: Silicon Valley Community Foundation | Analysis: Silicon Valley Institute for Regional Studies

Precise estimations of total donations to nonprofits by Silicon Valley companies are difficult to obtain, and the available data may or may not include things such as in-kind donations of products or services, employee volunteer time, and/or employee donation matching.

CORPORATE PHILANTHROPY

Local Giving by Top 50 Corporate Philanthropists Silicon Valley The top 15 corporate philanthropists in 2018 based on local giving (and those that chose to self-report) include a variety of sectors including sports/entertainment, banking, tech, real estate, and healthcare.



Note: Data are for the fiscal year; amounts are self-reported and only include companies that chose to participate. Data Source: Silicon Valley Business Journal, Book of Lists | Analysis: Silicon Valley Institute for Regional Studies The largest corporate donor to local Silicon Valley organizations in 2018 was The Sobrato Organization, which donated more than \$73 million that year, representing a significant share (93%) of its worldwide charitable contributions.

Top 15 Corporate Philanthropists Local Giving, 2018

,,	
	Amount (millions)
The Sobrato Organization	\$73.02
Alphabet/Google	\$23.03
Cisco Systems	\$20.85
Intel	\$9.92
SAP	\$7.85
Applied Materials	\$5.13
Adobe	\$4.95
Kaiser Permanente Northern California	\$4.91
Oracle	\$4.13
Wells Fargo Bank	\$3.84
NVIDIA	\$3.53
Fremont Bank	\$2.29
San Francisco 49ers	\$2.17
Varian Medical Systems	\$1.80
San Jose Sharks/Sharks Foundation	\$1.62

SOCIETY

SOCIETY Philanthropy

Grants to local recipients represented 6% of all Silicon Valley Community Foundation Corporate-Advised grants in 2018.

There are nearly 1,800 foundations located in Silicon Valley, with a total of \$65 billion in total assets. For scale, reported revenues including earned revenue and donations - for all Silicon Valley nonprofit organizations in 2017 were \$7.42 billion.³

o l	con Loca	Va al R	lley Commu Recipients	nity	Foundation	Corpo	orate-Advise	d Gran	ts	
ant	a Clara	1 & S	an Mateo Counties							
	\$7									
	\$6									
2	\$5									
	\$4									
	\$3									-
-	\$2									-
	\$1		\$6.3		\$6.5		\$4.0		\$3.6	-

Data Source: Silicon Valley Community Foundation | Analysis: Silicon Valley Institute for Regional Studies

2015

Number of Foundations & Total Assets				
	Number	Total Assets (billions)		
Santa Clara County	1,250	\$43.43		
San Mateo County	506	\$21.51		
Total	1,756	\$64.95		

Note: Based on data from 2017 and 2018

An estimated minimum of \$3.25 billion would have been distributed in 2019 by Silicon Valley foundations, based on \$65 billion in total assets and the 5% minimum distribution rule.⁴

In 2017, Silicon Valley organizations in Education and Social & Human Services were among the categories receiving the greatest number of foundation grants; however, average grant award amounts in education (excluding those to universities) were \$247,000 whereas Social & Human Services grants averaged only \$32,000 each.

Of all local organizations receiving foundation grants, the category with the largest average award amount per grant in 2017 was International Giving; however, that figure is skewed by a \$6 million donor-advised grant through the Silicon Valley Community Foundation to Morgan Stanley's Global Impact Fund.

Number of Foundation Grants and Average Grant Amount per Award, by Category Santa Clara & San Mateo County Grantees | 2017

2017

2018

Category	Grants	Average Amount
International Giving	59	\$257,429
Education ¹	1,264	\$247,499
Miscellaneous Philanthropy	1,133	\$153,759
Environment	193	\$82,139
Health ²	481	\$74,957
Community Development	224	\$63,841
Religion	731	\$50,239
Arts & Culture	425	\$48,462
Sports & Recreation	87	\$35,825
Social & Human Services	1,129	\$32,083
All Categories	5,726	\$122,070

1. Excluding grants to universities

2. Excluding grants to hospitals and the Chan Zuckerberg Biohub.

3. From the IRS Exempt Organizations Business Master File Extract (2017), excluding revenue of universities/colleges, hospitals and health centers, research institutes, credit unions, and chambers of commerce. 4. By federal law, private non-operating foundations are required to distribute 5% of their previous years' net investment assets. Loren Renz, Understanding and Benchmarking Foundation Payout (The Foundation Center, 2012). https://foundationcenter.issuelab.org/resources/14076/14076.pdf

The total amount of corporate-advised grants to local Silicon Valley organizations through the Silicon Valley Community Foundation have declined over the past two years, but were as high as \$6.5 million in 2016. These amounts are likely fairly low relative to actual corporate donation amounts, since many of the larger corporate donors tend to donate directly to nonprofit organizations.

CORPORATE PHILANTHROPY

\$0

S t

2016

S

Discretionary grantmaking to local organizations by the Silicon Valley Community Foundation has declined since the recent high of \$11.3 million in 2016, with \$4.1 million going to local organizations in 2018.

FOUNDATION GRANTS

Silicon Valley Community Foundation Discretionary Grants to Local Recipients & Local Share of National Discretionary Grants

Santa Clara & San Mateo Counties



Data Source: Silicon Valley Community Foundation | Analysis: Silicon Valley Institute for Regional Studies

The share of local foundation grants that went to Bay Area grantees has increased over time, reaching 39% in 2017 (up from 31% a decade prior).

Based on available data⁵ for 2017, the total value of grants made by Santa Clara and San Mateo County foundations reached nearly \$2 billion, 20% of which went to Silicon Valley organizations (\$383 million) and 19% to organizations in other parts of the Bay Area (\$377 million).

There were more than 1,000 grants to Silicon Valley organizations in the Miscellaneous Philanthropy category in 2017 totaling \$174 million, which included organizations such as United We REACH in Campbell (\$4.9 million), EdSurge in Burlingame (\$3.4 million), Montalvo Association in Saratoga (\$1.7 million) and others.

Of the Silicon Valley Community Foundation's discretionary grantmaking in 2018, 52% went to Silicon Valley organizations (and 86% to those within the Bay Area).

> Of the 2017 foundation grants to local organizations, 24% came from within the region; 76% came from foundations outside of Silicon Valley.

SOCIET

FOUNDATION GRANTS

Share of Foundation Grant Dollars, by Foundation and Recipient Location 2017



Data Source: FOUNDATIONSearch | Analysis: Silicon Valley Institute for Regional Studies

5. FoundationSEARCH is an online database of foundations and grant information. While the database is detailed and extensive, it is missing some information for several large donors and so grant totals should be considered minimum estimated amounts.

PLACE Housing

Housing costs in Silicon Valley remain the highest among large metropolitan areas and blooming tech regions across the country. However, rising home prices in Silicon Valley over the past seven years were met with a decline of 6% in 2019 (although median home sale prices remained well above a million dollars). Residential building permit activity slowed in 2019, and most of the permits issued were only affordable to high-income individuals. In contrast, there were more affordable housing units approved in the 2018-19 fiscal year than in any other year over the past two decades - indicating that a relatively large amount of affordable housing is in the development pipeline.

Despite relatively steady rental rates and the decline in home sale prices in 2019, housing affordability remained low and the share of households burdened by housing costs remained high. Even with residential building keeping pace with current population growth over the past several years and average household sizes stabilizing, housing availability issues persist. The shares of multigenerational and multi-family households remain high, and more than a third of all young adults live with a parent. Homelessness and housing insecurity remain critical issues. Further compounding the issue is the reality that many of Silicon Valley's residential units are vacant, underutilized, inadequate or otherwise deficient.

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.

The median sale price of a Silicon Valley home – single-family detached houses and condos combined – was \$1.12 million in 2019, compared to \$1.35 million in San Francisco, \$487,000 in California overall, and \$251,000 nationwide.



After seven straight years of rapid gains in home prices, Silicon Valley inflation-adjusted median home sale prices declined by 6% (nearly \$75,000) in 2019. This may reflect a cooling overall market and/or, to some (unknown) extent, a shift of activity away from higher-end homes.

*Based on data through October. | Data Source: CoreLogic (provided by DQNews) | Analysis: Silicon Valley Institute for Regional Studies

There were less than half as many Silicon Valley homes sold in 2019 than in 2004.

HOME SALES Number of Homes Sold

Santa Clara & San Mateo Counties, San Francisco, and California



Fewer Silicon Valley homes were sold in 2019 than during any other year in the dataset (going back to 2000).

PLACE

The number of homes sold annually in Silicon Valley continued a seven-year downward trend (reaching fewer than 22,000 sold in 2019) from the most recent peak of 29,500 homes sold in 2012.

*Based on data through October. | Data Source: CoreLogic (provided by DQNews) | Analysis: Silicon Valley Institute for Regional Studies

HOME SALES

Average Monthly For-Sale Inventory

Santa Clara & San Mateo Counties, and California



The number of Silicon Valley homes listed for sale each month increased slightly in 2019 (up 37% over the recent low in 2017), exceeding 3,000 homes per month.

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

*Includes data through November. | Data Source: Zillow Real Estate Research | Analysis: Silicon Valley Institute for Regional Studies

PLACE Housing

The rate of residential building in Silicon Valley accelerated in 2017, then began to decline; the total number of units permitted in 2019 was 27% fewer than in 2017.

Silicon Valley had 2,400 fewer residential units permitted in 2019 than during the prior year, and 4,100 fewer than the recent peak in 2014.; meanwhile, San Francisco kept pace with its 2018 totals, with an estimated 5,200 new residential units permitted in 2019.

As of 2018, Silicon Valley had surpassed the 2015-2023 RHNA allocation for residential units in the Above Moderate Income category; in contrast, only 11% of the RHNA was met for Very Low Income (0-50% of the Area Median Income), 17% for Low Income (50-80% AMI), and 20% for Moderate Income (80-120% AMI) units. RESIDENTIAL BUILDING

Units Included in Residential Building Permits Issued

Santa Clara & San Mateo Counties



*2019 estimate based on data through November. | Data Source: Construction Industry Research Board and California Homebuilding Foundation Analysis: Center for Continuing Study of the California Economy; Silicon Valley Institute for Regional Studies

83% of Silicon Valley's residential units permitted thus far in the 2015-2023 Regional Housing Needs Allocation (RHNA) cycle were in the Above Moderate (120%+ of the Area Median Income) category.

RESIDENTIAL BUILDING

Progress Toward 2015-2023 Regional Housing Need Allocation (RHNA), by Affordability Level

Silicon Valley and Bay Area



Note: Data is for RHNA reporting in 2015-2018, 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 In the first half of the eight-year (2015-2023) RHNA Cycle, Silicon Valley permitted 56% of the total number of new residential units allocated.

Progress Toward 2015-2023 RHNA

	Total Number of Units Permitted	RHNA	Progress Toward RHNA
Silicon Valley	46,377	82,893	56%
Bay Area	121,973	187,994	65%

There were an estimated 7,400 residential units permitted throughout Silicon Valley in 2019, 69% of which were multi-family units.

PLACE

There were more "affordable" housing units (defined as affordable to those earning up to 80% of the area median income¹) approved in FY 2018-19 than in any other year over the past two decades.

Of the 3,258 newly-approved affordable housing units in FY 2018-19, 1,478 (45%) were affordable to very-low income residents (those earning less than half of the area median income).



Note: Beginning in 2008, the Land Use Survey expanded its geographic definition of Silicon Valley to include cities northward along the U.S. 101 corridor (Brisbane, Burlingame, Millbrae, San Bruno and South San Francisco). In 2014, the Survey expanded to include all Silicon Valley cities (adding Colma, Daly City, Half Moon Bay and Pacifica). | Data Source: City Planning and Housing Departments of Silicon Valley | Analysis: Silicon Valley Institute for Regional Studies

> In the 2018-19 fiscal year, Silicon Valley cities and counties approved 3,258 new housing units that are affordable to residents earning less than 80% of the area median income, representing 17% of all residential units approved that year.

1. Affordable units are defined as affordable to those earning up to 80% of the median income for a county. Cities use the U.S. Department of Housing and Urban Development's (HUD) estimates of median income to calculate the number of units affordable to low-income households in their jurisdiction. In 2019, the HUD "low income" limits for a family of four in San Mateo and Santa Clara County were \$129,150 and \$103,900, respectively.

PLACE Housing

Rental rates are much higher in Silicon Valley and San Francisco than in California or the United States as a whole. Median Silicon Valley and San Francisco rental rates remained relatively steady over the past three years, after adjusting for inflation.

HOUSING AFFORDABILITY Median Rental Rates

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



*Based on data through November. | Note: Apartments include multifamily complexes with five or more units. Data Source: Zillow Real Estate Research | Analysis: Silicon Valley Institute for Regional Studies

Median Monthly Housing Costs Top 10 United States Metropolitan Statistical Areas, California, and the United States

1	San Jose-Sunnyvale-Santa Clara, CA	\$2,401
2	San Francisco-Oakland-Hayward, CA	\$2,152
3	Santa Cruz-Watsonville, CA	\$1,894
4	Oxnard-Thousand Oaks-Ventura, CA	\$1,881
5	Bridgeport-Stamford-Norwalk, CT	\$1,867
6	Washington-Arlington-Alexandria, DC-VA-MD-WV	\$1,812
7	San Diego-Carlsbad, CA	\$1,785
8	Napa, CA	\$1,782
9	Urban Honolulu, HI	\$1,778
10	Kahului-Wailuku-Lahaina, HI	\$1,756
	California	\$1,626
	United States	\$1,082

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



Single-Family Residences and Condos/Coops

United States

The median rental rate in Silicon Valley was \$3,028 for an apartment and \$3,795 for a single-family residence (or condo/coop) in 2019.

San Jose and San Francisco are the two most expensive of the country's major metropolitan regions, based on median monthly housing costs in 2018.

Median Apartment Rental Rates Per Square Foot

San Jose and San Francisco Metro Areas, Other U.S. Metro Areas, California, and the United States

2010*

2017	
San Francisco, CA	\$3.76
San Jose, CA	\$3.32
Santa Cruz, CA	\$3.13
Boston, MA	\$2.81
Los Angeles, CA	\$2.76
Honolulu, HI	\$2.71
New York, NY	\$2.70
California	\$2.67
Seattle, WA	\$2.43
Washington, DC	\$2.34
Portland, OR	\$1.84
Sacramento, CA	\$1.79
United States	\$1.73
Stockton, CA	\$1.73
Austin, TX	\$1.61
Atlanta, GA	\$1.60
Phoenix, AZ	\$1.42
Pittsburgh, PA	\$1.29
Las Vegas, NV	\$1.25

The San Francisco and San Jose metro areas ranked first and second, respectively, for apartment rental rates per square foot in 2019; these rates are twice as much as in the United States overall, and three times the cost of living in places such as Pittsburgh or Las Vegas. In 2018, 23% of Silicon Valley households who rented (and 13% of homeowners with a mortgage) were severely burdened, meaning that they spent more than 50% of their gross income on housing costs. Nearly half of all Silicon Valley households who rented in 2018 were burdened¹ by housing cost, meaning that they spent more than 30% of their gross income on housing.

> 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 (34% of Silicon Valley owners, compared to 28% across the country).



Housing Burden

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



Image: state stat

The share of Silicon Valley homeowners (with a mortgage) that are burdened by housing costs has declined by nine percentage points since 2007, amounting to 38,400 fewer burdened households. In contrast, the share of burdened renters has remained the same, with minor variations in the interim.

LACE

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

HOUSING AFFORDABILITY

Percentage of Potential First-Time Homebuyers That Can Afford to Purchase a Median-Priced Home

Santa Clara and San Mateo Counties, San Francisco, and Other California Regions





homebuyers living in San Mateo County can afford a median-priced home; this compares to 36% in Santa Clara County, 26% in San Francisco, and 48% statewide; meanwhile, potential homebuyers living outside of Silicon Valley (with a smaller share of affluent individuals) are even less likely to afford a median-priced home within the region.

Only 28% of potential first-time

The Silicon Valley Housing Affordability Index rose slightly in 2019 in most California regions (39 out of 49 tracked in the dataset) including Silicon Valley, where it was up five percentage points above 2018 in both Santa Clara and San Mateo Counties; this increase in affordability may be due to declines in median home prices in 2019 (from either a cooling of the market or a shift toward a larger share of lessexpensive homes being sold), or because of Silicon Valley income gains for potential homebuyers.

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.



If Silicon Valley was to have an average household size similar to that of the U.S. overall in 2018 (2.54 people per household), it would mean that the region has a housing shortage of 151,000 units.

In order to have abated the 2006 through 2017 rise in Silicon Valley household sizes (and remain at the 2006 average of 2.791 people per household), the region would have needed to build 107,000 new units over that period of time; in actuality, only 67,700 were permitted, leaving a deficit of 39,600 units.¹

occupancy characteristics Average Household Size & Additional Units Needed to Accommodate Population Growth



Data Sources: 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

Average Silicon Valley household sizes 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 2.97 people per household.

In 2018, Silicon Valley had more than 53,000 vacant housing units, 72% of which were potentially available for rent or sale (although some may have been vacant for personal, legal, or other reasons). Although the number of new residential units permitted has kept pace with population growth over the past three years, average household sizes in Silicon Valley have continued to grow; over the past 13 years, household sizes have increased by 6.2%, presumably (at least partially) in response to a lack of available and/or affordable units.

In 2018, Silicon Valley had more than 38,000 potentiallyavailable vacant housing units (un-sold, un-rented, or otherwise reserved) containing a total of nearly 85,000 bedrooms. Available Vacant Units and Associated Number of Bedrooms Santa Clara & San Mateo Counties 2008 2018

2000		2010		
Units	Units Bedrooms		Bedrooms	
30,122	67,971	38,564	84,762	

Over the past decade, the number of potentially-available, vacant housing units in Silicon Valley has grown by 28% – a much faster growth rate than the total number of housing units in the region (which grew by 8% over that time period, increasing by more than 73,000 units).

1. Increases in household sizes over time may be due to a variety of factors in addition to availability and affordability (including social and cultural reasons), thus building according to population gains should not be taken as the ultimate objective.

While less than 4% of Silicon Valley's occupied-housing units (based on data from the San Jose-Sunnyvale-Santa Clara MSA) are estimated to be moderately or severely inadequate, that share rises to 5% for renter-occupied units.

OCCUPANCY CHARACTERISTICS

Inadequate or Deficient Housing Units

San Jose-Sunnyvale-Santa Clara MSA, San Francisco-Oakland-Hayward MSA, and California 2017



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

The number of vacant housing units in Silicon Valley has risen over the past decade by 8,400 units (containing 16,800 bedrooms).

Santa Clara & San Mateo Counties, California, and the United States | 2018

occupancy characteristics Share of Housing Units, by Occupancy Level



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

Compared to San Francisco and the state overall, Silicon Valley had a lower share of inadequate occupied-housing units in 2017, but a higher share of units with water stoppages.

In 2017, an estimated 10% of occupied housing units in the greater San Jose area had signs of cockroach infestations, 7% were uncomfortably cold for 24 hours or more, 7% had a recent water stoppage, 5% had water leaks, 3% had mold, and 2% had no functioning toilet at some point over a three-month period.

In 2018, 26% of Silicon Valley residential units were characterized as low-occupancy/potentially underutilized (had more than one bedroom and one spare room per occupant or couple) and 18% were high-occupancy/potentially overcrowded; 55% of Silicon Valley's housing units were sized appropriately for their occupants.

> Silicon Valley has a smaller share of high-occupancy housing units (18%) compared to California (21%) or the United States as a whole (36%); Silicon Valley and the state overall have the same shares (26%) of low-occupancy residential units.

Silicon Valley has a slightly lower share of residents living in multigenerational households (25.2%) than in the state as a whole (27%).

PLACE Housing

More than a quarter of all Silicon Valley residents live in multigenerational households (amounting to 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 live in a multifamily household).

occupancy characteristics Multigenerational Households

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



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

The share of Silicon Valley young adults living with their parent(s) has increased by 4.4 percentage points (+52,300 people) since 2010. More than 277,000 Silicon Valley young adults (ages 18-34) live with their parent(s), representing 37% of all young adults in the region; this compares to 16% in San Francisco, and 39% throughout the state of California as a whole.

Young Adults Living with a Parent

37% of all Silicon Valley young adults (ages 18-34) live with their parent(s).

OCCUPANCY CHARACTERISTICS

Santa Clara & San Mateo Counties, San Francisco, and California

Share of the Population Living in Multifamily Households

Santa Clara & San Mateo Counties, and California

	2008	2018
Silicon Valley	8.1%	10.6%
California	9.3%	9.9%

Note: Multifamily households include all households with at least two unrelated families. | Data Source: IPUMS-USA, University of Minnesota | Analysis: Kyle Neering; Silicon Valley Institute for Regional Studies

A greater share of Silicon Valley residents lives in multifamily households (10.6%) than a decade ago (8.1% in 2007), and the share has risen more than in the state overall.



Data Source: IPUMS-USA, University of Minnesota | Analysis: Kyle Neering; Silicon Valley Institute for Regional Studies

HOMELESSNESS

Unlawful Detainer Evictions

Santa Clara & San Mateo Counties

Santa Clara County

The number of unlawful detainer evictions of Silicon Valley renters has declined steadily over the past seven years; there were half as many in the 2017-18 fiscal year as there were in 2010-11.



San Mateo County

Data Source: Judicial Council of California | Analysis: Silicon Valley Institute for Regional Studies

At the start of 2019, Santa Clara and San Mateo Counties had a combined total of 11,218 homeless residents, more than half (54%) of which were in San Jose alone. In comparison, San Francisco had a homeless population of 8,011 in 2019.

79% of Silicon Valley's homeless population is unsheltered – the highest rate of unsheltered homelessness over the past eight years (at least).

More than a quarter of homelessness in Santa Clara County is prompted by issues with family and friends – an argument with a family member or friend (12%), or divorce/separation/breakup with a significant other (14%). 1% of all renter-occupied units in Silicon Valley faced possible eviction in the 2017-18 fiscal year, amounting to an estimated 12,000 people who were housinginsecure.

