

# 2021 SILICON VALLEY INDEX



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## DESIGNED BY:

JILL MINNICK JENNINGS

# ABOUT THE 2021 SILICON VALLEY INDEX

Dear Friends:

They say it takes a crisis to reveal one's true character.

That certainly seems to be the case with Silicon Valley and the upheaval wrought by COVID-19. It has shown our region to be many laudable things: compassionate, resilient, resourceful, dynamic, and possessing an economic engine that performs remarkably well under stress.

This year's Index shows all of these enviable qualities in living color, including more than \$94 million generated (and quickly!) for emergency response and relief, the centrality of Silicon Valley products and services in a sheltering world, the resulting market share of our driving industries, their prodigious performance on the stock markets, venture capital somehow approaching record highs (\$46 billion), and the Valley making major contributions—through genomic sequencing and supercomputing—to the race for a vaccine.

Improbably, we even found our home values rising by five percent, despite general tumult and a striking pattern of techies relocating.

But the crisis has revealed another aspect of our character more clearly than ever, and it is deeply disturbing: Silicon Valley has a grotesque set of disparities. Our high-octane tech economy has masked the despair in our service sector for many years, but the pandemic has ripped the cover off, showing that despair turning into grief and destruction.

We used to lament that in Silicon Valley the rich kept getting richer while the poor became poorer. Today we must frankly admit that the pandemic has made the rich richer while the poor are dying. Hispanic rates of COVID infection are fifty percent higher than the rest of the population. Unemployment in the service sector and the "in-person" economy shot up beyond 30 percent, while the "work from home" economy essentially maintained full employment. Fully half of our Black and 42 percent of our Hispanic households are facing high risk of eviction and living with food insecurity. In the past year Silicon Valley's essential workers have had to make impossible choices between sheltering (and therefore not working) or working (but exposing themselves to the virus).

But they also say crisis breeds opportunity. Ours is the chance to build back better. Our region has the wherewithal, the ingenuity, and a renewed commitment on the part of our leaders. Our noble service providers and heroic frontline workers emerge from the crisis with newfound stature. Employers express heightened resolve to create new ladders of opportunity, and to make diversity and inclusion a priority in their hiring practices. There is even a sense that we can keep the air quality gains that sheltering forced on us, and that Silicon Valley can bring fresh leadership to the planet's climate crisis.

In terms of our character, the coming months will be the most telling. This organization is committed to providing the framework—and the data—for the decision-making ahead.

Yours,



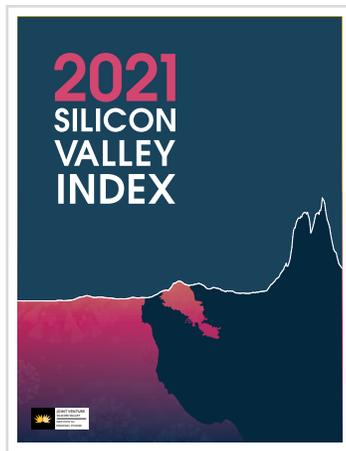
Russell Hancock

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](http://www.siliconvalleyindicators.org).

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# PROFILE OF SILICON VALLEY



## 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

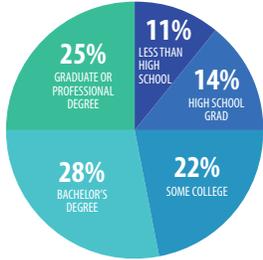
### ALAMEDA COUNTY

Fremont, Newark, Union City

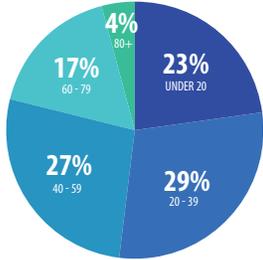
### SANTA CRUZ COUNTY

Scotts Valley

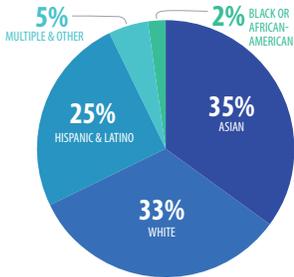
ADULT EDUCATIONAL ATTAINMENT



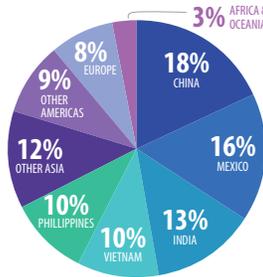
AGE DISTRIBUTION



ETHNIC COMPOSITION



FOREIGN BORN - 39.1%



\*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, Tonga, 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.

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.

## FEATURES



**Web Icon** - Indicates more data is available online.



**Mini Chart** - Clarifies data by presenting it in a simplified format.



**Red Shading** - Highlights pandemic-period data and narrative.

# Key COVID-19 Health Metrics

through January 2021; vaccinations through mid-February

1<sup>st</sup> Dose 2<sup>nd</sup> Dose



**SAN MATEO COUNTY**

Share Vaccinated: 14.7%
Cases: 36,370
Deaths: 382
Tests: 1,025,004



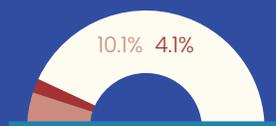
**SANTA CLARA COUNTY**

Share Vaccinated: 15.0%
Cases: 102,904
Deaths: 1,552
Tests: 2,438,117



**SAN FRANCISCO**

Share Vaccinated: 15.2%
Cases: 31,687
Deaths: 364
Tests: 1,376,752

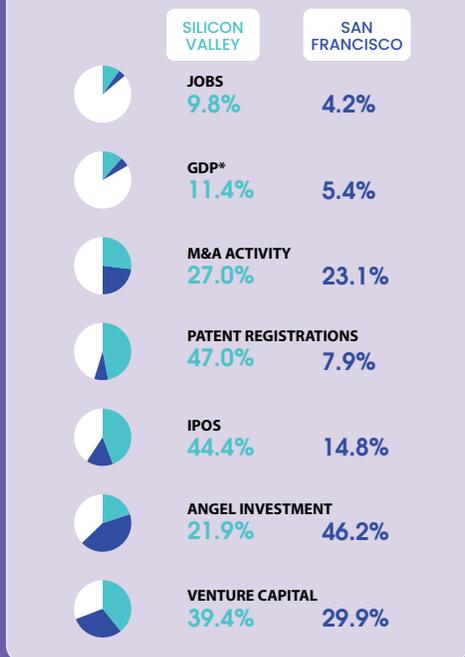


**CALIFORNIA**

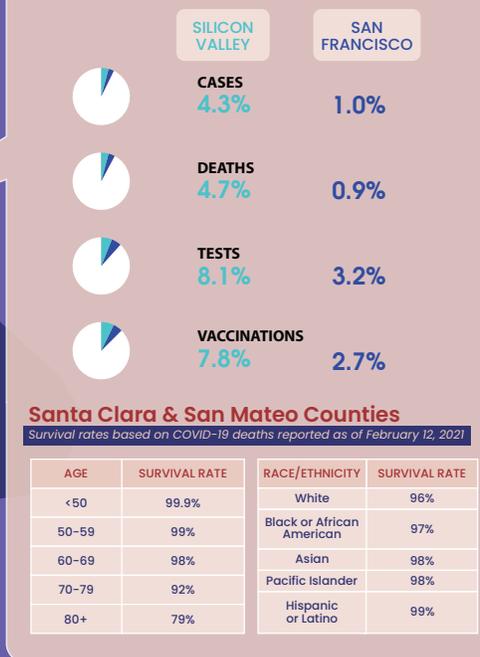
Share Vaccinated: 14.2%
Cases: 3,258,706
Deaths: 40,908
Tests: 42,569,193

Note: County cases, deaths, and tests through January 31, as reported on February 12 (San Mateo County), February 14 (Santa Clara County), and February 13 (San Francisco); San Francisco test total is through January 21. Share vaccinated is calculated as a percentage of the population age 16 and over (U.S. Census Bureau, 2019 American Community Survey). County-level data is from the individual county health department dashboards. California cases, deaths, testing, and vaccines administered are from the state dashboard as of February 1; the total number of California residents who have received a vaccine, by doses, are from the Centers for Disease Control and Prevention COVID Data Tracker. Vaccine data are through February 12 (San Mateo County), February 14 (Santa Clara County and California), and February 13 (San Francisco).

## The Region's Share of California's Economic Drivers



## Share of California COVID-19 Metrics



\*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, 2020); GDP (Moody's Economy.com, 2020); Venture Capital (Thomson ONE, 2020); Patent Registrations (U.S. Patent and Trademark Office, 2020 through December 12); Initial Public Offerings (Renaissance Capital, 2020); Jobs (U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages; EMSI, Q2 2020); Angel Investment (Crunchbase, 2020); Mergers & Acquisitions (Factset Research Systems, 2020).

# 2021 INDEX HIGHLIGHTS

The COVID-19 pandemic affected every aspect of Silicon Valley's economy and community: physical health, social and emotional wellbeing, jobs and income, food, housing, air quality, digital access, and more. The turbulence of 2020 also played out against the backdrop of a contentious presidential election and a high degree of civil unrest. Issues that had long plagued the region were further exposed, particularly the region's racial and ethnic disparities, the share of individuals and families unable to keep up with rising costs, and the gaping income and wealth divides. While some easily transitioned to remote work—perhaps even prospering from the staggering market growth of the tech sector—others found themselves unemployed, underemployed, or on the front lines risking exposure to the virus.

## KEY COVID-19 METRICS:

San Mateo & Santa Clara Counties, combined, through January 31, 2021

**Tests: 3.46 million**

**Cases: 139,274**

74% Santa Clara County; 26% San Mateo County

84% ages 60+; 55% <age 40

49% Hispanic or Latino; 15% Asian; 14% White

**Deaths: 1,934\***

53% ages 80+; 89% ages 60+;

10% ages 40-59; 2% <age 40

**Daily Hospitalizations:**

**906 peak (January 6); 613 on January 31**

**Survival Rate: 98.6% of confirmed cases**

79% ages 80+; 92% ages 70-79; 99.9% <age 50

White 96%; Black 97%; Asian 98%;

Pacific Islander 98%; Hispanic 99%

**Vaccinations: 14.9% of the population 16+**

10.4% 1<sup>st</sup> dose; 4.5% completed series\*\*

\*As of February 12<sup>th</sup> reporting.

\*\*Through February 12 (San Mateo County) and February 14 (Santa Clara County)

**Population growth has halted. While the region continues to attract tech talent from around the world, incoming (primarily foreign-born) talent is met with a massive outflow of residents to other parts of the state and nation, and slower natural growth. Tech employment is still rising here, but those companies are adding jobs more rapidly elsewhere.**

The overall educational attainment levels of Silicon Valley residents remain extraordinarily high. However, the majority of Hispanic and Black residents do not have an undergraduate degree, adding to existing disparities in incomes and economic opportunity. Significant outmigration to outlying parts of the Bay Area and elsewhere continued into 2020, coupled with seven percent more deaths and an all-time low birth rate; mid-year population growth was near zero.

Foreign-born residents represent a larger share of the region's

population than ever before (39 percent), and an even larger share of tech workers (particularly female tech workers). Silicon Valley continues to rank far above other U.S. talent centers in terms of the share of local jobs in tech, and tech job growth.

**The staggering amount of job losses fell unevenly, disproportionately affecting low-income earners, renters, and Black and Hispanic workers. The income and wealth divide—already gaping—reached staggering proportions. Housing insecurity and hunger rose, met by increasing costs at a time when few could afford them.**

Pandemic-related job losses drove the unemployment rate to an unprecedented 11.6 percent in April, higher than the Great Recession or dot.com bust. Black and Hispanic workers filed initial unemployment insurance claims at rates 1.5 to two times higher

than White workers. The jobs lost were concentrated in lower-income occupations (with losses of up to 31 percent by May). The losses were most pronounced in the accommodation and food services sector (-41 percent), the arts, entertainment and recreation sectors (-54 percent), and personal services (-54 percent).

Within the first three months of the pandemic alone, as many as 44,000 low-income renters had become burdened by housing costs due to job losses. The need for food assistance rose steeply, evidenced by CalFresh applications tripling between February and May. An estimated 197,000 households remained at risk of rent or mortgage nonpayment at the end of 2020, and may have lost their housing had it not been for the eviction moratoria in place.

Silicon Valley's income inequality has grown twice as quickly as that of the state or nation over the past decade. The wealth divide is even more stark, with the top 16 percent of households holding 81 percent of the wealth; meanwhile, the bottom 53 percent held a mere two percent of investable assets. Nearly one out of five Silicon Valley households have no savings; their income losses led to sharp rises in housing and food insecurity. Meanwhile, food prices rose (+eight percent), as did the cost of transportation and the cost of childcare (rising twice as quickly as inflation over the past decade).

### **Silicon Valley's tech companies and highly-skilled workforce thrived amid the crisis.**

The region had lost more than 151,000 jobs by June, while the tech sector remained nearly untouched with overall employment levels up two percent despite some layoffs. 2020 was a record year for venture capital (\$46 billion), which fueled a record 67 megadeals in Silicon Valley and 41 in San Francisco. A quarter of US unicorns and two-thirds of US decacorns were headquartered here. The total number of patents registered in each of the last two years were higher than ever before, and the year ended with 24 new Silicon Valley publicly-traded companies. In aggregate, Silicon Valley and San Francisco companies increased their market capitalization by 37 percent, reaching nearly \$10.5 trillion by the end of the year.

The footprint of the major tech companies increased, even despite some pandemic-related construction delays. More new commercial space was under construction than ever before (21 million square feet) and another 14 million square feet is in the pipeline. While commercial leasing activity did slow down by as much as 67 percent for office space, most tenants and landlords took a wait-and-see approach: landlords held rents steady and tenants held onto their space, even if unoccupied.

### **Connectivity became an even bigger issue with the prevalence of remote work and distance-learning, particularly for lower-income students and those living in rural communities. High school dropout rates rose, and standardized testing was suspended.**

The region experienced a significant decline in internet speeds. Although Census data from 2019 indicated that the vast majority (97 percent) of Silicon Valley students had access to a computer and broadband internet at home, that did not translate to having adequate digital access for distance learning. Tens of thousands of students lacked sufficient connectivity, and many were rescued

by regional efforts. Graduation rates declined over the past school year, and the high school dropout rate rose by three percentage points, with the highest rates among the homeless (50 percent), English-language learners (28 percent), Hispanic (16 percent) and socioeconomically disadvantaged students (16 percent). Statewide standardized testing was suspended due to COVID; however, only 54 percent of eighth-graders were proficient in math prior to the pandemic, and limited fall 2020 data indicated students were falling behind by three percentage points.

### **Fewer people were driving or riding public transit, spending money in stores, or participating in arts, culture, and entertainment. The consequences were wide-ranging.**

Due to the sheltering orders, regional mobility declined to levels never seen before and the air quality gains were dramatic until the rampant wildfires set in. Budgets of public transit agencies and arts organizations were decimated. By spring, more than 60 percent of arts and culture jobs had been lost. Consumer spending on arts and entertainment shifted almost entirely from events and attractions (-54 percent) to home entertainment and hobbies (+18 percent). With fewer opportunities to engage with community, family, and friends, many people—particularly young adults—experienced rapidly rising rates of anxiety and/or depression.

### **The philanthropic community, local government organizations, and nonprofits came together as never before to address rising needs, with a focus on food and shelter.**

Nineteen major COVID-19 response funds granted over \$94 million in pandemic relief, \$58 million of which was disbursed within the first three months of the crisis; nearly two-thirds of all funding went toward food, shelter, and other basic needs. Many of the region's more than 11,000 homeless were housed through efforts such as Project Roomkey, by converting motels and hotels, and expanding local shelter capacity. Food distribution efforts ramped up among hundreds of service providers; by June Second Harvest of Silicon Valley had doubled the number of meals they provide (10.2 million).

### **Civic engagement increased significantly amid a presidential election and high levels of civil unrest. Local government faced declining public funds and made major adjustments.**

Because of a high-stakes national election, voter registration rates and eligible voter turnout reached unprecedented levels (85 percent and 73 percent, respectively). Turnout among young voters, traditionally low, rose to a record high of 63 percent. Absentee voting rates reached new heights due to the pandemic, with more than nine out of ten voters either mailing or dropping-off their ballots.

Meanwhile, local government agencies were adjusting budgets to accommodate pandemic-related declines in revenues (from transient occupancy taxes, charges for services, and business license taxes among others) that are expected to be greater than those experienced during the Great Recession or the dot.com bust. All total, Silicon Valley cities are expected to have more than \$400 million in budget shortfalls.

# Snapshot of Key COVID-19 Indicators & Impacts

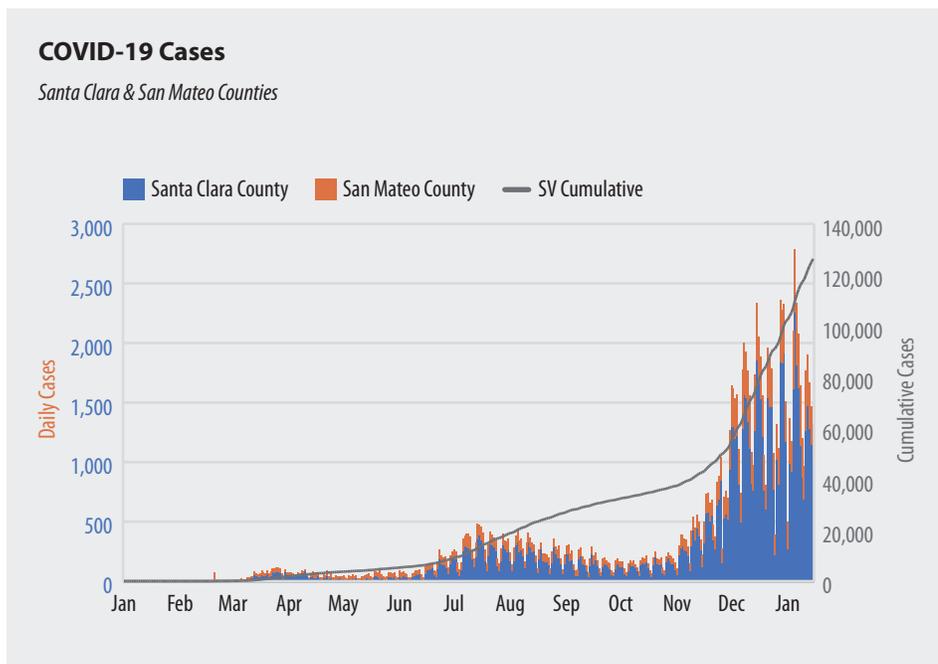
The COVID-19 pandemic has affected every segment of Silicon Valley's economic and community health. From the health impacts themselves, to its effect on employment, IPOs, childcare, hunger, housing, and so much more, the pandemic and associated policy actions (aimed at limiting virus transmission) have rippled through every part of our day-to-day lives and, in many cases, will have long-term implications.

While nearly all of the indicators in the Index have been influenced by the pandemic, in one way or another, this section

provides a snapshot of some of the key indicators showing direct health impacts as well as those influencing the health of the region as a whole.

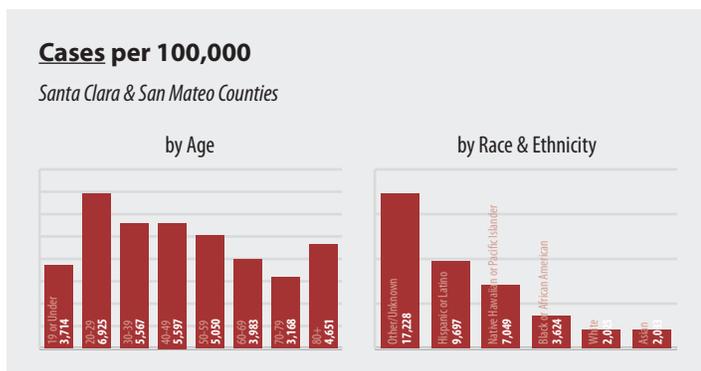
Throughout the report, the pandemic period is noted using red shading on charts and tables. For datasets that do not include information after March 2020, additional data or reference information is included in the narrative relating it to the pandemic (where possible).

Visit the [Silicon Valley COVID-19 Data Dashboard](https://siliconvalleyindicators.org/live-updates/covid-data) for up-to-date metrics: <https://siliconvalleyindicators.org/live-updates/covid-data>

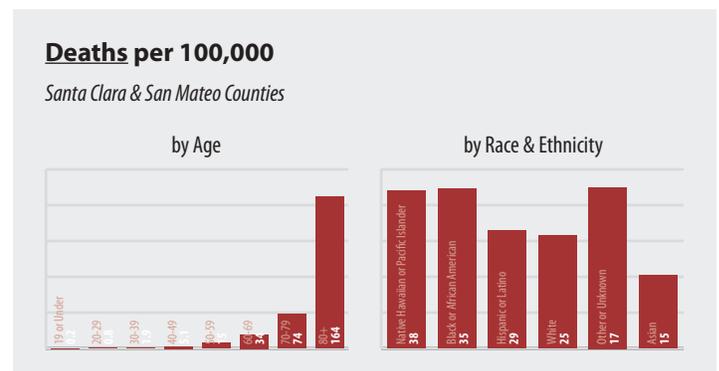


**Cumulative COVID-19 cases in Santa Clara and San Mateo Counties totaled more than 139,000 by the end of January 2021. As of February 12 reporting, COVID-related deaths totaled 2,134—a death toll that included 21% of those ages 80+ who contracted the disease.**

Data Sources: County of Santa Clara; San Mateo County Health | Analysis: Silicon Valley Institute for Regional Studies



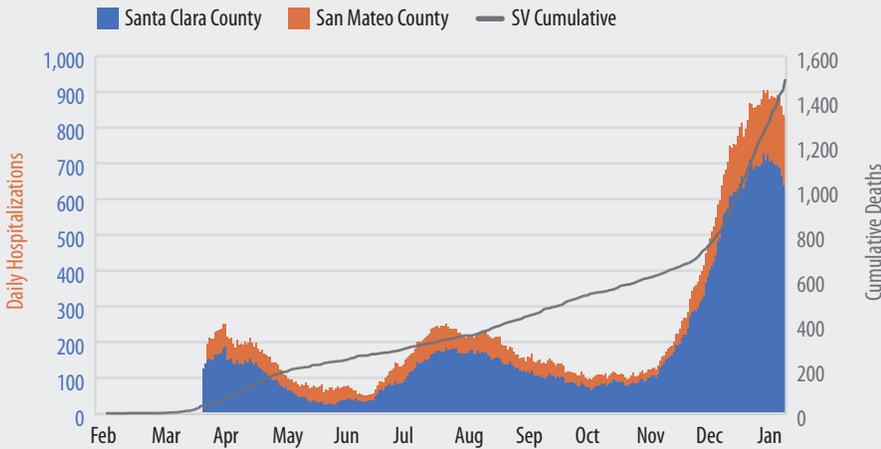
Note: Cumulative Cases and Deaths Per Capita by Age, Race & Ethnicity are through January 19, plus preliminary data through January 24, 2021. | Data Sources: County of Santa Clara; San Mateo County Health; United States Census Bureau Analysis: Silicon Valley Institute for Regional Studies



Note: Cumulative Cases and Deaths Per Capita by Age, Race & Ethnicity are through January 19, plus preliminary data through January 24, 2021. | Data Sources: County of Santa Clara; San Mateo County Health; United States Census Bureau Analysis: Silicon Valley Institute for Regional Studies

## COVID-19 Hospitalizations & Deaths

Santa Clara & San Mateo Counties

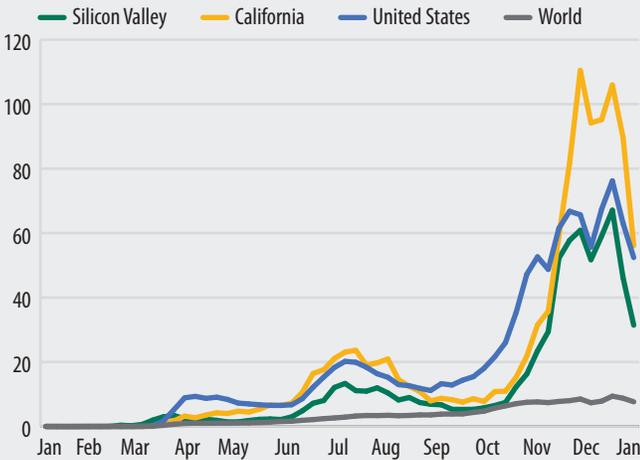


Data Sources: County of Santa Clara; California Department of Public Health; *The New York Times* | Analysis: Silicon Valley Institute for Regional Studies

## COVID-19 Cases per 100,000

7-Day Moving Average

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

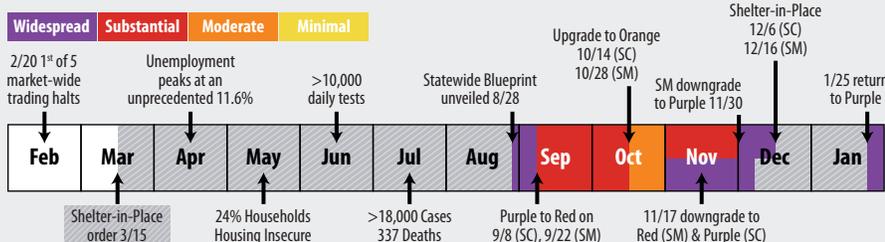


Data Sources: County of Santa Clara; San Mateo County Health; California Department of Public Health; *The New York Times*; World Health Organization; United Nations Population Fund; United States Census Bureau | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley's per capita case rates remained lower than the state and country overall until after Thanksgiving, subsequently peaking at just above 70 per 100,000 residents in early January.

## Blueprint for a Safer Economy

Color-Tier System Timeline, Santa Clara (SC) and San Mateo (SM) Counties



Note: Timeline based on the State of California Blueprint for a Safer Economy (<https://covid19.ca.gov/safer-economy>) color tier system, and key dates as announced by the Counties of Santa Clara and San Mateo.

## JOBS

### Unemployment Rate



The region's unemployment rate soared to unprecedented levels, peaking in April. By June, more than 150,000 jobs were lost in Silicon Valley (445,000 Bay Area-wide).

## HUNGER

### CalFresh Applications (thousands)



Food needs rose sharply with job losses and reduced access to free/reduced-price school meals. Food distribution and regional philanthropic efforts ramped up in rapid response.

## MOBILITY

### Monthly Freeway Miles per Person



Following the mid-March shelter-in-place orders, regional mobility declined significantly. Freeway miles driven and daily traffic delays hit an all-time low in April, and mass transit ridership fell to a fraction of pre-pandemic.

## CONSUMER SPENDING

### In-Store vs. Online Purchasing



There was a clear and swift shift away from in-store shopping to spending online as residents stayed home to reduce their exposure to the virus, plus varying degrees of economic restrictions on local shopping outlets.

## STOCK MARKET

### Aggregate Regional Market Cap (\$trillions)



The stock market decline from mid-February to late-March resulted in a \$2.32 trillion loss of market cap among Silicon Valley and San Francisco's 400+ public companies, though more than that was regained in the remainder of the year (+\$5.17 trillion).

Note: Unemployment Rate, Monthly Freeway Miles Driven, and CalFresh Applications include Santa Clara and San Mateo Counties; Aggregate Regional Market Cap includes all Silicon Valley and San Francisco Public Companies; In-Store vs. Online Spending includes the city-defined Silicon Valley region, and excludes Store Card purchases. California Department of Finance population estimates were used to calculate average monthly vehicle miles driven per person. | Data Sources: Crunchbase; IEX Cloud; Earnest Research COVID-19 Tracker; Caltrans PEMS; United States Bureau of Labor Statistics; California Employment Development Department; California Department of Finance; California Department of Social Services | Analysis: Silicon Valley Institute for Regional Studies

# PEOPLE

## Talent Flows and Diversity

Population growth rates for the region and statewide were reported at near zero in mid-2020. In Silicon Valley, this stagnation is due to a combination of declining birth rates (which are lower than any other year over the last half-century) and a significant outflow of people to other parts of the state and nation. Little recent data is available to illustrate the anecdotal outflow of residents during the pandemic thus far. Natural growth (births minus deaths) will be impacted by the number of COVID-related deaths, which (through January 2021 alone) amounted to roughly 12 percent of the typical number of annual deaths.

The region continues to attract tech talent from all around the world, and overall educational attainment levels of Silicon Valley residents remain extraordinarily high. However, the majority of Hispanic and Black residents do not have an undergraduate degree. This disparity in educational attainment levels is reflected in disparities across other socioeconomic indicators such as income, housing, and ability to build wealth. Some of the region's tech talent (largely men) are educated locally, with foreign talent continuing to pour in. Silicon Valley's foreign-born population in 2019 was higher than for any year on record, dating back to the

mid-1800s, and more than half the population speaks a language at home other than English. Women continue to be underrepresented in technical occupations; of the women that are in tech jobs, nearly three-quarters came from abroad.

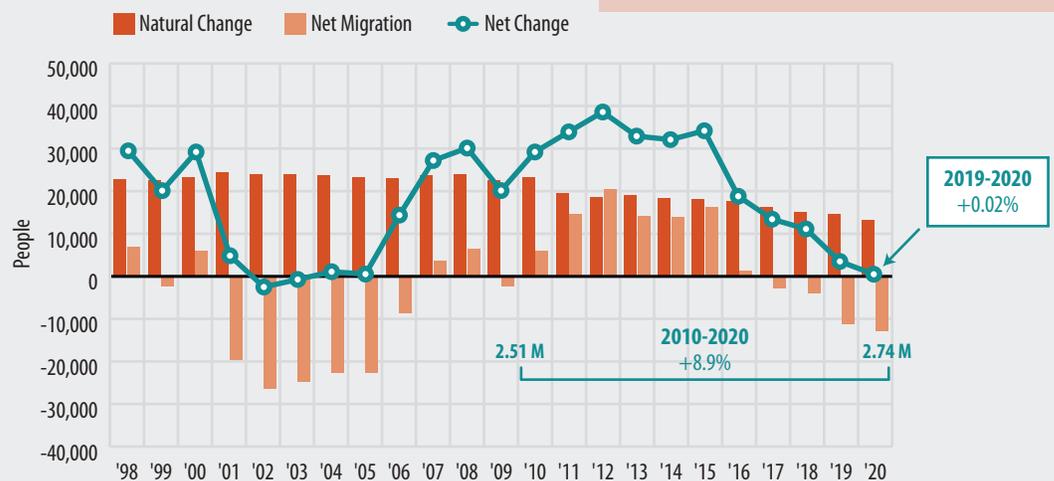
### Why is this important?

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

Silicon Valley's population (including Santa Clara & San Mateo Counties) grew by only a fraction of a percent (+0.02%) between July 2019 and July 2020—the smallest gain since 2005. Similarly, the state of California's population grew by only 0.1%.

### POPULATION CHANGE Components of Population Change

Santa Clara & San Mateo Counties



During a typical year, around 15,000 Santa Clara and San Mateo County residents die (with an annual average of 15,300 over the past five years). The 1,813 COVID-19 deaths reported as of February 1 alone represent a 12% increase over this typical annual count.

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

Silicon Valley's population growth has slowed over the past five years—down to almost zero (from an average gain of 31,600 per year between 2007 and 2015).

Over the past decade, the region's population has grown by +8.9% (compared to +11.0% in San Francisco, and +6.5% in the state as a whole).

The stark year-over-year decline in Silicon Valley's population growth rate was largely due to increased net-outmigration since 2016, coupled with a lower rate of natural growth beginning in 2011 and to an even larger extent after 2016.

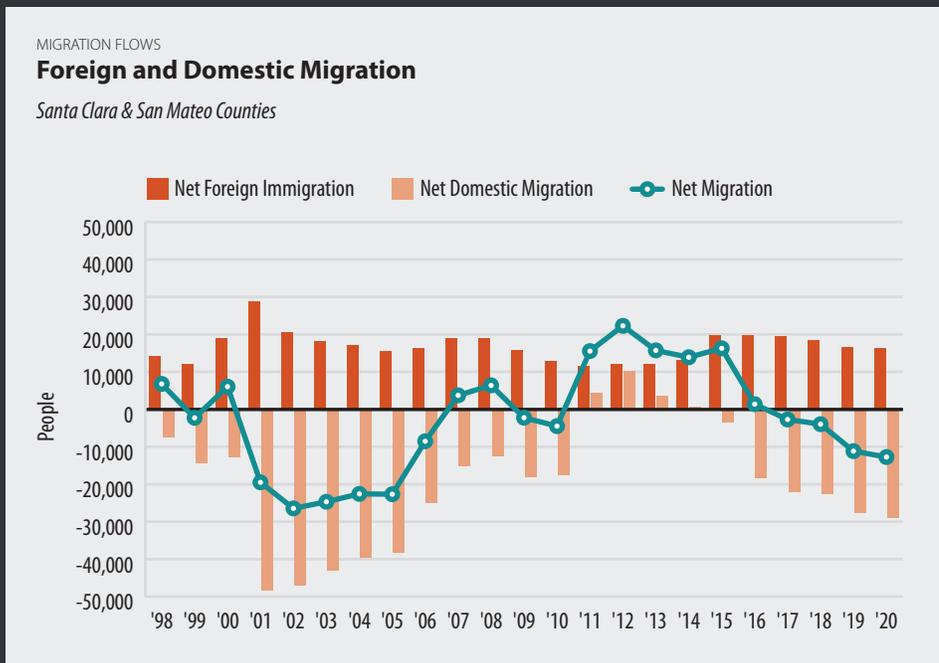
makeup of the region’s people—and its newcomers—helps everyone to better understand the region’s assets and challenges.

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.<sup>1,2</sup> Maintaining and increasing these flows, combined with efforts to integrate immigrants into 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 businesses and the region as a whole. These backgrounds shape the perspective from which tasks are undertaken. By creating inclusive communities and workplaces, every-

one is better able to build, succeed, and grow together. Numerous efforts aim to create and maintain equality within the talent pool (and in educating a future workforce), and tracking the progress allows all to reflect and continue to strive for a better, more inclusive region.



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

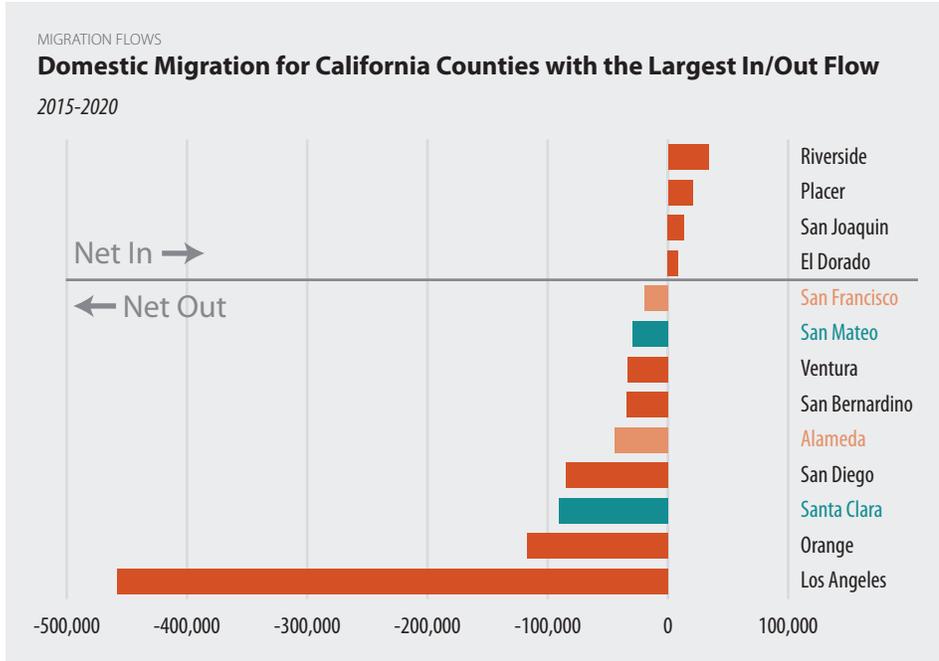
In each of the past five years, Silicon Valley’s annual domestic outmigration was greater than in any other year since 2006. The magnitude of net outmigration in 2020 was around half of that experienced in 2001, post dot.com bust.

Silicon Valley has only experienced a net in-migration from other parts of the state and country during four of the past 30 years. Last year, outmigration exceeded in-migration by nearly 12,800 people—more than any other year since those following the dot.com bust (2001–2005).

For the past four years, more people have left Silicon Valley than have moved in. Between July 2015 and July 2020 (a five-year period), the region gained a net 90,600 foreign immigrants but lost a net 119,800 residents to other parts of California and the United States; the total net loss of Silicon Valley residents over that time period was -29,200.

# PEOPLE

## Talent Flows and Diversity



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

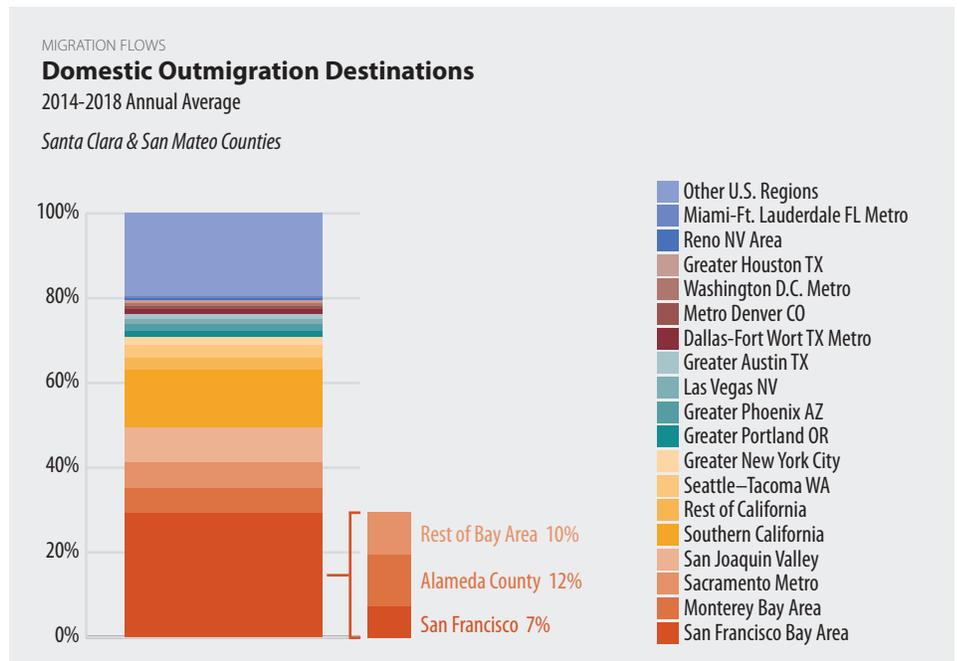
Of California's 58 counties, 43 have experienced a net outflow of domestic migrants over the past five years; 92% of California's out-of-county moves relocated out of the state entirely. In contrast, the majority (59%) of Silicon Valley's domestic outmigrants stayed in California—29% remaining in the Bay Area, 6% moving to the nearby Monterey Bay Area, 6% to the Sacramento area, 8% to San Joaquin Valley, and 14% to southern California.

Santa Clara County ranked third among California's 58 counties for net domestic outmigration between July 2015 and July 2020, with a net loss of 90,200 residents.

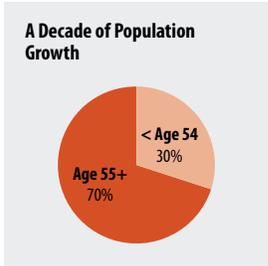
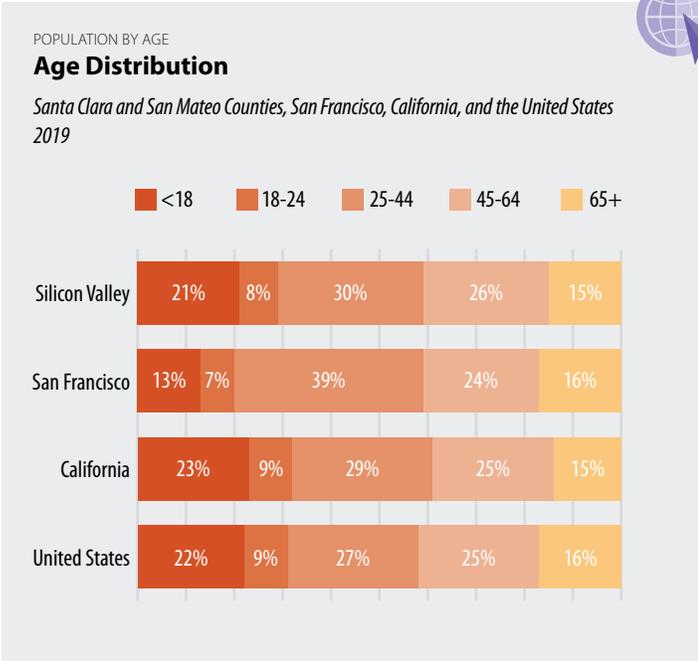
Top out-of-state destinations for the region's outmigrants include the Seattle-Tacoma area (3%), Greater New York City (2%), in and around Portland Oregon (2%), Phoenix, Las Vegas, Austin, Dallas-Fort Worth, and Denver (1% each) among a handful of others.

Each year, approximately 3,300 Silicon Valley residents relocate to Alameda County, and 1,900 to San Francisco; however, counter-migration is occurring as well. There are more people moving from Silicon Valley to Alameda County than moving in, resulting in a *net outflow* of approximately 5,100 per year. In contrast, there are fewer Silicon Valley residents moving to San Francisco than moving in, resulting in a *net inflow* from San Francisco of approximately 2,500 per year (based on 2015-2020 data).

Between 2014 and 2018, Santa Clara and San Mateo Counties combined lost more than 147,000 residents to other parts of the state and country—amounting to a turnover of approximately 5% to 6% of the region's population annually.



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



Silicon Valley’s population continues to age, with a growing number of residents ages 65 and over (up by more than 36% since 2009) and a shrinking number of children under the age of 18 (down 4%).

Note: A Decade of Population Growth includes Santa Clara and San Mateo Counties by age range between 2009 and 2019. The share of growth includes the portion of positive growth by age range only. | Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies

The core working age group (25-44) makes up a slightly larger share of the combined Santa Clara and San Mateo County population (30%) than the state’s (29%) or nation’s (27%); San Francisco has a much larger share in that age group (39%).

Between 2009 and 2019, the number of infants and preschool-aged children declined by more than 30,000 (-16%) in Silicon Valley. Over the same 10-year period, the number of children ages five to nine declined by 15,000 (-9%) among the two counties, amounting to an average of 42 fewer students at each of the more than 360 elementary schools.

Between 2009 and 2019, Santa Clara and San Mateo Counties gained an additional 190,800 residents; among the age groups that increased in number, 70% of the growth is accounted for by those ages 55 or older.

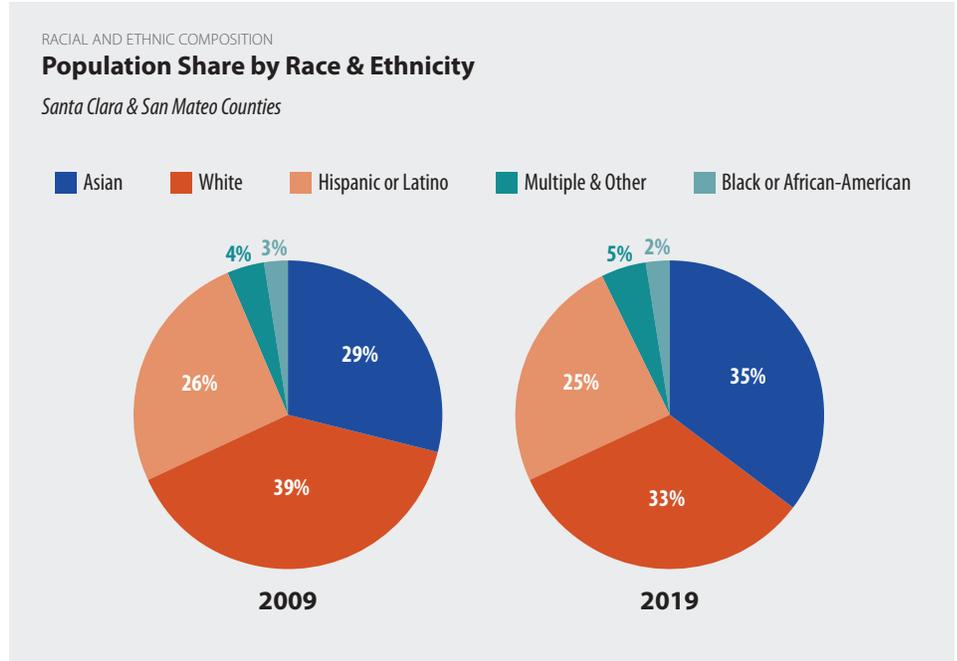
# PEOPLE

## Talent Flows and Diversity

Silicon Valley's population share of Black or African American residents (2.3% in 2019) has remained at just over two percent for the past decade.

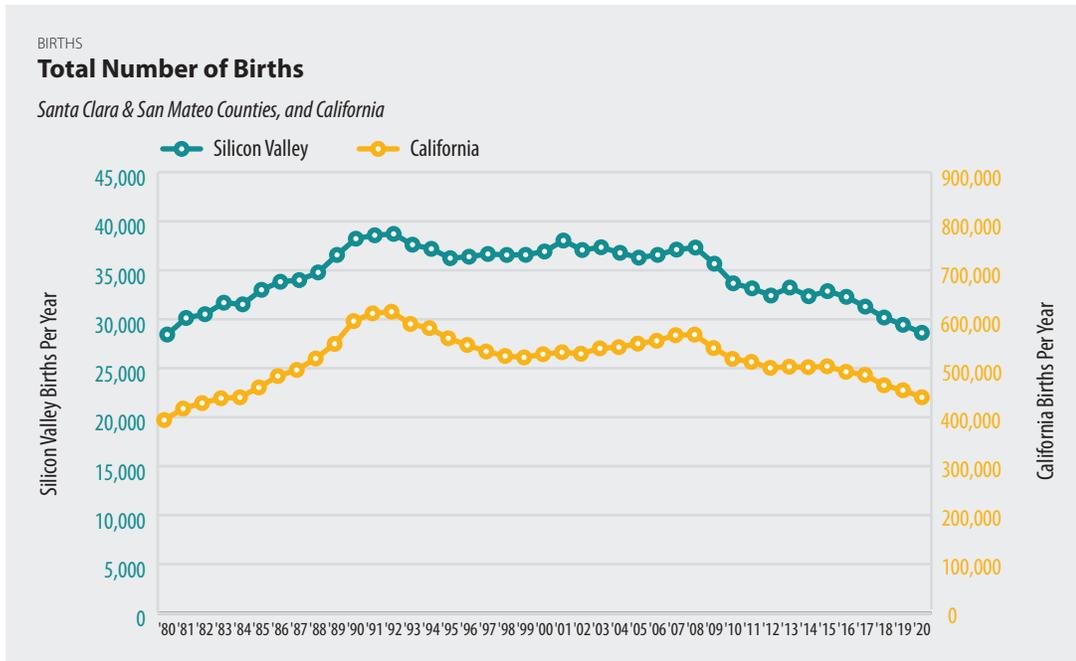
White residents historically represented the largest share of Silicon Valley's population. Since 2017, Asians have represented the largest share.

Asian residents have the largest population share among Silicon Valley racial and ethnic groups, representing 35% of the overall population in 2019 (compared to 29% a decade prior).



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

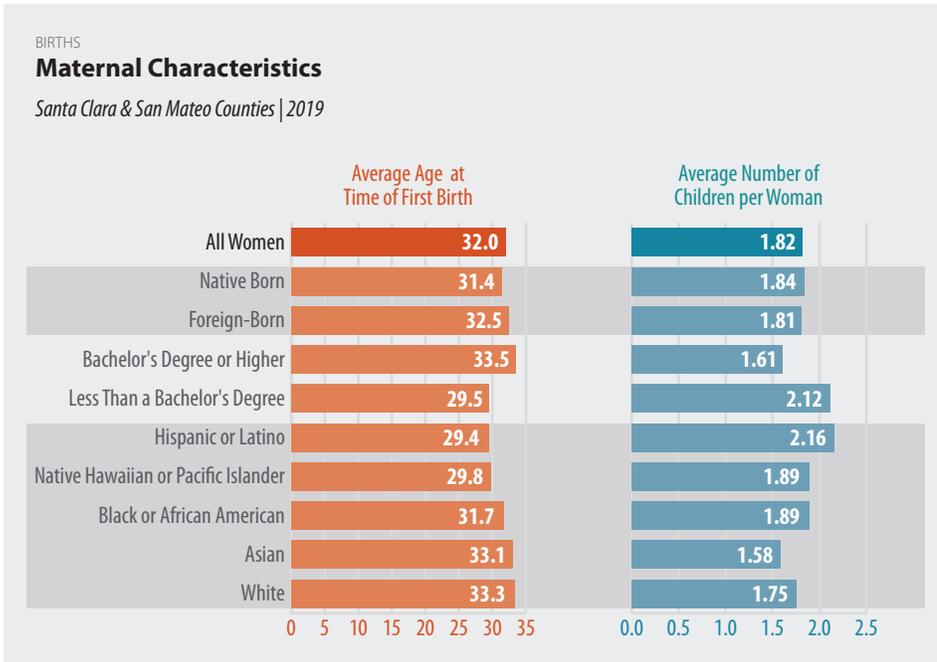
The total number of births per year in Santa Clara and San Mateo Counties continued to fall between 2019 and 2020 (down 3% year-over-year), and has declined significantly since 2008 (down 25%). Between mid-2019 and mid-2020, 28,600 babies were born in the region, representing the lowest annual total since 1980.



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

The 2020 birth rate (10.5 births per 1,000 people) in Santa Clara and San Mateo Counties combined was lower than any other year over the last half-century. The birth rate has declined steadily since 1991 when it last peaked at nearly 18 births per 1,000 people.

While foreign-born women tend to wait slightly longer to have their first baby, on average, there is very little difference in age by nativity for highly-educated women; both foreign- and native-born women with a bachelor's degree or higher had an average age of around 33.5 years at the time of their first child's birth in 2019.



Women with higher levels of educational attainment are waiting longer to have their first child. Over the past decade, this difference has narrowed from 6.6 years on average for those with a bachelor's degree or higher in 2009, to 5.5 years in 2018, and 4.0 years in 2019.

Note: Only includes women who gave birth in 2019. | Data Source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC) | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley women tend to start having children later in life (age 32) than in California (age 30) or the United States overall (age 29), based on births in 2019; they also tend to have fewer children (average of 1.8 per woman, compared to 2.1 in both California and throughout the country).

Hispanic or Latino women in Silicon Valley tend to start having children at a younger age, and have more children compared to the overall regional average; in contrast, Asian and White women tend to wait until they are older to have their first child, and have fewer children.

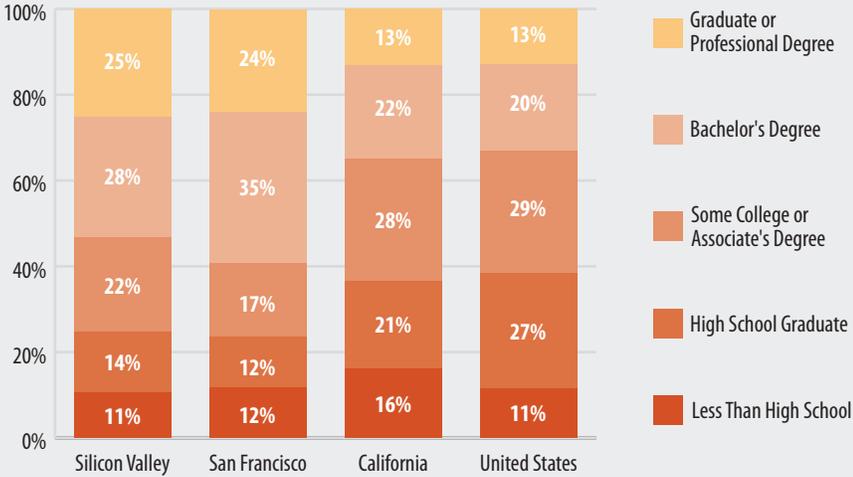
# PEOPLE

## Talent Flows and Diversity

EDUCATIONAL ATTAINMENT

### Percentage of Adults, by Educational Attainment

Santa Clara & San Mateo Counties, San Francisco, California, and the United States | 2019



25% of Silicon Valley adults have a graduate or professional degree.

Silicon Valley and San Francisco have much higher levels of educational attainment than California or the United States as a whole, with 53% and 59% of adults, respectively, having a bachelor's degree or higher.

The share of Silicon Valley residents with a bachelor's degree or higher (53%) increased by more than nine percentage points over the past decade (from 44% in 2009).

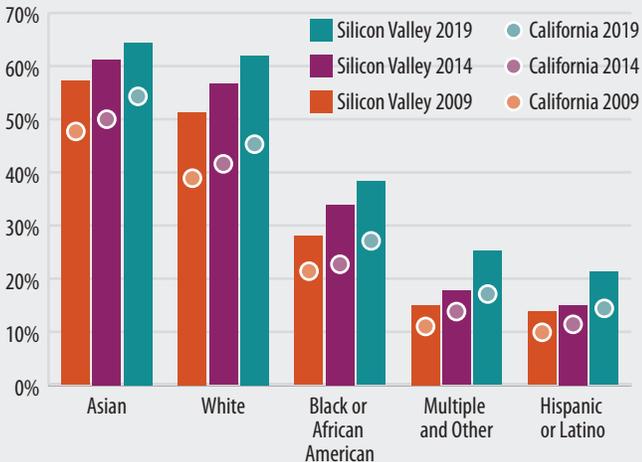
Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley residents have higher levels of educational attainment, overall, than the state or nation, with increasing levels across all racial and ethnic groups over the past decade.

EDUCATIONAL ATTAINMENT

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

Santa Clara & San Mateo Counties, and California

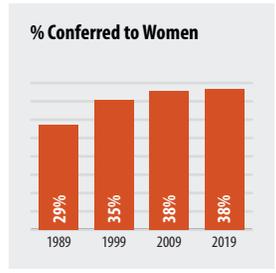
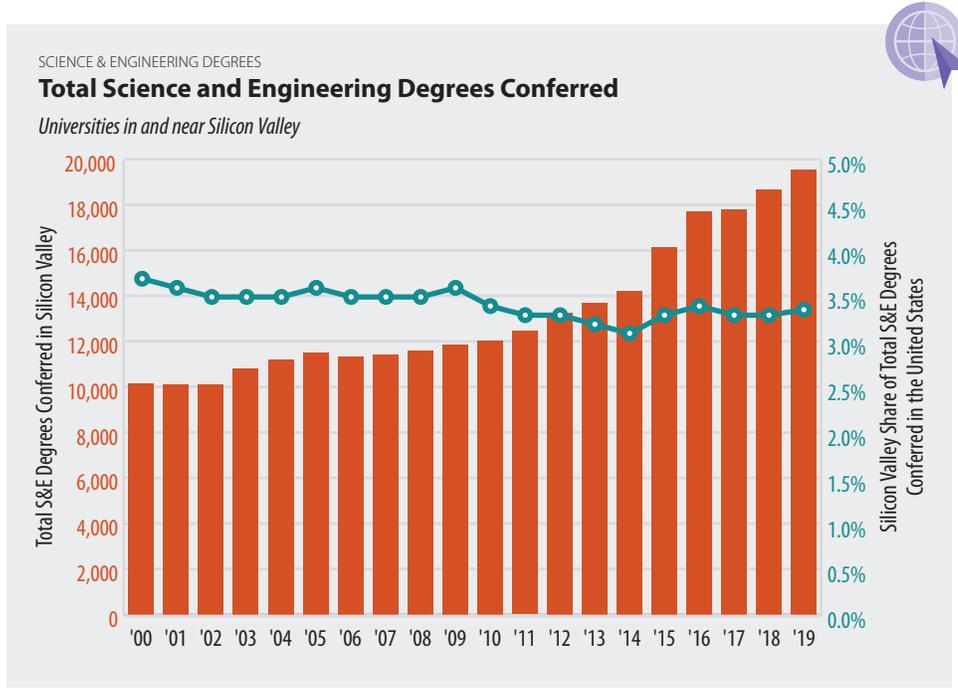


While educational attainment levels for Silicon Valley's Hispanic or Latino residents remain low relative to other racial and ethnic groups, they have increased over time; 21% of Silicon Valley's Hispanic or Latino residents had a bachelor's degree or higher in 2019, compared to 14% in 2009.

Less than 40% of Silicon Valley Black or African American residents have a bachelor's degree, compared to less than 40% of Asian and White residents who *do not* have one.

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

While the total number of science and engineering degrees conferred in and around Silicon Valley continues to increase, the share conferred to women has remained stagnant for nearly two decades.

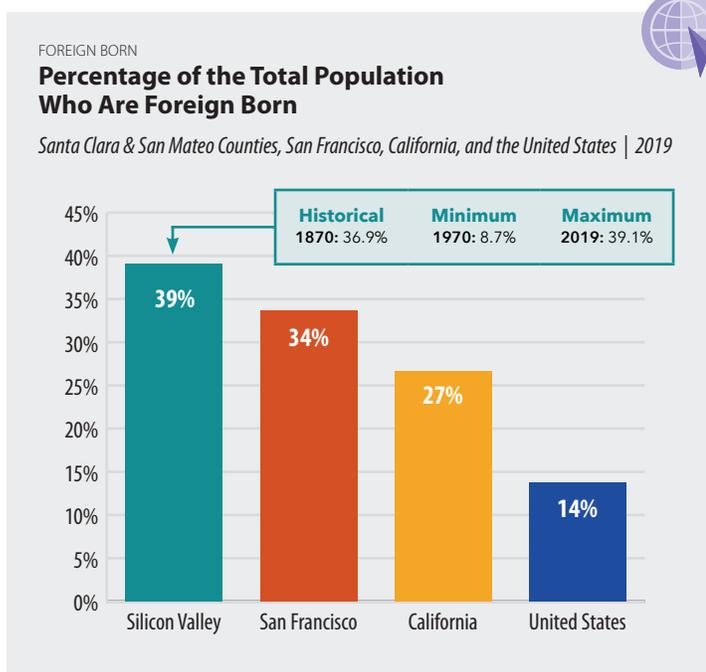


In 2019, there were 19,564 science and engineering degrees conferred among Silicon Valley's top academic institutions—nearly 900 more than during the previous year.

The share of Silicon Valley science and engineering degrees conferred to women has remained in the 37–39% range since the year 2000, and has increased by only a fraction of a percentage point over the past decade.

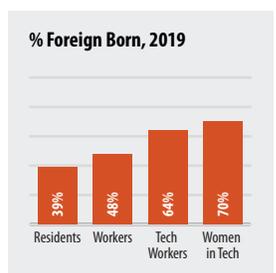
Data Source: National Center for Educational Statistics, IPEDS | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley's foreign-born population share is higher than for any other year on record, going back to the mid-1800s.



Silicon Valley's foreign-born population share (39% in 2019)—which is much higher than the state and nation as a whole—is even higher when looking solely at employed residents (48%), tech workers (64%), and specifically female tech workers (70%).

Seventy percent of Silicon Valley's female tech workers are foreign-born. They are disproportionately married with children, and primarily come from Asian countries.

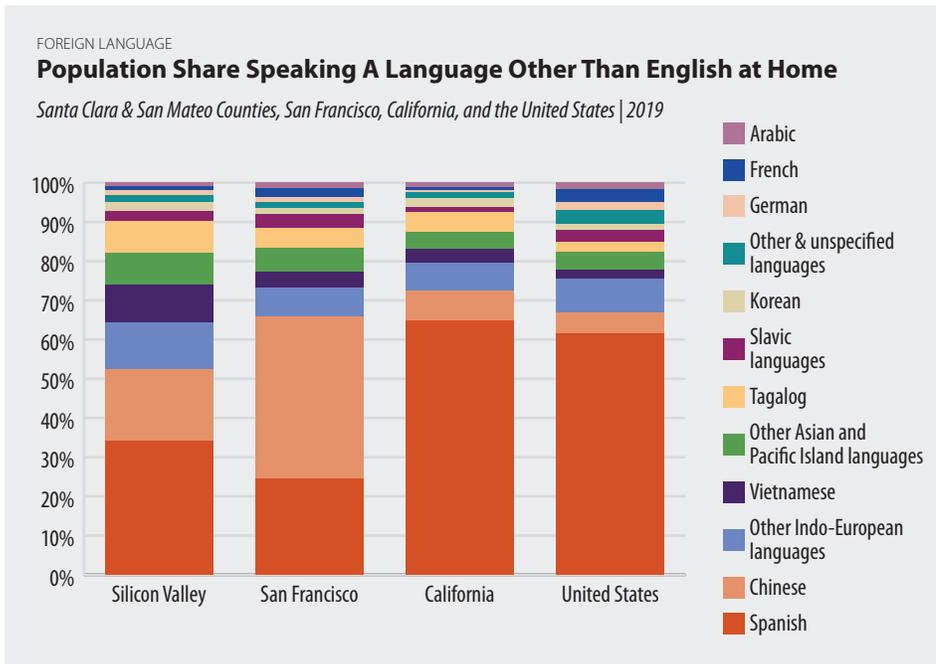


Note: Tech includes Computer & Mathematical, Architectural & Engineering occupations. Workers include those over age 16 who are employed and at-work. | Data Source: United States Census Bureau, American Community Survey  
 Analysis: Silicon Valley Institute for Regional Studies

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## Talent Flows and Diversity

Over the past decade, Silicon Valley's population has shifted from mostly speaking English exclusively at home to a majority speaking another language.



Silicon Valley has a widespread distribution of languages spoken at home, with a smaller share of foreign-language speakers speaking Spanish (34%) than in California (65%) or the United States (62%), and a larger share speaking languages such as Chinese, Vietnamese, and Tagalog.

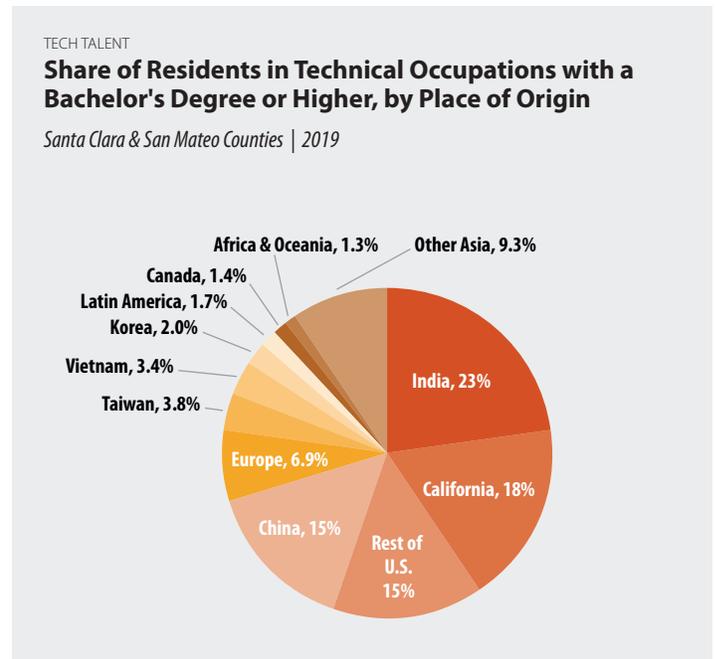
### Population Share That Speaks a Language at Home Other Than Exclusively English

	2009	2019
<b>Silicon Valley</b>	48%	51%
<b>San Francisco</b>	44%	42%
<b>California</b>	43%	44%
<b>United States</b>	20%	22%

Note: Includes the population five years of age and older. | Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies

A larger share of Silicon Valley's highly-educated tech workers are from India and China combined (38%) than from within the United States (32%).

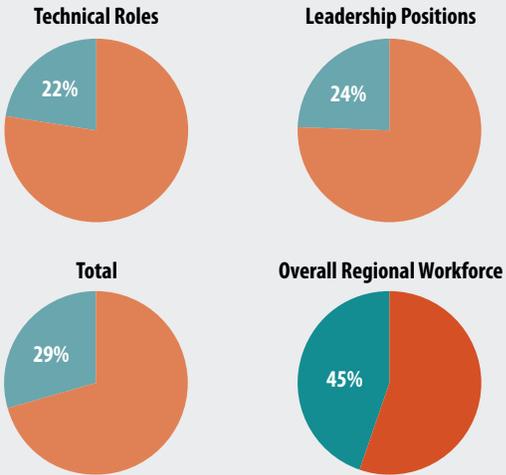
68% of Silicon Valley's tech talent is foreign-born, with the largest shares coming from India (23%) and China (15%) in 2019.



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

TECH TALENT

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



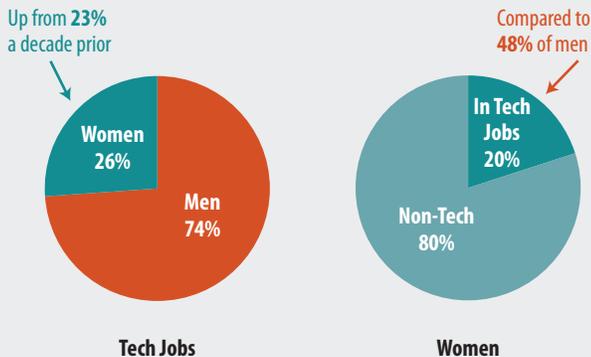
While women make up 45% of Silicon Valley's regional civilian workforce, they only account for 29% of employees at the region's 15 largest tech companies (24% in leadership positions, and 22% in technical roles).

Note: Analysis includes the 15 largest technology companies. | Data Sources: Individual company diversity reports; *Silicon Valley Business Journal*; United States Census Bureau | Analysis: Silicon Valley Institute for Regional Studies

TECH TALENT

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

*Santa Clara & San Mateo Counties | 2019*



Women represented slightly more than a quarter of Silicon Valley's young, highly-educated tech workers in 2019 (including those in the 25-44 core working age group with a bachelor's degree or higher); this share has risen by less than three percentage points over the prior decade.

In 2019, 20% of young, college-educated Silicon Valley women (ages 25 to 44 with a bachelor's degree or higher) worked in technical occupations; this compares to 48% of their male counterparts.

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

# ECONOMY

## Employment

As with everywhere else in the state and nation, Silicon Valley was hit with significant job losses due to the onset of the COVID-19 pandemic and subsequent policies to limit virus transmission. Within the first month of the health crisis, the region's unemployment hit an historic high level of 11.6 percent, with losses disproportionately affecting Community Infrastructure & Services jobs (such as retail, food services, arts and entertainment, transportation, and personal services), low-income residents, and Black and Hispanic workers. By June, Silicon Valley's industry employment levels were down -8.9 percent year-over-year. Steady gains through the

second half of the year (nearly +7 percent growth) resulted in rising employment through November, until sharply increasing COVID-19 case rates led to tighter economic restrictions and thus more job losses in December.

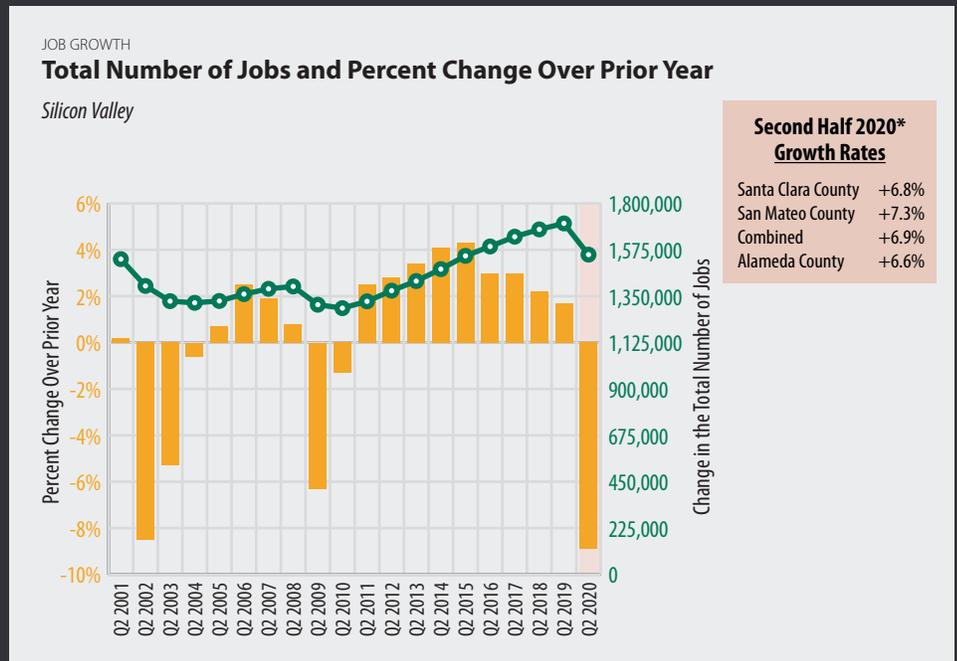
While Silicon Valley's tech sector fared much better than others (actually increasing employment levels throughout the year), it was not immune. Mid-year Media & Broadcasting jobs were down -35 percent year-over-year, and hundreds of Bay Area startups resorted to laying off tens of thousands of workers. Among those startups were 46 that received an estimated \$127 million collectively in Paycheck Pro-

tection Program (PPP) loans, yet they still laid off an average 40 percent of the workers whose jobs the loans were intended to support. Conservative estimates suggest that around 71,500 Silicon Valley jobs may have been retained through PPP loans in 2020.

The region's 15 largest tech companies—which account for more than half of Silicon Valley and San Francisco tech industry jobs—thrive overall in 2020, growing jobs here but growing them more quickly elsewhere. The latter resulted in Silicon Valley's declining share of their U.S. and global workforces. The region remains, however, a standout among other

Total employment levels in Silicon Valley fell by 8.9% between Q2 2019 and Q2 2020; while some of those lost jobs were regained toward the end of the year, 8.9% represents a year-over-year decline greater than that of the dot.com bust in 2001 (of -8.5%).

Silicon Valley lost more than 151,500 jobs between Q2 2019 and Q2 2020, with 145,200 lost jobs within Santa Clara and San Mateo Counties alone. However, many of these jobs were recovered in the latter half of 2020, with a growth rate of +6.9% in Santa Clara and San Mateo Counties combined between June and November (and +4.3% throughout the state).<sup>3</sup>



\*based on EDD reported June through November growth rates by county. | Note: Percent change from 2012 to 2020 is based on unsuppressed numbers. Percent change for prior years is based on QCEW data totals with suppressed industries. Percent change for 2020 was updated using Q2 reported growth. Data Sources: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; EMSI | Analysis: BW Research

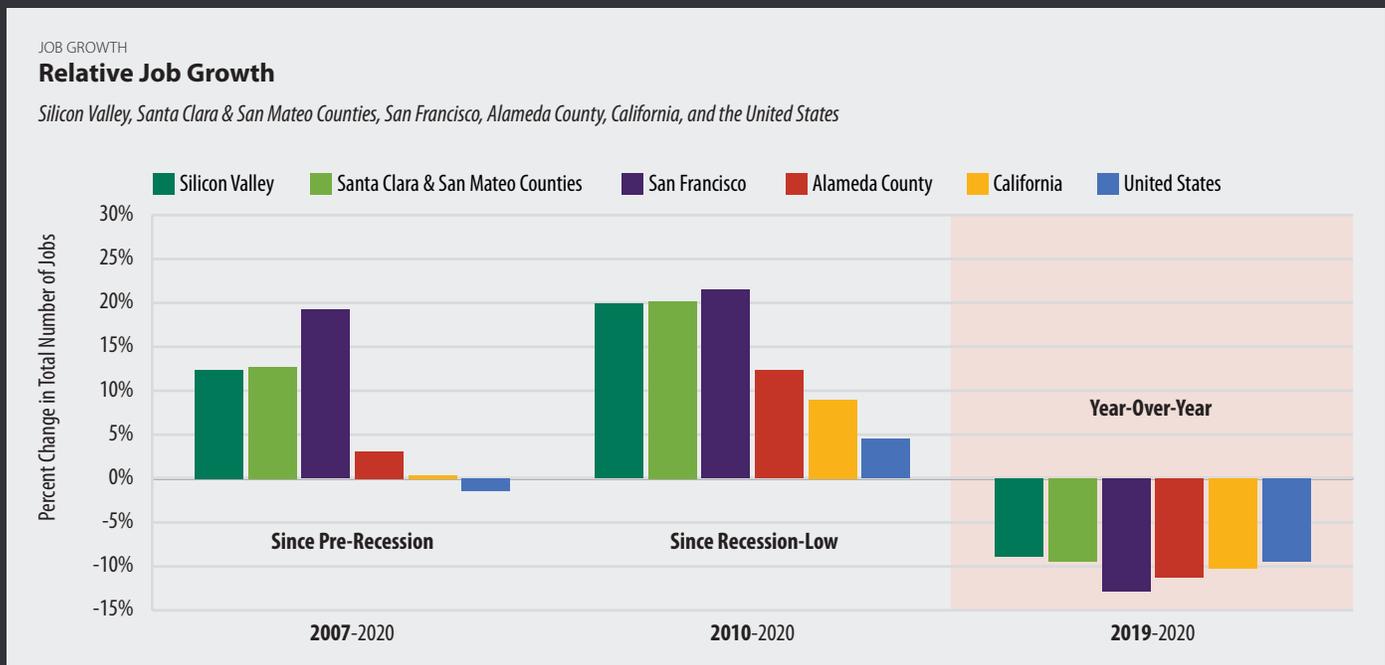
The total number of jobs in Silicon Valley remained 20% higher than the Great Recession-low (in 2010) and 12% above pre-recession (2007) levels, despite year-over-year losses between mid-2019 and mid-2020. In contrast, employment levels throughout the U.S. dropped below pre-recession (2007) by 1.4%.

top U.S. tech talent centers in terms of tech talent growth, and tech’s share of total local jobs.

### 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 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. Changes in the region’s industry patterns show how well our economy is maintaining its position in the global economy.



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

Silicon Valley had sustained year-over-year job growth between 2010 and 2019, although the rate slowed slightly in the latter four years. Between mid-2019 and mid-2020, job losses due to the COVID-19 pandemic resulted in a decline of -8.9% in Silicon Valley, with larger declines experienced in San Francisco (-12.8%), Alameda County (-11.3%), California as a whole (-10.2%), and throughout the United States (-9.4%).

# ECONOMY

## Employment

An estimated 38% of Silicon Valley and San Francisco tech jobs in mid-2020 were at the 15 largest tech companies alone; 62% were at all other tech companies, combined.

Of the 573,000 tech (Innovation & Information Products and Services) jobs within Silicon Valley and San Francisco, as many as 215,000 of them (38%) are employed at one of the region's 15 largest tech companies; Google and Apple employ the largest shares (approximately 7% each), followed by Facebook (4%), Cisco (3%), and Amazon (3%).

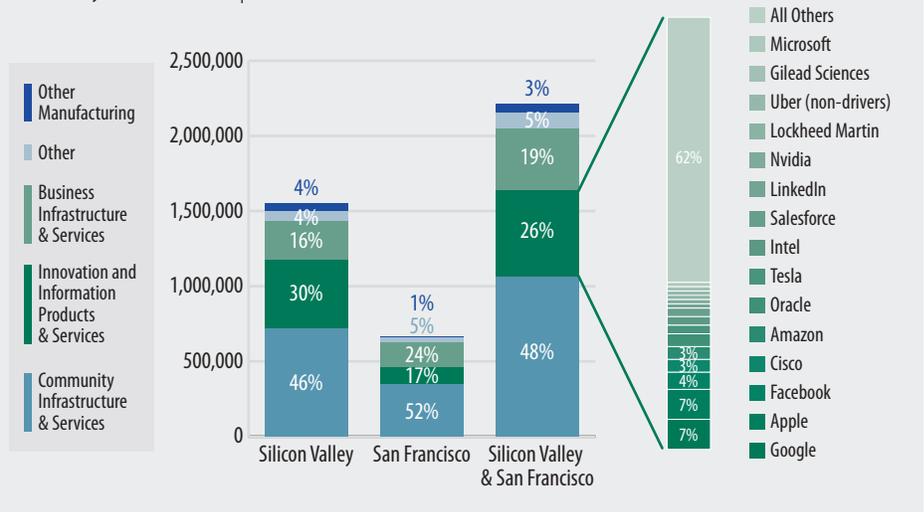
With pandemic-related job losses concentrated in Community Infrastructure & Services, the share of Silicon Valley's workforce in tech grew from 26% in mid-2019 to 30% in mid-2020. Correspondingly, the share in Community Infrastructure & Services fell from 50% in 2019 to 46% in 2020.

