



FY2024-27

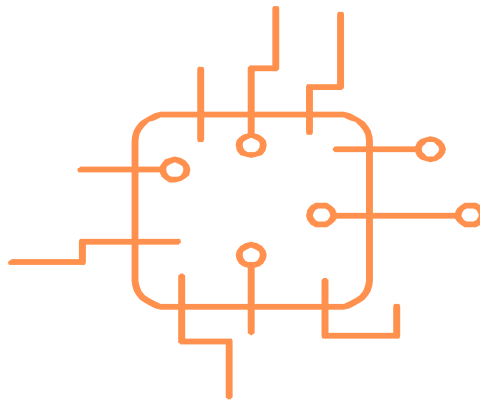
Digital Equity Strategy



TECHNOLOGY
SERVICES AND SOLUTIONS

“Like electricity a century ago, broadband is a foundation for economic growth, job creation, global competitiveness, and a better way of life. It is changing how we educate children, deliver health care, manage energy, ensure public safety, engage government, and access, organize and disseminate knowledge.”

Federal Communication Commission’s National Broadband Plan



Acknowledgements

Even before the start of the COVID-19 pandemic—which highlighted and deepened the digital divide—County leadership has invested in numerous initiatives to address broadband access and adoption gaps. We would like to thank the Board of Supervisors and Digital Equity Consortium for their guidance and active support. In addition, we would like to thank the community representatives who participated in the interviews that informed the development of Digital Equity Strategy. These conversations provided invaluable insight to help bridge the digital divide in the county. Finally, we thank the following individuals who supported the creation of this document.

Nina D'Amato, Chief Information Officer, Technology Services and Solutions
Ameen Moslehi, Associate Chief Information Officer, Technology Services and Solutions
Imre Kabai, Senior Enterprise Architect, Technology Services and Solutions
Michael Maher, Senior IT Manager, Technology Services and Solutions
Rinky Bhattacharyya, IT Program Manager, Technology Services and Solutions
Lori Kenepp, Chief Communications Officer, Technology Services and Solutions
Sampa Patra, Senior GIS Analyst, Technology Services and Solutions
Dheeraj Saini, Senior Solution Architect, Technology Services and Solutions
Joshua Tovar, Goldman School of Public Policy, UC Berkeley
Lisa Harrison, Office of the County Counsel (Retired)
Jerett Yan, Deputy County Counsel, Office of the County Counsel
Barry Ng, Deputy Director Infrastructure Development, Roads and Airports
Harry Freitas, Director Roads and Airports, Roads and Airports



Message from the CIO

To the Residents of Santa Clara County,

I am pleased to announce the release of the County's first Digital Equity Strategy. This strategy addresses the digital divide affecting thousands of households in our community today. The digital divide is the separation between those with and without access to high-speed internet (broadband) and the skills to use technology. Broadband access is important because it drives economic development, enhances access to County services, and improves health, education, and public safety outcomes for residents. For this reason, broadband must be capable of supporting current technology standards and speeds for residents to fully participate in civic, social, education, and livelihoods.

Consistent with the state of California's long published standard, the [new federal benchmark speed](#) for broadband is 100 Mbps download and 20 Mbps upload, or 100/20 Mbps. Considering our residents' needs for access to telehealth, online instruction for students, livelihoods, and plugging into the modern economy, this is the minimum standard we consider sufficient as a County. However, broadband alone is not sufficient. Residents also need access to affordable internet subscriptions, internet-compatible devices, and digital literacy training. In response, county agencies, schools, libraries, and community anchor institutions are actively expanding broadband access, so all can participate in the 21st-century economy. Despite significant progress, much work remains.

What does the data tell us?

Recent data from the American Community Survey (ACS 2022) reveal that of the 650,352 total households in the county, 24,271 households do not have access (3.7%), 34,056 households (5.24%) do not subscribe to the internet, and 25,085 residents (1.2%) have no computers, smartphones, or other internet-compatible devices at home. These disparities disproportionately impact low-income households, students and older adults living in San José, South San José, and South County (Morgan Hill, San Martin, and Gilroy).

We must not view these statistics as just data points. These numbers represent real people facing heightened obstacles to participate in various aspects of County services and the modern economy. The aftermath of the COVID-19 pandemic has only reinforced the importance of supporting digital equity through engaged leadership and coordination. Artificial Intelligence promises benefits but will only serve to widen the gaps for those who do not have reliable internet. Now is the time to close this gap for our residents.

Going Forward: Advancing Digital Equity

The Digital Equity Strategy lays the groundwork for improving countywide coordination over the next three years. Guiding this work is our commitment to iterative improvement, agile frameworks, and input from stakeholders. Hence, this report is designed to inform—not to dictate—policy decisions. Through continued collaboration with the County Board of Supervisors, our agency partners, and support from the community, we can build toward a more inclusive community.

Thank you for contributing to the effort!

Nina A. D'Amato
Nina A. D'Amato

Table of Contents

Table of Contents	3
Executive Summary	4
Introduction	6
Vision and Guiding Principles	8
Understanding the Digital Divide in the County	9
Drivers of the Digital Divide	22
Defining Strategic Goals and Measuring Impact	30
Roadmap and Timeline	37
Implementation: Action Plan	38
Appendix A: Alignment with Digital Equity Frameworks	50
Appendix B: Collaboration and Engagement Approach	52
Appendix C: Previous and ongoing Digital Equity Efforts	55
Appendix D: Digital Equity Funding Opportunities	71
Appendix E: Broadband Availability and Pricing in the County	74



Executive Summary

Too many households in Santa Clara County are without access to broadband. 34,056 households continue to face challenges with gaining access to high-speed broadband service, and households earning less than \$35,000 per year are 20% less likely to have an internet subscription compared to 2% of households with income greater than \$75,000. Moreover, 15,478 residents 65 years and older do not have a computing device at home and 4,709 students (pre-k to 12th grade) have neither a computing device nor internet subscription. While there are pockets all over the county where this phenomenon exists, the lowest rates of broadband adoption are prevalent in concentrated areas of the county. The lowest rates of broadband adoption are in East San José, South San José and South County (Morgan Hill, San Martin and Gilroy). Consequently, these households have limited participation in County digital services and various digital aspects of civic and social life.

Digital equity challenges identified in the county stem primarily from three main drivers: lack of access to affordable broadband services, access to devices, and limited digital skills. In response, the County's FY2024-2027 Digital Equity Strategy puts forth a vision to connect all county residents with resources to access broadband services and engage online. The following five guiding principles are distinct values the County will follow when implementing the strategic plan's vision:

1. **Equity Driven**
2. **Community Oriented**
3. **Best Practices**
4. **Accountability**
5. **Collaboration and Coordination**

These guiding principles are woven throughout the Digital Equity Strategy and advance the following goals:

- **Goal 1: Availability.** Expand connectivity in unserved and underserved areas in the county with a focus on measurable outcomes.
- **Goal 2: Affordability and Computing Devices.** Promote equitable access to affordable, reliable broadband service and the computing devices necessary to participate online.
- **Goal 3: Digital Skills.** Enhance digital literacy skills and training support so residents have the knowledge to effectively use technology.

The County of Santa Clara Digital Equity Consortium

The County of Santa Clara Digital Equity Consortium (DEC), the County's governing body for digital equity, will act as a coordinating body, managing the County's broadband initiatives. It will be led and chaired by the County of Santa Clara's Chief Information Officer. County broadband programming will not be fully aligned without leadership focused on supporting digital equity. County wide alignment will mitigate the

risk of overlap and duplication. This strategic plan takes a first step at highlighting shared services and other cooperative opportunities to reduce or avoid costs and enhance service delivery.

Over the past four years, the contributions of the County's DEC have spanned from early engagement in state-level rulemaking processes, to bringing 148 miles of [Middle Mile Broadband Infrastructure](#) to the southern and western regions of the County. We will continue to play a leadership role by considering proposals from private sector and not-for-profit partners and coordinating with the State of California Public Utilities Commission to ensure that the County's grant allocation of \$36M in [Last Mile Federal Funding](#) is spent where it is most needed for our residents.

The consortium will evolve in concert with state and federal digital equity programming and grant funding currently under development. Our aim is to adopt an iterative methodology and transform the Digital Equity Strategy into an evolving one that continues to provide meaningful information. Leading with this framework also allows the County to closely integrate our strategy with the [California's State Digital Equity Plan](#).

Introduction



Background

Digital equity is a condition in which all individuals and communities have the information technology capacity needed for full participation in our society.¹ Digital equity warrants access to affordable broadband, digital literacy training, and the devices necessary to use the internet.

Supporting digital equity aligns with the [County's core mission statement](#) : to *plan* for the needs of a dynamic community, provide quality services and *promote* a healthy, safe and prosperous community for all.² In fact, digital equity was a focus of various efforts in the County well before the pandemic made gaps in broadband access more noticeable. In 2023, the [County's main public website](#) was migrated to a new Content Management System (CMS). This platform supports powerful tools to deliver County services digitally and is built on the principle of equity, to provide residents and County clients, the option to apply for and/or receive services through digital means in addition to on-site and in-person service delivery. Additionally, several other initiatives by County agencies helped fill gaps for thousands of students, the elderly, and disabled populations (see digital equity efforts by the County in Appendix C). One key effort stemmed from the Board of Supervisors' legislative direction to conduct an in-depth analysis into internet connectivity barriers within the county and to develop an action plan to address them.

In 2021, the Board of Supervisors requested research and technical analysis on the existing state of broadband infrastructure and the needs of the County. The County's Technology Services and Solutions (TSS) Department has been designated as the administering department to synthesize these findings into a comprehensive digital equity strategy. Through a needs assessment, stakeholder interviews, and workshops with the County's Digital Equity Consortium, the County developed an understanding of the digital divide barriers facing the community. The needs assessment highlights the vital importance of affordable connectivity options and computing devices and notes digital adoption gaps for low-income and elderly households. These findings also better refine the geographic locations of where the County is experiencing these gaps – residents living in San José, South San José, and South County (Morgan Hill, San Martin, and Gilroy) are disproportionately impacted.

The County's FY24-27 Digital Equity Strategy will guide its efforts to improve digital equity. The strategy includes goals, objectives, strategic actions, and key performance indicators. These components work together to sequence and prioritize initiatives while balancing long-term priorities with today's available resources.

¹ National Digital Inclusion Alliance, "Definitions." <https://www.digitalinclusion.org/definitions/>

² Santa Clara County Core Values. <https://news.sccgov.org/about-us/county-mission-and-core-values>

Equity v. Equality

It is important to make the distinction between equity and equality. While the two words seem to represent a similar intention, they have very different meanings and impact. Equality emphasizes equal inputs, such as the same resources for all, will lead to equal outcomes and experience. Whereas equity emphasizes intentional strategies and investments to reduce and eliminate barriers facing disadvantaged communities (low-income, elderly, students, etc.). The findings in the needs assessment influenced the strategy's focus on equity.



Vision and Guiding Principles

Vision Statement

All Santa Clara County residents have access to affordable, reliable broadband, and the necessary internet-capable computing devices at home, schools, libraries, and businesses, and receive digital literacy skills and technical support associated with using those devices to navigate the many opportunities afforded by high-speed internet.

Guiding Principles

Equity Driven. Strategically target residents in need of the most support to access broadband and use technology. This principle requires focused investigations into digital equity barriers and the strategy puts forth intentional recommendations and investments.

Community Oriented. Anchor each recommendation so it reflects the values and digital equity needs of the community. This includes embracing design-thinking principles that are iterative and focus on the unique needs of public agencies, residents, and broadband stakeholders within the county.

Best Practices. Leverage best practices to effectively steward public resources and make as needed adjustments as we move forward. This means adopting local, state, and federal digital equity frameworks and maximizing expected state and federal grant funding opportunities for broadband infrastructure projects in the county.

Accountability. Establish and accurately track meaningful performance metrics. This is important to gauge the impact and progress of the Digital Equity Strategy and support for accountability purposes.

Collaboration and Coordination. Enhance multi-agency and countywide collaboration to advance initiatives that improve Santa Clara County's digital equity needs. This will require a multi-sectoral, county-wide response that includes thoughtful and focused partnerships with the community.



Understanding the Digital Divide in the County

Needs Assessment

The purpose of this section is to describe digital equity conditions in the county, identify broadband gaps, and areas where adoption is low. Taking more than a year to complete, the analysis included quantitative and technical analysis performed by staff from various County agencies. The following key challenges have been identified:

- **The digital divide primarily impacts low-income households, older residents, and students:**
 - a. Households with an annual income of \$35,000 or less are the least likely to subscribe to internet service.
 - b. 15,478 residents aged 65 years and older are the least likely to own a computing device.
 - c. 4,709 pre-K to 12th grade students do not have a computing device nor internet subscription.
- **Low rates of broadband adoption and ownership of computing devices are concentrated in certain parts of the County:**
 - a. Data reveals that several areas lack broadband adoption as well as a low percentage of ownership of computing devices. This is particularly true in East San José, South San José and South County (Morgan Hill, San Martin and Gilroy). **These households have common *overlapping* indicators, such that the median household income is the lowest, and the percentage of the population below the poverty level is the highest in these areas.**