In the 2017-18 fiscal year, there were nearly 4,000 unlawful detainer evictions of renters in Santa Clara and San Mateo Counties (a rate of 11 per day); while not all of these renters were ultimately forced to leave their homes, approximately one in every 230 Silicon Valley residents faced the threat of losing their home to eviction that year.

In Santa Clara County, 36% of the 2,800 unlawful detainer evictions in the 2017-18 fiscal year received default judgements before a court trial by either the clerk (for instance, because the defendant failed to respond) or by the court.

> Incarceration was cited 11% of the time as a primary cause of homelessness in Santa Clara County, a share that has nearly doubled over the past two years (up from 6% in 2017).





Data Sources: County of San Mateo, Human Services; County of Santa Clara, Office of Supporting Housing Analysis: Silicon Valley Institute for Regional Studies

HOMELESSNESS



Santa Clara & San Mateo Counties



Data Sources: County of San Mateo, Human Services; County of Santa Clara, Office of Supporting Housing; California Department of Finance | Analysis: Silicon Valley Institute for Regional Studies

PLACE Transportation

The average number of miles driven by Silicon Valley residents each day has remained relatively steady over the past three years (22 miles per day in 2018), as gas prices have inched up locally and statewide. Transportation costs as a whole have increased significantly over the past five years, up 21% nominally over that time period.

Though a smaller share of Silicon Valley residents drives to work alone compared to 10 or 15 years ago, solo-commuting is still the most common way to get to work. Regardless of the means of travel, the average time it took for Silicon Valley residents to get to their workplace in 2018 was 29.6 minutes - a 25% increase over the prior 15 years, adding an additional 52 hours of driving time per commuter annually. In 2018, 6.6% of Silicon Valley employees (more than 101,000 people) spent more than three hours commuting to and from work on a daily basis. Over the past decades, the commute paths that have gained commuters most rapidly include Alameda to San Francisco (+59%), San Francisco to Santa Clara County (+61%), and Santa Clara County to San Francisco (+135%). Increases in the number of commuters and the utilization of certain commute paths have led to an unprecedented level of traffic delays in Silicon Valley, with 81,000 hours lost to congestion every day – amounting to an estimated loss in regional productivity of as much as \$3.4 billion annually.

Growing numbers of commuters are choosing to ride bicycles instead of driving, likely influenced by significant increases in the miles of bicycle paths throughout the region. In contrast, public transit use per capita has been on the decline since

The average number of vehicle miles traveled annually per Silicon Valley resident has been relatively steady over the past three years, and was just above 8,200 miles per person in 2018.

Silicon Valley residents drove an average of 22 miles per day in 2018 (down from 24 miles per person per day a decade prior); this compares to 10 miles/ person/day in San Francisco, 25 miles/person/day in Alameda County, and 24 miles/person/day statewide.





Santa Clara & San Mateo Counties



Data Sources: California Department of Transportation; California Department of Finance Analysis: Silicon Valley Institute for Regional Studies Gas prices locally (and statewide) have increased slightly since 2016, reaching \$3.96 per gallon in 2019; despite recent increases, gas prices have remained \$1.05 per gallon (21%) less than the recent peak in 2012 after adjusting for inflation.

TRANSPORTATION COSTS



Data Sources: California Department of Finance; U.S. Energy Information Administration Analysis: Silicon Valley Institute for Regional Studies 2015 on almost all systems, and Caltrain ridership declined in 2019 for the first time since 2010. 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 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.

PLACE

The estimated cost of basic transportation needs¹ for a Silicon Valley family of four was \$6,500 per year in 2019.

TRANSPORTATION COSTS

Average Cost of Transportation Needs per Household, by Family Type Santa Clara & San Mateo Counties, San Francisco, and California



transportation needs for a family of four in Silicon Valley has increased by 21% since 2014 (without adjusting for inflation); this compares to only a 1% increase in the cost of transportation needs statewide over the same period.

The cost of

Percent Change in Average (Nominal) Cost of Transportation Needs for a Family of Four 2014-2019*

Silicon Valley	+21%
San Francisco	+27%
California County Average	+1%

*2019 estimate based on 2018 data. | Data Source: Center for Women's Welfare, University of Washington | Analysis: Silicon Valley Institute for Regional Studies

PLACE Transportation

Silicon Valley commute times have increased by 25% over the past 15 years, reaching an average of 59 minutes per commuter per day in 2018.

Mean Travel Time to Work Minutes						
2003 2008 2013 2018 2003-201 % Change						
Santa Clara & San Mateo Counties	23.6	24.5	26.6	29.6	+25%	
San Francisco	28.5	29.3	31.5	33.0	+16%	
California	26.5	27.0	27.9	30.2	+14%	

As the number of Santa Clara and San Mateo County residents commuting

to work has increased over the past decade (+14% since 2008), there has

been a disproportionate increase in the number of commuters taking public

transit (+42%) and those who predominantly work from home (+34%).

In 2018, 10.2% of Silicon Valley commuters carpooled to work; particularly in San Mateo County, women were slightly more likely to carpool than men (11% of women, compared to 9% of men).

Over the past 15 years, the share of Silicon Valley commuters who drive to work alone has declined by five percentage points, while the shares of those working at home, taking public transportation, or commuting to work by other means have all increased slightly. COMMUTING Means of Commute



Note: Other Means includes taxicab, motorcycle, and other means not identified separately within the data distribution. Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies

> 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.

Despite a slowly declining share of solo-drivers, nearly three-quarters of Silicon Valley commuters still drove to work alone in 2018 (73%, compared to 74% statewide).

6.6% of Silicon Valley employees (more than 101,000 people) travel more than three hours each day to/from work combined.

The number of Silicon Valley and Bay Area commuters that travel more than three hours to/from work combined each day rose sharply in 2018, up 7% and 11%, respectively, over the prior year; this rise represents an additional 25,700 megacommuters throughout the region (bringing the total up to 259,400 throughout the nine-county Bay Area).

COMMUTING

Megacommuters

Santa Clara & San Mateo Counties, Bay Area, and California



Data Source: United States Census Bureau, American Community Survey Summary Files | Analysis: Jon Haveman, Marin Economic Consulting

COMMUTING Number of Residents Who Commute to Another County Within the Region 2018





Data Source: United States Census Bureau, American Community Survey PUMS Analysis: Jon Haveman, Marin Economic Consulting; Silicon Valley Institute for Regional Studies

The number of commuters in/out of Silicon Valley has increased significantly over the past decade (up by 7% to 135% since 2007, depending on the commute path).

Change in the Number of Cross-County Commuters					
		2008 -2018		2017 -2018	
Origin	Destination	Number	Percent	Number	Percent
	San Francisco	+42,814	+59.0%	+10,694	+10.2%
Alameda	San Mateo	+5,556	+15.3%	+1,031	+2.5%
	Santa Clara	+14,597	+21.7%	+1,015	+1.3%
	Alameda	-2,224	-10.1%	-5,155	-20.6%
San Francisco	San Mateo	+10,417	+24.5%	+1,556	+3.0%
	Santa Clara	+10,773	+60.9%	+1,504	+5.6%
	Alameda	+1,035	+8.3%	-810	-5.7%
San Mateo	San Francisco	+5,777	+7.4%	-1,409	-1.7%
	Santa Clara	+18,546	+36.2%	+4,624	+7.1%
	Alameda	+6,238	+15.8%	+3,891	+9.3%
Santa Clara	San Francisco	+11,970	+134.8%	-7,381	-26.1%
	San Mateo	+9,149	+21.1%	+967	+1.9%

Data Source: United States Census Bureau, American Community Survey PUMS

Analysis: Jon Haveman, Marin Economic Consulting; Silicon Valley Institute for Regional Studies

Between 2017 and 2018, the number of commuters traveling from Santa Clara County to work in San Francisco decreased by 26%, returning to near 2016 levels (approximately 21,000 people daily).

Over the past decade, the number of people commuting from Santa Clara County into San Francisco has increased by 135% (up by nearly 12,000 commuters); the number of commuters traveling from Alameda County into San Francisco rose by nearly 43,000 people (+59%) over the same time period.

Share of Commuters Who Cross County Lines, by County of Residence 2018		
Santa Clara County	14%	
San Mateo County	42%	
San Francisco	22%	
Alameda County	36%	
Bay Area	29%	

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

On a daily basis, more than 300,000 Santa Clara and San Mateo County residents commute to other counties for work; that number represents 22% of the region's combined commuters (21% of employed residents).

On a typical weekday there are 163,000 Silicon Valley residents commuting to San Francisco or Alameda County, and 205,000 commuters going the other way.

In 2018 there were 626,000 commuters traveling to/ from work each day among San Francisco, San Mateo, Santa Clara, and Alameda Counties alone; this number represents 27% more cross-county commuters than there were in 2008.



Between 2003 and 2018, the share of Silicon Valley commuters who bike to work increased from 0.9 to 1.7%, amounting to an additional 14,100 people biking to/from work most weekdays.

Number of Bicycle Commute Trips Per Day Santa Clara & San Mateo Counties		
2003	2018	% Change 2003-2018
18,572	46,781	+152%

In 2018, Silicon Valley had nearly 47,000 daily bicycle commute trips utilizing the region's roadways and other bicycle facilities (representing a 152% increase over the past fifteen years).

In 2018, 12 Silicon Valley bicycle collisions resulted in a fatality, and another 71 resulted in severe injuries.

Silicon Valley had 907 bicycle collisions in 2018 resulting in either injury or death (58 more collisions than in 2017).

Bicycle Collisions, by Severity

Santa Clara & San Mateo Counties

BICYCLING

Minor bicycle collisions in which the victim complained of pain declined significantly in San Mateo County in 2018, down from 88 in 2017 to 31 that year.



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

BICYCLING

Share of Commuters Who Bike to Work

Santa Clara & San Mateo Counties



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

> Between 2015 and 2018, the bicycle collision rate declined significantly in both San Mateo and Santa Clara Counties (down 20% and 9%, respectively).

The majority (80%) of Silicon Valley cities and counties have a Bicycle Master Plan in place, in the planning stage, or in-progress; this share is up from 61% in 2016.

BICYCLING

Share of Jurisdictions with a Bicycle or Pedestrian Master Plan

Silicon Valley | 2016 & 2019



Note: Data includes all bicycle and pedestrian master plans created in 2011 or thereafter. Data Source: Silicon Valley Cities & Counties | Analysis: Silicon Valley Institute for Regional Studies Since 2016, Silicon Valley has gone from having no protected bikeways – the "gold standard" for bicyclists' comfort and safety – to having 16 miles of protected bikeways.

Silicon Valley has more than 1,500 miles of bicycle facilities, the majority (47%) of which are Class 2 (bike lanes).

Of every 10,000 daily bicycle commuters in Silicon Valley, 388 experienced a collision in 2018 that resulted in some sort of injury.

Miles of Bicycle Facilities

Santa Clara & San Mateo Counties



Note: Data for 2019 is limited to 18 out of 20 San Mateo County cities and 8 out of 15 Santa Clara County cities due to lack of available data (as of January 2020). Data Sources: Silicon Valley Cities; Metropolitan Transportation Commission; Santa Clara Valley Transportation Authority; Google Maps; Nelson\Nygaard Consulting Associates | Analysis: Nelson\Nygaard Consulting Associates; Silicon Valley Institute for Regional Studies

Annual Bicycle Collisions per 10,000 Daily Commuters			
	2015	2018	% Change 2015-2018
San Mateo County	463	369	-20%
Santa Clara County	435	395	-9%
Total	441	388	-12%

The number of vehicle hours wasted due to traffic congestion in Silicon Valley and the Bay Area has tripled over the past decade, from 2009 to 2019. In 2019, Silicon Valley commuters lost more than 81,000 hours to traffic congestion every day; using the 2019 estimate of regional labor productivity (\$116 per employee per hour), Silicon Valley traffic delays could amount to as much as a \$3.4 billion loss in productivity on an annual basis.

The region gained at least 61 miles

of bicycle facilities in 2019, based on data available from 26 of the 35

TRAFFIC CONGESTION

Daily Vehicle Hours of Delay Due To Congestion

Santa Clara & San Mateo Counties, San Francisco, and the Bay Area



Data Source: Caltrans PeMS | Analysis: Silicon Valley Institute for Regional Studies



Silicon Valley public transit use per capita is lower than any other year in the dataset (17+ years).



Note: Transit data are in fiscal years. Per capita figures are based on the population served by each transit agency, while the regional per capita ridership is based on the populations of Santa Clara and San Mateo Counties combined. | Data Source: Altamont Corridor Express, Caltrain, SamTrans, Santa Clara Valley Transportation Authority, California Department of Finance | Analysis: Silicon Valley Institute for Regional Studies

In contrast to the overall decline in public transit use, per capita ridership on ACE in Santa Clara County rose by 2.5% in FY 2018-19.

FY 2018-19 Caltrain ridership was 63,597 boardings per day; assuming riders take the train two ways, this amounts to nearly 32,000 people utilizing Caltrain each weekday.

Caltrain ridership in FY 2018-19 declined for the first time since 2010 (down 2.3% year-over-year) due to fewer "Reverse Peak" (morning-peak southbound/ afternoon-peak northbound) and evening boardings.

MASS TRANSIT Caltrain Ridership



*2017 and subsequent years represent average mid-weekday ridership. | Note: Data are in fiscal years. Data Source: Caltrain 2019 Annual Passenger Counts | Analysis: Silicon Valley Institute for Regional Studies

Despite declining overall per capita transit ridership since 2010 – the beginning of the economic recovery period – Caltrain and ACE* per capita ridership have increased by 41% and 141%, respectively.

Change in Per Capita Transit Use, 2010-2019 San Mateo & Santa Clara Counties

Transportation System	2010 - 2019 Percent Change
Santa Clara Valley Transportation Authority (VTA)	
All Service	-23%
Express Bus Service	-13%
SamTrans	-29%
Caltrain	+41%
Altamont Corridor Express (ACE)*	+141%
Total	-11%

*Santa Clara County stations only.

Despite an overall year-over-year decline in Caltrain riders, boardings at several stations (including San Mateo, San Bruno, San Antonio in Mountain View, and Tamien in San Jose) increased slightly in 2019. Private shuttles are making an average of nearly 1,100 trips within Silicon Valley on a daily basis.

> 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.



Note: Line weight is proportional to the number of shuttles. | Data Source: Bay Area Council and Metropolitan Transportation Commission 2016 Bay Area Shuttle Census | Analysis: Bay Area Council and Metropolitan Transportation Commission **Total Number of Shuttle Trips on Weekdays** Santa Clara & San Mateo Counties, San Francisco, and the Bay Area 2012-2014

	Daily Shuttle Trips
San Francisco	612
San Mateo County	767
Santa Clara County	843
Bay Area	1,126

Bay Area | FY 2014-2015 **Total Annual Passengers** Operator (millions) 1 SFMTA 233.11 2 BART 136.82 3 AC Transit 54.58 4 VTA 44.00 5 Caltrain 19.23

Ridership on Private Shuttles and Regional Transit Systems

Data Source: Transit operator reports & MTC Statistical Summary of Bay Area Transit Operators (via the Bay Area Council and Metropolitan Transportation Commission 2016 Bay Area Shuttle Census) Analysis: Bay Area Council and Metropolitan Transportation Commission

SamTrans

Shuttles

6

7

SHUTTLES

Cumulative Count of Shuttle-Type Buses Registered, by Model Year

Santa Clara & San Mateo Counties, Rest of Bay Area, and Rest of California | 2018



Note: Includes common shuttle bus manufacturers. | Data Source: California Department of Motor Vehicles | Analysis: Silicon Valley Institute for Regional Studies

Private shuttles represent the Bay Area's 7th largest mass transit system, with annual ridership just below that of SamTrans and Caltrain.

13.15

9.60

In 2018, there were a total of 1,155 vehicle registrations throughout the state of vehicles made by common shuttle bus manufacturers. While not all of these vehicles are necessarily privately-operated commuter shuttles, the number of registrations by model year illustrates the growth of this transportation mode.

In late 2018 there were 163 vehicles made by common shuttle bus manufacturers registered in Silicon Valley (half in South San Francisco, and half in Mountain View); this number has nearly doubled since 2012.

PLACE

The density of Silicon Valley residential development approved in FY 2017-18 was significantly higher than for any other year on record (spanning more than two decades), reaching an average 32 units per acre. Among the cities themselves, two-thirds had average densities of newly-approved units above 10 per acre that year. Approved developments were spread throughout the region, with more than half (59%) within walking distance of public transit.

The amount of non-residential development approved in FY 2017-18 was 17% higher than the prior year, and more has been approved over the past six years than the previous 13 years combined. While there were projects approved in many cities, 69% of the square footage was concentrated in six cities alone – San Jose, Cupertino, Mountain View, South San Francisco, Sunnyvale, and Santa Clara. While the largest share of approvals was for new office space (64%), commercial space represented 53% of all approved non-residential demolition.

There are a large number of hotels in various stages of planning throughout the region. While not all of them will necessarily be built, the total represents four times the amount that has been developed over the past 15 years and 14% of all planned hotel development throughout the state.

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.

Two-thirds of the cities and counties in Silicon Valley had average residential densities of newly-approved developments higher than 10 units per acre in FY 2018-19.

RESIDENTIAL DENSITY



Average Units per Acre of Newly Approved Residential Development

Note: Beginning in 2008, the Land Use Survey expanded its geographic definition of Silicon Valley to include cities northward along the U.S. 101 corridor (Brisbane, Burlingame, Millbrae, San Bruno and South San Francisco). In 2014, the Survey expanded to include all Silicon Valley cities (adding Colma, Daly City, Half Moon Bay and Pacifica). | Data Source: City Planning and Housing Departments of Silicon Valley | Analysis: Silicon Valley Institute for Regional Studies Pockets of high-density residential development approvals in FY 2018-19 were spread throughout the region; among them were two mixed-use transit-oriented developments near the Millbrae Transit Center with a combined total of more than 800 units. the 132-unit affordable workforce and senior apartment Village at Burlingame project, new townhouses in Foster City, 78 assisted living units on Blossom Hill Road in Los Gatos, 183 units in a Menlo Park mixed-use development, several projects in Mountain View (including a 71-unit affordable studio apartment development], 520 units at the mixeduse Broadway Plaza project in Redwood City (which also includes office, retail, and a child care center), a few 100% affordable development projects including one in East Palo Alto (Light Tree Apartments) and one in San Carlos (24 units at 817 Walnut Street), more than half a dozen new developments in Santa Clara, and 741 units on Aster Avenue in Sunnyvale.

The pace of Silicon Valley non-residential development approvals remained brisk in FY 2018-19, and was up 17% over the prior fiscal year.

NON-RESIDENTIAL DEVELOPMENT

Net Non-Residential Development Approved, by Proximity to Transit *Silicon Valley*



*Beginning in 2012, the definition of transit-oriented development has been changed from 1/4 mile to 1/3 mile. Data Source: City Planning and Housing Departments of Silicon Valley | Analysis: Silicon Valley Institute for Regional Studies

The density of newly-approved residential development in Silicon Valley during the last fiscal year was significantly higher than any other year on record (spanning more than two decades).

The average density of newly-approved Silicon Valley residential units rose sharply in the 2018-19 fiscal year, reaching 32 units per acre of land (up from 18 units/ acre the year before) due to numerous approvals of multifamily developments across the region. More net-new non-residential development was approved over the past six years (65 million square feet) than over the previous thirteen years combined.

A total of 13.7 million square feet of Silicon Valley non-residential development was approved in FY 2018-19, with 3.5 million square feet of approved demolition (for a net of 10.2 million square feet of additional space to be developed).

Net non-residential development approvals (after planned demolition) in FY 2018-19 totaled 10.2 million square feet across 199 different development sites; of these approved sites, 49% are within walking distance to major public transit stations.

While approved non-residential development projects were spread throughout Silicon Valley, 69% of it was concentrated in six cities alone: San Jose (2.8 million square feet including a 200room hotel with retail in Alviso, an 18-story R&D/ office/retail development, a 300,000 square foot data center and office building in Edenvale, and a 200,000 square-foot warehouse distribution center among other projects), Cupertino (2.5 million square feet, 80% of which is office development), Mountain View (1.2 million square feet including Hope Street Lots, a proposal to utilize two downtown surface parking lots for a mixed-use hotel/office/retail/public parking development), South San Francisco (1.1 million square feet including 704,000 square feet at Gateway of Pacific, a life science development, and an additional 336,000 square feet of biotech space on Haskins Way), Sunnyvale (998,000 square feet including two four-story R&D/office buildings on West Maude Avenue, and a hotel renovation project on Mathilda Avenue with 185 new rooms), and Santa Clara (882,000 square feet, including a new STEM complex and an Athletic Excellence Center at Santa Clara University, one new data center and the expansion of an another, and the Lawson Lane Office Campus with a five-story office building and two-story amenities building).



HOUSING NEAR TRANSIT

New Housing Units Approved Within 1/3 Mile of Rail Stations or Major Bus Corridors, and Share of Total Units Approved



The number of approved housing units near transit in FY 2018-19 (11,130) was significantly higher than the prior year (4,723 in FY 2017-18).

Silicon Valley housing units within walking distance to public transit represented 59% of all newly-approved residential units in FY 2018-19.

*Beginning in 2012, the definition of transit oriented development has been changed from 1/4 mile to 1/3 mile. | Note: Beginning in 2008, the Land Use Survey expanded its geographic definition of Silicon Valley to include cities northward along the U.S. 101 corridor (Brisbane, Burlingame, Millbrae, San Bruno and South San Francisco). | Data Source: City Planning and Housing Departments of Silicon Valley | Analysis: Silicon Valley Institute for Regional Studies More than half of all non-residential demolition approved in FY 2018-19 was commercial space. 64% of all newly-approved non-residential development in FY 2018-19 was office space (compared to 26% the prior year).