### MAJOR AREAS OF ECONOMIC ACTIVITY

#### Total Employment, by Major Areas of Economic Activity

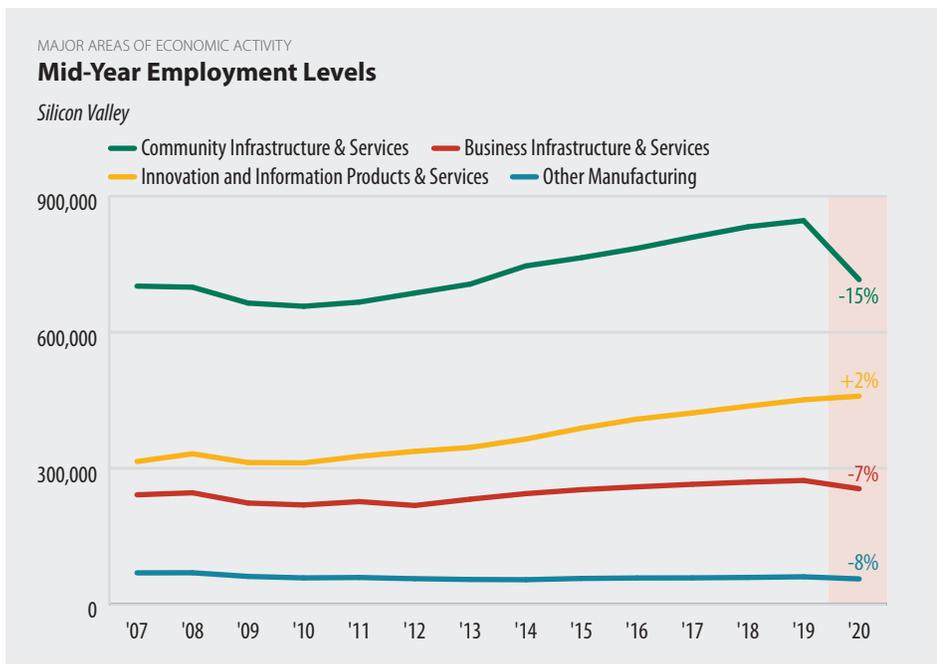
with Approximate Shares of Innovation & Information Products and Services Jobs at the Region's Largest Tech Companies

Silicon Valley and San Francisco | 2020



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; *Silicon Valley Business Journal*; LinkedIn | Analysis: BW Research; Silicon Valley Institute for Regional Studies

Silicon Valley jobs in Innovation and Information Products & Services—such as Computer Hardware, Software, Internet & Information Services, and Biotechnology—remained 47% higher in mid-2020 (up by more than 147,000 jobs) than the Great Recession-low (in 2010); in contrast, overall regional employment levels were only 20% higher than in 2010.



A net of nearly 8,000 new jobs were added in Innovation and Information Products & Services between Q2 2019 and Q2 2020.

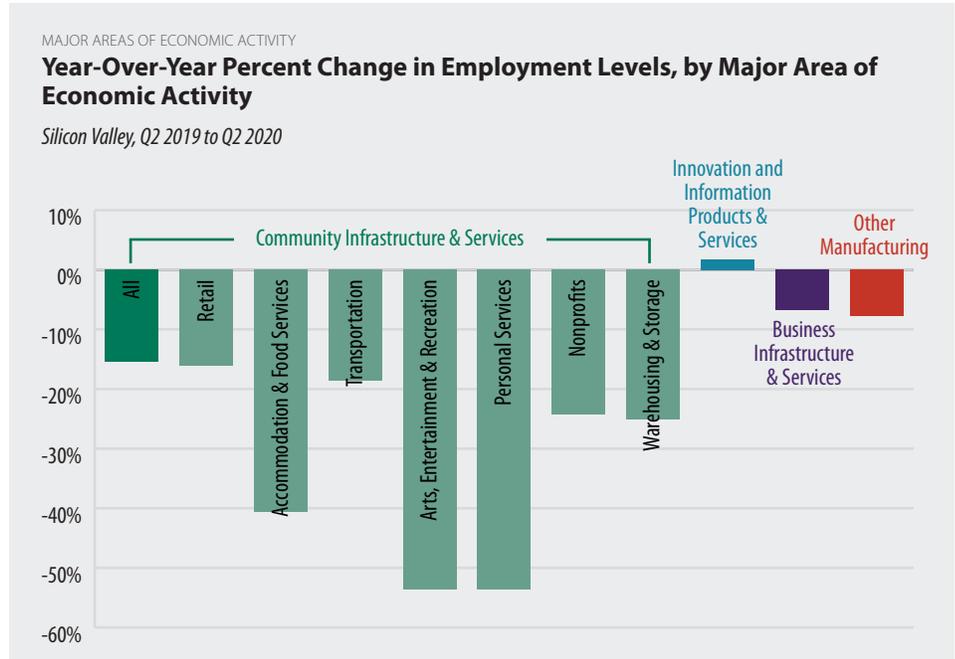
Note: Definitions of the major areas of economic activity are included in Appendix A. | Data Sources: BW Research; U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; EMSI; Silicon Valley Business Journal; LinkedIn | Analysis: BW Research; Silicon Valley Institute for Regional Studies

In contrast to overall pandemic-related employment level declines between mid-2019 and mid-2020 (-8.9% in Silicon Valley) and a loss of -15.4% in Community Infrastructure & Services, job growth was positive (+1.8%) for the tech industry (Innovation and Information Products & Services).

# ECONOMY

## Employment

While Silicon Valley’s pandemic-related job losses in Community Infrastructure & Services led to a 15% year-over-year employment decline overall, industry groups within Community Infrastructure & Services experienced varying levels of losses; one such group—Banking & Financial Services—was actually up by 7% over that period.

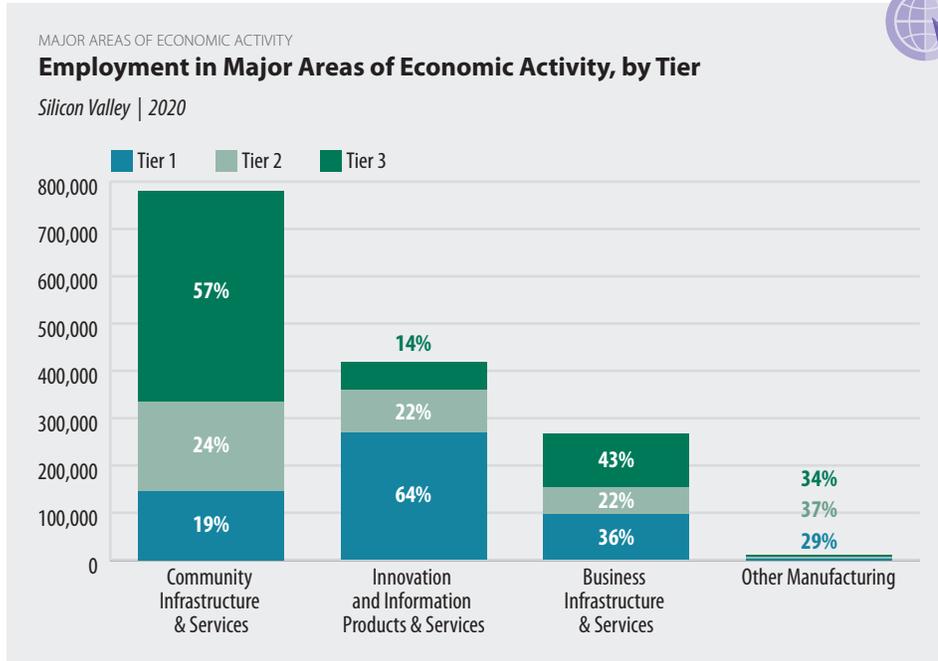


Note: Definitions of the major areas of economic activity are included in Appendix A. | Data Sources: BW Research; U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; EMSI | Analysis: BW Research ; Silicon Valley Institute for Regional Studies

Pandemic-related job losses were concentrated in Community Infrastructure & Services Jobs (-15% between mid-2019 and mid-2020), particularly Arts, Entertainment & Recreation (-54%), Personal Services such as Beauty Salons, Nail Salons, and Dry Cleaning Services (-54%), and Accommodation & Food Services (-41%).

Silicon Valley jobs in Innovation and Information Products & Services—such as Computer Hardware, Software, Internet & Information Services, and Biotechnology—grew by nearly 2% (+7,900) between Q2 2019 and Q2 2020, despite significant job losses in other segments of the economy. Similarly, tech jobs in San Francisco grew by nearly 4% over the same period. While tech industry job growth was positive in 2020 despite the broader effects of the pandemic on employment, the growth rate (+1.8%) was slower than prior years (3.2% to 3.5% in each of the prior three years, with even higher growth rates earlier in the post-recession economic recovery).

More than half of all Silicon Valley Community Infrastructure & Services jobs are in Tier 3 (low-skill/low-wage), which translates to lower wages for those most affected by pandemic-related job losses.



Since 2012, the shares of Silicon Valley jobs in each tier have remained almost unchanged. The long-term trend indicates that the share of Silicon Valley employment in Tier 2 jobs has decreased by 5% over the past 19 years, although year-to-year changes have been relatively small.

42% of all Silicon Valley jobs are Tier 2 (mid-skill/mid-wage); 25% are Tier 1 (high-skill/high-wage), and 32% are Tier 3 (low-skill/low-wage).

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

57% of Community Infrastructure & Services jobs are Tier 3; in contrast, Innovation and Information Products & Services (tech industry) jobs are primarily (64%) Tier 1.

While Business Infrastructure & Services jobs are 36% Tier 1 (high-skill/high-wage), there is also a relatively large share (22%) of them that are Tier 2 (mid-skill/mid-wage).

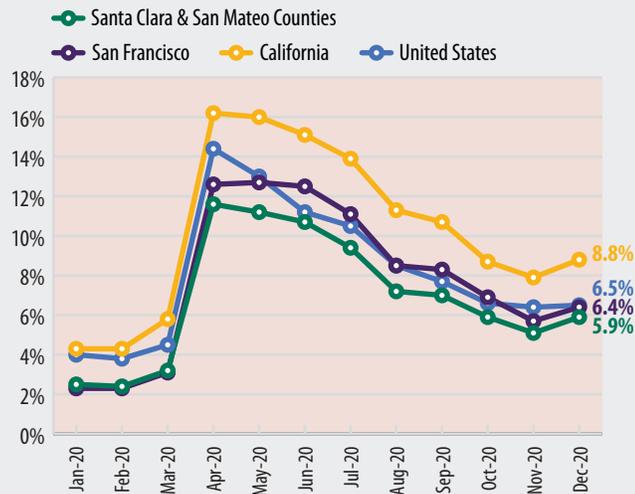
# ECONOMY

## Employment

UNEMPLOYMENT

### Monthly Unemployment Rate, 2020

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



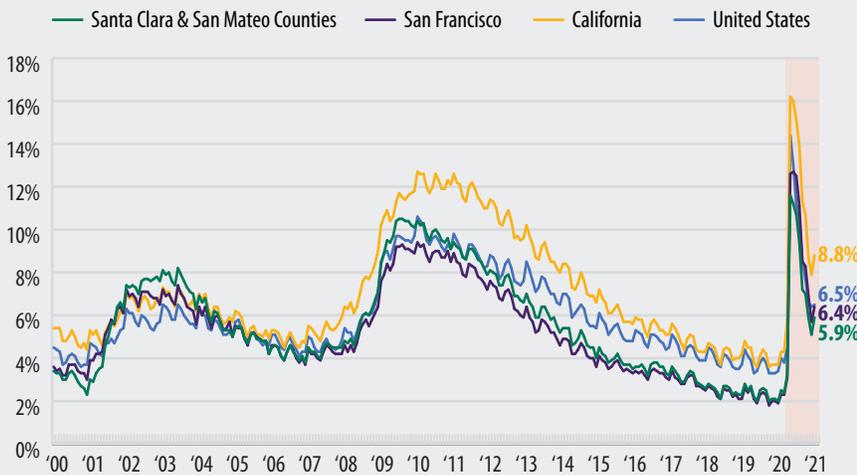
Silicon Valley's unemployment rate peaked in April 2020 at an unprecedented 11.6%—higher than the 10.5% Great Recession—peak and any other year on record (30+ years) including the dot.com bust.

At the end of 2020, Silicon Valley's unemployment rate was 5.9%, amounting to 87,600 unemployed residents across Santa Clara and San Mateo Counties. While this was an uptick from the prior month, the two counties had the second- and third-lowest rates in the state (following Marin County).

UNEMPLOYMENT

### Monthly Unemployment Rate

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



Prior to the pandemic, Silicon Valley's unemployment rate was at 20-year low—reaching 2% in several months of 2019, lower than any other month since December 1999. Within one month of the crisis, the region's unemployment rate skyrocketed to an historic high of 11.6% in mid-April.

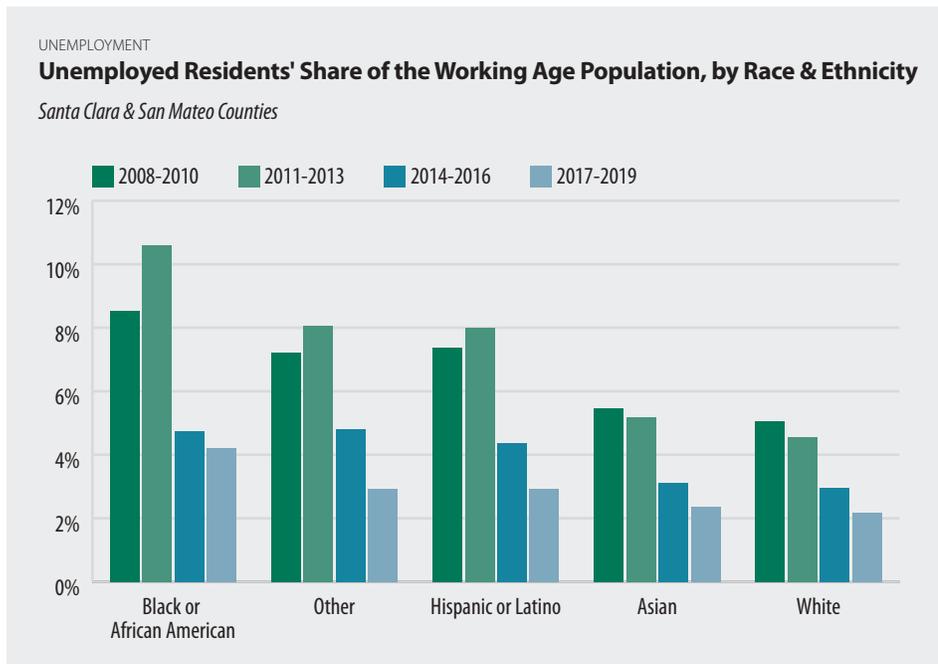
The unemployment rate in Santa Clara and San Mateo Counties, combined, remained lower throughout the pandemic than the U.S. and California rates. Peak Silicon Valley unemployment (11.6% in April) was nearly five percentage points lower than that of the state as a whole, and three percentage points less than the nation.

Despite steady declines in unemployment rates following the mid-April pandemic-peak through November, there were upticks of nearly one percentage point each in December in Silicon Valley, San Francisco, and statewide.

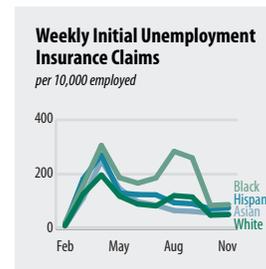
Note: County-level and California data for November and December 2020 are preliminary; Rates are not seasonally adjusted. Data Sources: U.S. Bureau of Labor Statistics, Current Population Survey (CPS) and Local Area Unemployment Statistics (LAUS); California Employment Development Department (EDD) | Analysis: Silicon Valley Institute for Regional Studies

Even at the end of 2020, greater Silicon Valley<sup>4</sup> employment within several industries remained severely depressed; among them were Leisure & Hospitality (-35% year-over-year, or -90,700 jobs), Clothing & Clothing Accessory Stores (-36%, or -8,600 jobs), Accommodation & Food Services overall (-39%, or -50,900 jobs), particularly Restaurants (-38%, or 58,200 jobs year-over-year).

The 2019 unemployment rate for Black or African American Silicon Valley residents (3.8%) was nearly eight percentage points lower than the 2011 peak of 11.6%; however, initial unemployment insurance (UI) claims filed during the pandemic indicate that job losses may have affected Black residents at a rate of 1.3 to 2.3 times that of White residents in 2020. In the last three months of 2020, the number of initial UI claims filed by Hispanic workers was an average 55% higher than by White workers.

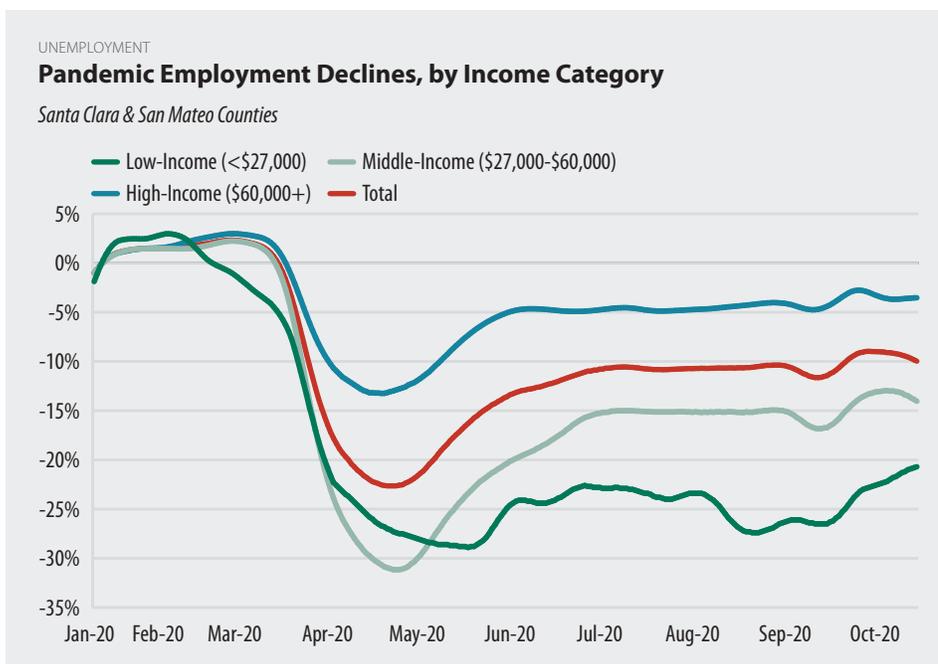


Note: Other includes Some Other Race and Two or More Races. Data includes workers ages 16 and over. | Data Sources: United States Census Bureau, American Community Survey; California Employment Development Department | Analysis: Silicon Valley Institute for Regional Studies



Unemployment rates across all racial and ethnic groups in Silicon Valley were below pre-recession (2007) levels by 2016; since then, the unemployment rate has declined further for all groups except Black or African American residents, for whom the rate has increased from 3.4% in 2016 to 3.8% in 2019.

Silicon Valley's unemployment rate—which represents employment levels in relation to the overall labor force—peaked in April, reaching 11.6%; similarly, in May, total employment levels hit a pandemic-low of nearly 14% below January levels. In contrast to these two measures, the jobs located within the region (Silicon Valley workers, as opposed to residents) declined to a much larger extent, with as many as 23% lost by the end of April. Given the significant disparity in job losses by income category, this finding supports the notion that Silicon Valley is a net importer of its low-income workers from neighboring counties.



Data Source: Opportunity Insights Economic Tracker | Analysis: Silicon Valley Institute for Regional Studies

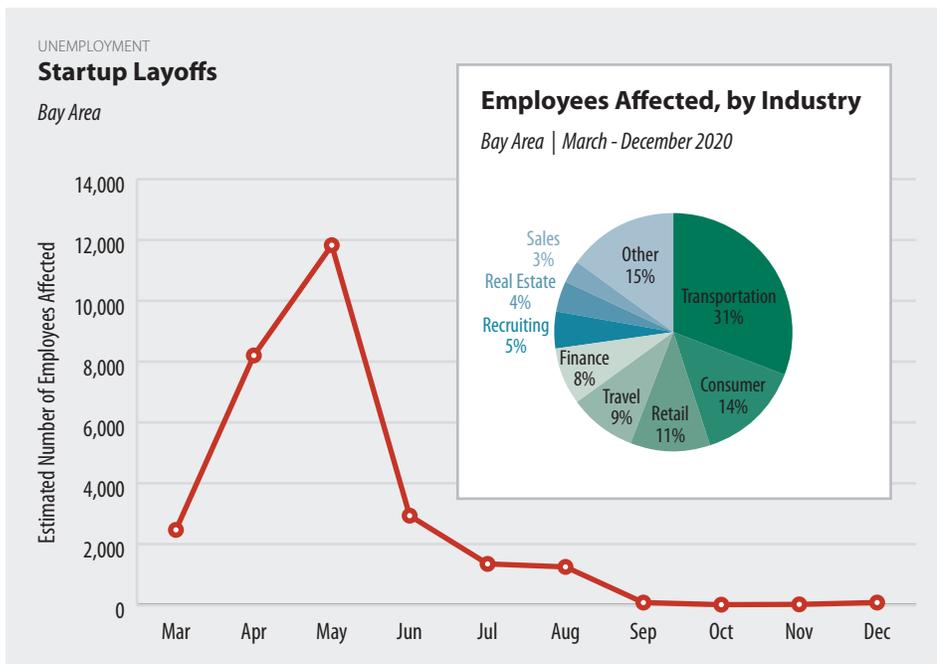
Range of Pandemic Employment Declines, by Income Category			
March 15 - October 15, 2020			
	Low	Middle	High
<b>Silicon Valley</b>	5-29%	0-31%	1-13%
<b>San Francisco</b>	4-27%	0-41%	1-23%
<b>California</b>	5-36%	0-25%	0-15%
<b>United States</b>	2-38%	0-24%	0-13%

Pandemic-effects on employment levels varied significantly by worker income category, with low- and middle-income workers (making less than approximately \$60,000 annually) in Silicon Valley experiencing declines of up to 29% and 31%, respectively, compared to a maximum pandemic-decline of 13% in high-income jobs.

# ECONOMY

## Employment

Between the onset of the pandemic and the end of 2020, more than 170 Bay Area companies laid off employees, with the greatest number of layoffs occurring in April and May; 11 of them (which had collectively raised a total of \$315 million) laid off 100% of their workforce. In total, more than 28,600 Bay Area employees were affected.



Data Source: Layoffs.fyi | Analysis: Silicon Valley Institute for Regional Studies

Among the notable Bay Area startups with pandemic-period layoffs were Juul Labs—one of the region’s recipients of the largest venture capital deals (\$722 million in Q1, prior to cutting its global workforce by ~30% in Q2)—and Eventbrite, one of the region’s companies with the greatest market losses between mid-February and late March. Around the time of its ~45% workforce reduction,<sup>5</sup> Eventbrite’s market cap was down by approximately \$1.1 billion (or -60%).

At a minimum, six percent of the Bay Area’s year-over-year job losses (through June 2020) were due to startup layoffs; this share is likely higher, however, since layoff data was not available for approximately one quarter of the region’s startups.

The industry most affected by Bay Area startup job losses in 2020 was Transportation—primarily influenced by the 6,700 Uber employees laid off in May (representing 25% of the company’s workforce), as well as the nearly 1,000 laid off from Lyft in April. Consumer-industry companies represented the second highest share of Bay Area pandemic-period layoffs, with the largest losses at Yelp (1,000 employees in April and 73 in July), Juul Labs (900 in May), Eventbrite (500 in April), plus smaller layoffs at GoPro, StubHub, Houzz, and several others.

Layoffs across all industries reported through the state Worker Adjustment and Retraining Notification (WARN) Act<sup>12</sup> showed that in the first two months of the pandemic alone, more than 79,000 Bay Area employees across 653 companies were affected by either temporary (83%) or permanent layoffs.

WARN-reported Silicon Valley layoffs in March and April, 2020, affected nearly 27,500 employees (80% of which were classified as temporary). The layoffs spanned a variety of industries, with large numbers reported for in-store retailers, restaurants, movie theaters, hotels, personal care services, and gyms.

Employees Affected by WARN-Reported Layoffs				
	March 2020	April 2020	Combined	% Temporary
Silicon Valley	21,454	6,027	27,481	80%
Bay Area	61,354	17,676	79,030	83%
California	277,209	87,703	364,912	85%

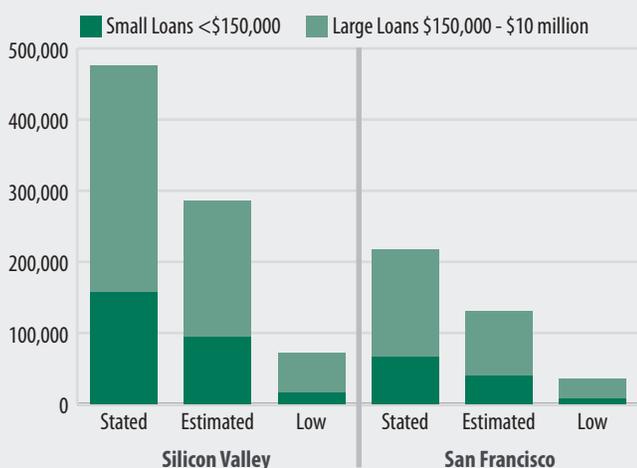
Note: Executive Order N-31-20 (March 4, 2020) temporarily suspended the 60-day notice requirement in the WARN Act. | Data Source: California Employment Development Department, Worker Adjustment and Retraining Notification (WARN) | Analysis: Silicon Valley Institute for Regional Studies

As a result of the first and second rounds of the Paycheck Protection Program (PPP),<sup>10</sup> \$69.9 billion in loans were distributed throughout California, supporting an estimated 6.51 million jobs—the most of any U.S. state.<sup>11</sup> Among nearly 71,000 businesses, Silicon Valley and San Francisco received \$6.53 billion and \$3.26 billion, respectively, of that statewide total.

BUSINESSES

**Jobs Supported through Paycheck Protection Program (PPP) Loans**

Silicon Valley and San Francisco | 2020



Note: Stated are as listed on PPP loan applications. Estimated are based on 60% uninterrupted job retention through the end of 2020. Low estimate based on highest allowable salary (\$100,000 per year), maximum salary reduction (25%), and minimum share (60%) to payroll expenses, with retention through the end of 2020. Data Source: United States Small Business Administration | Analysis: Silicon Valley Institute for Regional Studies

Of the 173 Bay Area startups included among those with 2020 pandemic-period (March through December) layoffs, 46 PPP loans totaling an estimated \$127 million and an average job retention of 60% (of the total stated on the loan applications) through the end of 2020.<sup>6</sup> If this 60% were applied to the theoretical PPP-supported Silicon Valley and San Francisco jobs, then an estimated 415,900 would have been retained through 2020—a number 67% higher than the actual year-over-year losses sustained through June 2020 (249,100).

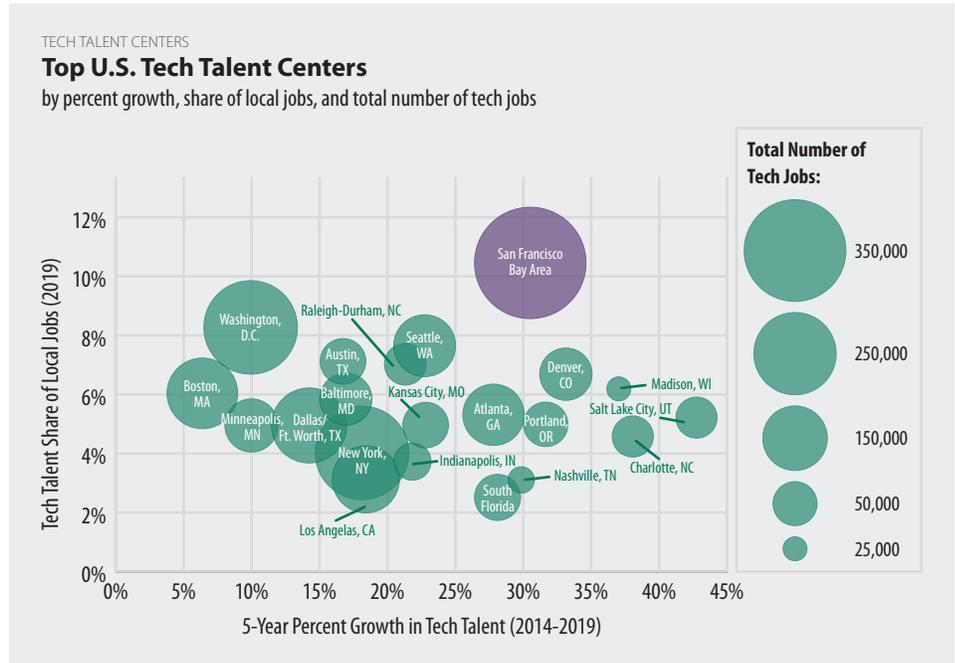
As a low-end estimate—based on optimization of PPP loans for forgiveness—an estimated 107,200 Silicon Valley and San Francisco jobs were supported through PPP loans in 2020 (amounting to approximately 15% of the jobs reported on loan applications). This low-end estimate is closer to the 27% of expected jobs saved throughout the U.S., as reported by S&P Global Ratings.<sup>7</sup> Other analysts estimate an even smaller share of expected jobs saved (or absence of statistically significant short-term impacts on jobs) through the PPP, with funds going primarily toward savings or debt rather than employee retention.<sup>8,9</sup>

# ECONOMY

## Employment

The Bay Area ranks #1 among top U.S. tech talent centers by both total number of people in tech occupations (nearly 380,000 in 2019) as well as the percentage of local jobs (10.5%); Washington, D.C. is a close second by share of jobs, but the total number of tech jobs there is much lower (-31%) than in the Bay Area.

Emerging U.S. tech talent regions since 2014—by percent growth—include greater Salt Lake City, Utah; Charlotte, North Carolina; Madison, Wisconsin; Denver, Colorado; and Portland, Oregon (with growth rates of 32 to 43%). While the Bay Area growth rate was slightly lower, at 31%, the region added more new tech jobs between 2014 and 2019 (+88,840) than all of these five emerging regions combined (+80,550).



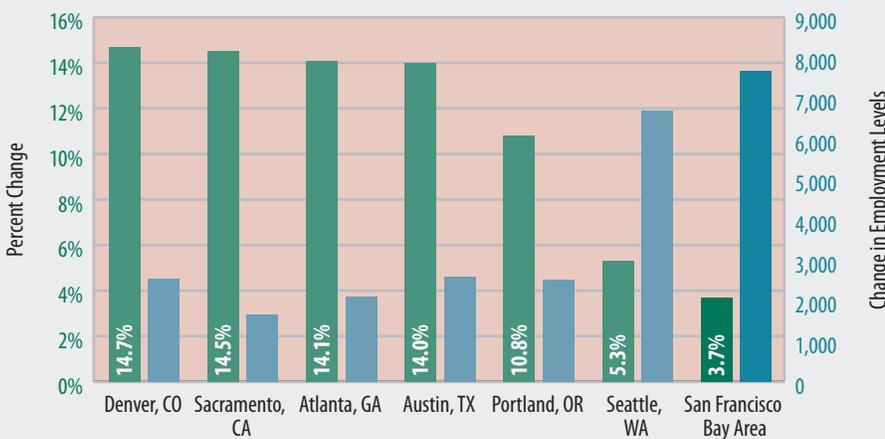
Data Source: CBRE 2020 Scoring Tech Talent | Analysis: CBRE Research; Silicon Valley Institute for Regional Studies

The Bay Area remains a top U.S. tech talent center in terms of total number of people in tech occupations as well as the share of local jobs that are in tech, and five-year growth rates. However, the region's largest tech companies have grown their workforce more rapidly elsewhere in the U.S. and globally than within the Bay Area over the past two years.

TECH TALENT CENTERS

### 2020 Employment Growth at 15 Largest Bay Area Tech Companies

Various U.S. Regions



### Bay Area Share of Top Tech Employers' Workforce



While five U.S. regions added tech jobs at higher rates than the Bay Area between 2014 and 2019, total tech jobs added over that period were significantly higher in the Bay Area than elsewhere.

Data Sources: LinkedIn; Silicon Valley Business Journal | Analysis: Silicon Valley Institute for Regional Studies

## Over the past two years, the Bay Area's share of its fifteen largest tech companies' national and global workforces have declined (by 3.7 and 3.3 percentage points, respectively).

Despite a 4% growth in Bay Area employment at those companies in the two-year period between January 2019 and the end of 2020 (amounting to nearly 8,000 new tech industry jobs), the workforce share declined due to more rapid growth in the U.S. as a whole (+11%) and worldwide (+19%). Growth rates were also higher in places such as greater Denver and Sacramento (+15% in both), Atlanta and Austin (+14% in both), Portland (+11%), and Seattle (+5%), even though the number of jobs added in those regions were all less than in the Bay Area.

Despite being identified as emerging tech hubs by five-year growth rates, the greater Charlotte, Madison, and Salt Lake City regions combined represent a very small share of the Bay Area's largest 15 tech employers' workforce (approximately 1% of the U.S. workforce) and one-twentieth the number of Bay Area's jobs at those companies. Their presence in those three regions is primarily dominated by more than 4,000 employees of Amazon, Microsoft, and Apple in the Charlotte metro area, and just over 3,000 employees in greater Salt Lake City from Amazon, Oracle, Tesla, Lockheed Martin, and Apple.

# ECONOMY

## Income

Incomes in 2020 were highly impacted by pandemic-related job losses, particularly for those working in the most affected industries (such as restaurants, retail, and personal care services among others). Eighteen percent of Silicon Valley households have no savings, and were thus caught without a cushion to soften the blow of losing their employment. This loss of income led to increased levels of food insecurity, housing insecurity, and limited residents' overall ability to meet their basic needs. The effects of the pandemic on individual and household incomes are layered upon existing income and wealth inequality within the region, rapidly rising costs (of housing, childcare, food and

transportation in particular), as well as persistent income disparities by sex, race, and ethnicity.

Silicon Valley income levels were at an all-time high prior to the pandemic, with growth outpacing inflation. Eighteen of 39 Silicon Valley cities have enacted minimum wage ordinances. Yet, the real cost of living is rising more quickly than the overall inflation rate (particularly for housing and childcare), and the wages required for self-sufficiency (to meet one's own basic needs without assistance) for all family types—including those with dual-incomes and no-children—exceeded even the highest minimum wage in 2020. While indicators such as per capita personal income

and average annual earnings continue to exhibit upward trends, the region's equiproportional income growth (equality in percent growth) has masked the effects of inequitable absolute growth (equality in actual dollar amount increases). This divergence has contributed to a growing divide between those able to purchase homes and build wealth, and those who continue to lose traction.

### 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 distribu-

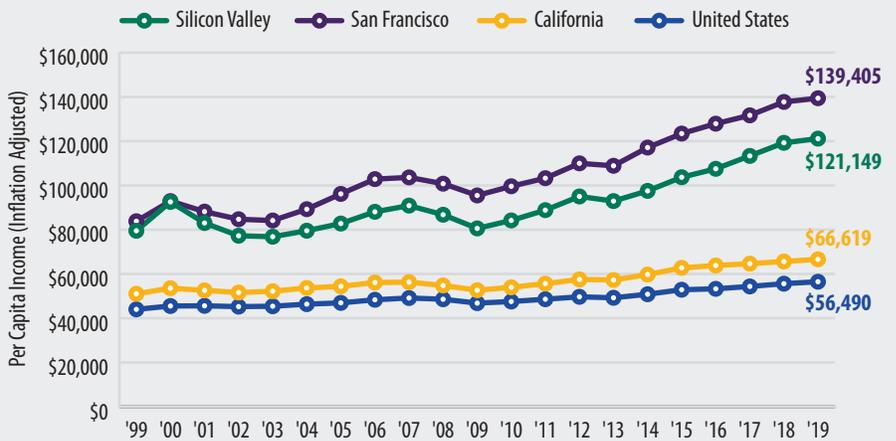
Per capita income is affected to a large degree by the highest income earners, who were less likely to have experienced job losses during the pandemic. Based on several scenarios of the composition and duration of pandemic-related job losses in Silicon Valley, it is unlikely that 2020 per capita income will be more than a fraction of a percent lower than the 2019 value.

Inflation-adjusted per capita income has been increasing steadily in Silicon Valley since 2009, reaching an all-time high of more than \$121,000 in 2019. This compares to \$139,000 in San Francisco, in California, and \$56,000 nationwide.

#### PERSONAL INCOME

### Per Capita Personal Income

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



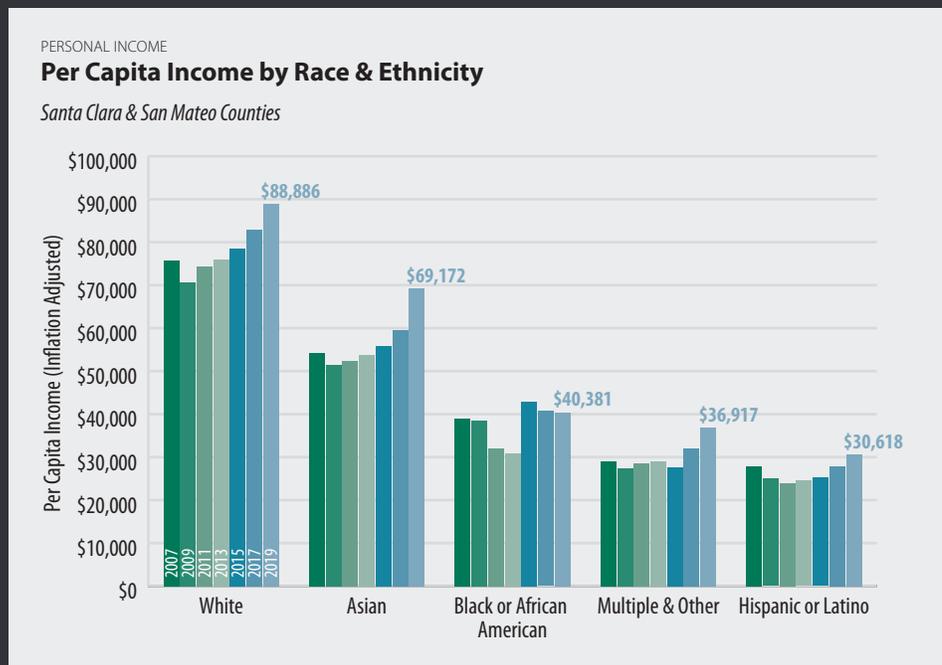
Note: Personal income is defined as the sum of wage and salary disbursements (including stock options), supplements to wages and salaries, proprietors' income, dividends, interest, rental income, and personal current transfer receipts, less contributions for government social insurance.  
Data Source: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

Over the decade between 2009 and 2019, inflation-adjusted personal per capita income in Silicon Valley rose significantly for most racial/ethnic groups (23–35%); however, per capita income for Black or African American residents barely outpaced inflation, with only a 5% increase over those ten years. This lack of income growth is related to the types of jobs available to those without a college education; in 2019, only 38% of Black or African-American and 21% of Hispanic or Latino residents had undergraduate degrees, compared to 64% of White and 62% of Asian residents.

Per capita income gains have consistently outpaced inflation (nearly every year) since the start of the Great Recession economic recovery period; however, Black or African American residents have experienced much smaller gains than other racial/ethnic groups.

tion. 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 money 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.<sup>13</sup> 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)<sup>14</sup> and the extent of food insecurity, are key indicators of the challenges facing many Silicon Valley residents.



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

### Percent Change in Inflation-Adjusted Per Capita Income, by Race & Ethnicity

Santa Clara & San Mateo Counties, 2009-2019

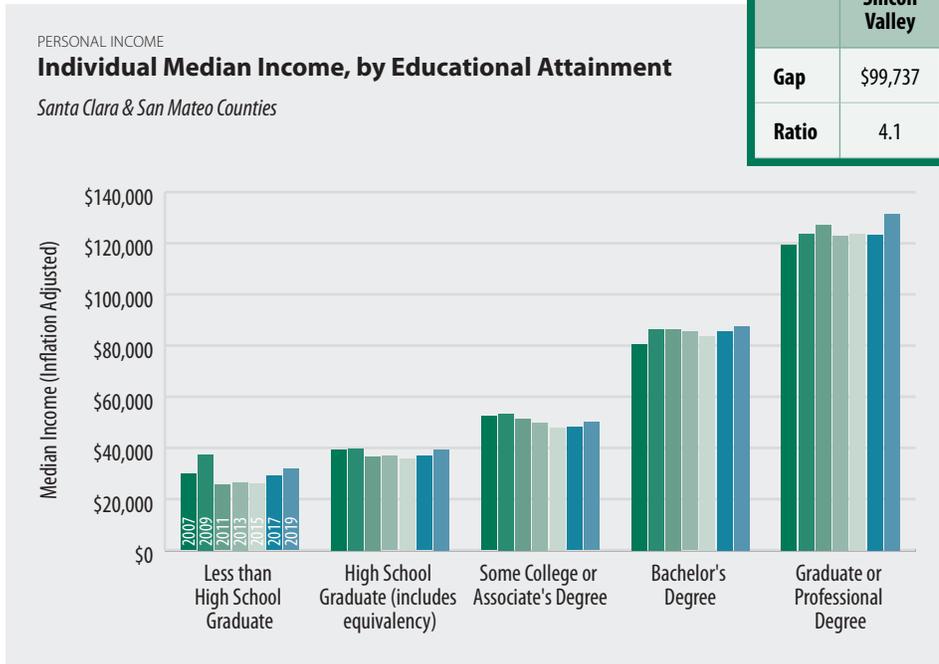
Asian	+35%
Multiple & Other	+34%
White	+26%
Hispanic or Latino	+23%
Black or African American	+5%
ALL	+25%

The highest earning among racial/ethnic group in 2019 were White residents at nearly \$89,000 (based on Census data, which includes income from cash or cash equivalents only).<sup>15</sup> This number is significantly lower than per capita income estimates from the Bureau of Economic Analysis (\$121,000) due to exclusion of non-monetary compensation, bonuses, and additional employer benefits from the dataset, and because the dataset is limited to individuals only.<sup>16</sup>

# ECONOMY

## Income

Between 2011 and 2019, inflation-adjusted median income rose by 24% for Silicon Valley workers with less than a high school diploma and 8% for those who graduated from high school, while workers with higher levels of educational attainment experienced little to no gains.



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

In contrast to per capita income (which is often used to compare relative economic prosperity in different locales), 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 2019, the median individual income was nearly \$108,300 for Silicon Valley residents with a bachelor's degree or higher, and \$31,700 for those without a high school diploma.

Between 2018 and 2019, Silicon Valley individual median income rose by 4% for residents with less than a high school diploma (up \$1,270 annually, after adjusting for inflation—equivalent to an hourly-pay increase of approximately 61 cents for full-time workers). This annual growth was likely a result of recent minimum wage increases at both the state and local levels.<sup>17</sup> While it has outpaced inflation, narrowly, it has not increased as quickly as rising costs of basic needs within the region.

Silicon Valley workers with a graduate or professional degree earn nearly \$100,000 more than those with less than a high school diploma (4.1 times more); this gap has increased by more than \$10,000 since prior to the Great Recession (2007) after adjusting for inflation. In contrast, the income gap by educational attainment level has *decreased* statewide and throughout the U.S. as a whole since 2007.

### Disparity in Median Income between Highest and Lowest Educational Attainment Levels

2019

	Silicon Valley	San Francisco	California	United States
<b>Gap</b>	\$99,737	\$96,037	\$66,385	\$49,619
<b>Ratio</b>	4.1	4.8	3.6	2.9

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, and has expanded significantly since prior to the Great Recession.

### Median Wages, by Occupational Category

Greater Silicon Valley\* 2020

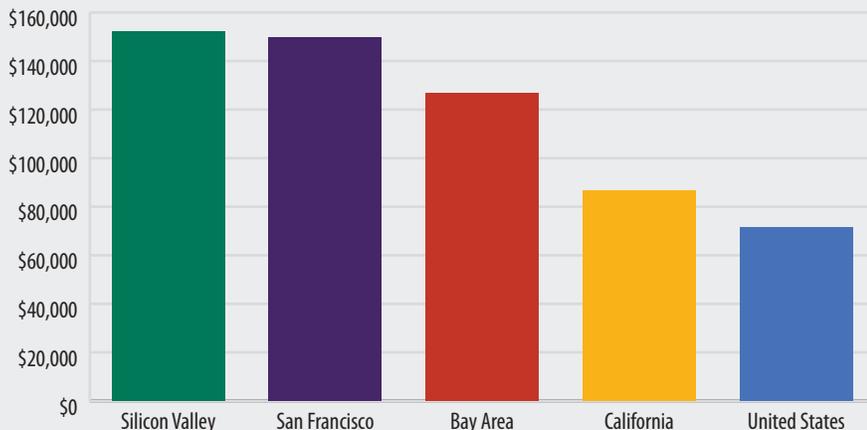
<b>Management, Business, Science and Arts Occupations</b>	\$115,451
<b>Natural Resources, Construction and Maintenance Occupations</b>	\$63,209
<b>Sales and Office Occupations</b>	\$49,011
<b>Production, Transportation and Material Moving Occupations</b>	\$41,462
<b>Service Occupations</b>	\$35,241

\*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 2016-2020. | Data Sources: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages; EMSI | Analysis: BW Research

PERSONAL INCOME

**Average Annual Earnings**

*Silicon Valley, San Francisco, Bay Area, California, and the United States | 2020*



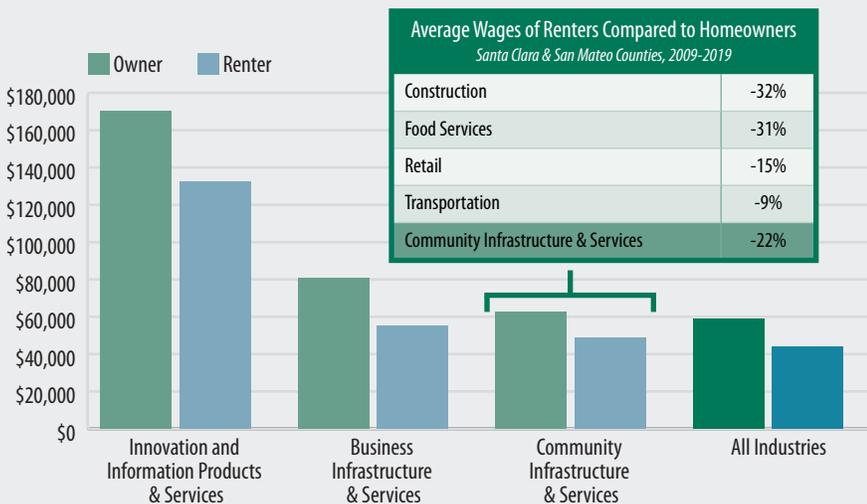
Note: Includes wages, salaries, profits, benefits, and other compensation.  
Data Sources: California Employment Development Department; EMSI | Analysis: BW Research

Average annual earnings—including wages and supplements—are much higher in Silicon Valley and San Francisco (\$152,200 and \$149,800, respectively, in 2020) than the Bay Area overall (\$126,800), California (\$86,400), or the United States (\$71,700).

WAGES

**Average Wages, by Housing Tenure and Industry**

*Santa Clara & San Mateo Counties | 2019*



Note: Definitions of industry categories are included in Appendix A. | Data Source: United States Census Bureau, American Community Survey PUMS  
Analysis: Silicon Valley Institute for Regional Studies

Among Community Infrastructure & Services industries, large wage disparities by housing tenure exist for Construction and Food Services, with renters earning 32% and 31% less than homeowners, respectively.

Average wages in Silicon Valley are higher for homeowners compared to renters across all major areas of employment (by 25% in 2019), indicating that significantly higher wages are necessary in order to enter the housing market, which offers added housing stability and a means by which to build wealth through home equity.

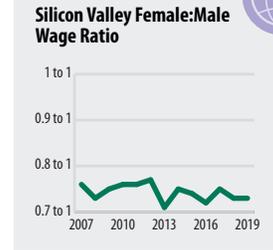
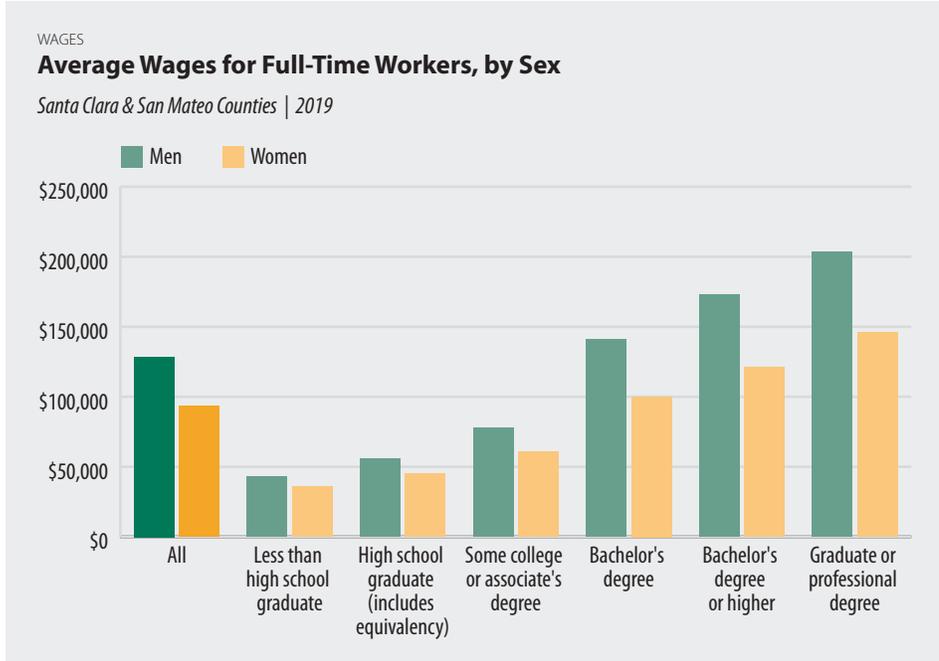
2020 median wages varied significantly by occupational category for Silicon Valley workers, with those in Management, Business, Science and Arts Occupations earning 3.3 times more than those in Service Occupations.

In 2020, Service workers earned a median wage of \$35,241 per year in the greater Silicon Valley region—a (pre-tax) total only slightly higher than the \$25,800 annual fair market rent for a studio apartment.<sup>18</sup>

# ECONOMY

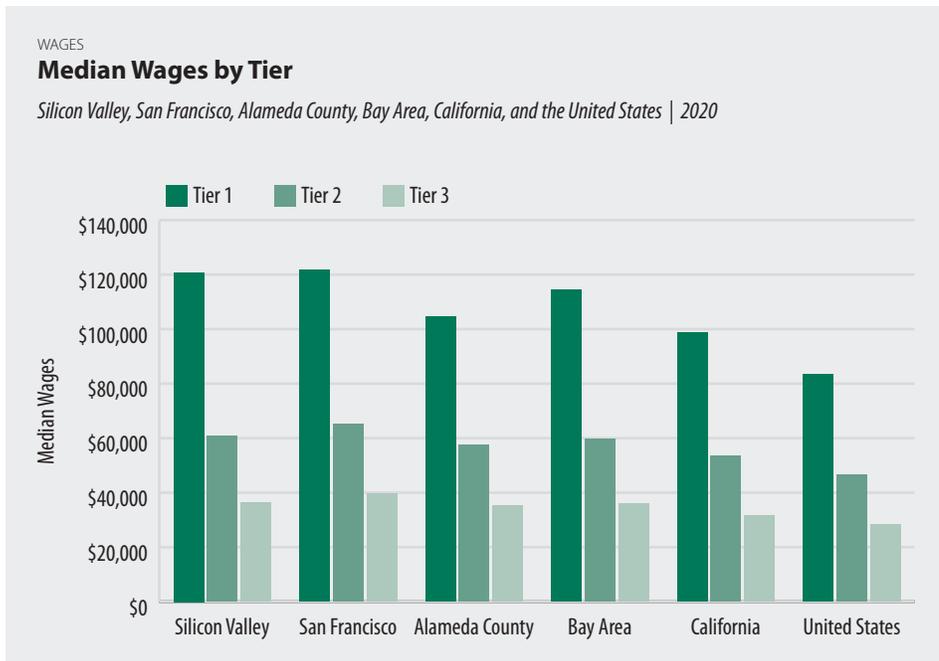
## Income

Men in Silicon Valley with a bachelor's degree or higher earn an average of \$172,600 annually—43% more than women with the same level of educational attainment.



The 2019 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 (\$0.79 on the dollar), California (\$0.79), or the United States as a whole (\$0.75).

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



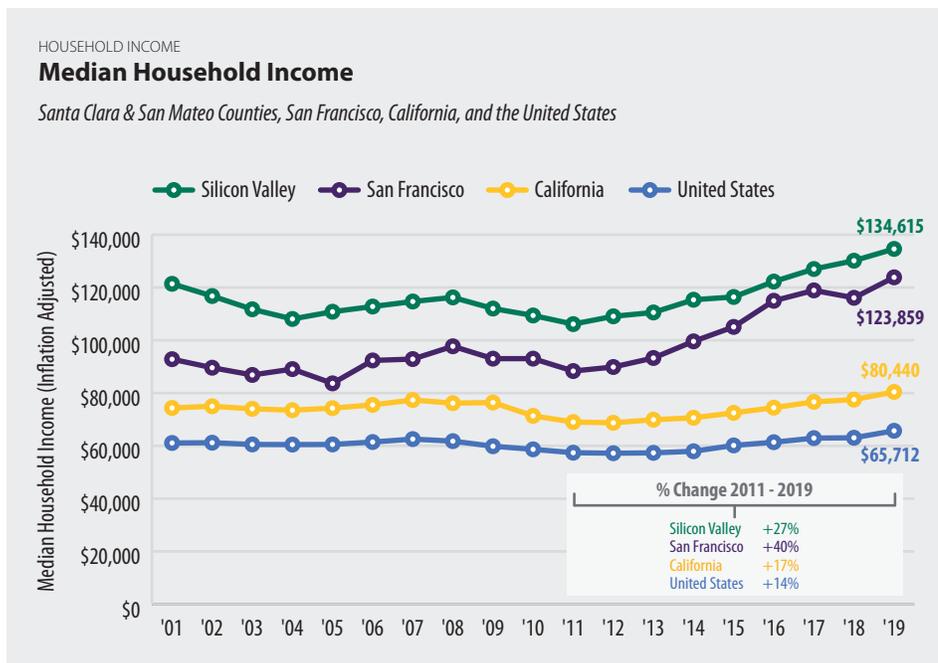
The median wage for Silicon Valley Tier 1 (high-wage/high-skill) workers was \$122,000 in 2020—three times more than Tier 3 workers (a gap of \$85,000 in 2020); this compares to gap of \$55,000 between Tier 1 and Tier 3 workers in the country as a whole.

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

Average wages for Silicon Valley full-time working mothers are 66% of full-time working fathers.<sup>19</sup> Parenthood was the determinant of the largest gender-pay disparity among those analyzed, which included occupational category, sector, race and ethnicity, educational attainment level, and nativity.

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 gender-income gap was \$51,500 in 2019 (\$2,900 more than the previous year and \$8,100 more than in 2017); in comparison, the gap was \$7,000 for workers without a high school diploma (a gap that has shrunk over time—by -\$3,200 since 2017).

Median household income has increased by 40% in San Francisco and 27% in Silicon Valley since 2011, the beginning of the post-recession economic recovery period (compared to 17% statewide, and 14% in the U.S. overall).



Silicon Valley median household income reached an all-time high in 2019 at nearly \$135,000 (up by 3.4% 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.

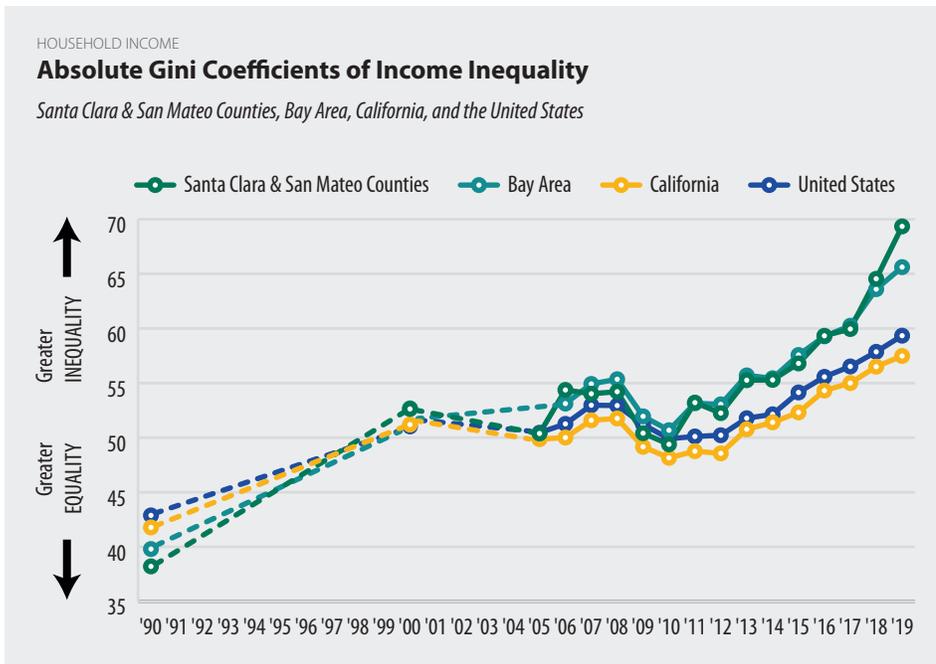
Note: Household income includes wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income from estates and trusts; Social Security or railroad retirement income; Supplemental Security income; public assistance or welfare payments; retirement, survivor, or 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

# ECONOMY

## Income

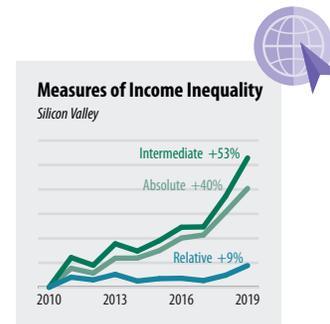
The growing income divide in Silicon Valley has accelerated since 2010, increasing twice as quickly as the state or nation as a whole.



Note: The Absolute Gini is the product of the Relative Gini and the inflation-adjusted mean household income, and has been scaled to equal the Relative Gini in 1990. | Data Source: United States Census Bureau, American Community Survey | Analysis: Jon Haveman; Silicon Valley Institute for Regional Studies

Various coefficients are used to determine the extent of inequality within a given income distribution. In *relative* terms—where equality remains the same with equiproportional income growth—Silicon Valley has only a slightly higher level of inequality than the nation overall (+2%) and has risen by 28% since 1990 (compared to 12% nationally). In contrast, the *absolute* measure of income inequality—where equality remains the same with equal monetary increments of income gain—indicates that the extent of income inequality in Silicon Valley is more than double (+104%) that of the U.S. overall, and has increased by 81% since 1990 (compared to only 38% nationally). Increases in the latter measure have been tied, by some, to a rise in housing prices due largely to increased demand by high-income households.<sup>20</sup>

Based on measures that account for changes in the actual (monetary) income gap between the highest- and lowest-earning households, Silicon Valley income inequality reached an all-time high in 2019. Furthermore, the extent of this high may be an underestimate, because the U.S. Census income data only includes cash income,<sup>21</sup> and many of the higher-income earners in Silicon Valley receive significant non-monetary compensation, bonuses, and additional employer benefits.



By several measures of income inequality—Relative, Absolute, and Intermediate (the product of the two)—Silicon Valley has grown more unequal over the past several decades (with estimates ranging from +28% to +133% since 1990); although most of the increase occurred in the 1990s, it has accelerated again since the beginning of the post-recession economic recovery in 2010.

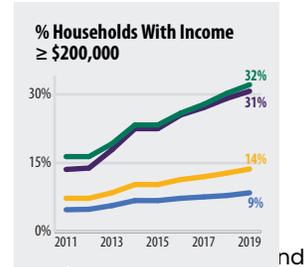
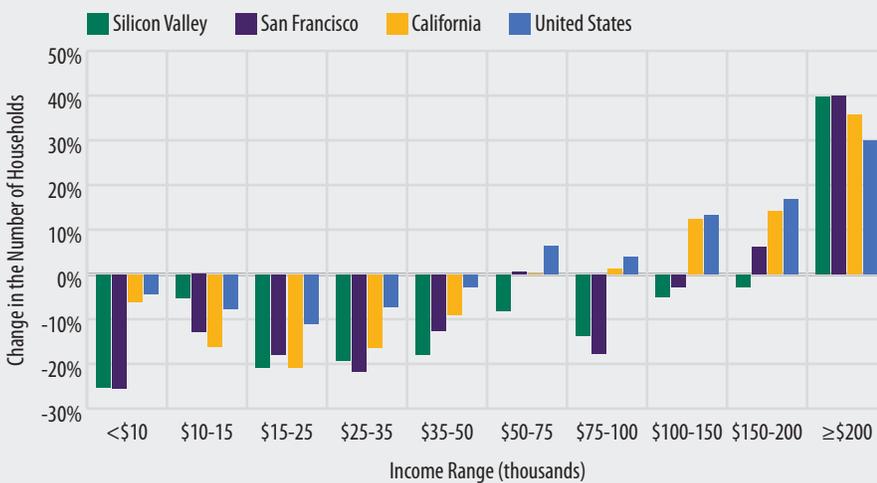
In contrast to the Gini coefficient, which is a relative measure of income inequality, the Absolute Gini<sup>22</sup> accounts for differences in average household income and therefore the absolute (monetary) gap between the highest- and lowest-income households. It corresponds directly to their ability to purchase necessary goods and services. By this measure, income inequality in Silicon Valley is 1.6 times *higher* than in California and double that of the United States overall, and has increased by 40% during the Great Recession economic recovery period alone (since 2010).

32% of Silicon Valley households in 2019 earned \$200,000 or more annually; 45% earned \$150,000 or more.

HOUSEHOLD INCOME

**Percent Change in the Number of Households by Income Range**

Santa Clara & San Mateo Counties, San Francisco, California, and the United States | 2015-2019



Compared to the nation as a whole, Silicon Valley and San Francisco are losing disproportionately more households in the lowest income range (<\$10,000 annually), and losing (rather than gaining) mid-high income households in the \$75,000 to \$200,000 range.

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

Continuing a seven-year upward trend, Silicon Valley gained nearly 19,400 high-income households in 2019 (earning \$150,000 or more).

Over an eight-year period, Silicon Valley's high-income households (earning \$150,000 or more annually) went from representing 27% in 2011 to more than 45% of all households in 2019.

Between 2018 and 2019, the greatest decline in number of Silicon Valley households by income range was for those earning \$75,000 to \$99,000 (down by 7% year-over-year, or 6,400 households).

Silicon Valley has a larger share of high-income households earning \$200,000 or more annually (32%) than San Francisco (31%), California (14%), or the United States as a whole (9%).

# ECONOMY

## Income

More than half (53%) of all Silicon Valley households have less than \$100,000 in investable assets (compared to 47% in San Francisco, 48% in California, and 50% in the United States overall), and hold a mere 2% of the region's total wealth.

Of Silicon Valley's 148,000 millionaire households (those with more than \$1 million in investable assets), 7,200 have more than \$10 million—representing less than 1% of the region's households, but holding more than 11% of the collective wealth.

Silicon Valley's share of millionaire households has doubled over the past five years, from 8% in 2015 to 16% in 2020 (compared to 12% in San Francisco, 10% in California, and 8% in the U.S. overall).

One out of every seven California millionaire households is in either San Francisco, Santa Clara, or San Mateo Counties.

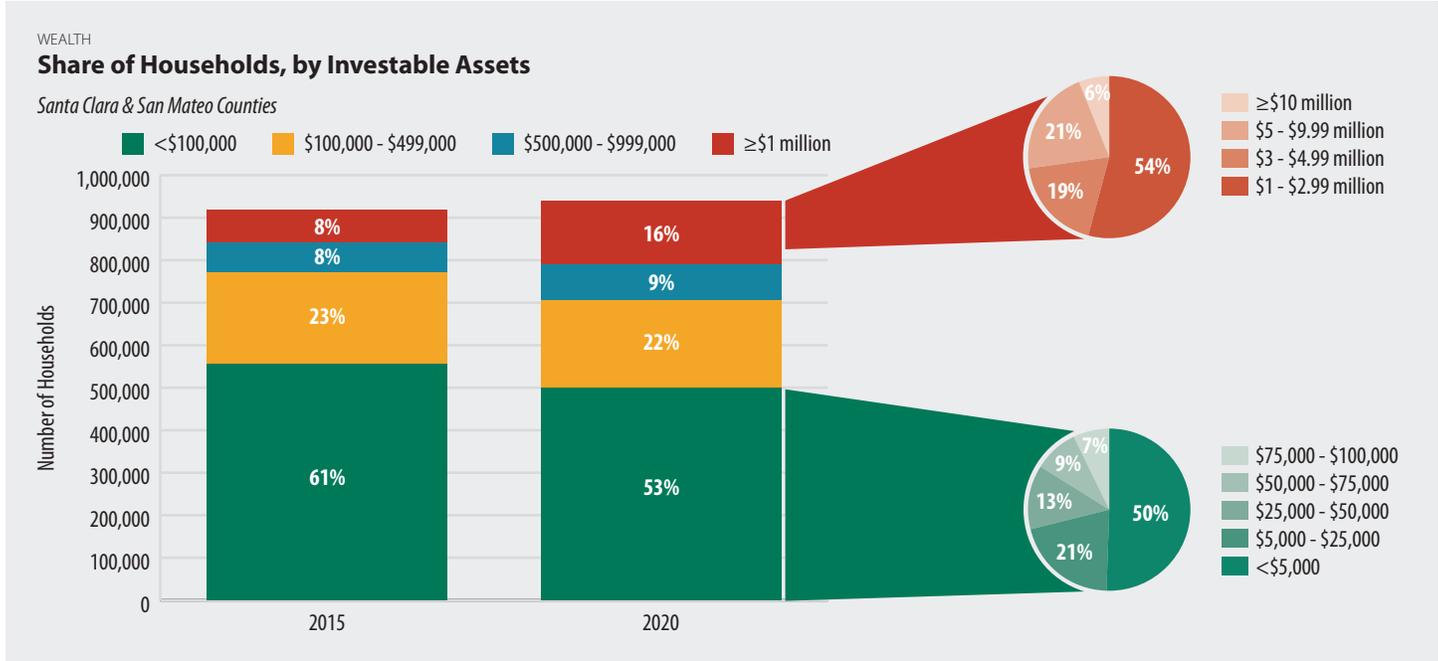
A conservative estimate of the total wealth in all Silicon Valley households combined was \$645 billion in 2020.

The top 16% of Silicon Valley households hold an estimated 81% of the collective wealth; the top 0.8% hold an estimated 11%.

The distribution of wealth in Silicon Valley is relatively similar to that of the country as a whole, with the Top 10% of households holding around two-thirds of the wealth (approximately 65% in Silicon Valley, and 71% in the U.S.), the Bottom 50% holding 1.5% of the wealth, and the Middle 40% holding the rest. In the mid-1980s, the Middle 40% in the U.S. distribution held as much as 35% of the wealth, but that share has since declined (especially since the late 1990s) to 28% in 2019. The worldwide distribution of wealth, however, looks much different—with the top 10% holding much less (34%) of the wealth, and the bottom 50% holding more (21%).<sup>23</sup>

Regional Distribution of Wealth <i>Silicon Valley Households   2020</i>		
	Share of Households	Share of Wealth
<b>Non-Affluent</b> <\$100,000	53%	2%
<b>Affluent</b> \$100,000 - \$1 million	31%	18%
<b>High Net Worth</b> >\$1 million	16%	81%
>\$10 million	0.8%	11%

An estimated 18% of Silicon Valley households had zero (or negative) net assets in 2020, amounting to nearly 172,000 households without any savings to cover potential job losses or unexpected expenses; an additional 9% had less than \$5,000 in liquid assets.

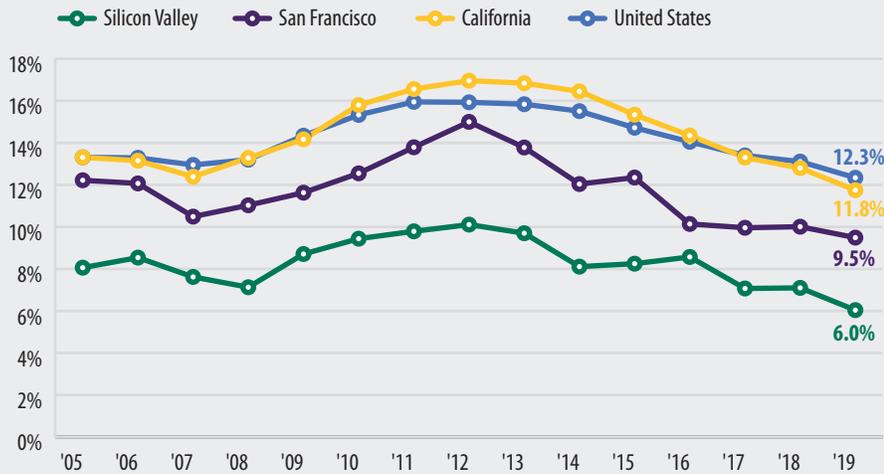


Note: Investable assets all liquid assets such as checking accounts, CDs, and retirement accounts. | Data Sources: Phoenix Global Wealth Monitor; Claritas | Analysis: Silicon Valley Institute for Regional Studies

POVERTY STATUS

### Percentage of the Population Living in Poverty

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

Silicon Valley's 2019 poverty rate was the highest for young adults ages 18-34 (7.3%), and lowest for residents ages 35-64 (5.2%).

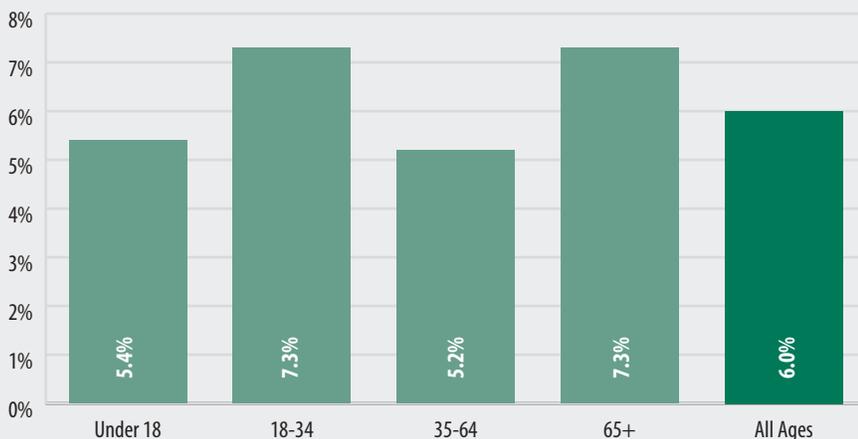
Silicon Valley poverty rates vary significantly by race and ethnicity; the poverty rates Black or African American residents (11%) was more than double that of White or Asian residents (5%) in 2019.

Children accounted for 19% of all Santa Clara and San Mateo County residents who lived in poverty (30,150 out of 160,200) in 2019.

POVERTY STATUS

### Poverty Status by Age

Santa Clara & San Mateo Counties | 2019



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

Prior to the pandemic, Silicon Valley's household poverty rate was the lowest on record since the 1990s (6% in 2019). While the 2020 Census poverty data will not be available until later this year, poverty rates undoubtedly have increased due to pandemic-related employment losses and other hardships. Nationally, poverty rates declined at the start of the pandemic (due primarily to the distribution of stimulus payments), but have since increased—disproportionately for children, Hispanic, and Black individuals, and even during months in which the country has experienced employment gains.<sup>24, 25</sup>

ECONOMY

Silicon Valley's poverty rate remains low (6%) compared to San Francisco (9%), California (12%), and the United States as a whole (12%); however, these poverty estimates are based on the Federal Poverty Threshold (e.g., \$26,750 for a family of four in 2019<sup>26</sup>), and therefore do not take into consideration the region's high cost of living.

The poverty rate in Santa Clara and San Mateo Counties, combined, declined by one percentage point between 2018 and 2019, reaching a rate lower than any other year since 2008.

### Poverty Status by Race/Ethnicity

Santa Clara & San Mateo Counties

<b>Black or African American</b>	11.0%
<b>Hispanic or Latino</b>	8.3%
<b>Multiple and Other</b>	8.1%
<b>Asian</b>	5.2%
<b>White</b>	4.9%

Note: Multiple and Other includes Some Other Race Alone, Two or More Races, and American Indian and Alaska Native Alone (Santa Mateo County only). White is non-Hispanic or Latino.

Silicon Valley's childhood poverty rate was 5% in 2019, which is relatively low compared to California (16%), and the United States overall (17%); still, more than 30,000 Silicon Valley children—one out of every 19—lived in poverty that year.

# ECONOMY

## Income

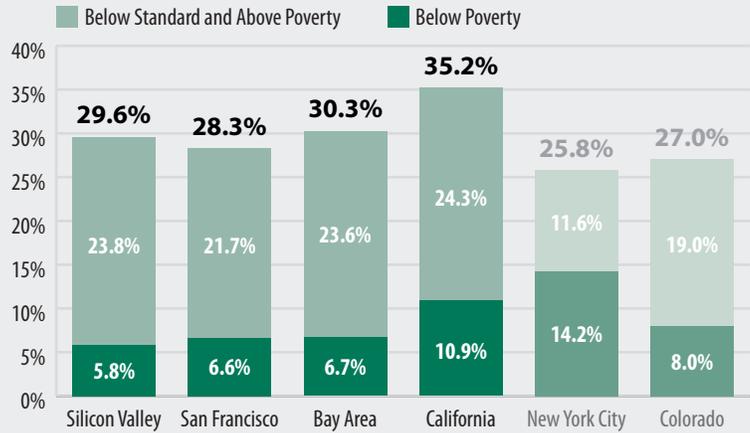
Despite a relatively low household poverty rate, nearly 30% of all Silicon Valley households do not earn enough money to meet their basic needs without public or private/informal assistance.

The share of households living below Self-Sufficiency is slightly higher in Silicon Valley (29.6%) than in San Francisco (28.3%), but lower than in the Bay Area (30.3%) or in California as a whole (35.2%); for comparison, New York City's share below Self-Sufficiency is 27.0%, and Colorado is 25.8% statewide.