Defining Broadband Access

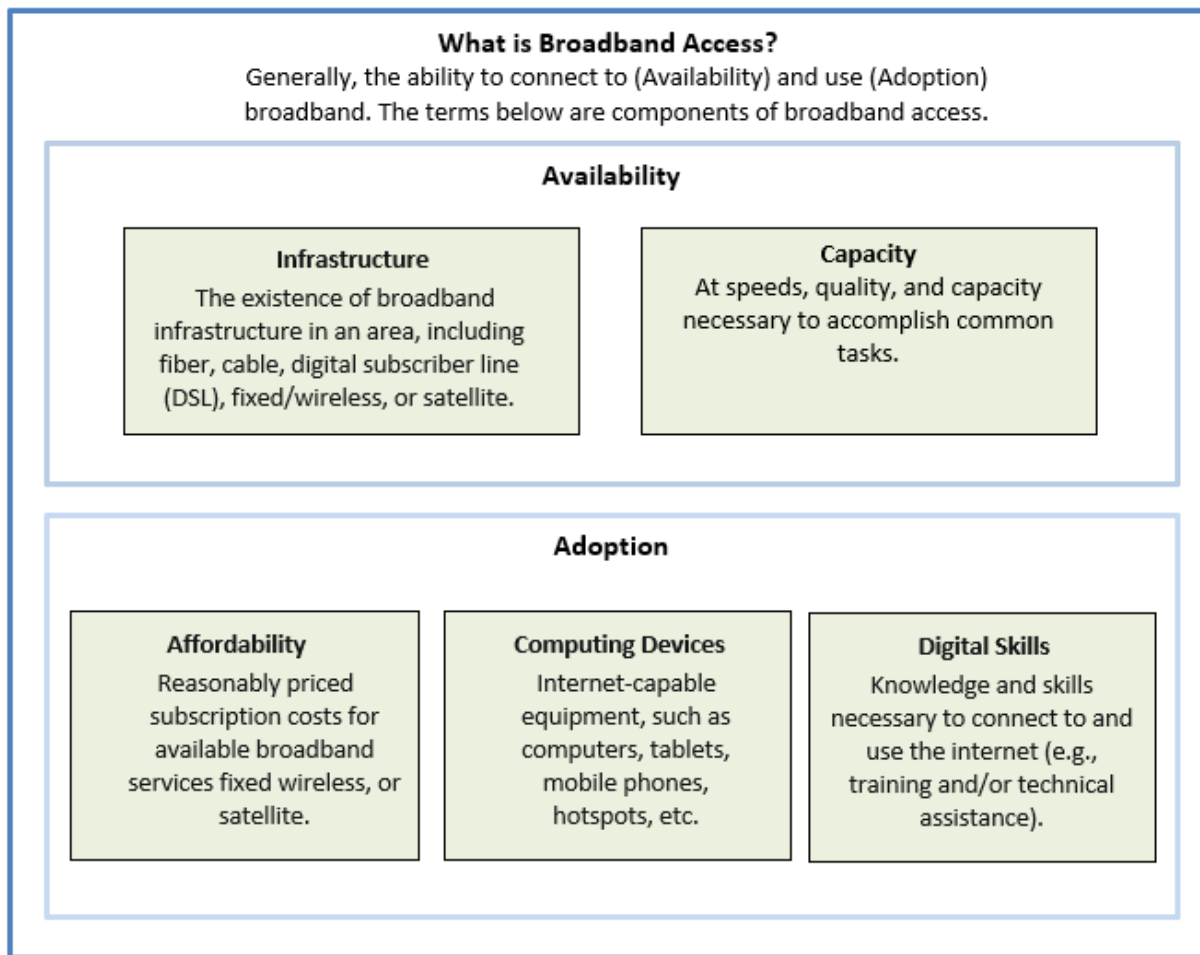
Broadband access encompasses various components: availability, digital skills, computing devices and affordability. *Availability* refers to whether broadband infrastructure exists in a given area. Broadband can be delivered using different types of technological infrastructure, including fiber, cable, digital subscriber line (DSL), fixed, wireless, or satellite. Megabits per second, or Mbps, is the standard measure of broadband speed. It refers to the speed with which information packets are downloaded from, or uploaded to, the internet. While each of these technologies has different characteristics and delivers different speeds, not all internet connections are technically considered “broadband.” As of March 2024, the Federal Communications Commission (FCC) defines broadband as a connection with a minimum download speed of 100 Mbps and a minimum upload speed of 20 Mbps, or 100/20 Mbps. This is a four-fold increase from the 25/3 Mbps benchmark set by the FCC in 2015. Further, the FCC noted an aspirational long-term goal of 1 Gbps/500 Mbps, a necessary stretch for most of the country.³

³ Federal Communications Commission, FCC 24-27. Inquiry Concerning the Deployment of Advanced Telecommunication Capability to All Americans in a Reasonable and Timely Fashion. 2024 Sect 706.

[FCC Increases Broadband Speed Benchmark | Federal Communications Commission](#)

Consistent with the new FCC standard, the State of California has a speed goal of 100 Mbps as part of Governor Newsom’s Executive Order N-73-20 August 2022 (see Appendix A: Alignment with Digital Equity Frameworks and Regulations). This standard requires state funded broadband projects to provide broadband access at minimum speeds of 100 Mbps download and 20 Mbps upload. As such, the County’s Digital Equity Strategy aligns with both national and the state’s requirements and further refines “access to broadband” to mean internet service that achieves a minimum of 100/20 Mbps. At present, the Digital Equity Strategy does not prescribe which types of broadband infrastructure are preferred for closing the digital divide in the county, but notes that according to the state’s [Broadband for All Action Plan](#) fiber is prominently preferred due to its capacity, reliability, and scalability.⁴

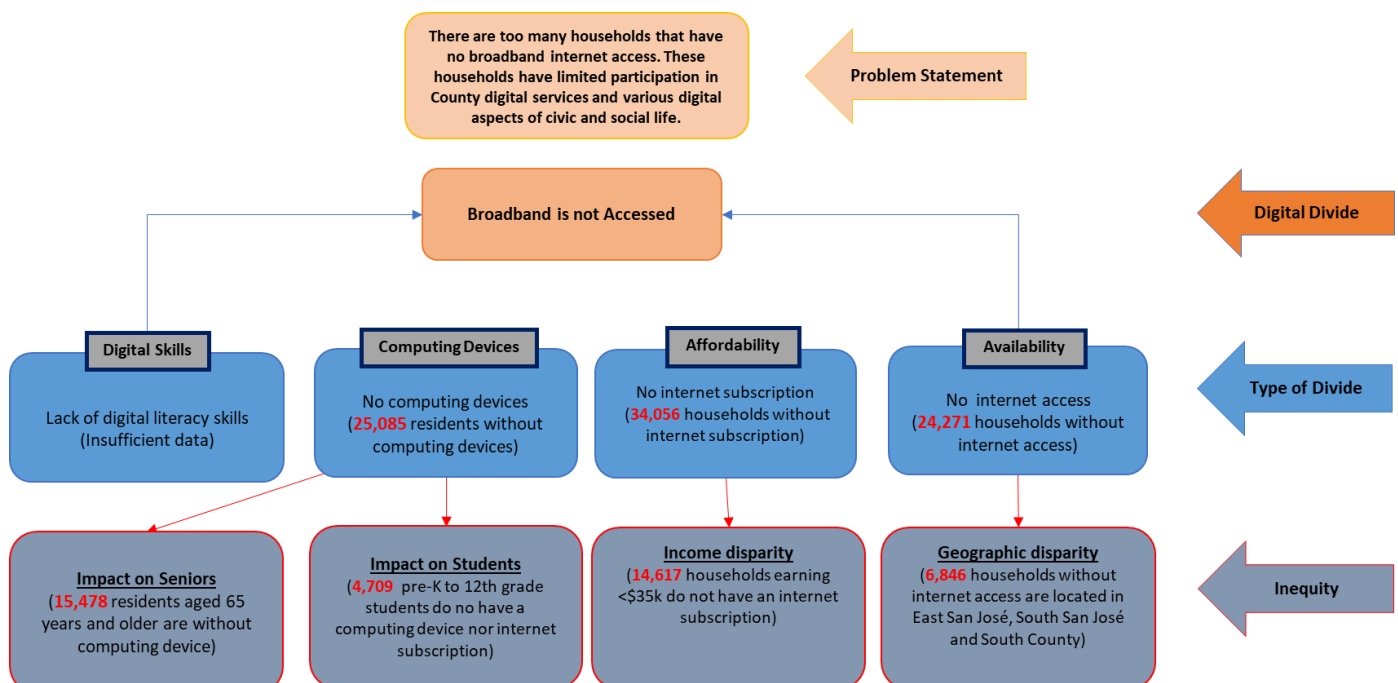
However, even when the infrastructure to offer broadband exists within a community, some residents may not subscribe to, or *adopt*, the service (i.e., they need the knowledge, *digital skills*, and training to use technology). *Affordability* is a key component of broadband adoption, especially for those least able to pay for the total cost of accessing high-speed broadband services and the associated computing devices (computers, smartphones, tablets, etc.). Helpful definitions of digital divide terms are outlined in the figure below.



⁴ California Broadband Council. *Broadband for All Action Plan*. 2020. <https://broadbandcouncil.ca.gov/wp-content/uploads/sites/68/2020/12/BB4All-Action-Plan-Final.pdf?emrc=1cd8bc>

- **Affordability:** Do households have the ability to pay for the total cost of maintaining reliable, high-speed broadband service and the associated computing devices (computers, smartphones, tablets)? Do they have the knowledge or awareness of existing subsidy and discount programs that alleviate the cost?
- **Computing Devices:** Do households have access to computing devices (computers, tablets, mobile phones, etc.) to connect to the internet? Do they have the knowledge or awareness of existing computing device distribution programs?
- **Digital Skills:** Do households have the information, skills, and support to use technology tools and effectively navigate online resources?
- **Availability:** Is sufficient infrastructure available to deliver reliable, high-speed wired or wireless broadband service?

Overview: Broadband Access Today



Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

The following section will unpack each of these components, as well as how the digital divide impacts the community.

Broadband Availability Gaps

Lack of Reliable, High-Speed Broadband Connection Within Communities

According to data from the American Community Survey (ACS), the county has an estimated 650,352 total households. The Census Bureau defines a “household” as a person or group of persons living in a housing unit, as opposed to persons living in group quarters.⁵ In the county, the average-sized household is 2.97 people.⁶ Of the 650, 352 total households, the county has an estimated 24,271 households that do

⁵ U.S. Census Bureau, “Subject Definitions”. <https://www.census.gov/programs-surveys/cps/technical-documentation/subjectdefinitions.html#:~:text=A%20household%20includes%20the%20related,who%20share%20the%20housing%20unit.>

⁶ U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

not have internet access. "Internet access" refers to whether someone in the household can connect to the internet, regardless of whether or not they pay for service.⁷

Internet access is the foundation stone for residents seeking to participate in the 21st century information economy. Yet, 5% of the total households in the county are without an internet connection as shown in Table 1.

Table 1: Households without Internet Access

Area	Total households	Total households without Internet Access	% of households without Internet Access
Santa Clara County	650,352	24,271	3.73%

U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

ACS data suggests that the areas with the highest rates of households without internet access are in concentrated areas of the county. Of the 24,271 households without internet access, 6,846 households, or 28.2%, are located in East San José, South San José, and South County (Morgan Hill, San Martin and Gilroy). The remaining households without internet access are distributed broadly across the county.

Table 2 displays where the total number of households without internet access are concentrated, while Figure 1 displays the distribution of the households without internet access by census tract.⁸

Table 2: Concentrated areas without Internet access

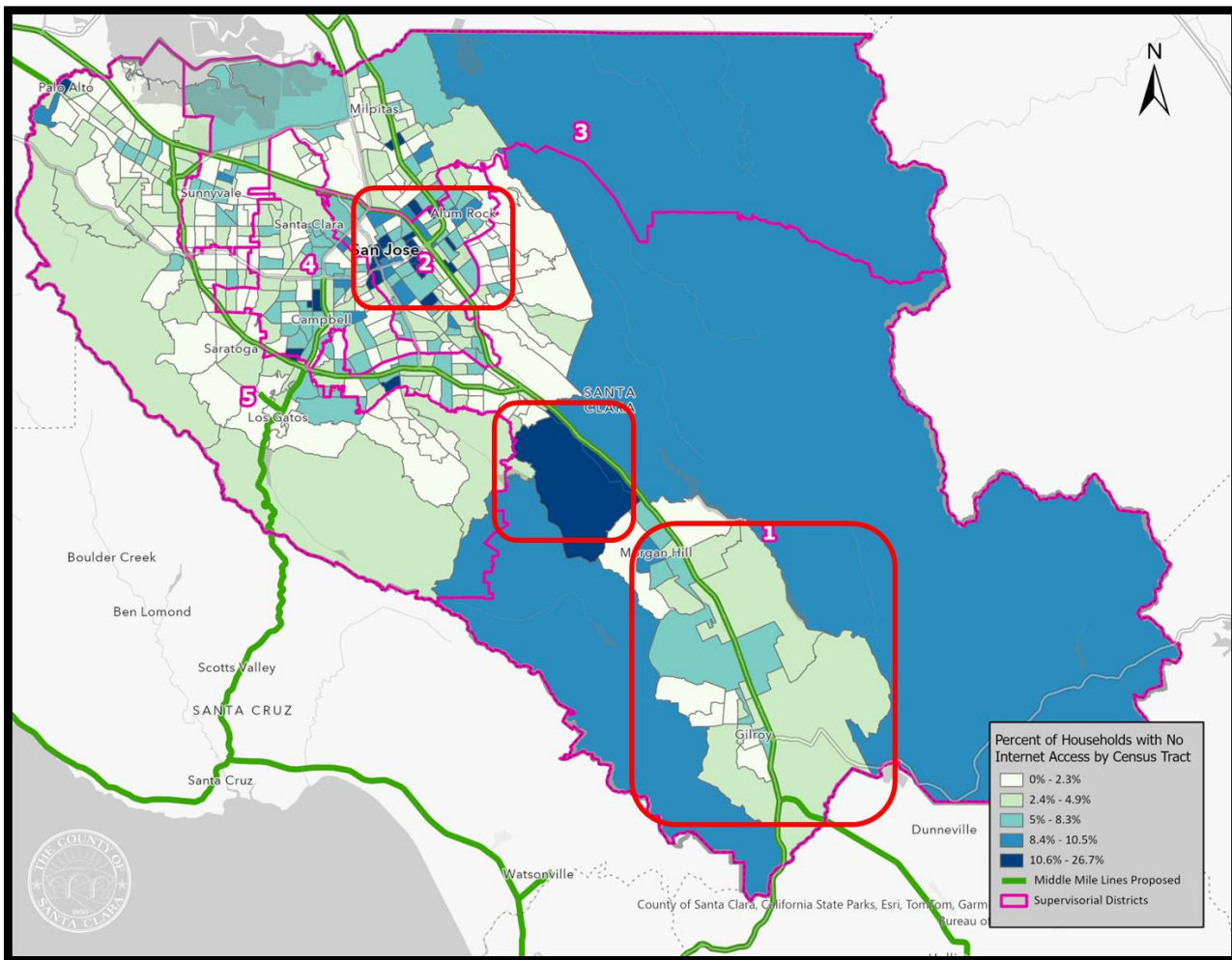
Area	Total households	Total households without Internet Access	% of households without Internet Access
East San José	79,125	5,466	6.91%
South San José	2,805	125	4.46%
South County (Morgan Hill, San Martin, and Gilroy)	36,038	1,255	3.48%
Total	117,968	6,846	5.80%

Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

⁷ ACS data do not differentiate between broadband and non-broadband internet speeds.

⁸ Census tracts are defined as small, relatively permanent statistical subdivisions of a county. These can be updated prior to each decennial census.

Figure 1: Distribution of Households without Internet Access by Census Tract (ACS 2022)



Unserved and Underserved Areas Within Santa Clara County

ACS data do not differentiate between broadband and non-broadband internet speeds. This results in communities that are left unserved or underserved:

- An **unserved** area is an area of the county in which households or businesses lack access to broadband service at speeds that meet the previous Federal Communication Commission's (FCC) threshold of 25/3 Mbps.
- An **underserved** area is an area of the county where households or businesses do receive services at or above the previous FCC threshold but lack access to broadband services of at least 100/20 Mbps.