NON-RESIDENTIAL DEVELOPMENT

Share of Non-Residential Demolition and Development Approvals, by Type Silicon Valley, FY 2018-19



Note: Beginning in 2008, the Land Use Survey expanded its geographic definition of Silicon Valley to include cities northward along the U.S. 101 corridor (Brisbane, Burlingame, Millbrae, San Bruno, and South San Francisco). In 2014, the Survey expanded to include all Silicon Valley cities (adding Colma, Daly City, Half Moon Bay, and Pacifica). | Data Source: City Planning and Housing Departments of Silicon Valley | Analysis: Silicon Valley Institute for Regional Studies Of the 104 hotels [with 15,000 hotel rooms] planned for Silicon Valley, approximately 16% received planning approvals in the 2018-19 fiscal year.

Planned Hotel Development 2019			
	Hotels	Rooms	
Santa Clara County	68	9,865	
San Mateo County	28	3,651	
Rest of Silicon Valley	8	1,441	
San Francisco	52	7,493	
California	1,143	155,782	

Note: Planned hotels are in various stages, and have not necessarily received planning approvals. | Data Source: Atlas Hospitality Group Analysis: Silicon Valley Institute for Regional Studies

There are 156 hotels (with a total of more than 22,000 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 nearly four times the amount that has been developed over the past 15 years.

In 2019, the number of Silicon Valley and San Francisco hotel rooms in various stages of planning (22,450) accounted for 14% of all planned hotel development throughout the state of California.

PLACE Environment

Water consumption by Silicon Valley residents remained relatively low in 2019 at 104 gallons per person per day, with a slight uptick in the share of recycled water used throughout the region. Waste disposal rates, in contrast, have been rising steadily since 2012 - reaching 4.3 pounds per person per day in 2018. Per capita electricity consumption has declined over the past decade, although it remains higher in Silicon Valley than in San Francisco or the rest of the state.

In a dramatic shift over the past three years, Silicon Valley's community choice energy programs now serve 89% of the region's residential electricity customers and 69% of non-residential customers; this change effectively reduced regional carbon dioxide emissions from electricity by approximately 64%. As the emissions intensity of available electricity has declined, electric vehicle adoption and infrastructure installation has retained momentum. Installed solar photovoltaic systems reached nearly 550 megawatts of capacity in late 2019 - twice as much as what was installed just four years ago. There is continued room for growth, however, with a technical solar potential throughout the region of 26 times what is currently installed.

Due to the recent California wildfires and other factors, there were more unhealthy air days in Silicon Valley in 2017 and 2018 than over the entire decade prior; the number of unhealthy air days in 2019 declined to five total, and only for sensitive groups.

Why is this important?

Environmental quality directly affects the health and well-being of all residents as well as the Silicon Valley ecosystem.¹ 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. Shifting more customers to lower-emissions energy providers also affects regional GHG 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



Silicon Valley per capita water consumption – lower in 2016 than it had been in 15+ years – remained relatively low in 2019 at 104 gallons per person per day.

*FY 2018-2019 data is preliminary. | Note: Data are for the fiscal year. | Data Source: Bay Area Water Supply & Conservation Agency (BAWSCA), Santa Clara Valley Water District, and Scotts Valley Water District Analysis: Silicon Valley Institute for Regional Studies

Studies have quantified the importance of the ecosystem services provided by the region's natural capital to the health of the economy including clean air, water quality and supply, healthy food, recreation, storm and flood protection, tourism, science and education. Healthy Lands & Healthy Economies: Rtature's Value in Santa Clara County (Open Space Authority and Earth Economics, 2014) found that each year, Santa Clara County's natural and working lands provide a stream of ecosystem services to people and the local economy that range in value from \$1.6 billion.

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 waste disposal per capita was 4.3 pounds per person per day in 2018, nearly a pound higher than the recent low in 2011. Despite increasing waste disposal rates, waste disposal per capita in Silicon Valley was lower in 2018 than that of San Francisco or

the state overall.



Silicon Valley California San Francisco 7 Waste Disposal per Capita (pounds / person / day) 6 5 4 3 2 1 0 '11 '07 '08 '09 '10 '12 '13 '14 '15 '16 '17 '18

> 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 29 unhealthy days for sensitive groups); the region had not experienced this number of

Silicon Valley did not have any unhealthy air days for the general population in 2019, although there were five unhealthy air days that year for sensitive groups.

unhealthy days since 2001.

Data Sources: CalRecycle; California Department of Finance | Analysis: Silicon Valley Institute for Regional Studies.

AIR QUALITY

Number of Unhealthy Air Days

Santa Clara & San Mateo Counties



Note: 2019 data through November. | Data Source: United States Environmental Protection Agency, Outdoor Air Quality Data Analysis: Silicon Valley Institute for Regional Studies

PLACE



ELECTRICITY USE

Electricity Consumption per Capita

Santa Clara & San Mateo Counties, San Francisco, Rest of California



Data Sources: Moody's Economy.com; California Energy Commission; State of California, Department of Finance Analysis: Silicon Valley Institute for Regional Studies Per capita electricity consumption in Silicon Valley has declined significantly over the past decade, down 15% (1,300 kilowatt-hours per person) over that time period.

Electricity consumption per capita is higher in Silicon Valley (7,651 kilowatthours per person) than in San Francisco (6,338 kWh/person) and the rest of California (7,035 kWh/person).

Electricity productivity in San Francisco is 1.7 times that of Silicon Valley's, which was \$17,000 per megawatt-hour of electricity consumed in 2018.

While the rest of California's electricity productivity has remained relatively stable – and below \$10,000 per megawatthour – Silicon Valley and San Francisco electricity productivity have risen significantly throughout the economic recovery period (up 55% and 58%, respectively, since 2010).



Electricity Productivity

Santa Clara & San Mateo Counties, San Francisco, Rest of California



Data Sources: Moody's Economy.com; California Energy Commission; State of California, Department of Finance Analysis: Silicon Valley Institute for Regional Studies Three community choice energy programs now serve 89% of Silicon Valley's residential customers, and 69% of non-residential customers; Pacific Gas & Electric, which served 91% of customers across Santa Clara and San Mateo Counties in 2016 – now provides bundled energy, transmission, and distribution service to less than 5%.

Share of Electricity Customers Served, by Provider Silicon Valley			
	Residential	Non-Residential	
Peninsula Clean Energy	32%	25%	
Silicon Valley Clean Energy	29%	26%	
San Jose Clean Energy	28%	18%	
Silicon Valley Power	6%	7%	
Palo Alto Utilities	3%	4%	
Pacific Gas & Electric	3%	21%	

The transition of electricity customers to Silicon Valley's community choice energy programs happened in less than three years, and effectively reduced the region's overall carbon dioxide emissions from electricity by approximately 64%.

Note: Percentages may not add up to 100% due to rounding.

Although PG&E has relatively clean energy with a 2017 emissions intensity factor that has declined by 67% over the previous decade, the emissions intensity factor is still higher than those of Silicon Valley's community choice energy programs which procure a larger share of power from renewable resources.

ELECTRICITY USE

Emissions Intensity for Power Providers

Silicon Valley, California, and the United States



*estimate | Data Sources: Silicon Valley electricity providers (Peninsula Clean Energy, Silicon Valley Clean Energy, Palo Alto Utilities, Silicon Valley Power, Pacific Gas & Electric, and San Jose Clean Energy); The Climate Registry; Center for Resource Solutions; U.S. Environmental Protection Agency | Analysis: Silicon Valley Institute for Regional Studies All of the power provided to Silicon Valley electricity customers carries a fraction of the emissions intensity of the U.S. grid average, and is significantly cleaner than California's state average residual emissions intensity.

The region's relatively clean electricity has enabled the implementation of a variety of "natural gas fuel-switching" efforts, including programs that promote the use of heat pump water heaters, induction cooktops, and the exchange of multi-family gas wall furnaces with heat pump space heaters. It has also helped to advance electric vehicle adoption throughout the region, and enabled efforts to achieve environmental, air-quality, and cost benefits with all-electric buildings.



There are 65,500 solar PV systems on residential rooftops throughout Silicon Valley, plus another 1,700 non-residential installations.

Based on the amount of sunshine and rooftop space available, Silicon Valley has an estimated technical potential for more than 600,000 additional rooftop solar photovoltaic (PV) systems, which is nearly ten times more than the number of existing solar PV installations and 28 times capacity that was installed by the end of 2018.

Technical Potential of Rooftop Solar Photovoltaics Silicon Valley, 2018

Number of Additional Viable Rooftops	668,200
Estimated Total System Size (Megawatts DC)	14,188

Data Source: Google Project SunRoof, Data Explorer Analysis: Silicon Valley Institute for Regional Studies



of solar PV installed in Silicon Valley has doubled over the past four years, reaching a cumulative installed solar capacity of 545 megawatts in late 2019.

The amount

*2019 data are through early-December for the municipal utilities, 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

Nearly 5,500 new solar photovoltaic (PV) systems were installed in Silicon Valley in 2019, 98% of which were residential systems (by count); by installed capacity, residential systems represented 67% of all solar PV installations that year.

19% of California's EV charging outlets are in Silicon Valley.

Since 2015, the number of public EV charging outlets in Silicon Valley has nearly quadrupled (reaching 4,305 at the end of 2019).

CLEANTECH

Electric Vehicle Infrastructure



Note: Data include public stations only.

Data Source: United States Department of Energy, Alternative Fuels Data Center | Analysis: Silicon Valley Institute for Regional Studies

Among the top-ten Silicon Valley cities for EV adoption, Palo Alto, Los Altos Hills, and Saratoga have the highest shares of Tesla ownership with Teslas accounting for more than 40% of registered light-duty EVs, compared to 21% in the state overall.

San Jose has by far the highest number of EV drivers in the region, with more than 23,000 registered vehicles; the city with the next-highest number of EVs, Fremont, has just over 9,000 registered.

CLEANTECH

Share of Registered Light-Duty Electric Vehicles, by City and Make

Top 10 Silicon Valley Cities, and California | 2018



Data Source: California Department of Motor Vehicles | Analysis: Silicon Valley Institute for Regional Studies

Teslas, Chevrolets, and Nissans account for 76% of all electric vehicles registered in Silicon Valley.

Teslas are the most popular EV among Silicon Valley drivers, with 39% (nearly 25,000 vehicles) of all registered EVs in the region in late 2018.



Share of Registered Electric Vehicles, by Make Silicon Valley | 2018



Note: Other includes Honda, Chrysler, FIAT, GEM, Audi, Kia, Volvo, Mercedes-Benz, and Club Car. Data Source: California Department of Motor Vehicles | Analysis: Silicon Valley Institute for Regional Studies Due largely to a handful of cities with high adoption rates, the County of Santa Clara has the highest EV adoption per capita in the state, with 28.4 EVs per 1,000 population; furthermore, nine of the top-ten California counties ranked by registered light-duty EVs per capita are in the Bay Area.

LACI

The total number of electric vehicles (EVs) registered to Silicon Valley drivers continued to climb in 2018, with plug-in hybrids gaining popularity over the previous three years (representing nearly two-thirds of all registered EVs).

There were more than 83,000 electric vehicles registered to Silicon Valley drivers in 2018, representing 19% of all registered EVs in California.



Note: Year is the model year for vehicles registered in 2018.

Data Source: California Department of Motor Vehicles | Analysis: Silicon Valley Institute for Regional Studies

GOVERNANCE

Local Government Finances

Silicon Valley city revenues increased 3% regionally in FY 2017-18, reaching a total of \$7.38 billion. Nearly half of all city revenue came from charges for services - a share comparable to places such as Austin and Los Angeles, but significantly higher than San Francisco, which have more than doubled since 2010, the beginning of the economic recovery period. Of Silicon Valley city expenses in FY 2017-18, the largest shares went to public safety (30%) and building, planning, and public works combined (29%). In total, the cities' combined investment earnings were \$57 million during that fiscal year; as an unassociated but notable comparison, expenses related to interest on debt were more (\$85 million). Investment earnings have declined significantly since 2008 regionally and at the state level, and have not recovered to pre-recession yields. While Silicon Valley cities, in aggregate, experienced revenue gains in FY 2017-18, annual expenses were up as well.

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, fluc-

Nearly half (49%) of all Silicon Valley city revenue comes from charges for services; in comparison, charges for services represent 6% of San Francisco's revenue, 3% of New York City's, 67% of Austin's, 26% of Seattle's, and 61% of Los Angeles' revenues.¹



Note: Percentages may not add up to 100% due to rounding. | Data Sources: Silicon Valley Cities, Audited Annual Financial Reports; California State Auditor Analysis: Silicon Valley Institute for Regional Studies

1. Based on FY 2017-18 Comprehensive Annual Financial Reports.

tuating 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.

> Silicon Valley city revenues totaled \$7.38 billion in FY 2017-18, representing a 3% increase year-over-year after inflation-adjustment.

Silicon Valley city revenues from Charges for Services have more than doubled since 2010 (without adjusting for inflation), reaching nearly \$3.6 billion in the 2017-18 fiscal year. This dramatic increase since the beginning of the economic recovery period is likely related to the amount of new construction during that period leading to increased fees collected by the cities (e.g., building permits, planning fees, affordable housing impacts, and traffic impacts).

Of the \$7.02 billion in Silicon Valley city expenses in FY 2017-18, 30% was spent on public safety (nearly \$2.1 billion) and 29% went to planning, building, and public works; 8% of city expenses (\$583 million) was spent on electric utilities.
Silicon Valley cities' combined investment earnings were \$57 million in FY 2017-18; as an unassociated but notable comparison, the region's combined expenses related to interest on debt was \$85 million during that same fiscal year. Investment earnings in FY 2017-18 continued to provide a very small share [1%] of total regional city revenues. They amounted to only one-sixth of what they were a decade ago (\$372 million in FY 2007-08, nearly three-quarters of which came from six cities alone – Fremont, Mountain View, Palo Alto, San Jose, Santa Clara, and Sunnyvale).

LOCAL GOVERNMENT FINANCES

Silicon Valley Cities, Santa Clara & San Mateo Counties, and California



The pattern of declining investment earnings by Silicon Valley cities over the past decade is also reflected in countyand state-level financial reports. GOVERNANCE

Revenues minus expenses for all of Silicon Valley's cities combined, and for the State of California, have been positive since FY 2012-13; in contrast to the Silicon Valley cities and the County of Santa Clara, the County of San Mateo's expenses never exceeded revenues during the recession despite a \$32 million decrease in investment earnings in FY 2008-09.

Data Sources: Silicon Valley Cities and Counties, Audited Annual Financial Reports; California State Auditor | Analysis: Silicon Valley Institute for Regional Studies

LOCAL GOVERNMENT FINANCES

Revenues Minus Expenses

Silicon Valley Cities, Counties of Santa Clara & San Mateo, and California



Silicon Valley cities, in aggregate, are doing much better financially on an annual basis than a decade ago, with revenues in FY 2017-18 exceeding expenses by \$363 million (compared to a net loss of \$480 million in FY 2007-08).

The combined revenues minus expenses of Silicon Valley cities in FY 2017-18 (\$363 million) declined significantly year-over-year, down by 59% (or \$515 million, after inflation adjustment).

Data Sources: Silicon Valley Cities and Counties, Audited Annual Financial Reports; California State Auditor | Analysis: Silicon Valley Institute for Regional Studies

GOVERNANCE Civic Engagement

The share of Silicon Valley voters that register with no political party preference has been increasing steadily over the past four decades, reaching 33% in 2019 (up from 5% in 1970); meanwhile, the share of registered Republicans in the region declined to the lowest it has ever been in the available data, at 16.1%. Silicon Valley's absentee voting rate continued an upward trend, reaching 81% in November 2018 higher than in the state overall (65%) and the highest it has ever been for a general election. Additionally, the eligible voter turnout was higher than any other midterm election in the recent past (at 53%). 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. Comparing the share of eligible voters that were young adults (11.4%) during the 2018 General Election to the share that turned out at the polls (7%) indicates that they were underrepresented.

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. 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 in the available data (back to 1974).

> 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.

32% of Silicon Valley voters were registered with No Party Preference (compared to 27% statewide) as of the October 2019 Report of Registration.

PARTISAN AFFILIATION

Percentage of Registered Voters, by Political Party Santa Clara & San Mateo Counties



Data Source: California Secretary of State, Elections Division | Analysis: Silicon Valley Institute for Regional Studies

The share of Silicon Valley registered voters with no political party affiliation continued an upward trend, reaching a high of 33.5% in February 2019, while the share of registered Republicans declined to the lowest it has been at any time in the available record (back to 1970) of 16.1% in October 2019.

VOTER PARTICIPATITON Eligible Voter Turnout and Absentee Voting, by Election

Santa Clara & San Mateo Counties, and California



Note: Includes even-year General Elections. | Data Source: California Secretary of State, Elections Division | Analysis: Silicon Valley Institute for Regional Studies

California

Santa Clara & San Mateo Counties, San Francisco, and California | 2018 Midterm General Election

San Francisco

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

Eligible Voter Turnout, by Age

Silicon Valley

VOTER PARTICIPATION

80% 70%

60% 50%

40%

30% 20% 10%

0%

18-24

Share of Eligible Voters Who Cast Ballots

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. absentee voting rate has risen steadily over the past several decades reaching 81% in November 2018 compared to 24.2% in 1998 and 4.5% in 1978.

Silicon Valley's

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 in November 2018 was the highest of any midterm general election on record.

Eligible Voter Turnout of Young Adults (Ages 18-24)

	2010	2014	2018
Silicon Valley	22.2%	11.2%	36.0%
San Francisco	19.8%	13.1%	38.6%
California	18.5%	8.2%	27.5%

Share of Eligible Young Adult Voters, and Turnout (Ages 18-24) 2018 General Election

	% Eligible Voters	% Ballots Cast
Silicon Valley	11.4%	7.0%
San Francisco	9.7%	5.6%
California	13.8%	7.3%

Data Sources: California Civic Engagement Project at the USC Price School of Public Policy, Data: Statewide Database (SWDB) and California Department of Finance Analysis: California Civic Engagement Project at the USC Price School of Public Policy

63%

35-44

25-34

61%

45-54

Young adult voters (ages 18-24) were underrepresented at the polls during the 2018 General Election in Silicon Valley, San Francisco, and statewide; in Santa Clara and San Mateo Counties combined, young adults accounted for 11.4% of all eligible voters but only 7% of the ballots that were cast.

68% 60%

65+

57%

55-64

61%

Total

GOVERNANCE

GOVERNANCE

Representation

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.

Local elected officials include 229 councilmembers, mayors, and county supervisors including councilmembers in all 39 Silicon Valley cities across four counties, the 10 county supervisors for Santa Clara and San Mateo Counties, the District 2 Supervisor for Alameda County, and the District 5 Supervisor for Santa Cruz County). Of those 229 seats, 103 were up for election in 2018 and six were up for election in 2019. Of those six seats, all but one councilmember up for election were re-elected; the losing councilwoman was a Democrat who lost to another woman registered as Declined to State.

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 shares 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

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

59% of those newly elected to local office in 2018 were women; the one new councilmember (nonincumbent) elected to local office in 2019 was a woman (Councilmember Linda Mason of San Bruno).

Share of Local Elected Officials, by Gender



Consistent with State and Federal government representation,² women are underrepresented in local elected office in Silicon Valley; however, the share of female local elected officials is quickly approaching proportional representation with a gain of nine percentage points since 2017.

The share of female local elected officials in Silicon Valley (45%) is now much higher than in the state overall (35%).

REPRESENTATION



Share of Local Elected Officials, by Partisan Affiliation Silicon Valley

Note: Includes local elected officials serving on City and Town Councils and County Boards of Supervisors. | Data Source: Grassrootslab (www.grassrootslab.com) | Analysis: GrassrootsLab

2. The Leadership California Institute, Women 2014: The Status of Women in California (www.grassrootslab.com/sites/all/files/Women2014FullReport.pdf).

REPRESENTATION

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.

2019



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).

GOVERNANCE

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%).

Note: Includes local elected officials serving on City and Town Councils and County Boards of Supervisors. Data Source: GrassrootsLab (www.grassrootslab.com) | Analysis: GrassrootsLab

2017

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 toward careers in Engineering, Technology, and Science than those throughout the state as a whole.

The majority of the elected officials serving on City and Town Councils and County Boards of Supervisors in Silicon Valley are Democrats (74%, up from 72% in 2017).

0%

15% of Silicon Valley's local elected officials are Republicans, compared to 16% of the electorate.³

REPRESENTATION Share of Local Elected Officials, by Professional Background



Note: Includes local elected officials serving on City and Town Councils and County Boards of Supervisors. Data Source: GrassrootsLab (www.grassrootslab.com) | Analysis: GrassrootsLab

3. As of the October 1, 2019 Report of Registration (www.sos.ca.gov/elections).

PROFILE OF SILICON VALLEY

Land Area includes Santa Clara and San Mateo counties, Fremont, Newark, Union City, and Scotts Valley. Land Area data (except for Scotts Valley) is from the U.S. Census Bureau: State and County QuickFacts. Land area is based on current information in the TIGER' database, calculated for use with Census 2010. Scotts Valley data is from the Scotts Valley Chamber of Commerce.

Population Data for the Silicon Valley population comes from the E-1: City/County Population Estimates with Annual Percent Change report by the California Department of Finance and are for Silicon Valley cities. Population estimates are for January 2019.

The total number of jobs in the city-defined Silicon Valley region for Q2 of 2019 was estimated by BW Research using Q1 2019 United States Bureau of Labor Statistics Quarterly Census of Employment and Wages data and Q2 2019 reported growth, modified slightly by EMSI, which removes suppressions and reorganizes public sector employment.

Average Annual Earnings Average Annual Earnings for Silicon Valley was calculated by BW Research using data from the United States Bureau of Labor Statistics Quarterly Census of Employment and Wages and modified slightly by EMSI (which removes suppressions and reorganizes public sector employment). Data for Silicon Valley includes San Mateo and Santa Clara Counties, and the Cities of Fremont, Newark, Scotts Valley, and Union City. Earnings include wages and supplements.