### SELF-SUFFICIENCY

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

Santa Clara & San Mateo Counties, San Francisco, California, with comparison regions | 2018

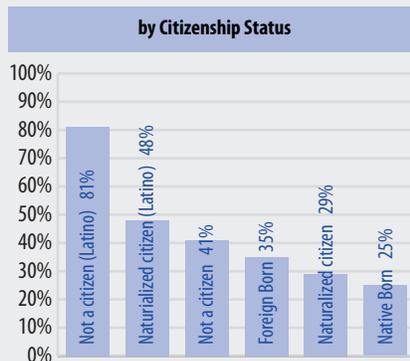
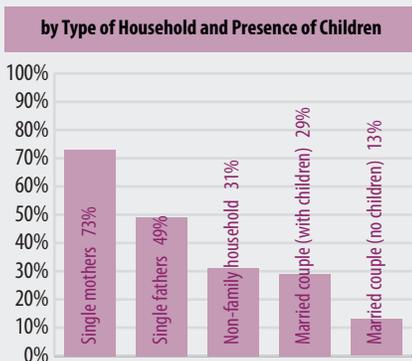
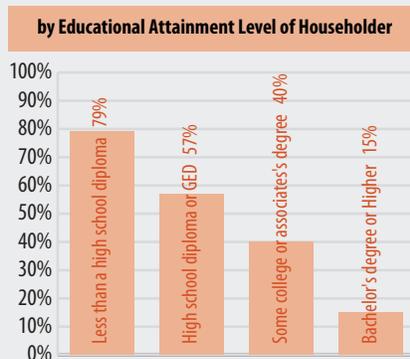
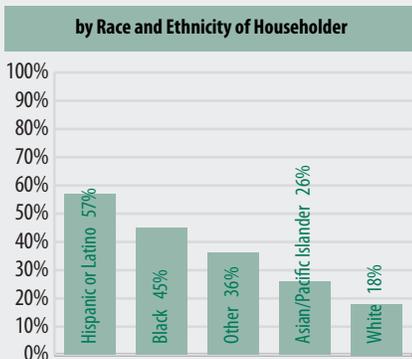


Note: The Self-Sufficiency Standard defines the amount of income necessary to meet basic needs without public subsidies or private/informal assistance. | Data Source: Center for Women's Welfare, University of Washington | Analysis: Silicon Valley Institute for Regional Studies

### SELF-SUFFICIENCY

#### Share of Households Living Below the Self-Sufficiency Standard

Santa Clara & San Mateo Counties | 2018



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

Among family households in Silicon Valley, those led by single mothers struggled the most to meet their basic needs without assistance in 2018 (with 73% below the Self-Sufficiency Standard). Full-time, working single mothers as a group experienced one of the most pronounced gender-wage disparities in the region, earning 66% of what single, full-time working fathers made in 2019.<sup>27</sup>

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%).

More than 57% of all Silicon Valley households with a Hispanic or Latino householder lived below the Self-Sufficiency Standard in 2018, 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.

In 2020, the estimated wages needed in order to meet a family's most basic needs without assistance in Silicon Valley ranged from \$16.65/hour for a two-adult household with no children to \$27.07/hour per adult in a family of four (with two adults and two school-aged children), and higher. A single adult with an infant and preschooler would need to make \$70.80 per hour (\$147,300 annually) in order to be self-sufficient.

Self-Sufficiency wages increase significantly when there are fewer adults (earners) per household, or younger children that require costlier childcare (22% more for an infant compared to a preschooler) in Silicon Valley.

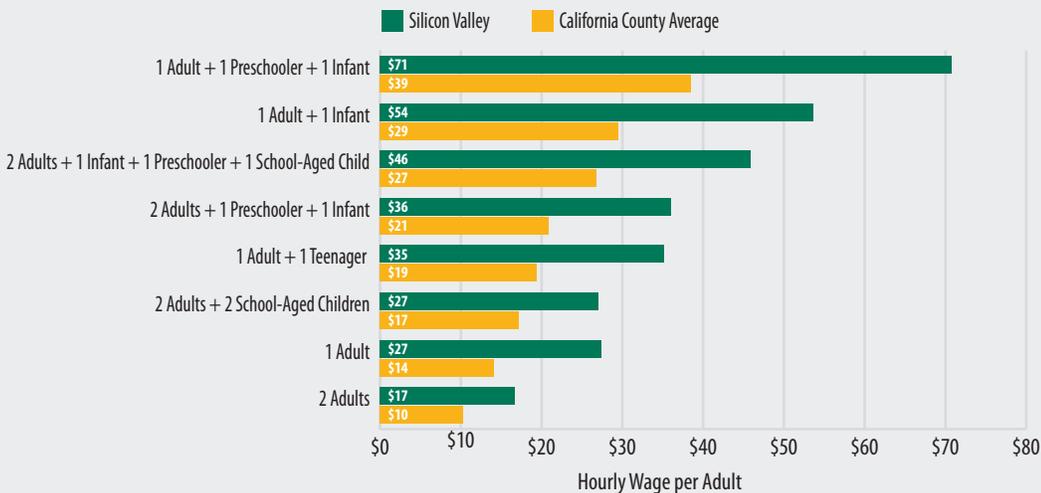
Based on Self-Sufficiency Wages, a family in Santa Clara County with two adults, an infant, and a preschooler would need to have made \$152,160 in 2020 in order to have met their own basic needs without assistance; in comparison, the federal poverty limit for a family of four that year was \$26,200 (less than one-fifth of the Self-Sufficiency Standard).<sup>29</sup> Likewise, Self-Sufficiency wages for a single adult were \$57,830 annually, while the federal poverty limit for an individual less than a quarter of that (\$12,760) in 2020.

Self-Sufficiency wages in Silicon Valley are significantly higher than the California county average, and much higher than in places like Phoenix, Portland, and Las Vegas (where a two-adult household with an infant and a preschooler requires a wage of \$17.42, \$21.33, and \$15.92 per hour, respectively,<sup>30</sup> compared to \$36.03 in Silicon Valley).

SELF-SUFFICIENCY

**Hourly Self Sufficiency Wages Needed For Various Family Types**

Santa Clara & San Mateo Counties, and California | 2020



It was impossible for anyone earning minimum wage to be above the Self-Sufficiency Standard in Silicon Valley at the 2020 statewide minimum wage (\$13 per hour in California, and \$15-\$16.05 per hour in 12 of Silicon Valley's 39 cities); even a dual-income family with no children would require a Self-Sufficiency wage of \$16.65 per hour to meet their most basic needs without assistance.<sup>28</sup>

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

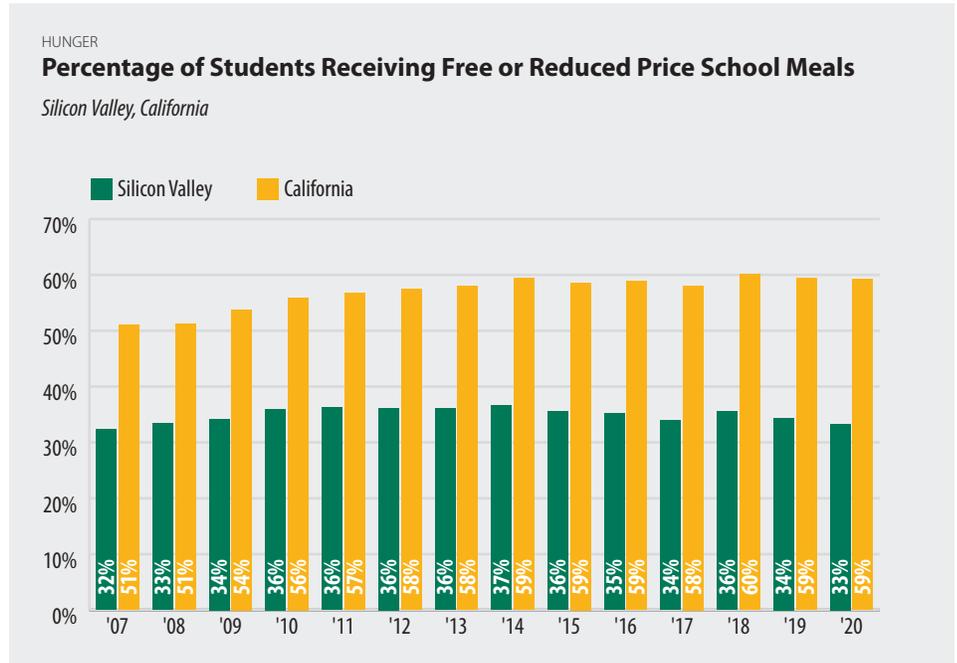
# ECONOMY

## Income

More than a third of Silicon Valley students ages 5-17 (134,200 students) applied for and qualified to receive free or reduced-price school meals (FRPM) in the 2019-20 school year. 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.<sup>31</sup>

With children offsite beginning in March, complications arose in getting meals to those in need. There was a lag time between when the shelter-in-place began, and when families began to access school meals via pick-up locations.

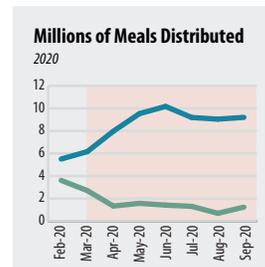
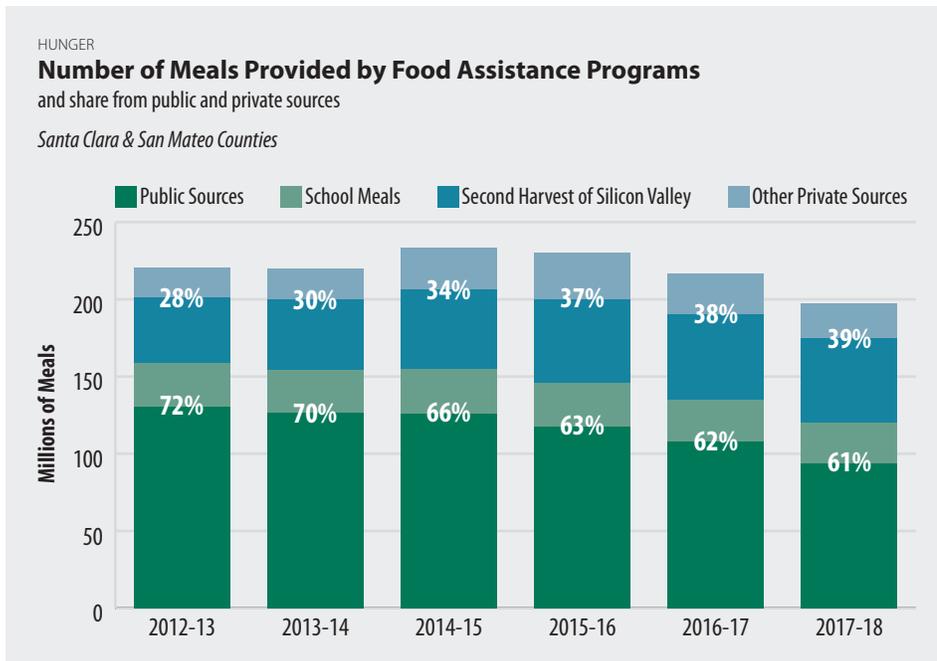
The share of Silicon Valley students qualifying for free or reduced-price meals remains significantly lower than the state overall, at 33% in the 2019-20 school year (compared to 59% throughout California).



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

## Second Harvest of Silicon Valley food distribution ramped up significantly during the pandemic, from approximately 5.5 million meals in February to a peak 10.2 million in June.

Based on the number of meals provided by assistance programs in 2018, an estimated 677,000 Silicon Valley residents were served that year.<sup>32</sup>

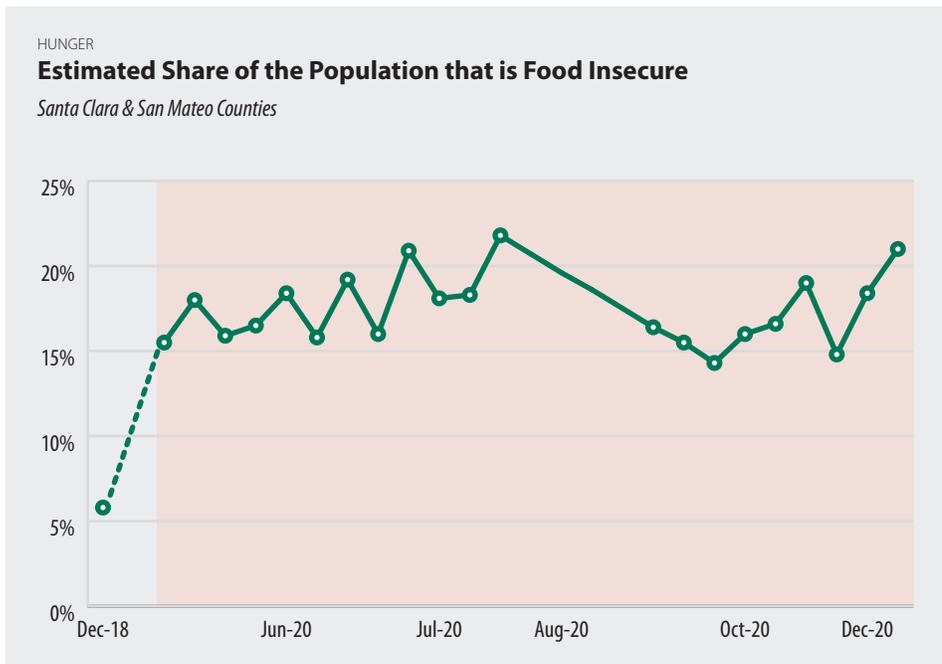


Prior to the pandemic, the total amount of food assistance provided to Santa Clara and San Mateo County residents had been declining consistently year after year. However, this decline is not necessarily indicative of a decline in need, but rather decreasing amount of food assistance from public programs such as the Supplemental Nutrition Assistance Program (CalFresh in California, formerly Food Stamps) and Women, Infants, and Children (which were down 31% and 35%, respectively, between 2013 and 2018).

Note: Number of Meals Distributed for 2020 includes Second Harvest of Silicon Valley and School Meals. | Data Sources: California Department of Social Services; Santa Clara University, Leavey School of Business; Second Harvest of Silicon Valley; California Department of Education, Nutrition Services Division; Analysis: Silicon Valley Institute for Regional Studies; Santa Clara University, Leavey School of Business

Food insecurity rates rose dramatically following pandemic-related job losses and reduced access to school meals. Between April 2020 and the end of the year, as many as one in five Silicon Valley residents lacked access, at times, to food and/or food that was nutritionally adequate.

By and large, national measures of food insecurity do not take into account the cost of living in Silicon Valley—particularly the high cost of housing and childcare. 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.



Data Sources: Stanford Data Lab, California Weekly Pulse; Northwestern University Institute for Policy Research  
Analysis: Silicon Valley Institute for Regional Studies

Between February and the end of 2020, the cost of “food at home” for Bay Area residents rose by 8% overall, with the greatest increase in Meats, Poultry, Fish, and Eggs (+17%).

At the same time as the unemployment rate rose dramatically, food prices increased as well. As both of these factors are closely tied to food insecurity, the share of Silicon Valley residents in need of food assistance rose substantially beginning in March.

Percent Change in the Cost of Food at Home	
Bay Area   February - December 2020	
Meat, Poultry, Fish & Eggs	+17%
Dairy & Related Products	+6%
Fruits & Vegetables	+13%
All	+8%

Data Source: United States Bureau of Labor Statistics  
Analysis: Silicon Valley Institute for Regional Studies

Food insecurity rates among Santa Clara and San Mateo County residents quadrupled during the pandemic. Families with children were affected to a greater extent than the overall population, with one in three experiencing food insecurity by late-April/early-May, nationwide.<sup>33</sup>

Estimates of pre-pandemic food insecurity in Silicon Valley vary widely by source, ranging from as low as 6% to as much as 17% of the region’s population (depending on data sources and how food insecurity is defined). Statewide food insufficiency was highest for Hispanic and non-Hispanic Black individuals, with a large majority of survey respondents citing “couldn’t afford to buy more food” as the reason.<sup>34</sup>

The number of school meals distributed to Silicon Valley students declined significantly with the mid-March shelter-in-place orders and transition to distance-learning (from 3.6 million meals in February to 1.3 million in April). An estimated 88% of eligible Santa Clara and San Mateo County students (90% throughout the Bay Area and 95% statewide) participated in the first phase of the federal Pandemic Electronic Benefits Transfer (P-EBT) program, which provided families who would have typically received Free- and Reduced-Price School Meals with an EBT card and supplemental funding to purchase food at most grocery stores, farmer’s markets, or online to replace missed school meals.<sup>35</sup>

An estimated 6% of Santa Clara and San Mateo County households participating in CalFresh live farther than a 20 minute walk or public transit ride to a SNAP-accepting retailer. Nearly 100% have access to online EBT grocery purchasing and delivery; currently, however, they can only shop at two major online EBT-accepting retailers—Amazon and Walmart.<sup>36</sup>

The system of food assistance provided in the United States overall, statewide, and in Silicon Valley includes a mix of government programs (e.g., SNAP/CalFresh, School Meals, Senior Nutrition) and additional sources such as food banks, as well as a large number of food providers, funding providers, and food distribution partners. The region has experienced a consistently declining share of food assistance from public sources (from 72% in 2013 to 61% in 2018) and a corresponding increase in food provided by private sources. The latter may be due to a variety of factors, such as an increasing need by those who do not qualify for public nutrition programs (with stringent income eligibility limits), or a greater need by a smaller number of individuals (who can only receive a limited amount from other programs).

# ECONOMY

## Innovation & Entrepreneurship

Silicon Valley's regional Gross Domestic Product (GDP) fell in 2020 to an estimated \$351 billion—\$19 billion less than the prior year. However, regional employment levels fell more rapidly than GDP, resulting in an increase in regional productivity per employee.

2020 was a record year for Venture Capital. Total VC funding to Silicon Valley and San Francisco companies rose eight percent year-over-year. The number of extremely large 'megadeals' (over \$100 million each) nearly doubled compared to the prior year, and the region was home to 114 Unicorn companies (representing 25 percent of all U.S. Unicorns, defined as

private companies valued at more than \$1 billion) and an *elite-eight* Decacorns (valued at more than \$10 billion) at the end of the year with a combined valuation of \$370 billion. Angel investments were up year-over-year as well, most of which were seed-stage deals. Meanwhile, the founding of new Silicon Valley startup companies declined for the sixth year in a row, and only 14 percent of new 2020 startups had women founders.

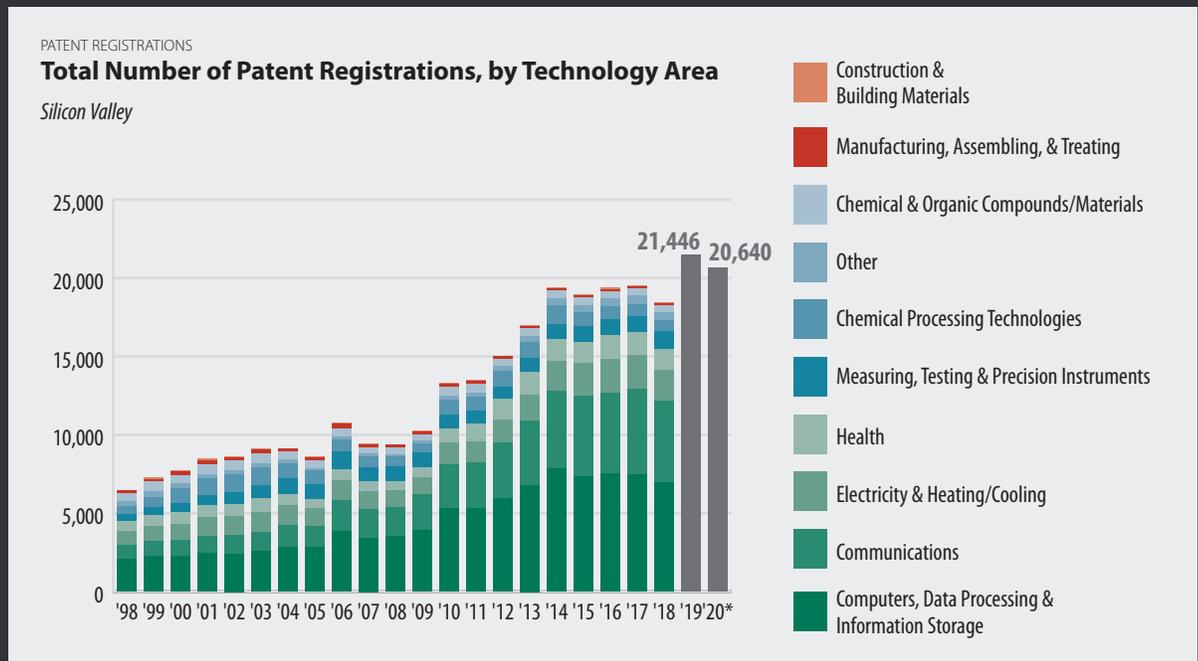
Patent registrations were down slightly year-over-year, but higher than any other year prior to 2019 on record. Seven out of the state's top ten patent-generating cities were located in Silicon Valley, plus

San Francisco which ranked third and also continued the trend of rapidly increasing per capita patent activity.

Initial Public Offerings (IPOs) were slow in the early part of the year, then accelerated quickly to a total 24 Silicon Valley IPOs in 2020. Two-thirds of them were Health Care companies, and a quarter were in Technology (the largest of which was San Mateo-based Snowflake). Average IPO return rates at the end of the year were higher for Silicon Valley and San Francisco IPOs (+117 percent and +101 percent, respectively) than for U.S. IPOs overall (+80 percent).

Silicon Valley's annual number of patent registrations has doubled over the past 11 years (since 2009). In 2020, more than half (55%) of California patents were registered to Silicon Valley or San Francisco inventors, and San Jose ranked number one in both the state and nation.

In 2020 (through December 12), there were 20,640 patents registered to Silicon Valley inventors (compared to 3,478 to San Francisco inventors); this number represents 805 fewer patents than the prior year, but nearly 2,200 more than in 2018.



\* through December 12 | Note: 2019 and 2020 data not available by technology area.  
Data Sources: United States Patent and Trademark Office; California Department of Finance | Analysis: Silicon Valley Institute for Regional Studies

## 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

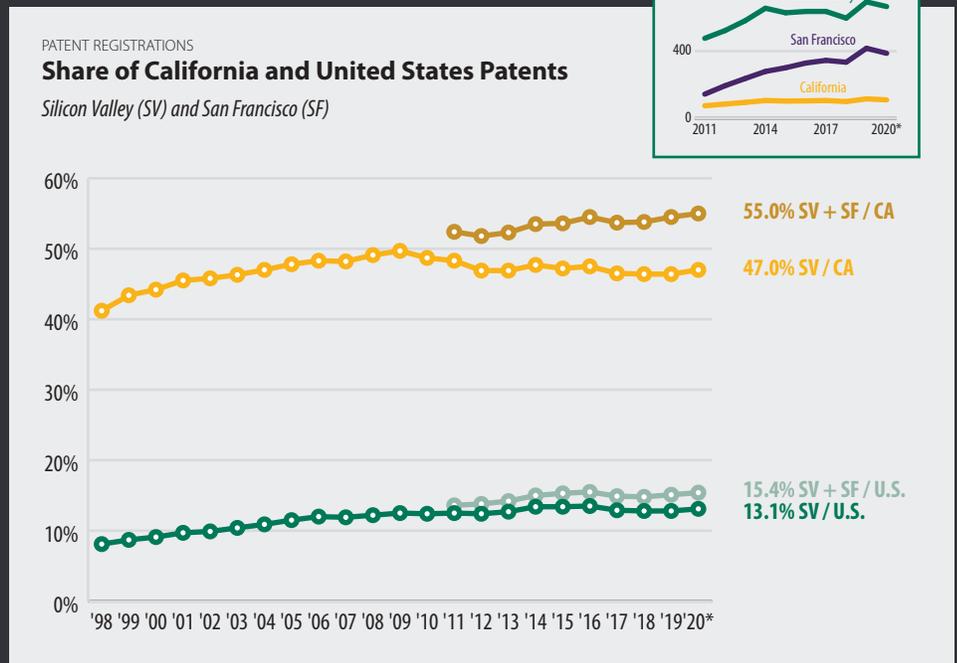
the generation of new ideas, as well as the ability to disseminate and commercialize those ideas. The activity of mergers and acquisitions (M&As) and initial public offerings (IPOs) indicate that a region is cultivating successful and potentially high-value companies. And, growth in firms without employees indicates that more people are going into business for themselves.

Finally, tracking both the types of patents and areas of venture capital 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.

Per capita patent registrations in San Francisco increased by 170% since 2011, despite a slight year-over-year decline in the total number of patents registered in 2020.

Over the past three decades (since 1990), Silicon Valley's share of California and U.S. patent registrations has increased dramatically (from 25% to 47%, and from 4% to 13%, respectively), although most of the increase occurred in the 1990s.

Seven of California's top ten patent-generating cities in 2020 were in Silicon Valley, and San Francisco ranked third. San Jose also ranked first in the country, with 3% of United States patents that year. While many of the same Silicon Valley cities topped the national list, cities beyond California that also made the top 15 list included Seattle and Austin (both 1.5% of U.S. utility patents), Houston (1.1%), New York (0.9%), and Portland (0.8%).



\* through December 12 | Data Source: United States Patent and Trademark Office | Analysis: Silicon Valley Institute for Regional Studies

# ECONOMY

## Innovation & Entrepreneurship

Silicon Valley's decline in employment was greater than the decline in regional GDP between 2019 and 2020, resulting in a rise of labor productivity by 1.5% year-over-year. The region's labor productivity has risen steadily for the past two decades, up 53% between 2001 and 2020 (compared to +38% in San Francisco, +29% in California, and +25% throughout the United States as a whole).

**Silicon Valley labor productivity increased in 2020, despite a decline in year-over-year regional GDP (of -\$19.5 billion, after inflation-adjustment).**

Silicon Valley labor productivity was nearly \$244,000 per employee in 2020 (equivalent to approximately \$117 per hour, per employee). This compares to \$237,000 in San Francisco, \$190,000 in California, and \$146,000 throughout the United States.

Percent Change in Inflation-Adjusted GDP	
	2019-2020
<b>Silicon Valley</b>	-5.3%
<b>San Francisco</b>	-4.5%
<b>California</b>	-2.6%
<b>United States</b>	-4.5%

Top 10 Patent Generating Cities in California			
With United States Rank and Share, 2020*			
City	Count	Share	U.S. Rank (Share)
San Jose	4,734	11%	1 (3.0%)
San Diego	3,588	8%	2 (2.3%)
San Francisco	3,477	8%	3 (2.2%)
Sunnyvale	1,944	4%	6 (1.2%)
Mountain View	1,736	4%	7 (1.1%)
Palo Alto	1,624	4%	9 (1.0%)
Santa Clara	1,479	3%	10 (0.9%)
Fremont	1,259	3%	13 (0.8%)
Cupertino	1,112	3%	14 (0.7%)
Los Angeles	1,005	2%	15 (0.6%)

\* through December 12 | Data Source: United States Patent and Trademark Office | Analysis: Silicon Valley Institute for Regional Studies

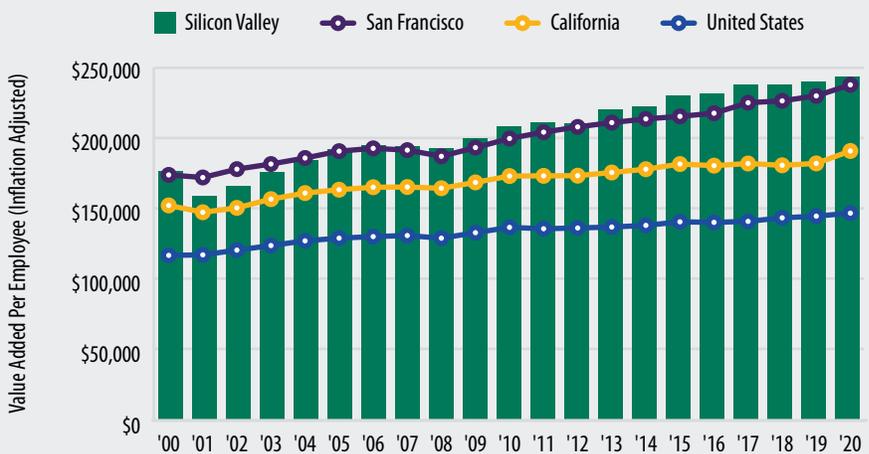
Mountain View-based Waymo, a self-driving car company and Google spinoff, attracted the two largest deals in the region in 2020, with \$2.25 billion in the first quarter and \$750 million in the second. Among Waymo's 2020 investors were Google's parent company, Alphabet, and two Menlo Park-based investors: Silver Lake and Andreessen Horowitz.

Menlo Park-based Fintech company, Robinhood, raised nearly \$670 million in the third quarter through back-to-back closings (Series G/G-II), following earlier 2020 investments of \$320 million in June (Series F-II) and \$280 million in May (Series F). Robinhood, one of the region's elite-eight Decacorns (private companies valued at more than \$10 billion), is expected to go public sometime in 2021.

### 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

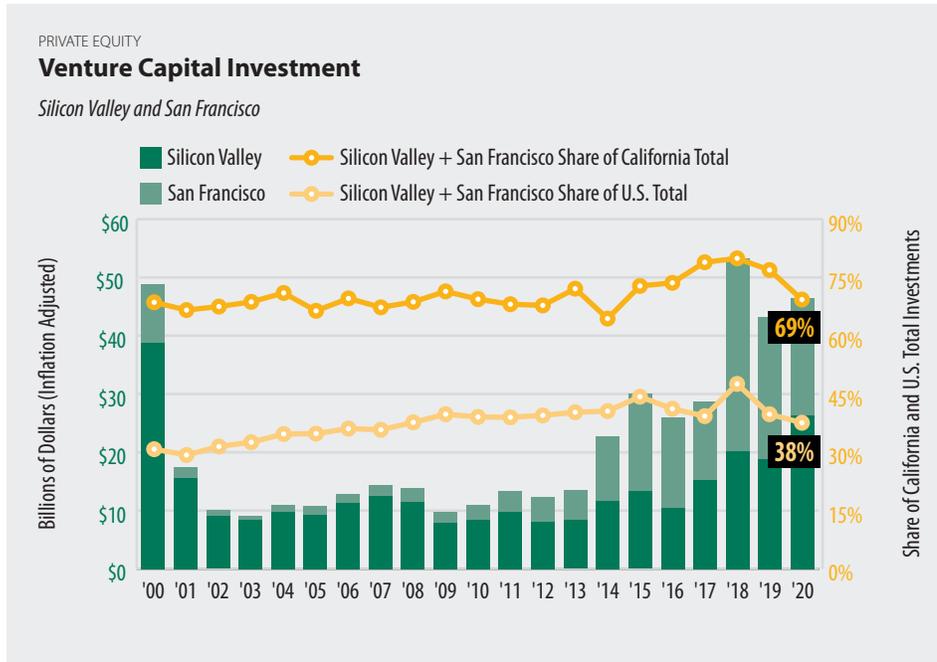
Grail, a Menlo Park-based Healthcare company focused on early cancer detection, raised \$390 million in a Series D round in May before the pending acquisition for \$8 billion by San Diego-based Illumina, announced in September.

Tradeshift, a San Francisco-based enterprise software company, received between \$5 and \$10 million from the Paycheck Protection Program in late April in order to retain an estimated 201 jobs,<sup>39</sup> less than four months after its \$240 million Series F equity/debt VC round.

Among the year's largest VC deals were Instacart and DoorDash—both in the food delivery space, and both are in sharply greater demand with people largely homebound during the pandemic. In advance of its IPO, DoorDash had absorbed as much as half (48%) of the food delivery market share with nearly three-quarters of its customers new to the platform.<sup>37</sup> Likewise, within the first couple weeks of the pandemic, Instacart sales were up by as much as 145%.<sup>38</sup> The company attracted a handful of VC deals throughout the year, including a \$225 million Series G round in June 2020, followed by another \$100m in July and a \$200 million Series H round in October.

Silicon Valley VC funding hit a record high in 2020, reaching \$26.4 billion. This compares to a nominal \$23.3 billion at the height of the dot.com boom in 2000 (although when inflation-adjusted to 2020 dollars, that amount is equivalent to \$38.2 billion).

Venture Capital investments in Silicon Valley and San Francisco companies, combined, were up 8% year-over-year in 2020, reaching a total of \$46.4 billion (\$26.4 and \$20.0 billion, respectively). Despite this rise, the region's combined share of state and national funding declined slightly due to the sharp increase in VC deals elsewhere as well.



Venture Capital funding was at an all-time high in 2020, reaching \$26.4 billion in Silicon Valley, \$20.0 billion in San Francisco, \$67.0 billion in California, and \$123.6 billion in the U.S. overall.

San Mateo-based Snowflake Computing and San Francisco-based DoorDash were among the recipients of the year's largest VC deals, then both went public later in the year. Prior to its \$3.4 billion IPO in early December, DoorDash held its last VC round (Series H) in mid-June—raising another \$400 million and bringing the company's valuation up to nearly \$15 billion.

Data Sources: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report (2000-2016); Thomson ONE (2017-2020)  
Analysis: Silicon Valley Institute for Regional Studies

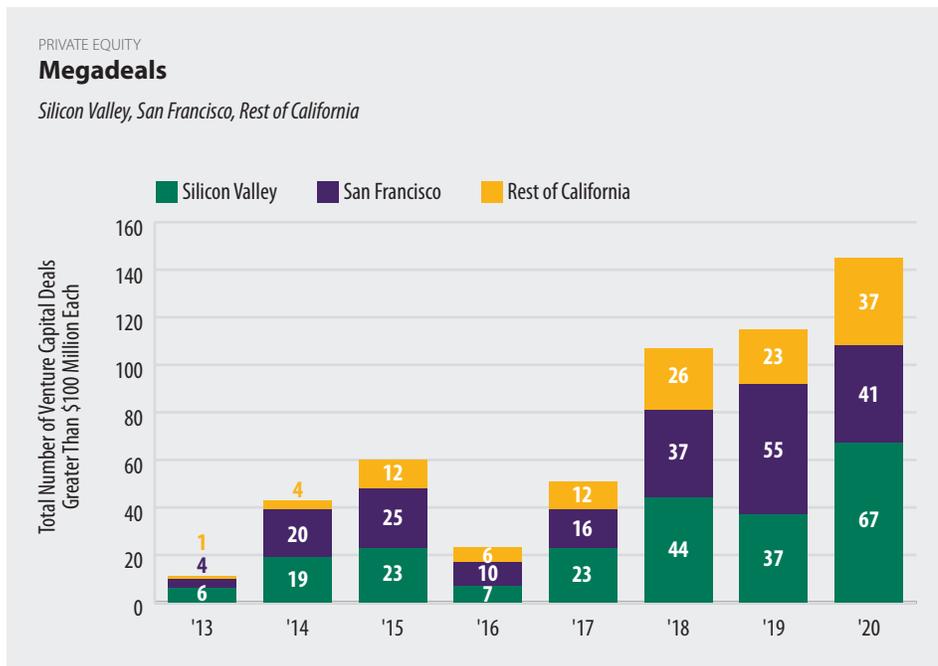
Top Venture Capital Deals of 2020						
Silicon Valley				San Francisco		
Investee Company Name	City	Amount (millions)	Quarter	Investee Company Name	Amount (millions)	Quarter
Waymo	Mountain View	\$2,250.00	1	JUUL Labs	\$721.56	1
Waymo	Mountain View	\$750.00	2	Stripe	\$631.00	2
Robinhood	Menlo Park	\$668.30	3	SecFi	\$550.00	1
Nuro	Mountain View	\$500.00	4	Chime	\$485.00	3
Impossible Foods	Redwood City	\$499.95	1	Samsara Networks	\$400.00	2
Lyell Immunopharma	South San Francisco	\$493.00	1	DoorDash	\$400.00	2
Snowflake Computing	San Mateo	\$475.98	1	Varo Money	\$241.00	2
Pony.ai	Fremont	\$462.00	1	Tradeshift	\$240.00	1
Grail	Menlo Park	\$388.41	2	Instacart	\$225.00	2
Hippo	Palo Alto	\$350.00	4	Appsflyer	\$210.00	1

Data Sources: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report (2000-2016); Thomson ONE (2017-2020); CB Insights | Analysis: Silicon Valley Institute for Regional Studies

# ECONOMY

## Innovation & Entrepreneurship

Megadeals—a name given to venture capital deals over \$100 million—hit an all-time high in 2020 with 318 nationwide, after rising steadily each year since from 23 national megadeals in 2016. In Silicon Valley, the number of megadeals nearly doubled from 2019 to 2020.



Data Source: Thomson ONE | Analysis: Silicon Valley Institute for Regional Studies

Of the \$46.4 billion in total venture capital funding to Silicon Valley and San Francisco companies in 2020, more than half of it (53%, or \$24.6 billion) was in the form of megadeals.

There was a record number of Silicon Valley and San Francisco megadeals in 2020, with 108 (totaling \$24.6 billion) compared to 92 (\$20.5 billion) in 2019. In Silicon Valley alone, the number of megadeals grew by 81% year-over-year with 67 in 2020 compared to 37 the prior year.

The majority of Angel investments are in seed-stage deals including at least one Angel investor. In 2020, the largest deals were to San Mateo-based Engageli (an online educational platform) for \$14.5 million, Palo Alto-based software company Turing (\$14 million), San Francisco-based financial services company Oyster (\$14 million), and Menlo Park-based Helm.ai (focused on autonomous vehicle technology) for \$13 million.



Data Source: CB Insights | Analysis: Silicon Valley Institute for Regional Studies

Among the region's elite eight Decacorns is San Mateo-based gaming technology company, Roblox, which has gained popularity over the past several years and especially during the pandemic—with Google searches for the game up 33% in March 2020 alone,<sup>40</sup> and sales up by an estimated 20x between the first and second quarters of the year.<sup>41</sup> Roblox, which had originally planned to hold an IPO, announced in the first week of 2021 that it has plans to offer shares through a direct listing instead.<sup>42</sup>

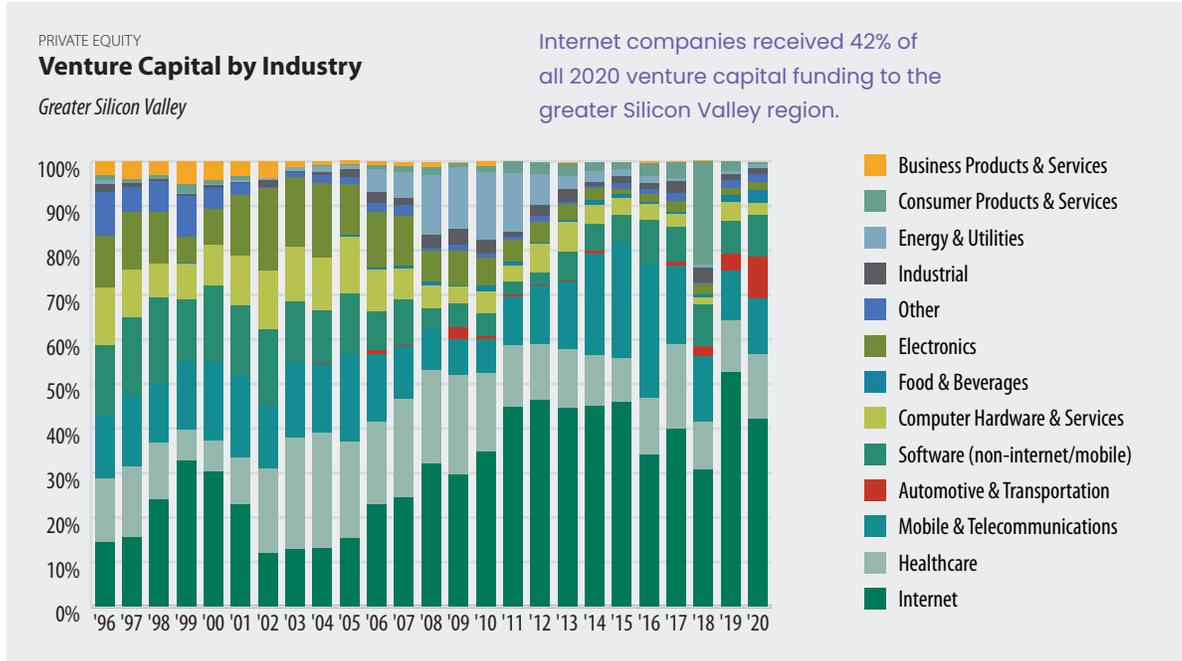
Among the top VC deals of 2020 were \$476 to San Mateo-based Snowflake Computing in Q1 and \$400 million to DoorDash in Q2. While both companies were already among the region's elite Decacorns, they exited the list when they went public later in the year. Snowflake was valued at \$12.4 billion after its last (Series G) round, and DoorDash was valued at \$14.7 billion prior to its IPO.

As of mid-January 2021, there were a total of 250 U.S. Unicorns and 12 U.S. Decacorns (private companies valued at more than \$100 million and \$10 billion, respectively). Of those twelve, eight are headquartered within the greater Silicon Valley region—five in San Francisco (Ripple, JUUL Labs, Chime, Instacart, and Stripe), and three in Silicon Valley (Aurora, Robinhood, and Roblox).

Of the 250 U.S. Unicorn companies in January 2021, 25% are located in San Francisco and 21% in Silicon Valley. In total, these 114 Unicorns are worth more than \$370 billion.

There was a significant increase in the share of Greater Silicon Valley VC dollars to Automotive & Transportation companies in 2020—reaching more than 9% (from 4% in 2019)—largely due to the \$3.5 billion total in funding to Mountain View-based autonomous car companies Waymo and Nuro.

Greater Silicon Valley Healthcare and Software companies continued to attract relatively steady shares of total VC funding, with 15% and 9% (\$7.2 billion and \$4.5 billion, respectively) in 2020.



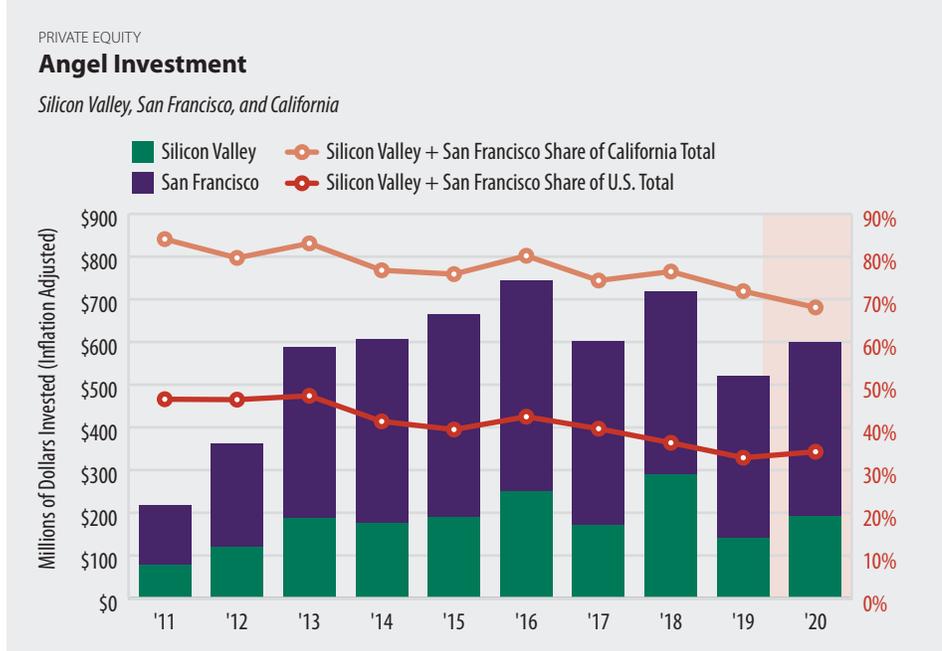
The share of VC funding to Greater Silicon Valley electronics companies has slowly dwindled from a high of 18% in 2002 to a mere 2% in 2020; likewise, the share of VC funding to Computer Hardware & Services companies has declined from 13% to 3% over the same period.

ECONOMY

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 Sources: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report, Data: CB Insights; CB Insights Analysis: Silicon Valley Institute for Regional Studies

San Francisco companies received more than double the amount of Angel investment dollars in 2020 than Silicon Valley companies (\$406 million, compared to \$192 million).

2020 Angel investments in Silicon Valley companies (\$192 million) were \$51 million more than the prior year, after inflation-adjustment; San Francisco Angel investments were up \$26 million, year-over-year.



Angel investments in Silicon Valley and San Francisco increased in 2020 (by 36% and 7%, respectively, after inflation-adjustment); likewise, Angel investments throughout the state and U.S. overall were up year-over-year (by 21% and 10%, respectively).

In 2020, 68% of California (and 34% of U.S.) Angel investments went to Silicon Valley or San Francisco companies. These shares, however, have been trending downward for nearly a decade. In 2011, 84% of all California (and 47% of U.S.) Angel investments went to local companies.

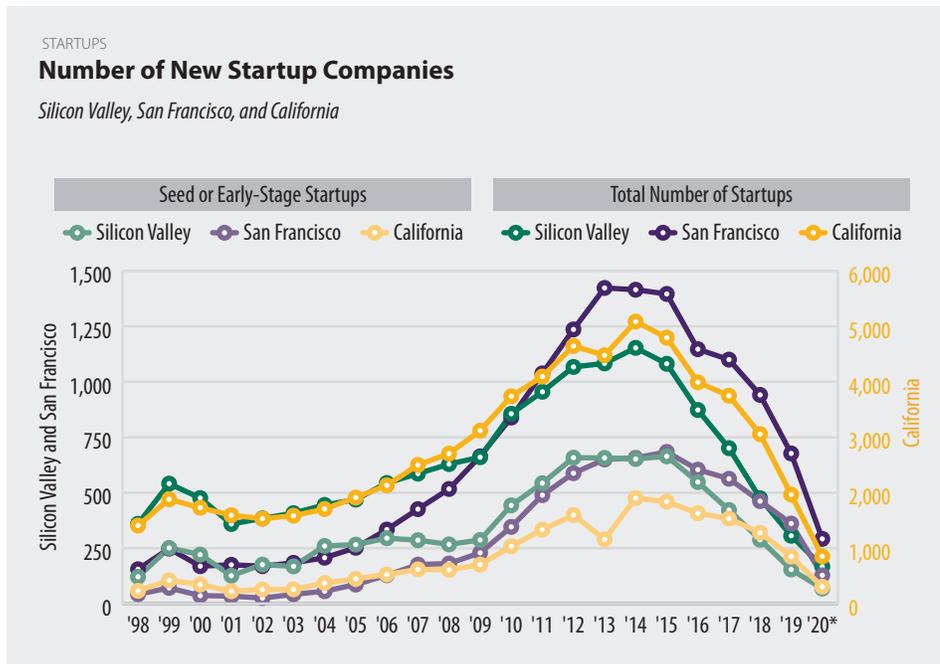
Note: Only includes disclosed financing data for all deals that were designated specifically as Angel funding rounds and seed stage investments that included at least one Angel investor. | Data Source: Crunchbase | Analysis: Silicon Valley Institute for Regional Studies

# ECONOMY

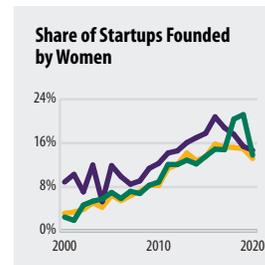
## Innovation & Entrepreneurship

While the share of Silicon Valley and San Francisco startup companies with at least one woman founder has steadily increased over the past two decades, it has yet to exceed 21%.

14% of Silicon Valley new startup companies in 2020 were founded by at least one woman—a share that has doubled since 2007.

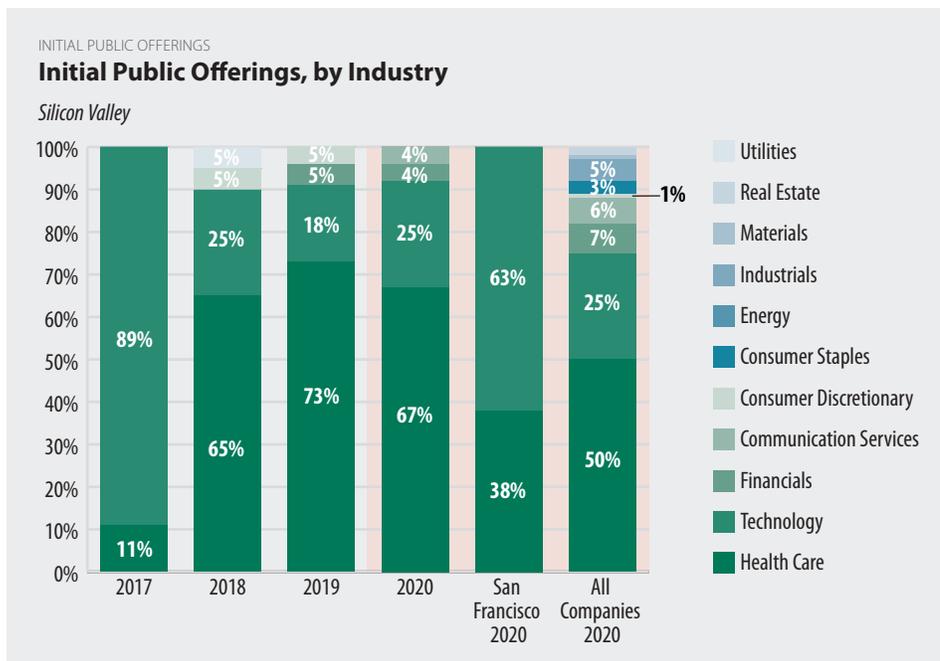


\*preliminary | Data Source: Crunchbase | Analysis: Silicon Valley Institute for Regional Studies



The number of Silicon Valley startup companies declined for the sixth year in a row, with only 68 new companies headquartered in the region receiving seed or early-stage investments in 2020—a mere 10% of the number that received seed or early-stage funding in 2014.

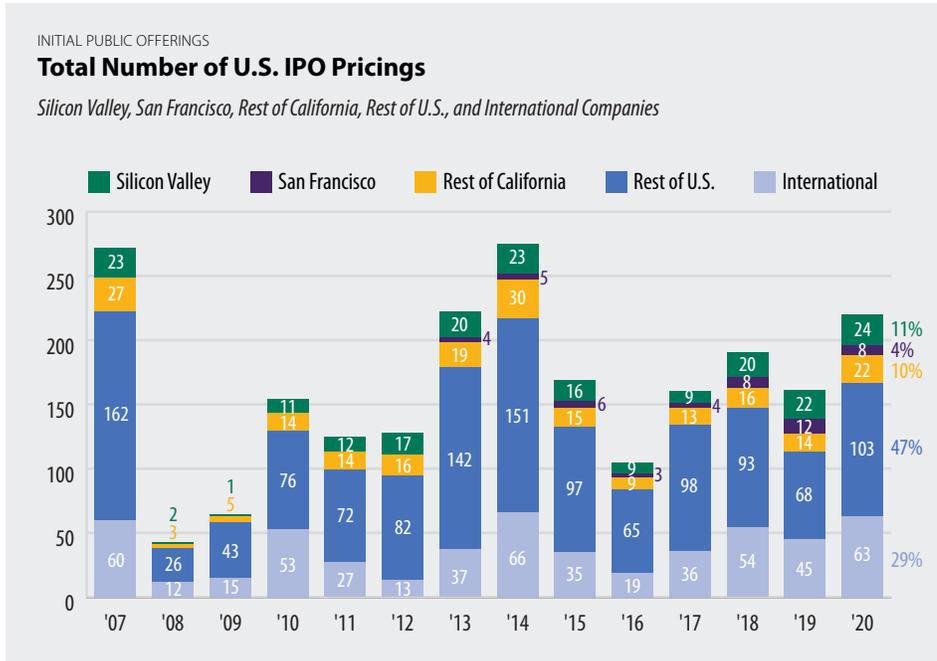
While Silicon Valley had historically created more new startup companies than San Francisco, San Francisco has created more annually since 2010. Over the following decade, there have been a total of 11,500 new startup companies headquartered in San Francisco, and 8,700 in Silicon Valley.



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

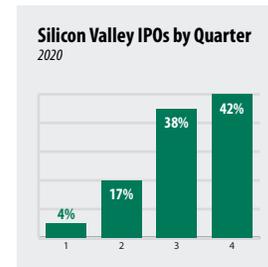
Silicon Valley had 24 IPOs in 2020 that raised a total of nearly \$8.6 billion—more than double that of the \$3.9 billion raised by the prior year’s 22 IPOs—representing 11% of the 220 IPOs on U.S. markets as well as a proportional 11% share of the \$81 billion national total (up from a 7% share the prior year).

Silicon Valley IPOs were slow in the first half of the year, then increased in number; there were more in the fourth quarter (10) than in any recent year, with the closest being eight Silicon Valley IPOs in the fourth quarter of 2014.



**Average IPO Return Rates**  
2020

<b>Silicon Valley</b>	+117%
<b>San Francisco</b>	+101%
<b>United States</b>	+80%



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

Silicon Valley had two more IPOs in 2020 than during the prior year, while San Francisco had four fewer; overall, there were 220 IPOs on U.S. markets in 2020 (a 30% year-over-year increase).

The 24 Silicon Valley companies that went public in 2020 on U.S. stock exchanges had a total of approximately 14,300 employees at the time of their IPO (average of 600 per company); among the eight San Francisco companies with 2020 IPOs, there were just over 15,400 employees (more than 5,000 of which work for Airbnb alone, post-May layoffs<sup>43</sup>), with an average of 1,900 employees per company. Silicon Valley and San Francisco IPOs in 2020 had average ages of 10 and 12 years from founding to IPO.

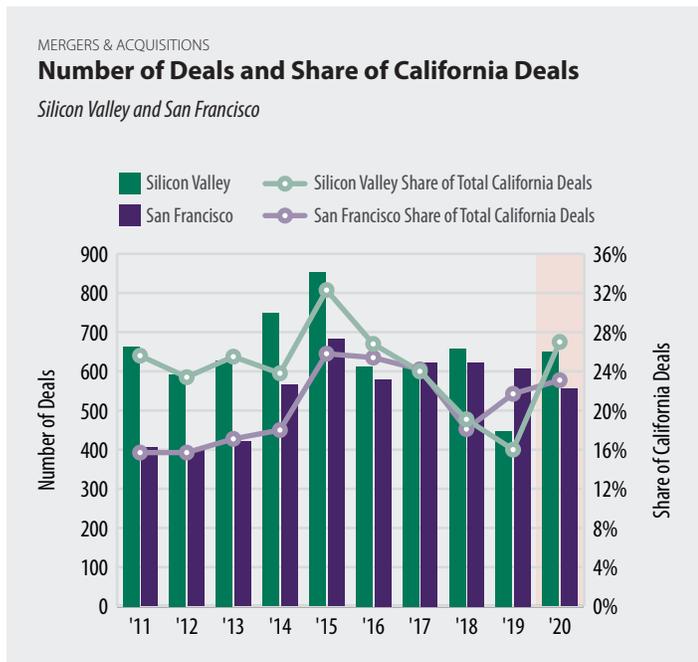
Two-thirds of Silicon Valley’s 2020 IPOs were in Health Care; a quarter were in Technology (the largest of which, by far, was the San Mateo-based data warehousing company Snowflake). In contrast, San Francisco IPOs were more heavily weighted toward Technology companies, with 63% in Technology (including Wish, Airbnb, DoorDash, Asana, and Unity Software) and 38% in Health Care.

Expected 2021 Silicon Valley IPOs include San Mateo-based Roblox Corporation—the makers of a computer game that has gained popularity in recent years, particularly during the pandemic—which delayed their IPO date, originally planned for 2020.<sup>44</sup> San Francisco-based Affirm Corporation—a consumer lending platform, which has attributed approximately one-third of its revenue to Peloton alone—also reportedly delayed its IPO<sup>45</sup> and ended up going public in mid-January 2021. Some believe the phenomenon of first-day “pops” in stock prices are leading to delays, as they could indicate an underpricing of shares;<sup>46</sup> despite any intentions to avoid it, Affirm’s first-day “pop” was +98%.

# ECONOMY

## Innovation & Entrepreneurship

The total number of Silicon Valley Merger & Acquisition (M&A) deals increased in 2020, while declining slightly for San Francisco companies (556 total, compared to 607 in 2019).



Note: Deals include Acquirers and Targets.  
Data Source: FactSet Research Systems, Inc. | Analysis: Silicon Valley Institute for Regional Studies

Among the largest pending M&A deals of 2020 were the Salesforce acquisition of fellow-San Francisco company Slack for \$27.7 billion in cash and stock,<sup>48</sup> and the Oracle/Walmart minority-stake acquisition of TikTok for a reported \$12 billion following national security concerns regarding the Chinese company, subsequent prohibitions, and court entanglements.<sup>49, 50</sup>

The largest 2020 M&A deal with a Silicon Valley company acquiring another Silicon Valley company was the Advanced Micro Devices (AMD) acquisition of Xilinx, announced in October and pending completion in 2021.

The largest completed M&A deals of 2020 including either a Silicon Valley or San Francisco company were the \$20.4 billion Gilead Sciences acquisition of New Jersey-based Immunomedics (which develops targeted cancer therapies), and the Social Capital acquisition of San Francisco OpenDoor Labs for \$14.7 billion.

64% of disclosed M&A base equity deal values in 2020 with a California company involved at least one from Silicon Valley or San Francisco (\$401.4 out of \$630.6 billion). The region's ten largest deals alone totaled more than \$210 billion.

Two of the region's relatively recent biotech IPOs (which went public in 2015 and 2019) were acquired by New York firms. Mountain View-based Livongo Health (by Teladoc Health for \$14.3 billion) and Brisbane-based MyoKardia (by Bristol Myers Squibb for \$13.1 billion in cash<sup>47</sup>).

27% of all 2020 California M&A deals involved at least one Silicon Valley company; 23% included a San Francisco company.

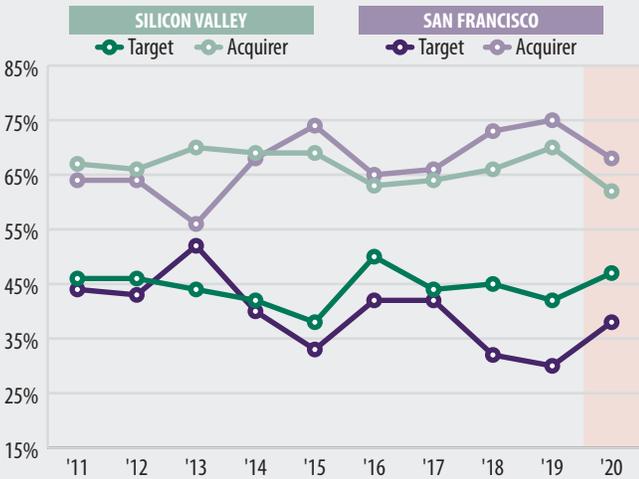
Of the \$401.4 billion in disclosed base equity value for M&A deals involving at least one Silicon Valley or San Francisco company in 2020, \$27.1 billion included *both* (a Silicon Valley and San Francisco company).

Among the 649 M&A deals in 2020 that involved at least one Silicon Valley participant, 181 had disclosed base-equity values at the time of completion for a total of more than \$318 billion. Among the 556 deals involving a San Francisco company, 117 had disclosed amounts (totaling \$110 billion).

MERGERS & ACQUISITIONS

**Percentage of Merger & Acquisition Deals, by Participation Type**

Silicon Valley and San Francisco



Note: Target and Acquirer shares of total M&A deals do not add up to 100% because some deals include both a local target and a local acquirer. | Data Source: FactSet Research Systems, Inc. | Analysis: Silicon Valley Institute for Regional Studies

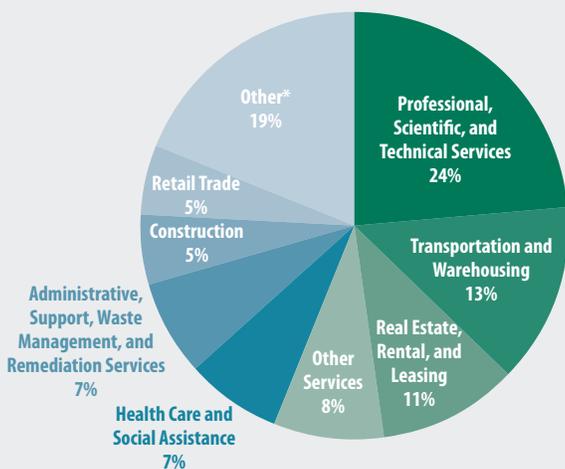
Target M&A deals represented a slightly larger share of the total number in 2020, up from 42% to 47% for those involving a Silicon Valley company, and from 30% to 38% for San Francisco company deals. This increase was almost entirely due to Target Only deals, where local companies were acquired by non-local ones.

The number of nonemployer firms in Silicon Valley has risen steadily over time, particularly since 2008.

NONEMPLOYER TRENDS

**Percentage of Nonemployer Firms, by Industry**

Santa Clara & San Mateo Counties | 2018



\*Other includes Accommodation & Food Services; Mining, Quarrying and Oil & Gas Extraction; Agriculture, Forestry, Fishing & Hunting; Utilities; Arts, entertainment, and recreation; Educational services; Finance and insurance; Information; Wholesale trade; and Manufacturing | Note: Other Services does not include public administration. Data Source: United States Census Bureau, Nonemployer Statistics | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley Nonemployer Firms



Historically, heightened unemployment rates have been tied to a rise in non-employer firms, including those working in the 'gig' economy.<sup>51</sup>

In 2018, Silicon Valley had nearly 223,000 businesses without paid employees (primarily consisting of self-employed individuals operating very small, unincorporated businesses). The largest share (24%) of them were in Professional, Scientific, and Technical Services.

# ECONOMY

## Commercial Space

The earliest and most pronounced impact of the pandemic on commercial real estate was construction delays, particularly in March and April. Despite these delays and other pandemic-related complications, nearly five million square feet of new commercial space was completed during the calendar year. There was more new commercial space under development in the first quarter of 2020 (20.9 million square feet) than ever before, and much of it continued with modifications.

The region's major tech companies—Google, Facebook, Intuitive Surgical, and others—continued with their expansion plans, while expansion among companies leasing smaller spaces was muted as a response to looming uncertainty about

the duration of the pandemic, the future of remote work, and when employees will be able to go back into the workplace. Commercial space leasing volume was slashed in half during the course of 2020, with fewer lease renewals than expected, significantly fewer tenants moving around within the region, and increasing amounts of sublease space on the market.

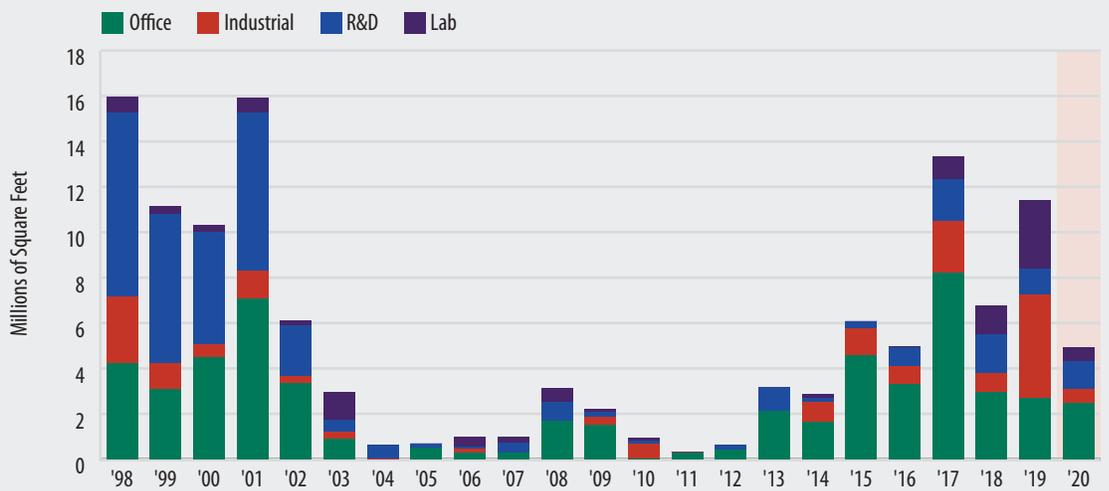
Silicon Valley's commercial space is 76 percent tenant-occupied, so the dynamics between landlords and tenants (and the pandemic-related uncertainty faced on both sides) have had a large influence on the market. Like the region's companies, commercial landlords are taking a wait-and-see approach, mostly holding office space rental rates steady while the work-

force remains remote, and offering various concessions to industrial space lessees in lieu of rental rate declines. Aside from the nine percent decline for R&D, rental rates remained relatively stable unlike places like Austin, Seattle, Boston, and Denver—all of which typically have lower office rental rates per square foot, but had year-over-year asking rent increases in 2020. Vacancy rates rose in 2020 as a result of pandemic-related telework and uncertainty, though not nearly to the extent of the Great Recession. Increases in Industrial vacancy were tempered by the pandemic-related rise in e-commerce, which drove up demand for warehouse/distribution. Fewer downtown-area amenities and weariness about riding public transit led to a

Despite pandemic-related delays, nearly five million square feet of new commercial space was delivered to the Silicon Valley market in 2020—more than one-third of which were accounted for by tech company expansions.

COMMERCIAL SPACE  
**New Commercial Development Completions**

Silicon Valley



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

A total of 4.94 million square feet of Silicon Valley commercial space was completed in 2020. While this total represents less than half (43%) of what was completed during the prior year, it is still a significant amount of space—more than any of the years between 2003 and 2014.

Among the largest 2020 commercial space developments was the new headquarters for Roku—a 195,000 square-foot Class A Office space on Coleman Avenue in San Jose.

steep rise in vacant space near transportation nodes—a huge shift from the pre-pandemic scenario in those prime locations.

While development seems to be continuing at a rapid pace for now, new speculative development has been put on hold, and longer-term projects that were not already in-progress still hang in the balance. A large share of the development in progress at the end of the year (63 percent) was office space, which may be difficult to fill once completed if leasing activity remains depressed for an extended period of time. In contrast, the demand for laboratory and other specialty spaces will likely persist even with the continuation of a predominantly remote workforce.

### Why is this important?

Changes in the supply of commercial space, vacancy rates and asking rents pro-

vide 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 the prevalence of remote work, as well as either consolidation or expansion/contraction, with the latter thereby impacting regional employment levels. Leasing activity and tech company pre-leasing activity is also indicative of overall real estate demand and affects optimism toward speculative development.

Of the nearly five million square feet of Silicon Valley commercial space completed in 2020, 50% was office space, 25% R&D, 13% industrial, and 12% lab space. More than half (54%) of the newly constructed space was accounted for by the ten largest development projects alone; at least 36% of it (1.79 million square feet) was accounted for by growing tech companies, including Splunk at Santana Row in San Jose, two Facebook buildings on Constitution Drive in Menlo Park, Google developments in Palo Alto (Stanford Research Park), Sunnyvale, and Mountain View, and Intuitive Surgical's 326,000 square-foot Class A Flex campus expansion in Sunnyvale.

### 10 Largest Commercial Space Completions

*Silicon Valley, 2020*

Development Name/Location	Owner/Developer	Rentable Building Area (square feet)	Percent Leased at Time of Delivery & Tenant	Class & Type of Space	Quarter Completed
<b>Gateway of the Pacific - Phase I</b> <i>1000 Gateway Boulevard, South San Francisco</i>	Biomed Realty	479,000	100% (AbbVie)	Class A Lab	Q4
<b>Intuitive Surgical Campus Expansion</b> <i>1050 Kifer Road, Sunnyvale</i>	Intuitive Surgical	326,000	100% (Intuitive Surgical)	Class A Flex	Q4
<b>Moffett Place Phase II - Building 6</b> <i>1152 Bordeaux Drive, Sunnyvale</i>	Jay Paul Company	315,272	100% (Kodiak Sciences)	Class A Office	Q2
<b>Splunk Expansion at Santana Row</b> <i>700 Santana Row, San Jose</i>	Federal Realty Investment Trust	289,645	100% (Splunk)	Class A Office	Q1
<b>Menlo Gateway - Phase II</b> <i>125 Constitution Drive, Menlo Park</i>	Bohannon Development Company	260,488	100% (Facebook <sup>1</sup> )	Class A Office	Q2
<b>Menlo Gateway Phase II</b> <i>135 Constitution Drive, Menlo Park</i>	Bohannon Development Company	250,000	100% (Facebook <sup>1</sup> )	Class A Office	Q2
<b>The Catalyst</b> <i>684 West Maude Avenue, Sunnyvale</i>	Harvest Properties & Invesco Real Estate	195,000	0%	Class A Office	Q4
<b>Coleman Highline - Building 3</b> <i>1173 Coleman Avenue, San Jose</i>	Hunter Storm	194,790	100% (Roku)	Class A Office	Q3
<i>620 Clyde Avenue, Mountain View</i>	Renault & Handley	189,974	100% (Google)	Class A Office	Q3
<b>Pathline Park - Building 7</b> <i>650 North Mary Avenue, Sunnyvale</i>	Irvine Company	167,000	0%	Class A Flex	Q3

1. Blanca Torres, Exclusive: Alexandria takes \$430 million stake in Facebook-leased office complex in Menlo Park, *Silicon Valley Business Journal* (November 29, 2017). | Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

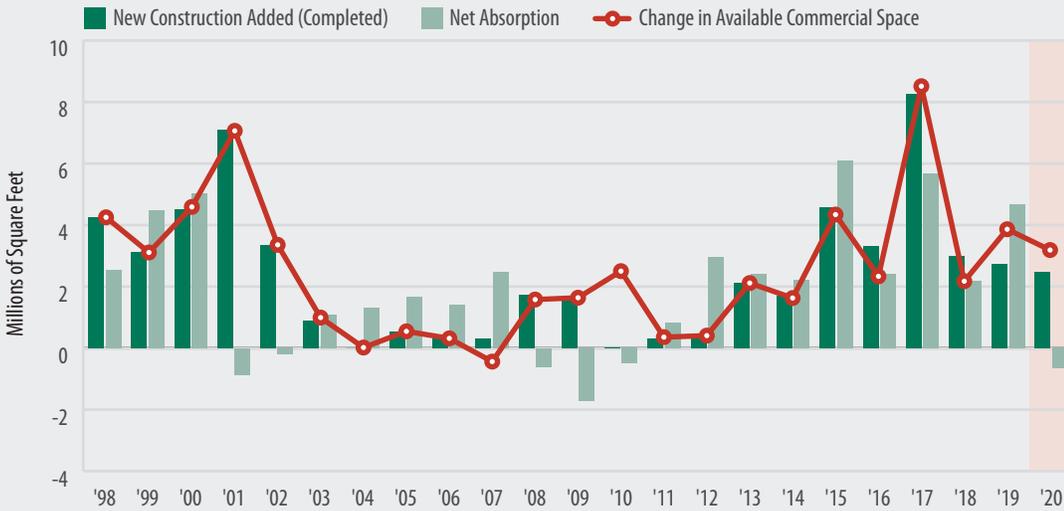
# ECONOMY

## Commercial Space

COMMERCIAL SPACE

### Change in Supply of Office Space

Silicon Valley



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

There was a record amount of commercial space under construction in the first quarter of 2020 (20.9 million square feet). This compares to the height of the dot.com boom (end of 2000) when 17.3 million square feet was under construction.

The total amount of available commercial space declined slightly in 2020, driven by smaller-scale move-outs in San Mateo County and a significant amount of space removed from the inventory in Santa Clara County (including approximately 500,000 square feet of industrial space demolished by Google).

Of the 17 million square feet under construction at the end of the year, a large share (63%, 10.7 million square feet) was office space; 1.8 million was R&D, 1.6 million was Industrial, and 2.9 million square feet was lab space.

COMMERCIAL SPACE

### Quarterly In-Progress Commercial Space Development

Silicon Valley



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

Following an all-time high in the first quarter of nearly 21 million square feet, Silicon Valley's in-progress commercial space declined sharply as the developments were completed and delivered to the market.

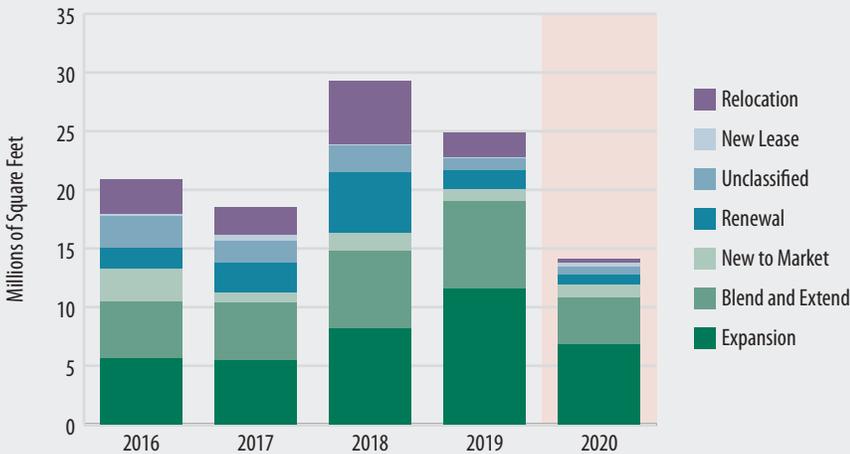
The most significant declines in commercial leasing activity have been in relocations (tenants moving from one location to another within the same real estate market), with relocation leases down by 85% year-over-year for all space types combined. There was also a sharp decline in lease renewals, down 46% from 2019 totals. In contrast, the square footage leased by new market entrants increased slightly—by 133,000 square feet, or +13% year-over-year—bolstered by continued demand for industrial space.

While many of the largest leases of 2020 were signed in the first quarter, the 250,000 square-foot, 13-year Guardant Health sublease at Stanford Research Park was signed in July.

COMMERCIAL SPACE

**Square Footage of Commercial Leases, by Type**

Silicon Valley



Note: Lease transactions include New to Market (tenant moves into a new market from another market), Relocation (tenant moves from one location to another in the same market), Renewal (tenant renews its existing lease at its current location), Expansion (when a tenant expands its current premises to include new premises outside of its currently leased premises), Blend-and-extend (tenant's remaining lease term, usually one to three years, is extended and the current rental rate is "blended" with a newly negotiated one), and New Lease (when it is unclear if the tenant is new to market, relocating, expanding, or renewing, to indicate that a new lease transaction has taken place). | Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

**Silicon Valley's commercial space leasing activity fell during the pandemic, down 43% year-over-year by square footage (and as much as 67% for office space alone).**

The minimal leasing activity of 2020 indicated a continued trend toward more sublease space, with 2.2 million square feet of Office subleases remaining on the market at the end of the year (renting at 4% less than direct leases in Santa Clara County, and 22% less in San Mateo County).<sup>53</sup>

ECONOMY

Despite pandemic-related construction delays and a likely decline in new speculative development, there was still 17 million square feet of commercial space under construction throughout the region in Q4 2020. While this represents a significant amount of new commercial space remaining in the pipeline, some projects have been put on hold including Related Santa Clara (the City of Santa Clara/Related Companies partnership on a 9.2 million-square-foot LEED-Gold, mixed-use development near Levi's Stadium, which has pushed its groundbreaking to early next year due to the pandemic)<sup>52</sup> and another mixed-use project, Bay Meadows in San Mateo (which was slated to complete construction in Q4 2021 but is now expected to be completed by Q2 2022).

Major construction projects underway at the end of 2020 included several large owner-user developments, such as Adobe's North Tower in downtown San Jose, Google's 1.1 million square-foot Office project on Wright Avenue in Mountain View, NVIDIA's 755,000 square-foot Flex/R&D building on San Tomas Expressway in Santa Clara, and Fortinet's headquarters on Kifer Road in Sunnyvale.

In-progress commercial construction square-footage declined by 19% over the course of the year (-4 million square feet) as space was completed and delivered to the market, with relatively few new construction projects started.

Many of the Silicon Valley projects that were slated for completion in 2020 remain in progress, likely due (at least in part) to pandemic-related delays. These developments include four buildings totaling nearly 770,000 square feet slated for Facebook in Burlingame (all on Airport Boulevard), the Station 1300 office developments in Menlo Park, and the 'canopied' 595,000 square-foot Charleston East addition to Google's Bay View Campus—which is now expected to be completed in spring 2021.

At the end of 2020, 3.3 million square feet of speculative office development remained underway, which may ultimately have difficulty finding tenants if leasing activity remains depressed for an extended period of time (ultimately affecting regional vacancy rates).

# ECONOMY

## Commercial Space

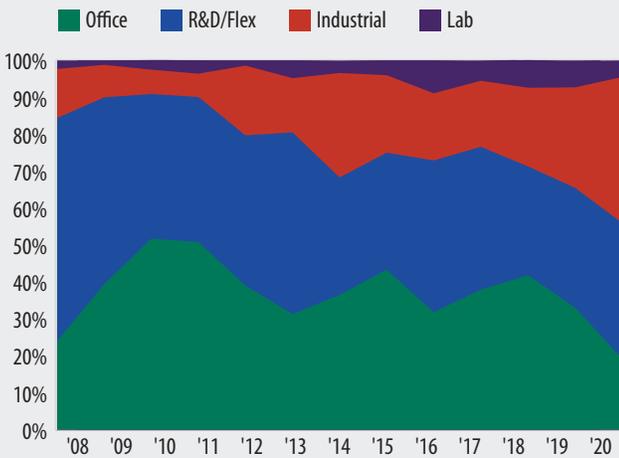
Over the past two years, the share of commercial leases (by square footage) accounted for by office space has declined significantly, while the share of Industrial square footage has grown (from 21% to 39% between 2018 and 2020). The total square footage of office space leases in 2020 was 67% below that of the prior year, and 78% below the recent peak in 2018.