To complement the ACS data shown above, staff analyzed information provided by FCC Form 477. Broadband providers are required to file this data twice a year with the FCC, self-reporting where they offer broadband, the speeds offered, and type of infrastructure provided (cable, fiber optics, satellite internet service, etc.). While Form 477 data points can provide insight, the FCC's broad definition of what is considered a covered area can overstate broadband availability in the county.

Nonetheless, the following maps display unserved and underserved areas based on FCC Form 477 data. In particular, the map in **Figure 2** displays the unserved areas and the map in **Figure 3** depicts areas that are underserved.

Figure 2: Underserved Areas 25/3Mbps in Santa Clara County (FCC Form 477)

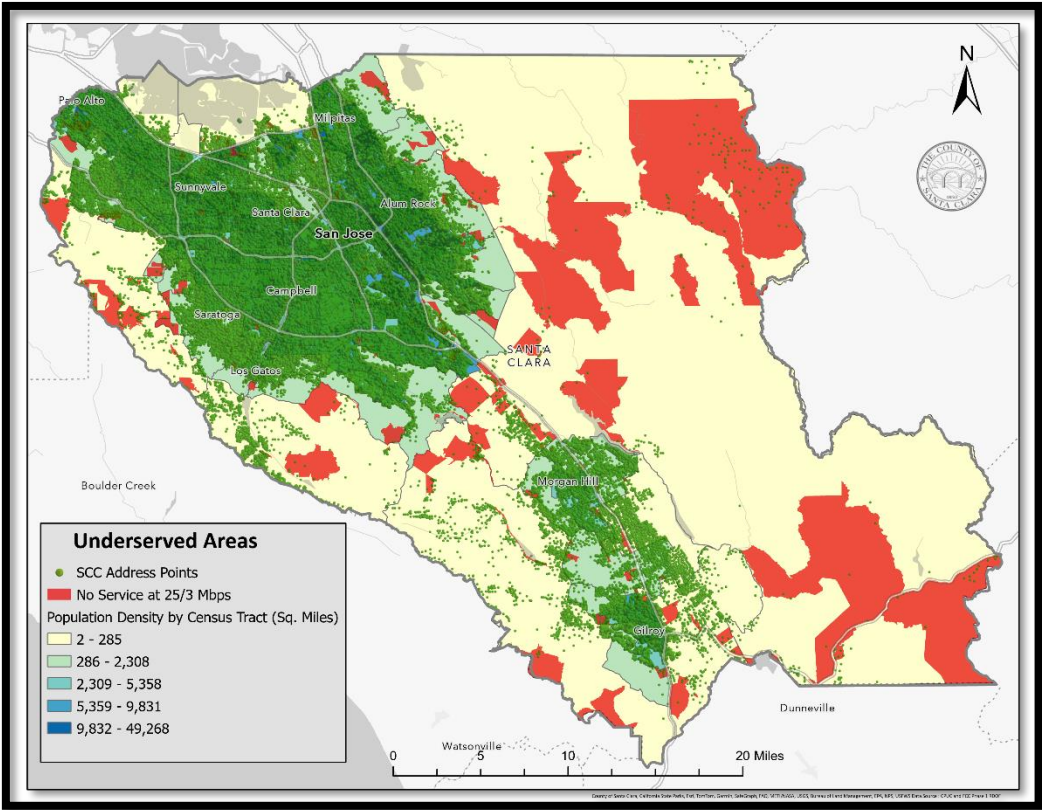
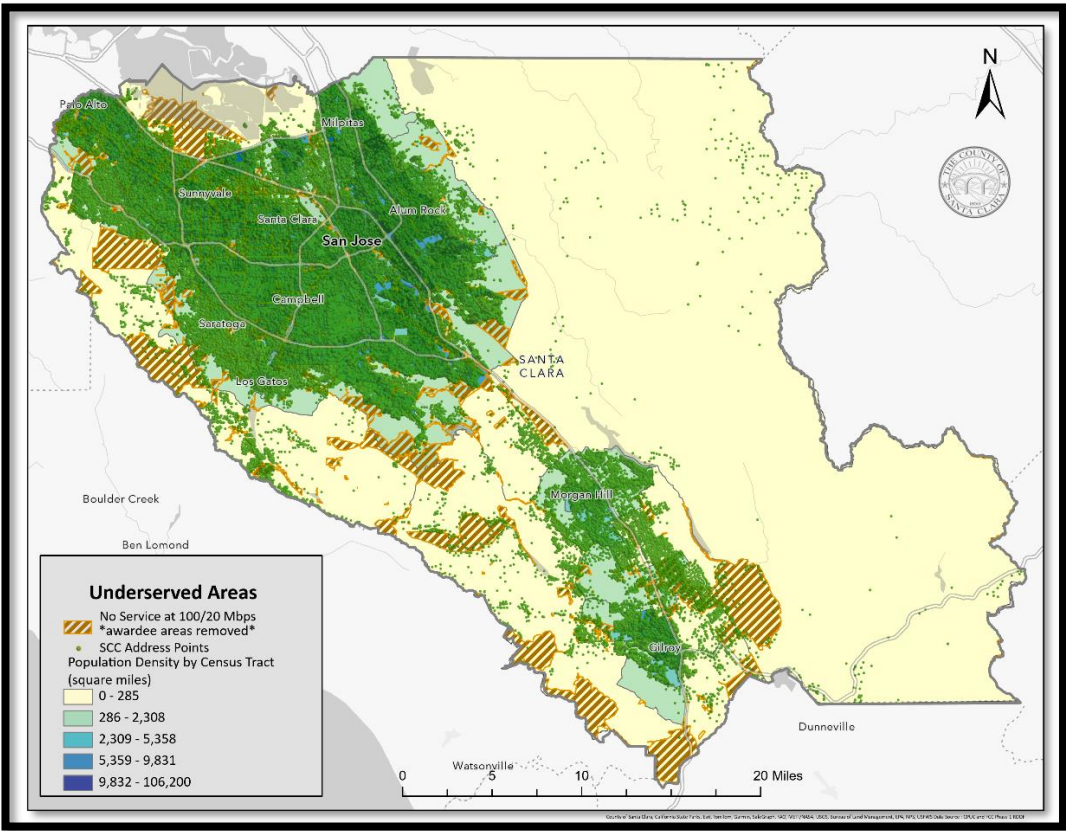


Figure 3: Underserved Areas 100/20Mbps in Santa Clara County (FCC Form 477)



as wetlands near the Bay, corporate and educational campuses, and vacant lots. Likewise, the underserved areas comprise agricultural land, parks, open space, and golf courses.

But ACS data, as well as reports from constituents, tell otherwise.⁹ Consequently, residents who lack access to broadband could be left out of policies and programs aimed at closing the digital divide due to an overreliance on Form 477 data. The absence of data on the number of unserved and underserved residents and their respective locations warrants additional analysis. The Digital Equity Strategy recommends further investigating and reporting on these essential County statistics.

Broadband Internet Subscription Gaps

Adoption Rates by Race/Ethnicity

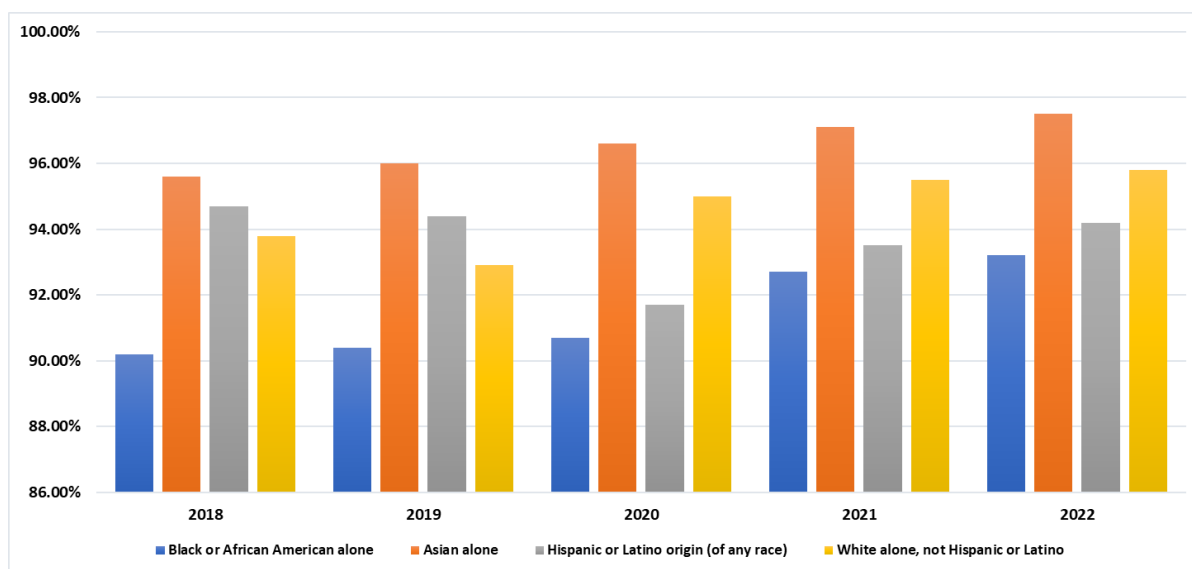
Data shows that of the 650,352 total households in the county, 34,056 households are without an internet subscription. "Internet subscription" refers to those who said "Yes" to one or more of the following types of subscriptions: broadband (high speed) such as cable, fiber optic or Digital Subscriber Line (DSL); cellular data plan for a smartphone or other subscription types.¹⁰ This is representative of approximately 5% of the total households in the county, as shown in Table 3. Figure 4 compares broadband subscription by race and ethnicity.

Table 3: Households without Internet Subscription

Area	Total households	Total households without Internet Subscription	% of households without Internet Subscription
Santa Clara County	650,352	34,056	5.24%

Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

Figure 4: Comparison of Internet Subscription by Race / Ethnicity (ACS 2018-2022)



⁹ Jon Brokdin. "Comcast wanted \$210,000 for Internet—so this man helped expand a co-op fiber ISP Fed up with Comcast and AT&T, Silicon Valley residents started their own network." October 17, 2022.

<https://arstechnica.com/tech-policy/2022/10/comcast-wanted-210000-for-internet-so-this-man-helped-expand-a-co-op-fiber-isp/>

¹⁰ U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

Since 2015, White and Asian¹¹ households in the county have outpaced all other racial and ethnic demographics in broadband subscription rates. Of the next two most populous groups, Hispanic or Latino residents have steadily increased their subscription rates since 2015—but the same has not been true for Black households, as shown in **Table 4** breaks down **Figure 4** for 2022 data.

Table 4: Comparison of Internet Subscription by Race/Ethnicity (ACS 2022)

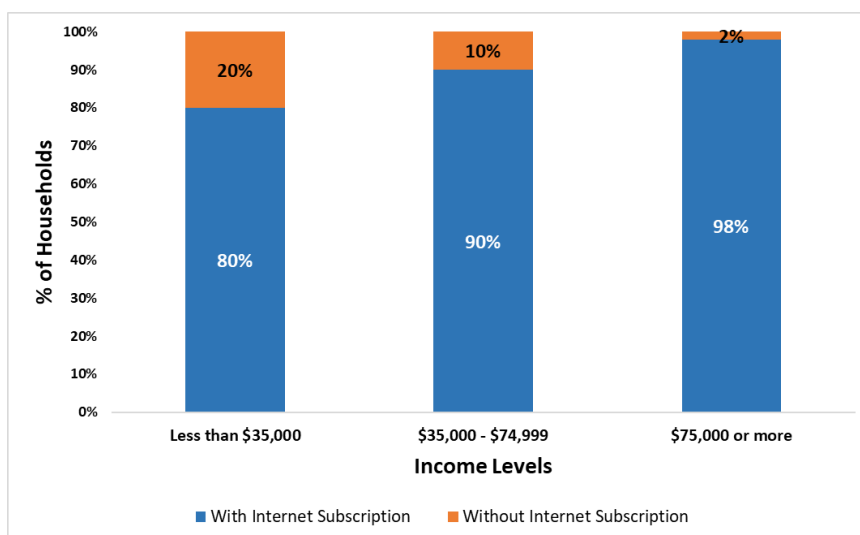
Race/Ethnicity	Total number of residents	Number of residents with internet subscription	% of residents with internet subscription
Black or African American alone	42,982	40,045	93.17%
Asian alone	738,421	719,988	97.50%
Hispanic or Latino origin (of any race)	466,587	439,518	94.19%
White alone, not Hispanic or Latino	543,410	520,655	95.81%

Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

Low Rates of Adoption for Low-income Residents

Of the 650,352 households in the county, 14,617 households have annual household incomes of less than \$35,000 and do not have a broadband internet subscription.¹² This makes up 2.24% of the total households in the county. As shown in **Figure 5** below, 20% of households with an annual income of less than \$35,000 have no internet subscription.

Figure 5: Internet Subscription by Income Levels



Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

¹¹ The ACS does not collect or publish data on specific ethnic backgrounds within Asian or other racial groups. The information presented below does not imply that all Asian ethnic groups are equally or uniformly subscribing to broadband internet services. (For example, the ACS considers respondents of Chinese descent and Vietnamese descent as both "Asian," but the two demographic groups may subscribe to broadband services at different rates in the County as a whole, and in various locations within the County.)

¹² ACS estimates presence and type of internet subscription by household income (inflation-adjusted dollars) by boundaries. These figures reflect the summation of households with income of less than \$10,000; between \$10,000 to \$19,999; and \$20,000 to \$34,999.

The map below (**Figure 6**) shows that these households are concentrated in the areas of East San José, South San José, and South County (Morgan Hill, San Martin and Gilroy). These areas make up 32% (4,701 households) of the total 14,617 households.