Foreign Immigration and Domestic Migration

Poreign immigration and Domestic imgration Data are from the California Dearment of Finance E-2 and E-6 Population Estimates and Components of Change, and include San Mateo and Santa Chara Counties. Estimates for 2019 are preliminary. Ner migration includes all legal and unauthorized foreign immi-grants, residents who left the state to live abroad, and the balance of hundreds of thousands of popple moving to and from California from within the United States. 2000-2010 data were updated with the revision released in December 2011; 1991-1999 data were updated with the revised historical data released February 2005.

Adult Educational Attainment

Data for adult educational artismment are for Santa Clara and San Mateo counties and are derived from the United States Census Bureau, 2018 American Community Survey, 1-Year Estimates. Data reflects the educational attainment of the population 25 years and over. Presentages may not adu pro 100% due to rounding.

PEOPLE

TALENT FLOWS AND DIVERSITY

Population Change

Data are from the California Department of Finance E-2 and E-6 Population Estimates and Components of Change and include San Mateo and Santa Clara Counties. Estimates for 2019 are preliminary.

Net Migration Flows Data are from the California Department of Finance E-2 and E-6 Population Estimates and Components of Change, and include San Mateo and Santa Chara Counties. Estimates for 2019 are preliminary. Net migration includes all legal and unauthorized foreign immi-grants, residents who left the state to live abroad, and the balance of hundreds of thousands of people moving to and from California from within the United States. 2000-2010 data were updated with the revision released in December 2011; 1991-1999 data were updated with the revised historical data released February 2005.

Top 25 Regions for Domestic Out-Migration

100 25 Regions for Joinestic Out-migration Domestic migration data are from the United States Census Bureau, County-to-County Migration Flows using data from the American Community Survey (ACS) 2013-2017 5-Year Estimates. The county-to-county migration flows are created from tabulations of ACS respondents' current county of residence crossed by county of residence 1 year ago. Silicon Valley includes Santa Clara and San Mateo Counties, and migration between those two counties are not included. Values Issed represent annual estimates based on data collected within a five-year span. Areas highlighted on the maps are once that had more than 400 estimated annual domestic in/out migrants to/ from Silicon Valley within a region (as opposed to migrants spread out throughout an entire state).

Characteristics of New Silicon Valley Residents Data are from the United States Census Bureau, 2018 American Community Survey 1-Year Estimates. Silicon Valley includes Santa Clara and San Mateo Counties, and migration between those two counties are included.

Age Distribution; Population Change, by Age Category Data are from the United States Census Bureau, 2018 American Community Survey 1-Year Estimates. Silicon Valley includes Santa Clara and San Mateo Counties

Population Share by Race/Ethnicity Data are from the United States Census Bureau, American Community Survey 1-Year Estimates. Silicon Valley data include Santa Clara and San Marco Counties. Multiple & Other includes American Indian and Alaska Native alone, Native Hawaiian and Other Pacific Islander alone, Some other race alone, and Two or more races. Asian, White, Black or African-American, and Multiple & Other are Non-Hispanic or Lating

Total Number of Births

Data are from the California Department of Finance E-6 Population Estimates and Components of Change by County. Silicon Valley data are for San Mateo and Santa Clara Counties. Estimates for 2019 are preliminary.

Average Age at Time of First Birth & Number of Children Per Woman, by Educational Attainment Level & Nativity Data is from the United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, Natality public-use data. Silicon Valley includes Santa Clara & San Mateo Counties. Average Age of Mother AT Time of First Birth is calculated as the average age of women who gave birth to their first child that year. Women with a bachelor's degree or higher includes Bachelor's degree (MA, MS), Sb, Master's degree (MA, MS), Doctorate (PHD, EdD) or Professional Degree (MD, DDS, DVM, LLB, JD). Women with les than a bachelor's degree (MA, MS), Doctorate (PHD, EdD) or Professional Degree (MD, DDS, DVM, LLB, JD). Women with les than a bachelor's degree (MA, AS), Pade or less, 9th through 12th grade with no diploma, High school graduate or GED completed, Some college credit but not a degree, and Associate degree (AA, AS). The average number of children per women is calculated only for those women who gave birth that years. For 2008 data, those who had given birth to '8 or more'' children were counted as having their 8th child for the purposes of creating an average; for 2018 data, those who had given birth to '8 or more'' children were counted as having their 8th child for the purposes of creating an average. It includes live births only, and is a snapshot in time; it is not a replacement for a true population-level ferrility rate. Data by educational attainment level does not include women whose education attainment level was unknown or excluded Foreign-born women include those born outside of the U.S. (including possessions); native-born women include those born within the 50 U.S. states. 50 U.S. states

Age Distribution

Data are for Stat Clara and San Mateo Counties and are derived from the United States Census Bureau, 2017 American Community Survey, 1-year estimates. Percentages may not add up to 100% due to rounding.

Ethnic Composition

Data are for Starta Clara and San Mateo Counties and are derived from the United States Census Bureau, 2017 American Community Survey. 1-year estimates. Multiple and Other includes Native Hawaiian and Other Pacific Islander Alone, Some Other Race Alone, American Indian and Alaska Native alone, and Two or More Races. Percentages may not add up to 100% due to rounding. White, Asian, and Black or African-American are non-Hispanic.

Foreign Born

Foreign Born Data are for Santa Clara and San Mateo Counties and are derived from the United States Census Bureau, 2018 American Community Survey 1-Year estimates. The Foreign Born Population excludes those who were born at sea. Data for China includes Taiwan. Oceania includes American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Fiedrated States of Micronesia, Naruru, New Caledonia, New Zealand, Northerm Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu, Wallis and Futuna. Percentages may not add up to 100% due to rounding.

Domestic Migration, by Region Domestic migration data are from the United States Census Bureau, County-to-County Migration Flows using data from the American Community Survey (ACS) 2013-2017 5-Year Estimates. The county-to-county migration flows are created from tabulations of ACS respondents' current county of residence crossed by county of residence 1 year ago. Silicon Valley includes Santa Clara and San Mateo Counties, and migration between those two counties are not included. Values listed represent annual estimates based on data collected within a five-year span. Areas highlighted on the maps are notes that had more than 400 estimated annual domestic in/out migrants to/ from Silicon Valley within a region (as opposed to migrants spread out throughout an entire state).

Population by Age & Sex 2018 data are from the California Department of Finance, P-2: County Population Projections (2010-2060), baseline 2016 (accessed December 2019). 1998 data are from the United States Census Bureau, State and County Intercensal Datasets: 1990-2000. Silicon Valley includes Santa Clara and San Mateo Counties.

Educational Attainment

Data for adult educational attainment are for Santa Clara and San Mateo Counties and are from the United States Census Bureau. Data to admic cudantina ataminicar are to sama Data and sam vance Outness and are from the Omite Same Central Surgers and over. American Community Survey 1-Year Estimates Data reflects the educational attainment of the population 25 years and over. Educational Artainment by Race/Ethnicity reflects adults whose highest degree received was either a backbelow's degree or a graduate degree. Multiple and Other includes Two or More Races, Some Other Race, Narive Hawaiian and Other Pacific Blander, and American legger, miniple and Oner includes two or more baces, some Oreas, reary range and one reaction and the same and and sake Native was not available in San Mateo County for 2008 or 2018.

Science and Engineering Degrees Data are from the National Center for Education Statistics. Regional data for the Silicon Valley includes the following post-secondary institutions: Menlo College, Cogwell Polytechnic College, University of San Francisco, University of California (Berkeley, Davia, Santa Cruz, San Francisco), Santa Clara University, San Jose State University, San Francisco State University, Stanford University, and Golden Gate University. Beginning with the 2015 data, California State University-East Bay, International Technological University, and Notre Dame de Namur University ware added. The academic disciplines include: computer and information sciences, engineering, engineering-related technologies, biological sciences/life sciences, mathematics, physical sciences and science technologies. Data were analyzed based on first major and level of degree (bachelor's, master's or doctorate). The year listed represents the end of the school year (e.g., 2017 represents the 2016-2017 school year).

Foreign Born Data for the Percentage of the Total Population Who Area Foreign Born are from the United States Census Bureau, 2018 American Community Survey, 1-Year Estimates. Silicon Valley includes Santa Clara and San Mateo Counties. Data for the Foreign Born Share of Employed Residents Over Age 16, by Occupational Category are from the United States Census Bureau, 2018 American Community Survey Public Use Microdata, and include Santa Clara and San Mateo Counties. Foreign born residents do not include those who were Born Abroad of American Parent(s). Estimates for the foreign born share include employed residents over age 16 who are at work only.

Foreign Language Data for Silicon Valley include Santa Clara and San Mateo Counties, and are from the United States Census Bureau, American Community Survey J. Year Estimates, for the population five years and over. German includes other West Germanic Languages, French includes Haitian or Cajun, Tagalog includes Filipino, Slavic Languages include Russian, Polish, and other Slavic Languages, and Chinese includes Mandarin and Can

Migration of Tech Talent in the Core Working Age Group (25-44) Data are from the United States Census Bureau, 2017 American Community Survey 1-Year Estimates. Data are for the counties associated with the citize listed, and include adults in the core working age group (ages 25-44) with a bachelor's degree or higher, who are employed full-time (35 or more hours per week) in the private sector, and work in Computer, Mathematical, Architectural and Engineering occupations and moved to that specific county within one year of responding to the survey.

Female Tech Talent in the Core Working Age Group (25-44)

Data are from the United States Census Bureau, American Community Survey 1-Year Estimates, and include women ages 25-44 with a bachelor's degree or higher. Technical roles include Computer, Mathematical, Architectural and Engineering occupations. Silicon Valley includes Santa Clara & San Mateo Counties.

Share of Female Employees at Silicon Valley's Largest Technology Companies Analysis includes the 12 largest companies by rank in the Silicon Valley Busines Journal Book of Lists, 2018-2019, and only those for which gender diversity data is disclosed. Companies included are Apple, Google, Gisco, Facebook, Intel, Oracle, Gilead Sciences, Nvidia, Western Digital, Lockheed Martin, Applied Materials, and VMware. The share of female workers is company-wide (or in some cases for the U.S. workforce only), not Silicon Valley-specific. While Tesla Motors is one of Silicon Valley's largest technology companies, it was not included due to lak of available diversity data. The overall regional workforce data by gender are for Santa Clara and San Mateo Counties from the U.S. Census Bureau, 2018 American Community Survey 1-year estimates.

Share of Residents in Technical Occupations with a Bachelor's Degree or Higher, by Place of Origin Data includes all civilian employed workers who reside in San Mateo or Santa Clara Counties, with a bachelor's degree or hi r higher, who

Data includes all civilian employed workers who reside in San Mateo or Santa Clara Counties, with a bachelor's d work in technical occupations (including Computer, Mathematical, Architectural, and Engineering occupations).

ECONOMY

EMPLOYMENT

Total Number of Jobs and Percent Change over Prior Year

Data includes average annual employment estimates as of the second quarter for years 2001 through 2019 from the United States Bureau of Labor Statistics Quarterly Census of Employment and Wages, and includes the entire city-defined Silicon Valley region. Data for Q2 of 2019 was estimated at the industry level by BW Research using Q1 2019 QCEW data and updated based on Q2 2019 reported growth and totals, and modified slightly by EMSI, which removes suppressions and reorganizes public sector employment.

Relative Job Growth

Data is from the United States Bureau of Labor Statistics, Quarterly Census of Employment and Wages for Q2 2007, Q2 2010, Q2 2018, and Q2 2019. The total number of jobs for Q2 of 2019 was estimated by BW Research using Q1 2019 data and Q2 reported growth, modified slightly by EMSI which removes suppressions and reorganizes public sector employment.

Major Areas of Economic Activity

Major Areas of Economic Activity Data includes average annual employment estimates as of the second quarter from the United States Bureau of Labor Statistics Quarterly Census of Employment and Wages, and includes the entire city-defined Silicon Valley region. Data for Q2 of 2019 was estimated at the industry level by BW Research using Q1 2019 QCEW data and updated based on Q2 2019 reported growth and totals, and modified slightly by EMSI, which removes suppressions and reorganizes public sector employment. Community Infrastructure & Services includes Healthcare & Social Services (including state and local government jobs); Retail; Accommodation & Food Services; Education (including state and local government jobs); Construction; Local Government Administration; Transportation; Banking & Financial Services; Arts, Entertainment & Recreation; Personal Services; Federal Government Administration; Transportation; Banking & Services; State Government Administration; Warehousing & Storage; and Utilities (including state and local government jobs). Innovation and Information Products & Services; Includes Computer Hardware Design & Manufacturing; Semiconductors & related Equipment Manufacturing; Internet & Information Pervices; Technical Research & Development (Include Life Sciences); Oftware; Telecommunications Manufacturing & Services; Intrument Manufacturing (Navigation, Measuring & Electromedical); Pharmaceuticals (Life Sciences); Other Media & Broadcasting, including Publishing; Medical Devices (Life Sciences); Biotechnology (Life Sciences); and I.T. Repair Services. Busines Infrastructure & Services indudes Como Offices; Design, Architecture & Engineering Services; Technical & Management Consulting Services; Facilities; Management Offices; Design, Architecture & Engineering

Services; Goods Movement; Legal; Investment & Employer Insurance Services; and Marketing, Advertising & Public Relations. Other Manufacturing includes Primary & Fabricated Metal Manufacturing; Machinery & Related Equipment Manufacturing; Other Manufacturing; Transportation Manufacturing including Aerospace & Defense; Food & Beverage Manufacturing; Textiles, Apparel, Wood & Furniture Manufacturing; and Petroleum and Chemical Manufacturing (Not in Life Sciences).

wood oc rumnure Manufacturing and Petroleum and Chemical Manufacturing (Not in Life Sciences). **Employment by Tier** Employment by Tier data are from the U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and modified slightly by EMSI to remove suppressions and reorganize public sector employment. 2019 data are estimates based on QCEW 2019 Q2 employment at the industry level using 2019 Q1 data, and updated based on 2019 Q2 reported growth and totals reported, and modified slightly by EMSI to Cocupational segmentation into teirs has been recently adopted by the California Employment Development Department (EDD), and implemented over the last several years by BW Research for regional occupational analysis. Occupational segmentation allows for the in-depth examination of the quality and quantity of jobs in a given economy. This occupa-tional segmentation technique delineates the majority of occupations into one of three tiers. Tier 1 Occupations include managers (Chief Executives, Financial Managers, and Lagieness, and Lagieness, and are gripcilly the highest-paying, highest-skilled occupations in the economy. Tier 2 Occupations include sales positions (Sales Representatives), teachers, and Iray finguing, operations, and Production positions (Ascemblers, Electricians, and Machinists). They have historically provided the majority of employment opportunities and may be referred to as middle-wadge, middle-skill positions. The 3 Occupations include protective services (Security Gurads), food service and reali positions (Waiters, Cools, and Cashiers), building and grounds cleaning positions (Janitors), and personal care positions (Home Health Aides and Child Lave Workers).

Monthly Unemployment Rate

Monthly unemployment rates are calculated using employment and labor force data from the Bureau of Labor Statistics, Current Population Statistics (CPS) and the Local Area Unemployment Statistics (LAUS). Rates are not seasonally adjusted. County-level and California data for November 2019 are preliminary.

ECONOMY continued

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

omeniproyed residents and the Working Age Population, by Race & Ethnicity Data is from the U.S. Census Bureau, American Community Survey 1-Year Estimates. Silicon Valley includes Santa Clara and San Mateo Counties. The data counts the number of unemployed persons, as well estimates the total population in each racial/ethnic caregory for residents 16 years of age and older. Other includes the categories Some Other Race and Two or More Races. White is non-Hispanic or Latino. Data are limited to the household population and exclude the population living in institutions, college dormitories, and other group quarters.

Labor Force Participation

Data is from the United States Census Bureau, American Community Survey 1-Year Estimates. Silicon Valley includes Santa Clara and San Marco Counties. The labor force participation rate is calculated as the number of employed workers plus those who are unemploye but looking for a job, divided by the torola working-age population.

Top U.S. Tech Talent Centers

Top U.S. Tech Talent Centers Data is from the CBRE 2019 Scoring Tech Talent report, Scoring Tech Talent is a comprehensive analysis of labor market conditions, cost and quality in the U.S. and Canada for highly skilled tech workers. The top-50 markets were ranked according to their competitive advantages and appeal to tech employers and tech talent using data from the U.S. Bureau of Labor Statistics and other sources. Tech Talent includes the following occupation categories: software developers and programmers; computer support, database and systems; technology and engineering related; and computer and information system managers. Tech talent workers comprise 20 different occupations, which are highly concentrated which in the high-tech services industry but are spread across all industry sectors. Using this definition, a software developer who works for a logistics or financial services company is included in the data. occupations, which are definition, a software dev

INCOME

Per Capita Personal Income

Per capita values are calculated using personal income data from the U.S. Department of Commerce. Bureau of Economic Analysis and Per capita values are calculated using personal income data from the U.S. Department of Commerce, Bureau of Economic Analysis and population ingures from the U.S. Cenus Bureu mid-year population estimates. Silicon Valley data are for Stant Clara and San Marco Counties. All per capita income values have been inflation-adjusted and are reported in 2018 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley data, the California aconsumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2019) for California data, and the U.S. city average consumer price index for all urban consumers from the Galifornia to supersoft of the Bureau of Labor Statistics. The personal per capita income for the United States is derived from state and regional data (so opposed to National Income and Product Accounts data), which include all persons who reside in a state, regardless of the duration of residence, except for foreign nationals employed by their home governments in the United States—regardless of length of residency. It excludes the portion of income actuades the portion of usident data and you (Sater State personal Income includes the portion of income earned abroad by U.S. citizens living abroad for less than a year. It also excludes the carnings of federal civilian and military personnel stationed abroad and the property income received by the federal pension plans of those workers.

Per Capita Income by Race & Ethnicity Data for per Capita Income are from the United States Census Bureau American Community Survey 1-Year Estimates. All income val-ues have been inflation-adjusted and are reported in 2018 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley and San Francisco data, the California consumer price index for all urban consumers from the United States Census Bureau (Alfornia consumer price index for all urban consumers from the California to Silicon Valley and San Francisco data, the California chay and Urban consumers from the California to Summers from the United States Counties. Per capita income is the mean money income received computed for every man, woman, and child in a geographic area. It is derived by dividing the total income of all poople 15 years old and over in a geographic area by the total population in thar area. Income is not collected for people under 15 years old and over in a geographic area by the total population in thar area. This measure is rounded to the nearest whole dollar. Money income includes amounts reported separately for wage or salary income; ent self-employment income; Supplemental Security Income (SSI); public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income. Population data used to compute per capita values are from the United States Census Bureau, American Community Survey 1-Year Estimates. Multiple & Other includes Native Hawaiian & Other Pacific Islander Alone, American Indian & Alaska Native Alone, Some Other Race Alone and Two or More Races; White, Asian, Black or African American, Multiple & Other are non-Hispanic. Other are non-Hispanic

Individual Median Income, by Educational Attainment Data for Median Income by Educational Attainment rare from the U.S. Census Bureau American Community Survey, 1-Year Estimates and include the population 25 years and over with earnings. All income values have been inflation-adjusted and are reported in 2018 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley and San Francisco data, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2019) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics. Silicon Valley data includes Santa Clara and San Mateo Counties. The 2008 value for those with a graduate or professional degree is for San Mateo County only because the Santa Clara County data reported median income in that category as \$100,000+.

Average Wages Average wages are from the U.S. Bureau of Labor Statistics, QCEW data modified slightly by EMSI to take into account yearly changes in methodology and occupational classifications. Average wage data for San Mateo County exhibited an abnormally large increase between 2011 and 2012, which may be reflective of methodological changes in data collection. Wages have been inflation-adjusted and are reported in 2019 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for the Bay Area data, 2019 estimate based on January-August, the California aonsumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2018) for California data.

Median Wages for Various Occupational Categories

Median Wages for Various Occupational Categories Data are from the California Employment Development Department, Employment and Wages by Occupation, 2010-2019, for the San Jose-Sunnyale-Santa Clara Merropolitan Statistical Area (MSA), including Santa Clara and San Benito Counties, and the San Francisco-Radwood City MSA, including Marin, San Francisco, and San Mateo Counties. The San Francisco-Redwood City-South San Francisco Merropolitan Division replaced the San Francisco-Radwood City MSA in 2017. Wages have been inflation-adjusted and are reported in 2019 dollars using the Bay Area consumer price index for all urban consumer from the Bureau Of Labor Statistics for the Bay Area data, 2019 estimate based on January-Augus, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2019) for California data. Maragement, Business, Science and Arts Occupations include Management; Business and Financial Operations; Computer and Mathematical, Architecture and Engineering. Life, Physical, and Social Science; Community and Social Services; Legal; Education, Training, and Libary; Arts, Design, Entertainment, Sports, and Media; and Healthcare Practitioners and Technical Occupations. Service Occupations include Healthcare Support: Protective Service; Construction and Maintenance; and Personal Care and Service Occupations. Sales and Office Occupations. Include Faming, Fishing and Fordistrive Support Occupations. Natural Resource; Construction and Maintenance Occupations include Faming, Fishing and Family: Construction and Estraction; and Irasplation, Maintenance and Repair Occupations. Production, and Material Moving Occupations include Production; and Transportation and Maiterial Moving Occupations.