Office rents have remained relatively stable throughout the pandemic thus far. Shifts in the contrast between rents near and not near to transit were minimal the first three quarters of 2020, followed by a +16% increase in average asking rents not-near transit in the fourth quarter. Despite the increase, Silicon Valley office space asking rents remained around 47% higher at locations near public transit (within a 10-minute walk of a Caltrain, BART, or VTA station) at the end of the year.

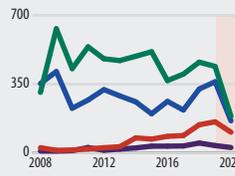
COMMERCIAL SPACE

### Share of Commercial Lease Square Footage, by Space Type

Silicon Valley



### Number of Leases, by Space Type

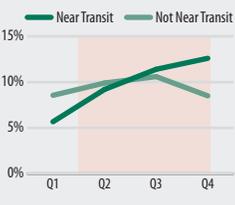


Among Silicon Valley's largest commercial space leases executed in 2020 were two 150,000 square-foot buildings on Great America Parkway in Santa Clara leased to Airbnb in January, prior to the company laying off 25% of its 7,500-person workforce in May.<sup>54</sup> Other large leases included a 132,000 square-foot Class A office building—also in Santa Clara—to Bill.com, and several large Flex/R&D spaces in Fremont to companies including Super Micro Computer, Bloom Energy and National Resilience—a VC-backed company that emerged out of the COVID-19 crisis.<sup>55</sup>

Note: Lease transactions include New to Market (tenant moves into a new market from another market), Relocation (tenant moves from one location to another in the same market), Renewal (tenant renews its existing lease at its current location), Expansion (when a tenant expands its current premises to include new premises outside of its currently leased premises), Blend-and-extend (tenant's remaining lease term, usually one to three years, is extended and the current rental rate is "blended" with a newly negotiated one), and New Lease (when it is unclear if the tenant is new to market, relocating, expanding, or renewing, to indicate that a new lease transaction has taken place).  
Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

Average vacancy rates for Silicon Valley commercial space were 10% for Office and R&D, 5% for Industrial, and just over 2% for Lab space in 2020. While these rates are higher than they were in 2019, they are still significantly lower than the Great Recession highs of 2010 (between eight and 19 percent).

### Office Vacancy Rates

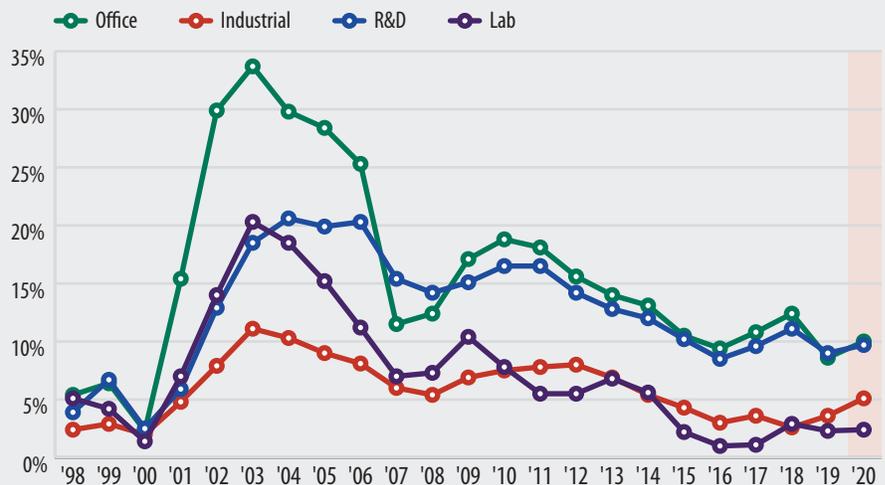


Office space vacancy rates—which fell dramatically between 2018 and 2019 due to tenants moving into their leased spaces—came up slightly in 2020. While the pandemic will undoubtedly affect office space vacancy rates, many of those affects have yet to be felt as companies await more certainty and hold on to their leased (but unoccupied) space, also known as 'Shadow Space.'

COMMERCIAL VACANCY

### Annual Rate of Commercial Vacancy

Silicon Valley

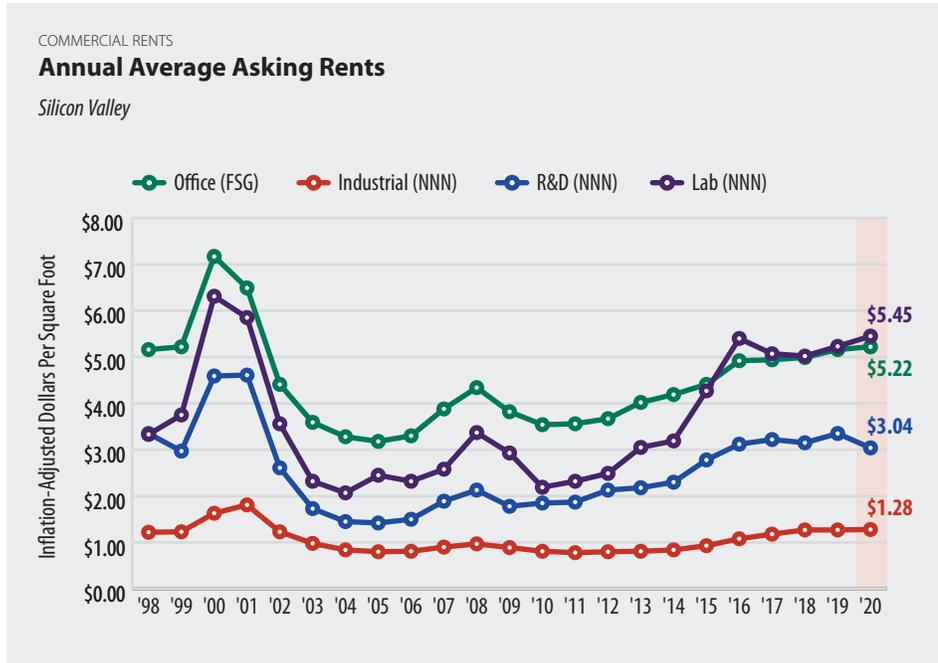


Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

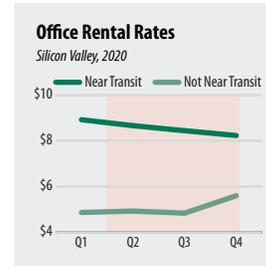
Aside from R&D space, landlords have not significantly dropped asking rates even as leasing activity has declined in 2020. While some Office subleases have declined in price, the overall regional average has not been impacted due to higher-end sublease space offsetting the effect.

**Silicon Valley commercial space rental rates have remained relatively stable in 2020, despite a variety of factors at play including pandemic-related uncertainty for both landlords and tenants.**

Average rental rates for Silicon Valley commercial space remained relatively stable in 2020, with slight increases for lab space (+4% year-over-year after adjusting for inflation), a decline for R&D (-9% year-over-year), and Office and Industrial rates only 1% above those of 2019. This stability is affected by tenant retention of so-called 'Shadow Space' (leased but unoccupied) buffering rises in vacancy rates, landlords trying to retain their Office tenants as they determine the future of remote work, and Industrial landlords offering various concessions such as free rent and higher tenant allowance packages in lieu of rental rate declines.



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



**Rental rates for laboratory space remain nearly double the cost of other R&D (\$5.45 per square foot, compared to \$3.04).**

Silicon Valley's average 2020 rental rates were \$5.22 per square foot (full-service gross) for office space, \$5.45 for Lab, \$3.04 for R&D, and \$1.28 per square foot for Industrial.

Silicon Valley Office, R&D, and Industrial vacancy rates rose in 2020, likely as a result of pandemic-related telework and uncertainty. While this represents an increase from last year, commercial vacancy rates are still significantly lower than during the Great Recession.

Increases in online spending during the pandemic bolstered the need for goods warehousing and delivery, magnifying demand and thus keeping Industrial vacancy rates relatively stable. The year-over-year rise in Industrial vacancy was primarily due to the amount of new space delivered to the market in the second half of 2019 and Q1 2020, and a handful of notable move-outs.

The pandemic-related leasing slowdown may continue to affect vacancy rates in 2021, though it remains to be seen whether lessees will move into their spaces (thus pushing vacancy rates down) or put their space on the market for sublease (thereby increasing vacancy rates).

Silicon Valley office space vacancy rates at locations within a 10-minute walk from public transit—which have traditionally been lower than elsewhere due to the ease of employee commutes—have risen significantly during the pandemic, and are now actually higher than in locations not near transit (13% in Q4 2020, compared to 9% not near transit). This is likely due to the workforce remaining primarily remote, the decline in available amenities in downtown areas, and extremely low utilization of public transit (both at present, and expected for the near future if/when employees return to work).

Silicon Valley commercial vacancy rates rose in 2020, most significantly for office space in San Mateo County (up 2.5 percentage points over 2019) and industrial space throughout the region (+1.5 percentage points year-over-year).

# ECONOMY

## Commercial Space

### Average Asking Rents for Office Space, by Region Q4 2020

	Average Rental Rate per Square Foot (FSG)	Year-Over-Year % Change
New York City	\$6.47	-2%
Silicon Valley	\$4.97	0%
Austin	\$4.07	+4%
Los Angeles	\$3.73	+1%
Seattle	\$3.70	+2%
Boston	\$3.86	+5%
Portland	\$2.76	-1%
Denver	\$2.62	+3%

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

Office space rental rates in Silicon Valley remained steady between Q4 2019 and Q4 2020, whereas they increased by 3–5% in places such as Denver, Boston, and Austin. Silicon Valley office rental rates were already higher than in those other regions, though, at \$4.97 per square foot (full-service gross) at the end of 2020. They remained lower in Q4 than in New York City (by 23%) however that margin shrank during the course of the year, as New York City office space rents declined by 2%.

Tech companies continued to dominate preleasing activity, with 61% of space preleased in Q4 2020—90% of which is to tech companies.

A total of 14.2 million square feet of new commercial office space was under construction throughout the Bay Area at the end of 2020 (75% of which was in Silicon Valley). Of that total, 8.6 million square feet (61%) has been preleased, primarily (90%) to tech companies.

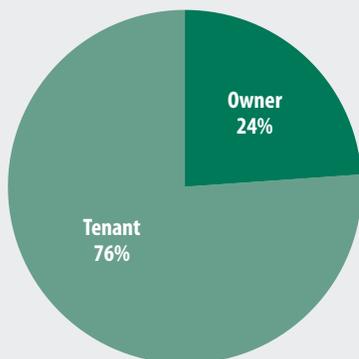
Silicon Valley office space is 76% tenant-occupied and 24% owner-occupied.

Most of Silicon Valley’s new commercial developments continue to be pre-leased. Minimal new speculative development is commencing; yet, seven Silicon Valley ‘spec’ projects were completed in 2020 (for a total of 656,000 square feet).

COMMERCIAL OCCUPANCY

### Inventory of Commercial Space, by Owner vs. Tenant Occupancy

Silicon Valley | Q4 2020

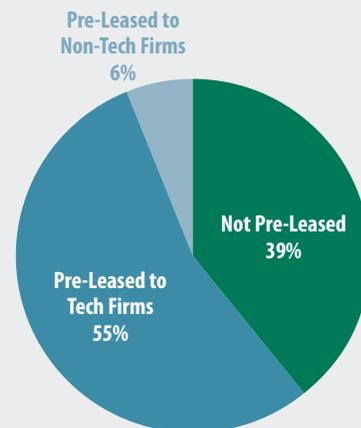


Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

COMMERCIAL OCCUPANCY

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

Bay Area | Q4 2020

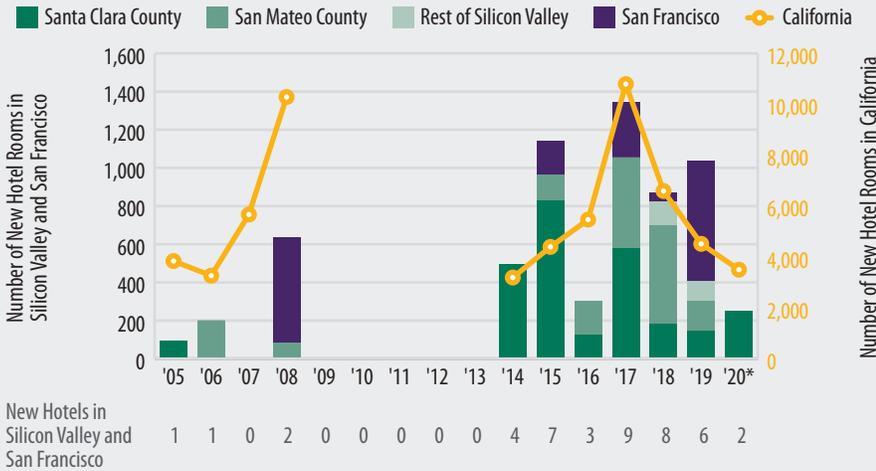


Data Source: JLL | Analysis: Silicon Valley Institute for Regional Studies

HOTEL DEVELOPMENT

**Number of New Hotel Rooms**

*Silicon Valley, San Francisco, and California*



Hotel development slowed in 2020, following several years of significant completions and construction. In 2019, 23% of California hotel rooms completed (and 15% under construction) were in either Silicon Valley or San Francisco.

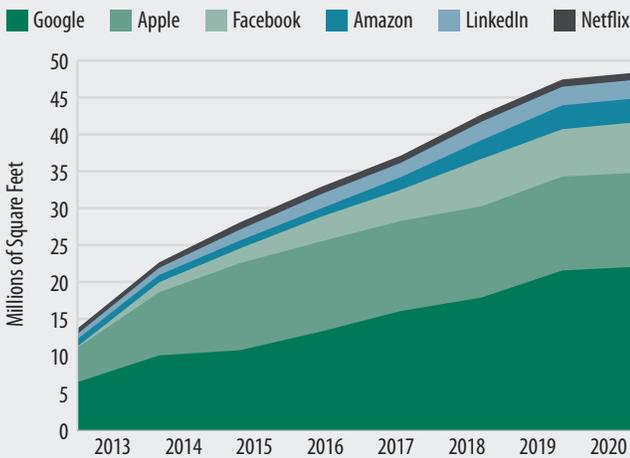
In 2020, only two Santa Clara County hotels (with 249 rooms in total) were finished within the region. Seventeen Santa Clara County hotels, five in San Francisco, and five in San Mateo County were under construction.

\*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

TECH COMPANY PRESENCE

**Amount of Commercial Space Occupied by Major Tech Tenants**

*Silicon Valley*



Just six of the major tech companies (Google, Apple, Facebook, Amazon, LinkedIn, and Netflix) occupy a combined 19% of all available office/R&D space in Santa Clara County, Menlo Park, and Fremont.

Six of the region's largest tech companies—Google, Apple, Facebook, Amazon, LinkedIn, and Netflix—occupy 48.5 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 (approximately 22.1 million square feet in 2020).

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

# SOCIETY

## Preparing for Economic Success

During the pandemic, the combination of distance-learning for students and remote work for adults increased the need for computers and access to the internet at home. With more people logging on, average internet speeds (particularly upload speeds) declined significantly year-over-year. Despite data showing that the vast majority of students in Silicon Valley have computers and broadband internet at home (97 percent), a need for adequate devices and connectivity in the tens of thousands was identified during the transition to distance-learning last March. Connectivity, particularly in coastal and rural parts of the region, was particularly challenged by access issues and/or insuf-

ficient internet speeds for distance-learning.

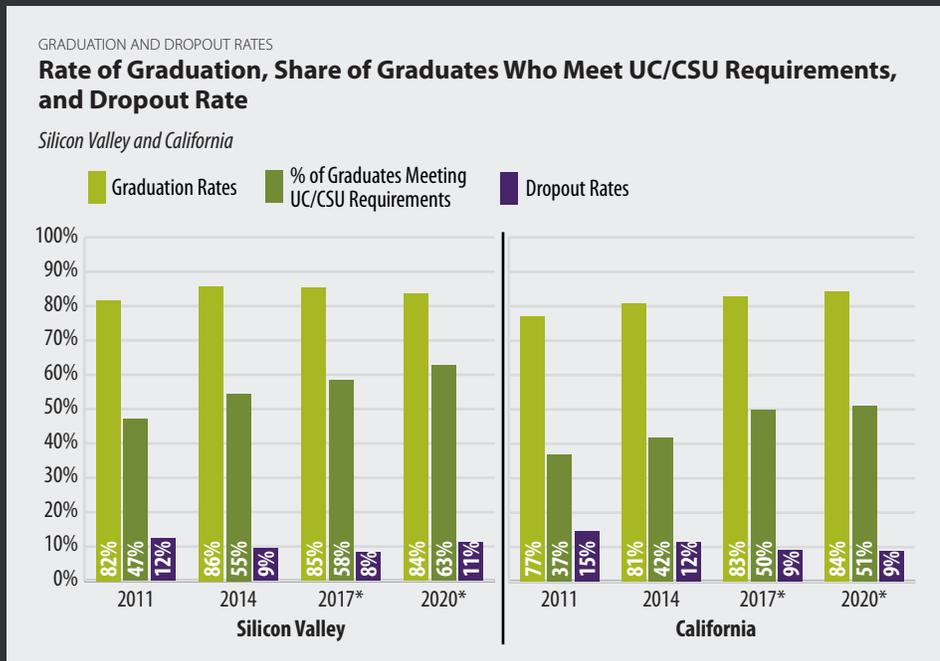
Ultimately, high school graduation rates fell in the 2019-20 school year. Dropout rates were up by three percentage points from the prior year, with the highest rates among homeless youth, English-language learners, Hispanic or Latino students, and those categorized as socioeconomically disadvantaged.

While standardized testing was suspended due to school closures, national studies have found that students have lost ground with respect to math proficiency. Only slightly more than half (54 percent) of Silicon Valley eighth-graders were proficient in math in 2018-19.

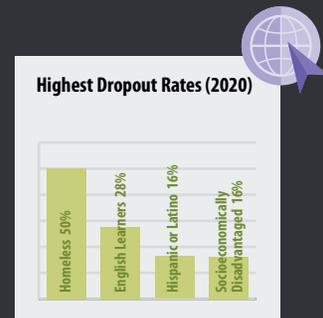
### Why is this important?

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 the ability to provide all residents with a fundamental requirement for 21<sup>st</sup> 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 Cali-



\*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

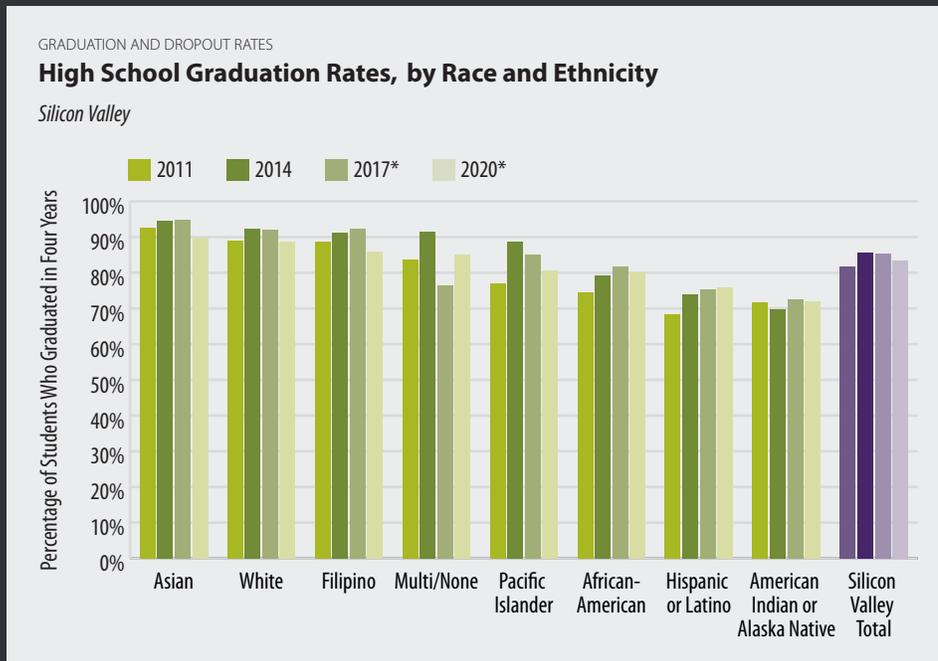


The sharp increase in regional high school dropout rates in 2020 was due almost entirely to shifts in Santa Clara County, where increases were mostly driven by Asian (461 more dropouts, or six percentage points year-over year), White (+228, or four percentage points), and Filipino students (+160, or nine percentage points). Of the 1,029 additional students<sup>56</sup> who dropped out of high school in 2020 (compared to the prior year), a quarter of them (265) were considered socioeconomically disadvantaged.

fornia (UC) or California State University (CSU) systems. Educational achievement can also be measured by proficiency in math, which is correlated with later academic success. Breaking down high school graduation rates and the share meeting UC/CSU entrance requirements by race and ethnicity sheds light on the inequality of educational achievement in the region. And, whether the region’s residents have

access to a computer with broadband internet connectivity is indicative of their ability to engage in the community, look for jobs, do homework, manage finances, interact with government, access a wide variety of resources, and conduct the business of everyday life. During the pandemic, distance-learning has increased this need—making computer and internet access a necessity for remote learning.

**Silicon Valley’s high school dropout rate increased significantly in the 2019–20 school year (+3 percentage points year-over-year), likely as a result of losses in student engagement due to the pandemic/distance-learning challenges.<sup>57</sup> A quarter of the losses were from socioeconomically disadvantaged students.<sup>58</sup>**



\*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

Silicon Valley’s high school graduation rate declined by nearly four percentage points in the 2019–20 school year—far greater than that of the state as a whole (–0.2 percentage points year-over-year). The declines were most pronounced for White, Asian, and Filipino students (down seven, six, and four percentage points, respectively).

Silicon Valley’s high school dropout rate (11.2% in 2020)—which is typically around one to two percentage points lower than the state—was significantly higher than that of the state in 2020 (8.9%). A dropout rate above ten percent has not been observed in Silicon Valley since 2012. The 2020 dropout rate was 13.8% in Santa Clara County, 6.8% in San Mateo County, and 5.4% among the other four cities included in the city-defined Silicon Valley region.

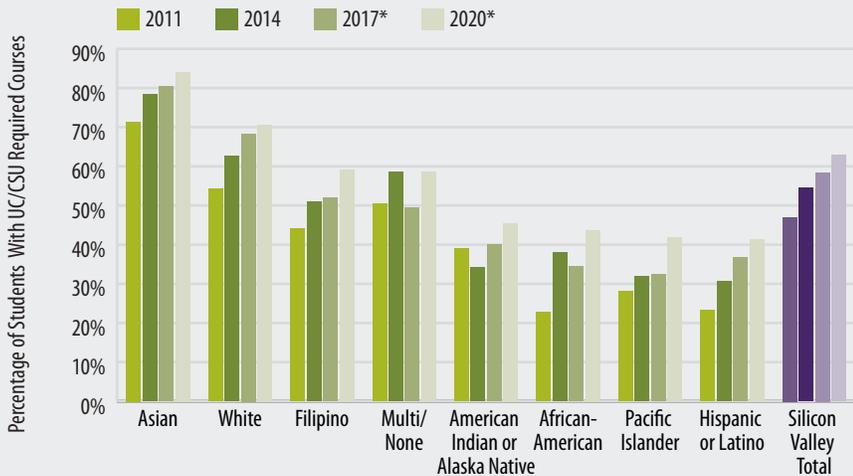
# SOCIETY

## Preparing for Economic Success

### COLLEGE PREPARATION

#### Share of Graduates Who Meet UC/CSU Requirements, by Race and Ethnicity

Silicon Valley



\*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

The share of Silicon Valley high school graduates meeting UC/CSU requirements has increased by nearly 16 percentage points over the past decade (from 47% in 2011 to 63% in 2020). Over the past year alone, the share increased by seven percentage points.

Over the past decade, the share of Silicon Valley high school graduates meeting UC/CSU requirements has increased most dramatically for African American and Hispanic or Latino students (+21 and +18 percentage points, respectively).

Asian students have the highest rate of graduates meeting UC/CSU requirements among Silicon Valley's racial and ethnic groups, at 84% in 2020.

Math proficiency data was unavailable for the 2019-20 school year due to the suspension of testing as a result of pandemic-related school closures/transition to remote-learning.<sup>59</sup> However, a national study that included 65 California school districts<sup>60</sup> in the fall of 2020 found that student math achievement scores were lower than the prior year, with eighth-grade proficiency down by approximately six percentage points.<sup>61</sup>

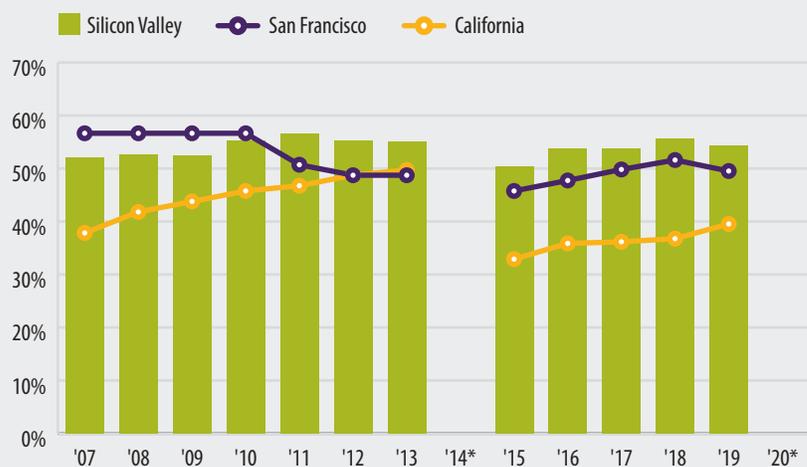
54% of Silicon Valley eighth-graders were proficient in math during the 2018-19 school year, compared to only 40% in California overall.

Eighth-grade math proficiency rose between 2015 and 2019 in Silicon Valley, San Francisco, and statewide (by four, four, and seven percentage points, respectively).

### MATH PROFICIENCY

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

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



\*Math proficiency data is not available for 2014 or 2020. | Note: Data for the 2019-20 school year is unavailable due to the suspension of CAASP testing in March, 2020, due to COVID-19. Data for the 2019-20 school year is unavailable. Beginning with the 2013-14 school year, the California Assessment of Student Performance and Progress (CAASPP) became the new student assessment system in California, replacing the Standardized Testing and Reporting (STAR) system. Data Source: California Department of Education | Analysis: Silicon Valley Institute for Regional Studies

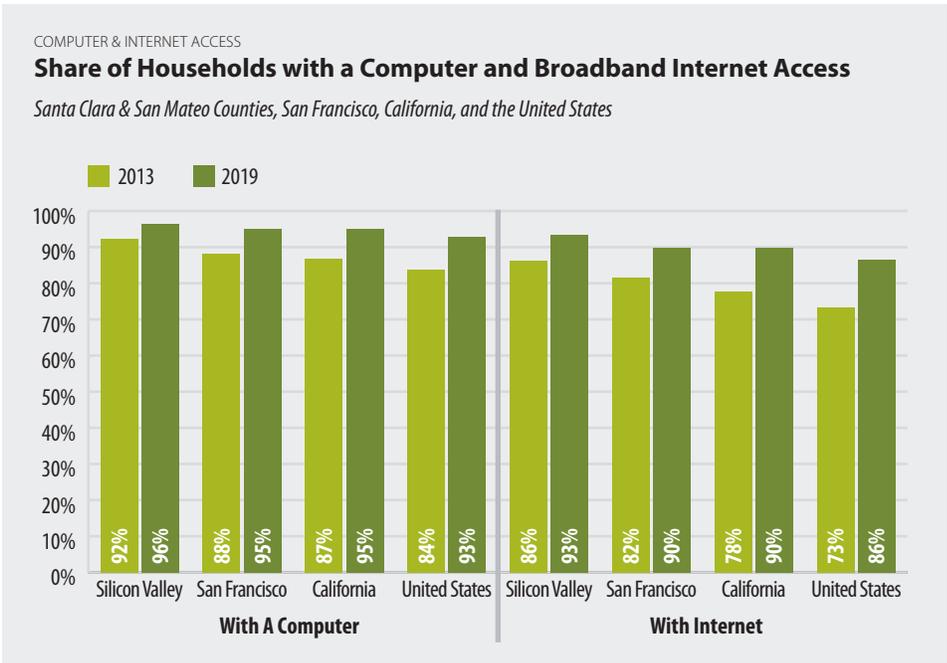
Silicon Valley has a greater share of households with computers and broadband internet access than San Francisco, California, or the United States overall.

The share of Silicon Valley households with a computer and broadband internet access increased between 2013 and 2019 (up by four and seven percentage points, respectively); however, there was very little change year-over-year in 2019.

**Share of Households Without Internet Access At Home, by Income Range**  
*Santa Clara & San Mateo Counties, San Francisco, California, and the United States | 2019*

	Low-Income	Moderate-Income	High-Income
<b>Silicon Valley</b>	24%	12%	2%
<b>San Francisco</b>	35%	11%	3%
<b>California</b>	25%	11%	4%
<b>United States</b>	30%	12%	4%

Nearly 7% of all Silicon Valley households did not have broadband internet access in 2019; this share jumps to 24% for low-income households (earning less than \$35,000 annually).



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

# SOCIETY

## Preparing for Economic Success

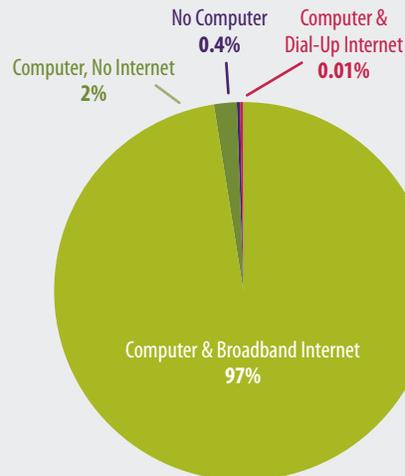
While the 2019 census data indicated that nearly all of the region's students had a computer and internet access at home, local efforts to quantify the lack of students' digital access to support distance-learning during the pandemic have identified a much greater level of need. At a minimum, this need was estimated at more than 39,000 computers and 11,400 hotspots needed in Santa Clara County alone for Fall 2020-21<sup>62</sup> among its approximately 270,000 public school students, as well as thousands of students in low-income communities throughout San Mateo County.<sup>63</sup> Recent estimates suggest that more than 7% of San Mateo County students lacked the necessary connectivity to support distance-learning.<sup>64</sup>

Among the region's children, almost all have a computer and broadband internet access at home; 2% (nearly 14,000 children) have a computer without an internet subscription, and a fraction of a percent (0.4%, or approximately 2,300 children) have no computer in their home at all; the latter compares to 1.3% of California children, and 2% of children throughout the country.

### COMPUTER & INTERNET ACCESS

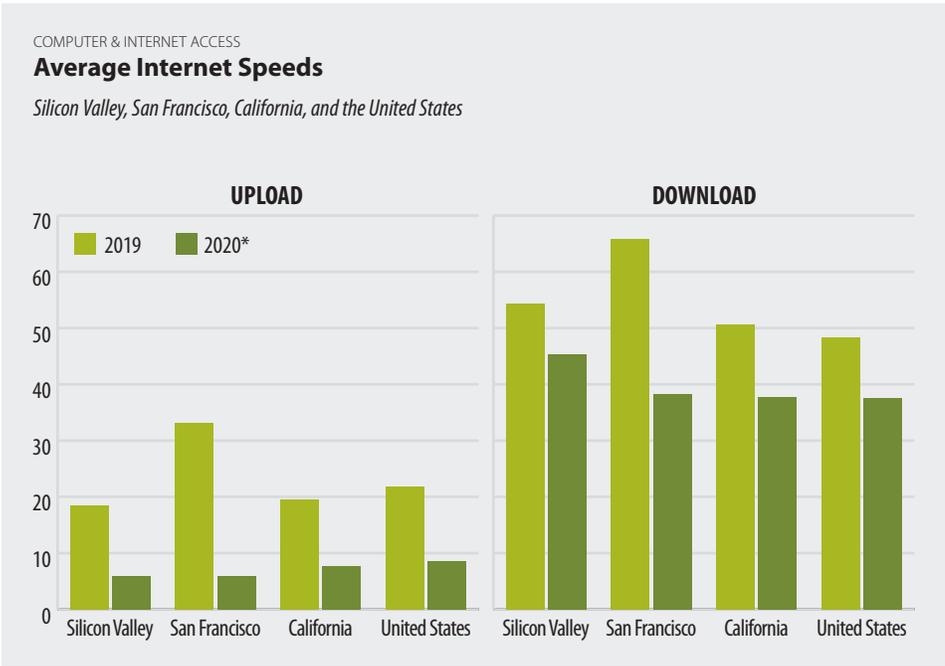
#### Share of Children With Computers and Internet Access at Home

Santa Clara & San Mateo Counties | 2019



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

# Internet speeds decreased significantly in 2020, down by 68% and 82% for uploads (16% and 42% for downloads) in Silicon Valley and San Francisco, respectively.



\*2020 data through October 25. | Data Source: M-Lab | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley’s average internet upload speed in 2020 was 6.0 megabits per second (Mbps)—similar to that of San Francisco (5.9 Mbps), but much slower than in California (7.7 Mbps) or the U.S. overall (8.6 Mbps). While the 2019 to 2020 decline in speeds is likely due to increased internet traffic during the pandemic, Silicon Valley upload speeds may have already been hampered 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.

Low internet speeds in coastal and rural Silicon Valley communities, in particular, have posed a challenge for distance-learning during the pandemic. For example, approximately 800 children ages five to 18 live in Moss Beach<sup>65</sup> (a coastal, unincorporated area of San Mateo County), where last year internet speeds averaged only 4.1 Mbps upload/11.8 Mbps download.

While the overall average upload speed in Silicon Valley (6.0 Mbps) was relatively low compared to the state and nation as a whole—and to 2019 speeds—some cities had much faster average upload speeds. For example, Millbrae internet users had an average upload speed of 17.9 Mbps in 2020, and San Bruno users had an average of 11.8 Mbps. In comparison, San Jose internet users—who conducted more than eight million upload speed tests in 2020—had an average upload speed of 5.7 Mbps.

Download speeds in Silicon Valley (45.4 Mbps in 2020) are slightly higher than San Francisco (38.2 Mbps), the state (37.8 Mbps), and national averages (37.5 Mbps).

# SOCIETY

## Early Education & Care

Silicon Valley preschool enrollment rates have typically been high compared to the state overall. The pandemic changed this significantly. More than half of San Mateo County's childcare centers shut down or closed temporarily, and an estimated <13 percent of preschoolers remained enrolled in the fall.

Childcare costs continued to rise sharply year-over-year—twice as fast as the inflation rate, and up by 50 percent over the past decade. In 2020, the average cost of childcare for an infant at a licensed care center was \$22,400 per year (\$16,600

for a preschooler). In-home childcare was even more expensive at \$39,300 for one child, with higher rates paid by families in more affluent Silicon Valley cities (averaging \$44,000 annually among the ten highest-paying).

### Why is this important?

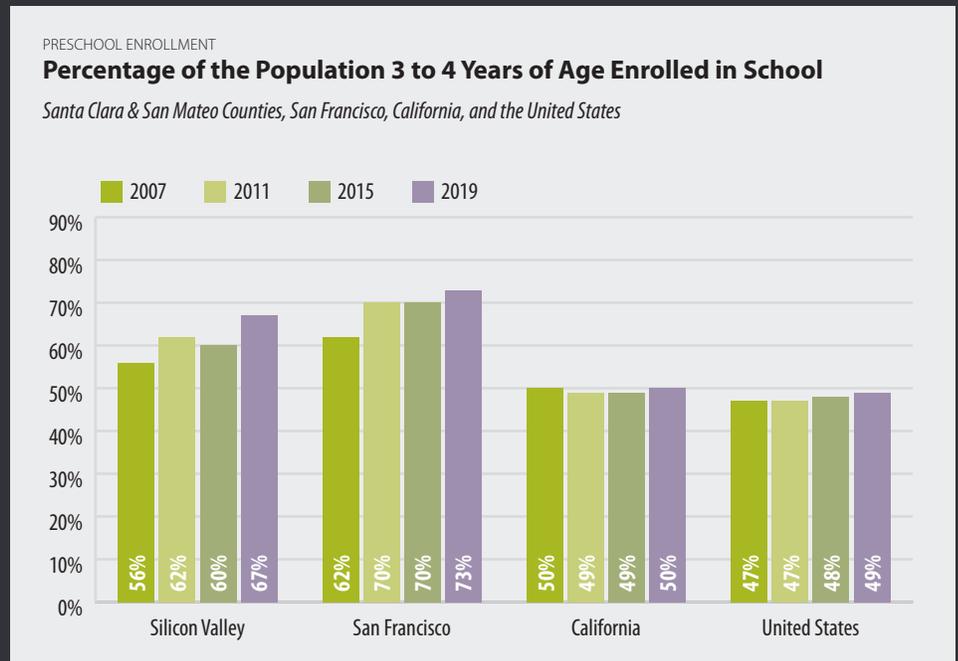
Early education provides the foundation for lifelong accomplishment. Research has shown that quality preschool-age education is vital to a child's long-term success. Private versus public school enrollment illustrates the economic structure

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 in San Francisco (73% in 2019) has increased significantly since the implementation of the city's Preschool for All program,<sup>66</sup> which was implemented in 2005 and supplemented by the 2017 launch of an Early Learning Scholarship Program.<sup>67</sup> Prior to the implementation of Preschool for All, the share of 3- and 4-year-olds enrolled in school was at 57% (in 2005).

Silicon Valley and San Francisco preschool enrollment rates (67% and 73%, respectively in 2019) were higher than in California (50%) or the United States overall (49%). They have also increased significantly over the years, up by 12% and 14%, respectively, since 2008 (compared to 0% in both the state and nation overall).



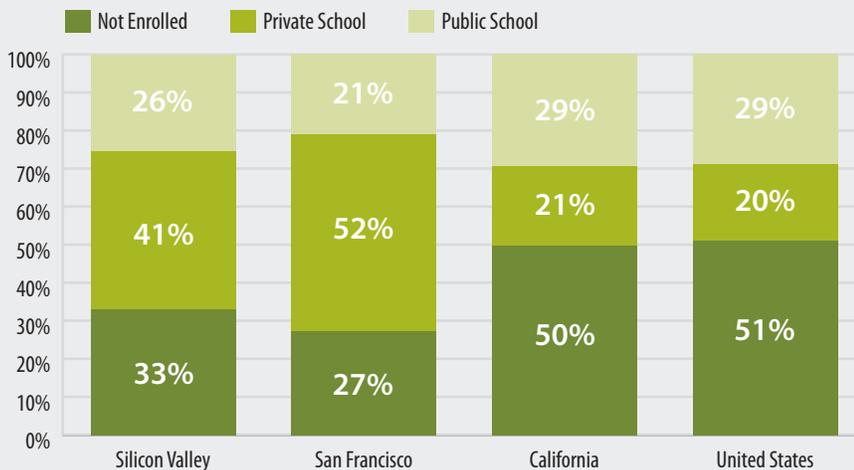
Note: Data includes enrollment in private and public schools.  
 Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies

In 2019, more than 44,400 three- and four-year-olds attended public and private preschools in Santa Clara and San Mateo Counties. Based on limited data regarding childcare center closures and low-attendance levels, it is likely that fewer than 5,900 of those children (<13%) remained in preschool toward the end of the school year.

PRESCHOOL ENROLLMENT

**Percentage of the Population 3 to 4 Years of Age, by School Enrollment**

*Santa Clara & San Mateo Counties, San Francisco, California, and the United States | 2019*



A greater share of Silicon Valley and San Francisco preschoolers attend private schools (41% and 52%, respectively, in 2019) than in the state (21%) or nation (20%).

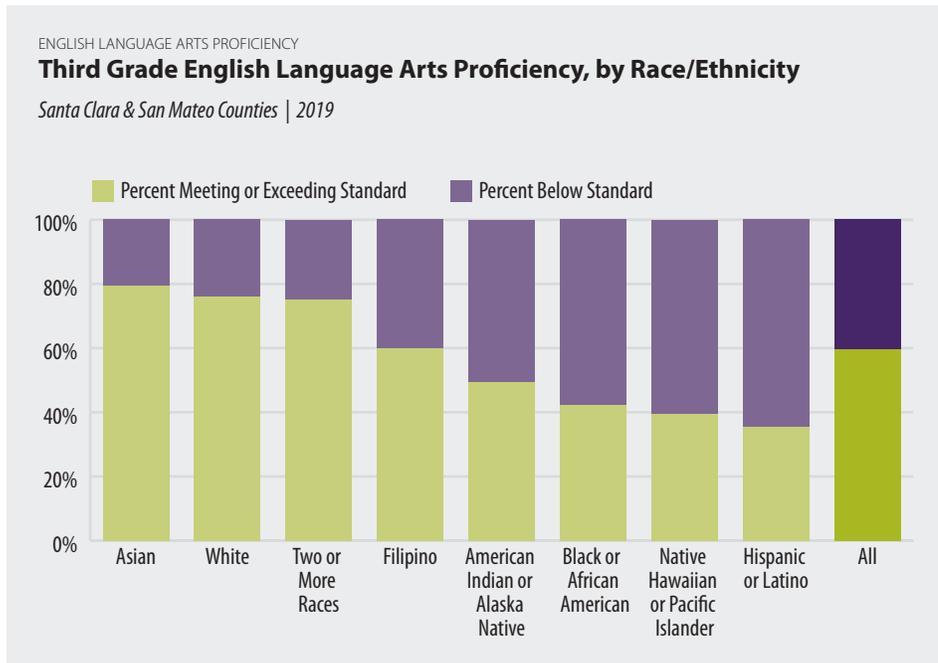
Despite year-over-year increases in preschool enrollment between 2018 and 2019, early data for 2020 suggests that the low attendance levels from March and April<sup>68</sup> may have persisted through the fall. From the onset of the pandemic through September 2020, approximately 58% of San Mateo County childcare facilities shut down or closed temporarily—a decline of around 540 child care centers.<sup>69</sup>

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

# SOCIETY

## Early Education & Care

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.



Note: Data for the 2019-20 school year is unavailable. | Data Source: California Department of Education, California Assessment of Student Performance and Progress (CAASPP) | Analysis: Silicon Valley Institute for Regional Studies

The average costs of an in-home childcare provider in Silicon Valley and San Francisco (\$3,300 and \$3,500 per month, respectively) are higher than throughout the state (\$2,900) and the nation as a whole (\$2,600).

In-Home Childcare Costs		
Silicon Valley, San Francisco, California, and the United States   2020		
	Monthly	Annual
<b>Silicon Valley</b>	\$3,276	\$39,309
<b>San Francisco</b>	\$3,462	\$41,548
<b>California</b>	\$2,855	\$34,266
<b>United States</b>	\$2,577	\$30,924

The cost of an in-home childcare provider for one child is significantly higher in the ten most expensive Silicon Valley cities (\$3,664 per month, on average)—including affluent places like Palo Alto, Woodside, and Atherton—than in the ten least expensive areas (\$3,034 per month). This indicates that the cost of care is dictated to a larger extent by what residents can afford, than by the income needs of care providers.

### Share of Third-Graders Meeting or Exceeding the Standard in English Language Arts

2019

<b>Silicon Valley</b>	60%
<b>San Francisco</b>	52%
<b>California</b>	49%

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.

An in-home childcare provider for one child in Silicon Valley costs approximately \$39,300 per year.

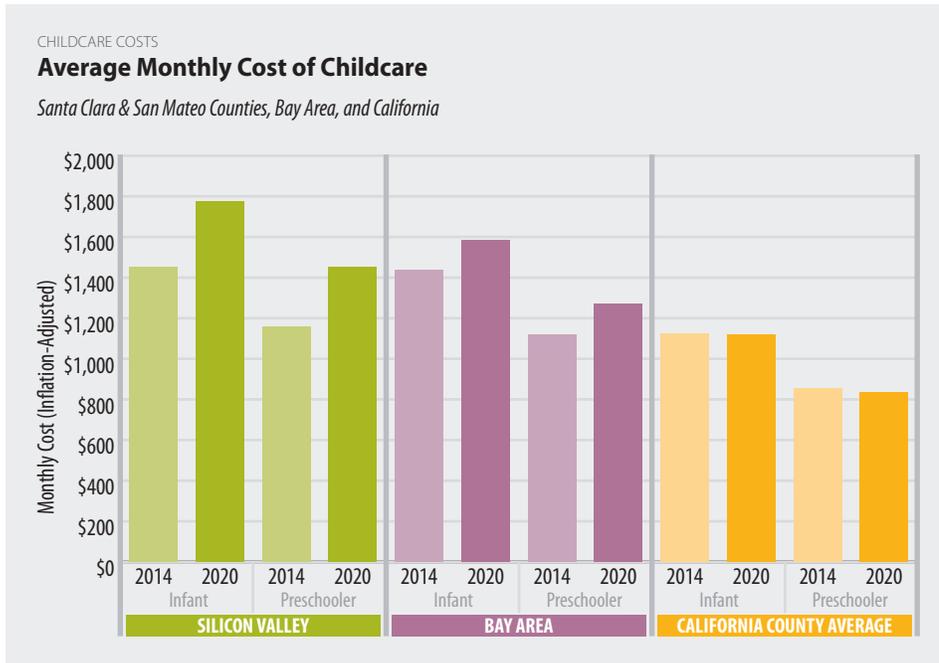
### In-Home Childcare Costs, for 10 Most/Least Expensive Areas

Silicon Valley | 2020

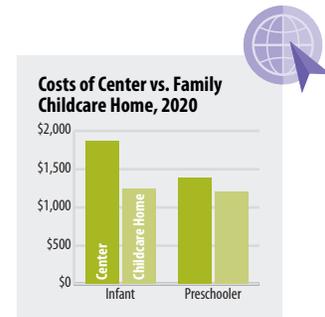
	Average Monthly Rate
<b>Most Expensive:</b> Atherton, Portola Valley, Los Altos Hills, Woodside, Stanford, Menlo Park, San Carlos, Palo Alto, Los Altos, Los Gatos	\$3,664
<b>Least Expensive:</b> Gilroy, Union City, Morgan Hill, Newark, Fremont, Scotts Valley, Colma, Milpitas, San Jose, and San Bruno	\$3,034

Data Source: Care.com  
Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley childcare costs have risen twice as fast as the inflation rate since 2010.



Note: Costs of Childcare are based on one child, and do not include any discounts for additional children. They are net costs after subtracting the Child Care Tax Credit and Child Tax Credit. 2020 Childcare Center and Family Childcare Home costs are based on 2018 market rate data. | Data Sources: Center for Women's Welfare, University of Washington; California Department of Education, Regional Market Rate Surveys | Analysis: Silicon Valley Institute for Regional Studies



### Percent Change in Inflation-Adjusted Childcare Costs

2014 - 2020

	Infant	Preschooler
<b>Silicon Valley</b>	+22%	+26%
<b>Bay Area</b>	+10%	+14%
<b>California County Average</b>	-1%	-2%

The cost of childcare for children under age five has risen significantly over the past decade in Silicon Valley, San Francisco, and statewide. Full-time childcare for a Silicon Valley preschooler at a licensed childcare center has risen by 50% since 2010.

Average childcare costs at licensed care facilities in Silicon Valley were an estimated \$22,400 per year for infants (nearly \$1,900 per month) and \$16,600 per year for preschoolers in 2020, without taking into account any cost-effects of the pandemic.

Prior to any pandemic-related factors, the estimated rise in childcare costs over the past decade is as high as 50% in Silicon Valley, 70% in San Francisco, and 76% in California overall (not accounting for inflation).

While data is not yet available to estimate pandemic/2020 childcare costs, the cost of childcare providers keeping up with COVID-19 protocols (such as sanitation) were found to be as much as 75% for in-home care providers, and 41%-74% (for infants and preschoolers, respectively) for child care centers statewide.<sup>70</sup> It is likely that the additional costs to providers affected their rates, to some extent.

# SOCIETY

## Arts & Culture

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 2020; 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.

The impact of the pandemic on arts and culture was felt broadly, with sharp declines in opportunities for engagement and social interaction. Local arts organizations saw attendance and income fall abruptly and drastically. While most industries throughout the region experienced job losses by mid-year, arts and culture industries lost more than half of their employees. Those jobs had been held to a large extent by part time workers (62 percent, compared to only 20 percent across all industries), who typically earned less than those in other industries. While consumer spending on events and in-person

entertainment declined sharply, spending on home entertainment (books, gaming, and streaming services) increased and has since remained high relative to the prior year. This shift in consumer spending behavior translates to more money leaving the region than before the pandemic.

### 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. These unique

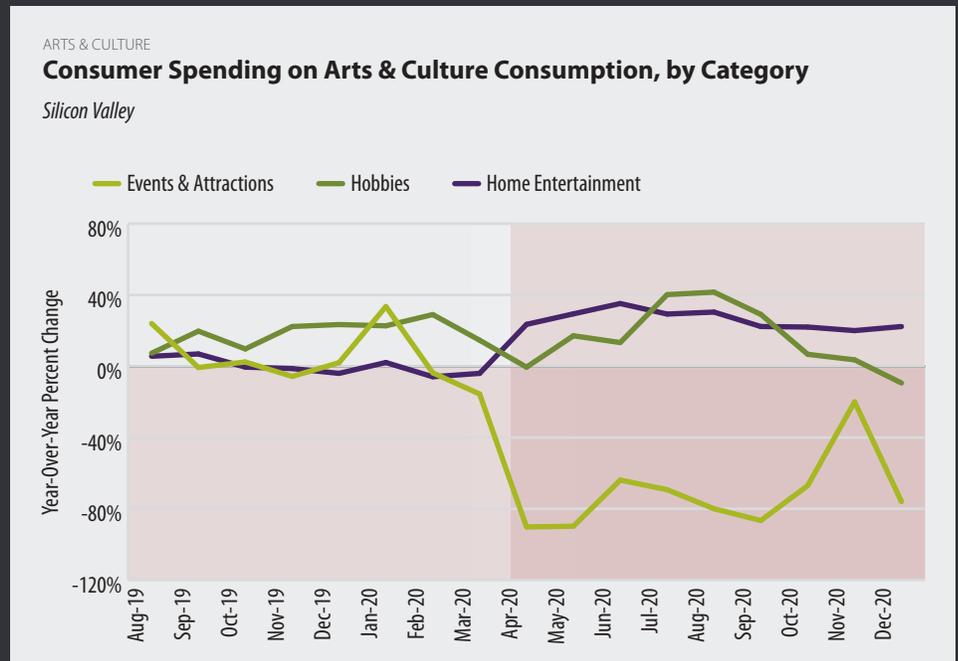
cultural activities have considerable local impact in attracting people to the area, generating business throughout the community, and contributing to local revenues.

The number of local arts nonprofits is indicative of a region's ability to organize and make arts programs available to the community. Spending on arts and cultural activities reflects the public's interests, as well as the ability of those organizations to pay employees and expenses. As with arts and cultural events, sporting events bring the community together for both enjoyment and enrichment.

Percent Change in Arts & Culture Spending 2019-2020		
	All	Events & Attractions
Silicon Valley	-8%	-54%
California	-9%	-48%
United States	-9%	-46%

Beginning in mid-March, Silicon Valley consumers reduced spending on Events & Attractions, while increasing amounts to things like music, books, gaming, video streaming services, and arts and crafts. (+18%).

Between March and the end of 2020, Silicon Valley consumer spending on Events & Attractions was down by an average 54% year-over-year (compared to slightly less pronounced declines statewide, -48%, and nationally, -46%).

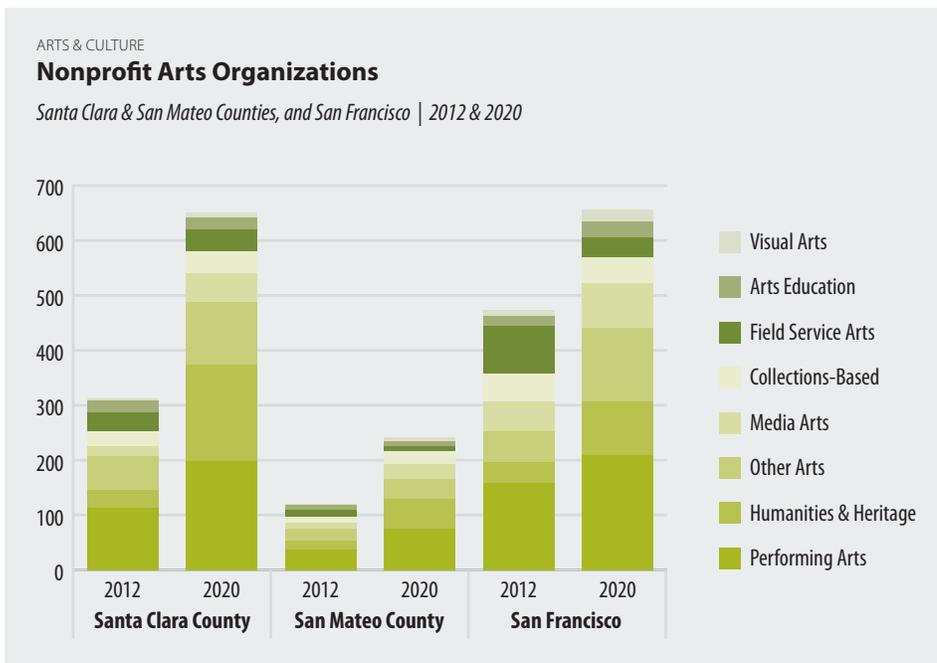


Note: Hobbies include arts and crafts, and music. | Data Source: Earnest Research, COVID-19 Tracker | Analysis: Silicon Valley Institute for Regional Studies

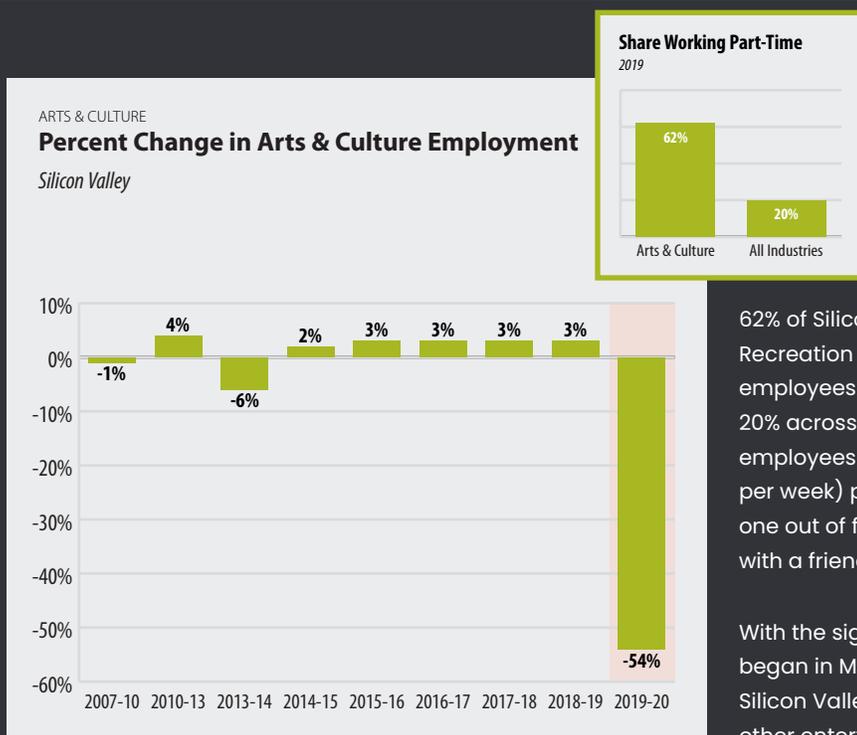
The onset of the pandemic significantly altered consumer spending behavior, resulting in a dramatic and swift shift from in-store to online spending. Likewise, spending on in-person arts and culture consumption—such as concerts, movie theaters, sporting events, and theme parks—fell drastically.

In 2020, there were 650 nonprofit arts and culture organizations in Santa Clara County, 242 in San Mateo County, and 657 in San Francisco; about one-third of them were in Performing Arts.

Among the 892 Santa Clara and San Mateo County nonprofit arts and culture organizations in 2020, there were 73 organizations with annual revenues over \$1 million. Among those with the highest revenues were Minority Television Project (the owner of the education television station, KMTP), Peninsula Arts Guild in Palo Alto, The Tech Interactive, the San Mateo County Exposition and Fair Association, the Computer History Museum, Theatreworks Silicon Valley, Filoli Center, the Children’s Discovery Museum of San Jose, and CuriOdyssey (Children’s museum and zoo) in San Mateo.



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



Note: Includes jobs in arts, entertainment, and recreation. | Data Sources: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; EMSI; United States Census Bureau, American Community Survey PUMS  
Analysis: BW Research; Silicon Valley Institute for Regional Studies

By June 2020, Silicon Valley’s arts and culture employment had fallen to less than 9,300 from nearly 20,000 the prior year.

62% of Silicon Valley’s Arts, Entertainment, and Recreation jobs in 2019 were filled by part-time employees—a much higher share than the region’s 20% across all industries. Most of these part-time employees worked very limited hours (around 10 to 15 per week) prior to the pandemic, and approximately one out of five lived somewhere rent-free (such as with a friend or at a parent’s house).

With the significant declines in event attendance that began in March, thousands of jobs were lost among Silicon Valley’s performing arts, sports, museums, and other entertainment and recreation industries.

**Pandemic-related job losses disproportionately impacted Community Infrastructure & Services jobs, particularly those in Arts, Entertainment, and Recreation which experienced an employment decline of 54% by mid-year (compared to a 9% loss across all Silicon Valley industries).**

With the regular college basketball season nearing a close when the pandemic hit in mid-March, attendance for the season at Stanford, Santa Clara, and San José State University home games did not decline year-over-year as with other sports.

### % Change in Home Game Attendance 2019-2020

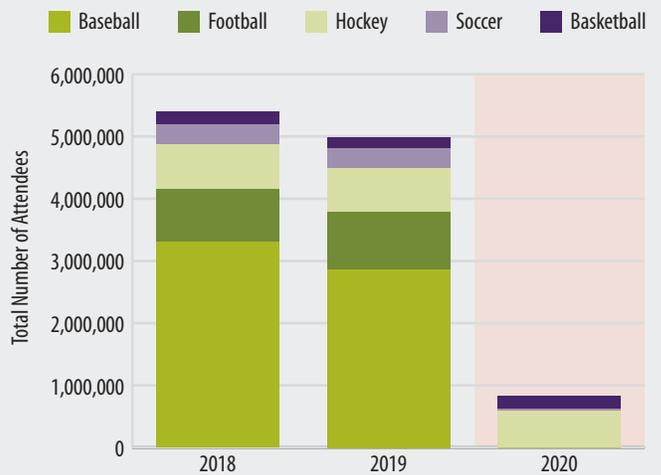
<b>Collegiate</b>	-61%
<b>Professional</b>	-86%

Total attendance for Silicon Valley's major sporting events in 2020 (less than 830,000) was a mere 17% of what it would be during a typical year (around five million).

In 2019, 57% of all Silicon Valley major sporting event home game attendance was at baseball games, primarily San Francisco Giants games which attracted 2.7 million attendees that year.

### SPORTS & 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

Sporting event cancellations and capacity restrictions during the pandemic resulted in a 2020 home game attendance that was 86% below the prior year for professional sports, and 61% below for collegiate sports.

The professional hockey season—which was supposed to run from early October through early April—was cut short in 2020, leading to 117,000 fewer attendees at San Jose Sharks home games.

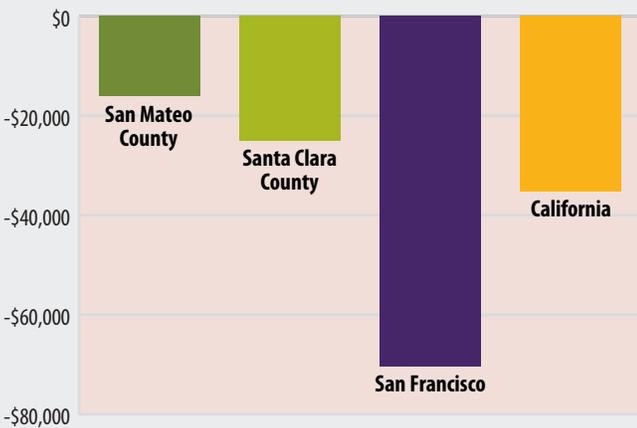
The major league soccer season had just begun when the pandemic hit, so the San Jose Earthquakes had a season total of about 10% of its typical home game attendance.

Neither the San Francisco Giants nor the 49ers had any home game attendance during the 2020 season, as games were closed to the public amid public health concerns. The limited number of San José State and Stanford Football games were also played without in-person fans.

ARTS & CULTURE

**Median Financial Impact of the Pandemic on Arts & Culture Organizations**

*Santa Clara & San Mateo Counties, San Francisco, and California | 2020*



Data Source: Americans for the Arts | Analysis: Americans for the Arts

The median financial impacts of the pandemic on local arts and culture organizations in Santa Clara and San Mateo Counties (\$25,000 and \$16,000, respectively, as reported from available survey data) is significantly lower than that of San Francisco organizations, which reported a median impact of \$70,350 each among 106 respondents. The median financial impact reported by survey respondents statewide was \$35,250.

The total financial impact of the pandemic on arts and culture organizations thus far has likely exceeded a combined total of \$20 million in Santa Clara and San Mateo Counties and \$46 million in San Francisco, based on the median impact reported from survey responses and the total number of nonprofit arts and culture organizations.

The health and wellbeing of Silicon Valley residents were top of mind this year, as the region joined a world grappling with the pandemic. COVID-19 was Silicon Valley's 6<sup>th</sup> leading cause of death in 2020, accounting for five percent of all deaths in 2020 (through November).

With a focus on limiting transmission of COVID-19, as many as 45 percent of residents statewide delayed some form of medical care, such as non-emergent issues, elective procedures, or routine medical care. There was also a corresponding decline in consumer spending on health-care (by as much as 21 percent below the prior year). Some of this decline was the result of job losses and subsequent loss of

employer-sponsored health plans, which left upwards of 12,000 Santa Clara and San Mateo County residents uninsured at the end of 2020.

Mental health became a more salient issue during the crisis due to pandemic-related hardships, job losses, loneliness, and isolation (among other factors). As many as 18 percent of all Bay Area residents were experiencing symptoms of anxiety and/or depression in early January, 2021; rates were especially high for women and young adults (ages 18-29).

Health disparities among Silicon Valley residents were not only evident in the COVID-19 case rates by race and ethnicity, but also in a variety of other health

outcomes. Black residents in Santa Clara and San Mateo Counties are more at risk of hypertension-related deaths (36 percent higher than the overall rate), dying of pregnancy-related complications (4.5 times more likely than women of other races), have an infant die before his or her first birthday (three times more likely than White women and twice the overall rate), and are 46 percent more likely to deliver a first baby via C-Section despite low risk-factors.

### Why is this important?

Early and continued access to quality, affordable health care is important to ensure that Silicon Valley's residents are

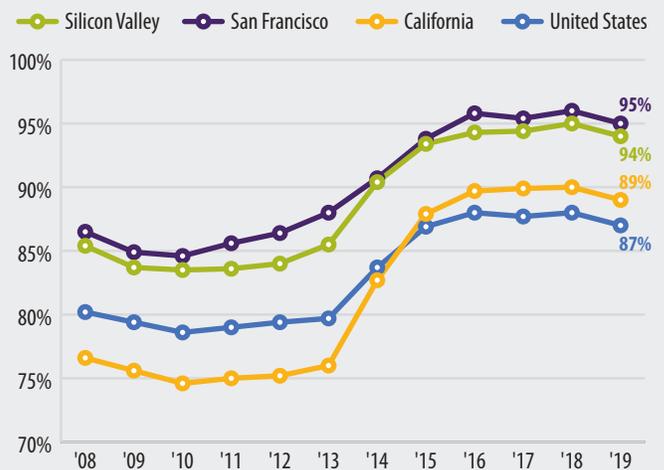
Pandemic-related job losses have undoubtedly affected health insurance coverage for the region's working-age population and their dependents. Nationally, it has been estimated that more than six million workers lost their employer-sponsored health insurance between March and July (affecting approximately 12 million workers and their dependents), with 85% subsequently finding alternative forms of coverage.<sup>73</sup> If those same ratios applied to Santa Clara and San Mateo Counties, then an estimated 12,000 residents may have remained uninsured at the end of 2020.<sup>74</sup>

Health insurance coverage for the working age population has increased significantly since 2013, influenced by the availability of coverage through the Affordable Care Act. In Silicon Valley, the share of 18- to 64-year-olds with health insurance rose from 86% in 2013 to 94% in 2016, and remained relatively steady through 2019.

#### 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

thriving. Given the high cost of health care, individuals with health insurance are more likely to seek routine medical care and preventive health-screenings.

Being overweight or obese increases the risk of many diseases and health conditions, including Type 2 diabetes, hypertension, coronary heart disease, stroke, and some types of cancers—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.<sup>71</sup>

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. Cesarean Sections (C-Sections) are

a necessary intervention that can be life-saving, in many cases. Overuse of non-medically indicated C-Sections, however, have been documented in wealthy communities around the world and have not been linked to added health benefits to mothers or babies.<sup>72</sup>

Percentage of Individuals with Health Insurance, by Employment Status 2019			
	Unemployed	Employed	Not In Labor Force
<b>Silicon Valley</b>	91%	94%	91%
<b>San Francisco</b>	86%	96%	94%
<b>California</b>	80%	90%	88%
<b>United States</b>	72%	88%	85%

Since the Affordable Care Act became effective for its earliest enrollees, the share of unemployed Silicon Valley residents with health insurance coverage jumped by 26 percentage points, reaching 91% in 2019 (compared to 86% in San Francisco, 80% in California, and 72% throughout the United States); there has also been an increase (though smaller) in the coverage of Silicon Valley employed workers (up six percentage points, to 94% in 2019).

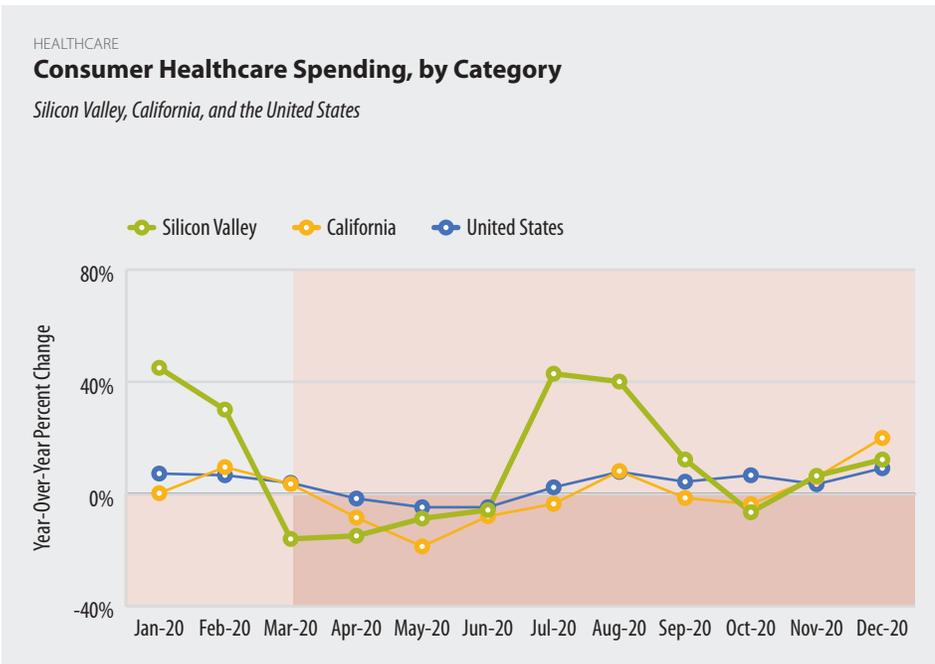
In 2019, 94% of Silicon Valley’s 18- to 64-year-olds were covered by health insurance (compared to 95% in San Francisco, 89% in California, and 87% in the U.S. as a whole), as well as 98% of children and 99% of residents ages 65 and older.

Change in the Percentage of Individuals with Health Insurance, by Employment Status <i>Santa Clara &amp; San Mateo Counties, 2013-2019</i>	
<b>Unemployed</b>	+26%
<b>Employed</b>	+6%
<b>Not in Labor Force</b>	+1%

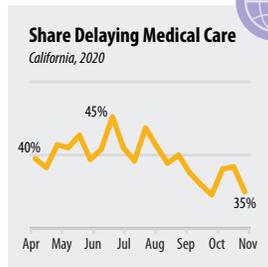
# SOCIETY

## Quality of Health

Silicon Valley consumer spending on health insurance was depressed from March through June, with the lowest year-over-year 4-week trailing average of -25% during the week of April 1; health insurance spending began to teeter around 2019 levels again in the August timeframe.

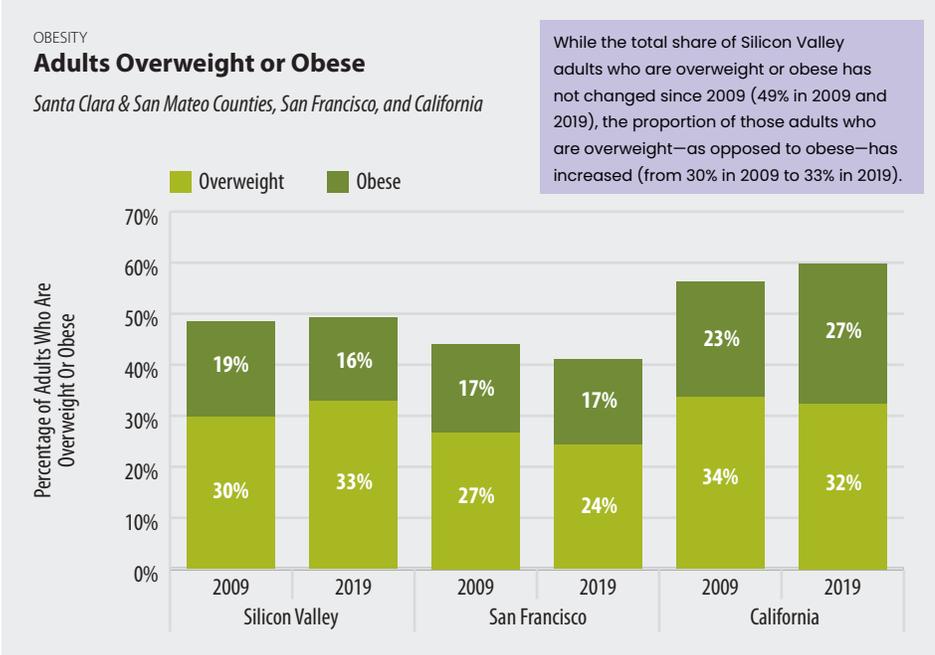


Data Source: Earnest Research, COVID-19 Tracker | Analysis: Silicon Valley Institute for Regional Studies



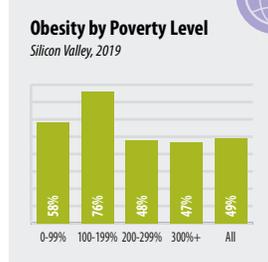
Data Source: United States Census Bureau, Household Pulse Survey | Analysis: Silicon Valley Institute for Regional Studies

As many as 45% of Californians delayed medical care during any given week. People may have delayed non-emergent issues to reduce potential exposure to the virus, or put off care because they lacked insurance or funds to cover the costs.



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

The share of adults who are overweight or obese has remained relatively steady in Silicon Valley, San Francisco, and throughout the state over the past decade. 49% of Silicon Valley adults were overweight or obese in 2019, compared to 41% in San Francisco and 60% in California.



Adult obesity rates are highest for Silicon Valley adults with incomes between one and two times the Federal Poverty Level (76% either overweight or obese, compared to 49% of the population overall). This same trend is observed on the state level (68%, compared with 60% of the population overall).

Consumer spending on healthcare—including insurance and lab testing, among other categories—declined noticeably in Silicon Valley at the start of the pandemic, with the lowest year-over-year decline (of -15%) in the month of March; the California and U.S. consumer healthcare spending bottomed out slightly later, in May, at approximately -21% and -12% year-over-year, respectively.

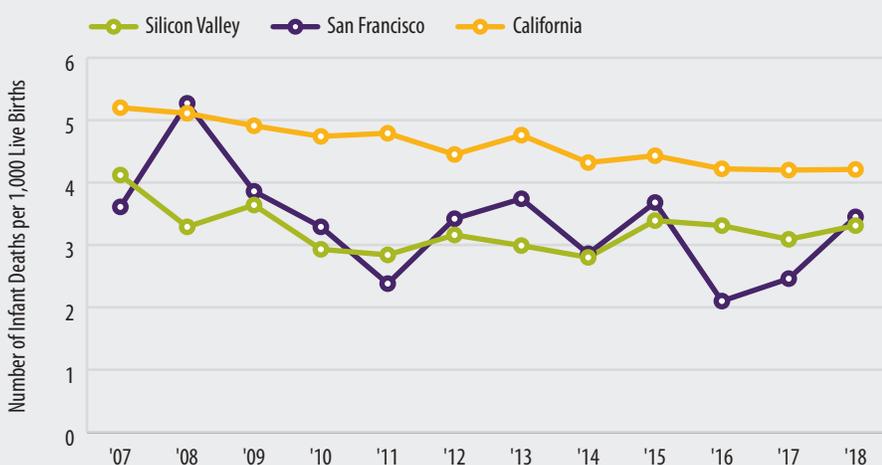
The 2018 Silicon Valley infant mortality rate (3.31 per 1,000 live births) was slightly lower than in San Francisco (3.45 per 1,000) and California overall (4.21 per 1,000). These rates are all lower than the 2018 United States average of 5.6 per 1,000 live births, and significantly lower than the world average that year of 29 per 1,000 live births (ranging from a low of 1.6 per 1,000 in Iceland, to 83 per 1,000 in Sierra Leone).<sup>75</sup>

Black or African American women in the greater Silicon Valley region die of pregnancy-related complications at significantly higher rates than women of other races/ethnicities (58 per 100,000 live births, compared to 13 per 100,000 for non-Black or African American women); this disparity is slightly more pronounced in Silicon Valley than in the state overall.

MATERNAL, INFANT, AND CHILDREN'S HEALTH

**Infant Mortality Rate**

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



\*Santa Clara and San Mateo Counties, Alameda County, and San Francisco | Note: Black or African American, Asian or Pacific Islander, and White are Non-Hispanic. Data Source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC) Analysis: Silicon Valley Institute for Regional Studies

Compared to regional averages, Silicon Valley's Black or African American women are four and a half times more likely to die of pregnancy-related complications, twice as likely to have an infant die before his or her first birthday, and 46% more likely to deliver their baby via C-Section despite low-risk factors.

In 2019, the share of all Silicon Valley adults who were either overweight or obese (defined by a Body Mass Index of 25 or higher) was 49%; this share increases 58% for adults living below the federal poverty level (FPL), and to 76% for those between one and two times the FPL.