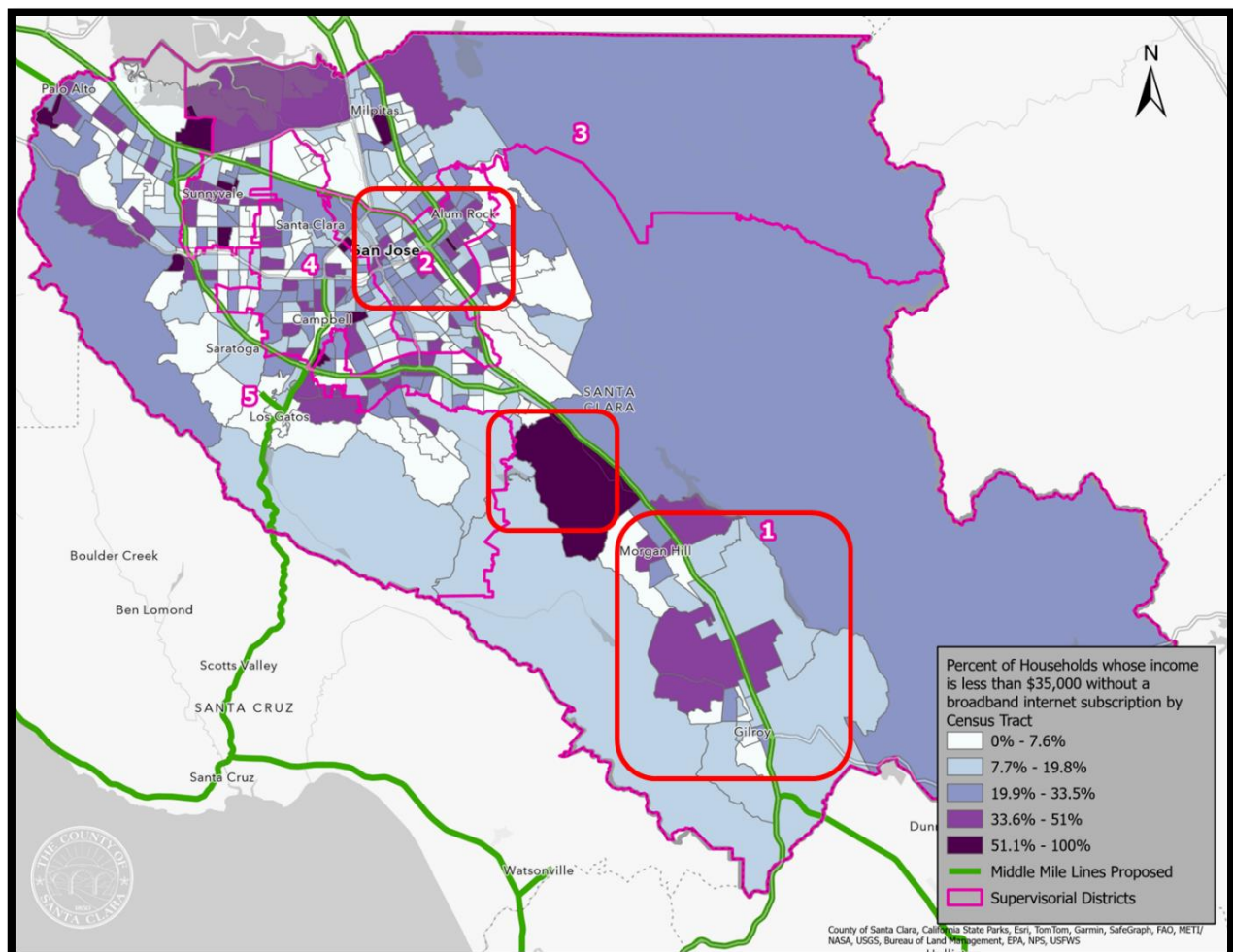
Table 5 displays the total number of households with annual income less than \$35,000 and without broadband internet subscription by area, while **Figure 6** displays the distribution of those households by census tract.

Table 5: Number of Households with Income less than \$35,000 and without Internet Subscription

Area	Total Households	Total Households with income less than \$35K and without Broadband Internet Subscription	% of Households with income less than \$35K and without Broadband Internet Subscription
East San José	78,654	3,591	4.57%
South San José	2805	70	2.50%
South County	36,038	1040	2.88%
Total	117,497	4,701	4.00%

Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

Figure 6: Distribution of Households with Income Less Than \$35,000 and without a Broadband Internet Subscription by Census Tract (ACS 2022)



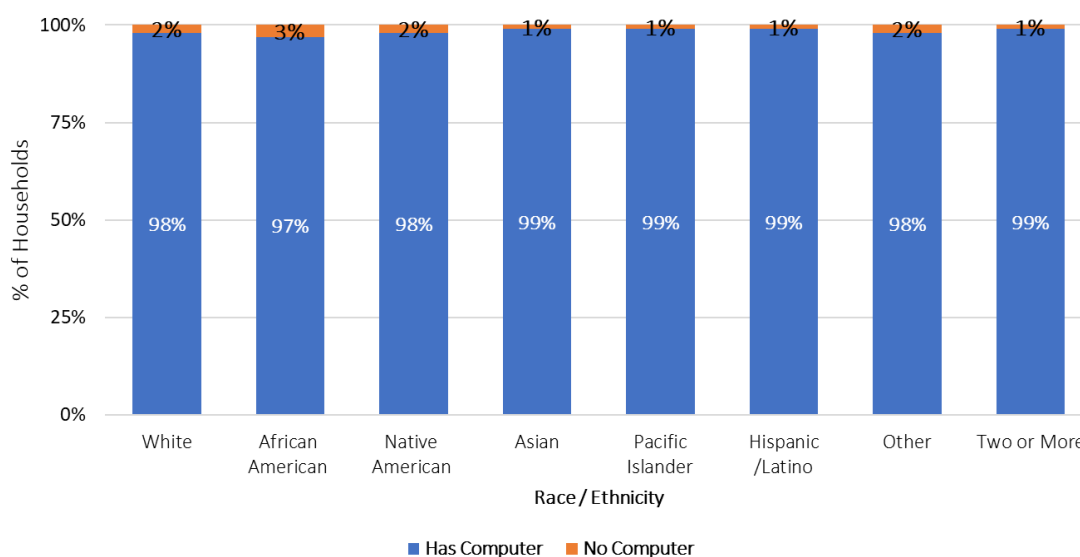
Computing Device Ownership Gaps

Computing Device Ownership by Race/Ethnicity

Of the total 650,352 households in the county, 24,271 households do not own a computing device. "No computing device" means respondents said "No" to having a desktop or laptop; smartphone; table or other portable wireless computer; or some other type of computer.¹³

As evidenced in **Figure 7**, the data does not show a significant difference in internet computing device ownership, with internet subscription, or between various races and ethnic groups.

Figure 7: Computing Device Ownership in Households by Race/Ethnicity (ACS 2022)



Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

However, ACS data reveals that the highest concentration of households without a computing device are in the areas of East San José, South San José and South County (Morgan Hill, San Martin and Gilroy). These areas have a total of 4,419 households that do not own a computing device. These areas make up 27% of the total 16,349 households. **Table 6** displays the total number of households without a computing device by area, while **Figure 8** displays the distribution of those households by census tract.

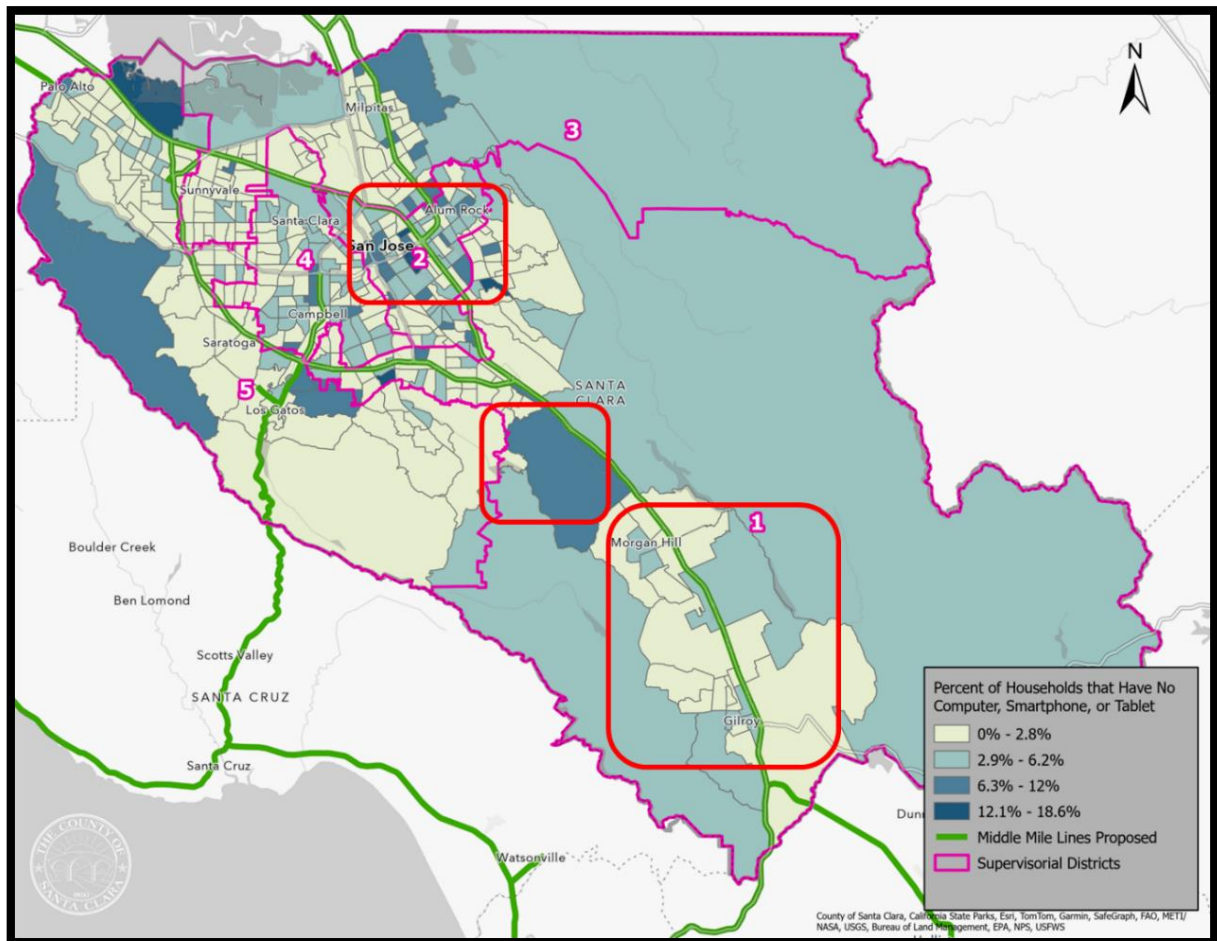
Table 6: Number of Households without a Computing Device (ACS 2022)

Area	Total Households	Total Households without a Computing Device	% of Households without a Computing Device
East San José	78,654	3,634	4.62%
South San José	2805	114	4.06%
South County	36,038	671	1.86%
Total	117,497	4,419	3.76%

Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

¹³ U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

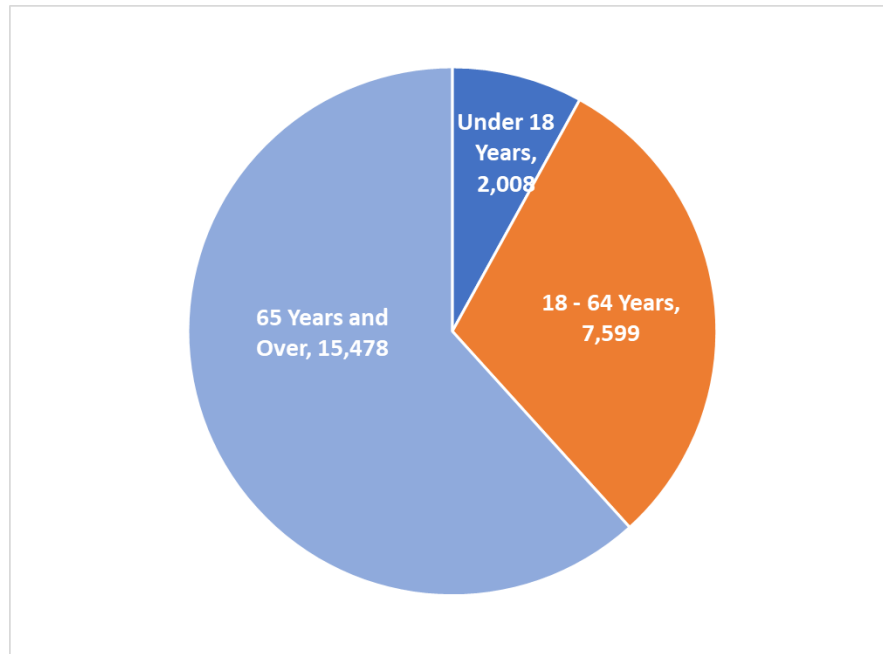
Figure 8: Distribution of Households without a Computer, Smartphone or Tablet by Census Tract (ACS 2022)



Low Rates of Ownership for Certain Populations

Data from the ACS also reveal that computing device ownership is the lowest amongst residents aged 65 years and older. This age group accounts for 58% of the population in households that do not own a device, as shown in **Figure 9** below. This equates to 20,258 residents of the total 35,142 that do not own a computing device.

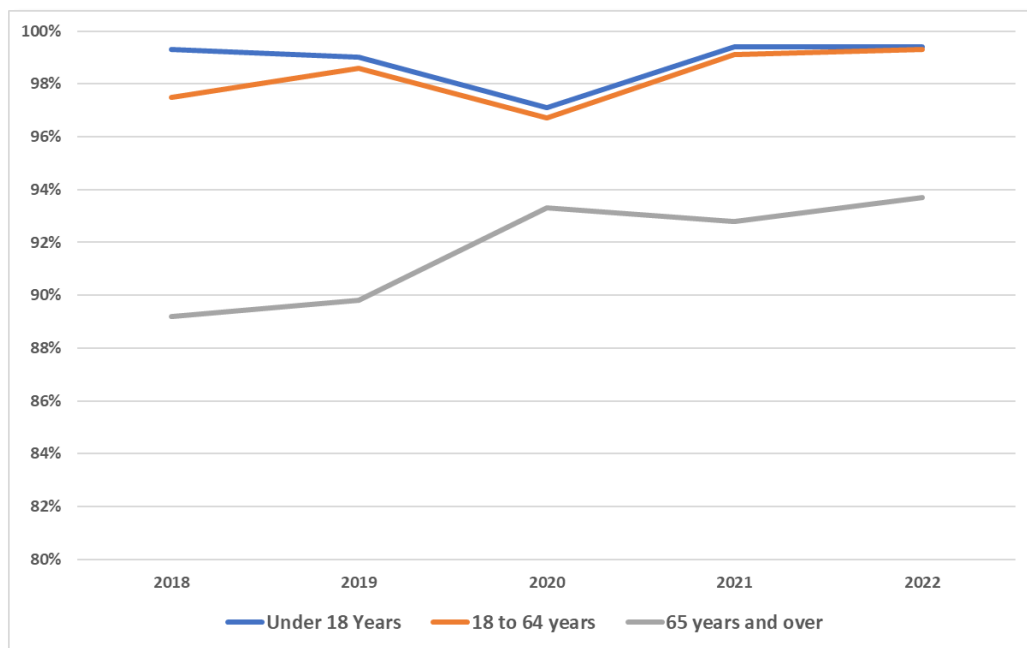
Figure 9: Population in Households without Computing Devices, by Age Group



Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

Figure 10 displays computer ownership rates in the county by age group over the past five years.