Incluse Houletton, and Hamportation and Materian Moving Occupations. Median Wages by Tier data are based on Occupational Employment Statistics from the U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) and modified slightly by EMSI county-level earnings by industry. 2019 data are estimates based on QCEW 2019 Q1 data. Occupational segmentation into tiers has been recently adopted by the California Employment Development Department (EDD), and implemented over the last several years by BW Research for regional occupational analysis. Occupational segmentation allows for the in-depth examination of the quality and quantity of jobs in a given economy. This occupa-tional segmentation technique delineates the majority of occupations into one of three tiers. Tier 1 Occupations include managers (Chief Executives, Financial Managers, and Sales Managers), professional positions (Lawyers, Accountants, and Physicians) and highly-skilled technical occupations, such as Scientists, Computer Programmers, and Engineers, and are typically the highes-paying, highest-skilled occupations in the economy. Ther 2 Occupations include also positions (Sale Representative), techers, and liberdinatis, office and administrative positions (Accounting Clerks and Secretaries), and manufacturing, operations, and production positions (Assemblers, Electricians, and Machinisty). They have historically provided the majority of enployment opportunities and may be referred to as middle-wage, middle-skill positions typically provided learning positions (Home Health Aides and Child Care Workers). These occupations typically the engloyment opportunities and may be referred to as middle-wage, middle-skill, positions typically the majority of cuards), food service and retail positions (Waiters, Cooks, and Cashiers), building and grounds cleaning positions (Janitors), and personal care positions (Home Health Aides and Child Care Workers). These occupations typically tersen tower-skilled service positions with l

Average Wages for Full-Time Workers, by Sex Data is from the United States Census Bureau, American Community Survey Public Use Microdata (PUMS), and includes all full-time (35 or more hours per week) workers over age 15 with earnings. Silicon Valley data includes Santa Clara and San Mateo Counties.

Median Household Income

Data for Median Household Income are from the U.S. Census Bureau American Community Survey 1-Year Estimates, All income val Data for Median Household Income are from the U.S. Census Bureau American Community Survey I-Year Estimates. All income val-ues have been inflation-adjusted and are reported in 2018 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley data, 2018 estimate based on January-August, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2019) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics. Silicon Valley data include Stanta Chara and San Marco Counties. Median household income for Silicon Valley was estimated using a weighted average based on the county population figures from the California Department of Finance E-4 Population Estimates for Cities, Counties, and the State.

Percent Change in the Number of Households by Income Range; Share of Households With Income of \$200,000 or More Annually Data for Distribution of Income and Housing Dynamics are from the U.S. Census Bureau American Community Survey, 1-Year Estimates. Income ranges for 2014-2018 household counts by income category are based on inflation-adjusted 2018 dollars, 2013

counts are based on inflation-adjusted 2017 dollars, and 2010-2012 counts are based on inflation-adjusted 2015 dollars. Silicon Valley Units at a baccom of many data the act of rooms, iso normalises and the sound of a coaccommandor-apparted sort of the sound of a coaccommandor-apparted sort of the sound of t survivor, or disability pensions; and All other income

Wealth

Wealth Data are from the Phoenix Global Wealth Monitor (2018 data procured December 2019), and include Santa Clara and San Mateo Counties. Investable Assets include education/custodial accounts, individually-owned retirement accounts, stocks, options, bonds, mutual funds, managed accounts, hedge funds, structured products, ETFs, cash accounts, annuities, and cash value life insurance. The Phoenix Wealth and Affluent Monitor (WEAMD) U.S. Sizing Report is intended to provide estimates of the number of affluent and High Net Worth households in the country. Sizing estimates are provided at the state level as well as by Core-Based Statistical Areas (CBSAs), which is comprised of Metropolitan and Micropolitan Statistical Areas (there are currently 933 in the country). The W&AM sizing estimates are developed using a combination of sources including the Survey of Consumer Finance, as well as Nielsen-Claritas. National data and closely linked variables are used to obtain estimates at the local level; thus, the country-level data are approximations only. only

Gini Coefficients of Income Inequality Data are from the U.S. Census Bureau, American Community Survey Public Use Microdata. Silicon Valley data include Santa Clara and San Mateo Counties. The Gini coefficient indicates the degree to which incomes are concentrated. A Gini of zero corresponds to no concentration, or incomes that are the same across all households. A Gini of 100 indicates that all income is concentrated in a single household. Figures between 0 and 100 indicate proximity to either endpoint.

Poverty Status Data for the percentage of the population living in poverty are from the U.S. Census Bureau, American Community Survey 1-Year Estimates. Silicon Valley data include Sam Mateo and Santa Clara Counties. Data for the share of children living in poverty include the population under age 18 for which poverty status is determined. Following the Office of Management and Budget's (OMB's) Directive 14, the Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If the total income for a family or uncreated individual falls below the relevant poverty threshold (e.g., household income of \$25,100 for a family of four in 2018 within the 48 contiguous states and the District of Columbia), then the family (and every individual is it) or unrelated individual is considered in poverty. Multiple and Other includes Some Other Race Alone and Two or More Races. White is non-Hispanic or Latino.

Self-Sufficiency Data is from the Self-Sufficiency Standard for California, from the Center for Women's Welfare at the University of Washington School of Social Work. Silicon Valley data includes Santa Clara and San Mateo Counties. Developed by Dr. Diana Pearce, the Self-Sufficiency Standard defines the amount of income necessary to meet basic needs (including taxes) without public subsidies (e.g., public housing, food stamps, Medicaid or child care) and withour private/informal assistance (e.g., free babysitting by a relative or friend, food provided by churches or local food banks, or shared housing). The family types for which a Standard is calculated range from one adult with no children, to one adult with one infant, one adult with one preschooler, and so forth, up to three-adult households with sit teenagers. Asian/Pacific Islander, Black, White, and Other are non-Hispanic or Latino. 2018 data was based on the 2016 ACS 1-Year Estimates, with updated cost estimates and earnings inflation-adjusted to 2018. Self-Sufficiency wages for 2019 were estimated using the 2018 Self-Sufficiency Standard wages, and inflating them to 2019 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics, 2019 estimate based on January-August data.

the bureau of Labor Matthics, 2019 estimate based on january-August data. Free or Reduced-Price School Meals Data includes students ages 5-17 who have a primary or short-term enrollment in the school on Fall Census Day. Free and Reduced Meal Program (FRMP) information is submitted by schools to the Department of Education in January. The 2018-19 data were from the October 2018 data collection, certified as of January 31, 2019. Data files include public school enrollment and the number of students eligible for free or reduced-price meal programs. Data for Silicon Valley include the ciry-defined region. A child's family income must fall below 130% of the federal poverty guidelines (\$32,630 for a family of four in 2018-2019) to qualify for reduced-cost meals, students may be eligible for free or reduced-price meals based on applying for the National School Lunch Program (NELP), or who are determined to meet the same income eligibility criteria as the NSLP through their local schools, or their homeless, migrant, or foster status in O CALPADS, or those students "directly certified" as participating in California's food stamp program. Years presented are the final year of CALPADS, or those students "directly certified" as participating in California's food stamp program. Years presented are the final year of CALPADS, or those students "directly certified" as participating in California's food stamp program. Years presented are the final year of Storic provide data. The Nor Public Schools (NPS) and adult schools included in the CALPADS data were excluded from the analysis for consistency, because they were not included in past FRPM files. Because the 2012-2013 data had a large number of schools reporting enrollment and percent eligible but not eligible student counts, counts were estimated by multiplying enrollment muthe eligiblity rate and rounding to the nearest whole number. The table of the top ten school districts in Silicon Valley by the share of students receiving free or reduced-price meals onl

Estimated Share of the Population that is Food Insecure

Estimated Share of the Population that is Food Insecure Data is from Map the Meal Gap 2019: A Report on County and Congressional District Food Insecurity and County Food Cost in the United States in 2017 (Feeding America, 2019), Map the Meal Gap 2018: A Report on County and Congressional District Food Insecurity and County Food Cost in the United States in 2016 (Feeding America, 2018), and Map the Meal Gap 2017: Food Insecurity and Child Food Insecurity Faitmates at the County Level (using 2015 data). Silicon Valley data includes Santa Clara and San Mateo Counties. Food Insecurity refers to USDA's measure of lack of access, at times, to enough food for an active, healthy life for all household insecure all the time. Food insecurity may reflect a household's need to make trade-offs between important basic needs, such as housing or medical bills, and purchasing nutritionally adequate foods. Food-insecure households are not necessarily food insecure all the time. Food insecurity and pederate household's need to make trade-offs between important basic needs, such as housing or medical bills, and purchasing nutritionally adequate foods. Food-insecure households are not necessarily food they even food insecurity and adequate foods. Teaceding America estimated food insecurity rates at the county level using a state-level relationship between food insecurity and poverty, unemployment, homeownership, etc.) are first analyzed at the state level. Then, the coefficient estimates from this analysis are used in conjunction with the same variables from the county level Shortfall is calculated using responses from food insecure households on the Current Population Survey (CPS) at the individual level and food-insecure households multiplied by the additional money needed per person per week, times 52 weeks per year for a period of seven months (using the U.S. Department of Agriculture finding that food-insecure households are food insecure in seven months during the year).

Meals Provided to Vulnerable Households

Interact Fuvines to Vulnerable Households The Hunger Index analysis is conducted by the Center for Food Innovation and Entrepreneurship at Santa Clara University's Leavey School of Business, through a partnership with Second Harvest of Silicon Valley. The Index measures the gap between the need for food in Santa Clara and Son Mateo counties and the ability of the most vulnerable individuals to get food either on their own or with the help of federal food-assistance programs such as CallFresh and Iocal non-profit organizations like Second Harvest. Other food assistance programs include Senior Nutrition, Summer Meals, School Meals (Breakfast, Lunch - Free and Reduced-Price), WIC, CACFP and other sources.

INNOVATION & ENTREPRENEURSHIP

Productivity Value added per employee is calculated as gross domestic product (GDP) divided by the total employment. GDP estimates the market value of all final goods and services. Data are from Moody's Economy.com. The employment estimates use historical data through 2016 (counties) and 2018 (California and U.S.), and forecasts updated on 12/10/2019 (U.S. data), 12/12/2019 (California data), and 12/20/2019 (Silicon Valley and San Francisco); the GDP estimates use historical data through 2018 and forecast updated on 12/10/2019 (U.S. data), 12/12/2019 (California data) and 12/27/2019 (Silicon Valley and San Francisco). All GDP values have been inflation-adjusted and are reported in 2019 dollars using the Bay Area consumer price index for all urban consumer sfrom the Bureau of Labor Statistics for Silicon Valley data, San Jue seitimate based on January-August, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2019) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics. Silicon Valley data san California data Mateo Counties.

Mateo Countres.
Patent Registrations
Patent ata is provided by the United States Patent and Trademark Office and consists of Utility patents granted by inventor. Geographic
designation is given by the location of the first inventor named on the patent application. Silicon Valley patents include only those
filed by residents of Silicon Valley. Other Includes: Teaching & Amusement Devices, Transportation/Vehicles, Motors, Engines and
Pumps, Dispensing & Material Handling, Food, Plant & Animal Husbandry, Furniture & Receptacles, Apparel, Textiles & Fastening,
Body Adornment, Nuclear Technology, Ammunition & Weapons, Earth Working and Agricultural Machinery, Machine Elements or
Mechanisms, and Superconducting Technology. The technology area categorization method was slightly modified in 2012, resulting
in minor changes to the proportion of patents in each technology area relative to previous years. Population estimates used to calculate
the number of patents granted per 100,000 people were from the California Department of Finance, E-1: City/Coumy Population
Estimates with Annual Percent Change. Beginning in 2015, the USPTO stopped classifying patents in the United States Patent
Classification (USPC) and began using the Cooperative Patent Classification (CPC), so some USPC codes were unavailable. In those
cases, unofficial routing classifications were used in place of the missing UPSC classifications. This process may create some minor
inconsistencies between the 2015 and previous years' data sorted by Technology Area.

Venture Capital Investment; Top Venture Capital Deals; Megadeals

Data for 2000-2016 are from the MoneyTice" Report from PricewaterhouseCoopers and the National Venture Capital Association, using data from CB Insights (beginning with Q4 2015) and Thomson Reuters (prior to Q4 2015). 2017-2019 data are from Thomson ONEs as of January, 2020. Silicon Valley includes the city-defined region. All Values have been inflation-adjusted and are reported in 2019 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley

ECONOMY continued

and San Francisco data, 2019 estimate based on January-August, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2019) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics. Megadeals include those over \$100 million each. Top Venture Capital Deals were cross-referenced with Crunchbase.

Venture Capital by Industry

Data are from the MoneyTree™ Report from PricewaterhouseCoopers and the National Venture Capital Association (with data from CB Insights). 2019 data include Q1-3. Greater Silicon Valley includes Santa Clara County; Fremont, Newark, and Union City in Alameda County; Atherton, Belmont, East Palo Alto, Foster City, Menlo Park, Portola Valley, Redwood City, San Carlos, San Mateo, and Woodside in San Mateo County; San Benito, Santa Cruz, and Monterey Counties; San Francisco, Alameda, Marin, Contra Costa, and San Mateo Counties. Industries included in the Moneytree report are defined as follows: Agriculture (all aspects of farming, including crop production and health, animal production and wellness, as well as machinery, products, and related activities), Automotive and Transportation (all elements of travel by air, automobile, train, trucking, and other forms of transportation; also addresses manufacturing, parts, and maintenance), Business Products and Services (All business needs and associated services: advertising, PR, HR, staffing, training records keeping, legal services, consulting, office supplies and furniture, information services, hardware, facilities, and more; also covers associated services like commercial printing, outsourcing, and packaging), Computer Hardware & Services (Physical computing devices and related services, though specifically not the software used on those machines; includes personal and business computers, networking equipment, leasing companies, peripherals, handhelds, servers, supercomputers, gaming devices, and IT services), Consumer Products and Services (all goods and services for personal use, not Business or Industrial, including but not limited to: appliances, automotive services, rentals, consumer electronics, clothes, home furnishings, jewelry, pet products, tobacco, toys and games), Electronics (Concerned mainly with electronic components like chips, semiconductors, switches, motors, testing equipment, and scientific instruments; also related manufacturing services), Energy and Utilities (energy production, distribution, and storage, including fossil fuels, renewables, electric power companies, companies focused on energy efficiency, as well as companies researching new energy sources or technologies), Environmental Services & Equipment (companies that deal with repairing damage after an environmental event has occurred or aim to help limit the negative ecological impact of an event or company; this includes environmental and energy consulting, hazardous waste services, recycling, cleanup, and solid waste), Financial (companies dealing with wealth in any form, including but not limited to: accounting, banking, credit and collections, investments, online payments companies, and lending), Food & Beverages (food and drink of all kinds: retail and wholesale, fresh ingredients, prepared and canned items, and foodservice, but not restaurants Leisure; also includes food safety, flavoring and condiments, alcoholic products, and distribution), Healthcare (all aspects of medical care and wellness: diagnosis, drug development and distribution, medical products and facilities, healthcare plans, and alternative treatments and elective procedures), Industrial (equipment and facilities that are neither commercial nor residential/consumer and all related applications; mainly concerned with materials, facilities, heavy machinery, and construction), Internet (online applications, but neither the hardware on which they are run nor the ISPs that make transactions possible; all ecommerce sites are included, as are webhosting services, browser software, online advertising, email, online communications platforms of all kinds, online learning, video, and more), Leisure (in-person entertainment like movie theaters, casinos, lodging, restaurants of all kinds, sporting events, gyms, and recreation facilities), Traditional Media (all forms of non-Internet entertainment that is also not in-person - see Leisure; includes film, video, music, publishing, radio, and television), Metals & Mining (companies involved with extracting raw materials from the earth and their processing; larger categories contained herein include aluminium, coal, copper, diamonds and precious stones, precious metals, and steel; additionally the brokering and distribution of these items), Mobile & Telecommunications (communications companies and associated technologies, from overarching categories like fiber optics, telecom equipment, infrastructure, towers, and RFID systems to applications like mobile software, mobile commerce, and the telecom companies that facilitate communication over their networks), Non-Internet/ Mobile Retail (brick-and-mortar retail locations of all kinds: clothes, electronics, appliances, physical media, grocery, office supplies, and every other item purchased in person that is not a leisure activity - see Leisure), Risk & Security (Security services and products that operate primarily in the physical world and encompass personal protective equipment, security and surveillance equipment, security guard companies, consultants, and more), and Non-Internet/Mobile Software (Software not covered under "Mobile" or "Internet"; It can be hosted on a user's machine or accessed remotely and can be used for any application; in this category, the software itself is the user's primary concern, not the delivery method as in Internet and Mobile categories).

Angel Investment

Data is from Crunchbase and includes the entire city-defined Silicon Valley region, San Francisco, and California. The analysis includes disclosed financing data for Angel Deals (may include small VCs or family funds or individuals, or may just be noted as an Angel round by the company itself), and seed stage investments that included at least one Angel investor. Angel Deals are typically pre-seed and are nor necessarily tied to equity. 2017-2019 data were extracted in January. 2020. Investment amounts have been inflation-adjusted and are reported in 2019 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley and San Francisco data, 2019 estimate based on January-August, and the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2019) for California data. Starting with the 2016 data, Crunchbase 'statistic' were used which automatically convert currencies; prior to that, foreign currencies were excluded.

SOCIETY

PREPARING FOR ECONOMIC SUCCESS

Graduation and Dropout Rates; College Preparation

Students meeting UC/CSU requirements includes all 12th grade graduates completing all courses required for University and/or California State University entrance. Ethnicities were determined by the California Department of Education. Any student ethnicity pools containing 10 or fewer students were excluded in order to protect student privacy. Multi/None includes both students of two or more races, and those who did not report their race. All races/ethnicities other than Not-Hispanic or Latino are non-Hispanic. Silicon Valley includes all students attending public high school in San Mateo and Santa Clara Counties, as well as those in Scotts Valley Unifed School District, New Haven School District, Fremont Unified School District, and Newark Unified School District. Dropout and graduation rates are four-year adjusted rates. The adjusted rates are derived from the number of cohort members who earned a regular high school diploma (or dropped out) by the end of year 4 in the cohort divided by the number of first-time grade 9 students in year 1 (starting cohort) plus students who transfer in, minus students who transfer out, emigrate, or die during school years 1, 2, 3, and 4. Years presented are the final year of a school year (e.g., 2011-2012) is shown as 2012). Dropout and graduation rates do not add up to 100% due to GED completions, those in the cohort who are still enrolled, and also due to suppressed data in some counties/districts for certain racial/ethnic groups. Due to the changes in the methodology for calculating the 2016–17 Adjusted Cohort Graduation Rate and subsequent years, the California Department of Education strongly discourages against comparing the 2016–17 and subsequent years.

Math Proficiency

Data for 2015-2019 are from the California Department of Education, California Assessment of Student Performance and Progress (CAASPP). Beginning with the 2013-14 school year, CAASPP became the new student assessment system in California, replacing the Standardized Testing and Reporting (STAR) system. 2019 CAASPP Test Results are from tests administered in 2019. The share of eighth-graders meeting or exceeding the standard includes students who have made progress and met or exceeded the grade standard, and who appear to be ready for future coursework. Data for 2006 through 2013 are from the California. In 2003, the CST replaced the Stanford Achievement Test, ninth edition (SATP). The CSTs in English-language arts, mathematics, science, and history-social science were administered only to students in California public schools. Except for a writing component that was administered as part of the grade for and grade seven English-language arts tests, all questions were multiple-choice. These tests were developed specifically to assess students knowledge of the California content standards. The State Board of Education adopted these standards, which specify what all children in California are expected to know and be able to do in each grade or course. Through the 2012-13 school year, the Algebra 1 CSTs were required for students who were reported in the grade/course at the time of testing or who had completed a course during the school year, including during the previous summare. In order to protect student confidentiality, no scores were reported in the CST research files for any group of ten or fewer students. The following types of scores are reported by grade level and content area for each school, district, county, and the state: % Advanced, % Proficient, % Basic, % Below Basic, and % Far Below Basic, and are rounded to the nearest

Startups

Data for seed and early-stage companies, and for total number of startups include funding from any type of investor. Startup companies are defined as those receiving funding that year. Silicon Valley data include the city-defined region, and includes Headquarters Location only. Share of Startup Companies Founded by Women includes companies where at least one founder identified as Female, and the share is calculated using companies in which the founders were identified as either male or female. Data are as of January 3, 2020.

Initial Public Offerings

Data is from Renaissance Capital. Locations are based on the corporate address provided to Renaissance Capital. Silicon Valley includes the city-defined region. Rest of California includes all of the state except Silicon Valley for 2007-2012, and all of the state except Silicon Valley and San Francisco for subsequent years.

Mergers & Acquisitions

Data are from FactSet Research Systems, Inc, and are based on M&A Activity in Joint Venture's zip code-defined Silicon Valley region. Transactions include full acquisitions, majority stakes, minority stakes, club-deals and spinoffs. Silicon Valley and San Francisco deals include those involving one or more Silicon Valley or San Francisco company. 2019 data accessed January 9, 2020.

Nonemployer Trends

Data for firms without employees are from the U.S. Census Bureau, which uses the term 'nonemployers'. The Census defines nonemployers as a business that has no paid employees, has annual business receipts of \$1,000 or more (\$1 or more in the construction industries), and is subject to federal income taxes. Most nonemployers are self-employed individuals operating very small unincorporated businesses, which may or may not be the owner's principal source of income. Silicon Valley data include Santa Clara and San Mateo Counties.

COMMERCIAL SPACE

Commercial Space; Commercial Vacancy; Commercial Rents; Commercial Office Space Under Construction and Share Pre-Leased to Tech Firms

Data represents the end of each annual period unless otherwise noted. Commercial space includes Office, Industrial, and R&D space. The JLL inventory includes all development above 35,000 square feet, with the exception of Downtown Palo Ato and Downtown Mountain View, and all R&D development above 10,000 square feet. The data included in this report does not include owner/user developments. Silicon Valley data include San Mateo County, Santa Clara County, and the City of Fremont. Bay Area data include entire nine-county region. Average office space asking rents are 'Full Service Gross' (FSG), which is the monthly rental rate and includes common are maintenance fees, utility fees, and taxes/insurance fees, Industrial and R&D asking rents are quoted "triple net" (NNN), which is the monthly base rental rate in which common area maintenance fees, utility fees, and taxes/insurance fees are excluded. The vacancy rate is the amount of unoccupied space, and is calculated by dividing the direct and sublease vacant space by the building base. The vacancy rate does not include occupied space, and is calculated as the change between Q4 and Q4 of the prior year. Net absorption is the change in occupied space during a given time period. Average asking rents have been inflation-adjusted and are reported in 2019 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley data, 2019 estimate based on January-August. Near transit is defined as located within a ten-minute walk for a Clarin, BART, or VTA station.