**Infant Mortality Rate by Race & Ethnicity**  
Number of Infant Deaths per 1,000 Live Births  
Santa Clara & San Mateo Counties | 2007-2018

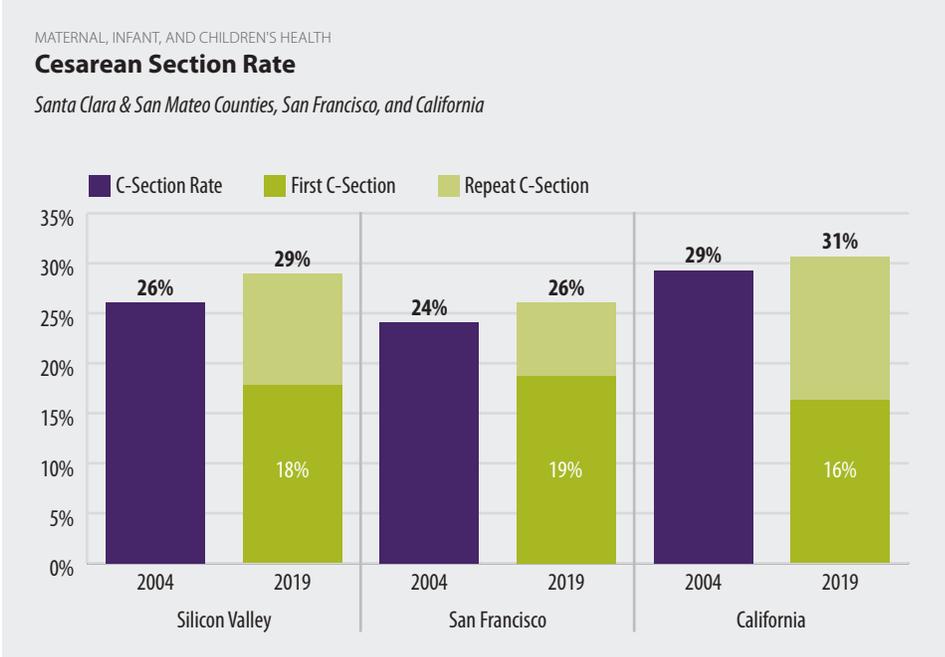
<b>Black or African American</b>	7.0
<b>Other or Unknown</b>	7.1
<b>Hispanic or Latino</b>	3.6
<b>Asian or Pacific Islander</b>	2.8
<b>White</b>	2.3
<b>Overall</b>	3.3

**Maternal Mortality by Race & Ethnicity**  
Greater Silicon Valley\*  
Number of Deaths Related to Pregnancy, Childbirth, and the Postpartum Period Per 100,000 Live Births (1999-2018)

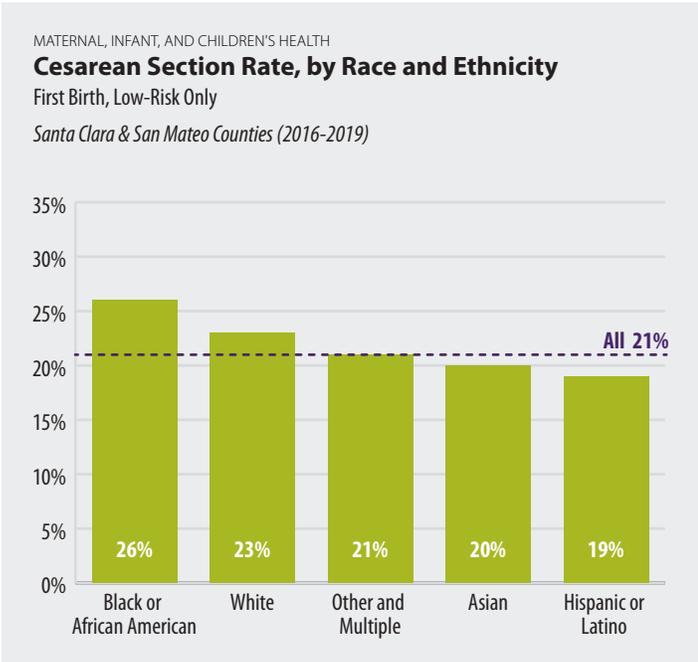
<b>Black or African American</b>	58
<b>Hispanic or Latino</b>	15
<b>Asian or Pacific Islander</b>	12
<b>White</b>	11
<b>Overall</b>	15

Over the 12-year period between 2007 and 2018, Black or African American women in Silicon Valley were more than three times more likely than White women (and 2.2 times the overall rate) to have an infant die before his or her first birthday.

Over a 15-year period, the C-Section rate in Silicon Valley increased by three percentage points, reaching 29% in 2019 (ranging from 15-30% at the region's individual hospitals<sup>76</sup>). This compares to 26% in San Francisco, and 31% statewide.



Note: C-Section data by primary (first) and repeat were not available prior to 2016. Data by race and ethnicity is for Santa Clara and San Mateo Counties, 2016-2019. Black or African-American, White, Other and Multiple, and Asian are non-Hispanic or Latino. Low Risk includes births with no maternal risk factors present, a gestational age of 37+ weeks, and head-down presentation of the fetus. | Data Source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC) | Analysis: Silicon Valley Institute for Regional Studies



Note: C-Section data by primary (first) and repeat were not available prior to 2016. Data by race and ethnicity is for Santa Clara and San Mateo Counties, 2016-2019. Black or African American, White, Other and Multiple, and Asian are non-Hispanic or Latino. Low Risk includes births with no maternal risk factors present, a gestational age of 37+ weeks, and head-down presentation of the fetus. | Data Source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC) | Analysis: Silicon Valley Institute for Regional Studies

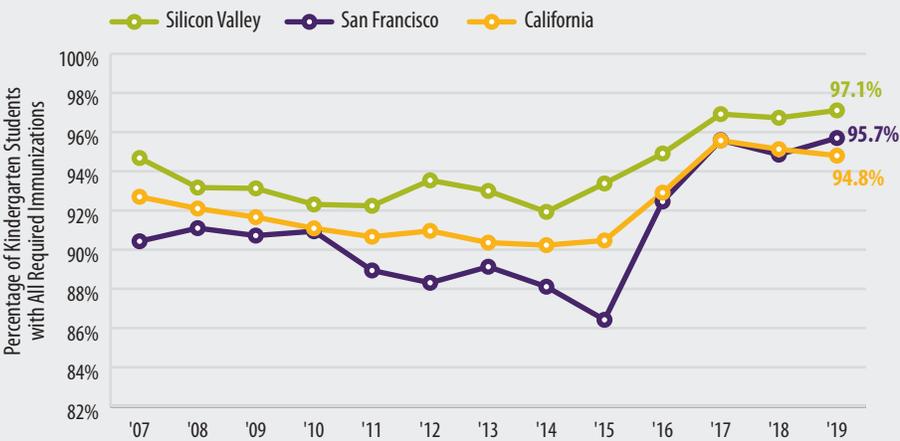
Black or African American women delivering their first at-term baby in Silicon Valley experience C-Sections at a rate (26%) that is significantly higher than women of other races and ethnicities (19-23%), despite low-risk factors. These findings are similar to those of a statewide study, which indicated a C-Section rate of 29.8% for Black women, compared to 25.6% for Asian/Pacific Islanders, 23.8% for Latina, and 23.8% for White women for low-risk first-births.<sup>77</sup>

The share of kindergarten students with all required immunizations did not change significantly in Silicon Valley, San Francisco, or California overall between 2017 and 2019—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*



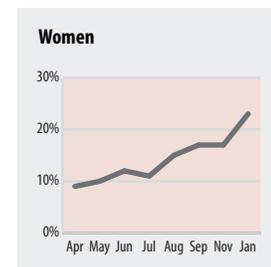
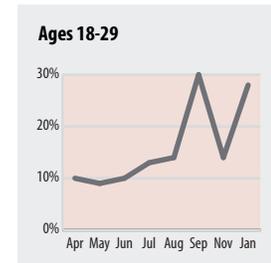
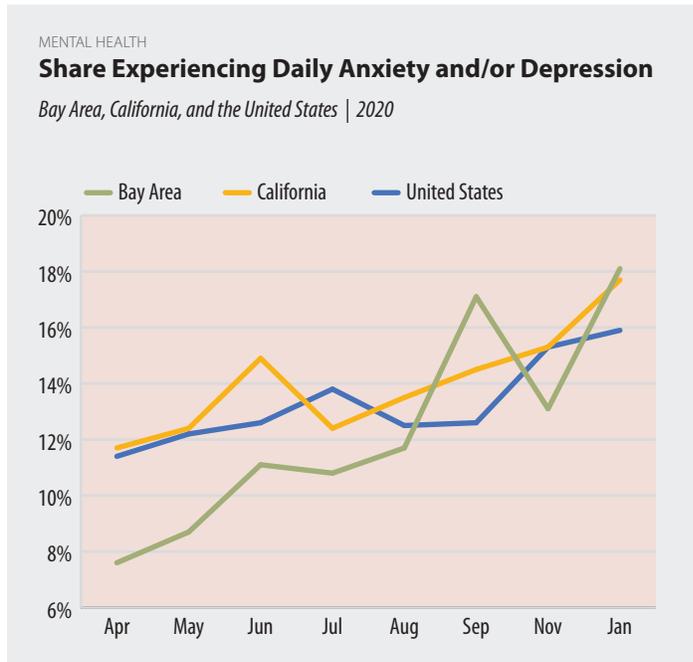
Note: 2019-20 school year immunization data was not available due to COVID-19.  
 Data Source: California Department of Public Health | Analysis: Silicon Valley Institute for Regional Studies

Although 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), the COVID-19 pandemic has likely hindered this progress temporarily. While regional data including 2020 is not yet available, statewide data indicated a decline in childhood immunization rates of as much as 40% in April 2020<sup>78</sup> and a less-pronounced but still noticeable immunization gap in August.<sup>79</sup>

The estimated share of Bay Area residents experiencing daily anxiety and/or depression has more than doubled since April.

Based on early January 2021 survey results, around 22% of Bay Area residents are either seeing or would like to see a mental health professional (counselor or therapist); half of them had not yet done so, for one reason or another.

The circumstances of the pandemic—such as financial hardships, loneliness and isolation, among many other challenges—may have contributed to the share of people experiencing symptoms of anxiety and/or depression.



Note: Bay Area includes San Francisco, Alameda, Marin, Contra Costa, and San Mateo Counties.  
Data Source: U.S. Census Bureau, Household Pulse Survey | Analysis: Silicon Valley Institute for Regional Studies

An estimated one out of five Bay Area women were experiencing symptoms of anxiety and/or depression nearly every day of the week in January 2021, as were more than a quarter of young adults (ages 18-29).

Rates of daily anxiety and/or depression seem to have risen particularly rapidly last year for women (up from an estimated 9% in April 2020 to 23% in January 2021) and young adults ages 18-29 (up from 10% to 28% over the same period).

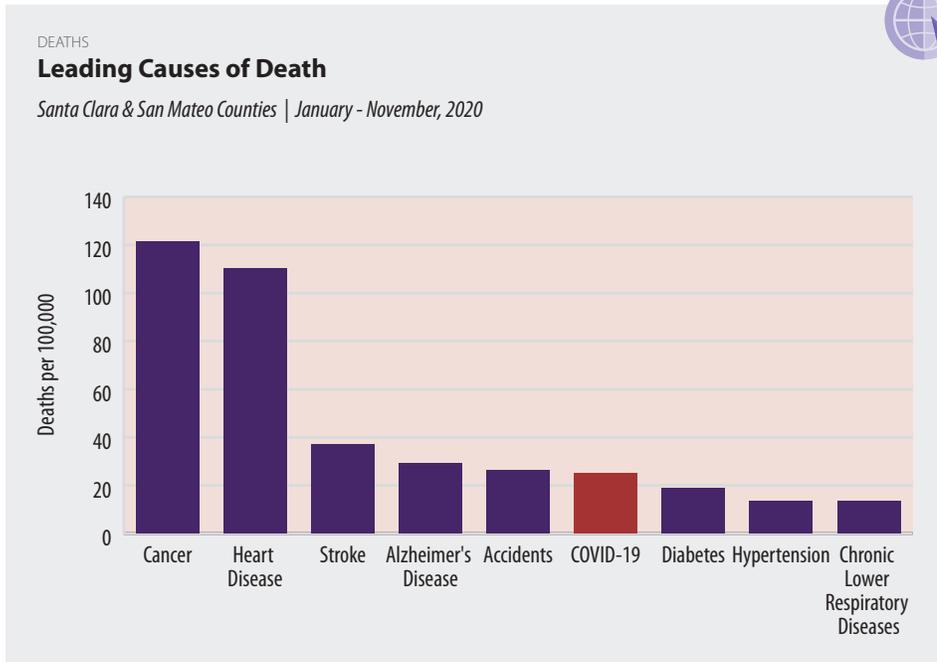
In early January 2021, an estimated 18% of Bay Area residents experienced symptoms of anxiety and/or depression on a daily basis, such feeling nervous or on edge, not being able to stop or control worrying, having little interest or pleasure in doing things, and feeling down, depressed, or hopeless. This estimated share was similar statewide, and just slightly lower in the U.S. overall (16%).

COVID-19 was Silicon Valley’s 6<sup>th</sup> leading cause of death in 2020, with a crude death rate (25.2 per 100,000) higher than that of diabetes, hypertension, or chronic lower respiratory diseases.



Deaths of Black or African American residents due to hypertension were 36% higher than the overall hypertension-death rate in 2019.

The crude rate of deaths caused by hypertension or hypertensive renal disorders in Silicon Valley has more than tripled over the past two decades, while the rates of deaths due to the other leading causes—cancer, heart disease and cerebrovascular diseases, and chronic lower respiratory diseases—have declined; the crude deaths rate due to diabetes and accidents increased over that time period, too, but to a lesser degree (+38% and +52%, respectively).



Data Sources: California Department of Public Health; California Department of Finance; County of Santa Clara; San Mateo County Health  
 Analysis: Silicon Valley Institute for Regional Studies

COVID-19 was the cause of 5% of all Santa Clara and San Mateo County deaths in the first 11 months of 2020, with 689 lives lost; by the end of January 2021, that death toll had risen to 1,813 (as of February 1 reporting).

While hypertension-related death rate in Silicon Valley has increased nearly three times more rapidly over the past 20 years than statewide, the crude rate in 2019 remained much lower (18.1 per 100,000, compared to 30.9 per 100,000 throughout California).

The leading causes of death for Silicon Valley residents of all ages in 2020 were—in order of prevalence—cancer, heart disease, stroke, Alzheimer’s, and accidents, followed by COVID-19.

In 2019, the segments of the Silicon Valley population most at risk of death due to hypertension or hypertensive renal disorders were Black or African American residents (24.6 per 100,000), women (20.2 per 100,000), and those who are non-Hispanic (20.3 per 100,000).

# SOCIETY

## Safety

Violent crime rates in Silicon Valley have remained relatively steady over the past several years, and consistently below statewide rates. However, the rate of reported rapes has more than doubled since 2012, and was higher in 2019 than for any other year on record. This increase may be due to more rapes occurring, more rapes being reported, or a combination of both.

More than half of Silicon Valley's felony arrests were for vehicle-related crimes (either theft of or from a vehicle). During the pandemic, several cities reported increases in the number of burglaries and vehicle thefts, and declines in reported rapes and property crimes. The City of San José experienced a rise in homicides (particularly in the second half of 2020, up 67 percent over the prior year).

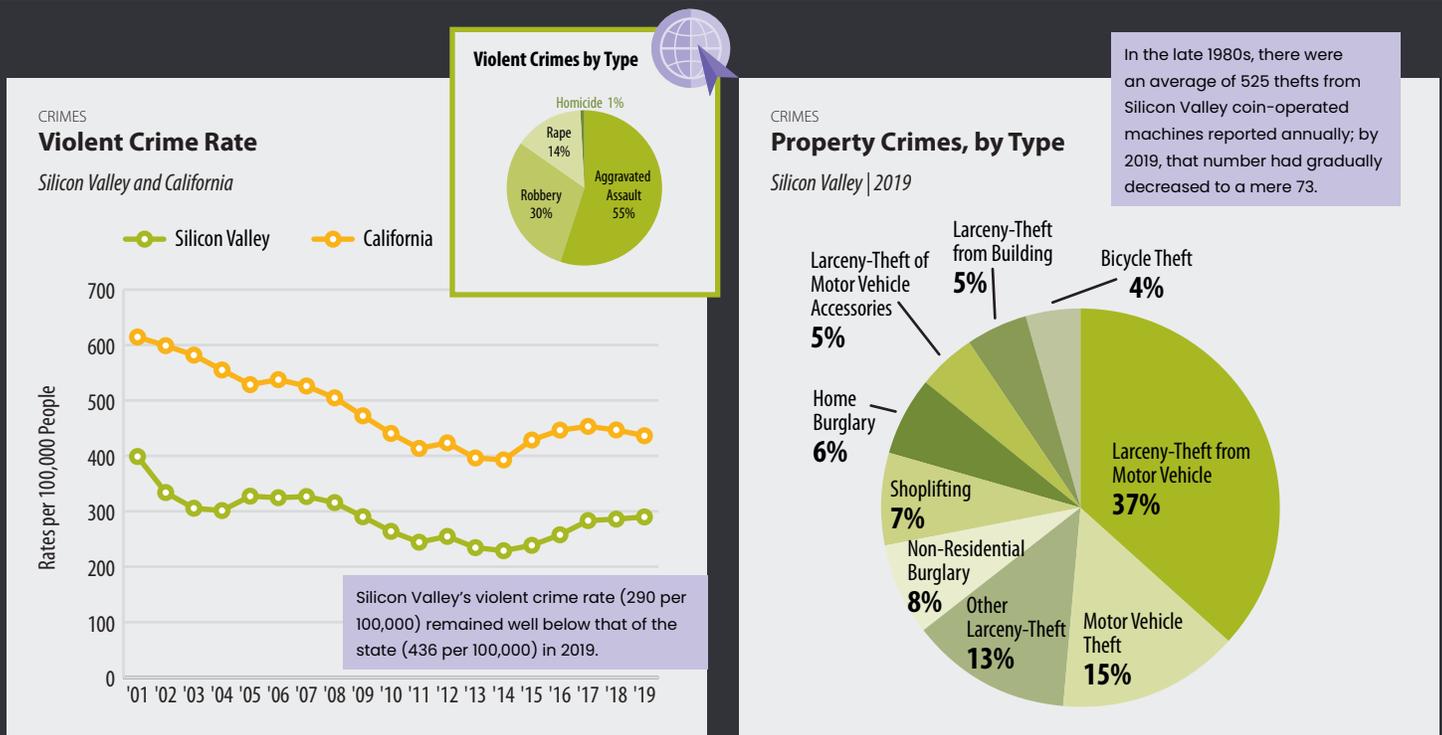
**While the overall violent crime rate in Silicon Valley has remained relatively steady over the past several years, the number of reported rapes has more than doubled since 2012.**

The region's juvenile felony arrest rates declined in 2019; however, Black juveniles (ages 10-17) had felony arrest rates that were seven times higher than the overall rate.

### 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.

Bicycles are five times more likely to be stolen than wallets or purses in Silicon Valley, with more than 3,000 reported stolen each year.



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

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

The rate of reported rapes in Silicon Valley (42 per 100,000 people) has more than doubled since 2012, 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.

There were 8,973 violent crimes reported within the region in 2019, 85% of which were either aggravated assault or robbery. More than half (55%) were Aggravated Assault (compared to 60% of violent crimes statewide).

More than half of all property crimes in Silicon Valley are vehicle-related—either theft of a motor vehicle or theft of items from within a vehicle.

Silicon Valley Black juveniles (ages 10–17) had a felony arrest rate seven times higher than the overall juvenile rate in 2019 (compared to a nearly 10:1 ratio in the state overall); 9% of all juvenile felony arrest that year were of Black individuals, who only make up 1.5% of the juvenile population.

Juvenile Felony Arrests per 100,000 2019		
	Santa Clara & San Mateo Counties	California
<b>Black</b>	3,250	3,835
<b>All Races</b>	460	394
<b>Ratio</b>	<b>7.1</b>	<b>9.7</b>

The overall felony offense rate in Silicon Valley increased by 3% in 2019, due in large part to a decline in the total population used to calculate the rate; there were 300 more felony arrests in 2019 than during the prior year, most of which (198) were violent offenses. Despite the slight increase in 2019, the felony arrest rate remained 29% below that of 2014—a decline almost entirely accounted for by the large 2014–2015 drop due to the passage of Propositions 47 and 64.<sup>81</sup>

In 2020, several Silicon Valley cities reported an increased number of burglaries (+14% year-over-year combined) and vehicle thefts (+16%), as well as declines in the number of reported rapes (-16% combined) and property crimes (-5%). The City of San José had an 18% rise in homicides in 2020 (and a +67% rise for the second half of the year).<sup>80</sup>

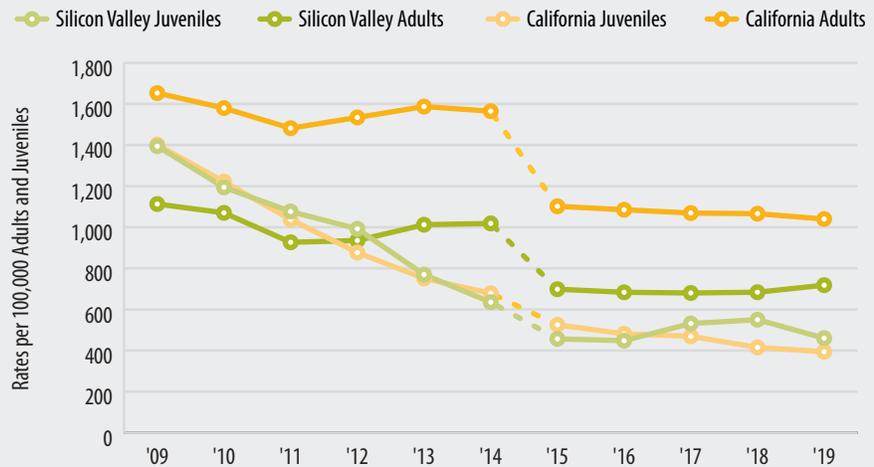
Silicon Valley had more than five thousand sworn full-time and reserve public safety officers employed throughout the region in 2020.

The total number of public safety officers in Silicon Valley rose slightly to 5,163 in 2020, up by 19 officers over the prior year.

### ARRESTS Felony Offenses

Santa Clara & San Mateo Counties, and California

Silicon Valley's juvenile felony arrest rate declined by 16% in 2019, while the adult felony arrest rate increased by 5% year-over-year. This compares to -5% and -2%, respectively, statewide.



\*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 the region's 42 agencies—the San Jose Police Department and the Santa Clara County Sheriff's Department.

### PUBLIC SAFETY OFFICERS

#### Total Number of Public Safety Officers, by Agency

Silicon Valley



- Other (24) Agencies
- Campbell PD
- Newark PD
- Union City PD
- Gilroy PD
- South San Francisco PD
- Santa Clara Co DA
- Milpitas PD
- Redwood City PD
- Palo Alto PD
- Daly City PD
- Mountain View PD
- San Mateo PD
- Fremont PD
- Sunnyvale DPS
- Santa Clara PD
- San Mateo Co SD
- San Jose PD
- Santa Clara Co SD

Data Sources: California Commission on Peace Officer Standards and Training; California Department of Finance  
Analysis: Silicon Valley Institute for Regional Studies

# SOCIETY

## Philanthropy

With billions of dollars in donations annually, the magnitude of philanthropy in Silicon Valley among top corporate philanthropists, foundations, and individuals is astounding. The top 50 corporate philanthropists alone donated \$181 million to local organizations in the 2019 fiscal year. There are nearly 1,600 foundations located in Santa Clara and San Mateo Counties, with a combined total of around \$62 billion in assets—approximately \$3 billion or more of which is distributed on an annual basis. In 2018, local foundations granted \$2 billion (excluding large donations to hospitals and academic institutions). Of that total, approximately \$394 million (20 percent) was directed to Silicon Valley

community-based nonprofit organizations. These organizations also received 56 percent (\$4.4 million) of the Silicon Valley Community Foundation's discretionary grants in 2019, seven percent (\$4.1 million) of its corporate-advised grants, and 11 percent (\$94 million) of its donor-advised grants.

At the onset of the pandemic in March, efforts to collect and distribute funds ramped up in order to meet increased need. The swift and massive action by local government agencies, organizations, and foundations to raise regional response funds quickly generated and disbursed more than \$94 million (via 19 major funds). Those dollars provided necessary support

for housing needs, community-based nonprofits, small businesses, childcare providers, schools, and low-income individuals throughout the region.

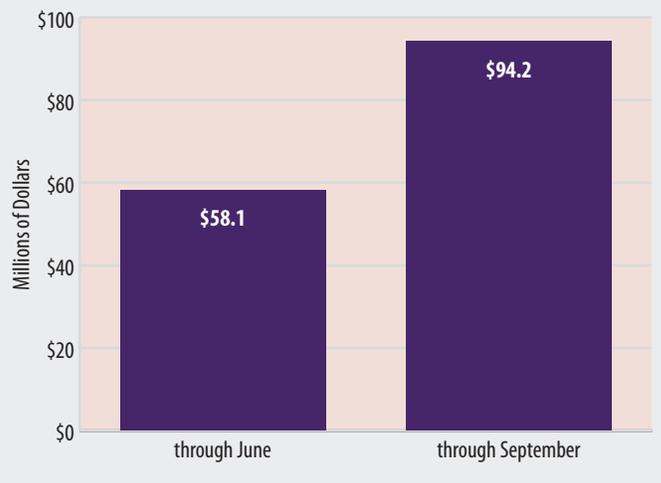
Nearly one quarter of all charitable contributions deducted on California individual tax returns came from Santa Clara or San Mateo County filers in 2018, despite the two counties only representing less than seven percent of the state's population. While increases in the standard deduction amount did affect the share of residents who itemized that year, Silicon Valley itemizers are skewed toward those with higher incomes, thus the total amount deducted remained high (at \$7.6 billion). Those Silicon Valley residents who did

**Silicon Valley's regional response funds provided rapid support to individuals, business, and nonprofit organizations throughout the region, collectively granting more than \$94 million (through 19 major Santa Clara and San Mateo County-focused funds).**

Major Silicon Valley COVID-19 regional response funds raised and granted more than \$58 million in emergency support during the first three months of the pandemic, alone; by September, the funds had directed more than \$94 million to housing needs, community-based nonprofits, small businesses, childcare providers, schools, and low-income individuals throughout the region.

### COVID-19 Regional Response Funds Granted to Local Recipients

Santa Clara & San Mateo Counties | 2020



Note: Includes 19 major Santa Clara and San Mateo County COVID-19 regional response funds.  
Data Source: Silicon Valley Regional Response Funds | Analysis: Silicon Valley Institute for Regional Studies

Among the 19 major regional response funds, \$66.1 million was raised by June, 88% of which had already been disbursed—primarily through grants but in some cases through microfinance loans.

itemize their tax returns donated to charity at a higher rate (5.4 percent of itemizers) than in the state overall (3.9 percent).

### 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.<sup>82</sup> 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.

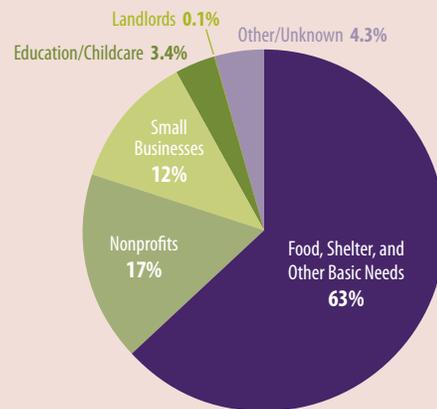
Nationally there has been a decline in the propensity to give to charities since the Great Recession, attributed to behavioral changes from economic uncertainty and changing attitudes about giving rather than a lack of wealth or income.<sup>83</sup> Additionally, recent tax reform has had a significant 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.

During the COVID-19 pandemic, hardships due to job losses, economic restrictions, and changing consumer behavior (among other factors) increased local philanthropic needs—not only for nonprofits, but for businesses and individuals as well. In a rapid response to this urgent need, local government organizations, foundations, and nonprofits came together to form and fundraise for emergency funds (often referred to as Regional Response Funds) that would provide grants and other disbursements to the community.

Of the more than \$94 million granted through Santa Clara and San Mateo County’s 19 major regional response funds, 63% went to food, shelter, and other basic needs; 17% went to nonprofits, and 12% to small businesses.

### COVID-19 Regional Response Fund Grants, by Recipient/Purpose

Santa Clara & San Mateo Counties | 2020



Note: Includes 19 major Santa Clara and San Mateo County COVID-19 regional response funds. Other includes youth art, mental health, personal protective equipment (PPE), and other unknown purposes.  
Data Source: Silicon Valley Regional Response Funds | Analysis: Silicon Valley Institute for Regional Studies

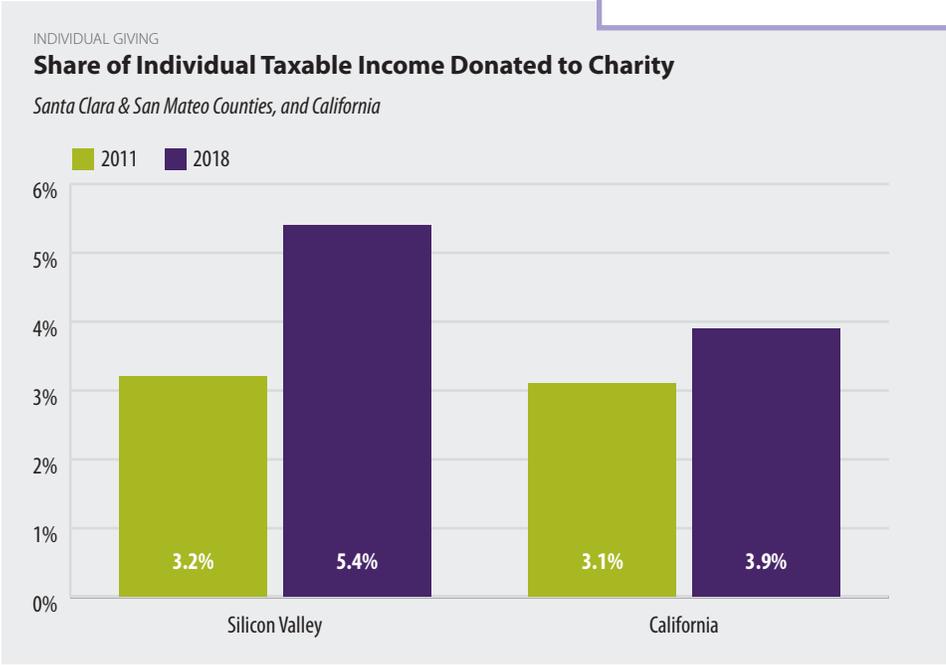
Santa Clara and San Mateo County-specific regional response funds included seed and additional funding of more than \$18 million from Silicon Valley companies and foundations such as Genentech, the Heising-Simons Foundation, Google, LinkedIn, the Morgan Family Foundation, and dozens of others, in addition to allocations from the foundations that are managing the funds themselves, local municipalities, and counties. Other companies created their own relief programs in response to the crisis, such as Facebook’s Small Business Grants Program with \$100 million in cash granted to businesses “in or near a location where Facebook operates.”<sup>84</sup>

# SOCIETY

## Philanthropy

24% of all charitable contributions deducted on California individual tax returns was from Santa Clara or San Mateo County filers in 2018.

While only a fraction of individual tax returns in Santa Clara and San Mateo Counties are itemized (43% and 24%, respectively, in 2011 and 2018), donations to charity were deducted in eight out of ten of them. Among itemizers with an adjusted gross income of \$200,000 or more—those less likely to take advantage of the increased standard deduction for 2018—88% deducted some amount of charitable contributions.

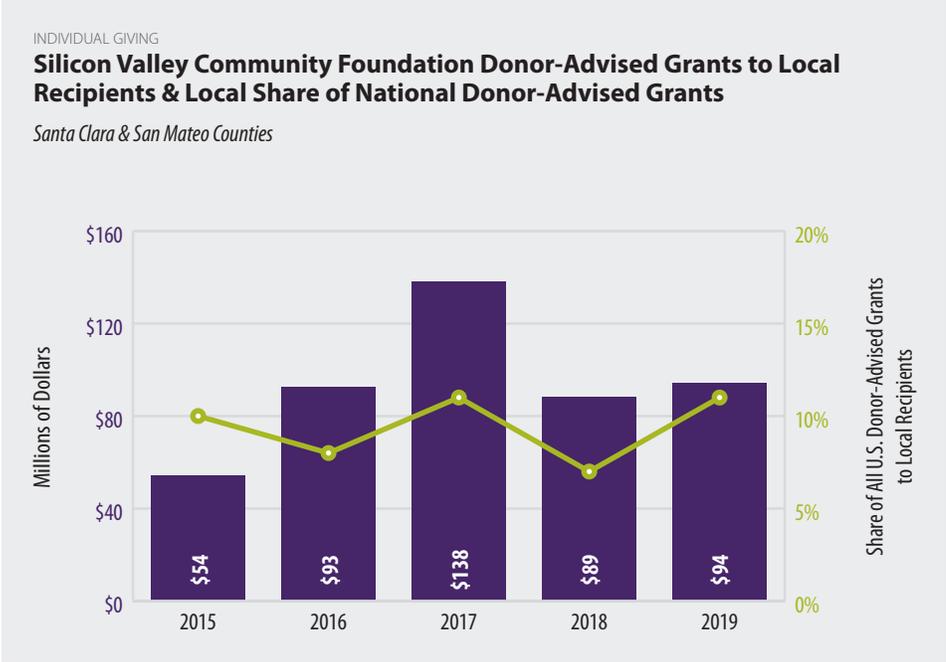


Note: Data is by tax return (includes single and joint filers); only includes returns with itemized deductions.  
Data Source: United States Internal Revenue Service | Analysis: Silicon Valley Institute for Regional Studies

Based on those who itemize deductions on their tax returns, a slightly larger share of individuals donates to charity in Silicon Valley (5.4%) than in California overall (3.9%).

The share of itemizers who deducted charitable contributions on their taxes increased between 2011 and 2018 in Silicon Valley (from 3.2% to 5.4%). Because itemizers are skewed toward those with higher incomes, the total amount deducted on those returns remained relatively steady (at \$7.61 billion in 2018, compared to \$7.01 billion in 2011). These deductions may include transfers to donor-advised funds, which may be disbursed that year or in subsequent years.

Donor-advised grants through the Silicon Valley Community Foundation to local Santa Clara or San Mateo County community-based organizations totaled \$94 million in 2019,<sup>85</sup> representing 11% of the foundation’s national donor-advised grants that year.

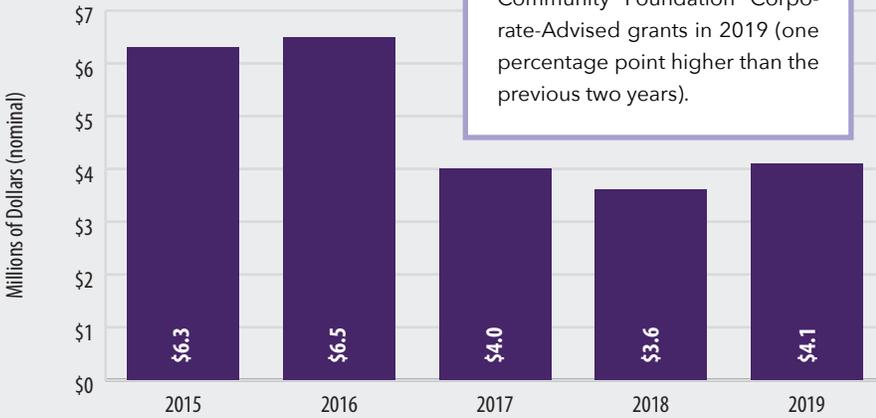


Note: Data includes all donor-advised grants through the Silicon Valley Community Foundation, with the exception of a \$550 million grant in 2016 to the Chan Zuckerberg Biohub, Inc, as well as large grants to Stanford University and Santa Clara College. Local organizations include those in Santa Clara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

As indicated by national-level data, the magnitude of donor-advised giving through national charities (founded by firms like Fidelity, Schwab, and Vanguard) may be as much as three times larger than the dollar amount granted through foundations. While national community-foundation donor-advised fund (DAF) grants totaled an estimated \$5.95 billion in 2019 (with \$40.22 billion in charitable assets), DAFs at national charities granted \$17.57 billion that year and had \$87.23 billion in charitable assets. Additionally, DAFs at single-issue charities, such as those with a religious or other specific focus area, granted \$3.85 billion (with \$14.5 billion in charitable assets) that year.<sup>86</sup>

### Silicon Valley Community Foundation Corporate-Advised Grants to Local Recipients

Santa Clara & San Mateo Counties



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

Among the top 50 corporate philanthropists alone, \$181 million was donated to local organizations in the 2019 fiscal year.<sup>89</sup>

The largest local donor among the top 50 corporate philanthropists was The Sobrato Organization—topping the corporate donor list during four out of the past five years.<sup>87</sup> In FY 2018-19, local donations totaled \$61 million, representing more than three-quarters of The Sobrato Organization’s worldwide charitable contributions that year. Likewise in 2020, more than three-quarters of its COVID-19 Rapid Response Fund dollars (which totaled \$2.43 million) went to organizations in Santa Clara and San Mateo Counties.<sup>88</sup>

The total dollar amount of corporate-advised grants to Silicon Valley organizations through the Silicon Valley Community Foundation totaled \$4.1 million in 2019. While this is a significant amount of money, it likely represents a relatively small share of total regional corporate philanthropy (as many of the larger corporate donors tend to donate directly to nonprofit organizations).

The top 15 corporate philanthropists in 2019, based on local giving (and those that chose to self-report), include those from a variety of sectors such as sports, banking, tech, real estate, and healthcare.

#### Top 15 Corporate Philanthropists

Local Giving | 2019

	Amount (millions)
<b>The Sobrato Organization</b>	\$61.00
<b>Cisco Systems</b>	\$30.00
<b>Alphabet/Google</b>	\$22.90
<b>SAP</b>	\$8.97
<b>Intel</b>	\$8.40
<b>Wells Fargo Bank</b>	\$5.40
<b>Applied Materials</b>	\$5.13
<b>Adobe</b>	\$4.90
<b>Oracle</b>	\$4.02
<b>Nvidia</b>	\$3.58
<b>Varian Medical Systems</b>	\$2.74
<b>Bank of America</b>	\$2.46
<b>San Francisco 49ers</b>	\$2.24
<b>Gilead Sciences</b>	\$1.98
<b>Silicon Valley Bank</b>	\$1.80

### Local Giving by Top 50 Corporate Philanthropists

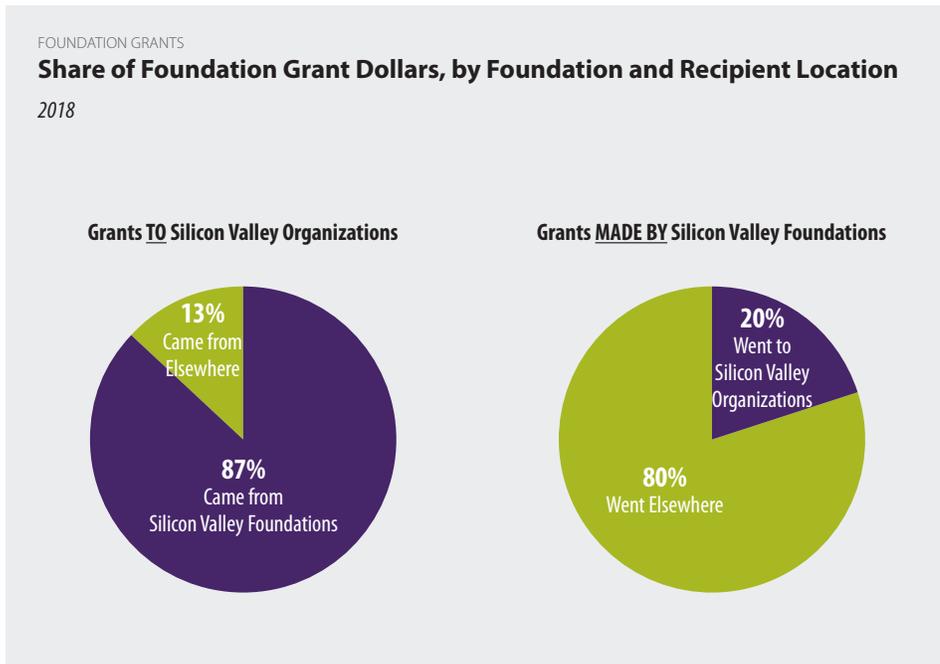
Silicon Valley



Note: Data are for the fiscal year; amounts are self-reported and only include companies that chose to participate. Kaiser Permanente declined to participate in 2019. Data Source: Silicon Valley Business Journal, Book of Lists | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley’s community-based nonprofit organizations received the majority (approximately 87%) of their foundation grants from local foundations in 2018. At the same time, those local foundations gave 80% of their grants to organizations elsewhere.

Based on available data for 2018, the total value of grants made by Santa Clara and San Mateo County foundations that year reached \$2.01 billion, 20% of which went to Silicon Valley organizations (\$394 million).<sup>92</sup>



Note: Data is by tax return (includes single and joint filers); only includes returns with itemized deductions.  
 Data Sources: Foundation Directory Online; Silicon Valley Community Foundation | Analysis: Silicon Valley Institute for Regional Studies

Of the 2018 foundation grants to local organizations, 87% came from within the region; 13% came from foundations outside of Santa Clara and San Mateo Counties.

In 2018, Silicon Valley community-based organizations received foundation grants totaling \$453 million (excluding those to colleges/universities, and hospitals). Of that total, approximately \$394 million came from foundations located in Santa Clara or San Mateo Counties.

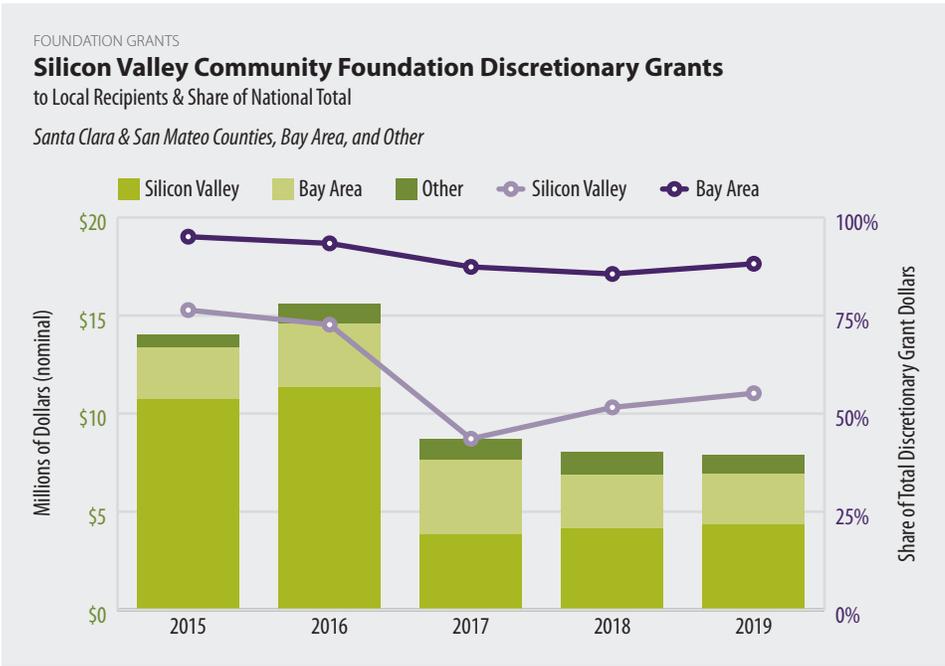
Number of Foundations & Total Assets		
	Number	Total Assets (billions)
Santa Clara County	1,167	\$44.98
San Mateo County	408	\$16.88
<b>Total</b>	<b>1,569</b>	<b>\$61.85</b>

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

An estimated minimum of \$3.1 billion would have been distributed in 2020 by Silicon Valley foundations, based on \$62 billion in total assets and the 5% minimum distribution rule.<sup>91</sup>

There are nearly 1,600 foundations located within Santa Clara and San Mateo Counties, with a total of \$62 billion in total assets. For scale, reported revenues—including earned revenue and donations—for all Silicon Valley nonprofit organizations in 2018 were \$11.7 billion.<sup>90</sup>

Of the Silicon Valley Community Foundation's discretionary grantmaking in 2019, 56% went to Silicon Valley-based organizations (and 88% to those within the Bay Area).



Discretionary grantmaking to local organizations by the Silicon Valley Community Foundation has declined since the recent high of \$11.4 million in 2016, with \$4.4 million going to local organizations in 2019.<sup>93</sup>

Note: Other includes organizations operating either in other parts of the United States, regionally, or statewide (not any one county alone).  
 Data Source: Silicon Valley Community Foundation | Analysis: Silicon Valley Institute for Regional Studies

# PLACE

## Housing

While eviction moratoria were in place, housing insecurity rose sharply during the pandemic—peaking in May at more than one-quarter of all households (>197,000 were at risk of eviction or mortgage non-payment) and one-third of all renter households. Peak-pandemic housing insecurity rates in the Bay Area were highest for those with less than a high school education (50 percent in early May), earning extremely low incomes of less than \$25,000 annually (50 percent), Black residents (48 percent), and those in which a household member lost employment income (46 percent). Nearly half (45 percent) of all Silicon Valley renters were burdened<sup>94</sup> by housing costs prior to the pandemic; that

share rose to an estimated 69 percent of renters in 2020. The high and unrelenting housing burden for Silicon Valley renters—in contrast to steady declines in burdened homeowners—is indicative of how hard it is to transition from renting to home ownership.

Of the region's homeless population (estimated at more than 11,000 people) thousands were able to utilize federal emergency assistance with the statewide *Projects Roomkey* (and subsequently *Homekey*) through county-level efforts to provide housing, food, and other services.

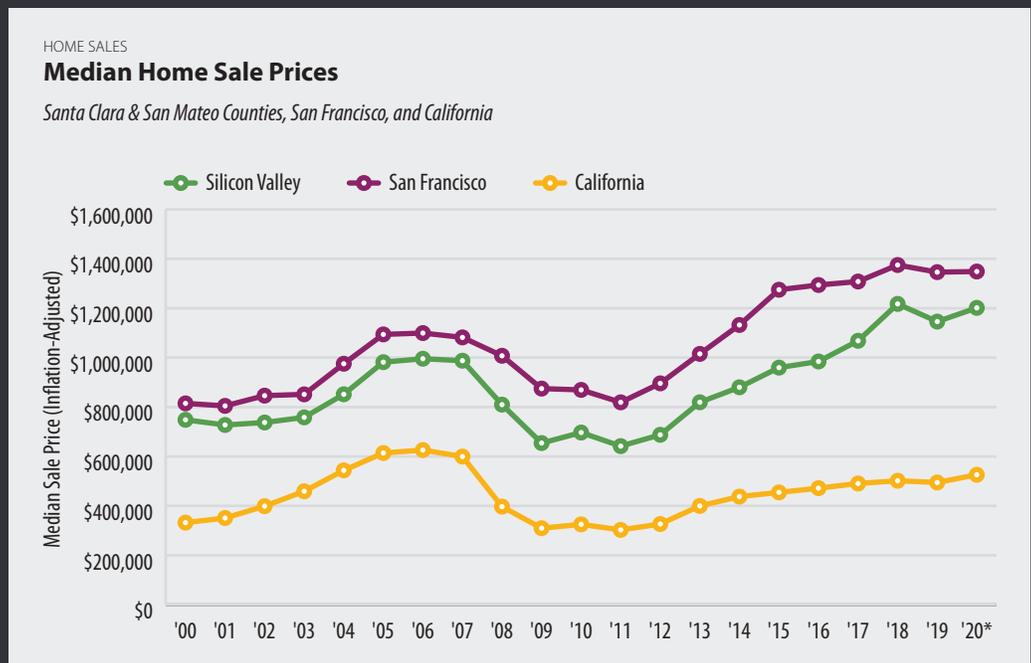
Meanwhile, home sales followed a relatively typical seasonal pattern (in contrast to the national trend) and median home

sale prices continued to rise, reaching \$1.2 million. The ability of only some to benefit from home equity is among the region's many long-term housing issues, which also include the lack of affordability for potential first-time homebuyers, crowded households (particularly among young adults), and the profound undersupply of low- and very low-income housing.

### Why is this important?

The housing market impacts a region's economy and quality of life, particularly in places where housing costs are extraordinarily high. An inadequate supply of new housing negatively affects prospects for job growth. A low for-sale inventory drives

The median sale price of a Silicon Valley home—single-family detached houses and condos combined—was \$1.20 million in 2020, compared to \$1.35 million in San Francisco, \$526,000 in California overall, and \$269,000 nationwide.



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

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 re-

gion. As a region’s attractiveness increases, average home prices and rental rates tend to increase. Higher levels of new housing and attention to increasing housing affordability are critical to the economy and quality of life in Silicon Valley.

Silicon Valley median home sale prices rose slightly in 2020 (up 5% year-over-year, after adjusting for inflation) to just over \$1.2 million; this may be indicative of increased demand, but also of the slight shift toward a greater number of higher-end homes sold (19%, compared to 16% in 2019), and a smaller share of homes in the \$600,000 to \$1 million range (26%, compared to 30% in 2019). Recent research has also shown that a variety of factors during the pandemic (economic impacts, persistent working-from-home, decreased access to amenities, and the desire to stay away from dense crowds) have led to a ‘doughnut effect’—increasing demand and home prices around the perimeter of the Bay Area, away from dense cities. The same study found that high-priced regions (like the Bay Area and New York) and lower-priced regions like Austin, Houston, and Phoenix, did not have a correlation indicating that housing demand is transferring from one to the other.<sup>95</sup> These findings are in line with longer-term Silicon Valley outmigration trends, which illustrate a larger share moving from other parts of the Bay Area than to less expensive cities out-of-state.

The pandemic did not appear to hinder homes sales in Silicon Valley or San Francisco to a large degree; median sale prices rose year-over-year, and there was a dampened but relatively normal seasonal pattern of inventory on the market (unlike the national trend).

# PLACE

## Housing

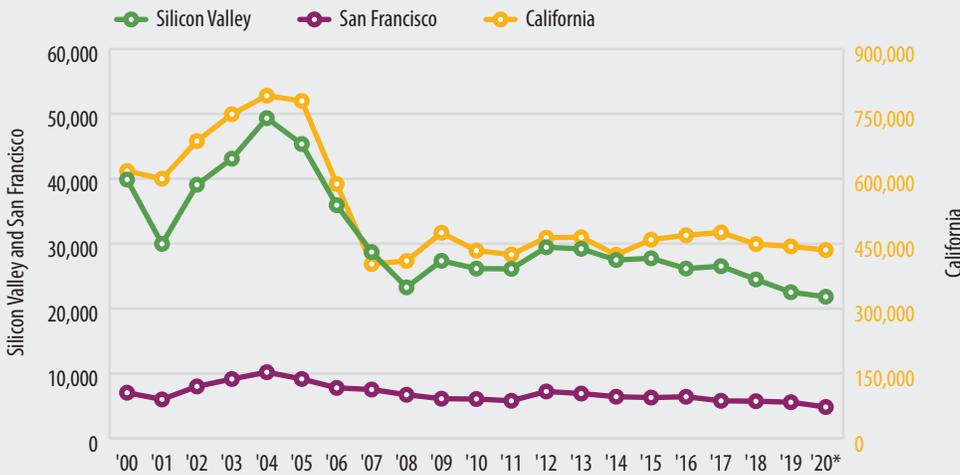
While fewer Silicon Valley homes were sold in 2020 than during any other year in the dataset (going back to 2000), the year-over-year decline (-3%) was less than may have been expected during a pandemic.

Of the estimated 4,670 residential units permitted throughout Silicon Valley in 2020, 60% were multi-family units. This compares to 42% statewide, and 97% in San Francisco.

HOME SALES

### Number of Homes Sold

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



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

### Homes Sold, by Price Range

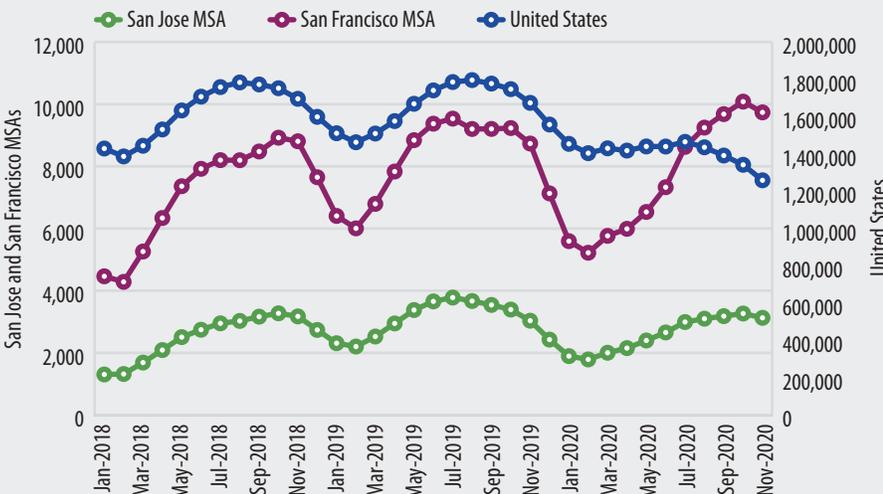


The total number of Santa Clara and San Mateo County homes sold in 2020 was just slightly below that of the prior year (down by about 700 homes), but 7,600 below that of the most recent peak in 2012. One of the factors that contributed to sustained home sales during the pandemic was the availability of extremely low interest rates—averaging 3.86% for a primary, 30-year fixed rate mortgage in 2020, with a historic-low rate of 2.66% at the end of December.<sup>96</sup>

HOME SALES

### Weekly For-Sale Inventory

San Jose and San Francisco Metropolitan Statistical Areas, and the United States

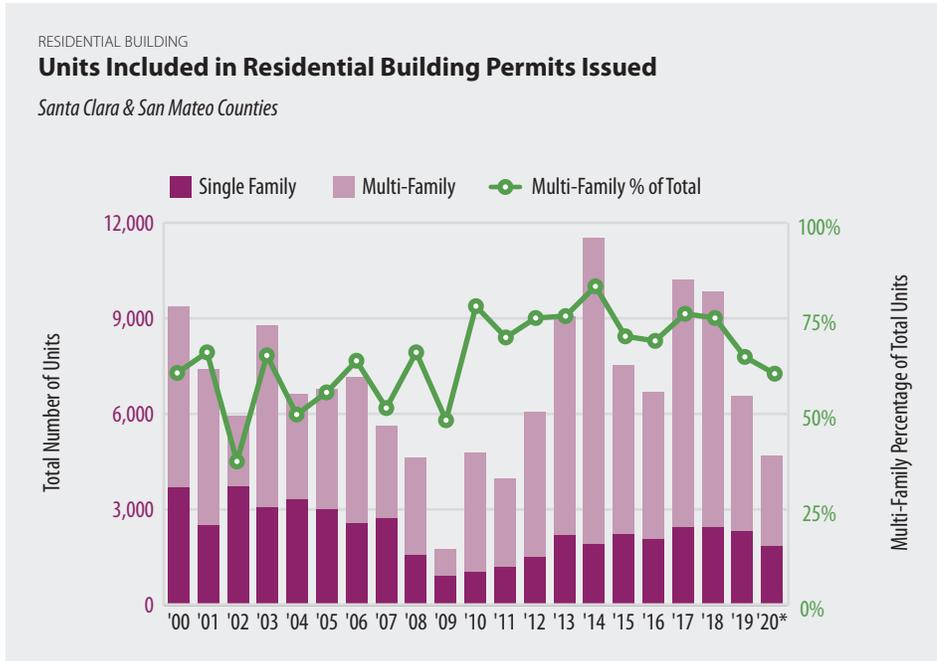


Data Source: Zillow Real Estate Research | Analysis: Silicon Valley Institute for Regional Studies

Contrary to the national trend, the number of homes listed on the market in greater Silicon Valley rose steadily throughout the pandemic—exhibiting a relatively normal seasonal trend (+93% in the San Francisco MSA and +83% in the San Jose MSA between February and October, compared to -4% nationally).

The number of Silicon Valley home listings in 2020 remained below that of the prior year until mid-November; by mid-December, there were 14% more homes on the market than during the same week in 2019.<sup>97</sup> This compares to +20% year-over-year in the San Francisco metro area, and -34% year-over-year nationwide.

703 new residential units were approved in FY 2019–20 that were specifically intended to be affordable for Very Low–Income residents—such as a family of four with two full-time income-earners at \$19 per hour each in Santa Clara County (\$21/hour in San Mateo County), or an individual living alone earning anything less than \$26 per hour in Santa Clara County (\$29 per hour in San Mateo County).

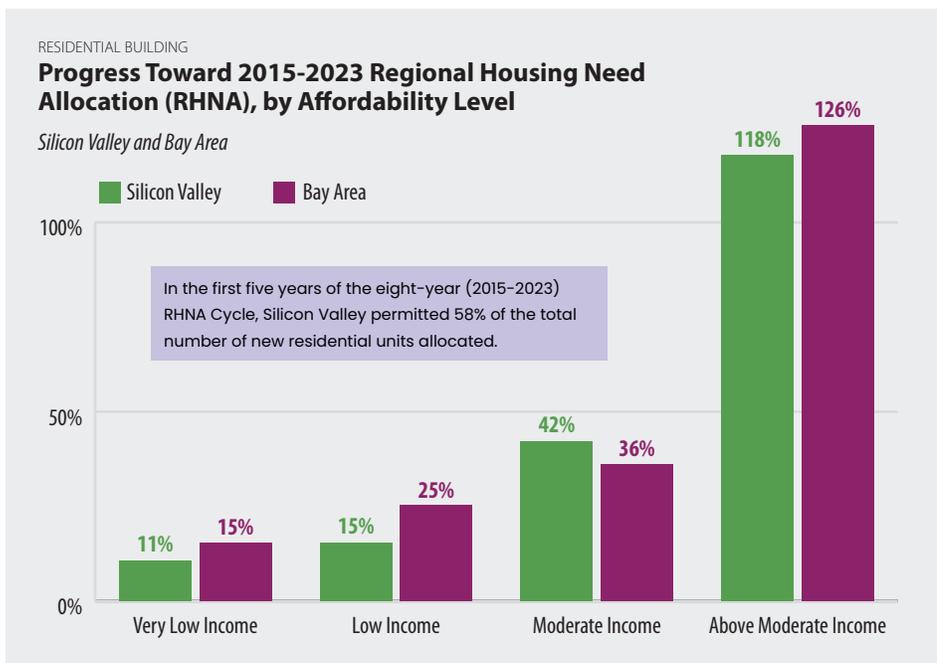


The rate of residential building in Silicon Valley slowed in 2020, with fewer than 5,000 single- and multi-family units in building permits issued; this represents a 29% decline year-over-year, and a significant (53%) decline from the 9,842 units in 2018 building permits issued.

\*2020 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

Some progress has been made in 2019 to permit the development of additional Moderate Income units to meet 2015–2023 RHNA allocations; however, in the first five years of the eight-year cycle, the region still has not met a proportional share of new Very Low-, Low-, or Moderate-Income housing.

More than three-quarters of the 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; 13% were Moderate Income, and 9% were Low- and Very-Low Income, combined. The relatively small share of low-income units permitted thus far in Silicon Valley and throughout the Bay Area will undoubtedly inform efforts currently underway to develop 2023–2031 cycle allocations, which aim to not only increase the region’s stock of low-income units but also address racial and economic segregation within and between communities.



Silicon Valley has far surpassed the 2015–2023 RHNA allocation for residential units in the Above Moderate Income category (at 118% through 2019); in contrast, only 11% of the RHNA was met for Very Low Income (0–50% of the Area Median Income), 15% for Low Income (50–80% AMI), and 42% for Moderate Income (80–120% AMI) units; the total number of Moderate Income units permitted in the RHNA cycle had the greatest year-over-year increase, more than doubling in 2019.

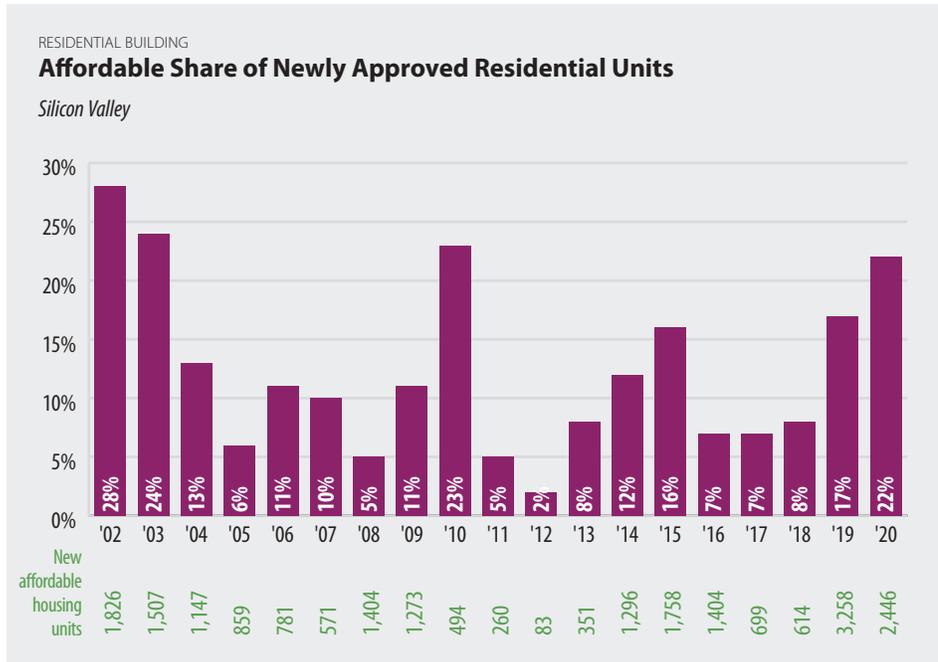
Progress Toward 2015–2023 RHNA			
	Total Number of Units Permitted	RHNA	Progress Toward RHNA
<b>Silicon Valley</b>	48,034	82,893	58%
<b>Bay Area</b>	125,839	187,990	67%

Note: Data is for RHNA reporting in 2015–2019, 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

# PLACE

## Housing

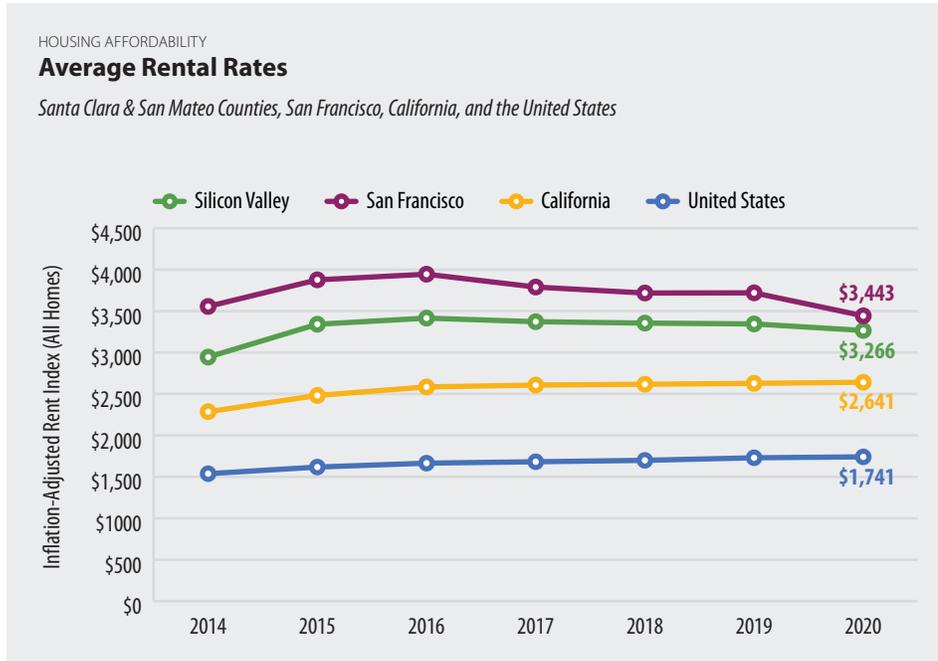
There was a larger share of affordable housing units (defined as affordable to those earning up to 80% of the area median income<sup>98</sup>) approved in FY 2019-20 (22%) than any other year since 2010.



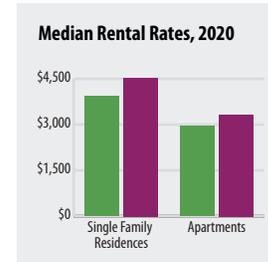
In the 2019-20 fiscal year, Silicon Valley cities and counties approved 2,446 new housing units that are affordable to residents earning less than 80% of the area median income, representing 22% of all residential units approved that year.

Of the 2,446 newly-approved affordable housing units in FY 2019-20, 703 (29%) were affordable to very-low income residents (those earning less than half of the area median income); it is likely that some of the 158 affordable housing units approved in South San Francisco may end up being affordable to very-low income residents, as well.

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



Data Source: Zillow Real Estate Research; Altos Research | Analysis: Silicon Valley Institute for Regional Studies



Rental rates remained much higher in Silicon Valley and San Francisco (\$3,300 and \$3,400 per month in 2020, respectively) than in California (\$2,600) or the United States overall (\$1,700); however, rents came down slightly in 2020, with a nearly 1% decline in Silicon Valley, and a 6% drop in San Francisco rents, after adjusting for inflation.

Median rental rates are 33% higher for single family homes in Santa Clara and San Mateo Counties than for apartments.

### Average Apartment Rental Rates

10 Most Expensive U.S. Metro Areas, Other U.S. Metro Areas, California, and the United States  
2020\*

San Francisco, CA	\$3,161
San Jose, CA	\$3,104
Ventura, CA	\$2,694
Los Angeles-Long Beach-Anaheim, CA	\$2,582
New York, NY	\$2,700
San Diego, CA	\$2,302
Boston, MA	\$2,397
Stamford, CT	\$2,145
Riverside, CA	\$2,100
North Port-Sarasota-Bradenton, FL	\$2,089
<b>California</b>	<b>\$2,264</b>
Seattle, WA	\$1,972
Denver, CO	\$1,751
<b>United States</b>	<b>\$1,739</b>
Portland, OR	\$1,660
Phoenix, AZ	\$1,489
Austin, TX	\$1,549
Las Vegas, NV	\$1,427

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

The San Francisco and San Jose metro areas ranked first and second, respectively, for apartment rental rates in 2020; these rates are more than twice as much as in Phoenix, Austin, and Las Vegas.

San Jose and San Francisco are the two most expensive major metropolitan regions in the country, based on median monthly housing costs in 2019 (and had grown more expensive by +2.4 and +3.1% year-over-year, respectively).

### Median Monthly Housing Costs

Top 10 United States Metropolitan Statistical Areas, California, and the United States

1	San Jose-Sunnyvale-Santa Clara, CA	\$2,459
2	San Francisco-Oakland-Berkeley, CA	\$2,219
3	Oxnard-Thousand Oaks-Ventura, CA	\$2,006
4	Santa Cruz-Watsonville, CA	\$1,900
5	Bridgeport-Stamford-Norwalk, CT	\$1,875
6	San Diego-Chula Vista-Carlsbad, CA	\$1,871
7	Washington-Arlington-Alexandria, DC-VA-MD-WV	\$1,862
8	Urban Honolulu, HI	\$1,847
9	Santa Rosa-Petaluma, CA	\$1,842
10	Napa, CA	\$1,835
	<b>California</b>	<b>\$1,695</b>
	<b>United States</b>	<b>\$1,112</b>

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

# PLACE

## Housing

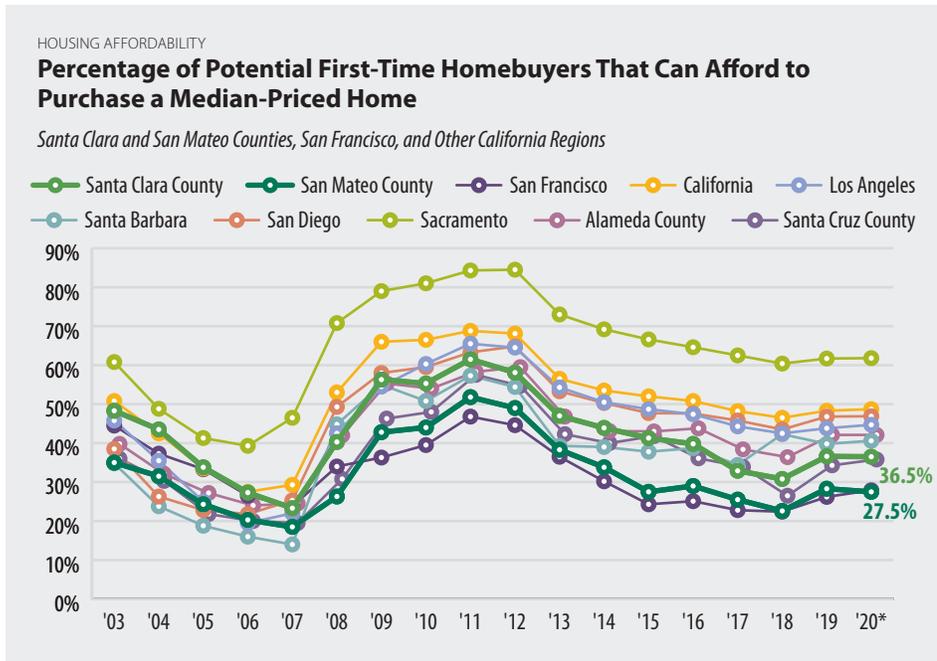
Nearly half (45%) of all Silicon Valley households who rented in 2019 were burdened by housing costs, meaning that they spent more than 30% of their gross income on their rent.

Silicon Valley renters are much more likely to be burdened<sup>99</sup> by housing costs than homeowners, with 45% spending more than 30%—and nearly a quarter (23%) severely burdened, spending more than half—of their gross income on rent. Due to pandemic-related job losses, the share of burdened renters in Santa Clara and San Mateo Counties is estimated at 69%.<sup>100</sup>



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 slightly higher (32% of Silicon Valley owners, compared to 27% across the country).

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



Fewer than 28% of potential first-time homebuyers living in San Mateo County can afford a median-priced home; this compares to 37% in Santa Clara County, 28% in San Francisco, 62% in Sacramento, 28% in San Francisco, 62% in Sacramento, and 49% 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.

The Silicon Valley Housing Affordability Index remained relatively steady into 2020 in most California regions, including Silicon Valley (where it was down by a fraction of a percent since 2019). However, because the Index is calculated based on a projected quarterly household income distribution, it may not fully account for pandemic-related income losses.

\*Includes Q1-3 | Data Source: California Association of Realtors | Analysis: Silicon Valley Institute for Regional Studies

The share of Silicon Valley homeowners (with a mortgage) that were burdened by housing costs in 2019 was eighteen percentage points lower than a decade prior, amounting to 79,900 fewer burdened households. In contrast, the number of burdened renters has increased by 18,100 over the same period.

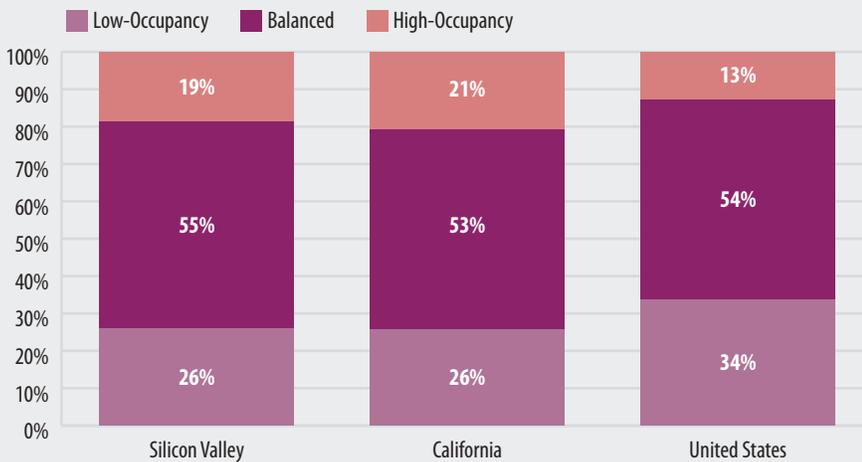
The housing burden for Silicon Valley homeowners has come down significantly since prior to the Great Recession; the burden for renters, however, has not. The latter is an illustration of how difficult it may be to transition from renting to owning a home in Silicon Valley.

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, and 7% for units occupied by a Hispanic householder.

OCCUPANCY CHARACTERISTICS

**Share of Housing Units, by Occupancy Level**

Santa Clara & San Mateo Counties, California, and the United States | 2019



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

26% of Silicon Valley residential units were characterized by low-occupancy and potential underutilization in 2019 (had more than one bedroom plus spare room per occupant/couple) and 19% were high-occupancy, potentially overcrowded with two or more people per bedroom (excluding couples); 55% of Silicon Valley’s housing units were sized appropriately, in proportion to their occupants.

In 2019, Silicon Valley had nearly 43,000 potentially-available vacant housing units (un-sold, un-rented, or otherwise reserved) containing a total of 99,700 bedrooms. The number of vacant units was up 11% year-over-year, and 26% over the prior decade.

**Available Vacant Units and Associated Number of Bedrooms**

Santa Clara & San Mateo Counties

2009		2019	
Units	Bedrooms	Units	Bedrooms
34,043	78,416	42,837	99,666

Both Silicon Valley and California overall had higher shares of high-occupancy housing units (19% and 21%, respectively in 2019) compared to the United States as a whole (13%).

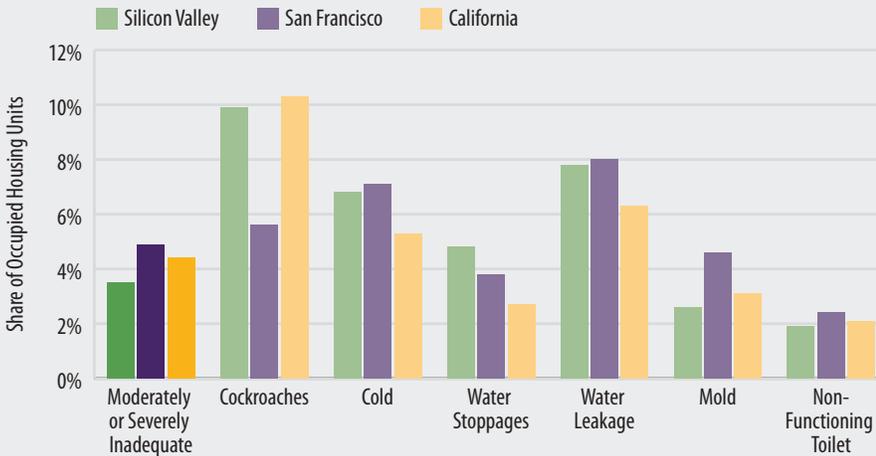
# PLACE

## Housing

OCCUPANCY CHARACTERISTICS

### Inadequate or Deficient Housing Units

San Jose-Sunnyvale-Santa Clara MSA, San Francisco-Oakland-Hayward MSA, and California | 2017/2019



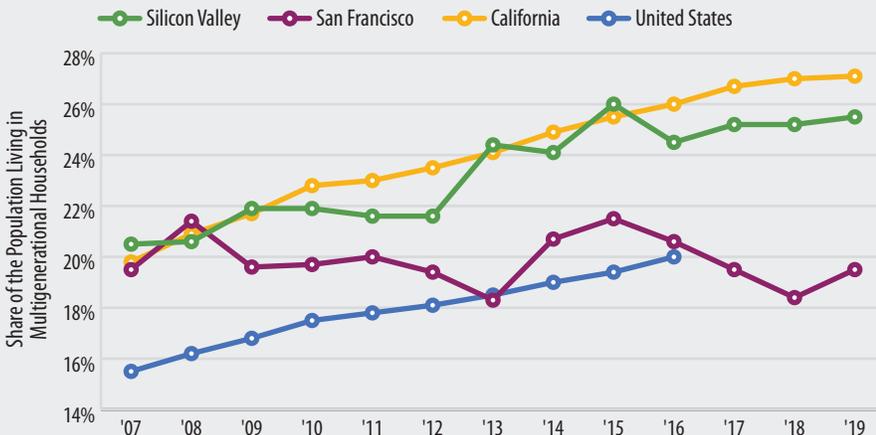
An estimated 10% of Silicon Valley housing units have signs of cockroach infestations, 7% were uncomfortably cold for 24 hours or more, 7% had a recent water stoppage, 5% had water leaks, 3% had mold, and 2% had no functioning toilet at some point over a three-month period. A smaller share of San Francisco units has these deficiencies across most of the categories, but a higher share with mold present (5%).