Figure 10: Computer ownership rates in Santa Clara County by age group



Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

Access to devices and internet subscription continues to be an essential link for meaningful connectivity to education. According to the ACS, an estimated 4,709 pre-K to 12th grade students do not have a computing device nor internet subscription. **Table 7** displays the total number of these students by grade level.

Table 7: Internet Subscription and Computer Ownership by Grade Level

	Santa Clara County, California	Percentage of Internet Subscription and Computer Ownership
Enrolled in school:		
Pre-K to 4th Grade (total)		
Has a computer and internet subscription	127,28	98.90%
No subscription or computer	1,414	1.1%
Total	129,342	100%
5th to 8th Grade (total)		
Has a computer and internet subscription	84,318	98.16%
No subscription or computer	1,578	1.84%
Total	85,896	100%
9th to 12th Grade		
Has a computer and internet subscription	97,039	98.26%
No subscription or computer	1,717	1.74%
Total	98,810	100%

Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

Digital Skills Gap

Digital literacy is a critical component of digital equity.¹⁴ Older adults express interest in and need for digital skills training. A 2021 survey of Santa Clara County residents by Source wise found that 63% of respondents over the age of 75 who did not own a computer explained that they “don’t know how to use it,” “don’t have anyone to help,” or “fear scams/privacy.”¹⁵

However, there is limited countywide data and analysis on how digital literacy impacts broadband access and adoption.¹⁶ For the County to evaluate and craft programmatic solutions most effectively, data collection methods should be considered. The resulting dataset would give the County a deeper understanding of the geographic and demographic nature of the digital divide to aid in decision-making and potentially gather compelling evidence to be included in applications to broadband-related grant and funding programs.¹⁷

¹⁴ The American Library Association defines digital literacy as, “the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.” See: “Digital Literacy,” ALA Literacy Clearinghouse, <https://literacy.ala.org/digital-literacy/> (accessed November 6, 2022).

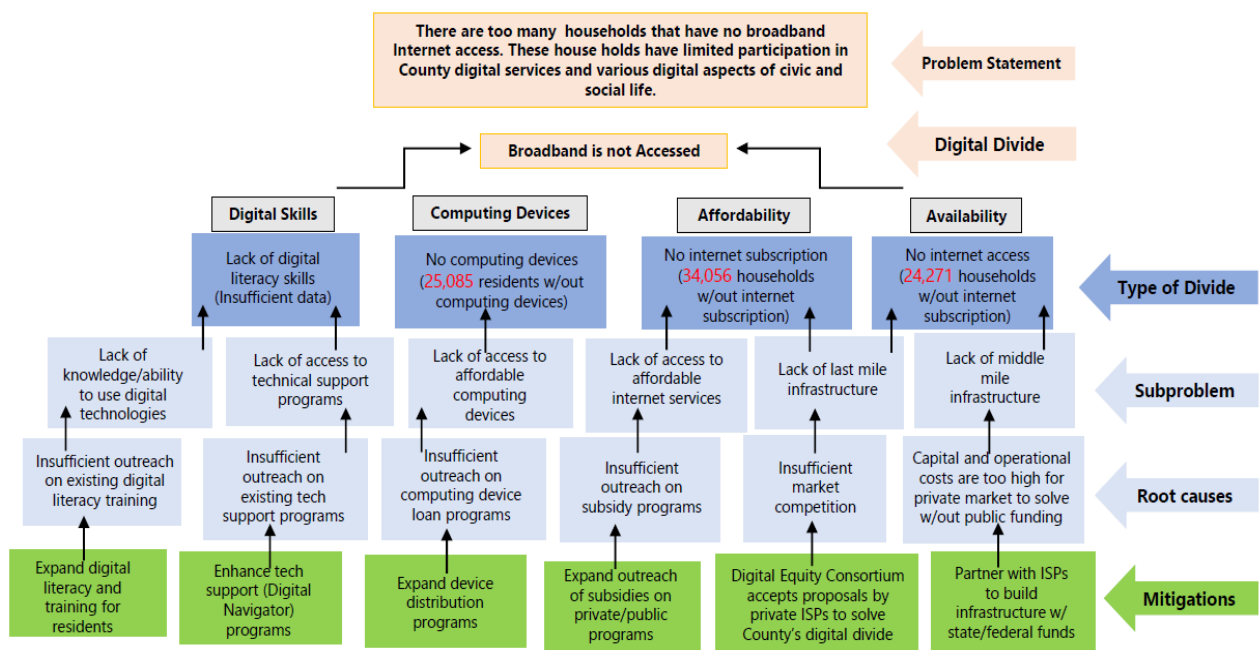
¹⁵ Sourcewise. “COVID-19 Impact Survey.” February 2022.

¹⁶ To compliment the Census data and FCC maps, the City of San José Library plans to enter into a grant agreement with the San José State University (SJSU) Research Foundation, which will enable SJSU to conduct a survey and evaluation of broadband and digital literacy use among San José residents. Council Agenda: 4/4/2023 - Item 7.1

¹⁷ National Association of Counties, Broadband Task Force Report: High Speed Internet is Essential to All Counties (July 2021) at https://www.naco.org/sites/default/files/documents/NACo-Broadband-Task-Force_8-6.pdf (accessed, November 17, 2022) (describing several county-level surveys on broadband availability)

Drivers of the Digital Divide

Using existing research and available national and county-level data, an analysis was undertaken to better understand how the County can most effectively address digital equity issues. The figure below illustrates the digital ecosystem in Santa Clara County, including the identified root causes that contribute to a gap in broadband access by residents. In summary, an analysis of broadband service availability and adoption data indicates that the county's digital divide relates primarily to a lack of access, or awareness, of affordable service offerings, digital skills, and device access. While the data suggests that the county is served by broadband, much of the county lacks access to more than one broadband provider at 25/3 or 100/20 Mbps speeds. This lack of competitive pressure on providers may lead to less investment in network upgrades, and less incentive for the ISP to offer lower rates for customers in the county who may not qualify for the Affordable Connectivity Program (ACP) or other subsidy programs.



Affordability: Lack of Access and Awareness of Discounted Broadband Services and End-user Subsidies

Research and analysis conducted for this assessment identified Internet Service Providers (ISPs) delivering services with a range of prices and performance levels in the county. **Table 8** below is a sample of existing discounted broadband services and their associated costs.

While discounted rates range from \$9.95-\$29.99 per month, choice between the low-cost programs largely depends on the area.

Table 8: Sample of Discounted Broadband Services in Santa Clara County

Service	Advertised download/upload speeds	Monthly price (non-promotional)	Notes
AT&T Access	100/100mbps	\$30	No data cap: no contract required; no installation or equipment charges; eligibility requirements
Comcast Internet Essentials	50/10mbps	\$9.95	\$5 monthly equipment fee; no contract required; eligibility requirements. Internet Essentials also includes added benefits; customers can purchase a refurbished computer for \$149.99 and can access out-of-home Wi-Fi on Comcast's Wi-Fi hotspots across the country. ¹⁸
Comcast Internet Essentials Plus	100/10mbps	\$29.95	\$5 monthly equipment fee; no contract required; eligibility requirements.
Charter Internet Assist	30/4 – 5mbps	\$17.99	\$5 monthly equipment fee; no contract required; eligibility requirements

End-user subsidies and affordability programs exist in Santa Clara County, but the limited success of these programs can be attributed in part to limited stakeholder outreach and inadequate subsidy and support levels to provide meaningful service for the county's lowest-income residents.

Analysis of enrollment in the Affordable Connectivity Program (ACP), a federal program that provided eligible low-income residents with a \$30 monthly subsidy for broadband service, found high levels of participation around San José and Gilroy, which indicates affordability needs in those areas. Unfortunately, Federal funding for the ACP ends in April 2024, with no clear Congressional plan to extend the funding.

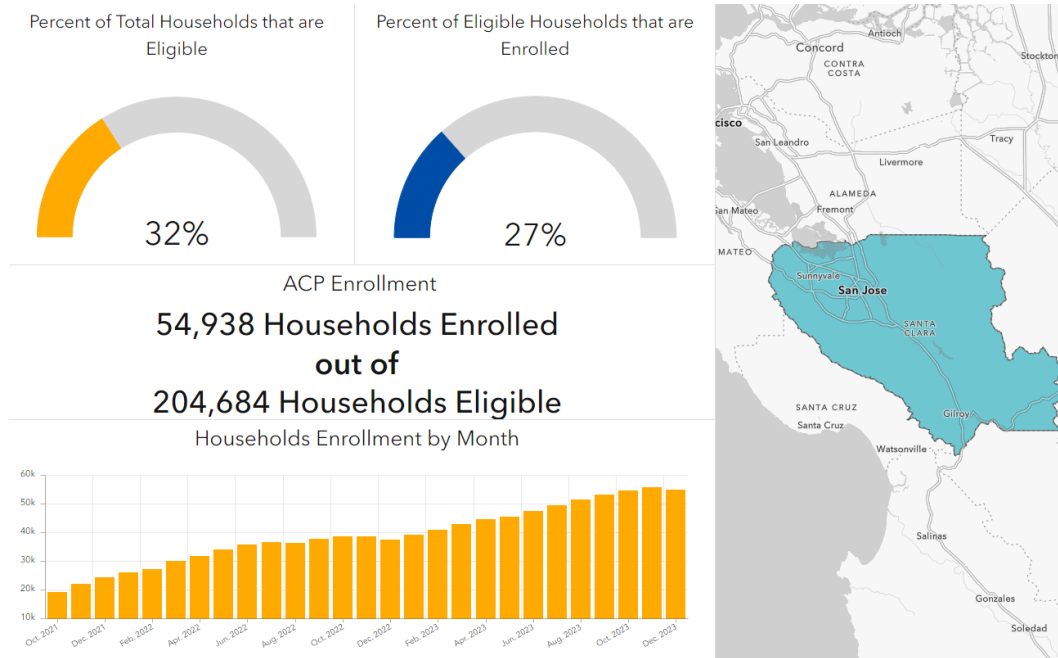
Figure 11 shows the number of eligible and enrolled households in Santa Clara County.¹⁹ As of February 2024, the most recent data available, 54,938 households, or 27%, out of an eligible 204,684 eligible households are enrolled in ACP.

¹⁸ Comcast, "Internet Essentials Programs."

¹⁹ Source: Universal Service Administrative Co. (Accessed February, 2024) .)

<https://www.arcgis.com/apps/dashboards/8c0249a9de8d404a9b49966fb824b728>

Figure 11: ACP Eligible and Enrolled Households¹¹



ACP applications concluded in February of this year. These numbers point to an ongoing gap in funding for affordable sustained connectivity.

Computing Devices: Lack of Access and Awareness of Computing Device Loaner Programs in Santa Clara County

The driving factors and root causes for a lack of computing device ownership in Santa Clara County are similar to the issues underlying broadband subscription affordability. The disparity in device ownership rates across income levels suggests that households lacking a device would subscribe if they had the financial means to do so.

Multiple programs are available to county residents to provide discounted devices or loaned devices;²⁰ however, subscription rates for those programs suggest that eligible residents may have low awareness of these programs.

While each of these programs is a valuable resource, there appears to be no framework or unified communication to connect these efforts to one another and further benefit county residents. The DEC will play a critical role in expanding outreach to eligible residents in existing broadband service subsidy and device programs. Additionally, the DEC will work closely with the private sector and nonprofit resources to address digital divide issues within the County of Santa Clara.

Digital Skills: Lack of Access and Awareness of Existing Digital Literacy Programs in Santa Clara County

The root cause analysis demonstrates that both of these drivers (lack of access to affordable services and

²⁰ Some broadband service subsidy and affordability programs also offer discounts on devices (e.g., ACP, Lifeline, and Comcast Internet Essentials). Additionally, the County has several device loaning and distribution programs (e.g., San Jose Public Library, SCCOE, Eastside Union High School, Department of Aging and Adult Services). See Appendix C.

device access) have overlapping root causes and are largely an outcome of the success (or lack of success) of end-user subsidy programs, such as ACP. However, other root causes, such as the lack of effective digital literacy programs, also have an impact on the rates of broadband adoption.

The levels of digital literacy for a specific group may be influenced by a lack of training or education, as well as language and cultural barriers.²¹ As policy makers, educators, and community-based organizations understand the importance of digital literacy there is a growing interest in digital skills and device education programs.²²

A number of organizations in Santa Clara County offer digital literacy programs (see Appendix C). These programs, if provided additional funding, can introduce the benefits of broadband access and online content in a targeted and tailored way. For instance, some residents need training on the basics, such as accessing the web or email. Others may need more nuanced job training skills, cybersecurity training or specific software training. However, digital literacy programs alone often do not bring households online. These programs must be paired with affordable services and device access.

Broadband Infrastructure: Santa Clara County Residents have Access to 25/3 Mbps but Lack of Market Competition Limits Consumer Choice

Santa Clara County is served by a mix of large, small, and micro-ISPs (i.e., community fiber organizations).²³ An assessment of the county's broadband market finds that residents have access to at least one ISP delivering at least 25/3.²⁴ Further, residential parcels within the county are served by at least one provider offering 100/20, and many of the remaining underserved parcels will be served by planned federally-funded fiber-to-the-premises (FTTP) projects. (See Appendix E for a map of these areas). In terms of the distribution of broadband technologies in the county, fiber service is primarily provided by AT&T and is available in pockets throughout the northwest portion of the county. Cable service is more widely available, with Comcast covering much of the northwest portion of the county and Charter service available widely in the Morgan Hill—Gilroy corridor. Digital Subscriber Line (DSL) service is available to the western part of the county. However, the ISPs' reported speeds vary significantly, and many DSL-served areas are unable to obtain 25/3 Mbps service (i.e., the DSL service delivers internet access but not

²¹ EveryoneOn and John B. Horrigan, "State of Digital Equity: Lessons from survey data and focus groups," Research Report, May 2022, at pp. 8-10, 12, <https://static1.squarespace.com/static/5aa8af1fc3c16a54bcbb0415/t/627d36cfde20f6167a7f3441/1652373204983/EveryoneOn+The+State+of+Digital+Equity+Report+May+2022.pdf> (accessed November 6, 2022) (concluding digital skills are impacted by limited English speaking, age, trust and security concerns, access to devices, technical support, and classes).