Hotel Development

Data is from the Atlas Hospitality Group annual California Hotel Development Surveys. Data for 2009-2013 was unavailable, as reports were not published due to lack of significant hotel development. New Hotels include those that opened within a given year. Rest of Silicon Valley includes Freemon, Newark, Union City, and Scotts Valley.

Amount of Commercial Space Occupied by Major Tech Tenants

Data are from Colliers International Silicon Valley, and represent the aggregate amount of space owned or leased by five major tech tenants (Amazon.com, Apple, Facebook, Google, and LinkedIn) in Silicon Valley between 2013 and Q3 of 2019. Not all space is currently occupied (some has been leased but involves redevelopment or was under construction at the time the leases were executed). Silicon Valley includes Stant Clara County plus Fremon. Facebook space includes the Menlo Park campus in San Mateo County.

Computer & Internet Access

Data for Silicon Valley include Santa Clara and San Mateo Counties, and are from the United States Census Bureau, American Community Survey 1-Year Estimates. For the Share of Households Without Internet Access At Home, by Income Range table, low-income includes households with an annual income of less than \$35,000, and high-income households include those with an annual income of \$75,000 or more. Children include residents ages 18 and under.

Average Internet Speeds

Data is from Measurement Lab (M-Lab), an an open source project with contributors from civil society organizations, educational institutions, and private sector companies led by teams based at Code for Science & Society, New America's Open Technology Institute, Google, and Princeton University's PlanetLab. Speeds are in Megabits per second. The Silicon Valley numbers are weighted averages based on the number of speed tests performed. A total of 1.23 million speed tests were performed in Silicon Valley cities in 2019. Data were not available for several cities (Colma, Hillsborough, Woodside, Los Altos Hills, and Monte Sereno) and so those cities were not included in the regional average.

EARLY EDUCATION & CARE

Preschool Enrollmer

Data for preschool enrollment are for San Mateo and Santa Clara Counties, California, and the United States. The data are from the United States Census Bureau, American Community Survey 1-Year Estimates. Percentages were calculated from the number of children ages three and four that are enrolled in either public or private school, and the number that are not enrolled in school.

English Language Arts Proficiency

Data are from the California Department of Education, California Assessment of Student Performance and Progress (CAASPP). Beginning with the 2013–14 school year, CAASPP became the new student assessment system in California, replacing the Standardized Testing and Reporting system (STAR). 2019 CAASPP Test Results are from tests administered in 2019. The share of third-graders meeting or exceeding the standard includes students who have made progress and met or exceeded the grade standard, and who appear to be ready for future coursework. Silicon Valley data for American Indian or Alaska Native students does not include San Mateo County because data was not available.

Annual Average Child Care Costs

Data are from the California Department of Education via Kidsdata.org, the California Child Care Resource and Referral Network (California Child Care Portfolio), and the 2016 Regional Market Rate Survey of California Child Care Providers prepared by ICF Macro. Child care centers are facilities that provide care for infants, toddlers, preschoolers, and/or school-age children during all or part of the day. Family Child Care Homes are child care centers located in the home of a licensed provider, and have no more than 14 children in total. Infants include children under 2 years old. Preschoolers include children ages 2 to 5. Silton Valley is calculated as the average of Santa Cara and Sam Mateo County child Care costs. 2019 Oost have been estimated using 2018 market rate data.

SOCIETY *continued*

inflation-adjusted to 2019 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley data, 2019 estimate based on January-August, and the California consumer price index for all urban consumers from the California data.

Monthly In-Home Child Care Costs

Data are from the Care.com Care Index. Silicon Valley data reflects the San Jose Metro Area. The Care Index draws on unique proprietary data from Care.com member job postings and caregiver reviews, as well as publicly available data from other organizations including the U.S. Census Bureau, Bureau of Labor Statistics, the National Association for the Education of Young Children (NAEYC), and the National Association for Family Child Care (NAFCC). A survey conducted by Care.com in October 2015 provides additional data on paid child care arrangements in each state among households with children.For the purposes of the Care Index, cost refers to the cost of 40 hours per week of care for 52 weeks for one child. Cost data for nannies is based on Care.com hourly rates offered in jobs posted by families seeking full-time child care. The Care Index data were inflation-adjusted and are reported in 2019 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley data, 2019 estimate based on January-August, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2019) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics for U.S. data.

ARTS & CULTURE

Nonprofit Arts Organizations

2012 data are from the National Center for Charitable Statistics (NCCS) at the Urban Institute, via the Americans for the Arts Local Index. Arts nonprofits are defined by 43 different categories of several major arts-related groups in the National Taxonomy of Exempt Entities (NTEE), and only include organizations that filed the IRS Form 990 in 2009. Arts Establishments include businesses and artists serving the community, and are defined by 44 North American Industrial Classification System (NAICS) codes representative of art and culture. 2019 data are from the IRS Exempt Organizations Business Master File Extract (EO BMF), updated 12/12/2019. Field Service Organizations includes the variety of nonprofit organizations who support arts organizations, providing technical assistance, professional membership, research, and resource development. They include Management & Technical Assistance; Professional cieties & Associations; Research Institutes and/or Public Policy Analysis; Single Organization Support; Fundraising and/or Fund Distribution; Nonmonetary Support Not Elsewhere Classified; Arts Council/Agency; and Arts Service Activities/ Organizations. Media Arts Organizations includes Media, Communications Organizations; Film, Video; Television; Printing, Publishing; and Radio. Performing Arts Organizations includes Performing Arts Organizations; Performing Arts Centers; Dance; Ballet; Theater; Music; Symphony Orchestras; Opera; Singing Choral; Music Groups, Bands, Ensembles; Commemorative Events; and County/Street/Civic/ Multi-Arts Fairs and Festivals. Humanities & Heritage Organizations includes Cultural/Ethnic Awareness; Humanities Organizations; and Historical Societies and Related Activities. Collections-Based Organizations include Museum & Museum Activities; Art Museums; Children's Museums; History Museums; Natural History, Natural Science Museums; Science & Technology Museums; Libraries; Botanical Gardens and Arboreta; and Zoos and Aquariums. Arts Education Organizations include Arts Education/Schools; and Performing Arts Schools

Consumer Expenditures on Arts & Culture Consumption

Data are from the Americans for the Arts Local Index. Data represent a per capita estimate of dollars spent in 2015 by county residents on admissions to entertainment venues – theatres, concert halls, clubs, arenas, outdoor amphitheaters, and stadiums – as well as on products such as recorded media, photographic equipment, musical instruments, and reading materials. These estimates combine the most recent Consumer Expenditure Survey duat with an annual modeling of spending patterns.

Visual & Performing Arts Degrees

Data on degrees conferred are from the National Center for Education Statistics. Regional data for the Silicon Valley includes the following post-secondary institutions: Stanford University, San Jose State University, University of San Francisco, University of California (Berkley, Davids, Santa Curu), Santa Clara University, San Francisco State University, California State University-East Bay, Notre Dame de Namur University, California College of the Arts, San Francisco State University, California State University-East Bay, Notre Dame de Namur University, California College of the Arts, San Francisco State University, California State University, East Bay, Notre Dame de Namur University, California College of the Arts, San Francisco Arts Institute, Academy of Art University, East Bay, Notre Dame de Namur University, California College of the Arts, San Francisco State University, California State University, California Artisanty; Dance; Design and Applied Arts; Drama/Theatre Arts and Stagecraft; Film/Video and Photographic Arts; Fine and Studio Arts; Music; Arts, Entertainment, and Media Management; and Visual and Performing Arts, Other. Data were analyzed based on first major. The year listed represents the end of the school year (e.g., 2017 represents the 2016-2017 school year). Population data used to calculate degrees conferred per 100,000 Santa Clara & San Mateo County residents are from the United States Census Bureau and are as of July 1.

Sporting Event Home Game Attendance

Data for Sporting Event Home Game Attendance is from multiple sources, including the National Collegiate Athletic Association (NCAA), ESPN, WorldFootball.net, and The Baseball Cube. Teams include the San Jose Sharks, San Jose Earthquakes, San Francisco 49ers, San Francisco Ganns, San Jose Gants, San Jose Barracuda, Stanford Football, Stanford Basketball, San ta Clara University Basketball, San Jose State Football, and San Jose State Basketball. The 2008 attendance estimate does not include San Jose Barracuda, as the franchise did not begin until 2015.

QUALITY OF HEALTH

Healthcare

Data for those with health insurance are from the U.S. Census Bureau, American Community Survey, 1-Year Estimates for the civilian non-institutionalized population. Silicon Valley data includes Santa Clara and San Mateo Counties.

Adults Overweight or Obese

Silicon Valley data include Santa Clara and San Mateo Counties. The California Health Interview Survey (CHIS) is conducted via telephone survey of more than 20,000 Californians across 58 counties each year. The data includes adults 18 years of age and older. Calculated using reported height and weight, a Body Mass Index (BMI) value of 25.0 - 29.99 is categorized as Overweight, and a BMI of 30.0 or greater is categorized as Obese. Starting in 2011, CHIS transitioned from a biennial survey model to a continuous survey model, which enables a more frequent (annual) release of data.

Students Overweight or Obese

Data are from the California Department of Education, Physical Fitness Testing Research Files, and include all public school students in 5^{th} , 7^{th} and 9^{th} grades in San Mateo and Santa Clara Counties, San Francisco, and California who were tested through the Fitnessgram assessment. In the 2013-14 school year, the performance standards changed for the Body Mass Index (BMI), one of the three body composition test options. The changes were made to better align with the well–established, health-related body fat standards from the Centers for Disease Control and Prevention (CDC).

Infant and Maternal Mortality Rates

Data are from the United States Department of Health and Human Services (US DHHS), Centers of Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics (DVS) Linked Birth/Ifanth Death Records 2007-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program, on CDC WONDER Cn-line Database. Silicon Valley data include San Mateo and Santa Clara Counties. Infant mortality is the death of an infant before his or her first birthday. The infant mortality rate is the number of infant deaths per every 1.000 live births. Data by race and ethnicity indicate the maternal race/ethnicity (nor the race/ethnicity of the infant). Maternal mortality includes deaths due to a variety of causes related to pregnancy, childbirth, and the puerperium. Black or African American, Asian or Pacific Islander, and White are Non-Hispanic.

Kindergarten Immunization Rates

Data for kindergarten immunization rates come from the kindergarten assessment, which measures compliance with the school immunization law, conducted in all schools with kindergartens. Immunizations required by law for children entering kindergarten in California or transitional kindergarten include: Five doses of DTP/DTaP or any combination with DT (diphtheria and tetanus) vaccine (four doses meets the requirement if at least one was given on or after the fourth birthday); Four doses of polio vaccine (three doses meets the requirement if at least one was given on or after the fourth birthday); Two doses of MMR vaccine (may be given separately or combined, but both doses must be given on or after the fourth birthday); Two doses of MMR vaccine (may be given separately or combined, but both doses must be given on or after the first birthday); Three doses of hepatitis B vaccine; (may be given separately or combined, but both doses must be given on or after the first birthday); Three doses of hepatitis B vaccine; and one dose of varicella (chickenpoty) vaccine (or physician documented varicella disease history or immunity). In the fall, every school in California must provide information on the total enrollment, the number of students who have or have not received the immunizations required, and the number of exemptions to the California Department of Health. Smaller schools are excluded to help protect privacy. In the spring, local and state public health personnel visit a sample of licensed schools with kindergarten classes, to collect the same information for comparison. In the 2014-2015 and 2015-2016 school years, entrants were subject to Assembly Bill (AB) 2109, which added requirements for exemptions to required immunizations based on personal or religious beliefs. The year shown represents the end of the school year (e.g., 2016 represents the 2015-16 school years.

Leading Causes of Death

Data is from the United States Department of Health and Human Services (US DHHS). Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, Underlying Cause of Death public-use data. Silicon Valley includes Statta Clara & Sa MAteo Counties. Causes of death included in the analysis are the seven leading causes in 2017, including cancer (malignant neoplasms), heart diseases, cerebrovascular diseases, accidents (unintentional injuries), chronic lower respiratory diseases (e.g., chronic emphysema, bronchitis, and asthma), diabetes mellitus, and hypertension (hypertension, hypertensive renal disease with or without renal failure, and secondary hypertension).

SAFETY

Violent Crimes

Data is from the California Department of Justice, Office of the Attorney General, Interactive Crime Statistics. Violent Crimes include homicide, rape (including attempted rape), robbery, and aggravated assault. Data for Silicon Valley includes the city-defined Silicon Valley region. Population data is from the California Department of Finance E-4 Population Estimates.

Property Crimes

Data is from the California Department of Justice, Office of the Attorney General, Interactive Crime Statistics. Silicon Valley includes the city-defined Silicon Valley region. Property crimes include burglary, motor vehicle theft, and larceny-theft, as well as attempted burglary/theft.

Felony Offenses

Data is from the California Department of Justice, Office of the Attorney General, Interactive Crime Statistics. Data for Silicon Valley includes San Mateo and Santa Clara Counties. Population data is from United States Census Bureau, American Community Survey 1-Year Estimates. Juveniles include children ages 10-17, and adults include the at-risk population (ages 18-69). Felony offenses include Violent, Property Offenses, Drug Offenses, Sex Offenses, Weapons, Driving Under the Influence, Hit and Run, Escape, Bookmaking, Manslaughter Vehicular, and Other Felonies. In November 2014, California voters passed Proposition 47 which reduced numerous state statutes from felonies to misdemeanors. Caution should be used when comparing felony and misdemeanor arrest data to prior years. Additionally, in November 2016, California voters passed Proposition 64 which legalized the possession and use of marijuana for individuals 21 years of age and older and reduced the offense degree for numerous state statutes. Caution should be used when comparing drug offense arrests to prior years.

Public Safety Officers

All data are from the California Commission on Peace Officer Standards and Training. The total number of Public Safety Officers accounts for all sworn full-time and reserve personnel, which may include (but is not limited to) Police Chiefs, Deputy Chiefs, Commanders, Corporals, Licurenanus, Sergeanus, Police Officers, Detectives, Detention Officers/Supervisors, Sheriffs, Undersheriffs, Captains, and Assistant Sheriffs; it does not include Community Service Officers or other non-sworn (civilian) police department personnel. All city, county and school district departments in Silicon Valley are included. Data does not include California Highway Patrol officers. 2019 data were as of July 1, 2019. The San Mateo County Sheriff's Department share of Silicon Valley public safety officers includes those serving Half Moon Bay, Millbrae, Portola Valley, San Carlos, and Woodside; the Sant Clara County Sheriff's Department share of Silicon Valley public safety officers includes those serving Cupertino, Los Altos Hills, and Saratoga. The total number of public asfety agencies include those with full-time sworn or reserve personnel. Population growth is from the California Department of Finance, E-4 Population Estimates.

PHILANTHROPY

Individual Giving

Data are from the IRS SOI Tax Stats County Data. Charitics receiving donations may be located anywhere. Individual donations to charity are grouped by tax return, so include both individual and joint filers. Data are limited to those who itemize deductions on their tax returns, which fell nationally in 2018 from 30% to 10% and was skewed toward those with higher annual incomes (\$75.000+) according to the IRS Mid-July Filing Season Statistics by ACI (https://www.irs.gov/statistics/filing-season-statistics). With Silicon Valley's median income in the \$100,000-200,000 range and based on the national data, we would expect that pproximately 25% of 2018 returns are itemized, with 89% of those including charitable contributions. Based on 2011 and 2017 county-level data from the IRS SOI Tax Stats, 43% and 45%, respectively, of returns in Santa Clara and San Mateo Counties were itemized; of those, 80% and 78%, respectively, donated to charity. While only 45% of Santa Clara and San Mateo County individual tax returns were itemized in 2017, those returns represented 86% of the regional adjusted gross income.

Silicon Valley Community Foundation Donor-Advised Grants

Data are from the Silicon Valley Community Foundation website, Community Impact "Grants: Where the Giving Goes" and include donor-advised grants from 2015 through 2018 as of November, 2018. Data includes all donor-advised grants through the Silicon Valley Community Foundation, with the exception of a \$550 million grant in 2016 to the Chan Zuckerberg Biohub, Inc. Annual totals also exclude grants to Stanford University of \$21 million in 2015 and \$8.4 million in 2016.

Local Giving by Top Corporate Philanthropists

Amounts include the total of the top 50 corporate philanthropists in Silicon Valley to local organizations, as self-reported to the Silicon Valley Business Journal and only including companies which chose to participate. One notable company that does not participate/ self-report is Facebook. Data are for the fiscal year. Amounts may include donations of products or services.

Corporate-Advised Grants

Data are from the Silicon Valley Community Foundation website, Community Impact "Grants: Where the Giving Goes" and include corporate-advised grants from 2015 through 2018 as of November, 2018.

Silicon Valley Community Foundation Discretionary Grants

Data are from the Silicon Valley Community Foundation website, Community Impact "Grants: Where the Giving Goes" and include discretionary grants from 2015 through 2018 as of November, 2018.

Foundation Grants

Data are from FOUNDATIONSearch as of November 11, 2019. Only grants above \$4,000 are included in the FOUNDATIONSearch analysis. Grants to academic institutions and hospitals were excluded, and every effort was made to remove transfers from one fund manager to another from the dataset.

PLACE

HOUSING

Median Home Sale Prices; Number of Homes Sold Data are from CoreLogic. Silicon Valley includes San Mateo and Santa Clara Counties. Median sale prices have been inflation-adjusted and are reported in 2019 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley and San Francisco data, 2019 estimate based on January-August, the California consumer from the California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics, annual estimate based on first half data. Based on consumer price index for all urban consumers from the Bureau of Labor Statistics, annual estimate based on first half data. Based on public property records, for transactions recorded in each period. Data reflect sales of all new and resale single-family detached houses and condos combined. 2019 estimates are based on data through October.

Average Monthly For-Sale Inventory Data for Silicon Valley include Santa Clara and San Mateo Counties, and are from Zillow Real Estate Research. The Average Monthly For-Sale Inventory for 2019 includes January through November. Average Monthly For-Sale Inventory represents an annual average of the monthly averages of median weekly snapshots of for-sale homes.

Residential Building

Nesidential submotion and the second structures and apartment type structures with five units or more.

Regional Housing Need Allocation (RHNA)

Regional Housing Need Allocation (RHNA) Data includes the number of new housing units for which Bay Area jurisdictions issued permits in calendar years 2015 through 2018. This information is compiled from the California Department of Housing and Community Development, Housing Element/Open Data Project, 5th Cycle Annual Progress Report Permits Jummary (www.hcd.ca.gov/community-development/housing-element/index. shtml). The data are for RHNA reporting periods of 2015 - 2018, and do not include units permitted in 2014 that are being applied toward the current RHNA cycle. The Regional Housing Need Allocation (RHNA) is the state-mandated process to identify the total number of housing units (by Affordability level) that each jurisdiction must accommodate in its Housing Element. AMI stands for Area Median Income. Silicon Valley data include Santa Clara and San Mateo Counties, and the cities of Fremont, Union City, and Newark. Affordability levels indicated on the chart include Very Low Income (0-50% of the Area Median Income, AMI), Low Income (50-80% AMI), Moderate Income (80-120% AMI), and Above Moderate Income (120%+ AMI).

Affordable Share of Newly Approved Residential Units

Affordable Share of Newly Approved Residential Units Data are from Joint Venture Silicon Valley's annual land-use survey of all cities within Silicon Valley. The 39 cities/counties included in the FY 2018-19 Building Affordable Housing analysis included Atherton, Belmont, Brisbane, Burlingame, Campbell, Colma, Cupertino, Daly City, East Palo Alto, Foster City, Fremont, Gilroy, Half Moon Bay, Los Altos, Los Altos Hils, Los Gatos, Menlo Park, Willbrae, Monre Sereno, Morgan Hill, Mountain View, Newark, Pacifica, Palo Alto, Portola Valley, Redwood City, San Bruno, San Carlos, San Jose, San Mateo, County of San Mateo, Santa Clara, County of Santa Clara, Saratoga, South San Francisco, Sunnyvale, Union City, and Woodside. Most recent data are for fiscal year 2018-19 (July 2018-June 2019). Affordable units are those units that are affordable for a four-person family earning up to 80% of the median income for a county. Cities use the U.S. Department of Housing and Urban Development's (HUD) estimates of median income to calculate the number of units affordable to low-income households in their unridiction. in their jurisdiction

Median Rental Rates Data for Median Rent List Price is from Zillow Real Estate Research (data downloaded December 24, 2019). Median Apartment Rental Rates include multifamily complexes with five or more units. Some data for specific rental types were not available for the full year of 2011 or 2012. Rental rates for 2019 are based on data through November. Rental rates have been rounded to the nearest dollar, and have been inflation-adjusted and are reported in 2019 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley and San Francisco tata, 2019 estimate based on January-August, the California data, price index for all urban consumers from the California Department of Finance May Revision Forecest (April 2019) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics. Silicon Valley Median Rent was estimated using a weighted average of Santa Clara and San Mateo County rental rates, using population data from the California Department of Finance. Median Apartment Rental Rates Per Square Foot are based on list price.

Median Monthly Housing Costs

Data are from the United States Census Bureau, American Community Survey 1-Year Estimates. Median Monthly Housing Costs are reported in 2018 dollars.

Housing Burden Data for owners' and renters' housing costs are from the United States Census Bureau, American Community Survey 1-Year Estimates. This indicator messures the share of owners and renters spending 30% or more of their monthly household income on housing costs. Renter data are calculated percentages of gross rent to household income in the past 12 months. Owner data are calculated percentages of selected monthly owner costs to household income in the past 12 months. Owners data are solely based on housing units with a mortgage. According to the U.S. Department of Housing and Urban Development, housing costs greater than 30% of household income nose moderate to severe financial burdens.