Note: Data is from the 2017 survey for Silicon Valley, and the 2019 survey for San Francisco and California.  
Data Source: United States Census Bureau, American Housing Survey | Analysis: Silicon Valley Institute for Regional Studies

OCCUPANCY CHARACTERISTICS

### Multigenerational Households

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



One out of four Silicon Valley residents live in multigenerational households; this share has been slowly rising over time, up by four percentage points in 2019 from a decade prior.

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).

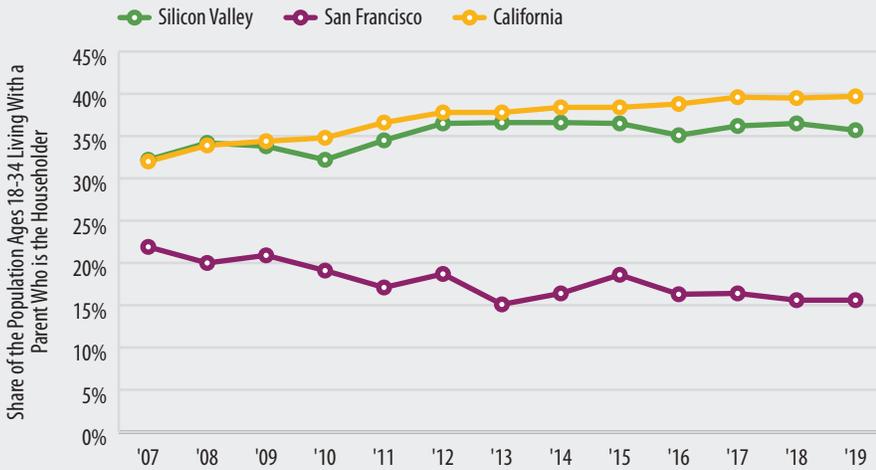
Note: Multigenerational households include all households with two or more adult generations, where an adult is defined as age 25 and over.  
Data Sources: IPUMS-USA, University of Minnesota; Pew Research Center | Analysis: Kyle Neering; Silicon Valley Institute for Regional Studies

More than a third (36%) of all Silicon Valley young adults, ages 18-34, live with their parent(s).

OCCUPANCY CHARACTERISTICS

**Young Adults Living with a Parent**

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



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

The high cost of housing in Silicon Valley and other parts of the state is a likely contributor to the number of young adults living with their parent(s). A 2020 Santa Clara County survey found that 32% of the young adult respondents in this same age category thought that car ownership was unaffordable, too.<sup>101</sup>

An increasing share of Silicon Valley’s young adults (ages 18-34) are living with a parent, reaching 36% (nearly 270,000) in 2019; this compares to 16% in San Francisco and 40% throughout the state.

**Share of the Population Living in Multifamily Households**

*Santa Clara & San Mateo Counties, and California*

	2009	2019
<b>Silicon Valley</b>	9.6%	11.7%
<b>California</b>	9.7%	10.4%

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

Approximately 374,000 Silicon Valley residents lived in multifamily households in 2019, representing a year-over-year increase of nearly 34,500 people.

# PLACE

## Housing

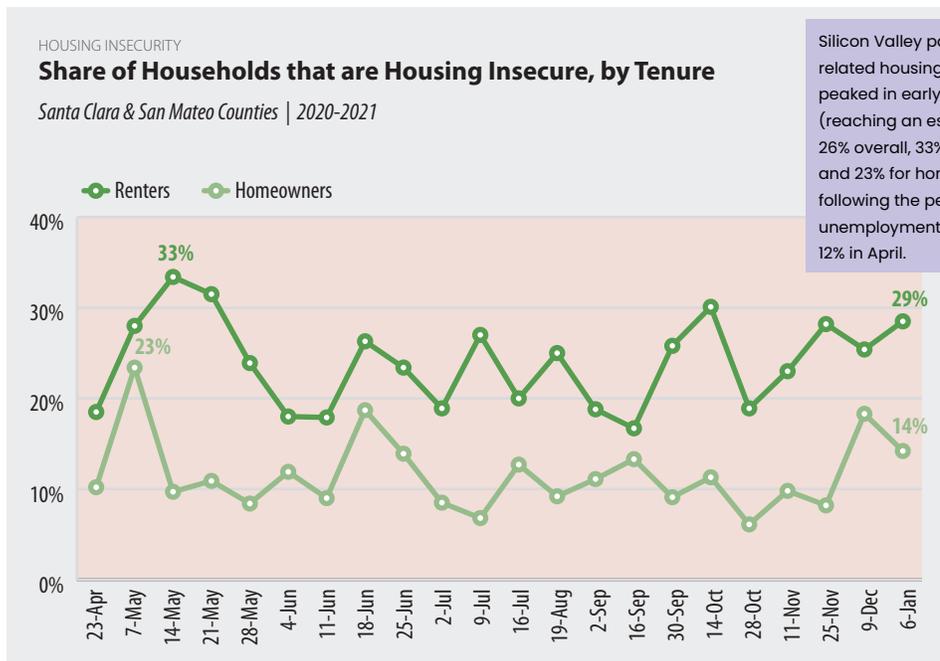
As many as four out of ten Bay Area households with children experienced housing insecurity in early May, having rent or mortgage payments that were deferred, or zero to slight confidence that they will be able to pay on time. This finding is consistent with pandemic-period food insecurity rates, which have been shown to be significantly higher in households with children (42% in April, compared to 30% of households without children).<sup>104</sup>

Nine months into the pandemic, there remained more than 626,000 Bay Area households that were housing insecure—nearly a third of which were in either Santa Clara or San Mateo Counties. This compares to an estimated 3.7 million households statewide, and 29 million across the country (or approximately 10.9 and 75.7 million people, respectively).

### Estimated Number of Households at Risk of Eviction or Mortgage Nonpayment

December 2020

<b>Silicon Valley</b>	197,050
<b>San Francisco</b>	93,230
<b>Bay Area</b>	626,210
<b>California</b>	3,714,520
<b>United States</b>	29,009,330



Data Source: U.S. Census Bureau, Household Pulse & Community Resilience Estimates | Analysis: Silicon Valley Institute for Regional Studies

### Rates of Housing Insecurity at Pandemic-Peak

San Francisco-Oakland-Berkeley MSA

by Survey Respondent Characteristics, Week of May 7, 2020

<b>Less than High School Diploma</b>	50%
<b>Household Income &lt;\$25,000</b>	50%
<b>Black</b>	48%
<b>Household Member Lost Employment Income</b>	46%
<b>Respondent Not Currently Employed</b>	43%
<b>Hispanic or Latino</b>	42%
<b>High School Diploma or GED</b>	41%
<b>Children in Household</b>	40%

Peak-pandemic housing insecurity rates in the Bay Area<sup>105</sup> were highest for those with less than a high school education (50% in early May), earning extremely low incomes of less than \$25,000 annually (50%), Black residents (48%), and those with a household member who has lost employment income (46%).

Housing insecurity rose to extreme levels during the early months of the pandemic in the Bay Area, California, and throughout the United States (peaking at 27%, 28%, and 25% of households, respectively); while the Bay Area rates came down slightly in July, California and national housing insecurity remained elevated through the summer months. These findings are in line with a national survey, indicating that as many as 32% of U.S. renters and homeowners entered the month of August having missed a rent or mortgage payment.<sup>102</sup> In response, landlords began to offer various concessions to renters—in October, 34% of rental listings on the Zillow platform offered at least one concession (up from 16% at the start of the year).<sup>103</sup>

Even at the end of 2020 when housing insecurity had declined significantly from its May peak, there remained an estimated 197,000 households (with more than half a million people) in Silicon Valley at risk of eviction or mortgage nonpayment.

While many renters were already burdened by housing costs (prior to the pandemic), an estimated 4% more Santa Clara and San Mateo County renter-households may have been affected by March through June job losses (representing approximately 14,500 units or 43,600 people).

<b>Newly Burdened Renter Households Due to Pandemic-Related Job Losses</b> <i>Santa Clara &amp; San Mateo Counties, June 2020</i>	
<30% AMI	230
30-50% AMI	850
50-80% AMI	3,000
80%+ AMI	10,400
<b>Total</b>	<b>14,500</b>

Note: AMI is area median income. Totals are rounded because they are estimates. | Data Sources: U.S. Census Bureau; Turner Center for Housing Innovation, U.C. Berkeley | Analysis: Silicon Valley Institute for Regional Studies

In San Mateo and Santa Clara Counties, an estimated 3,000 additional low-income (50–80% Area Median Income, or AMI) and 1,080 additional very-low income (<50% AMI) renter households (with may have become burdened by housing costs due to pandemic-related job losses.<sup>106</sup> While the latter represents a relatively small percent increase (approximately +1%) in households burdened, that is likely because such a large share (69%) of them were already rent-burdened pre-pandemic.

1% of all renter-occupied units in Silicon Valley faced possible eviction during the 2018-19 fiscal year, indicating that (at a minimum) 12,300 renters were housing-insecure prior to the pandemic.



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

The number of unlawful detainer evictions of Silicon Valley renters has declined steadily over the past seven years, reaching about half as many annually as there were in 2010–11. In Santa Clara County, 46% of the 2,900 unlawful detainer evictions in the 2018–19 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. This rate is up from 36% the prior year.

In the 2018–19 fiscal year, there were more than 4,100 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 89 Silicon Valley renters faced the threat of losing their home to eviction that year.

# PLACE

## Housing

Regional COVID-19 response funds provided grants directly for homeless support, including (but not limited to) \$1,000,000 of the San Mateo Credit Union Community Fund to shelter providers and core services agencies, approximately \$300,000 from the Palo Alto Community Fund, and numerous others providing support to residents for shelter and food totaling \$33 million (including \$31 million from the Silicon Valley Strong Financial Assistance Program).

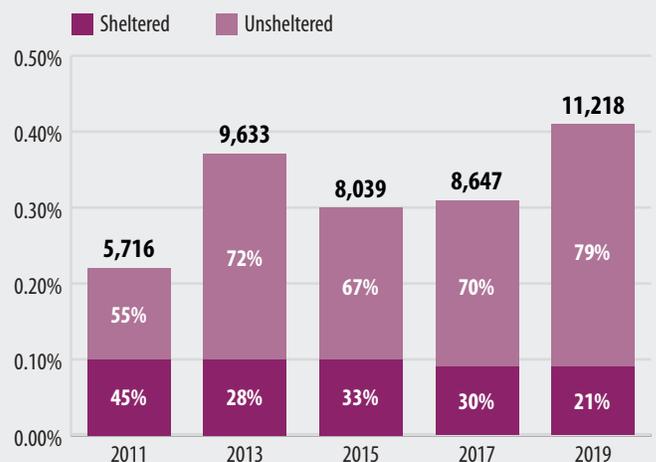
In 2019—prior to the increased efforts to shelter people experiencing homelessness during the pandemic—79% of Silicon Valley’s homeless population was unsheltered, representing the highest rate of unsheltered homeless individuals over the prior eight years (at least). In total, there were an estimated 11,218 homeless residents in Santa Clara and San Mateo Counties combined (including 267 unsheltered, unaccompanied youth under age 18<sup>111</sup>), more than half (54%) of which were in San Jose alone. In comparison, San Francisco had a homeless population of 8,011 in 2019.

During the pandemic, the region mobilized to house and provide services to unsheltered individuals. The Counties of San Mateo and Santa Clara were among the 30 entities funded through the state’s Project Roomkey, providing FEMA Public Assistance Program reimbursements for motel/hotels (and some trailers) for temporary, emergency housing, food, and other services. Through Project Roomkey, Santa Clara County was able to serve more than 1,600 households (including 560 households requiring isolation) and 2,100 clients in non-congregate shelters/hotels by mid-December, with an estimated 150,000+ hotel room nights<sup>107</sup> and 400,000 meals provided.<sup>108</sup> By April, the County of San Mateo had leased a block of 60 hotel rooms through Project Roomkey, in addition to sheltering 77 clients at other hotels and expanding capacity at local shelters.<sup>109</sup>

### HOMELESSNESS

#### Homeless Population Share and Percentage Sheltered/Unsheltered

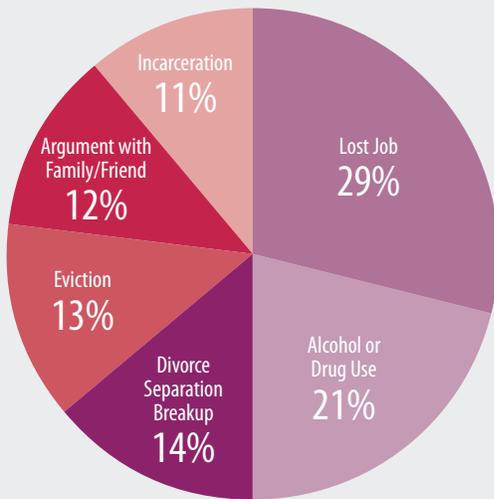
Santa Clara & San Mateo Counties



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

Through the second phase of the state-wide program, Project Homekey, the City of San José was awarded \$14.5 million to purchase a 76-unit Best Western (already in use for 74 Project Roomkey occupants) in September. In October, the County of San Mateo was awarded a total of more than \$33 million to purchase two hotels (170 units total), and the County of Santa Clara was awarded \$9.56 million for a 54-unit property with plans of expansion, serving as permanent and interim housing, and \$20.2 million award to purchase a property with 146 rooms, including kitchenettes to serve as permanent residences.<sup>110</sup>

## HOMELESSNESS

**Primary Causes of Homelessness***Santa Clara County | 2019*

More than a quarter of the homelessness in Santa Clara County was 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%); 42% was due to lost jobs or evictions, and incarceration was cited 11% of the time as a primary cause—nearly double what it was 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

# PLACE

## Transportation

The predominance of remote work, reluctance to ride public transit, and an overall decline in movement during the pandemic has had significant effects. Air travel through San Francisco and Mineta San Jose International Airports abruptly fell to 97 percent below typical levels in April.<sup>112</sup> Freeway driving was at lower levels than during any other year on record (as was traffic congestion), and ridership on public transit fell to only a fraction of pre-pandemic levels. Transportation-related injury crashes declined as well (down 43 percent year-over-year), as did DUI- and unsafe speed-crashes and associated fatalities.

In addition to pandemic-related transportation impacts, longer-term trends

persist, including sharply rising costs of basic transportation needs (more rapidly in Silicon Valley than elsewhere) and the megacommuter rate, which has more than doubled since 2011. There were 550 more miles of bike paths and other bicycle facilities added throughout the region over the past three years, and more residents are biking for their transportation needs as well as for exercise/recreation.

### Why is this important?

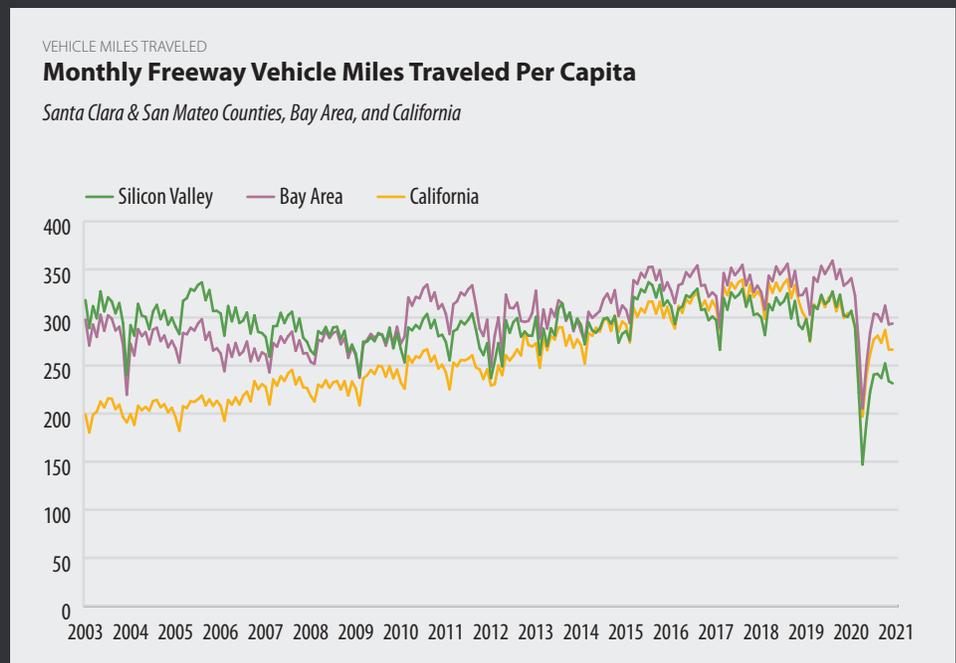
Adequate highway capacity and improved transportation options, both public and private, are important for the mobility of people and goods as the economy expands. Investments in public transporta-

tion, 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. These modes have become especially critical during the pandemic, with many people looking for alternatives to indoor exercise and public transit.

Creating affordable housing close to jobs can cut or eliminate commutes. How

Following the stay-at-home orders in mid-March, Silicon Valley freeway VMT per capita declined sharply—from 10 miles per person per day in February, to half that in April; declines were also observed through the Bay Area (-39%) and statewide (-36%) over that two-month period.

In 2019, Silicon Valley experienced approximately 10,700 transportation-related injury crashes (4,600 on state highways) including 880 bike collisions, 620 motorcycle collisions, and 150 transportation-related fatalities.



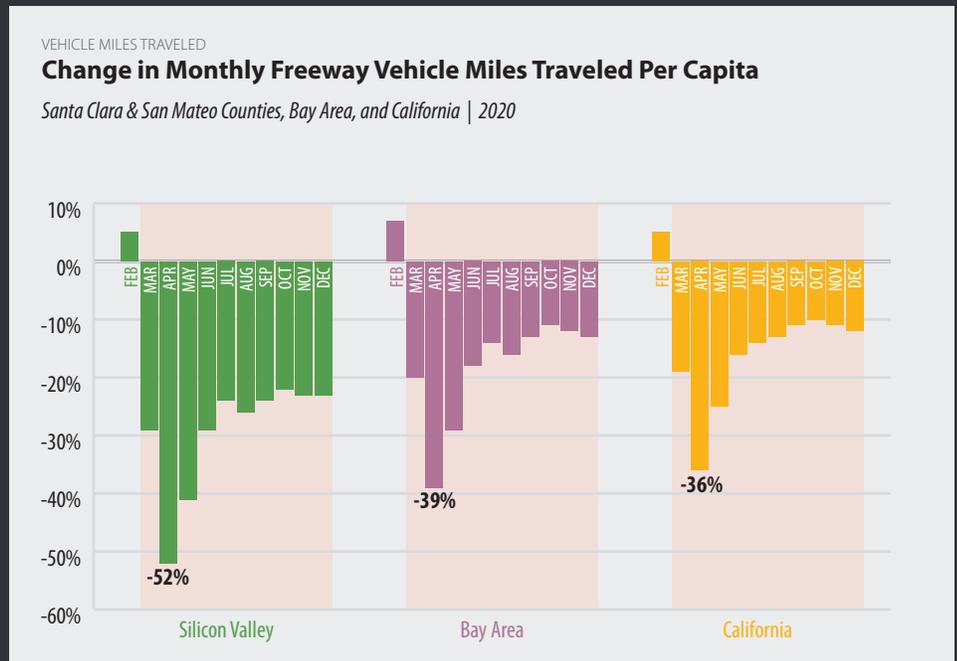
Data Source: Caltrans PeMS | Analysis: Silicon Valley Institute for Regional Studies

much residents are driving their cars, how they commute, and changes in overall commuting behavior affect congestion on the region’s roadways. Transportation-related injuries, including deaths, are significantly reduced with declines in regional vehicle miles traveled (VMT), an indicator of collision exposure. 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.

Pandemic-related transportation declines throughout the region led to lower freeway miles driven than any other time on record<sup>114</sup> in April; statewide, monthly VMT per capita was reduced to levels not observed since 2006.

Silicon Valley’s pre-pandemic VMT on all types of roadways (not just freeways) was 21 miles per person per day in 2019;<sup>113</sup> this compares to nine miles in San Francisco, and 23 miles per person in Alameda County and statewide.

Even at the tail end of 2020, freeway VMT per capita remained lower than the prior year by 23% in Silicon Valley, -13% in the Bay Area, and -12% statewide.



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

# PLACE

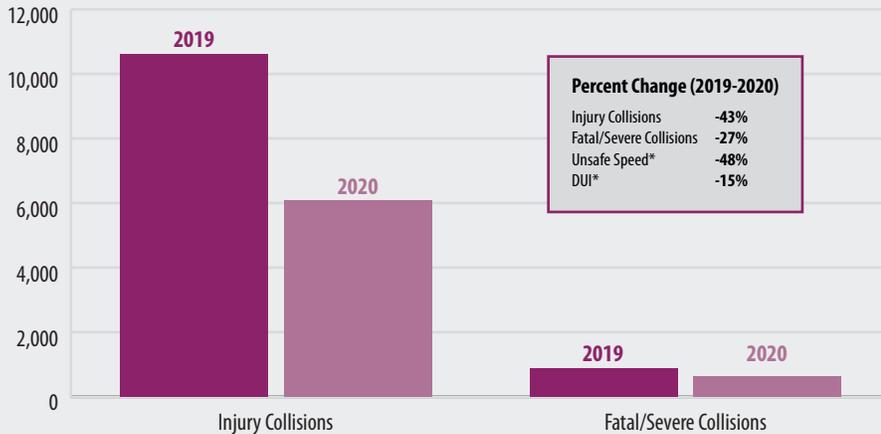
## Transportation

Work-from-home rates remained at higher levels in the Bay Area<sup>116</sup> (57%) than statewide (44%) or throughout the U.S. (38%) in late 2020.

VEHICLE MILES TRAVELED

### Transportation-Related Injury Crashes

Santa Clara & San Mateo Counties



\*Unsafe Speed and Driving Under the Influence (DUI) crash data include six Bay Area counties (Alameda, Contra Costa, Marin, Santa Clara, San Francisco, and San Mateo), using February-December totals. | Data Source: California Highway Patrol, SWITRS; Transportation Injury Mapping System (TIMS)  
Analysis: Silicon Valley Institute for Regional Studies

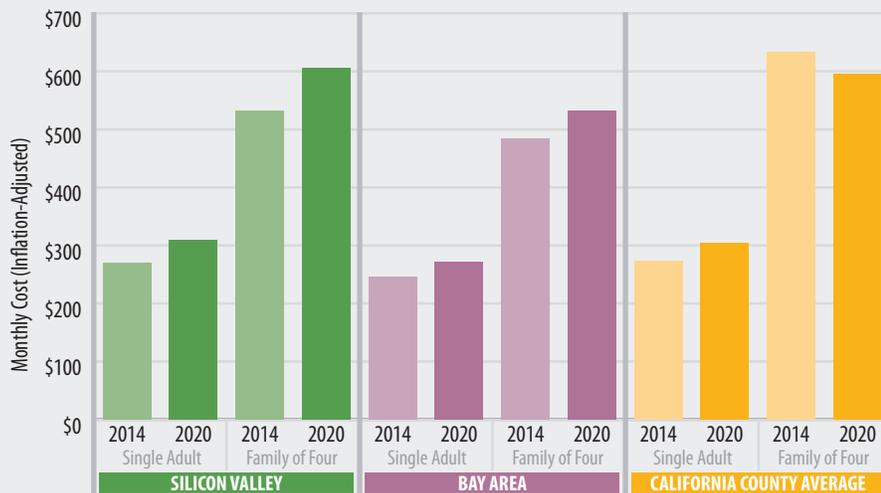
As a result of pandemic-related declines in VMT (an indicator of collision exposure), the total number of transportation-related injury crashes on Santa Clara and San Mateo County highways in 2020 was 43% below that of the prior year; fatalities were reduced by 41% (amounting to 62 fewer deaths).

Bay Area DUI (Driving Under the Influence) crashes declined by 15% in 2020; and in contrast to the sharp year-over-year increase in the number of excessive (>100 mile per hour) speeding citations issued statewide,<sup>115</sup> Bay Area Unsafe Speed Crashes declined by 48% in 2020.

TRANSPORTATION COSTS

### Average Monthly Cost of Transportation Needs per Household, by Family Type

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



Note: Family of four is based on a two-adult household.  
Data Source: Center for Women's Welfare, University of Washington | Analysis: Silicon Valley Institute for Regional Studies

The cost of basic transportation needs for a Silicon Valley family of four was \$7,300 per year in 2020—assuming a two-adult household shares one car, and only drives to work and school/daycare plus one errand per week.

### Percent Change in Inflation-Adjusted Average Cost of Transportation Needs for a Family of Four, 2014-2020

Silicon Valley	+14%
Bay Area	+10%
California County Average	-6%

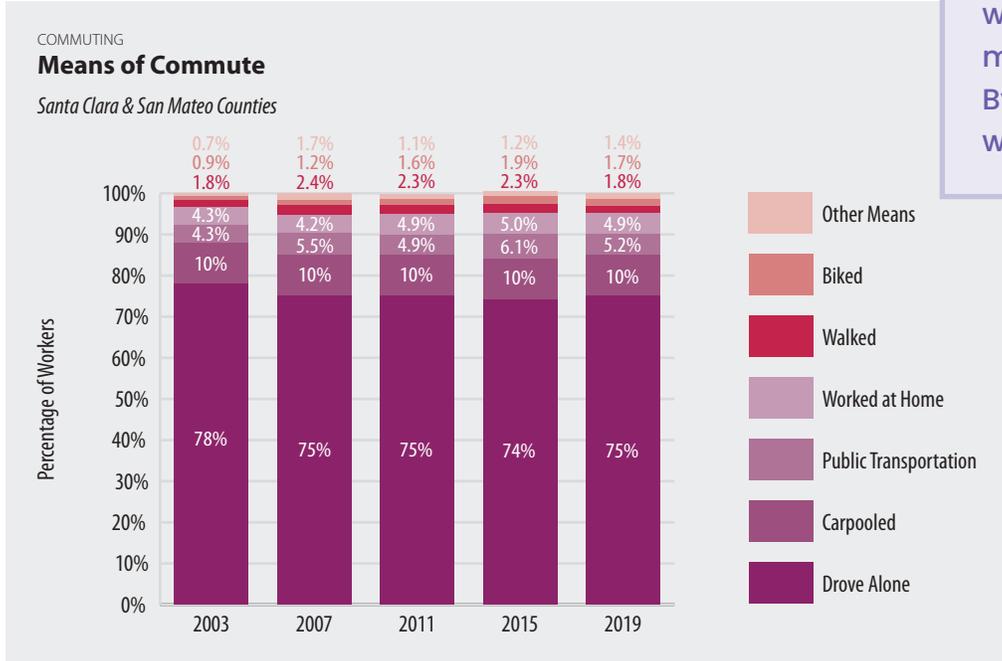
Transportation costs have increased significantly faster than the inflation rate over the past six years, and have risen more rapidly in Silicon Valley (+14% after inflation-adjustment) than in the Bay Area (+10%), while state transportation costs decreased after inflation-adjustment (by 6%).

The number of Silicon Valley commuters traveling more than three hours to/from work combined each day rose sharply in 2019 (+14% year-over-year). This rise represents an additional 13,900 megacommuters throughout the region, bringing the total up to 115,400—nearly half of the Bay Area's 275,400.

Silicon Valley commute times have increased by 17% over the past 16 years, reaching an average of 51 minutes per commuter per day in 2019—adding an additional 36 hours of driving time per commuter annually (or approximately 42 minutes per week, assuming a five-day workweek).

Public transit ridership and remote-work rates grew more rapidly between 2003 and 2019 (+38% and +29%, respectively) than the increase in Santa Clara and San Mateo County commuters (+14%); however, both were significantly affected by the pandemic. Public transit ridership was slashed to a fraction of what it was pre-pandemic, and remote work hit unprecedented levels (57% among five Bay Area counties, and 44% statewide) in October.<sup>117</sup>

In 2019, nearly 8% of Silicon Valley employees (more than 115,000 people) traveled more than three hours each day to/from work, and approximately 5% of Silicon Valley workers worked from home most days of the week. By April 2020, the latter was closer to 90%.<sup>119, 120</sup>



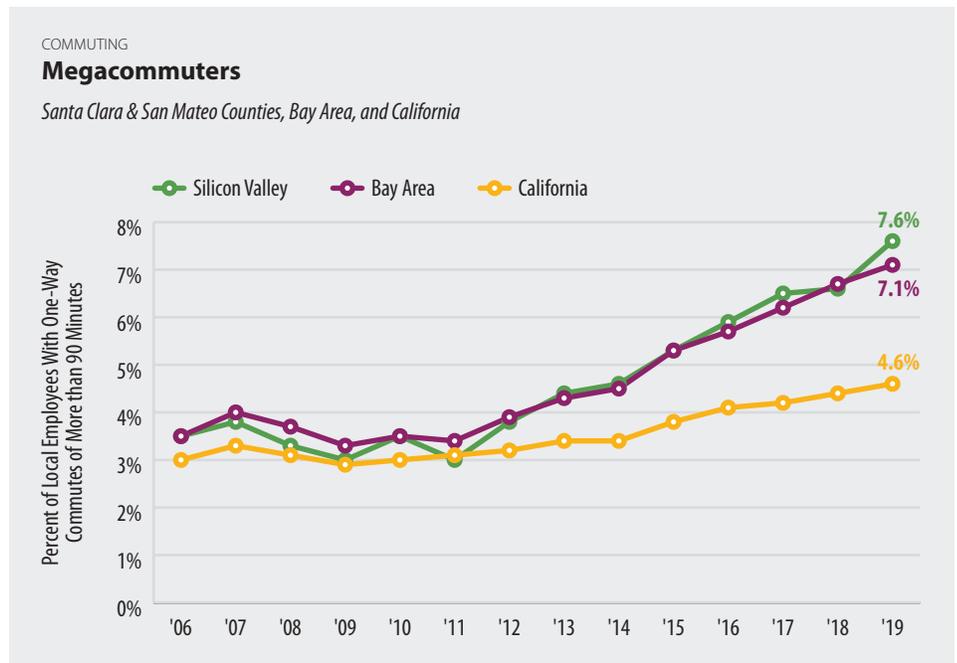
Note: Other Means includes taxicab, motorcycle, and other means not identified separately within the data distribution.  
Data Source: United States Census Bureau, American Community Survey | Analysis: Silicon Valley Institute for Regional Studies



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

Over the past 15 years, the share of Silicon Valley commuters driving alone to work has declined by three percentage points to 75%. This share is consistent with a recent local survey, which indicated that the most important factor in deciding the means of commute is total travel time. More than half of all respondents agreed, though, that they drive a car more than they would like to.<sup>118</sup>

Megacommuting rates have increased steadily in Silicon Valley, the Bay Area, and California since 2009—more than doubling in Silicon Valley over that period; however, the rate likely declined during the pandemic, as Santa Clara and San Mateo Counties disproportionately lost lower-income jobs and workers from other counties.



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

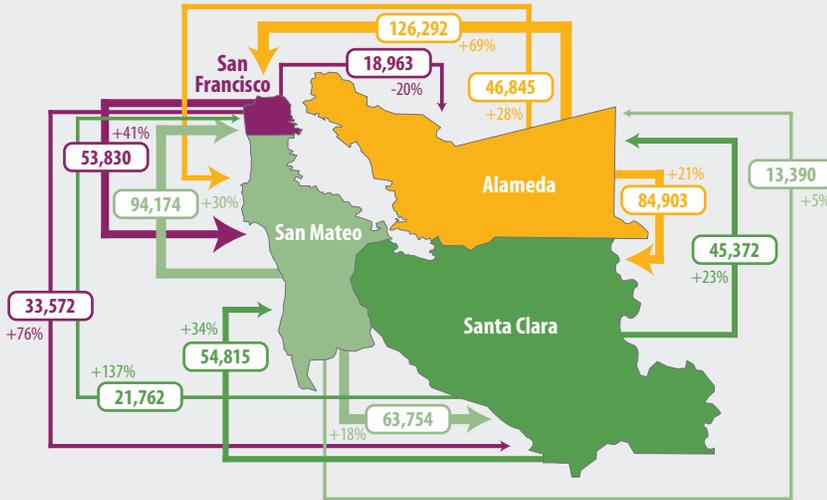
# PLACE

## Transportation

On a typical weekday, pre-pandemic, there were 175,000 Silicon Valley residents commuting to San Francisco or Alameda County, and around 219,000 commuters going the other way.

### COMMUTING

#### Number of Residents Who Commute to Another County Within the Region 2019, and 10-year percent change



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

In 2019 there were 658,000 commuters traveling to/from work each day among San Francisco, San Mateo, Santa Clara, and Alameda Counties alone; this number represents 35% more cross-county commuters than there were a decade prior. Among the commute paths, the one with the greatest 10-year increase was Santa Clara County to San Francisco (+137%, or 12,600 commuters); the next largest increase was in the exact opposite direction (+76%, or 14,500 commuters). The number of commuters traveling from Alameda County into San Francisco increased by a smaller percentage between 2009 and 2019, but represented a larger numeric increase (51,600).

While less than 2% of Silicon Valley commuters bike to work, larger shares of Santa Clara County residents bike for other reasons on an average week—including reaching any destination (7%, including to transit stops) or for exercise or recreation (9%) in 2020, pre-pandemic.<sup>121</sup>

The share of Silicon Valley bicycle commuters doubled (from 0.9% to 1.8%) between 2003 and 2019, amounting to an additional 12,300 people biking to/from work most weekdays. In 2019, there were approximately 43,000 daily bicycle commute trips utilizing the region's roadways and other bicycle facilities (+132%).

Number of Bicycle Commute Trips <i>Santa Clara &amp; San Mateo Counties</i>		
2003	2019	% Change
18,572	43,143	+132%

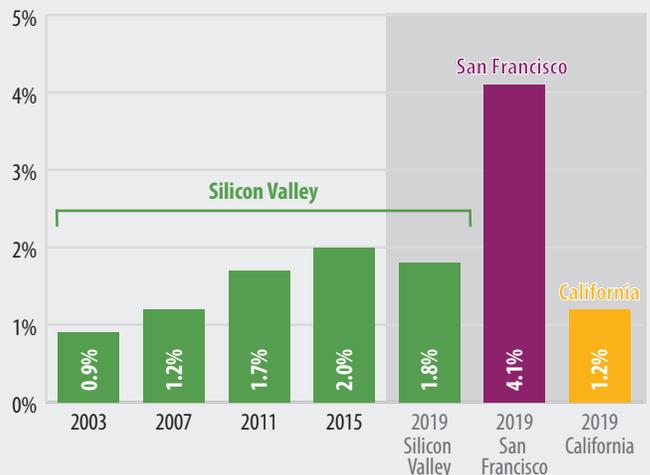
Share of Residents Who Ride a Bike <i>Santa Clara County, early 2020</i>	
To Reach Any Destination	6.7%
For Exercise or Recreation	8.5%
For Any Purpose	12.5%

The rate of bike accidents in Silicon Valley has declined by 29% over the past decade.

### BICYCLING

#### Share of Commuters Who Bike to Work

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

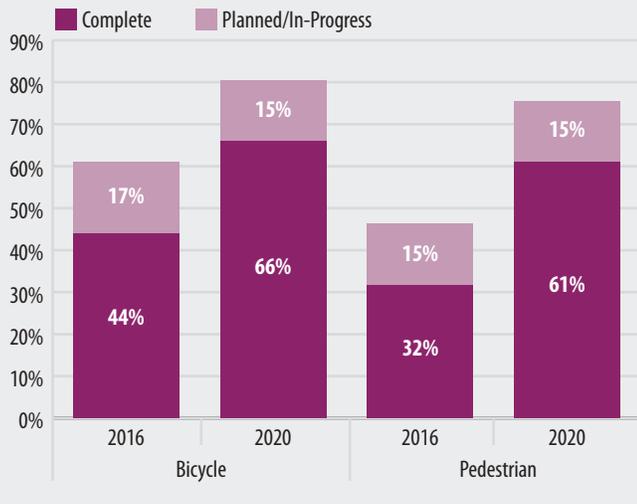


Note: Share excludes those who Work at Home.  
Data Sources: United States Census Bureau, American Community Survey; Silicon Valley Bicycle Coalition  
Analysis: Silicon Valley Institute for Regional Studies

BICYCLING

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

Silicon Valley | 2016 & 2020



More than 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.

The collective mileage of bikeways throughout Santa Clara and San Mateo Counties has increased by 39% (550 miles) over the past three years alone, reaching a total of nearly 2,000 miles of shared use paths for biking, dedicated bikeways, bike boulevards, and protected bikeways in 2020.

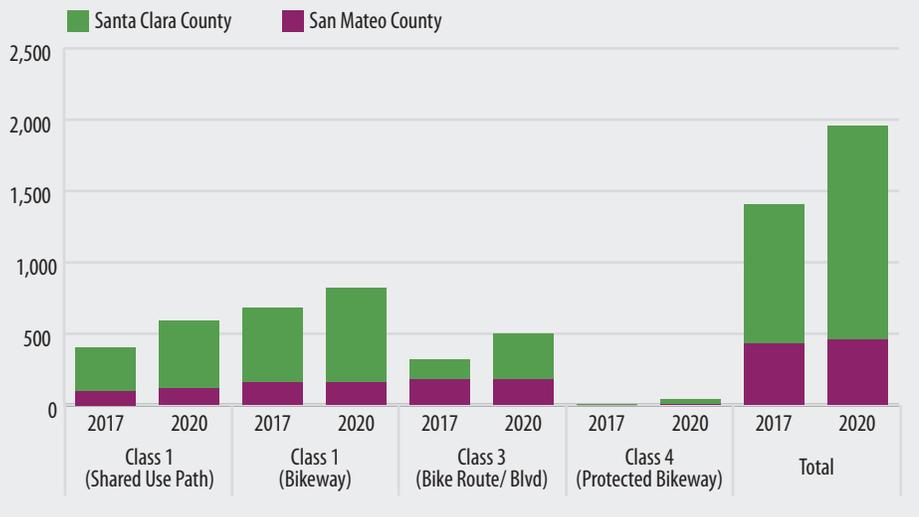
PLACE

Note: Data includes all bicycle and pedestrian master plans created since 2011.  
Data Source: Silicon Valley Cities & Counties | Analysis: Silicon Valley Institute for Regional Studies

BICYCLING

### Miles of Bicycle Facilities

Santa Clara & San Mateo Counties



Since 2016, Silicon Valley has gone from having zero protected bikeways—the “gold standard” for bicyclists’ comfort and safety—to having 41 miles of in 2020. Based on a pre-pandemic 2020 survey of Santa Clara County residents,<sup>123</sup> more than three-quarters (81%) of respondents are comfortable biking on an off-street path, and slightly more than half are comfortable biking in a buffered bike lane or lane with vertical posts (compared to only 35% in a regular bike lane with a road speed limit of 25 miles per hour, and 11% with 45 mile-per-hour speed limits).

Data Sources: Silicon Valley Cities; Metropolitan Transportation Commission; Santa Clara Valley Transportation Authority; Google Maps; Nelson\Nygaard Consulting Associates | Analysis: Silicon Valley Institute for Regional Studies; Nelson\Nygaard Consulting Associates

Overall, nearly 13% of Santa Clara County residents ride a bike on an average week for one reason or another.<sup>122</sup> Men are slightly more likely to ride a bike for exercise or recreation (10% compared to 6% of women), whereas women are much more likely to ride because the environment is “very important” to them (57% compared to 39% of men). Among other characteristics of those surveyed, those who are most likely to ride a bike for any purpose include young adults (15% of those ages 35-49), people born outside of California (11% from other parts of the U.S. and 16% of those from a foreign country), those with a bachelor’s degree or higher (14%), and White residents (14%).

# PLACE

## Transportation

Out of every 10,000 daily bicycle commuters in Silicon Valley, 407 experienced a collision in 2019 that resulted in some sort of injury.

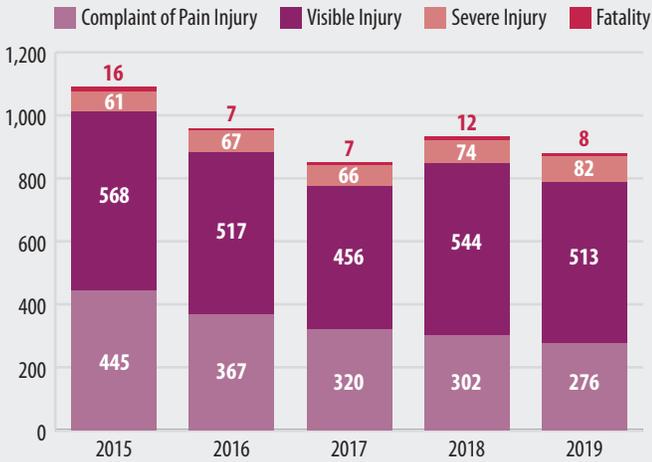
Silicon Valley had 879 bicycle collisions in 2019 resulting in either injury or death (53 fewer than the prior year); eight were fatalities, and another 82 were severe injuries.

During the pandemic period of mid-March through the last week of December, 2020, the number of bicycle collisions among six Bay Area counties was down by 35% year-over-year (and -43% for fatality/severe-injury collisions).

### BICYCLING

#### Bicycle Collisions, by Severity

Santa Clara & San Mateo Counties



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

#### Annual Bicycle Collisions per 10,000 Daily Commuters

	2009	2019	% Change
San Mateo County	611	455	-26%
Santa Clara County	565	392	-31%
<b>Total</b>	574	407	-29%

#### Bicycle Collision During the COVID-19 Pandemic

Six Bay Area Counties, \* Mar. 16 - Jan. 3

	2019	2020	% Change
With Fatality or Severe Injury	23	13	-43%
<b>Total Collisions</b>	139	90	-35%

\*Includes Alameda, Contra Costa, Marin, Santa Clara, San Francisco, and San Mateo Counties.

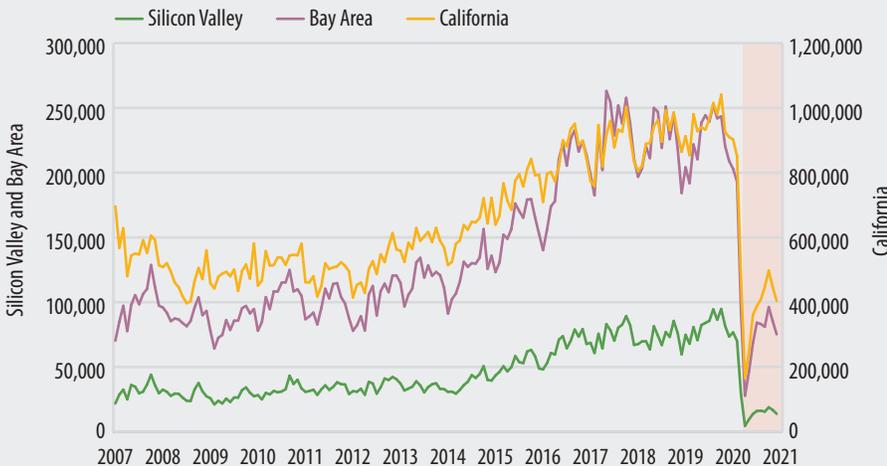
Following the mid-March stay-at-home orders, significantly fewer traffic delays were experienced throughout the region and statewide. Daily vehicle hours of delay declined by 94% between February and April in Silicon Valley, -86% throughout the Bay Area, and -81% in California overall.

### TRAFFIC CONGESTION

#### Daily Vehicle Hours of Delay Due To Congestion

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

Regional traffic delays were relatively constant year after year until 2014, when congestion began to rise considerably throughout the region and state.



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

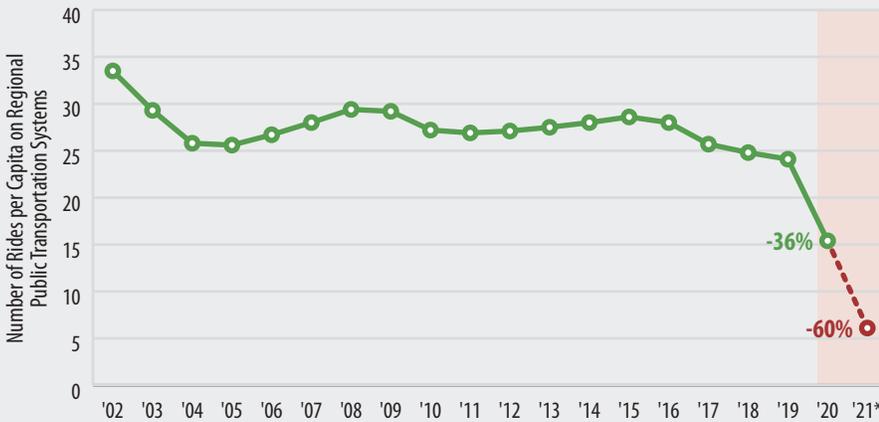
The sudden rise in remote-work during the pandemic, and associated decline in commuting, led to daily hours of traffic delay lower than any other year on record (hitting a low point in April) in Silicon Valley. Even at the end of 2020, low-levels of traffic congestion throughout the Bay Area overall were matched only by a brief, three-month period during the Great Recession in 2009 and a few sporadic months over prior years.

Prior to pandemic-related declines in traffic congestion, vehicle hours wasted due to traffic in Silicon Valley and the Bay Area had tripled within a decade (2009-2019).

### Per Capita Transit Use

Santa Clara & San Mateo Counties

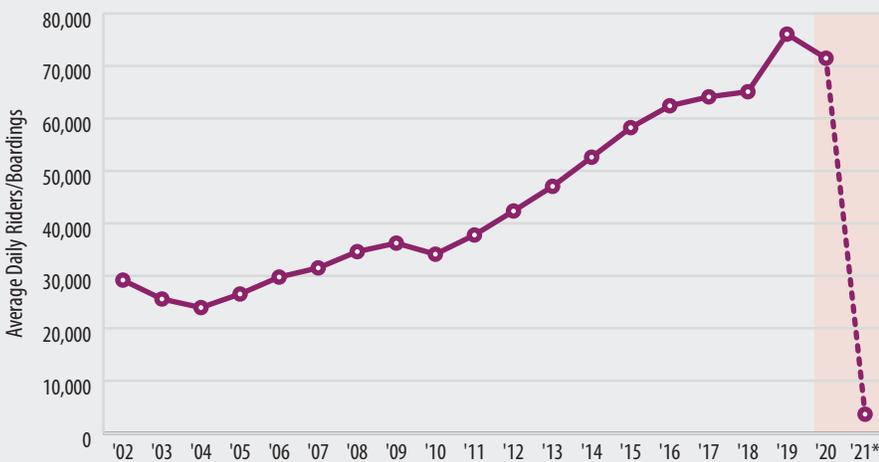
Silicon Valley public transit use per capita declined by 36% in the 2019-20 fiscal year to 15.4 rides per capita—a rate lower than any other year in the dataset (19+ years). Based on early FY 2020-21 data (3-4 months), estimated per capita ridership will fall by another 60%.



\*estimated. | 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 Sources: Altamont Corridor Express; Caltrain; SamTrans; Santa Clara Valley Transportation Authority; California Department of Finance | Analysis: Silicon Valley Institute for Regional Studies

Pandemic-related declines in transit use have been experienced by all transit agencies, with FY 2019-20 total ridership (through June 2020) down by 21% on VTA, -29% on BART, -18% on SamTrans, -73% on Caltrain, and -73% on ACE. Caltrain average weekday ridership for the first four months of the 2020-21 fiscal year was one-twentieth of what it was the prior year, resulting in a year-to-date revenue decline of -67% (nearly \$25 million).<sup>126</sup>

### Caltrain Ridership



\*through October. | Note: Data are in fiscal years. | Data Sources: Bay Area Rapid Transit (BART); Caltrain | Analysis: Silicon Valley Institute for Regional Studies

Public transit ridership has dropped to only a fraction of pre-pandemic levels; 2020-21 fiscal year estimates suggest ridership 74% below that of pre-pandemic (FY 2018-19) levels regionally, amounting to approximately 49 million fewer annual rides.

PLACE

SamTrans ridership experienced a low in April 2020, but some subsequent rebound occurred with a doubling of that monthly total by October.<sup>125</sup> ACE ridership declined to such an extent that the number of daily roundtrips between San Jose and Stockton was reduced from four to two.

Percent Change in Average Weekday Ridership <i>Caltrain and BART</i>		
	Pre-Pandemic to Low Point (January - April 2020)	Year-Over-Year October 2020
<b>Caltrain</b>	-98%	-94%
<b>BART</b>	-94%	-88%

Average weekday ridership on Caltrain—which reached more than 76,000 in FY 2018-19—dropped down to only 3,600 in the first four months of FY 2020-21. The pandemic-low for Caltrain ridership, as with those of other transit agencies, took place in April 2020 (at 98% below January levels); likewise, BART average weekly boardings were down by 94% in April 2020 from January levels. Even by October, Caltrain and BART average weekly ridership levels remained 94% and 88%, respectively, below that of the prior year.

In 2020, Silicon Valley commuters lost 25,000 hours to traffic congestion every day—69% fewer than during the previous year. With this drastic decline, the annual loss in regional productivity due to traffic delays<sup>124</sup> may have been lessened by as much as \$2.4 billion year-over-year (from as much as \$3.4 billion lost in 2019).

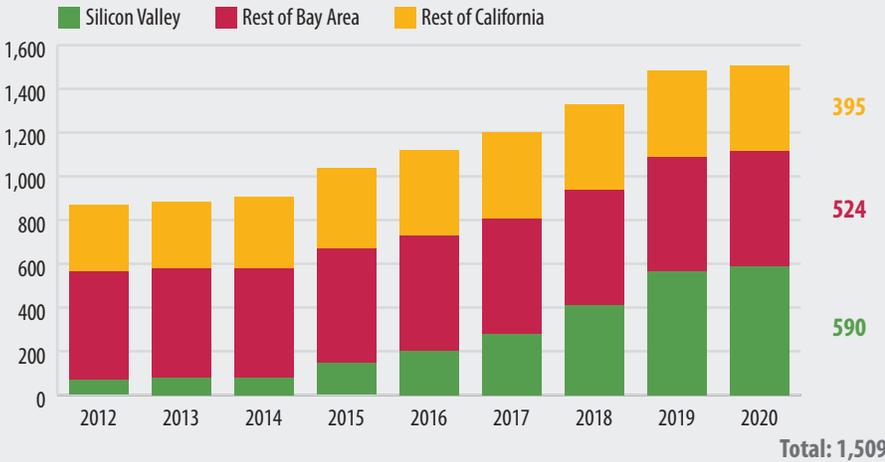
# PLACE

## Transportation

### SHUTTLES

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

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



Of the more than 1,500 shuttle-type vehicles registered in California (as of early 2020), 74% are registered within the 9-county Bay Area (39% in Silicon Valley).

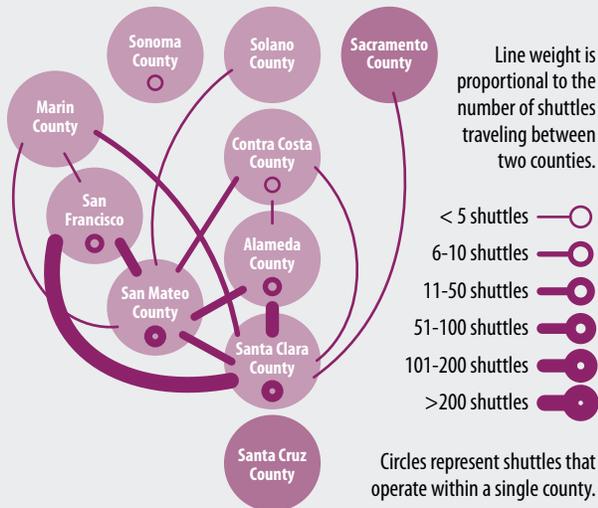
As of early 2020, there were a total of 1,509 vehicle registrations throughout the state of vehicles made by common shuttle bus manufacturers (an increase of 350 since late 2018). While not all of these vehicles are necessarily privately-operated commuter shuttles, the number of registrations by model year illustrates the growth of this transportation mode.

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

### SHUTTLES

#### Weekday Shuttle Trips, by Path

Bay Area | 2012-2014



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

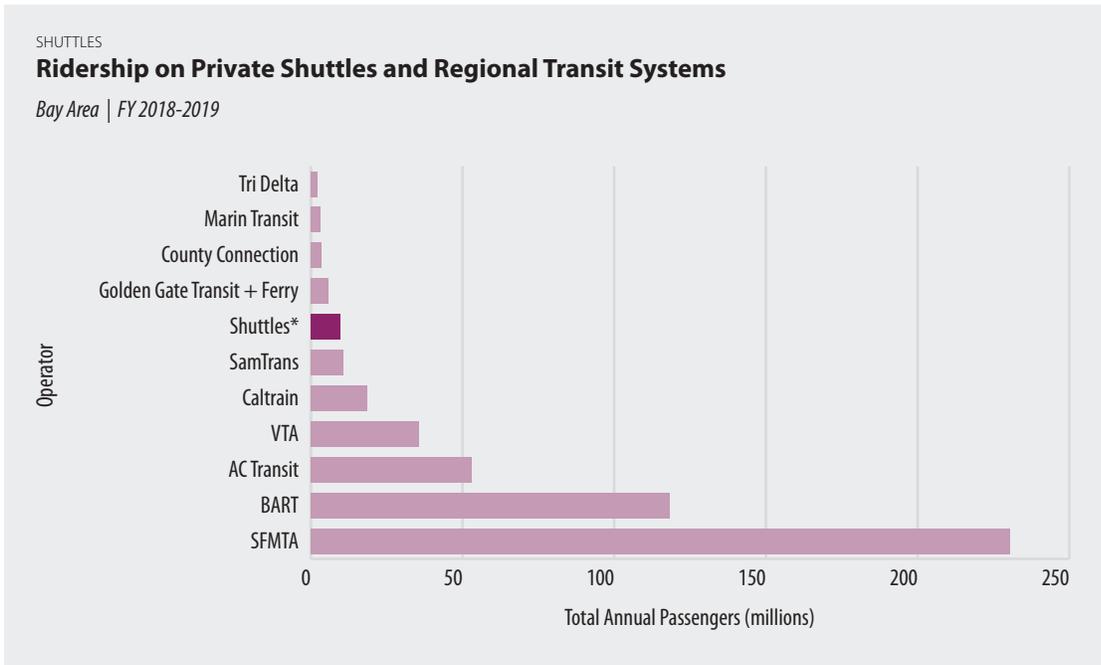
#### Total Number of Shuttle Trips on Weekdays

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

Based on data collected between 2012 and 2014, private shuttles made an average of nearly 1,100 trips within Silicon Valley on a daily basis (with nearly 500 trips between Santa Clara County and San Francisco alone). Given the precipitous rise in the total number of shuttle-type buses registered in Silicon Valley since then, the number of trips likely rose correspondingly prior to any pandemic-related declines.

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



\*Shuttle ridership is for 2012-2014. | Data Sources: Bay Area Transit Agencies; Bay Area Council and Metropolitan Transportation Commission 2016 Bay Area Shuttle Census  
 Analysis: Bay Area Council and Metropolitan Transportation Commission

# PLACE

## Land Use

The majority of Silicon Valley cities are approving higher residential density, with the regional average over the last two fiscal years significantly higher than any other on record. More accessory dwelling units (ADUs) are being approved as well, with a 53 percent increase year-over-year. The region's cities and counties approved nearly 7,000 housing units near transit. While this number is relatively high compared to the recent past, it does represent a decline in total units from the prior year.

A large number of non-residential developments entered the pipeline last fiscal year, despite the pandemic. A total of 13.8 million square feet was approved—an amount that rivals the all-time high of 17.5

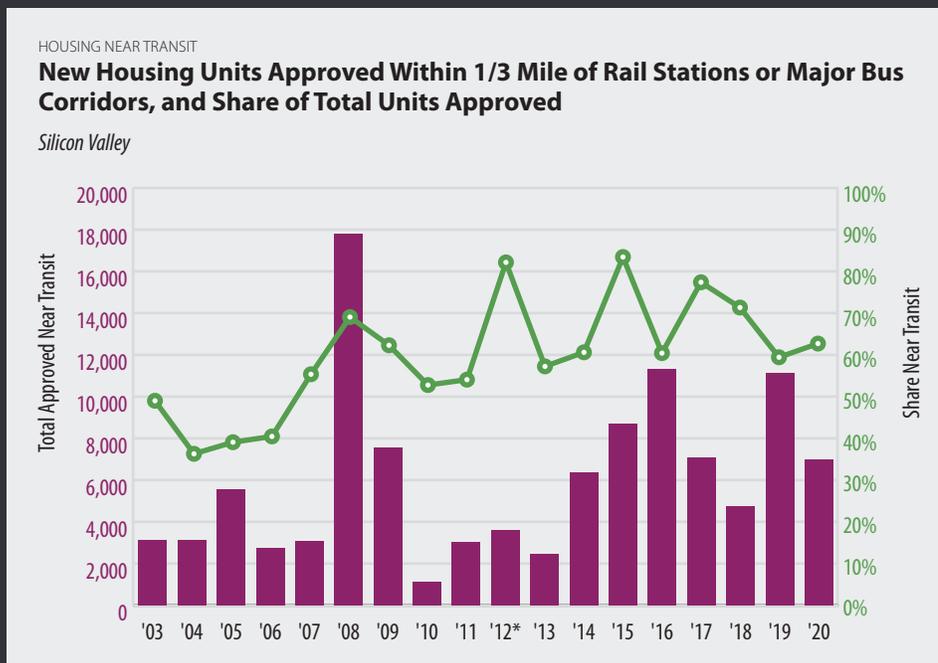
million square feet under construction in the first quarter for 2020. Eighty-nine percent of the 13.8 million square feet was in seven cities alone, and 66 percent was for commercial space, including restaurants and retail establishments.

More than 100 new Silicon Valley hotels remain in various stages of planning; approximately 14 percent of them received planning approvals in FY 2019-20.

### 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.



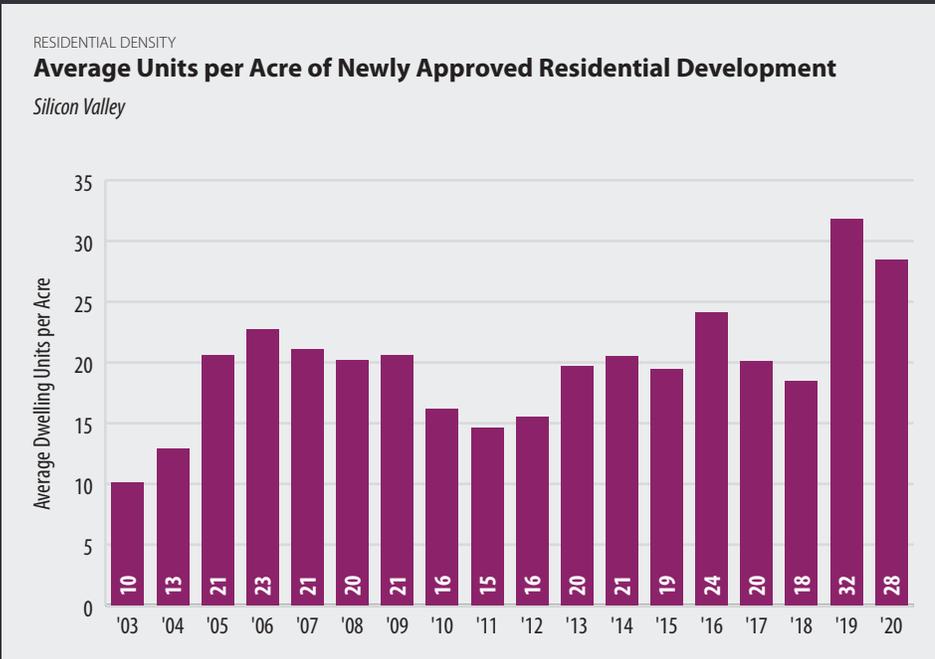
\*Beginning in 2012, the definition of transit oriented development has been changed from 1/4 mile to 1/3 mile. | Note: Beginning in 2008, the Land Use Survey expanded its geographic definition of Silicon Valley to include cities northward along the U.S. 101 corridor (Brisbane, Burlingame, Millbrae, San Bruno and South San Francisco). | Data Source: City Planning and Housing Departments of Silicon Valley | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley housing units within walking distance to public transit represented 63% of all newly-approved residential units in FY 2019-20.

The number of approved housing units near transit in FY 2019-20 (6,958) was around two-thirds of the number approved during the prior fiscal year.

The average density of newly-approved residential development during the last two fiscal years was significantly higher than any for other year on record (spanning more than two decades), although FY 2019-20 (28 units per acre) was slightly lower than the prior year (32 units per acre).

In the 2019–20 fiscal year, nearly two-thirds of Silicon Valley cities/counties had average planned residential development densities in the medium to high range (more than ten units per acre); nine cities had average densities in the 40- to 100-units/acre range, and one city (South San Francisco) had an average density of 140 units/acre for newly-approved units.



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). Beginning in 2020, the residential density calculation included accessory dwelling units (ADUs) that were issued a building permit in lieu of a planning approval. | Data Source: City Planning and Housing Departments of Silicon Valley | Analysis: Silicon Valley Institute for Regional Studies

Pockets of high-density residential development approvals over the last fiscal year were spread throughout the region; among them were an 800-unit/5.9 acre mixed-use project (with public open space) in South San Francisco at the former Public Utilities Commission site, the 427-unit mixed-use Mills Park Center Development in San Bruno (with 65 affordable residential units, and nearly 8,000 square feet of ground-floor commercial space), the 265-unit Adrian Court mixed-use development in Burlingame (with 38 low-income units, ground-floor commercial/office space, and public parking), and more than 2,000 of the residential units included in Santa Clara’s high-density, transit-oriented Tasman East Specific Plan (which may ultimately include as many as 4,500 residential units and supporting retail services spread among various development projects in an industrial neighborhood).

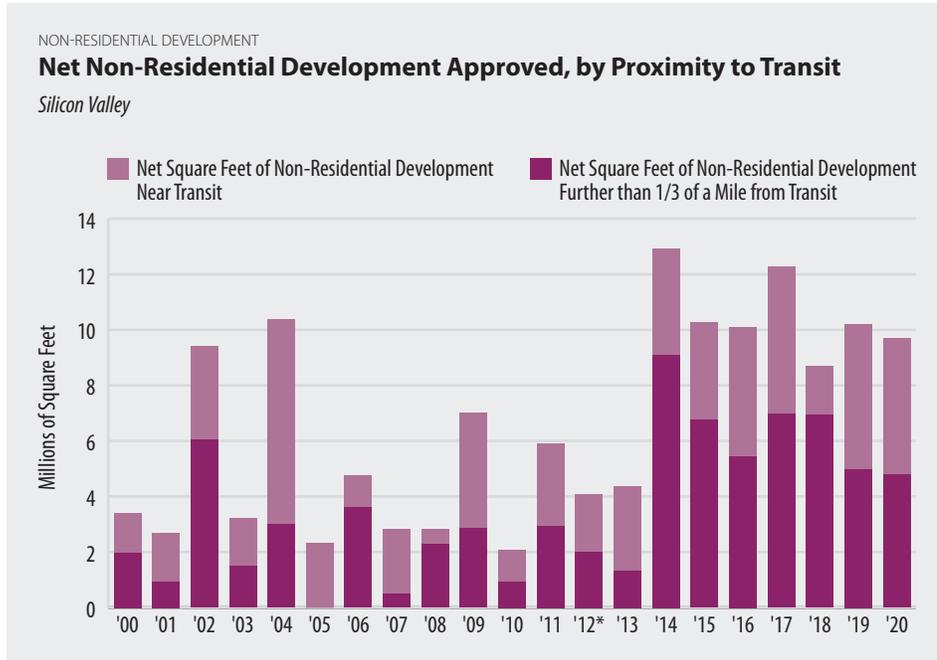
1,300 accessory dwelling units (ADUs) were issued a planning approval (or building permit in lieu) in FY 2019–20 by Silicon Valley cities/counties—a total 53% higher than the prior year.

# PLACE

## Land Use

More net-new non-residential development was approved over the past seven years (74 million square feet) than over the previous fourteen years combined.

The pace of Silicon Valley's non-residential development approvals remained brisk in FY 2019–20, despite potential slowdowns due to the shelter-in-place order in March 2020 and the subsequent months of the early-pandemic period. A total of 13.8 million square feet of non-residential space was approved through the course of the fiscal year, as well as 4.1 million square feet of space for demolition (for a net of +9.7 million square feet).



\*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). 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

Within the seven Silicon Valley cities with the most non-residential development approved in FY 2019–20, major projects included the Fremont Convention Center (among other, primarily office and industrial developments within the city), Jay Paul's 19-story, 937,000 square-foot Class A Office development at 200 Park Avenue in downtown San Jose, a 40+ acre site slated for two new five-story office/R&D buildings and a four-level parking structure (totaling more than one million square feet) in Sunnyvale, and a new 191-room hotel (Cambria Hotel) in Santa Clara that was both approved and obtained building permits during the same fiscal year. Additionally, the City of South San Francisco approved a nearly 80,000 square foot manufacturing facility for Genentech, as well as the Kilroy Oyster Point development phases 2-4 (totaling 1.7 million square feet of Office/R&D)—a development with two buildings already under construction, slated for completion in spring of 2021.

Among some of Silicon Valley's smaller non-residential development approvals in FY 2019-20 were the 36,000 square-foot, nearly \$48 million Atherton Civic Center and Library,<sup>127</sup> Topgolf—a 71,000 square-foot commercial recreation and sports complex with climate-controlled hitting bays, dining, and event space in Burlingame, a 32,000 square-foot Conservation and Wildlife Center in unincorporated Santa Clara County, a 31,000 square foot mortuary in Daly City, and a mixed-use historical renovation project in downtown Los Gatos with several residential units plus ground floor retail.

Net non-residential development approvals (after planned demolition) in FY 2019–20 totaled 9.7 million square feet across 128 different development sites; of the approved square footage, 42% is within walking distance to major public transit stations.

While approved non-residential development projects were spread throughout Silicon Valley, 89% was concentrated in seven cities alone: Fremont, Morgan Hill, Mountain View, San Jose, Santa Clara, South San Francisco, and Sunnyvale. In contrast, several Silicon Valley cities approved more demolition in the 2019–20 fiscal year than new development: Los Altos, Redwood City, San Bruno, and Woodside.

### Planned Hotel Development

2020

	Hotels	Rooms
Santa Clara County	75	11,299
San Mateo County	28	3,651
San Francisco	52	6,312
California	1,246	164,676

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

Despite pandemic-related delays and deferment of hotel development throughout the state, there remain an estimated 155 hotels (with a total of more than 21,000 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 five times the amount that has been developed over the past 15 years.

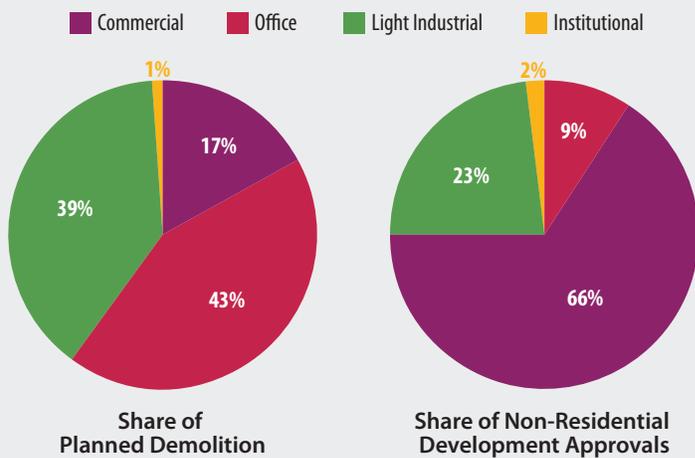
In 2020, the number of Silicon Valley and San Francisco hotel rooms in various stages of planning accounted for 13% of all planned hotel developments throughout the state of California.

Of the 103 hotels (with 15,000 hotel rooms) planned for Silicon Valley, approximately 14% received planning approvals in the 2019-20 fiscal year.

#### NON-RESIDENTIAL DEVELOPMENT

### Share of Non-Residential Demolition and Development Approvals, by Type

Silicon Valley, FY 2019-20



A full two-thirds (66%) of all newly-approved non-residential development in FY 2019-20 was commercial space, planned for uses such as retail, restaurants, and services.

82% of all non-residential demolition approved in FY 2019-20 was either office or industrial space.

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

# PLACE

## Environment

The region continues to decrease electricity and water usage, and adopt clean technologies. Electric vehicle ownership has risen (doubling in just three years) along with associated charging infrastructure, which has more than quadrupled since 2015. Solar and energy storage capacity have risen exponentially over the past decade, and the region's swift shift to community choice energy programs has effectively reduced regional greenhouse gas emissions by 67 percent over a three-year period. Gasoline and diesel sales,

however, have not declined over the past decade.

The sheltering orders created a noticeable shift to more residential water and energy use (with decreased usage by non-residential customers), as well as an early-pandemic decline in local waste disposal.

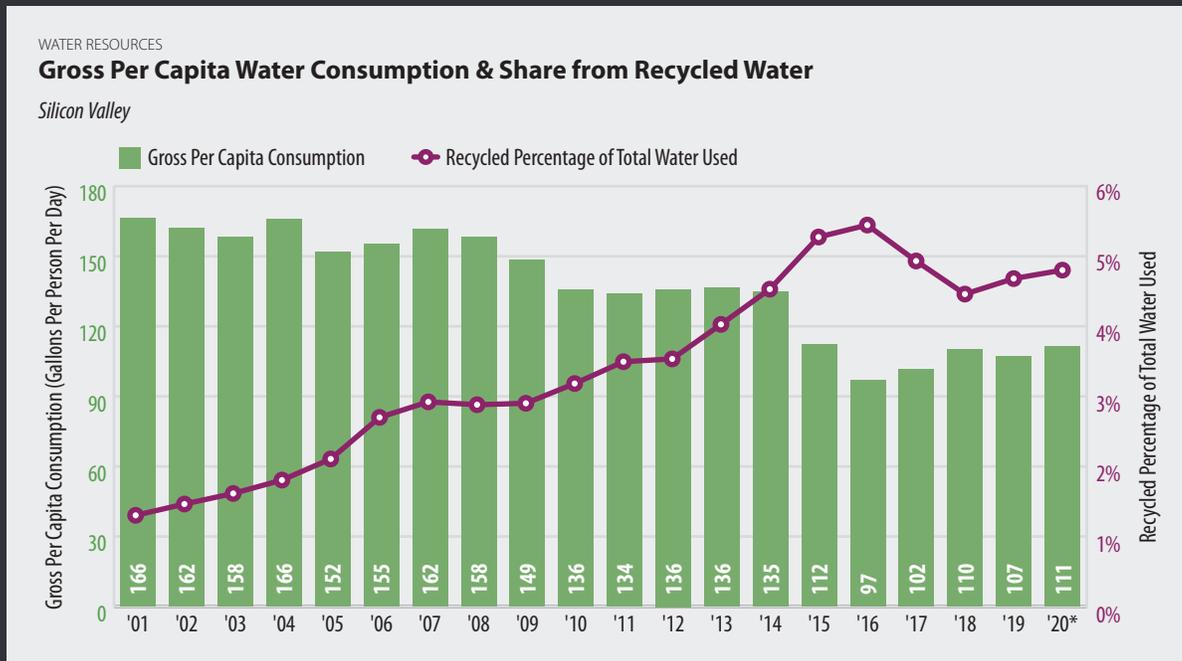
California's wildfires—particularly in 2017, 2018 and 2020—led to an increase in the number of unhealthy air days (50 over those three years alone), with a greater share of those days having air quality

considered unhealthy for the general population.

### Why is this important?

Environmental quality directly affects the health and well-being of all residents as well as the Silicon Valley ecosystem.<sup>128</sup> 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, their level of consumption of natural resources, and how to protect environmental resources.

Due to the predominance of working from home during the pandemic, there was a noticeable shift from commercial to residential water use (although the total per capita daily usage remained relatively similar to that of 2019).



Silicon Valley per capita water consumption has been much lower in the past six years than in prior years, with per capita usage dipping below 100 gallons per person per day in 2016 and 2017. In 2020, average water usage per person per day was 114 gallons.

\*FY 2019-2020 data are preliminary. | Note: Data are for the fiscal year. Data Sources: Bay Area Water Supply & Conservation Agency (BAWSCA); Santa Clara Valley Water District; Scotts Valley Water District | Analysis: Silicon Valley Institute for Regional Studies

There has been an observed increase in residential water use during the pandemic (by the region's water agencies), paired with a decrease in commercial usage. For example, the Scotts Valley Water District noted a decline in Commercial-Industrial-Institutional billing of as much as -32% year-over-year for consumption between early April and early June. By October, the year-over-year decline was -13%.

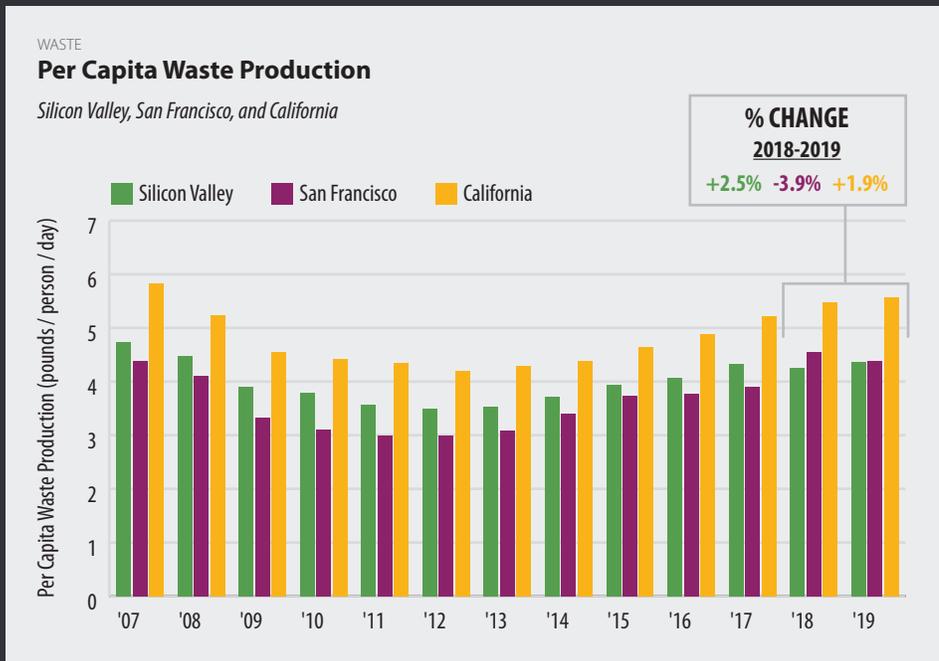
There was a slight uptick in the share of recycled water used in Silicon Valley in 2020, reaching nearly 5%.

Electricity and fuel use affect the environment by emitting greenhouse gases (GHGs) and atmospheric pollutants from fossil fuel combustion—the extent to which must be drastically reduced in response to the climate crisis. 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 harm-

ful 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 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.

Between 2018 and 2019, Silicon Valley and statewide waste production per capita increased, while decreasing in San Francisco (down nearly 4% year-over-year).



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

Silicon Valley waste production was 4.4 pounds per person per day in 2019, nearly a pound higher than the recent low in 2012. Despite increasing waste production rates, waste production per capita in Silicon Valley remained lower in 2019 than the statewide 5.6 pounds per person per day.