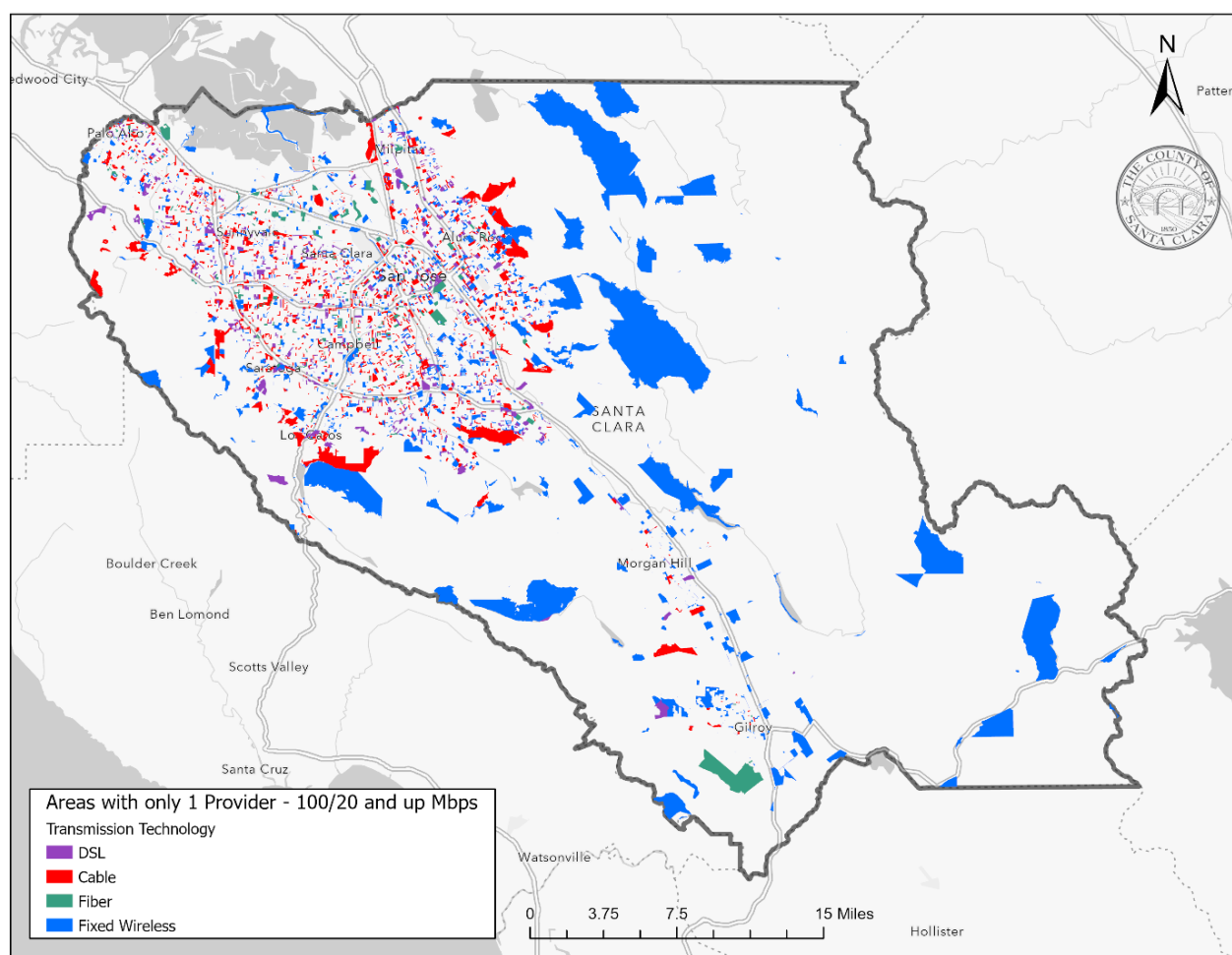
²² Id. (EveryoneOn, State of Digital Equity); See also: John B. Horrigan and Jorge Reina Schement, Broadband as Civic Infrastructure, Community Empowerment, Equity and a Digital New Deal, German Marshall Fund, March 23, 2021, <https://www.gmfus.org/news/broadband-civic-infrastructure-community-empowerment-equity-and-digital-new-deal>; See also: Amanda Bergson-Shilcock, The New Landscape of Digital Literacy, National Skills Coalition, May 2020, 05-20-2020-NSC-New-Landscape-of-Digital-Literacy.pdf; See also: Pew Research Center, Americans and Digital Knowledge, October 9, 2019, <https://www.pewresearch.org/internet/2019/10/09/americans-and-digital-knowledge/>; See also: San Jose Public Library, Digital Literacy Quality Standards (Dec 2023) at <https://www.sjpl.org/digital-literacy-quality-standards/>

²³ See Appendix E for a list of active ISPs in the County.

²⁴ A note on data sources: These analyses are built on publicly available data, including the CPUC broadband map and the U.S. Census Bureau's American Community Survey (ACS). CPUC's dataset was chosen as the primary source because the CPUC allows providers to submit more granular data than the FCC currently collects, and because the CPUC validates the provider data using subscription information and public feedback. Given current efforts at the FCC to develop address-level maps in compliance with the Federal Broadband DATA Act, the analysis presented in this report should be refreshed after the FCC has released its updated maps and allowed the statutory process to refine and improve such maps.

Figure 13 depicts areas that are served by only one broadband provider that advertises 100/20 Mbps speeds.

Figure 13: Areas served by a single provider at 100/20 Mbps



The least densely populated areas of the county appear to receive service from a single fixed wireless service provider, though actual service availability and speeds are likely more limited than they appear in this map. Another significant geographic portion of the county (located in more urban areas, and thus likely affecting a larger number of residents) has access only to one cable provider's service (Comcast). This lack of competitive pressure on providers in these areas may lead to less investment in network upgrades, and less incentive for the ISP to offer lower rates for customers in the county who may not qualify for ACP or other subsidy programs.

Areas in the county that are served solely by DSL service are primarily located in the greater Santa Clara/San José region (see the map above). Residents in these areas likely receive slow or inconsistent service because it is difficult for DSL networks to provide 100/20 services even if those speeds are advertised.

Residents who live in areas in which there is only a single broadband provider offering either cable, DSL, or fixed wireless broadband services face high prices and/or slow speeds relative to areas that have a competitive fiber broadband option. As such, service pricing can vary dramatically depending on where a household is located. The options available at a given county address will differ on a per unit basis among different products and services. For example, Comcast offers 50/5 Mbps for \$60 and up to 1,200/35 for

\$110 utilizing its cable infrastructure. AT&T offers 100/100 Mbps service at \$60 per month to consumers who are able to receive service over AT&T's upgraded fiber-to-the-premises network. However, for households that are served by AT&T's legacy DSL network (rather than its newer fiber network), \$70 will buy only the speeds available over DSL, which will vary depending on location and can be as low as 25/2 Mbps. Residents with Ethernity wireless as their only broadband option are faced with slower speeds and higher prices: customers can purchase 15/15 Mbps for \$99 per month or 38/38 Mbps for \$179.

In contrast, those with a competitive fiber option can choose much faster symmetrical options for around the same price. For example, AT&T offers 500/500 Mbps to those who can receive service over its upgraded fiber-to-the-premises network, for the same \$70 it charges its DSL customers. In the areas where Frontier is currently upgrading its network to fiber services (see Section Appendix E), customers will be able to subscribe to a 940/880 Mbps package for \$75. Customers with these competitive options may also be able to negotiate promotional pricing more easily with incumbent cable providers than cable customers with no viable alternative.

ISPs have committed to building new infrastructure in rural areas with funding awarded by the Federal Communications Commission (FCC) and the California Public Utilities Commission (CPUC). Recent federal and state programs have awarded funds to ISPs to build new fixed wireless and fiber broadband service in rural areas of the county. These commitments suggest that some currently underserved portions of the county may be served within a few years. (See Appendix E for more details.)

Strategies to Bridge the Digital Divide

Broadband service availability and adoption data indicates that the County's Digital Equity Strategy warrants targeted recommendations addressing access and knowledge of affordable service offerings, digital skills, and device access.

Achieving county-level change, the ultimate goal of the strategy, requires all stakeholders to recognize that success comes from the combination of many interventions. For County agencies, this means thinking about our work as part of a larger context and considering how our contributions feed into the larger puzzle of digital equity initiatives that enable multiple organizations to work together.

The following section provides an overview of recommendations addressing each of the components of broadband access.

Goal 1: Availability. Expand connectivity in unserved and underserved areas in the county with a focus on measurable outcomes.

- Recommendation 1.1: Evaluate proposals and coordinate with ISPs to understand and collaborate on network planning, low-income service offerings, and state and federal infrastructure (last mile and middle mile) funding opportunities.
- Recommendation 1.2: Conduct data analysis to guide investments in unserved and underserved areas in the county.
- Recommendation 1.3: Engage small businesses in the county to understand and collaborate on their needs for broadband access.

Goal 2: Affordability and Devices. Promote equitable access to affordable, reliable broadband service and the computing devices necessary to participate online.

- Recommendation 2.1: Reduce the number of households earning less than \$35,000 without internet subscription by removing barriers to entry to discounted or free broadband services.

- Recommendation 2.2: Increase percentage of subsidy enrollments for eligible households in the county through targeted outreach.
- Recommendation 2.3: Reduce the number of residents aged 65 years and older and students (pre-k-12th grade) without computing devices through the promotion, investment, and expansion of existing computing device distribution programs in the county.

Goal 3: Digital Skills. Enhance digital literacy skills and training support so residents have the knowledge to effectively use technology.

- Recommendation 3.1: Conduct a statistically valid survey to identify main challenges to broadband adoption as well as digital literacy needs in the county.
- Recommendation 3.2: Expand digital literacy classes and training programs in the county.
- Recommendation 3.3: Expand local Digital Navigator programs to provide residents access to one-on-one assistance with technology needs in the county.

Defining Strategic Goals and Measuring Impact



The Digital Equity Strategy aims to achieve the following goals and strategies. Goals address what the strategy is trying to achieve; objectives address the needs and barriers identified; strategic actions help lay out the steps needed to achieve those goals; and key performance measures provide accountability. All goals aim to make a measurable difference in digital equity within the next three fiscal-years.

Goal 1: Availability. Expand connectivity in unserved and underserved areas in the county with a focus on measurable outcomes.

- Objective 1:** Reduce the number of households without internet access by deploying free public wireless networks to neighborhoods in East San José, South San José, and South County.
- Objective 2:** Conduct data analysis to guide investments in unserved and underserved areas in the county.
- Objective 3:** Engage small businesses in the county to understand and collaborate on their needs for broadband access.
- Objective 4:** Coordinate with ISPs to understand and collaborate on network planning, low-income service offerings, and state and federal infrastructure (last mile and middle mile) funding opportunities.

Action Items Addressing Availability

- Objective 1:** Reduce the number of households without internet access by deploying free public wireless networks to neighborhoods in East San José, South San José and South County.

Description: Data reveal that several areas lack broadband adoption as well as a low percentage of ownership of computing devices. This is particularly true in East San José, South San José, and South County (Morgan Hill, San Martin and Gilroy). The County should coordinate with cities to investigate strategically deploying wireless networks and bringing broadband services to these neighborhoods to improve adoption for residents most in need.
- Strategy 1.1:** Identify, connect, and gather input from stakeholders (who work with or represent groups) and communities that are unserved and do not have access to high-quality broadband services.
- Strategy 1.2:** Identify existing network infrastructure and services, consider partnering with industry to leverage open trenches.
- Strategy 1.3:** Identify venues and forums to share information/education on broadband access gap findings and carry out advocacy activities, including proposing and submitting comments on policies and legislation to federal, state, and local governments.

- Strategy 1.4: Consider establishing the County's own internet service connectivity standards for County-managed and operated public broadband networks/Wi-Fi, such as accessibility, speed, reliability, resiliency, availability, and open access.
- Key Performance Indicator:** Number of households without internet access at certain connectivity standards.
- Timeline:** Nine to Twelve months (1.1, 1.2, 1.3,1.4)
- Objective 2:** Conduct data analysis to guide investments in unserved and underserved areas in the county.
- Description:** The absence of these essential County statistics warrants additional analysis. Consequently, the Digital Equity strategy recommends further investigation and reporting on the number and locations of unserved and underserved residents, as well as average download/upload speeds. Collecting this information will better position the County to apply for potential state and federal grant funding opportunities.
- Strategy 2.1: Quantify the number and location of unserved and underserved households in the county.
- Strategy 2.2: Quantify the average per megabit cost of broadband internet services, the average internet download speeds, and the average internet upload speeds in the county.
- Strategy 2.3: Obtain more information about incumbents' internet prices, speeds, and quality.
- Strategy 2.4: Report findings on Strategic Actions 2.1, 2.2,2.3 and propose potential programmatic solutions to expand connectivity to unserved and underserved households, as well as potential funding sources.
- Key Performance Indicator:** Number of households without internet access.
- Timeline:** Six to Nine months (2.1, 2.2, 2.3, 2.4)
- Objective 3:** Engage small businesses in the county to understand and collaborate on their needs for broadband access.
- Description:** Currently, not enough information exists on the needs of small businesses in the county with respect to broadband access.
- Strategy 3.1: Quantify the number and location of unserved and underserved small businesses in the county.
- Key Performance Indicator:** Number of unserved and underserved small businesses.
- Timeline:** One to Three months
- Objective 4:** Coordinate with ISPs to understand and collaborate on network planning, discounted service offerings, and state and federal infrastructure (last mile and middle mile) funding opportunities.
- Description:** It is envisioned that the County's CIO and Digital Equity Consortium will facilitate collaboration with the private sector and community-based organizations to address digital divide issues in the county. Given the significant opportunities to secure state or federal broadband funding for infrastructure, the DEC can also

ensure that it will focus the County's efforts on enabling these private sector and local government initiatives rather than investing significant County funds and resources to build infrastructure itself. At the same time, the DEC can continue the County's efforts to work closely with the CPUC, California Department of Technology, and ISPs to monitor statewide plans to build middle mile infrastructure in unserved areas, including current plans for 134 miles within the County.²⁶ The DEC can support efforts to educate last mile ISPs, large businesses, and key anchor institutions about plans for additional middle mile infrastructure in their area which could create additional demand for more robust last mile broadband service offerings. This could be a catalyst for increased competition and lower broadband costs.

- Strategy 4.1: Facilitate regular broadband planning strategy meetings with ISPs, municipal governments, and other stakeholders.
- Strategy 4.2: Analyze and monitor existing, newly enacted and proposed local, state, federal legislation and regulation for policy and financial impact on "priority areas" within the county. Carry out advocacy activities such as submitting comments to federal, state, and local regulatory agencies.
- Strategy 4.3: Work with incumbent providers and the State's Open Access Middle Mile project to take advantage of available infrastructure and technical assistance.

Key Performance Indicator: Number of providers offering broadband services in the county.

Timeline: Three to Six months (4.1, 4.2, 4.3)

Goal 2: Affordability and Devices. Promote equitable access to affordable, reliable broadband service and the computing devices necessary to participate online.

- Objective 1:** Reduce the number of households earning less than \$35,000 without an internet subscription.
- Objective 2:** Increase the percentage of enrollments for eligible households through targeted outreach in the county.
- Objective 3:** Reduce the number of older adult residents and students (pre-k-12th grade) without computing devices through the promotion, investment, and expansion of existing computing device distribution programs in the county.