Percentage of Potential First-Time Homebuyers That Can Afford to Purchase a Median-Priced Home Data are from the California Association of Realtors' (CAR) First-time Buyer Housing Affordability Index, which measures the percentage of bousholds that can afford to purchase an entry-level home in California based on the median price of existing single family homes sold from CAR's monthly existing home sales survey. Beginning in the first quarter of 2009, the Housing Affordability Index incorporates an effective interest rate that is based on the one-year, adjustable-rate mortgage from Freddie Mac's Primary Mortgage Market Survey. 2019 averages include Q1-3.

Average Household Size & Additional Units Needed to Accommodate Population Growth Data for average household size, number of households, and population living in households are from the California Department of Finance, E-3 and E-8 Population Estimates. Data for residential units in building permits itsued are from the Construction Industry Research Board and California Homebuilding Foundation. Silicon Valley data includes Santa Clara & San Mateo Counties. Additional Junits Needed to Accommodate Population Growth are calculated as the Households Needed to Accommodate Growth minus the Number of Residential Units in Building, Permits Issued. Households Needed to Accommodate Growth are calculated as the change in population (living in households) divided by the average household size from that year. The 2019 estimate of residential units in building permits issued is based on data through November.

Housing Units by Occupancy, and Vacant Housing Units. Data are from the United States Census Bureau, American Community Survey 1-Year Estimates Public Use Microdata. Silicon Valley includes Santa Clara and San Mateo Counties. The share of high-occupancy housing units are calculated by determining the total num-ber of housing units with fewer than 1 bedroom per person, with the exception of married/unmarried couple households in which the couple (presumably) shares a room. The share of low-occupancy housing units are those that have more than one bedroom per person plus an extra "spate" room, eculuding couples who share a room (and may also have a spare room). Available vacant units indude those that are For Rent, For Sale, and Other Vacant; they do not include Rented, not occupies; Sold, not occupied; For seasonal/recreational/ occasional use; or For migrant workers. A housing unit is defined as vacant if no one is living in it at the time of the Census survey inter-view, unless its occupants are only temporarily basent. In addition, a vacant unit may be one which is entirely occupied by persons who have a usual residence elsewhere. New units not yet occupied are classified as vacant housing units if construction has reached a point where all exterior windows and doos are installed and final usable floors are in place. Vacant units are excluded if they are exposed to the elements, or if there is positive evidence that the unit is to be demolished or is condemmed. Also excluded are quarters being used entirely for nonresidential purposes, such as a store or an office, or quarters used for the storage of business supplies or inventory, machinery, or agricultural products. Other Vacant housing units include those held for legal reasons such as the settlement of an estate, held for personal reasons, or held for repairs. Protentially Available housing units include For rent, For sale only, and Other Vacant.

personal reasons, of neur or repairs. Proteinany Available notsing units include For feith, for sue only, and Oner Vacani.
Inadequate or Deficient Housing Units
Data are from the 2017 American Housing Survey, from the United States Census Bureau. Silicon Valley and San Francisco data are by
MSA. Silicon Valley includes the San Jose-Sunnyvale-Santa Clara, California MSA (2013 OMB definition). San Francisco includes the
San Francisco-Oakland-Hayward, California MSA (2013 OMB definition). The AHS publishes information in the statistical reports
on the physical adequacy of occupied housing units. Occupied units are classified as adequate, having moderate physical problems, or
having severe physical problems. A unit is considered severely inadequate if any of the following criteria apply: 11) unit does not have
hot and cold running water; 2) Unit does not have a hathtub or shower; 3) Unit does not have a flush toilet; 4) Unit shares plumbing
facilities; 5) Unit was cold for 24 hours or more and more than two breakdowns of the heating equipment have occurred that lasted
longer than 6 hours; 6) Electricity is not used; 7) Unit has exposed wiring, not every room has working equipment have occurred that lasted
longer than 6 hours; 6) Electricity is not used; 7) Unit has exposed wiring, not every room has working equipment have occurred that lasted
longer than (6 hours; 6) Unit has five or six of the following structural conditions; a) Unit has how open cracks wider than
a dime; c) Unit has an area of peeling paint larger than 8 by 11 inches; f) Rats have been seen recently in the unic Told units include
those that were "Uncomfortably cold for 24 hours or more." Water Leakage Includes units with any leakage from inside or outside the
unit. Water Stoppages include "Any stoppage in the last 3 months." Non-Functioning Tollet includes "None working some time in last
a months."

Multigenerational Households

Muttigenerational rousenoids Data are from the United States Census Bureau, American Community Survey 1-Year Estimates, using the University of Minnesota Population Center IPUMS for Silicon Valley, San Francisco, and California. Data for the United States are from the Pew Research Center report by Fry & Passel (July 2014) for 2007-2012, the Pew Research Center report by Cohn & Passel (August 2016) for 2014, unpublished estimates from the Pew Research Center for 2013 and 2015, and an updated Pew Research Center report by Cohn & Passel (April 2018) for 2016 data. Silicon Valley data include Santa Clara and San Marco Counties. The definition of multigenerational bouseholds used for this analysis goes beyond the Census Bureaus traditional definition, and includes all households with wo or more adult generations, where an adult is defined as age 25 and over. The definition is modeled after the methodology developed by the Pew

Research Center, published in a report entitled "In Post-Recession Era, Young Adults Drive Continuing Rise in Multi-Generational Living" by Richard Fry and Jeffrey Passel, July 2014. In the definition used, a multigenerational household includes those with two a generations (a parent or parent-in-law and adult child/children, where either generations is the head of household), three generations (parent or parent-in-law, adult child/children, grandchildren), skipped generations (grandparents living with grandchildren where no parent is present), and more than three generations. Due to possible slight differences between the methodology used by the Pew Research Center and the Silicon Valley Institute for Regional Studies, caution should be used in comparing the Silicon Valley, San Francisco, and California estimates to those for the United States as a whole. adult

Young Adults Living With a Parent

Data are from the United States Census Bureau, American Community Survey 1-Year Estimates, using the University of Minnesota Population Center IPUMS. Silicon Valley data includes Santa Clara and San Mateo Counties. Young Adults include residents ages 18 to 34, and only those who live with a parent who is the householder (not including parents who live with their young adult children, where the child is the householder).

Multifamily Households Data are from the United States Census Bureau, American Community Survey 1-Year Estimates, using the University of Minnesota Population Center IPUMS for Silicon Valley, San Francisco, and California. Silicon Valley includes Santa Clara and San Mateo Counties. Multifamily households include all households with at least two unrelated families, including roommates and unmarried couples.

Homelessness

Homelessness The Santa Clara County data are from them 2019 Homeless Census & Survey, conducted during the last ten days of January; the point-in-time count was a community-wide effort conducted on January 29 and 30, 2019. In the weeks following the street count, a survey was administered to 1.335 unsheltered and sheltered individuals experiencing homelessness in order to profile their experience and characteristics. The San Mateo County data are from the 2019 One Day Homeless County and Survey, which was conducted in t early morning hours of January 31, 2019. The population share was calculated using January 1 population estimates from the Califorr Department of Finance, E-4 Historical Population Estimates for Cities, Counties, and the State. ed in the

Evictions

Evictions Data is from the Judicial Council of California, Public Access to Judicial Administrative Records (PAJAR), and include unlawful detainer filings by fiscal year. An eviction happens when a landlord expels people from property he or she owns. Evictions are landlord-initiated involuntary moves that happen to renters. Per the Superior Court of California, Country of Santa Clara, "An Unlawful Detainer action is a special court proceeding. It's a legal way to evict someone from the place where they live or work. This usually happens when a tenant stays after the lease is up, the lease is canceled, or the landlord thinks the tenant hasn't paid their rent."

TRANSPORTATION

Vehicle Miles Traveled Vehicle Miles Traveled (VMT) estimates the number of vehicle miles that motorists traveled on California roadways. Various roadway types are used to calculate VMT. Silicon Valley data include travel within Santa Clara and San Mateo Counties. In 2014, the Department of Transportation migrated the Highway Performance Monitoring System to a new Linear Referencing System (GIS layer). The California Department of Finance's E-4 Population Estimates were used to compute per-capita values.

Gas Prices

Gas Prices Data for average annual retail gas prices include all grades and all formulations, and are from the U.S. Energy Information Administration. They have been inflation-adjusted and are reported in 2019 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley data, 2019 estimate based on January-August, and the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2019) for California data. 2019 gas prices are an estimate based on data through October.

California data. 2019 gas prices are an estimate based on data through October. **Costs of Transportation Needs** Costs of transportation needs are taken from the Self-Sufficiency Standard for California, from the Center for Women's Welfare at the University of Washington School of Social Work. Silicon Valley is an average of Santa Clara and San Matco Counties. California data is a California county average. Developed by Dr. Daian Pearce, the Self-Sufficiency Standard defines the amount of income necessary to meer basic needs (including taxes) without public subsidies (e.g., public housing, food stamps, Medicaid or child care) and without pri-vate/informal assistance (e.g., free babysitting by a relative or friend, food provided by churches or local food banks, or shared housing). The Standard assumes private transportation (as car) in counties where less than 7% of owrkers commute within county by public trans-portation. Only three counties have rates of use among commuters that meet the 7% threshold (Alameda, Mono, and San Francisco); nohy Alameda and San Francisco are calculated using public transportation costs in the Standard. The 2014 California Standard assumed public transit for Contra Costa, Marin, and San Mateo counties, but due to recent shifts in commuting partaters, private transportation has been assumed. Private transportation costs are based on the average costs of working and operating a car. It is understood that the car(s) will be used for commuting five days per week, plus one trip per week for shopping and errands. In addition-adjusted and are reported household with young children is assumed to have a slightly longer weekday trip to allow for "linking" trips to a daycare site. Costs are described as transportation needs based on family type and county of residence. 2014 costs have been inflation-adjusted and are reported 10219 dollas using the Bay Area consumer price index for All urban consumers from the Caration adjusted and are reported household with young children is a costs are calculated using the 2019 estimated data, and nominal (non-adjusted) 2014 data.

Means of Commute; Mean Travel Time to Work

Means of Commute; Mean Travel Time to Work Data on the means of commute to work are from the United States Census Bureau, American Community Surveys, 1-Year Estimates. Data are for workers 16 years old and over residing in Santa Clara and San Mateo Counties community to the geographic location at which workers to the east old and over residing in Santa Clara and San Mateo Counties community to the geographic location at which workers to Years old and over residue during the reference week whether or not the location was inside or outside the county limits. The data on employment status and journey to work relate to the reference week, that is, the calendar week preceding the date on which the respondents completed their questionnaires or were interviewed. This week is not the same for all respondents since the interviewing was conducted over a 12-month period. The occurrence of holdsay during the reference week could affect the data on actual hours worked during the reference week, but probably had no effect on overall measurement of employment status. People who used different means of transportation on different days of the week were saked to specify the one they used most often, that is, the greatest number of days. People who used more than one means of transportation to get to work each day were asked to report the one used for the longest distance during the work trip. The categories, "Drove Alone" and "Carpool" include workers using a car (includies workers who used a bus or trolley bus, streectar or trolley car, subway or elevated, traiload, or feryboat, even if each mode is not shown separately in the tabulation. The category" "Other Kanas, includes, motorcycle, and other means that are not identified separately within the data distribution. Percentages may not add up to 100% due to rounding.

Megacommuters Data are from the United States Census Bureau, American Community Survey Summary Files. Silicon Valley data include San Mateo and Santa Clara Counties. The Bay Area includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

Commute Patterns

Data for Commute Patterns are from the United States Census Bureau, American Community Survey, 1-Year Public Use Microdata Samples (PUMS) using the Place of Work PUMA for San Francisco, San Mateo, Santa Clara and Alameda Counties. Workers incluc civilian residents over age 16 who were employed and at work. Cross-county commuters include those who do not work within their commuter and the same set of the same set of the same set of the same set. include county of residence.

Bicycle Commuters

Bucycle Commuter Data are from the United States Census Bureau, American Community Survey 1-Year Estimates, and include workers 16 years old and over residing in Stanta Clara and San Mateo Counties communiting to the geographic location at which workers carried out their occupa-tional activities during the reference week whether or nor the location was inside or outside the county limits. The data on employment tional activities during the reference week whether or not the location was inside or outside the county limits. Ine data on employment status and journey to work relate to the reference week; that is, the calendar week preceding the date on which the respondents com-pleted their questionnaires or were interviewed. This week is not the same for all respondents since the interviewing was conducted over a 12-month period. The occurrence of holidays during the relative reference week could affect the data on actual hours worked during the reference week, but probably had no effect on overall measurement of employment status. Bicyclists include people who biked to work as their most common means of commute (the greatest number of days per week) and/or for the longest distance during the work trip (if they used more than one means of transportation to get to work each day). The number of commute trips is estimated as the number of commuters multiplied by two (assuming each commuter has one two-way commute).

Bicycle Collisions

Data are from the Statewide Integrated Traffic Records System (SWITRS) via the Transportation Injury Mapping System (TIMS), and only include those collisions in which an injury or fatality occurred.

Bicycle Facilities

Bicycle Pacinities Data for 2019 are compiled from sources at the Engineering and Public Works Departments within the cities and towns of San Mateo and Santa Clara Counties. 2019 San Mateo County data include all cities and towns with the exceptions of Atherton and the City of San Mateo due to lack of available data (as of January 2020). 2019 Santa Clara County data include Gilroy, Los Altos, Ells, Milpitas, Monte Sereno, Palo Alto, San Jose, and Santa Clara, and exclude Campbell, Cupertino, Los Gatos, Morgan Hill, Mountain View, Santoga, and Sunnyvale due to lack of available data (as of January 2020). Dir Re 2019 Ataraste includes the 2018 inventory plus any bicycle infrastructure that has been added or removed over the prior calendar year. 2016-2018 data were compiled from MTC,

PLACE continued

VTA, and Google Streets, and include Santa Clara and San Mateo Counties. Bicycle facility classes have been defined by Caltrans and include Class 1 (Shared Use Path). Class 11 (Bikeway), Class 111 (Bike Route/Boulevard), and Class IV (Protected Bikeway). The Santa Clara County dataset was updated by VTA in 2017. The new dataset for Class 1 (Shared Use Path) includes pathway networks in parks, as well as parallel measurements for pathways that run along both sides of waterways. The metric does not include unpaved paths in mountainous state park areas that are mostly used for mountain bike recreation. The new dataset for Class 2 (Bikeway) includes parallel lane measurements for bike lanes that occur on roadways with medians that restrict passage from one side of the road to the other, as well as roadway that have shoulders that are treated as bike lanes but may not have stenciling. The 2017 data for Class 3 (Bike Route/ Boulevard) includes additional bike routes that were not included in the 2016 data. The San Mateo County dataset for 2017 includes the 2016 inserver plus park bicela inforturement where have added or resourced one the barier was reasting. the 2016 inventory plus any bicycle infrastructure that had been added or removed over the prior year.

Jurisdictions with a Bicycle or Pedestrian Master Plan

Data include cities within the city-defined Silicon Valley region, and the Counties of Santa Clara and San Mateo. Data include all bicy-cle and pedestrian master plans that were created in 2011 or thereafter and were approved, planned, or in-progress as of November 2019.

Daily Vehicle Hours of Delay Due To Congestion Data are from Caltrans PeMS (Performance Monitoring System) that collect and archives traffic data from the Caltrans network of road-way traffic sensors. The reported traffic delay data are based on the detector coverage and health ar the time that the data was collected by PeMS. Accordingly, actual traffic delay septemented in each country may be higher than those reported. Data includes California State Freeways only (not all state highways). Silicon Valley data include Santa Clara & San Mateo Counties. One vehicle hour of delay reflects one vehicle stuck in traffic for one hour. Delay refers to speeds less than 60 miles per hour.

Transit Use

Estimates are the sum of annual ridership on the light rail and bus systems in Santa Clara and San Mateo Counties (from Sam Trans and Santa Clara Valley Transportation Authority), and rides on Caltrain and Altamont Corridor Express (ACE). Data does not include paratransit, such as SamTrans' Redi-Wheels program. The California Department of Finance E-4 Population Estimates were used to compute per-capite values. Per capita ridership on ACE includes Santa Clara County only, and is calculated using the Santa Clara County population estimates.

Caltrain Ridership

Cardon Rules and Data are from the Caltrain Annual Passenger Counts report, and include average weekday daily ridership (through FY 2016) and average mid-weekday daily ridership (FY 2017+). Years indicate the end of the fiscal year (e.g., 2018 includes data for FY 2017-18).

Shuttles

Shuttles Data are from the Bay Area Council and Metropolitan Transportation Commission 2016 Bay Area Shuttle Census and includes the number of private shuttles traveling between Bay Area and adjacent counties each day. Data were collected by the Bay Area Council in 2016 (for the period from 2012 to 2014) via a web portal where shuttle sponsors and operators self-submitted their information. Data entry was voluntary and anonymized, so only a partial sampling of the 35 participating sponsors and operators used included. Shuttle sponsors included Bay Area companies and academic institutions; shuttle operators included companies that operate shuttle services for numerous individual sponsoring organizations. The Shuttle Census focused on commuter and "last mile" services only and did not include airport or charter transportation services. Daily Shuttles on the Road assumes that shuttles operating between San Francisco and Santa Clara County must travel through San Mateo County; likewise, shuttles operating between Marin and San Mateo County are assumed to past shrudp San Francisco. Shuttles operating between Marin and Santa Clara County were not assumed to travel through San Francisco or San Mateo County, although it is possible that they do.

Cumulative County of Shuttle-Type Buses Registered

tration data include comm n shuttle bus manufacturers (Van Hool, Motor Coach Industries, EBus, Novabus, Evobus, Man Truck and Bus Corporation), and are as of October 2018. Silicon Valley includes the city-defined region. Data only include vehicles that re registered as of October 2018, regardless of model year.

LAND USE

Residential Dens ity

Residential Density Data are from pioti Ventue Silicon Valley's annual land-use survey of all cities within Silicon Valley. The 35 cities/counties included in the FY 2018-19 Residential Density analysis are Belmont, Brisbane, Burlingame, Campbell, Colma, Cupertino, Daly City, East Palo Alto, Foster City, Fremont, Gilroy, Half Moon Bay, Los Altos Hills, Los Gatos, Menlo Park, Millbrae, Milpitas, Morgan Hill, Mountain View, Newark, Pacifica, Palo Alto, Redwood City, San Bruno, San Carlos, San Jose, San Mateo, County of San Mateo, Santa Clara, County of Santa Clara, Saratoga, South San Francisco, Sunnyvale, Union City, and Woodside. Most recent data are for fiscal year 2019 (July 2018-June 2019). Residential density was calculated as the average residential density of the participating cities. Beginning in 2014, the residential density analysis began to exclude secondary units that were approved with the primary unit.

Housing Near Transit

Housing Near Transit Data are from Joint Venture Silicon Valley's annual land-use survey of all cities within Silicon Valley. The 30 cities/counties included in the FY 2018-19 Housing Near Transit analysis were Atherton, Belmont, Burlingame, Campbell, Colma, Cupertino, Daly City, East Palo Alto, Foster City, Fremont, Ciltroy, Los Altos, Menlo Park, Millbrae, Milpitas, Morgan Hill, Mountain View, Newark, Palo Alto, Redwood City, San Bruno, San Carlos, San Jokes, County of San Mateo, Santa Clara, County of Santa Clara, South San Francisco, Sunnyvale, and Union City. Only cities containing rail stations or major bus corridors were included in the analysis for the share of housing near transit. Most recent data are for fiscal year 2019 (July 2018-June 2019). The number of new housing units within one-third mile of transit are coported directly for each of the cities and counties participating in the survey. Places with one-third of a mile of transit are considered "walkable" (i.e., within a 5- to 10-minute walk for the average person). Transit oriented data prior to 2012 is reported within one-uniter mile of transit. is reported within one-quarter mile of transit.

Non-Residential Development Data are from Joint Venture Silicon Valley's annual land-use survey of all cities within Silicon Valley. Most recent data are for fiscal year 2019 (July 2018-June 2019). The amount of commercial development within one-third of a mile of transit are reported directly for each of the cities and countes participating in the survey. Places with one-third of a mile of transit are considered "wallshole" (i.e., within a 5- to 10-minute walk for the average person). Transit oriented data prior to 2012 is reported within one-quarter mile of transit. The 38 cities/counties included in the FY 2018-19 Non-Residential Development Approvals analysis were Atherton, Brisbane, Burlingune, Campbell, Colma, Cupertino, Daly City, East Palo Alto, Forster City, Feromotr, Gilory, Half Moon Bay, Los Altos Hills, Los Gatos, Menlo Park, Milpiras, Mignar, Hill, Mountain View, Newark, Pacifica, Palo Alto, Portola Valley, Redwood City, San Bruno, San Coley, San Joas Mateo, Courso of Sant Cher, Course of Chamer, Clares, Stranob, San Falos, Mateo, Courso & Sant Cher, Course of Sant Cher, Santes C Bruno, San Carlos, San Jose, San Mateo, County of San Mateo, Santa Clara, County of Santa Clara, Saratoga, South San Francisco, Sunnyvale, Union City, and Woodside.

Planned Hotel Development Data is from the Adas Hospitality Group annual California Hotel Development Surveys. Planned hotels are in various stages, and have not necessarily received planning approvals. Data as of July 1, 2019. Rest of Silicon Valley includes Fremont, Newark, Union City, and not necessari Scotts Valley.

GOVERNANCE

LOCAL GOVERNMENT FINANCES

Local Government Finances

Local Government Finances Data were obtained from the audited annual financial reports from Santa Clara and San Mateo Counties and 39 Silicon Valley cities including Comprehensive Annual Financial Reports, Annual Financial Statements for the Year End, Annual Financial Reports, Basic Data where to bonnie to the activity of the point of the stand and the activity of the standard of the standard of the standard and the standard of the standa

CIVIC ENGAGEMENT

Eligible Voter Turnout and Absentee Voting Data are from the California Secretary of State. Elections Division. The eligible population is determined by the Secretary of State using Census population data provided by the California Department of Finance. Silicon Valley data are for Santa Clara and San Mateo counties, and include data for the even-year November General Elections.