Local Solid Waste Disposal	
% change in tons to landfills	
	Q1 - Q2 2020
Santa Clara & San Mateo Counties	-12%
Bay Area	-7%
California	-3%

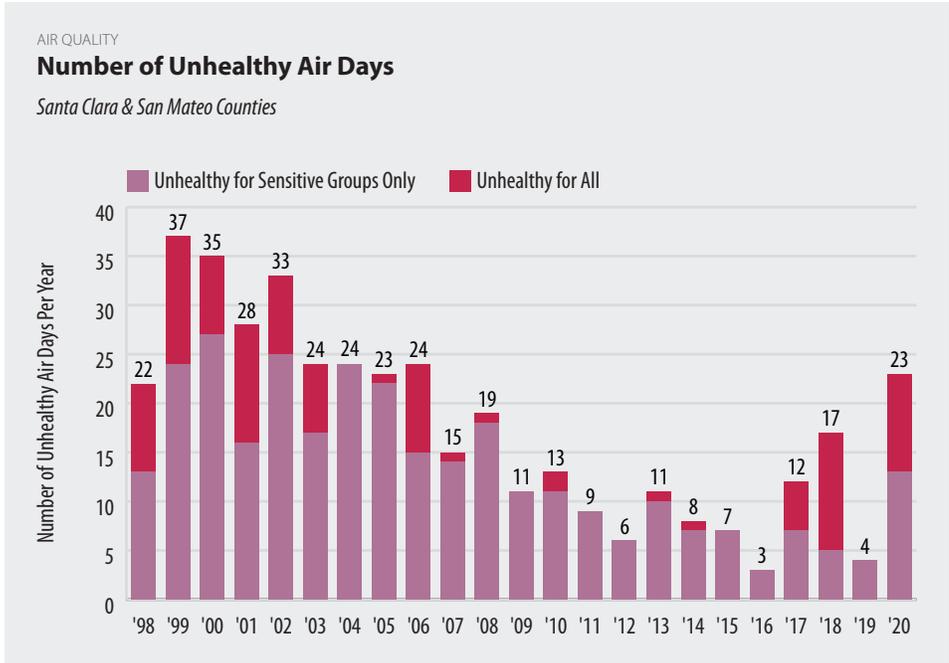
The amount of solid waste deposited into Santa Clara or San Mateo County landfills (though it may have originated elsewhere) declined in the first few months of the pandemic by 12% (Q1 to Q2), with declines throughout the Bay Area (-7%) and statewide (-3%) as well. This compares to a Q1 to Q2 increase the prior year (by +9%, +4%, and +19%, respectively). While some of this decline may have been due to COVID-related disruptions in waste processing, Recology—a waste management agency operating in various parts of the region—confirmed in April that it had not experienced any significant disruptions at its materials recovery facilities.<sup>129</sup>

# PLACE

## Environment

Prior to the extreme wildfires in late summer and early fall of 2020, regional air quality had improved as a result of pandemic-related transportation declines and weather factors, combined. Fine particulate matter emissions fell by as much as 33% (in April), and the average Air Quality Index in March through mid-May was 4% below that of the prior year.<sup>130</sup>

Due to the prevalence of wildfires throughout the state in 2017, 2018, and 2020 (in addition to other factors), Silicon Valley experienced more than 50 unhealthy air days during those three years (half of which were unhealthy days for the general population, regardless of sensitivities such as lung disease or age-related risk factors).

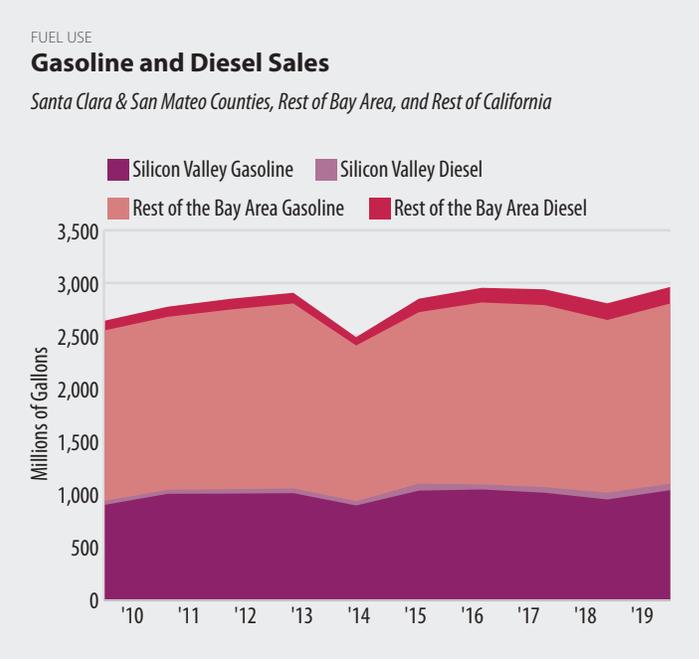


Nearly half of the unhealthy air days in 2020 were *extremely unhealthy*—amounting to unsafe conditions for both the general population as well as for sensitive groups.

In 2020, there were 23 unhealthy air days in Silicon Valley, 10 of which were unhealthy for the general population (not only for sensitive groups). The region had not experienced such a high number of unhealthy air days since 2006.

Data Source: United States Environmental Protection Agency, Outdoor Air Quality Data | Analysis: Silicon Valley Institute for Regional Studies

Gasoline and diesel sales in Silicon Valley have risen by 5% since 2012, combined, compared to +3% in the rest of the Bay Area (seven counties), and +7% in the rest of the state.



Data Source: California Energy Commission | Analysis: Silicon Valley Institute for Regional Studies

Per capita electricity consumption in Silicon Valley has declined by 14% (nearly 1,300 kilowatt-hours per person) since the most recent high in 2008.

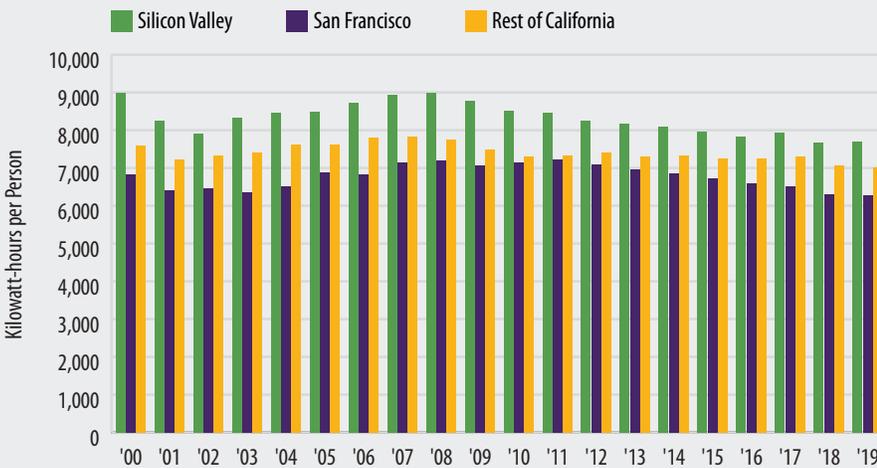
Compared to Silicon Valley, San Francisco electricity users consume 18% less, and the electricity productivity—ratio of regional GDP to electricity use—is 76% higher.

## Silicon Valley electricity consumers use more per capita than in San Francisco or elsewhere in the state.

ELECTRICITY USE

### Electricity Consumption per Capita

Santa Clara & San Mateo Counties, San Francisco, Rest of California



In the first three quarters of 2020, Silicon Valley residents (not including those in either of the two municipal utilities) increased their home electricity consumption by approximately 11%, while non-residential customers' energy use declined by 15%.<sup>131</sup>

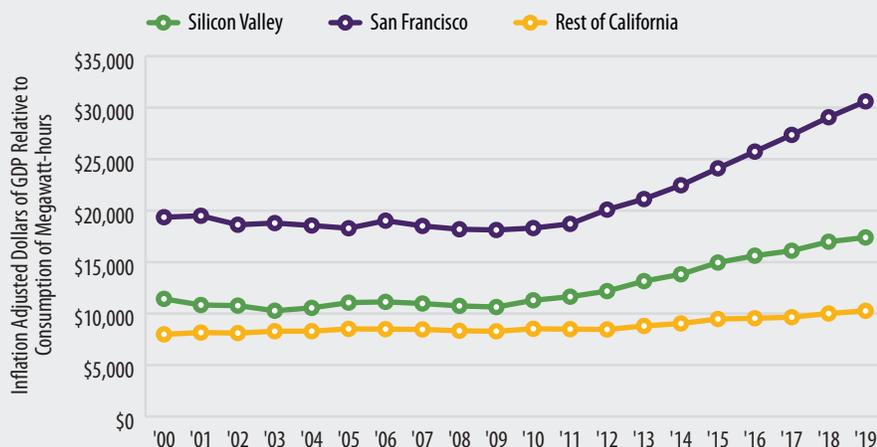
While the rest of California's electricity productivity has remained relatively low over the past two decades, it has risen significantly in Silicon Valley and San Francisco since the start of the post-recession economic recovery period (up 54% and 67%, respectively, between 2010 and 2019).

Data Sources: Moody's Economy.com; California Energy Commission; State of California, Department of Finance  
Analysis: Silicon Valley Institute for Regional Studies

ELECTRICITY USE

### Electricity Productivity

Santa Clara & San Mateo Counties, San Francisco, Rest of California

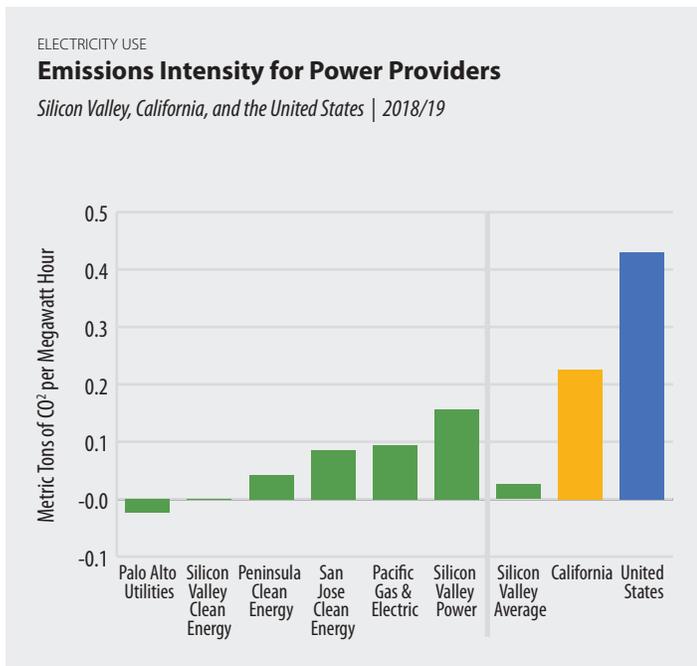


Data Sources: Moody's Economy.com; California Energy Commission; State of California, Department of Finance  
Analysis: Silicon Valley Institute for Regional Studies

# PLACE

## Environment

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 67%.



Note: California is the CAMX eGrid Subregion, which encompasses most of the state. The United States is an average of all eGRID subregions. Silicon Valley average weighted based on customer counts. | 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; California Energy Commission | Analysis: Silicon Valley Institute for Regional Studies

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 also has helped to advance electric vehicle adoption throughout the region, and enables efforts to achieve environmental, air-quality, and cost benefits with all-electric buildings.

Although PG&E has relatively clean energy—with a 2018 emissions intensity factor that has declined by 68% 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.

Across all providers, the power used by Silicon Valley electricity customers carries a fraction of the greenhouse gas emissions intensity of the U.S. grid average, and is significantly cleaner than California’s state average residual emissions intensity.

**Share of Electricity Customers Served, by Provider**  
*Silicon Valley | 2019*

	Residential	Non-Residential
<b>San Jose Clean Energy</b>	33%	22%
<b>Peninsula Clean Energy</b>	29%	24%
<b>Silicon Valley Clean Energy</b>	27%	25%
<b>Silicon Valley Power</b>	5%	7%
<b>Pacific Gas &amp; Electric</b>	4%	20%
<b>Palo Alto Utilities</b>	3%	2%

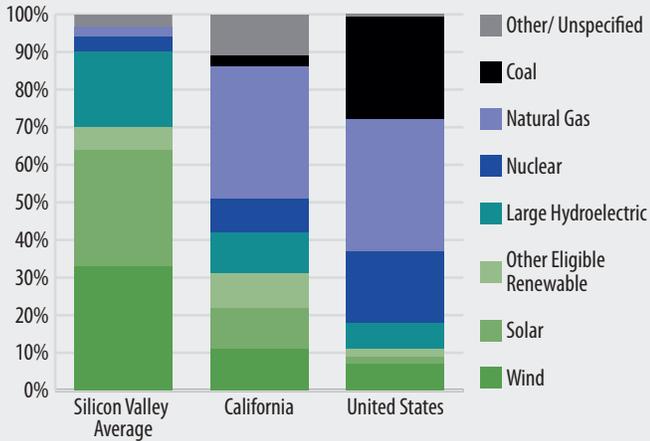
Three community choice energy programs now serve 88% of Silicon Valley’s residential customers, and 71% of non-residential customers; Pacific Gas & Electric (PG&E), which served 92% of customers across Santa Clara and San Mateo Counties in 2016—now provides bundled energy, transmission, and distribution service to less than 6%.

More than 7,100 new solar PV systems were installed in Silicon Valley in 2020, 98% of which were residential systems (by count); however, by installed capacity, residential systems represented 68% of all solar PV installations that year.

ELECTRICITY USE

Share of Electricity, by Generation Sources

Silicon Valley, California, and the United States | 2018



Among Silicon Valley’s electricity power plans available to residential and non-residential customers, the average share of renewable generation resources is more than double the statewide power mix, and nearly seven times higher than the national average.

Silicon Valley’s available electricity power plans, on average, consist of one-third wind generation, nearly one-third (31%) solar, 6% from other eligible renewables, and 20% large hydroelectric, with only 9% from nuclear, natural gas, and other/unspecified sources combined. In contrast, those non-renewable sources comprise 55% of both the California power mix (plus 3% from coal) and the national average power mix (plus 28% from coal).

Note: Silicon Valley Average is an approximation; it is an un-weighted average of all power plans available to residential and non-residential customers. | 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; California Energy Commission Analysis: Silicon Valley Institute for Regional Studies

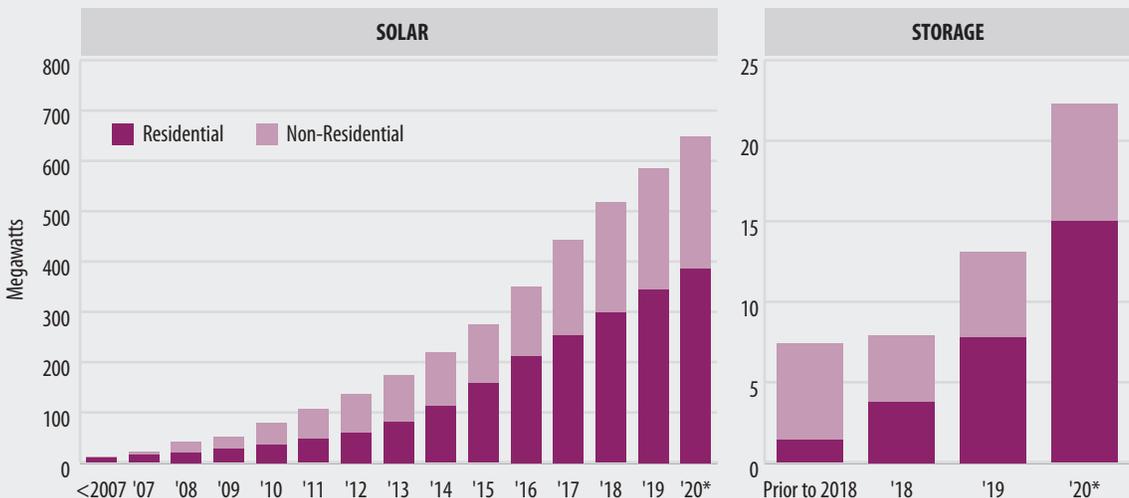
Over the past decade, the total capacity of solar photovoltaic (PV) systems installed in Silicon Valley has increased eightfold, from 107 megawatts (MW) in 2010 to 648 MW in 2020.

Silicon Valley’s interconnected energy storage, paired with (non-export) solar PV systems, has increased significantly over the past two years. Prior to 2018, there were only 7.5 MW interconnected to the electrical grid; as of 2020, more than 22 MW were interconnected throughout the region. Additionally, energy storage systems participating in the California Self-Generation Incentive Program (SGIP) totaled 17.6 MW in 2020, with half residential and half non-residential systems.

CLEANTECH

Cumulative Installed Solar & Storage Capacity

Silicon Valley



There are 77,600 solar PV systems on residential rooftops throughout Silicon Valley, plus another 2,000 non-residential installations.

\*2020 data are through mid-December for the municipal utilities, and through September for the PG&E data. | Note: Includes interconnected, Net Energy Metered (NEM) systems only. Data Sources: Palo Alto Municipal Utilities; Silicon Valley Power; Pacific Gas & Electric | Analysis: Silicon Valley Institute for Regional Studies

# PLACE

## Environment

### Technical Potential of Rooftop Solar Photovoltaics

*Silicon Valley, 2020*

<b>Total Number of Viable Rooftops</b>	668,200
<b>Estimated Potential System Size (Megawatts AC)</b>	12,060
<b>Progress Toward Total Potential</b>	5%

Based on the amount of sunshine and available rooftop space, Silicon Valley has the technical potential for around 668,200 rooftop solar PV systems, with a total system size of approximately 12,000 MW. As of 2020, the region had installed approximately 1/20th of that total technical potential.

Data Source: Google Project SunRoof, Data Explorer  
Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley represents a large portion of California's electric vehicle (EV) adoption and infrastructure, with 19% of all registered light-duty electric vehicles, 17% of all the public charging outlets, and more than 35% of the private charging outlets installed within the state.

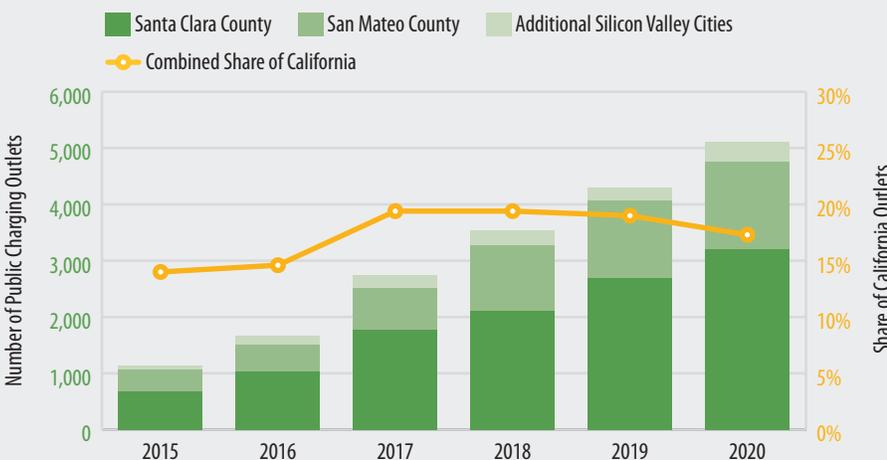
Since 2015, the number of public EV charging outlets in Silicon Valley has more than quadrupled. As of late 2020, Silicon Valley had more than 5,100 public electric vehicle charging outlets and nearly 14,000 private ones.<sup>132</sup>

CLEANTECH

### Electric Vehicle Infrastructure

Public Electric Vehicle Charging Outlets

*Silicon Valley*



Data Sources: United States Department of Energy, Alternative Fuels Data Center; California Energy Commission  
Analysis: Silicon Valley Institute for Regional Studies

### Share of California Electric Vehicle Charging Outlets

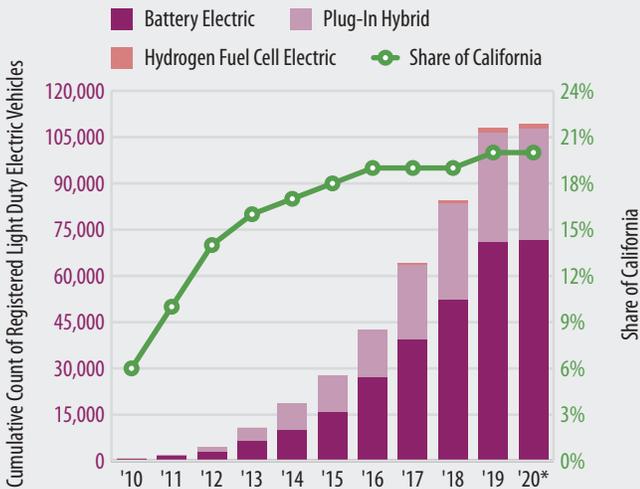
*Santa Clara & San Mateo Counties, 2020*

<b>Public</b>	16%
<b>Private</b>	35%
<b>All</b>	27%

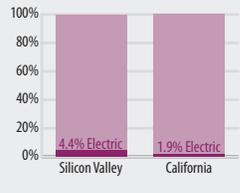
San Jose has, by far, the highest number of EV drivers in the region, with 29,800 registered vehicles; the city with the next-highest number of EVs, Fremont, has 11,500 registered.

### Electric Vehicle Adoption

Silicon Valley



### Registered Light-Duty Vehicles, 2020



While EV adoption has accelerated in Silicon Valley over the past decade—representing a significant share of adoption throughout the state—EVs still represented fewer than one out of 20 Silicon Valley light-duty vehicles at the start of 2020.

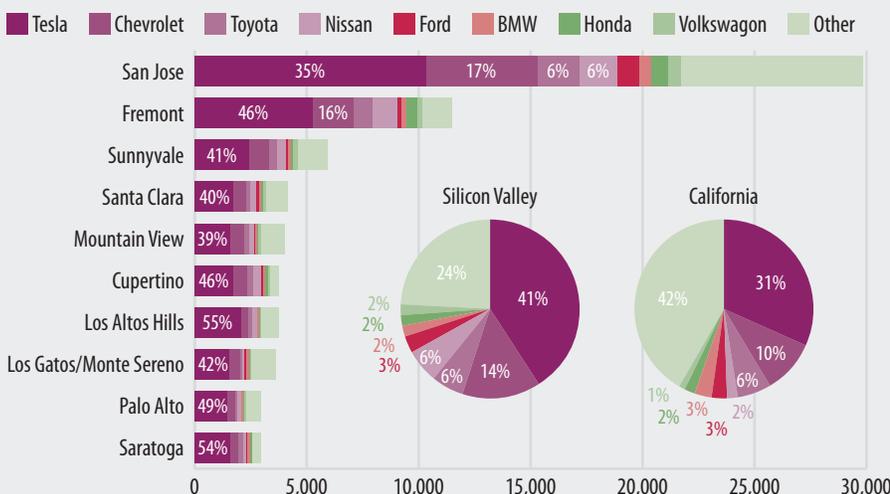
The total number of EVs registered to Silicon Valley drivers continued to climb in 2019, reaching nearly 109,000 in total, more than double the number registered only three years prior. The majority (two-thirds) are Battery Electric, one-third are Plug-In Hybrids, and a very small share (approximately one percent) are Hydrogen Fuel Cell vehicles.

\*As of January | Note: Electric includes Battery Electric, Hydrogen Fuel Cell Electric, and Plug-In Hybrid Electric. Other Fuel includes Gasoline, Diesel and Diesel Hybrid, Flex-Fuel, Hybrid Gasoline, Natural Gas, and Other.  
Data Source: California Department of Motor Vehicles | Analysis: Silicon Valley Institute for Regional Studies

Teslas, Chevrolets, Toyotas, and Nissans account for 67% of all EVs registered in Silicon Valley. The most popular models are the Tesla Model 3 (25%), Tesla Model S (12%), Chevrolet Volt (9%), Nissan LEAF (7%), Chevrolet Bolt EV (7%), and the Tesla Model X (5%).<sup>133</sup>

### Registered Light-Duty Electric Vehicles, by Make

Top 10 Silicon Valley Cities, Silicon Valley, and California | 2020



Tesla's share of Silicon Valley registered EVs has more than doubled over a five-year period, growing from 19% in 2014 to 41% in 2019. Among the top-ten cities for EV adoption, Los Altos Hills and Saratoga have the highest shares of Tesla ownership, representing more than half of all light-duty EVs (55% and 54%, respectively), compared to 41% throughout the region and 32% in the state overall.

As of January 2020, there were already 1,175 new (model year 2020) electric vehicles registered in Silicon Valley, including 11 powered by hydrogen fuel cells.

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

# GOVERNANCE

## Local Government Administration

Silicon Valley city revenues totaled \$8.2 billion in FY 2018-19, including investment earnings (\$233 million) that were four times higher than that of the prior year, and \$3.7 billion coming from Charges for Services. Of \$7.1 billion in aggregate city government expenses, 29 percent went to Public Safety, 18 percent to Water, Sewer, and Wastewater, and 10 percent to Community, Housing, and Human Services.

In response to the pandemic, FY 2020-21 city budgets indicate expected year-over-year declines in General Fund revenue, particularly those from Sales and Use Tax (by 20-40 percent in some cases), Transient Occupancy Taxes (an average 36 percent expected loss), Business License Taxes, Licenses and Permits (down by seven percent on average), as well as reduced revenue from Charges for Services (especially those from recreation services). The magnitude of expected declines has been noted in some budgets to be larger than those experienced during either the Great Recession or the dot.com bust. In response to expected revenue losses, pay-

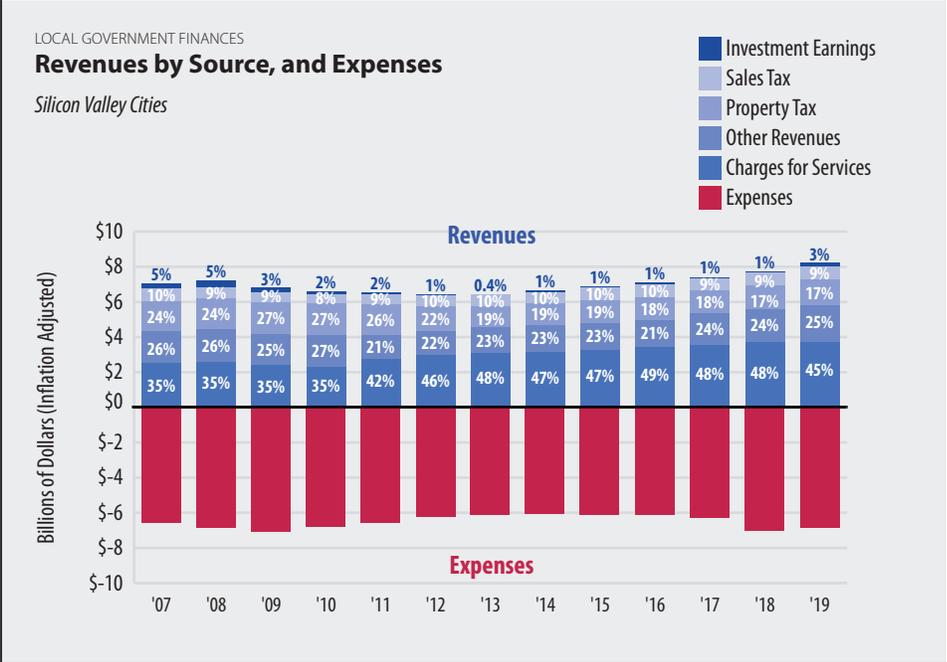
ments against debt and spending cuts— notably in Capital Outlay & Improvement Projects and Building & Planning—brought down budgeted expenditures from prior years (and/or those originally proposed). Still, pandemic-related revenue declines are expected to lead to more than \$400 million in budget shortfalls regionally in the 2020-21 fiscal year.

**Why is this important?**

Many factors influence local government's ability to govern effectively, in-

Silicon Valley city revenues totaled \$8.24 billion in FY 2018-19, with 45% coming from Charges for Services (with a range of 7-56% among the 37 individual cities without municipal utilities; 69% and 72% for Palo Alto and Santa Clara, respectively) totaling more than \$3.7 billion—double what it was at the beginning of the Great Recession recovery period in 2010. For comparison, Charges for Services represented 37% of San Francisco's total revenues that year.

Silicon Valley city revenues are expected to decline by an average of 5% due (primarily) to the effects of the pandemic, with the most dramatic declines expected in Transient Occupancy Taxes (-38% on average, with an aggregate loss of more than \$100 million regionally), Sales and Use Taxes (-10%), Business Tax (-10%), and Charges for Services (-7%). Property tax revenues are not expected to fall because they are based on pre-pandemic (January 2020) assessed property values. Planned net expenditures for FY 2020-21 are expected to increase in some cities while declining in others (ranging from -33% to +12%, with an average decline of 2%). Notable expense cuts are in Building & Planning (-58% on average), Capital Improvement Projects (-51%), and Transfers to Capital Improvement and other funds (-28%).



Note: Percentages may not add up to 100% due to rounding.  
 Data Source: Silicon Valley Cities, Audited Annual Financial Reports | Analysis: Silicon Valley Institute for Regional Studies

Of the \$7.08 billion in Silicon Valley city expenses for FY 2018-19, 29% (\$2.04 billion) went to Public Safety (42% of Governmental Activities-only expenses); 18% (\$1.24 billion) went to Water, Sewer, and Wastewater; 10% (\$688 million) went to Community, Housing, and Human Services. Silicon Valley city expenses to Public Safety are budgeted for FY 2020-21 at a significantly lower 32% of Government Activities expenses (approximately 20% to Police and 12% to Fire).

cluding the availability and management of resources, as well as staffing levels and retention. To maintain service levels and respond to a changing environment, local government revenue must be reliable.

Property tax revenue is the most stable source of city government revenue, fluctuating much less over time than other sources, such as sales and other taxes. Since property tax revenue represents only about a quarter of all revenue, other revenue streams are critical in determin-

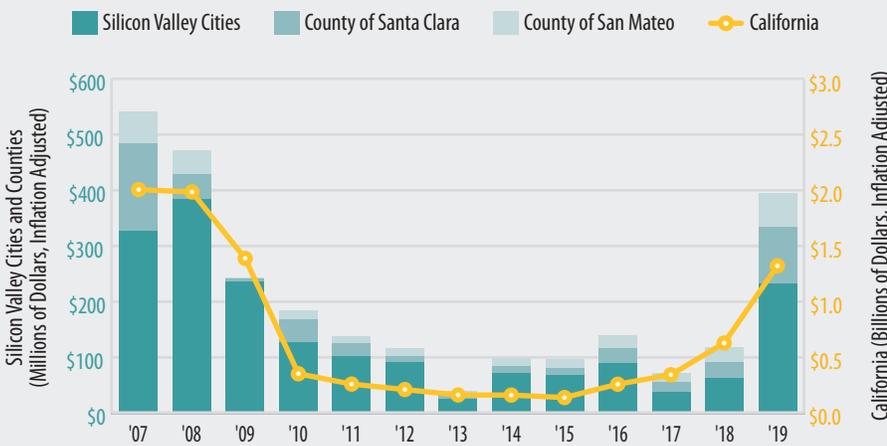
ing the overall volatility of local government funding.

The amount of public capital (assets minus debts) in relation to overall regional wealth can be indicative of the government’s ability to invest in infrastructure, and has been linked to distributive equity from both an economic and social perspective.<sup>134, 135</sup>

LOCAL GOVERNMENT FINANCES

**Investment Earnings**

*Silicon Valley Cities, Counties of Santa Clara & San Mateo, and California*



Data Sources: Silicon Valley Cities and Counties, Audited Annual Financial Reports; California State Auditor | Analysis: Silicon Valley Institute for Regional Studies

Investment earnings for Silicon Valley cities, in aggregate, nearly quadrupled in FY 2018-19 reaching \$233 million, with similarly sharp (2-3x) year-over-year gains experienced by the region’s counties as well as the State of California. Budgeted revenue declines of 7% in investment earnings, on average, are expected for Silicon Valley cities in FY 2020-21.

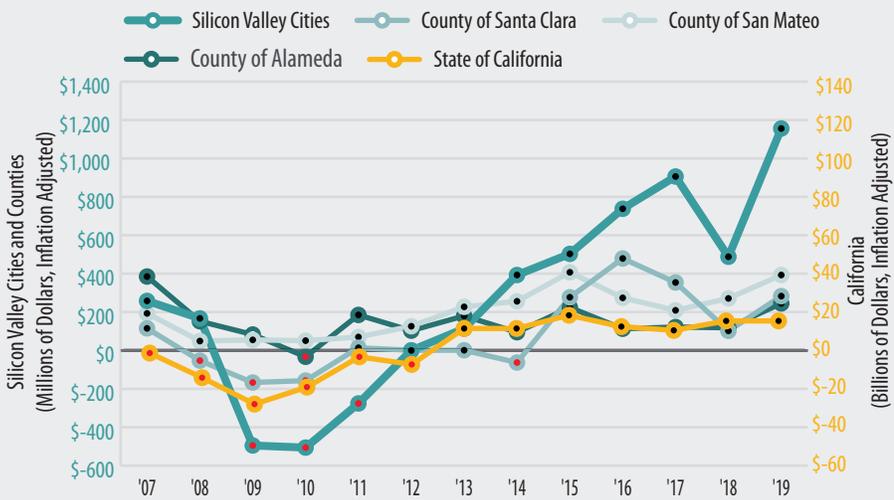
# GOVERNANCE

## Local Government Administration

LOCAL GOVERNMENT FINANCES

### Revenues Minus Expenses

Silicon Valley Cities & Counties, and California



Data Sources: Silicon Valley Cities, Audited Annual Financial Reports; California State Auditor | Analysis: Silicon Valley Institute for Regional Studies

While Silicon Valley city revenues exceeded expenses by nearly \$1.2 billion in FY 2018-19, pandemic-related revenue declines are expected to lead to more than \$400 million in budget shortfalls regionally in FY 2020-21.

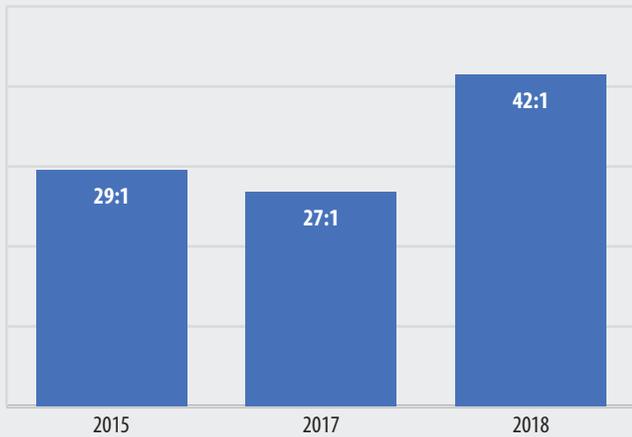
The total, aggregate net position (assets minus liabilities) of Silicon Valley cities grew by 4% between 2015 and 2018; however, total regional household wealth grew by an estimated 47% over that same period. In 2018, the region's household wealth was more than 42 times that of the cities themselves. This trend of a declining share of public capital relative to private wealth has been documented on a national level in the United States, as well as in various countries throughout Western Europe and Asia since the 1980s.<sup>136</sup>

CITY FINANCE

**Public Capital**

Ratio of Total Household Wealth to Aggregate City Net Position

*Santa Clara & San Mateo Counties*

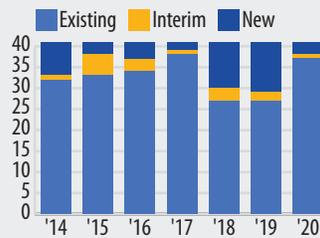


Data Sources: Silicon Valley City Comprehensive Annual Financial Reports (CAFRs); Phoenix Global Wealth Monitor  
Analysis: Silicon Valley Institute for Regional Studies

CITY AND COUNTY LEADERSHIP

**City/County Manager Turnover**

*Silicon Valley*



Note: Annual counts represent a snapshot in time, taken in August of each year. | Data Source: Silicon Valley City and County Websites | Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley experienced much higher-than-typical rates of City/County Manager turnover in 2018 and 2019, replacing 14 out of 41 Managers in each of those two years.

Each year, Silicon Valley cities and counties typically appoint anywhere from three to fourteen new (or interim) city/county managers, representing a turnover rate of 7-34%

Less than one-third (31%) of Silicon Valley city managers are women; however, this share is higher than the latest statewide estimate of 19% (with women leading 76 out of the 473 cities with a manager).<sup>137</sup>

# GOVERNANCE

## Civic Engagement

The confluence of extremely divided political views among the nation's electorate, a high-stakes and emotionally-charged election, and a worldwide health crisis led to unprecedented levels of civic engagement in 2020, particularly among younger voters.

The pandemic drove up absentee voting rates, already extremely high in Silicon Valley, to over 90 percent in 2020 (65 percent of which were cast in advance of the election). Registration rates and voter turnout for the 2020 General Election was also higher than ever before, with 85 percent of eligible voters registered and 73 percent of eligible voters casting ballots (from historical highs of 82 percent and

62 percent, respectively). Turnout among young adult (ages 18-24) voters hit 63 percent, representing a sharp increase over any other election.

Seventy-four percent of Silicon Valley voters—most of whom are registered as Democrats (51 percent) or No Party Preference (29 percent)—voted for Joe Biden for President, identical to the share that voted for Hillary Clinton in 2016; this compares to a slightly higher share throughout the Bay Area, and a much larger (85 percent) share in San Francisco.

### Why is this important?

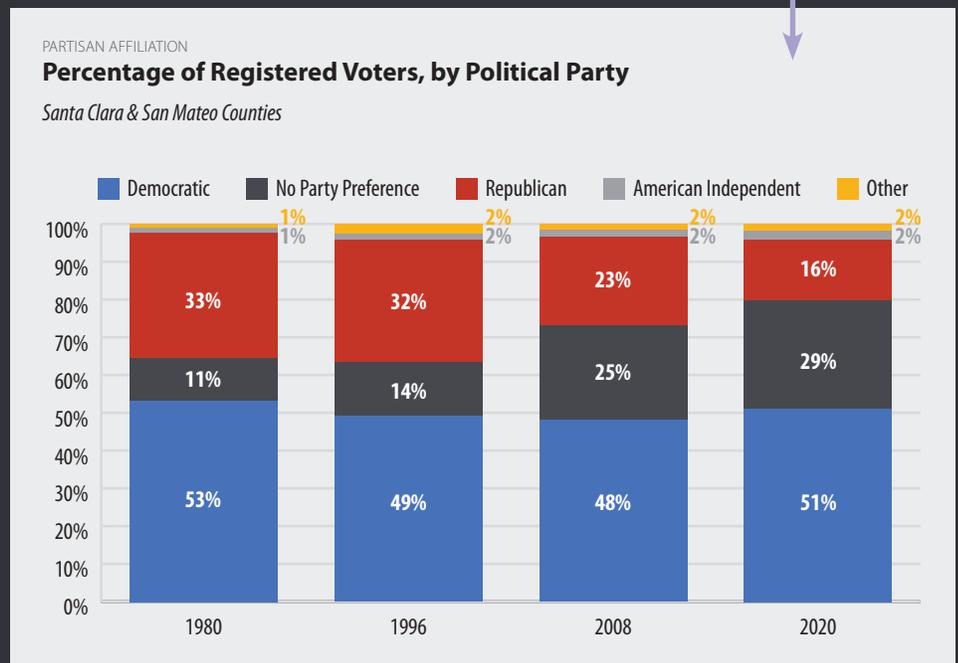
An engaged citizenry shares in the responsibility to advance the common

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.

51% of Silicon Valley voters were registered as Democrats (compared to 46% statewide) at the time of the November 2020 presidential general election.

Over the past 50 years, the share of Silicon Valley voters registered with No Party Preference has risen from less than 5% in 1970 to 29% in advance of the 2020 general election (compared to 24% statewide).

The share of Silicon Valley registered voters with no political party affiliation has continued to grow, reaching historically high levels. At the same time, the share of registered Republicans has declined to the lowest ever in the available record (back to 1970) of 16%.



Data Source: California Secretary of State, Elections Division | Analysis: Silicon Valley Institute for Regional Studies

Voter registration rates were higher in 2020 than 2016 in both Silicon Valley and statewide (up by ten percentage points).

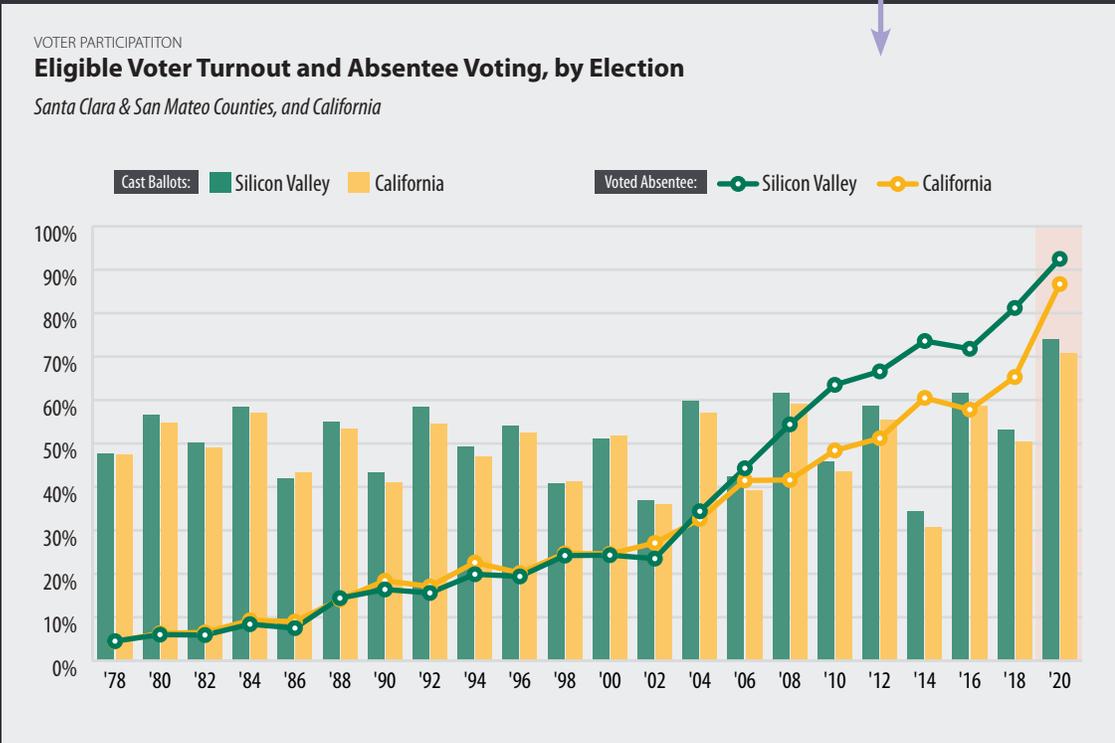
**Share of Eligible Voters Who Registered**  
*Santa Clara & San Mateo Counties, San Francisco, and California*  
 2016 & 2020 General Elections

	2016	2020
<b>Silicon Valley</b>	75%	85%
<b>San Francisco</b>	79%	78%
<b>California</b>	78%	88%

The share of eligible Santa Clara and San Mateo County voters who registered in advance of the 2020 general election (85.5%) was higher than in any other year in a half-century, if ever. The only other elections that came close to this rate were in 2004 (82.1%) and 1994 (81.6%, the highest on record for any midterm general election).

Data Source: California Secretary of State, Elections Division  
 Analysis: Silicon Valley Institute for Regional Studies

Silicon Valley's absentee voting rate reached an all-time high for the November 2020 elections, reaching 93%; this compares to a statewide absentee voting rate that rose to 87%.



Note: Includes even-year General Elections. | Data Source: California Secretary of State, Elections Division | Analysis: Silicon Valley Institute for Regional Studies

While there were more than 150 in-person voting centers open in Santa Clara and San Mateo Counties in advance of Election Day (most were open starting on October 31), more than nine out of ten Silicon Valley voters chose to vote by mail.

The region and state as a whole experienced historic voter turnout for the November 2020 general election (73% of eligible voters in Silicon Valley, and 71% statewide). Prior to this election, the highest eligible voter turnout in Silicon Valley was 62% in both the 2008 and 2016 presidential general elections.

# GOVERNANCE

## Civic Engagement

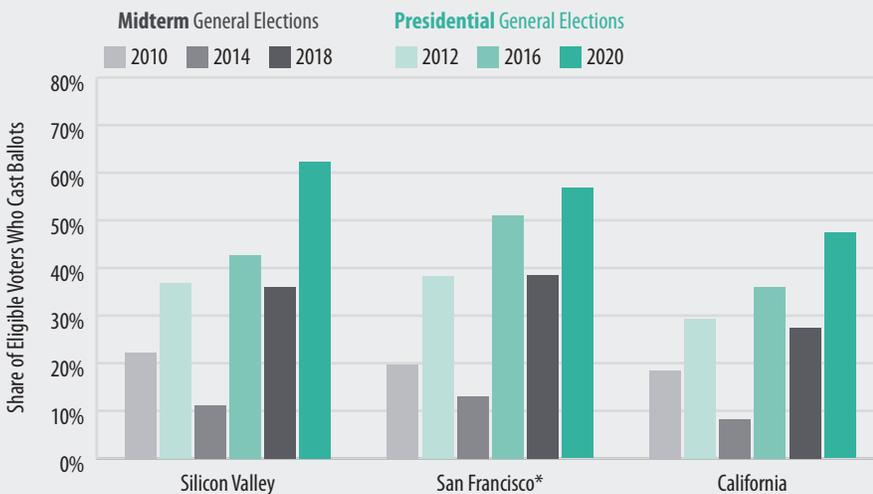
While eligible voter turnout of young adults ages 18–24 has traditionally been much lower compared to other age groups, rates have increased in recent years—up from 37% in 2012 to 43% in 2016, and 63% in 2020 among presidential general elections; eligible voter turnout of young adults was higher in November 2018 than any other midterm general election on record.

Young adults (ages 18-24) across the state were highly mobilized to vote in the 2020 general election; however, they remained underrepresented at the polls in Silicon Valley, San Francisco, and statewide; in Santa Clara and San Mateo Counties combined, young adults accounted for 12% of all eligible voters but only 10% of the ballots cast.

### VOTER PARTICIPATION

#### Eligible Voter Turnout of Young Adults (Ages 18-24)

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



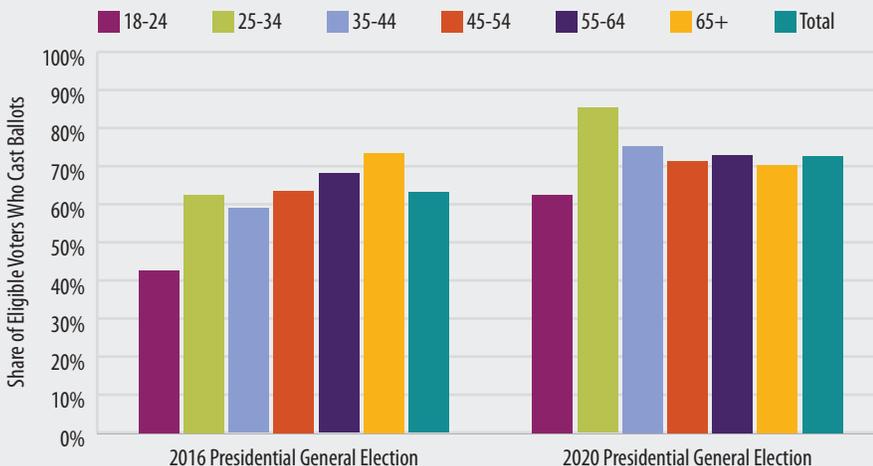
\*The eligible turnout rate in San Francisco increased significantly in 2020 due to an estimated decline in the citizen voting age population ages 25-34.  
Data Source: Center for Inclusive Democracy (Data: Statewide Database and California Department of Finance)  
Analysis: Center for Inclusive Democracy at the USC Sol Price School of Public Policy

Young voters turned out for the 2020 General Election at record rates. The rise may have been partly driven by this age cohort reaching adulthood during the turbulent times of the Great Recession, and its lasting impacts on their decision-making (though it may have had the opposite effect on engagement for some, as well). Additionally, civic engagement among young adults has been found to rise in response to increased engagement in politics online, particularly through social media.<sup>138</sup> In 2020, social networking sites were a key mode of sharing and discussing election-related content, much of which was made more accessible remotely due to the pandemic. Thus, increased online engagement likely played a role (among numerous other factors) in the record turnout.

### VOTER PARTICIPATION

#### Eligible Voter Turnout, by Age

Santa Clara & San Mateo Counties | 2016 & 2020 Presidential General Elections

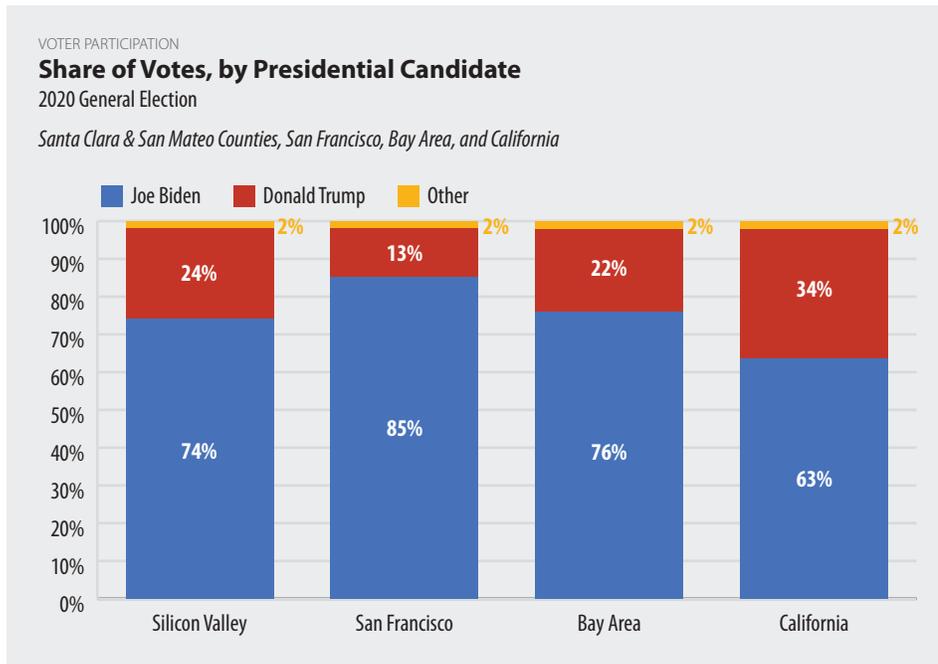


Data Source: Center for Inclusive Democracy (Data: Statewide Database and California Department of Finance)  
Analysis: Center for Inclusive Democracy at the USC Sol Price School of Public Policy



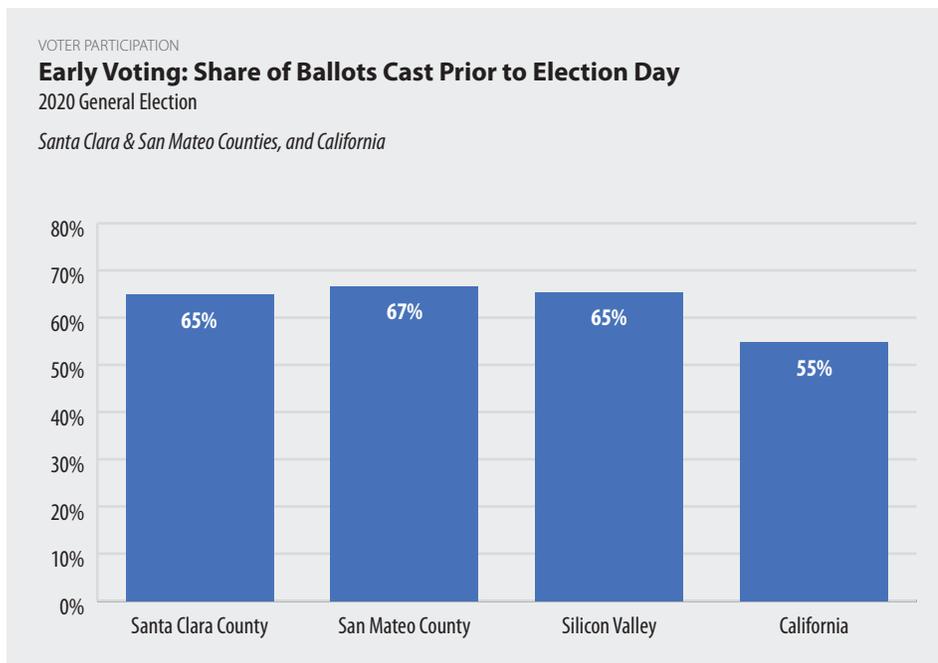
Eligible voter turnout in Silicon Valley was higher than in the state overall, across all age groups in 2020 (ranging from 62 to 85%, compared to 47 to 74% statewide).

74% of Silicon Valley voters cast their votes for Joe Biden, the same share that voted for Hillary Clinton in 2016. This compares to 63% for Biden statewide, 85% in San Francisco, and 76% throughout the entire 9-county Bay Area.



Note: Percentages may not add up to 100% due to rounding.  
 Data Source: California Secretary of State, Elections Division | Analysis: Silicon Valley Institute for Regional Studies

The number of Silicon Valley ballots cast early (prior to November 3) in the Presidential General Election were equivalent to 91% of the *total* vote in 2016.



Data Sources: County of Santa Clara; County of San Mateo; U.S. Elections Project; California Secretary of State, Elections Division  
 Analysis: Silicon Valley Institute for Regional Studies

77% of total Silicon Valley ballots counted were cast prior to Election Day, November 3. Slightly smaller shares voted early in California (68% of total ballots cast) and nationally (63% of the estimated total number of ballots).

Early voting rates in both Santa Clara County and statewide were significantly higher for Democrats (64% and 61% of registered voters, respectively) than for Republicans (58% and 55% of registered voters, as of the data reported on November 2).

# GOVERNANCE

## Representation

Silicon Valley had 116 out of 229 city and county seats up for election in 2020. Three San José City Council seats were decided in March, as were six out of the seven supervisorial seats (all incumbents); the seventh went to a runoff in November, filling the Santa Clara County board seat of term-limited incumbent, Dave Cortese, who was elected to the California State Senate. As of December, one vacant city council seat remained (for the City of South San Francisco, to be filled in February).

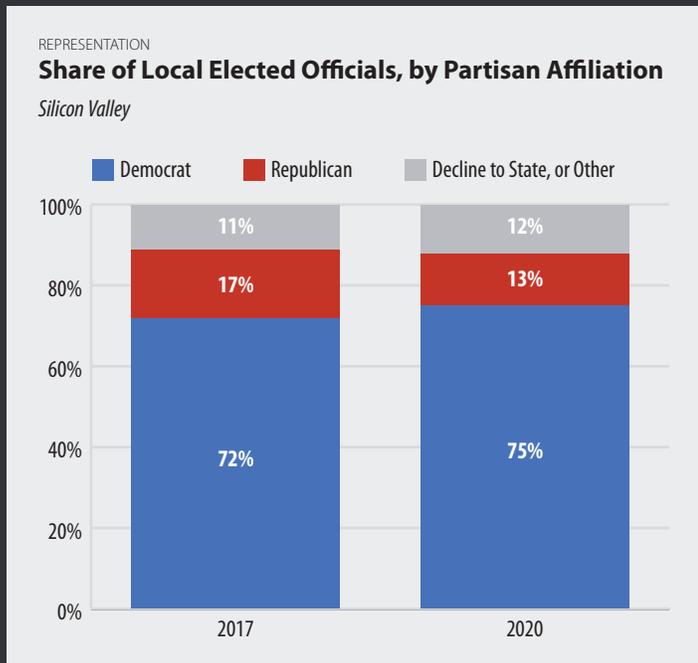
Women continue to be underrepresented in Silicon Valley local elected office; however, the share has risen from 36 percent in 2017 to 46 percent in 2020,

which is higher than in the state's cities/counties overall (38 percent). The majority of Silicon Valley's local elected officials are Democrats (75 percent). In comparison with the state overall, the region has particularly high shares of Asian and Pacific Islander representation (21 percent) and representation by those with professional backgrounds in engineering, technology, and science (18 percent).

### 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 lo-

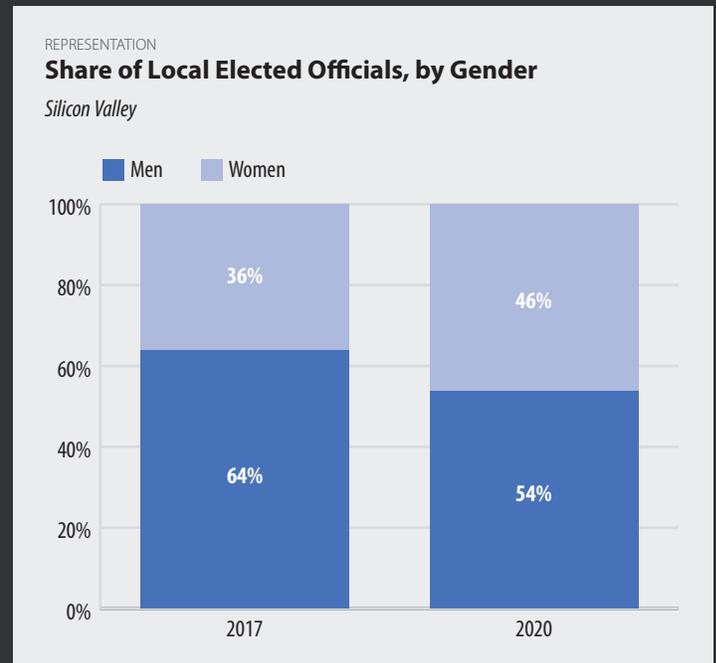
cal elected official represents, on average, more than 13,000 residents. By examining these local representatives, we are able to illustrate the extent to which Silicon Valley's constituency is represented, and gain insight on the backgrounds that may shape their decisions as representatives of our communities. The composition of a region's local elected officials is also critical because it represents the future cohort of state and regional leadership.<sup>139</sup> If any given constituency is not cultivated at the local level, they are unlikely to gain increased representations at the State and Federal levels.



Data Source: GrassrootsLab ([www.grassrootslab.com](http://www.grassrootslab.com)) | Analysis: GrassrootsLab

The majority of elected officials serving on City and Town Councils and County Boards of Supervisors in Silicon Valley are Democrats (75%, up from 72% in 2017).

13% of Silicon Valley's local elected officials are Republicans, compared to 16% of the electorate.



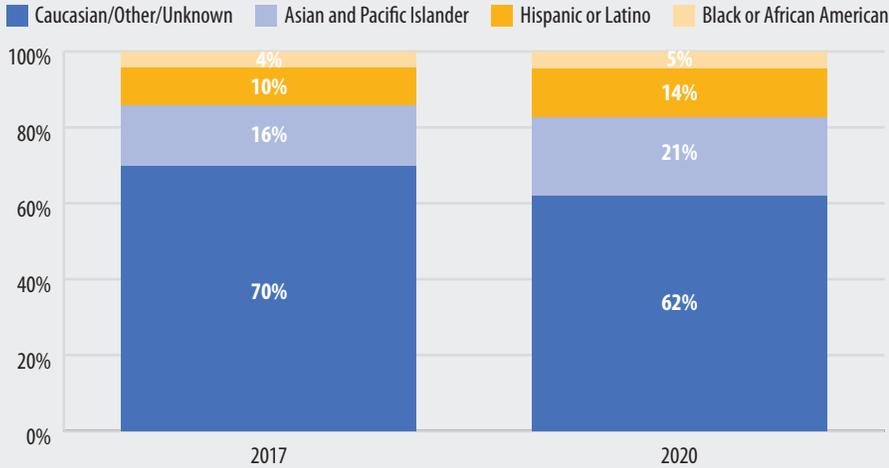
Data Source: GrassrootsLab ([www.grassrootslab.com](http://www.grassrootslab.com)) | Analysis: GrassrootsLab

46% of those newly elected to Silicon Valley city or county office in 2020 were women (plus 59% newly elected in 2018), increasing female representation from 36% in 2017 to 46% after the 2020 elections.

REPRESENTATION

### Share of Local Elected Officials, by Race and Ethnicity

Silicon Valley



Asian and Pacific Islander representation is relatively high in Silicon Valley, with 21% of local elected officials identifying as such (compared to 6% of local elected officials throughout the state).

The share of local elected officials identifying as Hispanic or Latino increased from 10% in 2017 to 12% in 2019, and 14% in 2020.

Note: Numbers may not add up to 100% due to elected officials identifying as more than one race/ethnicity.  
Data Source: GrassrootsLab (www.grassrootslab.com) | Analysis: GrassrootsLab

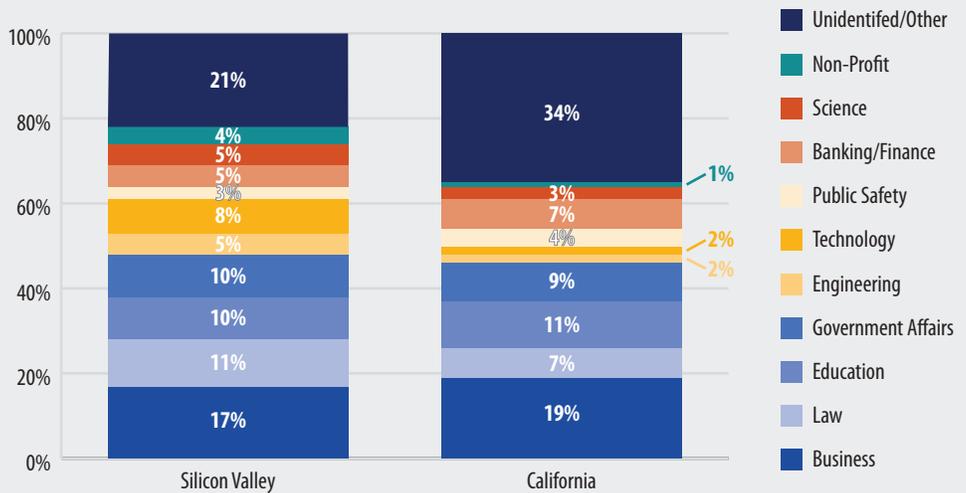
Consistent with State and Federal government representation,<sup>140</sup> women are underrepresented in local elected office in Silicon Valley; however, the share of female local elected officials is quickly approaching proportional representation with a gain of ten percentage points since 2017.

The share of female local elected officials in Silicon Valley (46%) is higher than in the state overall (38%).

REPRESENTATION

### Share of Local Elected Officials, by Professional Background

Silicon Valley and California | 2020



Note: Numbers may not add up to 100% due to rounding. | Data Source: GrassrootsLab (www.grassrootslab.com) | Analysis: GrassrootsLab

An overwhelming majority of city and county officials in both Silicon Valley and California identify as working in Business, Law, Education, and Government (48% and 46%, respectively); however, representatives in Silicon Valley show a much higher affinity toward careers in Engineering, Technology, and Science (18%) than those throughout the state as a whole (7%).

# APPENDIX A

## PROFILE OF SILICON VALLEY

### Area

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<sup>®</sup> 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 2020.

### Jobs

The total number of jobs in the city-defined Silicon Valley region for Q2 of 2020 was estimated by BW Research using Q1 2020 United States Bureau of Labor Statistics Quarterly Census of Employment and Wages data and Q2 2020 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 Santa Clara Counties, and the Cities of Fremont, Newark, Scotts Valley, and Union City. Earnings include wages and supplements.

### Foreign Immigration and Domestic Migration

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 2020 are preliminary. Net migration includes all legal and unauthorized foreign immigrants, residents who left the state to live abroad, and the balance of hundreds of thousands of people moving to and from California

## SNAPSHOT OF KEY COVID-19 INDICATORS & IMPACTS

Data is from Santa Clara County's Open Data Portal, San Mateo County Health County Data Dashboard, The New York Times COVID-19 Data, The World Health Organization WHO Coronavirus Disease (COVID-19) Dashboard, and the California Open Data Portal. Santa Clara County data is specimen collection date; for San Mateo County, California, United States, and the world, data is reporting date. Population data used to calculate per capita values were from the California Department of Finance (state and counties), United States Census Bureau Population Clock Estimate (United States), and United Nations Population Fund World Population

## 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 2020 are preliminary. Natural Change equals births minus deaths. Net migration includes all legal and unauthorized foreign immigrants, residents who left the state to live abroad, and the balance of hundreds of thousands of people moving to and from California from within the United States, 2011 to 2020 data are from the December 2020 release. 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.

#### 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 Clara Counties. Estimates for 2020 are preliminary. Net migration includes all legal and unauthorized foreign immigrants, residents who left the state to live abroad, and the balance of hundreds of thousands of people moving to and from California from within the United States, 2011 to 2020 data are from the December 2020 release. 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.

#### Domestic Outmigration Destinations

Domestic migration data are from the United States Census Bureau, County/MCD-to-County/MCD Migration Flows using data from the American Community Survey (ACS) 2014-2018 5-Year Estimates, which were 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. The Monterey Bay Area includes Santa Cruz, San Benito, and Monterey Counties; the Sacramento Metro area includes Sacramento, Yolo, El Dorado, Placer, Sutter, Yuba, and Nevada Counties; San Joaquin Valley includes San Joaquin Kings, Stanislaus, Merced, Fresno, Madera, and Tulare Counties; Southern California includes Imperial, Kern, Los Angeles, Orange, Riverside, Stanislaus, Bernardino, San Diego, Santa Barbara, San Luis Obispo, and Ventura counties; Seattle-Tacoma includes King, Snohomish, Pierce, Kitsap, Thurston, Skagit, Island, and Mason Counties; Greater New York City includes Nassau, Suffolk, Rockland, and Westchester Counties in New York, and the counties of Bergen, Essex, Hudson, Middlesex, Morris, Passaic, Somerset, and Union in New Jersey; Greater Portland, Oregon includes Multnomah, Clackamas, Washington, Yamhill and Columbia Counties; Las Vegas, NV includes Clark County; Greater Austin, Texas includes Bastrop, Caldwell, Hays, Travis, and Williamson Counties; the Dallas-Fort Worth, Texas Metro includes Collin, Dallas, Ellis, Hunt, Kaufman, and Rockwall Counties; Metro Denver, Colorado includes Denver, Arapahoe, Douglas, Elbert, Jefferson, Boulder, Broomfield, Weld, Adams, Park, Clear Creek, and Gilpin Counties; the Washington, D.C. Metro area includes the District of Columbia, Maryland (Calvert, Charles, Frederick, Montgomery, and Prince George's Counties), Virginia (Alexandria, Arlington County, Clarke County, Calverton County, Fairfax County, Fairfax, Falls Church, Fauquier County, Fredericksburg, Loudoun County, Manassas, Manassas Park, Prince William County, Rappahannock County, Spotsylvania County, Stafford County), and West Virginia (Jefferson County); Greater Houston, Texas includes Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties; Reno, Nevada area includes Storey and Washoe Counties; Miami-Ft. Lauderdale, Florida Metro includes Miami-Dade, Broward, and Palm Beach Counties.

#### Population by Age

Data are from the United States Census Bureau, 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 Mateo 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 Latino.

#### Total Number of Births

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 2020 are preliminary. 2011 to 2020 data are from the December 2020 release. 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.

#### Maternal Characteristics

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

## 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 2020 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 2020 was estimated at the industry level by BW Research using Q1 2020 QCEW data and updated based on Q2 2020 reported growth and totals, and modified slightly by EMSI, which removes suppressions and reorganizes public sector employment.

from within the United States. 2011 to 2020 data are from the December 2020 release. 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 attainment are for Santa Clara and San Mateo counties and are derived from the United States Census Bureau, 2019 American Community Survey, 1-Year Estimates. Data reflects the educational attainment of the population 25 years and over. Percentages may not add up to 100% due to rounding.

### Age Distribution

Data are for Santa Clara and San Mateo Counties and are derived from the United States Census Bureau, 2019 American Community Survey, 1-year estimates. Percentages may not add up to 100% due to rounding.

### Ethnic Composition

Data are for Santa Clara and San Mateo Counties and are derived from the United States Census Bureau, 2019 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

Data are for Santa Clara and San Mateo Counties and are derived from the United States Census Bureau, 2019 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, Federated States of Micronesia, Nauru, New Caledonia, New Zealand, Northern 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.

Dashboard (world). Population data used to compute per capita values by age, race and ethnicity were from the U.S. Census Bureau, American Community Survey 1-Year Estimates. All data included are updated daily on the Silicon Valley COVID-19 Dashboard (<https://siliconvalleyindicators.org/live-updates/covid-data>), which was developed in partnership with the Stanford Future Bay Initiative (Student Lead: Simone Speizer; Mentor: Derek Ouyang).

birth to their first child that year. Women with a bachelor's degree or higher includes Bachelor's degree (BA, AB, BS), Master's degree (MA, MS), Doctorate (PHD, EdD) or Professional Degree (MD, DDS, DVM, LLB, JD). Women with less than a bachelor's degree includes 8<sup>th</sup> grade or less, 9<sup>th</sup> through 12<sup>th</sup> 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 woman is calculated only for those women who gave birth that year. For 2008 data, those giving birth to their "6<sup>th</sup> child and over" were counted as having their 6<sup>th</sup> 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 8<sup>th</sup> 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 fertility 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.

### Educational Attainment

Data for adult educational attainment are for Santa Clara and San Mateo Counties and are from the United States Census Bureau, American Community Survey 1-Year Estimates. Data reflects the educational attainment of the population 25 years and over. Educational Attainment by Race/Ethnicity reflects adults whose highest degree received was either a bachelor's degree or a graduate degree. Multiple and Other includes Two or More Races, Some Other Race, Native Hawaiian and Other Pacific Islander, and American Indian and Alaska Native. Data was not available for Native Hawaiian and Other Pacific Islander in Santa Clara (2009, 2014, and 2019) or San Mateo Counties (2009 and 2019), or for American Indian and Alaska Native in San Mateo County.

### 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, Cogswell Polytechnic College, University of San Francisco, University of California (Berkeley, Davis, Santa Cruz, San Francisco), Santa Clara University, San José 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 were added. The academic disciplines included: 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., 2019 represents the 2018-2019 school year).

### Foreign Born

Data for the Percentage of the Total Population Who Are Foreign Born are from the United States Census Bureau, 2019 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, 2019 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. Tech includes Computer & Mathematical, Architectural & Engineering occupations.

### Foreign Language

Data for Silicon Valley includes Santa Clara and San Mateo Counties, and are from the United States Census Bureau, American Community Survey 1-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 Cantonese.

### 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 included the 15 largest tech companies by rank in the Silicon Valley Business Journal Book of Lists, 2019-2020, for which gender diversity data has been disclosed. Companies included are Apple, Google, Cisco, Facebook, Tesla, Gilead Sciences, Intel, Oracle, Applied Materials, Nvidia, LinkedIn, Juniper Networks, Lockheed Martin, SAP, and VMware. The share of female workers is company-wide (or in some cases for the U.S. workforce only), not Silicon Valley-specific. The overall regional workforce data by gender are for Santa Clara and San Mateo Counties from the U.S. Census Bureau, 2019 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 higher, who work in technical occupations (including Computer, Mathematical, Architectural, and Engineering occupations). Oceania includes At Sea.-

### 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 2019, and Q2 2020. The total number of jobs for Q2 of 2020 was estimated by BW Research using Q1 2020 data and Q2 reported growth, modified slightly by EMSI which removes suppressions and reorganizes public sector employment.

# APPENDIX A

## ECONOMY *continued*

### Total Employment, by Major Areas of Economic Activity; Approximate Shares of Innovation & Information Products and Services Jobs at the Region's Largest Tech Companies

Data for Silicon Valley and San Francisco employment by major areas of economic activity include 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 2020 was estimated at the industry level by BW Research using Q1 2020 QCEW data and updated based on Q2 2020 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; Nonprofits; Insurance 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 Services; Technical Research & Development (Include Life Sciences); Software; Telecommunications Manufacturing & Services; Instrument Manufacturing (Navigation, Measuring & Electromedical); Pharmaceuticals (Life Sciences); Other Media & Broadcasting, including Publishing; Medical Devices (Life Sciences); Biotechnology (Life Sciences); and I.T. Repair Services. Business Infrastructure & Services includes Wholesale Trade; Personnel & Accounting Services; Administrative 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). Largest Bay Area tech employers are from the Silicon Valley Business Journal, "Largest technology employers in Silicon Valley" ranked by local employee headcount; locally researched by Rosie Downey, dated Sep 11, 2020. Employment numbers for the region's largest tech employers are estimates obtained from LinkedIn. Because LinkedIn is primarily a professional network, employment should be considered to primarily include business professionals (as opposed to retail and/or other employees). Uber employment estimates exclude those who self-reported as a driver. 2020 employment estimates were for December, and include the entire Bay Area; however, they are compared to Silicon Valley and San Francisco tech employment combined with the assumption that a large share of the tech workforce at those companies is within that region. The extent to which that is the case is unknown.

### Employment by Major Areas of Economic Activity & Tier

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 2020 was estimated at the industry level by BW Research using Q1 2020 QCEW data and updated based on Q2 2020 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; Nonprofits; Insurance 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 Services; Technical Research & Development (Include Life Sciences); Software; Telecommunications Manufacturing & Services; Instrument Manufacturing (Navigation, Measuring & Electromedical); Pharmaceuticals (Life Sciences); Other Media & Broadcasting, including Publishing; Medical Devices (Life Sciences); Biotechnology (Life Sciences); and I.T. Repair Services. Business Infrastructure & Services includes Wholesale Trade; Personnel & Accounting Services; Administrative 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). 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 occupational 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 highest-paying, highest-skilled occupations in the economy. Tier 2 Occupations include sales positions (Sales Representatives), teachers, and librarians, office and administrative positions (Accounting Clerks and Secretaries), and manufacturing, operations, and production positions (Assemblers, Electricians, and Machinists). They have historically provided the majority of employment opportunities and may be referred to as middle-wage, middle-skill positions. Tier 3 Occupations include protective services (Security Guards), 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).

### 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 and December 2020 are preliminary, and county-level data for December are from the California Employment Development Department January 22 release.

### Pandemic Employment Declines, by Income Category

Data are from Opportunity Insights Economic Tracker, Harvard University. Change in employment rates are not seasonally adjusted, and are indexed to January 4-31, 2020. The series is based on payroll data from Payscale and Intuit, worker-level data on employment and earnings from Earnings, and timesheet data from Kronos. Employment level for workers in the bottom quartile of the income distribution includes incomes approximately under \$27,000; employment level for workers in the middle two quartiles of the income distribution includes incomes approximately \$27,000 to \$60,000; and employment level for workers in the top quartile of the income distribution includes incomes approximately over \$60,000. Silicon Valley is a weighted average of employment level declines for Santa Clara and San Mateo Counties, weighted based on U.S. Census Bureau 2019 estimates of civilian employed workers by personal income level. The week of peak employment level declines varied by geography and income level (between mid-April and late-May, 2020).

### Unemployment by Race & Ethnicity

Data is from the U.S. Census Bureau, American Community Survey 1-Year Estimates. Three-year ranges represent an average. 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 category for residents 16 years of age and older. Other includes the categories Some Other Race and Two or More Races. Data for Two or More Races was not available for San Mateo County for 2007. 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. Data for Initial Unemployment Insurance (UI) Claims are from the California Employment Development Department, and include Santa Clara and San Mateo Counties. Estimates represent a weekly average for each month. Race is from optionally self-identified information at the time a claim is filed. County represents the mailing address given by the claimant at the time of filing; it is possible that an individual can reside in a different county than their mailing address. Initial claims represent the number of claims submitted for all UI programs. Initial claims totals are not representative of the number of individuals filing as a claimant can have multiple initial claims. Employment data by race and ethnicity used to calculate UI claims filed per 10,000 employed are from the U.S. Census Bureau, 2019 American Community Survey 1-Year Estimates, and include all employed workers ages 16 and over.

### Startup Layoffs

Data are from Layoffs.fyi (accessed January 21, 2021), an online database tracking startup layoffs since the COVID-19 pandemic began, created by Roger Lee. Data are "compiled primarily from public report." The number of employees affected is an estimate because some companies did not publicly disclose that information (or it was not available on Layoffs.fyi). Analysis includes both public and private companies. Other includes Aerospace, Construction, Data, Education, Energy, Food, Healthcare, HR, Infrastructure, Legal, Logistics, Marketing, Media, Other, Product, Security, and Support.

### Jobs Supported through Paycheck Protection Program (PPP) Loans

Data are from the United States Small Business Administration (SBA), Paycheck Protection Program through its closure on August 8, 2020. The Paycheck Protection Program (PPP) is a forgivable loan program established by the federal government as part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act in March, 2020, aimed at helping small businesses keep their employees on the payroll. The PPP program was authorized to distribute \$659 billion in loans. Silicon Valley includes the city-defined region. Total amounts are calculated using actual loan amounts of \$250,000 and under, and average loan amounts per loan (in each funding range) as reported by the SBA in the Paycheck Protection Program (PPP) Report containing "approvals through 08/08/2020." For the number of jobs supported: Stated are as listed on PPP loan applications. Estimated are based on 60% uninterrupted job retention through the end of 2020. Low estimate based on highest allowable salary (\$100,000 per year), maximum salary reduction (25%), and minimum share (60%) to payroll expenses, with retention through the end of 2020.