Action Items Addressing Affordability and Devices

- Objective 1:** Reduce the number of households earning less than \$35,000 without an internet subscription.

Description: Strategically target low-income households to improve equitable outcomes with respect to broadband access. The following strategies provide additional resources to better understand the needs of the population, streamline existing discounted programs as well as reduce barriers to entry by providing information on the locations of free connectivity throughout the

²⁶ California Middle-Mile Broadband Initiative, <https://middle-mile-broadband-initiative.cdt.ca.gov/> (accessed November 4, 2022).

county.

Strategy 1.1: Research existing affordable internet programs (e.g., Internet Essentials, Lifeline), prices, speeds, and quality; document enrollment requirements, and identify key barriers to enrollment.

Strategy 1.2: Propose recommendations to streamline enrollment process in partnership with local ISPs, community anchor institutions (e.g., educational facilities, public libraries, etc.) and County agencies to reduce barriers to entry by ensuring the process to get discounted or free internet service is easy to complete.

Strategy 1.3: Develop a map showing geographic locations throughout the county with free public Wi-Fi connectivity/hotspots, publish map online and distribute hardcopies to community anchor institutions.

Key Performance Indicators: 1) Percentage of county households earning less than \$35,000 with internet subscription. 2) The number of residents using public hotspots.

Timeline: Six to Nine months (1.1, 1.2, 1.3)

Objective 2: Increase the percentage of enrollments for eligible households through targeted outreach in the county.

Description: To address affordability gaps, increase consumer education to help low-income residents by providing information about options (speed, availability, reliability) and price comparisons. Ensure services provided through discount and free programs are broad enough to reach diverse members of the community (i.e., multilingual, etc.), yet have specific and clear guidelines on enrollment procedures.

Strategy 2.1: Partner with community-based organization (CBO) to conduct an outreach program to facilitate the promotion of the subsidy programs and increase awareness of and participation among eligible households. Given CBO's have developed trusted relationships with community members, it is envisioned that CBO's should lead and coordinate outreach efforts.

Strategy 2.2: Provide information about broadband options, speeds, and price comparisons.

Key Performance Indicator: Percentage of eligible county residents enrolled in subsidy programs.

Timeline: Three to Six months (2.1, 2.2)

Objective 3: Reduce the number of older adult residents and students (pre-k-12th grade) without computing devices through the promotion, investment, and expansion of existing computing device distribution programs in the county.

Description: Multiple programs are available to county residents to provide discounted devices or loaned devices. However, subscription rates suggest that eligible residents may have low awareness of these programs. Obtain more information on existing computing device distribution programs and identify opportunities to promote and expand such programs. This may require collaboration with regional public agencies and other organizations to partner with or create refurbishment programs to broaden the County's distribution of low and no-cost devices.

- Strategy 3.1: Research existing computing device distribution programs (e.g. San José Public Library, Santa Clara County Office of Education), Eastside Union High School, County of Santa Clara Department of Aging and Adult Services; convene and gather input from stakeholders.
- Strategy 3.2: Identify partners that supply and refurbish free high-quality used devices and document process for donating and refurbishing, and receipt procedures.
- Strategy 3.3 Use findings from 3.1 and 3.2 to propose potential programmatic solutions to expand existing programs, as well as potential funding sources (local, state, and federal).

Key Performance Indicators: 1) Number of residents aged 65 years and older without a computing device. 2) Number of pre-k to 12th grade students without computing devices nor internet subscription.

Timeline: Three to Six months (3.1, 3.2, 3.3)

Goal 3: Digital Skills. Enhance digital literacy skills and training support so residents have the knowledge to effectively use technology.

- Objective 1:** Through the Digital Equity Consortium, lead, coordinate and manage the County's implementation of the broadband and digital equity strategy.
- Objective 2:** Conduct a statistically valid survey to identify main challenges to broadband adoption as well as digital literacy needs in the county.
- Objective 3:** Expand digital literacy classes and training programs in the county.
- Objective 4:** Expand local Digital Navigator programs to provide residents access to one-on-one assistance with technology needs in the county.

Action Items Addressing Digital Skills

- Objective 1:** Through the Digital Equity Consortium, lead, coordinate and manage the County's implementation of the broadband and digital equity strategy.
- Description:** At present, there is no central framework or unified communication to connect countywide broadband efforts to one another and further benefit County residents. The CIO and DEC will play a critical role in expanding outreach to eligible residents in existing broadband service subsidy and device programs. The staffing, budgets and systems development for this office can be scaled to meet the goals of the County and the interests of other county agencies working on these issues. It is envisioned that the CIO and DEC will facilitate collaboration with the private sector and community-based organizations to address digital divide issues in the county.
- Strategy 1.1:** Convene, support, and gather input from County stakeholders and local ISPs to inform programs and approaches that address digital equity needs. Consider the various existing digital literacy training programs as well as targeted training opportunities, (e.g. skills geared towards lower-income households, older adults, justice-involved individuals, veterans, individuals with disabilities, individuals with language barriers, members of a racial or ethnic minority, individuals who primarily reside in rural areas, women and individuals who identify as female, individuals who identify as LGBTQI+..)

- Strategy 1.2: Develop "standards" for what digital literacy means and help residents and businesses reach at least a basic level of literacy. Consider partnerships with local educational facilities to incorporate these standards into curriculum and training programs.
- Strategy 1.3: Develop recommendations to improve collaboration between government agencies, community-based organizations, and private companies.
- Key Performance Indicators:** 1) Number of new and existing residents assisted. 2) Number of households reached through outreach programs.
- Timeline:** One or more years (1.1, 1.2, 1.3, 1.4)
- Objective 2:** Conduct a statistically valid survey to identify main challenges to broadband adoption as well as digital literacy needs in the county.
- Description:** Currently, there is limited data and analysis on how the digital divide impacts broadband access and adoption in the county. In particular, information is lacking on digital literacy issues, with little quantifiable and aggregable data. For the County to evaluate and craft effective strategies that address the digital divide, data collection methods should be considered. The most widely adopted instrument to collect quantitative data on digital literacy is a statistically valid survey, which can be administered by mail or phone. The resulting dataset would give the County a deeper understanding of the geographic and demographic nature of the digital divide to aid in decision-making and potentially gather compelling evidence to be included in applications to broadband-related grant and digital literacy funding programs. The survey tool would become increasingly valuable if repeated on a regular interval, empowering County officials to dynamically update their solutions.
- Strategy 2.1: Identify reliable data sources and quantify the number of residents for which "lack of knowledge to use digital technologies" and "lack of access to technical support programs" are obstacles for broadband access.
- Strategy 2.2: Report findings on Strategic Action 2.1 and propose potential programmatic solutions to expand connectivity to unserved and underserved households, as well as potential funding sources.
- Key Performance Indicator:** Number of residents for which "lack of knowledge to use digital technologies" and "lack of access to technical support programs" are obstacles for broadband access.
- Timeline:** Three to Six months (2.1, 2.2)
- Objective 3:** Expand digital literacy classes and training programs in the county.
- Description:** A variety of stakeholders, including community-based organizations, the County and other public sector entities, are currently implementing solutions to overcome barriers to broadband adoption—or are well-positioned to do so (see Appendix C). Given the broadband adoption gaps in different geographic areas and among different population groups in the county, these stakeholders may be key partners in the County's strategic approach to digital equity by creating or funding significant expansions of these programs and developing new programs.
- Strategy 3.1: Conduct a listening session with stakeholders, such as community anchor

institutions, community-based organizations, local education agencies, public libraries, and County departments, and share knowledge, strategies, and best practices with each other.

Strategy 3.2: Research and propose recommendations to improve inclusiveness, such as diverse accessible formats that are online, in-person, multilingual, assistive technologies, etc.

Strategy 3.3: Develop a comprehensive resource with information on local digital literacy programming and training.

Key Performance Indicator: Number of digital literacy program enrollees.

Timeline: Three to Six months (3.1, 3.2, 3.3)

Objective 4: Expand local Digital Navigator programs to provide residents access to one-on-one assistance with technology needs in the county.

Description: A Digital Navigator program could help the County in addressing digital equity needs by amplifying the one-on-one service that many residents who have not adopted broadband service might require. Digital Navigators can help residents apply for government services online, upload their resumes for employment opportunities, and access information on digital skills training opportunities in the county. They can also serve as a resource by providing residents with information about the ACP and other digital equity services available in the county. Santa Clara County Library District presently operates a Digital Navigator program.²⁷

Strategy 4.1: Research regional digital navigator programs (e.g., Santa Clara Library District Digital Navigator) and gather input from stakeholders to understand program delivery model, and program needs to enhance enrollment.

Key Performance Indicator: Number of digital navigator program enrollees.

Timeline: One to Three months

²⁷ Santa Clara Library District. Digital Navigator program. <https://scclld.org/digital-navigators/>

Roadmap and Timeline



Below are a set of activities to guide our journey of realizing the County of Santa Clara's digital equity goals. Rather than following a predetermined linear plan, we emphasize the need to engage in continuous learning and adaptation. This allows for adaptive problem solving by looking for resources and innovations to solve barriers to digital equity and enables rapid learning through continuous feedback loops with the Board of Supervisors, community, and other stakeholders.



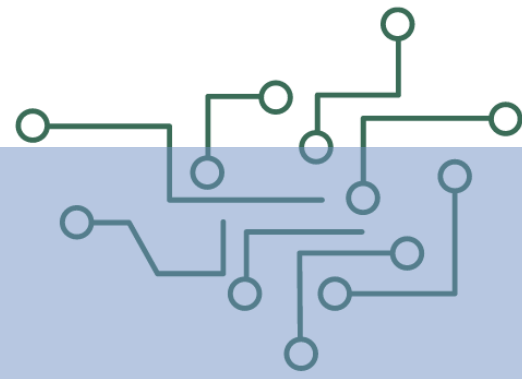
Quarter 1: Socialize and seek adoption of the County of Santa Clara's Digital Equity Strategy.

Quarter 2: Develop a work plan clearly articulating the goals, mission, and steps of the County of Santa Clara's Digital Equity Consortium. Secure state and federal digital equity grant funding. Refine plan and crosswalk with the State of California Digital Equity Plan.

Quarter 3: Begin focused implementation process and refine based on stakeholder outreach and engagement. Identify specific dates, times, and locations for stakeholder outreach events. Promote data and digital equity resources from city, county, and state resources.

Quarter 4: Launch key programs for devices, access, and digital literacy programs. Publish digital equity progress report highlighting year-end accomplishments and next steps. Iterate off data and adjust the plan as necessary.

Implementation: Action Plan



Taking Action

The Action Plan outlines preliminary steps toward achieving each of the three strategic goals to bridge the digital divide in the county. Each action is accompanied by measurable objectives that address one or more barriers to digital equity. These objectives serve as critical touchstones for evaluating the relevance and impact of implementation strategies in the near term and over the next three-year horizon. A consistent theme throughout the Action Plan is that it is iterative, rather than a linear process. As such, it is anticipated that the actions will be sequenced and prioritized by those who are responsible for the plan's implementation to ensure the plan's sustainability. Achieving the goals of the Action Plan will require collaboration and partnership from stakeholders, including the state and local governments, public agencies, community-based organizations, educational institutions, and ISPs.

Additionally, state and federal grant funding opportunities are expected to roll out over the next 12 to 18 months. The grant programs described in Appendix D represent opportunities for the County to seek to advance its digital equity efforts and alleviate projected implementation costs. This can be accomplished either through direct participation or through partnerships with other stakeholders. The project team is analyzing current opportunities and will continue to analyze emerging program rules as they are developed by state and federal governments.

Implementation: Action Plan				
Goal 1: Availability. Expand connectivity in unserved and underserved areas in the county with a focus on measurable outcomes.				
Digital Equity Barrier Addressed	Proposed Recommendations	Key Performance Indicator(s)	Baseline (ACS 2022 data unless noted otherwise)	Estimated Implementation Timing
Availability	Objective 1: Reduce the number of households without internet access by deploying free public wireless networks to neighborhoods in East San José, South San José and South County	Number of households without internet access at certain connectivity standards.	6,846 households without internet access are in East San José, South San José and South County).	9-12 months (1.1,1.2, 1.3, 1.4)
	<i>Strategic Action 1.1: Identify, connect, and gather input from stakeholders (who work with or represent groups) and communities that are unserved and do not have access to high-quality broadband services.</i>			1-3 months
	<i>Strategic Action 1.2: Identify existing network infrastructure and services and consider adopting open trench/notification policy.</i>			1-3 months
	<i>Strategic Action 1.3: Identify venues and forums to share information/education on broadband access gap findings, and carry out advocacy activities,</i>			1-3 months

	<i>including proposing and submitting comments on policies and legislation to Federal, State, and Local governments.</i>			
	<i>Strategic Action 1.4: Consider establishing the County's own internet service connectivity standards for County-managed and operated public broadband networks/Wi-Fi, such as accessibility, speed, reliability, resiliency, availability, and open access.</i>			3-6 months
Availability	Objective 2: Conduct data analysis to guide investments in unserved and underserved areas in the county.	Number of unserved and underserved households.	There is currently no quantifiable information.	6-9 months (2.1, 2.2, 2.3, 2.4)
	<i>Strategic Action 2.1: Quantify the number and location of unserved and underserved households in the county.</i>			1-3 months
	<i>Strategic Action 2.2: Quantify the average per megabit cost of broadband internet services, the average internet download speeds, and the average internet upload speeds in the county.</i>			1-3 months

	<i>Strategic Action 2.3: Obtain more information about incumbents' internet prices, speeds, and quality.</i>			1-3 months
	<i>Strategic Action 2.4: Report findings on Strategic Actions 2.1, 2.2,2.3 and propose potential programmatic solutions to expand connectivity to underserved and underserved households, as well as potential funding sources.</i>			1-3 months
Availability	Objective 3: Engage small businesses in the county to understand and collaborate on their needs for broadband access.	Number of unserved and underserved small businesses.	There is currently no quantifiable information.	1-3 months
	<i>Strategic Action 3.1: Quantify the number and location of unserved and underserved small businesses in the county.</i>			1-3 months
Availability	Objective 4: Coordinate with ISPs to understand and collaborate on network planning, discounted service offerings, and state and federal infrastructure (last mile and middle	Number of providers offering broadband services in the county.	There is currently no structured engagement convenings with local ISPs.	3-6 months (4.1, 4.2, 4.3)

	mile) funding opportunities.			
	<i>Strategic Action 4.1: Facilitating regular broadband planning strategy meetings with ISPs, municipal governments, and other stakeholders.</i>			1-3 months
	<i>Strategic Action 4.2: Analyze and monitor existing, newly enacted and proposed local, state, federal legislation and regulation for policy and financial impact on "priority areas" within the county; and carry out advocacy activities such as submitting comments to federal, state, and local regulatory agencies.</i>			1-3 months
	<i>Strategic Action 4.3: Work with incumbent providers and the State's Open Access Middle Mile project to take advantage of available infrastructure and technical assistance.</i>			1-3 months
Goal 2: Affordability and Computing Devices. Promote equitable access to affordable, reliable broadband service and the computing devices necessary to participate online				
Affordability	Objective 1: Reduce the number of households earning less than	Percentage of county households earning less than	14,617 households earning less than \$35,000 do not have a	6-9 months (1.1,1.2,1.3)