ENVIRONMENT

Water Resources Data for Stanta Clara County was provided by Santa Clara Valley Water District (SCVWD). Scorts Valley Water District (SVWD) provided Scorts Valley data. Bay Area Water Supply & Conservation Agency (BAWSCA) provided data for member agencies servicing San Mateo County and for Alameda County Water District, which services the Cities of Fremont, Union City and Newark. These agencies include Brisband/CVMID, Estero, Burlingame, Hillsborough, CWS - Bear Gulch, Menlo Park, CWS - Mid Peninsula, Mid-Peninsula, CWS - South ST, Millbare, Coastied, North Coast, Redwood City, Daly City, San Bruno, East Palo Alto, and Westborough. Cordileras serves residents in San Mateo County, but is not a BAWSCA member and therefore was not included in this analysis. Data for PY 2018-19 is preliminary. Population figures used to calculate per capita values include the population served by each water agency, and are provided by the agencies directly. Total water consumption figures used to calculate per capita values include the Sant SA data, the small number of agriculture or by private well-owners in the SCVWD data. In the BAWSCA data, the small number of agriculture avere agricultural customers, so total water consumption figures Sued to compute both the per capita consumption and the recycled percentage of total water used are the same. The year listed represents the fiscal year (e.g., 2019 represents the 2018-2019 fiscal year).

Air Quality Data are from the United States Environmental Protection Agency, Outdoor Air Quality Data, and include Santa Clara and San Mateo Counties. Unhealthy days are based on Air Quality Index (AQI) of >100 for sensitive groups, and >150 for the general population. The AQI includes Air Quality Index (AQI) for all AQI pollurants including carbon monoxide, czone, particulate matter, nitrogen dioxide, sullur dioxide, and lead. The PMD25 monitoring network was phased in between 1999 and 2001 in most areas, so earlier years do not in the PMDE (course of particulate matter).

Electricity Consumption & Productivity Electricity Consumption data is from the California Energy Commission, Gross Domestic Product (GDP) data is from Moody's Economy.com. GDP values have been inflation-adjusted and are reported in 2018 dollars, using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for the Silicon Valley and San Francisco data, and the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2019) for California data. Silicon Valley data includes Santa Clara and San Mateo Counties. Per capita values were computed from the California Department of Finance's E-4 Population Estimates.

Finance's E-4 Population Estimates. **Emissions Intensity for Power Providers; Share of Electricity Customers Served, by Provider**. In Silicon Valley, all electricity consumers receive power sourced by either PG&E (an investor-owned utility), one of the two municipal utilities (Silicon Valley Power in the City of Santa Clara, or Palo Alto Utilities), or one of the locally-controlled public agencies sourcing clean electricity. These community choice energy options are relatively new to the region, and include Silicon Valley Claem Energy which serves 13 communities in Santa Clara County, Peninaul Clean Energy which serves 20 San Mateo County, cities and the unin-corporated portion of the county; and San Jose Clean Energy, the newst of the three, serving residents and businesses in San Jose since February of this year. The remaining Silicon Valley communities outside of the two counties are served by Monteret Pag Community Power (Scotts Valley) and East Bay Community Energy (Fremont and Union City); Newark opted out of joining the community Horice energy program and thus remains served by PG&E. The three locally-controlled public-agency electricity providers have served customers since October 2016 (Peninsula Clean Energy), April 2017 (Silicon Valley Clean Energy), and Pobury 2019 (San Jose Clean Energy). Palo Alto Utilities has provided 100% carbon-neural electricity since and addition to providing carbon neural power to its customers. PG&E's emissions factor is from The Climate Registry, and customer counts were provided. The Page Volumer 2018 the 2018 Emission intensity is negative because the Carly's energy PG&E (2017), CAMX (2019), and the U.S. Average (2016). The analysis does not include direct access electricity customers. Greenee' Energy is the leading certification program for voluntary renewable energy in North America. The 2019 Greenee' Residual Mit: Emissions Rates are "greeneduse gas (CHG) emissions associated with untracked and unaliand U.J. based sources of electricity, based on loc

Solar Installations

Solar instalations: Data are from Palo Alto Municipal Utilities, Silicon Valley Power, and Pacific Gas & Electric, and include the entire city-defined Silicon Valley region. Years listed correspond to when the systems were interconnected. The category Non-Residential includes Commercial, Non-Profit, Government, Industrial, Utility, Military, and Educational. Camulative installed Solar capacity does not include installations prior to 1999. All systems included in the analysis are Net Energy Metred and Non-Export PV. PG&E data is from the California Solar Statistics, which publishes all 100 solar PV net energy metering (NEM) interconnection data per CPUC Decision (D.)14-11-001. 2019 data are through December 9 for Palo Alto Utilities, through December 11 for Silicon Valley Power, and through September for PG&E.

Technical Potential of Rooftop Solar Photovoltaics Data are from the 2010 U.S. Census, National Renevable Energy Laboratory weather data, EPA GHG Equivalencies, Department of Energy SLED (State & Local Energy Data), and Google Maps via the Google Project SunRoof, Data Explorer (dated November 2018, accessed November 2019). Silicon Valley includes the city-defined region. This tool estimates the technical solar potential of all buildings in a region. Technical potential includes electricity generated by the rooftop area suitable for solar panels assuming economics and grid integration are not a constraint. There are many definitions of technical potential, and other definitions may affect results by 25% or more. Based on Project Sunroof's definition of technical potential, installations meet the following circria: every included panel receives at least 75% of the maximum annual auto in the courty, every included roof has a total potential installation size of at least 2kW, and only areas of the roof with enough space to install four adjacent solar panels are included (obstacles like chimneys are taken into account).

Electric Vehicle Infrastructure Data are from the U.S. Department of Energy, and include public electric vehicle fueling stations and outlets in Santa Clara and San Marco Counties, and California. 2019 data are as of December 6; 2018 data are as of November 13; 2017 data are as of December 18; 2016 data are as of December 6; 2015 data are as of November 2; 2014 data are as of November 14.

Electric Vehicle Adoption

Vehicle registration data include registered light-duty vehicles only, and are as of October 2018. Electric vehicles include Battery Electric and Plug-In Hybrid vehicles. Silicon Valley includes the city-defined region.

Eligible Voter Turnout, by Age Eligible Voter Turnout by Age data are from the California Civic Engagement Project (CCEP) at the USC Price School of Public Policy, using data from the Statewide Database (the Redistricting Database for the State of California) and California Department of Finance (for voting age population estimates). Silicon Valley includes Santa Clara and San Mateo Counties. Eligible voter turnout is defined as the percentage of adult citizens who voted.

Partisan Affiliation

Data are from the California Secretary of State, Elections Division, Silicon Valley data are for Santa Clara and San Mateo counties Data are itoni nie zawiaty o date, Decusió Division. Suicon vancy data are tor Suita Caira data valero Uniters. Other includes Green, Liberarian, Natural Law, Pacze & Fredom/Reform, and Other. The 1988 and 2008 data are for the November Presidential General Elections. The 1998 and 2018 data are for the November Midterm General Elections. No Party Preference was formerly called Declined to State.

REPRESENTATION

Representation Data are from the GrassrootsLab GrassFire Directory (www.grassrootslab.com), a unique and comprehensive database that closely tracks, updates and categorizes local juridictions, elected officials and key staff members in California ciries, counties and school districts. Silicon Valley includes the city-defined region. Local elected officials and key staff members in California ciries, counties and school districts. Solicon Valley includes the city-defined region. Local elected officials and located on publicly available documentation that those officials self-identify with a particular racial/ethnic group. Other party affiliation includes American Independent, Green, Libertarian, Natural Law, Peace & Freedom/Reform, and Other. Data for Share of Local Elected Officials by Gender and Partisan Affiliation are through the end of 2019 and include results of the three council elections that took place in November in San Matco County; data for Race and Ethnicity, and Professional Background are through Janary 2019. Local elected officials include 229 Councilemembers, Mayons, and County Supervisors in 2019 (Councilmentbers in all 39 Silicon Valley ciries across four counties, the 10 County Supervisors for Santa Clara and San Mateo Counties, the District 2 Supervisor for Alameda County, and the District 5 Supervisor for Santa Cruz County). Of those 229 seats, 103 were up for election in 2018 and six were up for election in 2019.

APPENDIX B - Silicon Valley

	EMPLOYMENT Q2 2019	PERCENT OF TOTAL SILICON VALLEY EMPLOYMENT	PERCENT CHANGE		
			2007 -2019	2010 -2019	2018 -2019
TOTAL EMPLOYMENT	1,703,228	100.0%	23.4%	31.6%	1.7%
COMMUNITY INFRASTRUCTURE & SERVICES	845,949	49.7%	20.6%	28.7%	1.6%
HEALTHCARE & SOCIAL SERVICES ¹	177,485	10.4%	54.8%	42.5%	4.5%
RETAIL	134,933	7.9%	1.6%	9.8%	-0.7%
ACCOMMODATION & FOOD SERVICES	137,914	8.1%	34.5%	38.5%	0.2%
EDUCATION ¹	131,811	7.7%	40.6%	37.4%	2.1%
CONSTRUCTION	82,161	4.8%	14.3%	67.1%	2.5%
I OCAL GOVERNMENT ADMINISTRATION ²	47,309	2.8%	-18.8%	7.6%	1.5%
TRANSPORTATION	39,506	2.3%	10.9%	22.7%	-1.2%
BANKING & FINANCIAL SERVICES	20.008	1.2%	-3.2%	19.5%	0.7%
ARTS, ENTERTAINMENT & RECREATION	19.977	1.2%	10.2%	11.3%	2.7%
PERSONAL SERVICES	17,660	1.0%	46.3%	42.2%	3.0%
FEDERAL GOVT. ADMINISTRATION	10.814	0.6%	-14.7%	-33.9%	0.2%
NONPROFITS	10,039	0.6%	-13.4%	0.2%	1.1%
INSURANCE SERVICES	8.696	0.5%	-6.6%	13.1%	0.8%
STATE GOVERNMENT ADMINISTRATION ²	2,797	0.2%	-16.8%	6.2%	0.8%
WAREHOUSING & STORAGE	2,757	0.2%	30.5%	22.3%	6.7%
	2,027	0.1%	-3 5%	-26.2%	-0.4%
	450.928	26.5%	43.3%	44.6%	3.2%
COMPLITER HARDWARE DESIGN & MANUFACTURING	182 193	10.7%	67.5%	65.7%	3.1%
SEMICONDUCTORS & RELATED FOUIPMENT MANUFACTURING	42 830	2.5%	-24.4%	-10.1%	-2.2%
INTERNET & INFORMATION SERVICES	78 736	4.6%	284.5%	218.2%	10.3%
TECHNICAL RESEARCH & DEVELOPMENT (INCLUDES LIFE SCIENCES)	39 732	2 3%	49.5%	210.270	2 1%
SOFTWARE	32,415	1.9%	58.1%	47.8%	2.0%
TELECOMMUNICATIONS MANUFACTURING & SERVICES	15,252	0.9%	-28.8%	-20.9%	-3.6%
INSTRUMENT MANUFACTURING (NAVIGATION, MEASURING & ELECTROMEDICAL)	17.091	1.0%	-27.0%	-8.6%	0.8%
PHARMACEUTICALS (LIFE SCIENCES)	14.691	0.9%	12.4%	15.6%	2.4%
OTHER MEDIA & BROADCASTING, INCLUDING PUBLISHING	7,880	0.5%	-4.4%	-9.6%	-0.8%
MEDICAL DEVICES (LIFE SCIENCES)	6,996	0.4%	-1.1%	10.8%	-0.8%
BIOTECHNOLOGY (LIFE SCIENCES)	11,767	0.7%	91.7%	95.0%	9.5%
I.T. REPAIR SERVICES	1,347	0.1%	-43.2%	-49.8%	-1.6%
BUSINESS INFRASTRUCTURE & SERVICES	272,966	16.0%	13.1%	24.7%	1.3%
WHOLESALE TRADE	59,857	3.5%	-4.6%	4.5%	-1.7%
PERSONNEL & ACCOUNTING SERVICES	34,935	2.1%	-8.7%	2.3%	1.5%
ADMINISTRATIVE SERVICES	32,357	1.9%	24.5%	61.7%	0.7%
FACILITIES	28,822	1.7%	17.4%	22.1%	1.8%
TECHNICAL & MANAGEMENT CONSULTING SERVICES	24,242	1.4%	26.9%	21.4%	2.8%
MANAGEMENT OFFICES	28,514	1.7%	75.3%	81.3%	4.9%
DESIGN, ARCHITECTURE & ENGINEERING SERVICES	21,577	1.3%	16.2%	30.1%	3.5%
GOODS MOVEMENT	13,542	0.8%	13.4%	36.1%	0.6%
LEGAL	11,234	0.7%	0.7%	15.0%	0.2%
INVESTMENT & EMPLOYER INSURANCE SERVICES	14,557	0.9%	57.7%	54.7%	3.9%
MARKETING, ADVERTISING & PUBLIC RELATIONS	3,329	0.2%	-7.1%	32.8%	0.0%
OTHER MANUFACTURING	60,565	3.6%	-12.5%	4.2%	2.5%
PRIMARY & FABRICATED METAL MANUFACTURING	15,042	0.9%	-6.9%	3.9%	0.9%
MACHINERY & RELATED EQUIPMENT MANUFACTURING	13,407	0.8%	-3.2%	22.3%	1.9%
OTHER MANUFACTURING	10,737	0.6%	10.7%	22.1%	2.0%
TRANSPORTATION MANUFACTURING INCLUDING AEROSPACE & DEFENSE	9,198	0.5%	6.1%	-20.4%	6.8%
FOOD & BEVERAGE MANUFACTURING	8,386	0.5%	-47.3%	-1.3%	2.3%
TEXTILES, APPAREL, WOOD & FURNITURE MANUFACTURING	3,436	0.2%	-10.3%	18.2%	2.9%
PETROLEUM AND CHEMICAL MANUFACTURING (NOT IN LIFE SCIENCES)	359	0.0%	-66.7%	-62.3%	-1.4%
OTHER	72,820	4.3%	35.2%	50.2%	-4.8%

1. Includes government jobs (state and local).

2. Excludes government jobs in the additionary & 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, 2018 and 2019, modified slightly by EMSI, which removes suppressions and reorganizes public sector employment. Data for Q2 of 2019 was estimated at the 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

APPENDIX B - San Francisco

	EMPLOYMENT Q2 2019	PERCENT OF TOTAL SAN FRANCISCO EMPLOYMENT	PERCENT CHANGE		
			2007 -2019	2010 -2019	2018 -2019
TOTAL EMPLOYMENT	761,028	100.0%	36.7%	39.4%	2.6%
COMMUNITY INFRASTRUCTURE & SERVICES	430,749	25.3%	28.8%	33.3%	2.3%
HEALTHCARE & SOCIAL SERVICES ¹	91,784	5.4%	93.2%	89.3%	4.6%
RETAIL	45,377	2.7%	6.7%	18.2%	0.3%
ACCOMMODATION & FOOD SERVICES	86,027	5.1%	30.2%	30.8%	1.7%
EDUCATION ¹	49,679	2.9%	14.6%	10.3%	1.3%
CONSTRUCTION	21,440	1.3%	18.5%	59.5%	4.6%
LOCAL GOVERNMENT ADMINISTRATION ²	28,404	1.7%	16.2%	16.9%	2.0%
TRANSPORTATION	17,827	1.0%	91.2%	122.1%	6.3%
BANKING & FINANCIAL SERVICES	18,270	1.1%	3.2%	21.3%	3.8%
ARTS, ENTERTAINMENT & RECREATION	16,825	1.0%	27.8%	23.2%	2.1%
PERSONAL SERVICES	10,216	0.6%	55.1%	55.1%	2.9%
FEDERAL GOVT. ADMINISTRATION	9,554	0.6%	-11.6%	-11.3%	-1.2%
NONPROFITS	13,949	0.8%	36.2%	29.9%	2.5%
INSURANCE SERVICES	8,900	0.5%	-33.2%	-11.7%	-2.4%
STATE GOVERNMENT ADMINISTRATION ²	7.685	0.5%	12.0%	-3.8%	-1.7%
WAREHOUSING & STORAGE	192	0.0%	-66.5%	-36.2%	-1.2%
	4 619	0.3%	19.9%	4 2%	-2.4%
INNOVATION AND INFORMATION PRODUCTS & SERVICES	109 928	6.5%	199.1%	180.5%	7.7%
COMPLITER HARDWARE DESIGN & MANUFACTURING	57.017	3 3%	317.9%	242.7%	8.3%
SEMICONDUCTORS & RELATED FOURPMENT MANUFACTURING	62	0.0%	19.3%	-21.0%	10.5%
INTERNET & INFORMATION SERVICES	30.035	1.8%	1149.3%	663.1%	11.5%
TECHNICAL RESEARCH & DEVELOPMENT (INCLUDES LIFE SCIENCES)	2,706	0.2%	142.5%	149.8%	10.6%
SOFTWARE	4.842	0.3%	161.0%	118.0%	12.5%
TELECOMMUNICATIONS MANUFACTURING & SERVICES	3,151	0.2%	-31.9%	-19.4%	-8.3%
INSTRUMENT MANUFACTURING (NAVIGATION, MEASURING & ELECTROMEDICAL)	1,921	0.1%	2122.8%	3057.0%	10.1%
PHARMACEUTICALS (LIFE SCIENCES)	430	0.0%	1067.8%	89.1%	-9.9%
OTHER MEDIA & BROADCASTING, INCLUDING PUBLISHING	7,681	0.5%	-29.1%	-15.7%	-3.1%
MEDICAL DEVICES (LIFE SCIENCES)	149	0.0%	-26.1%	34.5%	0.0%
BIOTECHNOLOGY (LIFE SCIENCES)	1,802	0.1%	0.0%	5.0%	0.0%
I.T. REPAIR SERVICES	133	0.0%	43.3%	39.5%	-10.2%
BUSINESS INFRASTRUCTURE & SERVICES	175,996	10.3%	30.2%	39.8%	2.3%
WHOLESALE TRADE	15,710	0.9%	41.4%	65.3%	1.8%
PERSONNEL & ACCOUNTING SERVICES	20,196	1.2%	22.2%	28.0%	3.0%
ADMINISTRATIVE SERVICES	15,698	0.9%	19.1%	28.5%	1.8%
FACILITIES	16,403	1.0%	92.2%	44.6%	2.2%
TECHNICAL & MANAGEMENT CONSULTING SERVICES	22,947	1.3%	84.7%	89.0%	5.3%
MANAGEMENT OFFICES	23,601	1.4%	50.6%	61.1%	2.2%
DESIGN, ARCHITECTURE & ENGINEERING SERVICES	14,809	0.9%	2.6%	42.5%	1.2%
GOODS MOVEMENT	6,738	0.4%	43.9%	75.7%	6.4%
LEGAL	14,200	0.8%	-2.5%	4.8%	0.1%
INVESTMENT & EMPLOYER INSURANCE SERVICES	16,105	0.9%	-9.6%	2.1%	0.3%
MARKETING, ADVERTISING & PUBLIC RELATIONS	9,589	0.6%	52.5%	43.5%	1.2%
OTHER MANUFACTURING	6,972	0.4%	-19.8%	11.7%	2.1%
PRIMARY & FABRICATED METAL MANUFACTURING	556	0.0%	2.2%	-5.5%	6.2%
MACHINERY & RELATED EQUIPMENT MANUFACTURING	247	0.0%	488.5%	350.0%	10.2%
OTHER MANUFACTURING	966	0.1%	12.4%	36.5%	5.0%
TRANSPORTATION MANUFACTURING INCLUDING AEROSPACE & DEFENSE	357	0.0%	-53.5%	-38.7%	8.3%
FOOD & BEVERAGE MANUFACTURING	3,174	0.2%	64.3%	73.4%	3.7%
TEXTILES, APPAREL, WOOD & FURNITURE MANUFACTURING	1,654	0.1%	-62.5%	-31.1%	-5.5%
PETROLEUM AND CHEMICAL MANUFACTURING (NOT IN LIFE SCIENCES)	17	0.0%	-87.6%	-78.3%	4.3%
OTHER	37,383	2.2%	-10.3%	-27.7%	-6.0%

ACKNOWLEDGMENTS

This report was prepared by Rachel Massaro, Vice President and Director of Research 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 senior advisor.

Jill Jennings created the report's layout and design; Robin Doran served as copy editor.

We gratefully acknowledge the following individuals and organizations that contributed data, time, and expertise:

Altamont Corridor Express (ACE)	JLL		
Association of Bay Area Governments (ABAG)	Jon Haveman, Marin Economic Consulting		
Atlas Hospitality Group	Kelly Costa		
Bay Area Council	Kidsdata.org		
Bay Area Water Supply & Conservation Agency	Kyle Neering		
Ben Foster, Fosterra	Luka Kocic		
BW Research	Magnify Community		
California Civic Engagement Project at the USC	Mary Bradley		
CBRE Research	Palo Alto Municipal Utilities		
	Peninsula Clean Energy		
of San Mateo County	Phoenix Global Wealth Monitor		
Center for Women's Welfare, University of Washington	Renaissance Capital		
Citics of Cilicon Mallow	SamTrans		
Cities of Silicon valley	San Jose Clean Energy		
Colliers International Silicon Valley	Santa Clara Valley Transportation Authority		
CoreLogic	Santa Clara Valley Water District		
Discourse Data	Santa Cala Valley Water District		
Drew Starbird, Santa Clara University, Leavey School of Business	Second Harvest of Silicon Valley		
Elaine Kurtz	Silicon Valley Clean Cities		
EY Launch on Loan Interns (Mysha Fairuz, Tracy Hunt Gonzalez, Ines Hernandez, Alexandra	Silicon Valley Clean Energy		
Malaga Neyra, Juan Pimentel, Arely Ramos, Yoann Rudy Tchakoua, and Austin Villanueva)	Silicon Valley Power		
Graggroatel ab	Tom McCalmont		
	United States Patent and Trademark Office		
Heidi Young			
Issi Romem, MetroSight			

Generous funding for this report was provided by Silicon Valley Community Foundation and the City/County Association of Governments (C/CAG) of San Mateo County.





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



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