### Top U.S. Tech Talent Centers

Data is from the CBRE 2020 Scoring Tech Talent report. Scoring Tech Talent is a comprehensive analysis of labor market conditions, cost and quality in North America for highly skilled tech workers. The top 50 markets in the U.S. and Canada were ranked according to their competitive advantages and appeal to both 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 within 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.

### Employment Growth at Largest Bay Area Tech Companies

Largest Bay Area tech employers are from the Silicon Valley Business Journal, "Largest technology employers in Silicon Valley" ranked by local employee headcount; locally researched by Rosie Downey, dated Sep 11, 2020. Employment numbers are estimates obtained from LinkedIn. Because LinkedIn is primarily a professional network, employment should be considered to primarily include business professionals (as opposed to retail and/or other employees). The largest Bay Area tech companies included in the analysis were Apple, Google, Cisco, Tesla, Facebook, Intel, Gilead Sciences, Oracle, Lockheed Martin, Nvidia, LinkedIn, Microsoft, Amazon, Salesforce, and Uber. Uber employment estimates exclude those who self-reported as a driver. The change in 2020 was computed from estimates in January and December. The various U.S. regions are defined by LinkedIn as either metro areas or the "greater" region around a particular city; location is self-reported by LinkedIn users. The Dec/Jan-2020 datapoint represents an average of estimates collected in December 2019 and January 2020.

## 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 population figures from the U.S. Census Bureau mid-year population estimates. Silicon Valley data are for Santa Clara and San Mateo Counties. All per capita income 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 data, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics. The personal per capita income for the United States is derived from state and regional data (as 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. State personal income includes the income of resident foreign nationals working in the United States—including migrant workers—regardless of length of residency. It excludes the portion of income earned abroad by U.S. citizens living abroad for less than a year. It also excludes the earnings of federal civilian and military personnel stationed abroad and the property income received by the federal pension plans of those workers. The scenario analysis of potential effects of pandemic-related job losses on personal per capita income were based on the average number of people in Santa Clara and San Mateo Counties who were unemployed between August and October 2020 (from the U.S. Bureau of Labor Statistics), the Tier composition of Community Infrastructure & Services jobs in Silicon Valley (2019) and average wages by Tier, and median wages for Silicon Valley Service Occupations from the 2020 Silicon Valley Index.

### 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 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 and San Francisco data, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) 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. 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 people 15 years old and over in a geographic area by the total population in that area. Income is not collected for people under 15 years old even though these people are included in the denominator of per capita income. This measure is rounded to the nearest whole dollar. Money income includes amounts reported separately for wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income or income from estates and trusts; Social Security or Railroad Retirement 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.

### Average Annual Earnings

Data are from the California Employment Development Department and EMS. Earnings include wages, salaries, profits, benefits, and other compensation, and are calculated by dividing total earnings by the number of jobs.

### Individual Median Income, by Educational Attainment

Data for Median Income by Educational Attainment are 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 2019 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley data. Silicon Valley data includes Santa Clara and San Mateo Counties.

### Average Wages, by Housing Tenure and Industry

Data are from the United States Census Bureau, American Community Survey Public Use Microdata. Renters include those paying rent. Community Infrastructure & Services includes Healthcare & Social Services (excluding government jobs); Retail; Accommodation & Food Services; Education (excluding government jobs); Construction; Local Government Administration; Transportation; Banking & Financial Services; Arts, Entertainment & Recreation; Personal Services; Nonprofits; Insurance Services; Warehousing & Storage; and Utilities (excluding state and local government jobs). Innovation and Information Products & Services includes Computer Hardware Design & Manufacturing; Internet & Information Services; Technical Research & Development (Include Life Sciences); Software; Telecommunications Manufacturing & Services; Instrument Manufacturing (Navigation, Measuring & Electromedical); Pharmaceuticals (Life Sciences); Other Media & Broadcasting, including Publishing; Medical Devices (Life Sciences); and I.T. Repair Services. Business Infrastructure & Services includes Wholesale Trade; Personnel & Accounting Services; Administrative Services; Technical & Management Consulting Services; Facilities; Management Offices; Design, Architecture & Engineering Services; Goods Movement; Legal; and Marketing, Advertising & Public Relations.

### Median Wages for Various Occupational Categories

Data are from the California Employment Development Department, Employment and Wages by Occupation, 2010-2020, for the San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area (MSA), including Santa Clara and San Benito Counties, and the San Francisco-San Mateo-Redwood City MSA, including Marin, San Francisco, and San Mateo Counties. The San Francisco-Redwood City-South San Francisco Metropolitan Division replaced the San Francisco-San Mateo-Redwood City MSA in 2017. Wages have been inflation-adjusted and are reported in 2020 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for the Bay Area data, 2020 estimate based on January-August, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) for California data. Management, 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 Library; Arts, Design, Entertainment, Sports, and Media; and Healthcare Practitioners and Technical Occupations. Service Occupations include Healthcare Support; Protective Services; Food Preparation and Serving-Related; Building and Grounds Cleaning and Maintenance; and Personal Care and Service Occupations. Sales and Office Occupations include Sales and Related; and Office and Administrative Support Occupations. Natural Resources, Construction and Maintenance Occupations include Farming, Fishing and Forestry; Construction and Extraction; and Installation, Maintenance and Repair Occupations. Production, Transportation and Material Moving Occupations include Production; and Transportation and Material Moving Occupations.

### Median Wages by Tier

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. 2020 data are estimates based on QCEW 2020 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 occupational 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 highest-paying, highest-skilled occupations in the economy. Tier 2 Occupations include sales positions (Sales Representatives), teachers, and librarians, office and administrative positions (Accounting Clerks and Secretaries), and manufacturing, operations, and production positions (Assemblers, Electricians, and Machinists). They have historically provided the majority of employment opportunities and may be referred to as middle-wage, middle-skill positions. Tier 3 Occupations include protective services (Security Guards), food service and retail positions

# APPENDIX A

## ECONOMY *continued*

(Waiters, Cooks, and Cashiers), building and grounds cleaning positions (Janitors), and personal care positions (Home Health Aides and Child Care Workers). These occupations typically represent lower-skilled service positions with lower wages that require little formal training and/or education.

### 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 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 and San Francisco data, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) 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 Santa Clara and San Mateo 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 2015-2019 household counts by income category are based on inflation-adjusted 2019 dollars, 2014 counts 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 data include Santa Clara and San Mateo Counties. Income is the sum of the amounts reported separately for the following eight types of income: 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.

### Wealth

2020 data are from Claritas. 2018 data are from Phoenix Global Wealth Monitor (which utilizes Claritas data). Silicon Valley includes 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. Segment distributions are approximations. 2018 market sizing estimates were used to estimate 2020 market sizes for \$3-4.99 million, \$5-9.99 million, and \$10+ million. The distribution of wealth among households with less than \$25,000 in investable assets was calculated applying the national breakdown (U.S. Census Bureau, 2018). The Phoenix Wealth and Affluent Monitor (W&AM) 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 county-level data are approximations only.

### Absolute Gini Coefficients of Income Inequality

Data is from the U.S. Census Bureau, American Community Survey Public Use Microdata. Silicon Valley data include Santa Clara and San Mateo Counties. The Absolute Gini Coefficient is determined by the product of the Relative Gini and the inflation-adjusted mean household income. The Relative Gini Coefficient indicates the degree to which incomes are concentrated. A Relative Gini of zero corresponds to no concentration, or incomes that are the same across all households. A Relative Gini of 100 indicates that all income is concentrated in a single household. Figures between 0 and 100 indicate proximity to either endpoint. Income data used to calculate the relative Gini Coefficient were 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 and Bay Area data, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics. The Absolute Gini is scaled to equal the Relative Gini in 1990. The Intermediate Gini is the product of the Relative and Absolute Gini Coefficients.

### 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 San 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 unrelated individual falls below the relevant poverty threshold (e.g., household income of \$25,750 for a family of four in 2019 within the 48 contiguous states and the District of Columbia), then the family (and every individual in 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 include 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 without 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 six 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 are for 2020. New York City and Colorado Self-Sufficiency data are from Dr. Diana Pearce, Overlooked & Undercounted 2018, Brief 2. A City Evolving: How Making Ends Meet has Changed in New York City (University of Washington School of Social Work, Women's Center for Education and Career Advancement, and United Way of New York City, 2018) and Overlooked & Undercounted 2018, Struggling To Make Ends Meet In Colorado (University of Washington School of Social Work & Colorado Center on Law and Policy, December 2018).

### 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 2010-20 data were from the October 2019 data collection, certified as of January 28, 2020. 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 city-defined region. A child's family income must fall below 130% of the federal poverty guidelines (\$33,475 for a family of four in 2019-2020) to qualify for free meals, or below 185% of the federal poverty guidelines (\$47,638 for a family of four in 2019-2020) 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 (NSLP), 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 CALPADS, or those students "directly certified" as participating in California's food stamp program. Years presented are the final year of a school year (e.g., 2011-2012 is shown as 2012). In school year 2012-2013, the California Department of Education changed its data collection methodology to utilize CALPADS (California Longitudinal Pupil Achievement Data System) student-level data rather than district-provided data. The Non 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 FRMP files. Because the 2012-2013 data had a large number of schools reporting enrollment and percent eligible but not eligible student counts, they were estimated by multiplying enrollment by the eligibility 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 only includes school districts with more than 1,000 students, and excludes the County Offices of Education.

### Number of Meals Provided by Food Assistance Programs; Millions of Meals Distributed, 2020

Data for food assistance provided was compiled by Drew Starbird at Santa Clara University's Leavy School of Business, Center for Food Innovation and Entrepreneurship, and includes public and private food assistance in Santa Clara and San Mateo counties. Food assistance programs include Senior Nutrition, Summer Meals, School Meals (Free and Reduced Price Breakfast and Lunch), WIC (Women, Infants, and Children), Supplemental Nutrition Assistance Program (CalFresh), Child and Adult Care Food Program (CACFP), Second Harvest Food Bank, and other sources. CalFresh data are from the California Department of Social Services, CalFresh Data Dashboard (updated 12/15/20). CalFresh is California's Supplemental Nutrition Assistance Program (formerly Food Stamps). Data for the number of school meals distributed is from the California Department of Education, Nutrition Services Division (retrieved January 25, 2021), and includes breakfasts, lunches, and snacks provided through the National School Lunch Program (NSLP), Seamless Summer Food Option (SSFO), and Summer Food Service Program (SFSF).

### Estimated Share of the Population that is Food Insecure; Change in the Cost of Food at Home

Food insecurity rates are estimated using food insufficiency in combination with estimates of food insecurity rates from Diane Schanzenbach, Northwestern University Institute for Policy Research (prepared for California Association of Food Banks) for pre-pandemic and late-April/early-May 2020. Food Insufficiency represents the share of survey respondents that "sometimes" or "often" did not

have enough food to eat over the prior seven days. It was estimated on the county level by the Stanford Data Lab using regional unemployment data, and statewide survey data from the U.S. Census Bureau Household Pulse Survey and the Food Security Supplement of the Current Population Survey. Percent change in the cost of food at home is from the U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers, San Francisco-Oakland-Hayward, CA.

## 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 2019 (California and U.S.), and forecasts updated on 10/13/2020 (U.S. data), 10/19/2020 (California data), and 10/28/2020 (Silicon Valley and San Francisco); the GDP estimates use historical data through 2019 and forecasts updated on 10/13/2020 (U.S. data), 10/19/2020 (California data) and 11/02/2020 (Silicon Valley and San Francisco). All GDP values have been inflation-adjusted and are reported in 2020 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, 2020 estimate based on January-August, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics based on January through October data. Silicon Valley data include Santa Clara and San Mateo Counties.

### Patent Registrations

Patent data 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 & Fastenings, 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/County 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 USPC classifications. This process may create some minor inconsistencies between the 2015 and previous years' data sorted by Technology Area. Data by technology area was not available for 2019 or 2020 at the time of analysis. 2020 data are through December 12.

### Venture Capital Investment; Top Venture Capital Deals; Megadeals; Unicorns & Decacorns

Venture Capital data for 2000-2016 are from the MoneyTree™ 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). 2017-2020 data are from Thomson ONE as of January 14, 2021. Silicon Valley includes the city-defined region. All values have been inflation-adjusted and are reported in 2020 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, 2020 estimate based on January-August, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics based on January through October data. Megadeals include those over \$100 million each. Top Venture Capital Deals were cross-referenced with CB Insights and Crunchbase. Unicorn and Decacorn data are from CB Insights, as of January 15, 2021. Unicorns include private companies with valuations greater than \$100 million; decacorns include private companies with valuations greater than \$1 billion.

### Venture Capital by Industry

Venture Capital by Industry Data are from the MoneyTree™ Report from PricewaterhouseCoopers and the National Venture Capital Association (with data from CB Insights). For the 2019 and 2020 data, Greater Silicon Valley includes a 50 mile radius around Palo Alto and data was obtained directly from CB Insights. For prior years, 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 - see 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 e-commerce 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 aluminum, 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 are from Crunchbase and include 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 not necessarily tied to equity. Data were extracted January 18, 2021. Investment amounts have been inflation-adjusted and are reported in 2020 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, 2020 estimate based on January-August, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics based on January through October data. Foreign currencies were included by using Crunchbase Statistics, which automatically converts currencies.

### Startups

Data for seed and early-stage companies, and for total number of startups include funding from any type of investor. New startup companies are defined by the year they were founded. 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. Data as of January 2021.

# APPENDIX A

## ECONOMY *continued*

### 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 2013-2018. Average IPO return rates are from the time of the IPO through the end of 2020.

### 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. 2020 data accessed January 16, 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. The historical note on the tie between unemployment rates and nonemployer firms was based on information from the U.S. Bureau of Labor Statistics, Career Outlook, Working in a Gig Economy (May 2016), and Robert Fairlie, The Great Recession and Entrepreneurship Public Policy Working Paper (Kauffman-RAND Institute for Entrepreneurship (January 2011)).

## COMMERCIAL SPACE

### Commercial Space, Leasing, Vacancy, Rents, and Occupancy

Data are from JLL. Commercial space includes Office, Industrial, R&D and Lab. The JLL statistical inventory and all related reports include Office, Flex/R&D, and Lab buildings above 30,000 square feet in Santa Clara County (plus Fremont and Newark) and 20,000 square feet in San Mateo County, and all industrial developments above 10,000 square feet; any attached retail space is not included in total square footage. Silicon Valley data includes San Mateo County, Santa Clara County, and the Cities of Fremont and Newark. Bay Area data includes all San Francisco Bay Area Submarkets, including Silicon Valley, North Bay, Mid-Peninsula, Oakland, and East Bay Suburbs. Average office space asking rents are "Full Service Gross" (FSG), which is the monthly rental rate and includes common area maintenance fees, utility fees, and taxes/insurance fees. Industrial, R&D, and Lab 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

## SOCIETY

## PREPARING FOR ECONOMIC SUCCESS

### Graduation and Dropout Rates; College Preparation

Students meeting UC/CSU requirements includes all 12<sup>th</sup> 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 Unified 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' Adjusted Cohort Graduation Rate with the cohort outcome data from prior years.

### Math Proficiency

Data for 2015-2019 are from the California Department of Education, California Assessment of Student Performance and Progress (CAASPP). Data for the 2019-20 school year is unavailable due to the suspension of CAASP testing in March, 2020, due to COVID-19. 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 Department of Education, California Standards Tests (CST) Research Files for San Mateo and Santa Clara Counties, and California. In 2003, the CST replaced the Stanford Achievement Test, ninth edition (SAT/9). 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 four 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 I CSTs were required for students who were enrolled in the grade/course at the time of testing or who had completed a course during the school year, including during the previous summer. 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 ones place.

### 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 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, by city. The U.S. numbers are weighted averages of the state speeds. 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) for both years, and Foster City for 2020; those missing cities were not included in the regional average.

## EARLY EDUCATION & CARE

### Preschool Enrollment

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). Data for the 2019-20 school year is unavailable due to the suspension of CAASP testing in March, 2020, due to COVID-19. 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.

### Average Monthly Cost of Childcare

Costs of childcare 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 Mateo Counties. Bay Area includes the

vacancy rate does not include occupied spaces presently being offered on the market for sale or lease. Average asking rents have been inflation-adjusted and are reported in 2020 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley data. 2020 estimate based on January-August. Near transit is defined as located within a 10-minute walk of a Caltrain, BART, or VTA station. Lease transactions include New to Market (tenant moves into a new market from another market), Relocation (tenant moves from one location to another in the same market), Renewal (tenant renews its existing lease at its current location), Expansion (when a tenant expands its current premises to include new premises outside of its currently leased premises), Blend-and-extend (tenant's remaining lease term, usually one to three years, is extended and the current rental rate is "blended" with a newly negotiated one), and New Lease (when it is unclear if the tenant is new to market, relocating, expanding, or renewing, to indicate that a new lease transaction has taken place). In an effort to provide more accurate data and reporting, JLL Silicon Valley redefined inventory classifications for Office and Flex/R&D properties. Beginning with the Q3 2020 data, the definition of a property as Office or Flex/R&D was altered to focus more on the structure of the building rather than the use. Apart from downtown areas, the El Camino and Sand Hill Road Corridors, and other office-only pockets, Office is now defined as any building with at least four stories in Santa Clara County (plus Fremont and Newark) and at least three stories in San Mateo County. Flex/R&D properties are defined as buildings that have three or fewer stories in Santa Clara County (plus Fremont and Newark) and one to two stories in San Mateo County. Additionally, as of Q3 2020, owner-occupied buildings are included in the JLL statistical inventory and reports. As of Q4 2020, Lab buildings were included as a separate category from R&D. All the aforementioned changes resulted in a large shift in the existing inventory and historical statistics related to both property types; however, as a result of these changes, statistics and reporting now more accurately represent market dynamics in the region.

### 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 Fremont, Newark, Union City, and Scotts Valley. San Mateo County and Rest of Silicon Valley data were not included in the 2020 Atlas Hospitality Group annual survey report, so were assumed to have no hotels completed that year.

### 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 six major tech tenants (Amazon, Apple, Facebook, Google, LinkedIn, and Netflix) in Silicon Valley, including Santa Clara County, Fremont, and Menlo Park. Not all space is currently occupied (some has been leased but involves redevelopment or was under construction at the time the leases were executed).

9-County region. California data is an un-weighted California county average. 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 without private/informal assistance (e.g., free babysitting by a relative or friend, food provided by churches or local food banks, or shared housing). To calculate the cost of child care, the Standard assumes market-rate costs (defined as the 75<sup>th</sup> percentile) by facility type, age of children, and geographical location. Most states conduct or commission market-rate surveys biannually for setting child care assistance reimbursement rates. The Standard assumes infants (children 0 to 2 years old) and preschoolers (children 3 to 5 years old) are assumed to be in full-time care. Costs for school-age children (6 to 12 years old) assume they receive before and after school care. 2014 costs have been inflation-adjusted and are reported in 2020 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley and Bay Area data, 2020 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 2020) for California data. Costs reported for a family of four are based on a two-adult household. Costs of Childcare are based on one child, and do not include any discounts for additional children. They are net costs after subtracting the Child Care Tax Credit and Child Tax Credit. Costs of Childcare Centers and Family Childcare Homes are from the California Department of Education Regional Market Rate Survey of California Child Care Providers. 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 age two. Preschoolers include children ages two to five. Silicon Valley is calculated as the average of Santa Clara and San Mateo County child care costs. 2020 costs have been estimated using 2018 market rate data, inflation-adjusted to 2020 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley data, 2020 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 2020) for California data.

### Monthly In-Home Childcare Costs

Data for Silicon Valley are from the Care.com Cost of Childcare Calculator, accessed January 2, 2021, and include the city-defined region. 2020 data for San Francisco, California, and the United States are from the Care.com Cost of Child Care Survey: 2019 Report, and inflation-adjusted to 2020 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for San Francisco data, 2020 estimate based on January-August, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) 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. San Francisco includes the San Francisco Metro Area. Costs include care for one child, and are based on Care.com hourly rates offered in jobs posted by families seeking full-time childcare.

## 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 arts and culture. 2020 data are from the IRS Exempt Organizations Business Master File Extract (EO BMEF), updated 12/14/2020. 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 Societies & 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; 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.

### Percent Change in Arts & Culture Employment

Data includes annual industry employment data for the city-defined Silicon Valley region from the United States Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW) modified slightly by EMSI, which removes suppressions and reorganizes public sector employment. Data are for Q2 of each year. Q2 2020 was estimated at the industry level by BW Research using Q2 2020 reported growth and totals, and modified slightly by EMSI. Arts, Entertainment, and Recreation industry jobs include NAICS 71: Independent Artists, Writers, and Performers; Performing Arts Companies; Promoters of Performing Arts, Sports, and Similar; Museums, Arts Galleries, Historical Sites, and Similar; Spectator Sports; Bowling Centers; Other Amusement, Gambling, and Recreation Industries. Part-time is defined as working less than 30 hours per week. Data for average time worked per week in 2019 was from the United States Census Bureau, American Community Survey Public Use Microdata.

### Consumer Spending on Arts & Culture Consumption

Data is derived from a panel of over 6.5 million U.S. consumers, normalized by the Earnest Consistent Shopper Methodology, and includes consumer spending on Arts & Entertainment, Home Entertainment, and Hobbies. 4-Week Trailing Average Year-Over-Year Spending. Events & Attractions include Booking Platforms, Casinos, Indoor Entertainment Centers, Movie Theaters, Outdoor Attractions, Stadiums & Arenas, and Theme Parks; Home Entertainment includes Book Retailers, E-Books, Education Resources, Gaming, Music Streaming & Audio, News & Print Media, Social Media, and Video Streaming; and Hobbies include Arts & Crafts and Music. Silicon Valley includes the city-defined region. Percent change in arts and culture spending 2019-2020 is the average of weekly year-over-year percent change.

# APPENDIX A

## SOCIETY *continued*

### 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 Giants, San Jose Giants, San Jose Barracuda, Stanford Football, Stanford Basketball, Santa 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.

### Financial Impact of the COVID-19 Pandemic on Arts & Culture Organizations

Median financial impact per organization data are from Americans for the Arts, Economic Impact of Coronavirus on the Arts and Culture Sector Dashboard. Santa Clara County data include data from 99 survey responses received before January 21, 2021; San Mateo County data include 18 survey responses; San Francisco data include 106 responses; California included 1,151 responses. Financial impacts for the region are estimated by multiplying the median financial impact per organization by the total number of Arts Nonprofit Organizations. The number of Arts Nonprofit Organizations is defined using 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. 2020 counts are from the IRS Exempt Organizations Business Master File Extract (EO BMF), updated 12/14/2020.

## 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.

### Share Delaying Medical Care

Data is for California, from the U.S. Census Bureau Household Pulse Survey 2020, and include those who delayed medical care in the last four weeks.

### 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.

### Infant and Maternal Mortality Rates

Data are 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 (DVS), as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program, on CDC WONDER online database. Silicon Valley data include Santa Clara and Santa Clara Counties. Greater Silicon Valley includes Santa Clara and San Mateo Counties, Alameda County, and San Francisco. 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 (not the race/ethnicity of the infant). Maternal mortality includes deaths due to a variety of causes related to pregnancy, childbirth, and the puerperium, and the rate is expressed as the number of deaths per 100,000 live births. Black or African American, Asian or Pacific Islander, and White are Non-Hispanic.

### Cesarean Section Rate

Cesarean Section delivery data are 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 (DVS) Natality public-use data on CDC WONDER Online Database. Silicon Valley data include Santa Clara and Santa Clara Counties. Data by race and ethnicity is for Santa Clara and San Mateo Counties, 2016-2019, and only includes First Birth, Low-Risk (excludes any births where one or more maternal risk factors were present), and births at term (gestational age was 37+ weeks). Other and Multiple includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, More than one race, and unknown. Other and Multiple, Asian, Black or African American, and White are all non-Hispanic or Latino. Data by race and ethnicity is for First Birth and Low-Risk (includes births with no maternal risk factors present, a gestational age of 37 or more weeks, and head-down fetal presentation).

### 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/TdTaP 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 first birthday); Three doses of hepatitis B vaccine; and one dose of varicella (chickenpox) vaccine (or physician documented varicella disease history or immunity). Starting in the 2019-20 school year, two doses of varicella (chickenpox) vaccine were required. 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 beliefs. Effective July 1, 2016, California Senate Bill (SB) 277 eliminated the exemption for 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 year).

### Mental Health

Data are from the U.S. Census Bureau Household Pulse Survey - a new, experimental survey designed to quickly and efficiently deploy data collected on how people's lives have been impacted by the coronavirus pandemic. Data collection began on April 23, 2020 (Phase 1 through July 21; Phase 2 through August 19; Phase 3 October 28 through December). Bay Area includes the San Francisco-Oakland-Berkeley Metro Area (San Francisco, Alameda, Marin, Contra Costa, and San Mateo Counties). Share Experiencing Daily Anxiety and/or Depression is calculated by dividing the survey responses "Nearly Every Day" to the four questions of their experiences over the last seven days (Frequency of feeling nervous, anxious, or on edge; Frequency of not being able to stop or control worrying; Frequency of having little interest or pleasure in doing things; Frequency of feeling down, depressed, or hopeless) by the total number who answered the questions.

### Leading Causes of Death

Data are from the California Department of Public Health, Center for Health Statistics and Informatics, Vital Statistics Branch (Records Data and Statistics, December 2020 reports). 2020 data are provisional. Death counts less than 11 were suppressed to protect the privacy of decedents in accordance with the California Health and Human Services Data De-identification Guidelines. For death rate calculations, <11 was assumed to be 5. Population used to calculate rates were from the California Department of Finance, E-1 Population Estimates (January 2020). COVID-19 deaths in 2020 are through November, and are from Santa Clara County's Open Data Portal and the San Mateo County Health County Data Dashboard.

## SAFETY

### Violent Crimes & Property 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 include burglary, motor vehicle theft, and larceny-theft, as well as attempted burglary/theft. Crime trends for 2020 are based on the five Silicon Valley cities with 2020 data posted on their website: Los Altos Hills, Menlo Park, Santa Clara, Sunnyvale, and San Jose.

### 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, Lieutenants, Sergeants, 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. 2020 data were as of July 1, 2020. The San Mateo County Sheriff's Office share of Silicon Valley public safety officers includes those serving Half Moon Bay, Millbrae, Portola Valley, San Carlos, and Woodside; the Santa Clara County Sheriff's Department share of Silicon Valley public safety officers includes those serving Cupertino, Los Altos Hills, and Saratoga.

## PHILANTHROPY

### COVID-19 Regional Response Funds

Data are from individual organizations managing the regional response funds. Totals do not include Bay Area or broader response funds that have or will contribute to Silicon Valley relief, such as those from the United Way Bay Area COVID-19 Community Relief Fund and others. Some of the funds distribute grants to nearby counties in addition to San Mateo and Santa Clara, such as San Francisco and Alameda Counties. The 19 major Santa Clara and San Mateo County COVID-19 Regional Response Funds in the analysis include: Financial Assistance Program (Silicon Valley Strong, in partnership with Destination: Home, Sacred Heart Community Services & the Homelessness Prevention System), COVID-19 Regional Response Fund (Silicon Valley Community Foundation), Silicon Valley Strong (County of Santa Clara and City of San José, in partnership with Silicon Valley Community Foundation), Regional Nonprofit Emergency Fund (Silicon Valley Community Foundation), San Mateo County Strong Fund (County of San Mateo, in partnership with Silicon Valley Community Foundation), San Mateo Credit Union Community Fund (San Mateo Credit Union, in partnership with the County of San Mateo, San Mateo County Strong Business Assistance Program), Small Business Relief Fund (Silicon Valley Community Foundation, in partnership with Opportunity Fund), COVID-19 Education Partnership (Silicon Valley Community Foundation), COVID-19 Relief Fund (Palo Alto Community Fund), Mountain View Small Business Fund (Los Altos Community Foundation & City of Mountain View), COVID-19 Childcare Project (Silicon Valley Community Foundation & Low-Income Investment Fund), 2020 Nonprofit Relief Fund (Los Altos Community Foundation), Los Altos Small Business Relief Fund (Los Altos Community Foundation, City of Los Altos, and Town of Los Altos Hills), COVID-19 Response Fund (San Carlos Community Foundation), Mountain View Center Support Fund (Los Altos Community Foundation & City of Mountain View), WES COVID-19 Community Coalition Fund (Woodside Community Foundation, Essential Services Workers Childcare Program (Morgan Hill Community Foundation, in partnership with Morgan Hill Unified School District, YMCA, and the Santa Clara County Department of Education), Disaster Relief Fund (Morgan Hill Community Foundation), and the Woodside Together 2.0 Fund (Woodside Community Foundation & Fair Oaks Community Center). The Financial Assistance Program received a total of \$10,561,305 from the COVID-19 Regional Response Fund and the Silicon Valley Strong Fund combined; thus, that amount has been subtracted from the regional total to avoid double-counting. \$525,000 of the June San Mateo Credit Union Community Fund total is not included in the regional total to avoid double-counting, as these funds were distributed by the Silicon Valley Community Foundation and counted as funds raised elsewhere. It was assumed that all contributions to the WES COVID-19 Community Coalition Fund have been granted since the webpage says "donations to this fund will be dispersed regularly" and because we were unable to acquire a precise number. It was assumed that all contributions to the Woodside Together 2.0 Fund have been granted since the webpage says "our goal is to raise a minimum of \$10,000 which will be given to the Fair Oaks Community Center to distribute to low-income families living in Woodside and adjacent communities" and because we were unable to acquire a precise number. Totals "through September" are through mid-December for the COVID-19 Childcare Project, COVID-19 Education Partnership, Regional Nonprofit Emergency Fund, Silicon Valley Strong, and COVID-19 Regional Response Fund. Financial Assistance Program is through December. Total amounts granted through September for the two Morgan Hill Community Foundation funds were assumed to equal the total amount raised through June as an updated grant total was not obtained. Silicon Valley Strong fundraising goes toward the Silicon Valley Strong Fund, the Silicon Valley Community Foundation COVID-19 Regional Response Fund designated for Santa Clara County, the Silicon Valley Community Foundation COVID-19 Nonprofit Regional Emergency Fund designated for Santa Clara County, and direct commitments to Destination:Home. Silicon Valley Strong grants (alone) were assumed to be equally distributed between small businesses, nonprofits, and food/shelter/other basic needs, as exact percentages were not obtained. It was assumed that all contributions to the Woodside Community Foundation funds have been granted based on language posted to the website, and because we were unable to acquire precise numbers.

### Individual Giving

Data are from the IRS SOI Tax Stats County Data. Charities 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 from 45% in 2017 to 24% in 2018 for Santa Clara and San Mateo Counties, combined; however, while only 24% of returns were itemized, those returns represented 60% of the regional adjusted gross income, and 88% of Santa Clara and San Mateo County itemizers with an adjusted gross income of \$200,000+ deducted some amount of charitable contributions.

### 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, and 2019 grants as of January 2021. 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, \$8.4 million in 2016, and \$24.1 million in 2019, as well as \$3.7 million to the Los Altos Community Foundation and \$25 million to Santa Clara College in 2019.

### 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. Notably missing from the 2019 Book of Lists was Kaiser Permanente, which (according to the November 13, 2020 Business Journal Announcement) "declined to participate in the Corporate Philanthropists lists for either the Silicon Valley Business Journal or our sibling publication, the San Francisco Business Times."

### 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 2019 (accessed November 16, 2020).

### Foundation Grants

Data are from Foundation Directory Online as of January 24, 2021. Grants to academic institutions and hospitals were excluded, to the extent possible, as were grants from one local foundation to another and any grants received by local Community Foundations. Grants from local foundations to Elsewhere excludes large amounts (>\$1 million) to hospitals and academic institutions, to the extent possible, but may include any type of grant recipient. Analysis excludes Silicon Valley Community Foundation (SVCF) donor-advised grants in 2018 to local and non-local recipients, as listed on the SVCF grantee website as of January 2021.

### 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 2019 (accessed January 14, 2021).

# APPENDIX A

## PLACE

### HOUSING

#### Median Home Sale Prices; Number of Homes Sold

Data are from CoreLogic, provided by DQ News. Silicon Valley includes San Mateo and Santa Clara Counties. Median sale prices have been inflation-adjusted and are reported in 2020 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, 2020 estimate based on January-August, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics based on January through October 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. 2020 estimates are based on data through October.

#### Weekly For-Sale Inventory

Data include the San Jose and San Francisco Metropolitan Statistical Areas, and the United States, and are from Zillow Real Estate Research through November 2020.

#### Residential Building

Data are from the Construction Industry Research Board and California Homebuilding Foundation, and includes Santa Clara and San Mateo Counties. Data includes the number of single family and multi-family units included in building permits issued. Single-Family housing units include detached, semi-detached, row house and townhouse units. Multi-family housing includes duplexes, 3-4 unit structures and apartment type structures with five units or more.

#### Regional Housing Need Allocation (RHNA)

Data are from Joint Venture Silicon Valley's annual land-use survey of all cities within Silicon Valley. The 35 cities/counties included in the FY 2019-20 Building Affordable Housing analysis included Atherton, Belmont, Brisbane, Burlingame, Campbell, Colma, County of San Mateo, County of Santa Clara, Cupertino, Daly City, East Palo Alto, Foster City, Fremont, Gilroy, Half Moon Bay, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Morgan Hill, Mountain View, Newark, Pacifica, Palo Alto, Portola Valley, Redwood City, San Bruno, San Carlos, San Mateo, San Jose, Santa Clara, Saratoga South San Francisco, Sunnyvale, Woodside. Most recent data are for fiscal year 2019-20 (July 2019 through June 2020). Affordable units are those units that are affordable for a four-person family earning up to 80% of the median income for a county. Cities use the U.S. Department of Housing and Urban Development's (HUD) estimates of median income to calculate the number of units affordable to low-income households in their jurisdiction.

#### 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 35 cities/counties included in the FY 2019-20 Building Affordable Housing analysis included Atherton, Belmont, Brisbane, Burlingame, Campbell, Colma, County of San Mateo, County of Santa Clara, Cupertino, Daly City, East Palo Alto, Foster City, Fremont, Gilroy, Half Moon Bay, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Morgan Hill, Mountain View, Newark, Pacifica, Palo Alto, Portola Valley, Redwood City, San Bruno, San Carlos, San Mateo, San Jose, Santa Clara, Saratoga South San Francisco, Sunnyvale, Woodside. Most recent data are for fiscal year 2019-20 (July 2019 through June 2020). Affordable units are those units that are affordable for a four-person family earning up to 80% of the median income for a county. Cities use the U.S. Department of Housing and Urban Development's (HUD) estimates of median income to calculate the number of units affordable to low-income households in their jurisdiction.

#### Average Rental Rates

Data are from the Zillow Real Estate Research, Zillow Observed Rent Index (ZORI, as of January 2021), and include all homes plus multifamily housing. ZORI is a smoothed average of observed market rents, and is weighted to include the entire housing stock (not just what is listed on the market). California is calculated as the average of all California MSA ZORIs included in the dataset: San Francisco, San Jose, Ventura, Los Angeles-Long Beach-Anaheim, San Diego, Riverside, Sacramento, Fresno, and Bakersfield. San Francisco is the average ZORI of the available 14 San Francisco zip codes; Santa Clara County (21 zip code-average), and San Mateo County (10 zip code-average). Percent change in the consumer price index is based on October 2019 through October 2020, except rental rates for the U.S. which are based on November 2019 through November 2020, including multifamily complexes with five or more units; they have been inflation-adjusted and are reported in 2020 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, 2020 estimate based on January-August, the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) for California data, and the U.S. city average consumer price index for all urban consumers from the Bureau of Labor Statistics based on January through October data. Average Apartment Rental Rates by MSA data are from Zillow Real Estate Research, and include the Zillow Observed Rent Index (ZORI) for all homes plus multifamily housing in 2020 (through November). Median Rental Rates for single family residences and apartments are from Altos Research.

#### 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 2019 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 measures 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 pose 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 households 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. 2020 averages include Q1-3.

#### 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 number 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 "spare" room, excluding couples who share a room (and may also have a spare room). Available vacant units include those that are For Rent, For Sale, and Other Vacant; they do not include Rented, not occupied; 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 interview, unless its occupants are only temporarily absent. 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 doors 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 condemned. 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. Potentially Available housing units include For rent, For sale only, and Other Vacant.

#### Inadequate or Deficient Housing Units

Data are from the 2017 (Silicon Valley) and 2019 (San Francisco and California) 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: 1) Unit does not have hot and cold running water; 2) Unit does not have a bathtub 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 electrical plugs, and the fuses have blown more than twice; 8) Unit has five or six of the following

structural conditions: a) Unit has had outside water leaks in the past 12 months; b) Unit has had inside water leaks in the past 12 months; c) Unit has holes in the floor; d) Unit has open cracks wider than a dime; e) Unit has an area of peeling paint larger than 8 by 11 inches; f) Rats have been seen recently in the unit. Cold 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 Toilet includes "None working some time in last 3 months."

#### Multigenerational 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. 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 Mateo Counties. The definition of multigenerational households used for this analysis goes beyond the Census Bureau's traditional definition, and includes all households with two 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 adult generations (a parent or parent-in-law and adult child/children, where either generation 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.

#### 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.

#### Housing Insecurity

California and United States estimates are from the U.S. Census Bureau Household Pulse Survey, assuming that each survey respondent that is housing insecure represents one household. Silicon Valley and Bay Area are estimated using ratios of community risks from the U.S. Census Bureau Community Resilience Estimates (CRE) by county to housing insecurity estimates from the Household Pulse Survey data by MSA. CRE data include the share of individuals with three or more CRE risk factors. Silicon Valley includes Santa Clara and San Mateo Counties. Community Resilience is defined as the capacity of individuals and households to absorb, endure, and recover from the health, social, and economic impacts of a disaster such as a hurricane or pandemic. When disasters occur, recovery depends on the community's ability to withstand the effects of the event. In order to facilitate disaster preparedness, the Census Bureau has developed new small area estimates, identifying communities where resources and information may effectively mitigate the impact of disasters. The estimates were developed by modeling individual and household characteristics from the 2018 American Community Survey (ACS), in combination with publicly-available data from the 2018 National Health Interview Survey (NHIS), to provide tract and county level estimates. Risk factors include 1) household income-to-poverty ratio of less than 130%; 2) single or zero caregiver household, where only one or no individuals living in the household who are ages 18-64; 3) household crowding defined as either unit-level crowding of >0.75 persons per room, or household residing in a high-density tract with 75% of the population living in blocks with greater than 4,000 people; 4) communication barrier defined as either linguistically isolated, or having no or greater than the age of 16 with a high school diploma; 5) no employed persons; 6) disability posing constraint to significant life activity, including persons who report having any one of the six disability types: hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, or independent living difficulty; 7) no health insurance coverage; 8) age equal to or greater than 65; 9) serious heart condition; 10) diabetes; or 11) emphysema or current asthma. The share of housing insecure households is calculated as the number of people with "no confidence" or "slight confidence" that they will be able to pay next month's rent/mortgage on time, plus those who indicated "payment is/will be deferred," divided by the total number of respondents (who pay rent or a mortgage and provided both tenure and confidence).

#### Newly Burdened Renter Households Due to Pandemic Job Losses

Data for Santa Clara and San Mateo County median household income, number of renter households (that pay rent) in each income range, and the corresponding number of people in those households is from the U.S. Census Bureau, American Community Survey 1-Year Estimates for 2019. Approximate shares of additional households by area median income (AMI) category that were affected by COVID-related job losses and "Newly Burdened" by housing costs as of June 2020 were statewide, from the Turner Center for Housing Innovation at U.C. Berkeley, August 4 report entitled *COVID-19 and California's Vulnerable Renters* (Kneebone & Reid). The Newly Burdened shares were applied to the number of Santa Clara and San Mateo County renter households in those AMI categories, then adjusted based on the estimated total number of Newly Burdened renter households in the two counties (14,500) and the total number of households impacted by COVID-related job losses (54,400) from the Turner Center report.

#### Homelessness

The Santa Clara County data are from the 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 the early morning hours of January 31, 2019. The population share was calculated using January 1 population estimates from the California Department of Finance, E-4 Historical Population Estimates for Cities, Counties, and the State.

#### 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, County 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

Data are from Caltrans PeMS (Performance Measurement System) which collects, filters, processes, aggregates and examines traffic data from the Caltrans network of roadway traffic sensors. Data include California State Freeways only (not all state highways). Silicon Valley includes Santa Clara & San Mateo Counties. Bay Area includes the 9-County San Francisco Bay Area. California Department of Finance E-4 Population Estimates were used to compute per capita values.

#### Transportation-Related Injury Crashes

Santa Clara and San Mateo County data are from the California Highway Patrol, Statewide Integrated Traffic Reporting System (SWITRS), accessed January 26, 2021. Data include injury crashes involving a vehicle only, and only those occurring on state roads. Vehicle miles traveled are considered a measure of exposure to transportation-related vehicle crashes. 2020 data is preliminary. Bay Area data are from the U.C. Berkeley Transportation Injury Mapping System (TIMS), and include six Bay Area counties (Alameda, Contra Costa, Marin, Santa Clara, San Francisco, and San Mateo), with 2019-2020 percent change calculated using February-December totals.

#### Transportation Costs

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 Mateo Counties. Bay Area includes the 9-County region. California data is an un-weighted California county average. 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 without private/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 (a car) in counties where less than 7% of workers commute within the county by public transportation. Only three counties have rates of use among commuters that meet the 7% threshold (Alameda, Mono, and San Francisco); only 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 patterns, private transportation has been assumed. Private transportation costs are based on the average costs of owning and operating a car. It is understood that the car(s) will be used for commuting five days per week, plus one trip per

# APPENDIX A

## PLACE *continued*

week for shopping and errands. In addition, one parent in each 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" because they do not represent the average amount of money spent on transportation, but rather the cost of basic transportation needs based on family type and county of residence. 2014 costs have been inflation-adjusted and are reported in 2020 dollars using the Bay Area consumer price index for all urban consumers from the Bureau of Labor Statistics for Silicon Valley and Bay Area data, 2020 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 2020) for California data. Costs reported for a family of four are based on a two-adult household.

### 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 commuting to the geographic location at which workers carried out their occupational activities during the reference week whether or not the location was inside or outside the county limits. 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 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. People who used different means of transportation on different days of the week were asked 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 (including company cars but excluding taxicabs), a truck of one-ton capacity or less, or a van. The category "Public Transportation," includes workers who used a bus or trolley bus, streetcar or trolley car, subway or elevated, railroad, or ferryboat, even if each mode is not shown separately in the tabulation. The category "Other Means" includes taxicab, 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 include civilian residents over age 16 who were employed and at work. Cross-county commuters include those who do not work within their county of residence.

### Bicycle Commuters

Data are from the United States Census Bureau, American Community Survey 1-Year Estimates, and include workers 16 years old and over residing in Santa Clara and San Mateo Counties commuting to the geographic location at which workers carried out their occupational activities during the reference week whether or not the location was inside or outside the county limits. 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 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). Data for the Share of Residents Who Ride a Bike in Santa Clara County (early 2020) is for an average week, and is from a survey of 1,009 Santa Clara County residents, conducted pre-pandemic by Change Research on behalf of the Silicon Valley Bicycle Coalition, in partnership with the County of Santa Clara and the Mineta Transportation Institute at San José State University (*Surveying Silicon Valley on Cycling, Travel Behavior, and Travel Attitudes*).

### 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. 2019 and 2020 data are provisional.

### Bicycle Facilities

Data for 2020 are from the County of San Mateo and Santa Clara Valley Transportation Authority Open Portal. 2017 data were compiled from MTC, VTA, and Google Streets, and include Santa Clara and San Mateo Counties. Bicycle facility classes have been defined by Caltrans and include Class I (Shared Use Path), Class II (Bikeway), Class III (Bike Route/Boulevard), and Class IV (Protected Bikeway). Beginning in 2017, the data for Class I (Shared Use Path) included pathway networks in parks, as well as parallel measurements for pathways that run along both sides of waterways (the metric does not include unpaired paths in mountainous state park areas that are mostly used for mountain bike recreation); the data for Class 2 (Bikeway) included 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 data for Class 3 (Bike Route/Boulevard) included additional bike routes that were not included in the 2016 data. The San Mateo County dataset for 2017 was based on the 2016 inventory, plus any bicycle infrastructure that had been added or removed over the following year.

### Jurisdictions with a Bicycle or Pedestrian Master Plan

Data includes cities within the city-defined Silicon Valley region, and the Counties of Santa Clara and San Mateo. Data include all bicycle and pedestrian master plans that were created since 2011, and were approved, planned or in-progress as of December 2020.

### Daily Vehicle Hours of Delay Due To Congestion

Data are from Caltrans PeMS (Performance Measurement System) which collects, filters, processes, aggregates and examines traffic data from the Caltrans network of roadway traffic sensors. Data include California State Freeways only (not all state highways). Silicon Valley includes Santa Clara & San Mateo Counties. Bay Area includes the 9-County San Francisco Bay Area. The reported traffic delays data are based on the detector coverage and health at the time that the data was collected by PeMS. Accordingly, actual traffic delays experienced in each county may be higher than those reported. One vehicle hour of delay reflects one vehicle stuck in traffic for one hour. Delay refers to speeds less than 60 miles per hour.

### Per Capita Transit Use

Estimates are the sum of annual ridership on the light rail and bus systems in Santa Clara and San Mateo Counties (from SanTrans 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-capita values. Per capita ridership on ACE includes Santa Clara County only, and is calculated using the Santa Clara County population estimates. FY 2020-21 ridership estimated using Q1 data for VTA, and data from July through October for Caltrain and SanTrans; ACE ridership in Santa Clara County estimated by ACE as equal that of the prior fiscal year. FY 2020-21 per capita ridership calculated using 2020 population estimates.

### Caltrain and BART Ridership

Data are from Bay Area Rapid Transit (BART) and include average weekday entries. Data accessed November 10, 2020. Caltrain data through FY 2019 are from the Annual Passenger Counts report, and include average weekday daily ridership (through FY 2016) and average mid-weekday daily ridership (FY 2017+). FY 2020 and 2021 Caltrain data are from board meeting agendas. Years indicate the end of the fiscal year (e.g., 2018 includes data for FY 2017-18).

### Shuttles

Transit ridership data are from Bay Area transit agencies. Shuttle 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 the 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 was 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 pass through 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

Vehicle registration data include common shuttle bus manufacturers (Van Hool, Motor Coach Industries, Novabus, Evobus, Man Truck and Bus Corporation), and are as of January 2020. Silicon Valley includes the city-defined region. Data only include vehicles that were registered as of January 2020, regardless of the model year.

## LAND USE

### Residential Density

Data are from Joint Venture Silicon Valley's annual land-use survey of all cities within Silicon Valley. The 33 cities/counties included in the FY 2019-20 Residential Density analysis are Atherton, Belmont, Brisbane, Burlingame, Campbell, Colma, County of San Mateo, County of Santa Clara, Daly City, East Palo Alto, Foster City, Fremont, Gilroy, Half Moon Bay, Hillsborough, Los Altos Hills, Los Gatos, Millbrae, Morgan Hill, Mountain View, Newark, Pacifica, Palo Alto, Redwood City, San Bruno, San Carlos, San Mateo, San Jose, Santa Clara, Saratoga, South San Francisco, Sunnyvale, 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. Beginning in 2020, the residential density calculation included accessory dwelling units (ADUs) that were issued a building permit in lieu of a planning approval.

### 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 2019-20 Housing Near Transit analysis were Atherton, Belmont, Burlingame, Campbell, Colma, County of San Mateo, County of Santa Clara, Cupertino, Daly City, East Palo Alto, Foster City, Fremont, Gilroy, Hillsborough, Los Altos, Millbrae, Milpitas, Morgan Hill, Mountain View, Newark, Palo Alto, Redwood City, San Bruno, San Carlos, San Mateo, San Jose, Santa Clara, Scotts Valley, South San Francisco, and Sunnyvale. 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 2020 (July 2019 through June 2020). The number of new housing units within one-third mile of transit are reported 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-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 2020 (July 2019 through June 2020). The amounts of commercial development within one-third of a mile of transit are reported 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-quarter mile of transit. The 37 cities/counties included in the FY 2019-20 Non-Residential Development Approvals analysis were Atherton, Belmont, Brisbane, Burlingame, Campbell, Colma, County of San Mateo, County of Santa Clara, Cupertino, Daly City, East Palo Alto, Foster City, Fremont, Gilroy, Half Moon Bay, Hillsborough, Los Altos, Los Altos Hills, Los Gatos, Millbrae, Milpitas, Morgan Hill, Mountain View, Newark, Pacifica, Palo Alto, Portola Valley, Redwood City, San Bruno, San Carlos, San Mateo, San Jose, Santa Clara, Saratoga, South San Francisco, Sunnyvale, and Woodside.

### Planned Hotel Development

Data is from the Atlas Hospitality Group annual California Hotel Development Surveys. Planned hotels are in various stages, and have not necessarily received planning approvals.

## ENVIRONMENT

### Water Resources

Data for Santa Clara County was provided by Santa Clara Valley Water District (SCVWD). Scotts Valley Water District (SVWD) provided Scotts 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 Brisbane/GVMID, Estero, Burlingame, Hillsborough, CWS - Bear Gulch, Menlo Park, CWS - Mid Peninsula, Mid-Peninsula, CWS - South SF, Millbrae, Coastside, North Coast, Redwood City, Daly City, San Bruno, East Palo Alto, and Westborough. Cordillera serves residents in San Mateo County, but is not a BAWSCA member and therefore was not included in this analysis. Data for FY 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 and recycled percentage of total water used do not include consumption for agriculture or by private well-owners in the SCVWD data. In the BAWSCA data, the small number of agricultural users in the service area are treated as a class of commercial user and so are included in the consumption figures. Scotts Valley Water District does not serve agricultural customers, so total water consumption figures used 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).

### Per Capita Waste Production & Local Disposal

Data are from the CalRecycle Multi-year Countywide Origin Summary, which indicates the amount of waste that was produced (not disposed) within the region. Silicon Valley includes the city-defined region. Statewide waste disposal includes the total amount of waste disposed at a landfill and the total amount of waste exported out of state to landfills or transformation facilities. Population data used to calculate per capita values are from the California Department of Finance, E-4 Estimates. Local solid waste disposal data are by landfill location; waste may have been generated elsewhere.

### 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 an Air Quality Index (AQI) of >100 for sensitive groups, and >150 for the general population in one or both of the two counties. The AQI includes Air Quality Index (AQI) for all AQI pollutants including carbon monoxide, ozone, particulate matter, nitrogen dioxide, sulfur dioxide, and lead. The PM2.5 monitoring network was phased in between 1999 and 2001 in most areas, so earlier years do not include PM2.5 (a type of particulate matter).

### Gasoline and Diesel Sales

Data are from the California Energy Commission, 2019 California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets, accessed January 11, 2020. Gas stations and sales are estimated by the CEC using Board of Equalization gasoline sales totals and Energy Commission diesel sales determinations (which account for both taxable and non-taxable sales of diesel). Staff uses a statistical procedure known as "bootstrapping" to estimate the population characteristics of the unreported and unknown stations. Since large chain operators are easier to notify and collect information from, the estimated population station characteristics are weighted to match independent owners and smaller station chains in order to account for unreported stations. 2012-2019 data are not directly comparable to other years since an improved methodology was used, but the CEC estimates that they are within 5 percent compared to the previous methodology.

### 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 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, and the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) 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. Estimated percent change in electricity use for residential and non-residential customers in 2020 was calculated using data from Pacific Gas and Electric public data files of bundled (electricity and transmission/distribution) and unbundled (transmission/distribution only) residential and non-residential customers; it does not include electricity usage by municipal utilities customers.

### Emissions Intensity for Power Providers; Share of Electricity Customers Served, by Provider; Share of Electricity, by Generation Sources

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 Clean Energy which serves 13 communities in Santa Clara County; Peninsula Clean Energy which serves 20 San Mateo County cities and the unincorporated portion of the county; and San José Clean Energy, the newest of the three, serving residents and businesses in San Jose since February 2020. The remaining Silicon Valley communities outside of the two counties are served by Monterey Bay Community Power (Scotts Valley) and East Bay Community Energy (Fremont and Union City); Newark opted out of joining the community choice energy program and thus remains served by PG&E. Neither Monterey Bay Community Power or East Bay Community Energy are included in this analysis, although bundled PG&E customers in Fremont, Newark, Union City, and Scotts Valley are included. The three locally-controlled public-agency electricity providers in Santa Clara and San Mateo Counties have served customers since October 2016 (Peninsula Clean Energy), April 2017 (Silicon Valley Clean Energy), and February 2019 (San José Clean Energy). Palo Alto Utilities has provided 100% carbon-neutral electricity since 2013; the 2019 emissions intensity is negative because the City's renewable energy projects throughout the state generated more than the City used that year. These generation assets added excess renewable energy, and thus

# APPENDIX A

## PLACE *continued*

the utility helped reduce the carbon footprint of the grid in addition to providing carbon neutral power to its customers. PG&E's emissions factor is from The Climate Registry, and customer counts were provided publicly available data on PG&E's website (including bundled customers only). Other emissions intensities and customer counts were provided directly by Silicon Valley's energy providers. Data are for 2019 except PG&E (2018), California (2018), and the U.S. Average (2018). The analysis does not include Direct Access (DA) electricity customers. Green-e® Energy is the leading certification program for voluntary renewable energy in North America. The 2020 Green-e® Residual Mix Emissions Rates are "greenhouse gas (GHG) emissions associated with untracked and unclaimed U.S.-based sources of electricity, based on location of consumption." The "residual mix" is what is leftover on the grid after all the Green-e® certified renewable energy credits that have been purchased – either alone or bundled with the power itself – are removed. These emissions rates are used to calculate the carbon dioxide (CO<sub>2</sub>) equivalent emissions associated with unspecified purchased or acquired electricity, classified as "Scope 2" emissions for carbon accounting purposes. Data for the share of electricity by generation sources are from the 2018 Power Content Labels, through the California Energy Commission's Power Source Disclosure Program for Silicon Valley providers. California and U.S. generation by sources are from the U.S. Environmental Protection Agency (EPA) Emissions & Generation Resource Integrated Database (eGRID) fuel mix for 2018. The Silicon Valley Average shares of electricity by generation source are approximations for illustrative purposes only, calculated as un-weighted averages of all power plans available to residential and non-residential customers.

### Solar and Storage Installations

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. Cumulative installed solar capacity does not include installations prior to 1999. All systems included in the analysis are Net Energy Metered (including RES-BCT and Virtual Net Energy Metering) and Non-Export PV. PG&E data is from the California Solar Statistics, which publishes all IOU solar PV net energy metering (NEM) interconnection data per CPUC Decision (D)14-11-001. Energy storage data for PG&E is from the Self Generation Incentive Program (SGIP) Data. 2020 data are through mid-December for Palo Alto Utilities and Silicon Valley Power, and through September for PG&E. Silicon Valley Power energy storage data prior to 2019 is unavailable.

### Technical Potential of Rooftop Solar Photovoltaics

Data are from the 2010 U.S. Census, National Renewable 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 criteria: every included panel receives at least 75% of the maximum annual sun in the county, 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). Technical potential estimated total system size was converted from DC to AC using the Project SunRoof model assumption of DC to AC derate factor of 85%.

### Electric Vehicle Infrastructure

Data for public electric vehicle stations and outlets are from the U.S. Department of Energy, and include the city-defined Silicon Valley region. Annual data are for November 19, 2020; December 6, 2019; November 13, 2018; December 18, 2017; December 6, 2016; November 2, 2015; and November 14, 2014. Private electric vehicle charging infrastructure data are from the California Energy Commission Zero Emission Vehicle and Charger Statistics (last updated October 30, 2020; retrieved December 7, 2020), and include Santa Clara and San Mateo Counties.

### Electric Vehicle Adoption

Data are from the California Department of Motor Vehicles registration data including registered light-duty vehicles only, as of October 2018 (for 2010-2018) and January 2020 (for 2019). Years listed are the model year. Electric vehicles include Battery Electric, Fuel Cell Electric, and Plug-In Hybrid Electric Vehicles. Silicon Valley includes the city-defined region. Palo Alto includes East Palo Alto. City data are by zip code, so do not represent exact city-boundaries.

## GOVERNANCE

### LOCAL GOVERNMENT ADMINISTRATION

#### Local Government Finances

Data were obtained from the audited annual financial reports from Santa Clara and San Mateo Counties and 38 out of 39 Silicon Valley cities (all excluding Union City), including Comprehensive Annual Financial Reports, Annual Financial Statements for the Year End, Annual Financial Reports, Basic Financial Statements Reports, and Annual Basic Financial Statements Reports, as well as the State of California annual year-end financial report from the California State Auditor. The Union City audited annual financial report was not publicly available at the time the data were compiled, so budgeted amounts for FY 2018-19 were used in the regional analysis. Data for City Finances include both Government and Business-Type Activities (where applicable). Whenever possible, data were obtained from the following year report (e.g., the 2010 report for 2009 figures) because following year reports sometimes reflect revisions/corrections. 2019 data were obtained from the Fiscal Year 2018-2019 reports. Years represent the end of the Fiscal Year (e.g., 2019 data are for FY 2018-19). All 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 data, and the California consumer price index for all urban consumers from the California Department of Finance May Revision Forecast (April 2020) for California data. Values are significant to the nearest \$1 million due to rounding in the city and state reports. Revenues Minus Expenses is reported before Transfers or Extraordinary Items. Other Revenues includes any revenue other than Property Tax, Sales Tax, Investment Earnings, or Charges for Services. Other Revenues includes the following (as categorized by the various cities in Silicon Valley): Incremental Property Taxes; Public Safety Sales Tax; Business tax; Municipal Water System Revenue; Waste Water Treatment Revenue; Storm Drain Revenue; Transient occupancy tax; Business, Hotel & Other Taxes; Property transfer tax; Property Taxes In-Lieu; Vehicle license in-lieu fees or Motor Vehicle In-Lieu; Licenses & Permits; Utility Users Tax; Development impact fees; Franchise fees; Franchise Taxes Franchise & Business Taxes; Rents & Royalties; Net Increase (decrease) in Fair Value of Investments; Equity in Income (losses) of Joint Ventures; Miscellaneous or Other Revenues; Cardroom Taxes; Fines and Forfeitures; Other Taxes; Agency Revenues; Interest Accrued from Advances to Business-Type Activities; Use of Money and Property; Property Transfer Taxes; Documentary Transfer Tax; Unrestricted/Intergovernmental Contributions in Lieu of Taxes; Gain (loss) of disposal of assets. Shares of Silicon Valley city expenses to police and fire were estimated using total public safety spending amounts and data from cities which report police and fire expenses separately. Data used to estimate the effect of the pandemic on expected Silicon Valley city general fund revenues and expenses were from individual city budget documents. Thirty-two Silicon Valley cities were included in the analysis: Atherton, Belmont, Burlingame, Campbell, Colma, Cupertino, Foster City, Fremont, Gilroy, Half Moon Bay, Hillsborough, Los Altos, Los Altos Hills, Los Gatos, Menlo Park, Millbrae, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Newark, Pacifica, Palo Alto, Redwood City, San Bruno, San Jose, San Mateo, Santa Clara, Scotts Valley, South San Francisco, Sunnyvale, Woodside. In most cases, Adopted FY 2020-21 budgets were compared to Adopted FY 2019-20 budgets. For Redwood City, the Revised FY 2020-21 budget was compared to the Recommended one.

#### City/County Manager Turnover

Annual count of city/county managers are a snapshot in time, taken in August of each year since 2013 from individual city and county websites. Data include Silicon Valley Cities, as well as the Counties of Santa Clara and San Mateo.

### CIVIC ENGAGEMENT

#### Partisan Affiliation

Data are from the California Secretary of State, Elections Division. Silicon Valley data are for Santa Clara and San Mateo counties. Other includes Green, Libertarian, Natural Law, Peace & Freedom/Reform, and Other. No Party Preference was formerly called Declined to State.

#### Eligible Voter Turnout and Absentee Voting

Registration and turnout 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. Eligible Voter Turnout and Absentee Voting includes data for the even-year November General Elections.

#### Share of Votes, by Presidential Candidate

Data are from the California Secretary of State, Elections Division. Share of Votes by Presidential Candidate are for the 2020 General Election. Silicon Valley includes Santa Clara and San Mateo Counties. The Bay Area includes the 9-County region. Other includes Howie Hawkins, Jo Jorgensen, Roque "Rocky" De La Fuente Guerra, Gloria La Riva, Brian Carroll, Mark Charles, Joseph Kishore, Brock Pierce, and Jesse Ventura.

#### Early Voting

Data are from the Counties of Santa Clara and San Mateo, the U.S. Elections Project, and the California Secretary of State, Elections Division. Early voting percentages are for the 2020 Presidential General Election, and are based on the latest information available as of November 3, 2020. They are reported as a share of total ballots cast; U.S. ballots cast is an estimate from the U.S. Elections Project.

#### Eligible Voter Turnout, by Age

Eligible Voter Turnout by Age data are from the Center for Inclusive Democracy at the USC Sol 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. 2016 General Election turnout for California does not include Yuba County. The eligible turnout rate in San Francisco increased significantly in 2020 due to an estimated decline in the citizen voting age population ages 25-34.

### REPRESENTATION

#### Representation

Data is from the GrassrootsLab GrassFire Directory ([www.grassrootslab.com](http://www.grassrootslab.com)), a unique and comprehensive database that closely tracks, updates and categorizes local jurisdictions, elected officials and key staff members in California cities, counties, and school districts. Silicon Valley includes the city-defined region. Local elected officials include any person elected through a city-wide or county-wide election to represent at either the Municipal, Mayoral or Supervisorial level. Race/ethnicity of elected officials are based 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, Partisan Affiliation, Race and Ethnicity, and Professional Background are through the end of 2020 and include results of the mayoral, council, and supervisorial elections that took place in March and November. Local elected officials included 228 Councilmembers, Mayors, and County Supervisors in 2020 (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). As of December 2020 there was one vacant City Council seat in the City of South San Francisco. Of the 229 seats in the region, 116 were up for election in 2020, including nine that were decided outright in March (six supervisorial seats and three San Jose council seats).

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## APPENDIX B – Silicon Valley

	EMPLOYMENT Q2 2020	PERCENT OF TOTAL SILICON VALLEY EMPLOYMENT	PERCENT CHANGE		
			2007-2020	2010-2020	2019-2020
<b>TOTAL EMPLOYMENT</b>	<b>1,551,681</b>	<b>100.0%</b>	<b>12.4%</b>	<b>19.9%</b>	<b>-8.9%</b>
<b>COMMUNITY INFRASTRUCTURE &amp; SERVICES</b>	<b>715,860</b>	<b>46.1%</b>	<b>2.0%</b>	<b>8.9%</b>	<b>-15.4%</b>
HEALTHCARE & SOCIAL SERVICES <sup>1</sup>	174,511	11.2%	52.2%	40.1%	-1.7%
RETAIL	113,263	7.3%	-14.7%	-7.8%	-16.1%
ACCOMMODATION & FOOD SERVICES	81,937	5.3%	-20.1%	-17.7%	-40.6%
EDUCATION <sup>1</sup>	118,817	7.7%	26.8%	23.9%	-9.9%
CONSTRUCTION	78,463	5.1%	9.2%	59.6%	-4.5%
LOCAL GOVERNMENT ADMINISTRATION <sup>2</sup>	43,547	2.8%	-25.3%	-1.0%	-8.0%
TRANSPORTATION	32,153	2.1%	-9.7%	-0.2%	-18.6%
BANKING & FINANCIAL SERVICES	21,386	1.4%	3.4%	27.7%	6.9%
ARTS, ENTERTAINMENT & RECREATION	9,267	0.6%	-48.9%	-48.4%	-53.6%
PERSONAL SERVICES	8,178	0.5%	-32.3%	-34.1%	-53.7%
FEDERAL GOVT. ADMINISTRATION	11,403	0.7%	-10.0%	-30.3%	5.4%
NONPROFITS	7,601	0.5%	-34.4%	-24.2%	-24.3%
INSURANCE SERVICES	8,427	0.5%	-9.5%	9.6%	-3.1%
STATE GOVERNMENT ADMINISTRATION <sup>2</sup>	2,736	0.2%	-18.6%	3.9%	-2.2%
WAREHOUSING & STORAGE	2,117	0.1%	-2.3%	-8.4%	-25.1%
UTILITIES	2,053	0.1%	-1.5%	-24.6%	2.1%
<b>INNOVATION AND INFORMATION PRODUCTS &amp; SERVICES</b>	<b>458,874</b>	<b>29.6%</b>	<b>45.8%</b>	<b>47.2%</b>	<b>1.8%</b>
COMPUTER HARDWARE DESIGN & MANUFACTURING	183,226	11.8%	68.4%	66.7%	0.6%
SEMICONDUCTORS & RELATED EQUIPMENT MANUFACTURING	42,023	2.7%	-25.8%	-11.8%	-1.9%
INTERNET & INFORMATION SERVICES	82,946	5.3%	305.0%	235.2%	5.3%
TECHNICAL RESEARCH & DEVELOPMENT (INCLUDES LIFE SCIENCES)	43,438	2.8%	63.5%	31.5%	9.3%
SOFTWARE	35,243	2.3%	71.9%	60.6%	8.7%
TELECOMMUNICATIONS MANUFACTURING & SERVICES	14,083	0.9%	-34.2%	-27.0%	-7.7%
INSTRUMENT MANUFACTURING (NAVIGATION, MEASURING & ELECTROMEDICAL)	17,611	1.1%	-24.8%	-5.9%	3.0%
PHARMACEUTICALS (LIFE SCIENCES)	14,820	1.0%	13.4%	16.6%	0.9%
OTHER MEDIA & BROADCASTING, INCLUDING PUBLISHING	5,120	0.3%	-37.9%	-41.3%	-35.0%
MEDICAL DEVICES (LIFE SCIENCES)	7,375	0.5%	4.2%	16.8%	5.4%
BIOTECHNOLOGY (LIFE SCIENCES)	12,171	0.8%	98.3%	101.7%	3.4%
I.T. REPAIR SERVICES	819	0.1%	-65.4%	-69.5%	-39.2%
<b>BUSINESS INFRASTRUCTURE &amp; SERVICES</b>	<b>254,659</b>	<b>16.4%</b>	<b>5.5%</b>	<b>16.3%</b>	<b>-6.7%</b>
WHOLESALE TRADE	55,374	3.6%	-11.7%	-3.3%	-7.5%
PERSONNEL & ACCOUNTING SERVICES	29,148	1.9%	-23.8%	-14.6%	-16.6%
ADMINISTRATIVE SERVICES	28,538	1.8%	9.8%	42.6%	-11.8%
FACILITIES	28,240	1.8%	15.0%	19.6%	-2.0%
TECHNICAL & MANAGEMENT CONSULTING SERVICES	22,865	1.5%	19.7%	14.5%	-5.7%
MANAGEMENT OFFICES	27,437	1.8%	68.7%	74.4%	-3.8%
DESIGN, ARCHITECTURE & ENGINEERING SERVICES	21,577	1.4%	16.2%	30.1%	0.0%
GOODS MOVEMENT	14,348	0.9%	20.1%	44.2%	6.0%
LEGAL	10,727	0.7%	-3.8%	9.8%	-4.5%
INVESTMENT & EMPLOYER INSURANCE SERVICES	14,474	0.9%	56.8%	53.8%	-0.6%
MARKETING, ADVERTISING & PUBLIC RELATIONS	1,931	0.1%	-46.1%	-23.0%	-42.0%
<b>OTHER MANUFACTURING</b>	<b>55,876</b>	<b>3.6%</b>	<b>-19.3%</b>	<b>-3.9%</b>	<b>-7.7%</b>
PRIMARY & FABRICATED METAL MANUFACTURING	14,003	0.9%	-13.3%	-3.2%	-6.9%
MACHINERY & RELATED EQUIPMENT MANUFACTURING	13,364	0.9%	-3.5%	21.9%	-0.3%
OTHER MANUFACTURING	10,206	0.7%	5.2%	16.1%	-4.9%
TRANSPORTATION MANUFACTURING INCLUDING AEROSPACE & DEFENSE	8,773	0.6%	1.2%	-24.0%	-4.6%
FOOD & BEVERAGE MANUFACTURING	6,312	0.4%	-60.4%	-25.7%	-24.7%
TEXTILES, APPAREL, WOOD & FURNITURE MANUFACTURING	2,869	0.2%	-25.1%	-1.3%	-16.5%
PETROLEUM AND CHEMICAL MANUFACTURING (NOT IN LIFE SCIENCES)	350	0.0%	-67.5%	-63.3%	-2.6%
<b>OTHER</b>	<b>66,411</b>	<b>4.3%</b>	<b>23.3%</b>	<b>37.0%</b>	<b>-8.8%</b>

1. Includes government jobs (state and local).

2. Excludes government jobs in Healthcare & Social Services, Education, and Utilities.

Note: Table includes annual industry employment data for Silicon Valley from the United States Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW) for 2007, 2010, 2019 and 2020, modified slightly by EMSI, which removes suppressions and reorganizes public sector employment. Data for Q2 of 2020 was estimated at the industry level by BW Research using Q2 2020 reported growth and totals, and modified slightly by EMSI. Due to rounding, individual industry employment may not sum to industry group or overall job total. Due to rounding, individual industry employment totals may not sum to industry group or overall 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 2020	PERCENT OF TOTAL SAN FRANCISCO EMPLOYMENT	PERCENT CHANGE		
			2007-2020	2010-2020	2019-2020
<b>TOTAL EMPLOYMENT</b>	<b>663,439</b>	<b>100.0%</b>	<b>19.2%</b>	<b>21.5%</b>	<b>-12.8%</b>
<b>COMMUNITY INFRASTRUCTURE &amp; SERVICES</b>	<b>348,126</b>	<b>52.5%</b>	<b>4.1%</b>	<b>7.8%</b>	<b>-19.2%</b>
HEALTHCARE & SOCIAL SERVICES <sup>1</sup>	90,823	13.7%	91.1%	87.3%	-1.0%
RETAIL	36,928	5.6%	-13.2%	-3.8%	-18.6%
ACCOMMODATION & FOOD SERVICES	38,973	5.9%	-41.0%	-40.8%	-54.7%
EDUCATION <sup>1</sup>	43,101	6.5%	-0.6%	-4.3%	-13.2%
CONSTRUCTION	21,037	3.2%	16.3%	56.5%	-1.9%
LOCAL GOVERNMENT ADMINISTRATION <sup>2</sup>	27,503	4.1%	12.5%	13.2%	-3.2%
TRANSPORTATION	15,205	2.3%	63.0%	89.4%	-14.7%
BANKING & FINANCIAL SERVICES	18,340	2.8%	3.6%	21.8%	0.4%
ARTS, ENTERTAINMENT & RECREATION	9,308	1.4%	-29.3%	-31.9%	-44.7%
PERSONAL SERVICES	4,595	0.7%	-30.2%	-30.2%	-55.0%
FEDERAL GOVT. ADMINISTRATION	9,643	1.5%	-10.7%	-10.5%	0.9%
NONPROFITS	11,233	1.7%	9.7%	4.6%	-19.5%
INSURANCE SERVICES	8,696	1.3%	-34.7%	-13.7%	-2.3%
STATE GOVERNMENT ADMINISTRATION <sup>2</sup>	7,746	1.2%	12.9%	-3.0%	0.8%
WAREHOUSING & STORAGE	289	0.0%	-49.6%	-4.1%	50.4%
UTILITIES <sup>1</sup>	4,705	0.7%	22.1%	6.2%	1.9%
<b>INNOVATION AND INFORMATION PRODUCTS &amp; SERVICES</b>	<b>113,888</b>	<b>17.2%</b>	<b>209.9%</b>	<b>190.6%</b>	<b>3.6%</b>
COMPUTER HARDWARE DESIGN & MANUFACTURING	59,017	8.9%	332.6%	254.7%	3.5%
SEMICONDUCTORS & RELATED EQUIPMENT MANUFACTURING	73	0.0%	41.2%	-6.5%	18.4%
INTERNET & INFORMATION SERVICES	32,753	4.9%	1262.4%	732.2%	9.0%
TECHNICAL RESEARCH & DEVELOPMENT (INCLUDES LIFE SCIENCES)	2,831	0.4%	153.7%	161.4%	4.6%
SOFTWARE	5,377	0.8%	189.8%	142.1%	11.0%
TELECOMMUNICATIONS MANUFACTURING & SERVICES	2,560	0.4%	-44.6%	-34.6%	-18.8%
INSTRUMENT MANUFACTURING (NAVIGATION, MEASURING & ELECTROMEDICAL)	1,974	0.3%	2183.8%	3143.6%	2.7%
PHARMACEUTICALS (LIFE SCIENCES)	430	0.1%	1069.7%	89.5%	0.2%
OTHER MEDIA & BROADCASTING, INCLUDING PUBLISHING	6,761	1.0%	-37.6%	-25.8%	-12.0%
MEDICAL DEVICES (LIFE SCIENCES)	135	0.0%	-33.0%	21.9%	-9.4%
BIOTECHNOLOGY (LIFE SCIENCES)	1,855	0.3%	2.9%	8.1%	2.9%
I.T. REPAIR SERVICES	122	0.0%	31.5%	28.0%	-8.2%
<b>BUSINESS INFRASTRUCTURE &amp; SERVICES</b>	<b>160,061</b>	<b>24.1%</b>	<b>18.4%</b>	<b>27.2%</b>	<b>-9.1%</b>
WHOLESALE TRADE	12,942	2.0%	16.5%	36.1%	-17.6%
PERSONNEL & ACCOUNTING SERVICES	17,470	2.6%	5.7%	10.7%	-13.5%
ADMINISTRATIVE SERVICES	13,237	2.0%	0.5%	8.4%	-15.7%
FACILITIES	14,246	2.1%	66.9%	25.6%	-13.1%
TECHNICAL & MANAGEMENT CONSULTING SERVICES	23,448	3.5%	88.7%	93.1%	2.2%
MANAGEMENT OFFICES	19,672	3.0%	25.6%	34.3%	-16.6%
DESIGN, ARCHITECTURE & ENGINEERING SERVICES	14,353	2.2%	-0.6%	38.1%	-3.1%
GOODS MOVEMENT	6,338	1.0%	35.3%	65.3%	-5.9%
LEGAL	13,926	2.1%	-4.3%	2.8%	-1.9%
INVESTMENT & EMPLOYER INSURANCE SERVICES	15,777	2.4%	-11.4%	0.0%	-2.0%
MARKETING, ADVERTISING & PUBLIC RELATIONS	8,652	1.3%	37.6%	29.4%	-9.8%
<b>OTHER MANUFACTURING</b>	<b>5,589</b>	<b>0.8%</b>	<b>-35.7%</b>	<b>-10.5%</b>	<b>-19.8%</b>
PRIMARY & FABRICATED METAL MANUFACTURING	592	0.1%	8.7%	0.5%	6.4%
MACHINERY & RELATED EQUIPMENT MANUFACTURING	235	0.0%	458.7%	327.3%	-5.1%
OTHER MANUFACTURING	825	0.1%	-4.0%	16.6%	-14.6%
TRANSPORTATION MANUFACTURING INCLUDING AEROSPACE & DEFENSE	358	0.1%	-53.5%	-38.6%	0.1%
FOOD & BEVERAGE MANUFACTURING	2,258	0.3%	16.9%	23.4%	-28.9%
TEXTILES, APPAREL, WOOD & FURNITURE MANUFACTURING	1,291	0.2%	-70.7%	-46.2%	-21.9%
PETROLEUM AND CHEMICAL MANUFACTURING (NOT IN LIFE SCIENCES)	30	0.0%	-77.7%	-61.0%	79.2%
<b>OTHER</b>	<b>35,775</b>	<b>5.4%</b>	<b>-14.2%</b>	<b>-30.8%</b>	<b>-4.3%</b>

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