	\$35,000 without internet subscription.	\$35,000 with a computing device and has an internet subscription.	broadband internet subscription.	
	<i>Strategic Action 1.1: Research existing affordable internet programs (e.g., Internet Essentials, Lifeline), prices, speeds, and quality; document enrollment requirements, and identify key barriers to enrollment.</i>			1-3 months
	<i>Strategic Action 1.2: Propose recommendations to streamline enrollment process in partnership with local ISPs, community anchor institutions (e.g., educational facilities, public libraries, etc.) and County agencies to reduce barriers to entry by ensuring the process to get discounted or free internet service is easy to complete.</i>			1-3 months
	<i>Strategic Action 1.3: Develop a digital map (e.g. San José Access) showing geographic locations throughout the county with free public</i>			1-3 months

	<i>Wi-Fi connectivity/hotspots, publish map online and distribute hardcopies to community anchor institutions.</i>			
Affordability	Objective 2: Increase percentage of enrollments for eligible households in the county through targeted outreach program.	Percentage of eligible county residents enrolled in subsidy programs.	As of February 2024, the most recent data available, 54,938 households, or 27%, out of an eligible 204,684 eligible households are enrolled in ACP – a federally subsidized program.	3-6 months (2.1, 2.2)
	<i>Strategic Action 2.1: Partner with community-based organizations to conduct an Outreach Program to facilitate the promotion of subsidy programs.</i>			
	<i>Strategic Action 2.2: Provide information about broadband options, speeds, and price comparisons.</i>			1-3 months
Computing Devices	Objective 3: Reduce the number of residents aged 65 years and older and students (pre-k-12th grade) without computing devices through the promotion, investment, and expansion of existing computing device	1) Number of residents aged 65 years and older without a computing device. 2) number of pre-k to 12th grade students without computing devices	15,478 residents aged 65 years old without a computing device. 4,709 pre-K to 12th grade students without a computing device nor internet subscription).	3-6 months (3.1, 3.2, 3.3)

	distribution programs in the county.	nor internet subscription.		
	<i>Strategic Action 3.1: Research existing computing device distribution programs (e.g., San José Public Library, Santa Clara Office of Education), Eastside Union High School, Department of Aging and Adults Services; convene and gather input from stakeholders.</i>			1-3 months
	<i>Strategic Action 3.2: Identify partners that supply and refurbish free high-quality used devices and document process for donating and refurbishing, and receipt procedures.</i>			1-3 months
	<i>Strategic Action 3.3: Use finding from Strategic Actions 3.1 and 3.2 to propose potential programmatic solutions to expand existing programs, as well as potential funding sources (local, state, and federal).</i>			1-3 months

Goal 3: Digital Skills. Enhance digital literacy skills and training support so residents have the knowledge to effectively use technology				
Digital Skills	Objective 2.1: Through the Digital Equity Consortium, lead, coordinate and manage the broadband and digital equity strategy.	1) Number of new and existing residents assisted. 2) Number of households reached through outreach programs.		1+ year (1.1, 1.2, 1.3, 1.4)
	<i>Strategic Action 1.1: Charter the County of Santa Clara Digital Equity Consortium, made up of County leaders who represent services that can be consumed digitally by residents.</i>			1-3 months
	<i>Strategic Action 1.2: Convene, support, and gather input from County stakeholders and local ISPs to inform programs and approaches that address digital equity needs. Consider the various existing digital literacy training programs as well as targeted training opportunities, (e.g., skills geared towards older adults, disabled community, Spanish-speaking etc.)</i>			1-3 months

	<i>Strategic Action 1.3: Develop "standards" for what digital literacy means and help residents and businesses reach at least a basic level of literacy. Consider partnerships with local educational facilities to incorporate these standards into curriculum and training programs.</i>			3-6 months
	<i>Strategic Action 1.4: Develop recommendations to improve collaboration between government agencies, community-based organizations, and private companies.</i>			1-3 months
Digital Skills	Objective 2: Conduct a statistically valid survey to identify main challenges to broadband adoption as well as digital literacy needs in the county.	Number of residents for which "lack of knowledge to use digital technologies" and "lack of access to technical support programs" are obstacles for broadband access.	There is currently no quantifiable information.	3-6 months (2.1, 2.2)
	<i>Strategic Action 2.1: Identify reliable data sources and quantify the number of residents for which "lack of knowledge to use digital</i>			1-3 months

	<i>technologies" and "lack of access to technical support programs" are obstacles for broadband access.</i>			
	<i>Strategic Action 2.2: Report findings on Strategic Action 2.1 and propose potential programmatic solutions to expand connectivity to unserved and underserved households, as well as potential funding sources.</i>			1-3 months
Digital Skills	Objective 3: Expand digital literacy classes and training programs in the county.	Number of digital literacy program enrollees.	There is currently no information	3-6 months (3.1, 3.2, 3.3)
	<i>Strategic Action 3.1: Conduct a listening session with stakeholders, such as community anchor institutions, community-based organizations, local education agencies, public libraries, and County departments, and share knowledge, strategies, and best practices with each other.</i>			1-3 months
	<i>Strategic Action 3.2: Research and propose recommendations to improve inclusiveness,</i>			1-3 months

	<i>such as diverse accessible formats that are online, in-person, multilingual, assistive technologies, etc.</i>			
	<i>Strategic Action 3.3: Develop a comprehensive resource with information on local digital literacy programming and training.</i>			1-3 months
Digital Skills	Objective 4: Expand local Digital Navigator programs to provide residents access to one-on-one assistance with technology needs in the county.	Number of digital navigator program enrollees	There is currently no information.	1-3 months (4.1)
	<i>Strategic Action 4.1: Research regional digital navigator programs (e.g., Santa Clara County Library District Digital Navigator) and gather input from stakeholders to understand program delivery model, and program needs to enhance enrollment.</i>			1-3 months

Notes:

Grant programs described in Appendix D represent opportunities for partners to put forth proposals that aim to mitigate digital equity gaps within the County.



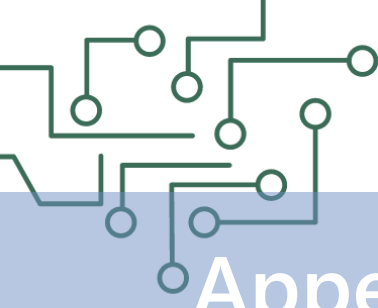
Appendix A: Alignment with Digital Equity Frameworks

The Digital Equity Strategy was developed to be consistent with other local, state and federal resources to the extent feasible. As such, staff referenced and cross-walked these resources with the hope of increasing social impact and promoting best practices for digital equity countywide. The following section summarizes key digital equity toolkits, guidelines, and regulatory documents that the Digital Equity Strategy aligns with and builds upon.

- The [National Broadband Plan](#) (the Plan), released by the Federal Communication's Commission on March 17, 2010, sets out a roadmap for initiatives to stimulate access to broadband capability. The Plan is a guiding document that identifies the vision of the nation's future and designates key goals for targeted broadband investments over the next decade.
- California [Executive Order N-73-20](#) (the Order), issued August 2020 by Governor Newsom, promotes closing the digital divide in California by improving connectivity around the state. The Order not only directed the state Broadband Council to develop a statewide Broadband Action Plan, but also directed state agencies to use a minimum broadband speed goal of 100 megabits per second download to guide infrastructure investments and digital equity programmatic implementation to benefit all Californians.
- California [State Broadband For All Action Plan](#) (the State Broadband Plan), released approximately six months after the Order, outlines three long-term broadband goals: 1) "create access to high-performance broadband at home, schools, libraries, and businesses everywhere in the state;" 2) "make available affordable broadband and the devices necessary to access the internet;" and 3) "provide avenues for training and support to enable digital inclusion." The State Broadband Plan can be viewed as the umbrella resource, as it sets the framework by which all other regulations must fall within. The County's Digital Equity Strategy takes into consideration the various elements of the state framework to leverage the full range of tools, programs, funding, and partnerships available.
- California [Senate Bill 156](#) (SB 156), adopted during the 2021-2022 legislative session, provided funding for \$6 billion in broadband infrastructure development, including \$2 billion for last-mile infrastructure projects and \$750 million in Broadband Loan Loss Reserve to assist local governments and non-profits in financing broadband service projects. Staff reviewed requirements for potential funding opportunities to deliver equitable, affordable access to high-speed internet service to all residents in the county.
- California [Government Code, Section 11546](#), adopted in the 2021-2022 legislative session, requires the California Department of Technology, in consultation with the public, the California Public Utilities Commission, and the state Broadband Council, to develop a state digital equity plan by January 1, 2024. While the State's digital equity plan has yet to materialize, staff reviewed

the legislation to align with the vital components with the County's Digital Equity Strategy.

- National Digital Inclusion Alliance's (NDIA) [State Digital Equity Plan Toolkit](#), published in 2022, outlines specifics for states to include in their digital equity plans, for eligible funding provided by the National Telecommunications and Information Administration's (NTIA) Broadband Equity, Access, and Deployment (BEAD) Program. As a proactive measure, staff reviewed the toolkit to align with the goals of NTIA's grant programs, as well as potential state funding opportunities.
- Additionally, numerous local digital equity reports and frameworks were reviewed, including, but not limited to, the Santa Clara County Digital Inclusion Workgroup's [Promoting Digital Inclusion for Older Adults in Santa Clara County](#), New America's [Learning at Home While Under-connected](#) (particular emphasis on findings from Santa Clara County respondents), the [City of San José's Digital Inclusion Strategy](#) and [Broadband Strategy](#), and the [Silicon Valley Education Foundation's Digital Equity Stories](#), among others.



Appendix B: Collaboration and Engagement Approach

Overview

In 2021, the Board of Supervisors requested research and technical analysis on the existing state of broadband infrastructure, barriers to internet access, and options for infrastructure and programmatic solutions specific to Santa Clara County. The County's Technology Services and Solutions (TSS) Department has been designated as the administering department to synthesize these findings into a comprehensive digital equity strategy, with direction from the County's Digital Equity Consortium. In general, these tasks were broken out in various phases summarized below:

Digital Equity Strategy Development

- Phase 1: Research and data collection, analysis, synthesis, and identification of specific actionable strategies in three verticals: Equitable access, affordability, and devices/skills.
- Phase 2: Solidify digital equity vision statement, principles, and goals; draft strategic recommendations and coordinate feedback with stakeholders.
- Phase 3: Draft digital equity strategic plan, solicit feedback from stakeholders, and publish and adopt plan.
- Implementation: Leverage existing local funding, new potential revenues, and legislative action that could support implementation.

Our Approach

The community is the greatest resource in formulating how to address digital equity. Over the course of a year, the project team used a multifaceted approach to obtain input from a broad range of stakeholders, including broadband industry leaders, nonprofits, and local jurisdictions throughout Santa Clara County. These engagement opportunities included virtual meetings, in-person events, interviews, emails, phone calls, individualized presentations to various community groups, and briefings with the County's Digital Equity Consortium and the Board of Supervisors. These touchpoints, as well as research into additional community-based initiatives, informed the formulation of the digital equity strategy.

County Agency Representation

Collaboration with our agency partners is vital and an essential driving force behind digital equity programming and implementation. Staff made it a priority to gather diverse input from the County Digital Equity Consortium, the Santa Clara County Office of Education, and County agencies such as the Roads and Airports Department, Department of Aging and Adult Services, Department of Employment and Benefit Services (DEBS), the Vietnamese American Service Center, and Department of Public Health. Diverse representation from County representatives is key to maximize the potential for inter-departmental collaboration, as many digital equity strategies may overlap significantly with respect to

goals and projects in other departments.

Community-based Organization Representation

Community-based organizations (CBOs) encompass a variety of institutions, including non-profits, foundations, and advocacy organizations. CBOs serve as a critical touchpoint with the community since they have established trust and insights on specific racial and ethnic subgroups. The County benefits from having numerous local organizations advancing digital equity in which several provided invaluable feedback. Notably, these organizations include the Community Health Partnership, South County Collaborative, Silicon Valley Council of Nonprofits, Silicon Valley Community Foundation, and Joint Venture Silicon Valley, among others.

Regional Representation

Regional representation is essential to provide insights on underserved populations with whom they work and for whom they advocate, as well as connect existing programming under shared objectives. With this regional lens, staff recognized the importance of engaging municipal agencies within Santa Clara County across various segments of education, public health, economic and community development.

Representatives included, but were not limited to, East Side Union High School District, the City of San José, the San José Public Library, Santa Clara County Housing Authority, and First 5 Commission of Santa Clara County.

Private Sector Representation

As both employers and service providers, the private sector plays a key role in improving digital equity in communities. Input from active countywide Internet Service Providers included representatives from AT&T, Comcast, South Valley Internet, Charter Spectrum, Etheric, Raw Bandwidth, Sonic, Next Level Networks, and Hankins Information Technology.

The table below provides a summary of the County agencies, CBOs and regional and private stakeholders.

Organization	Profile
County Digital Equity Consortium	Countywide Consortium
Silicon Valley Community Foundation	Non-profit/Foundation
Joint Venture Silicon Valley	Non-profit/Foundation
East Side Union High School District	Public agency
Balanced Access	Non-profit/Foundation
County Social Services Agency, Department of Aging and Adult Services	Public agency
County Social Services Agency, Department of Employment and Benefit Services (DEBS)	Public agency
Older Adults Technology Services/Senior Planet	Non-profit/Foundation
County Health System	Public agency
County Roads and Airports Department	Public agency
Santa Clara County Office of Education	Public agency
Vietnamese American Service Center, County Department of Public Health	Public agency

San José Public Library	Public agency
City of San José	Public agency
Santa Clara County Housing Authority	Public agency
First 5 Commission of Santa Clara County	Public agency
Community Health Partnership	Advocacy organization
South County Collaborative	Advocacy organization
Silicon Valley Council of Nonprofits	Advocacy organization



Appendix C: Previous and ongoing Digital Equity Efforts

A variety of stakeholders in the county, including community-based organizations and other public sector entities, are currently implementing solutions to overcome barriers to broadband adoption—or are well-positioned to do so. Given the data indicating broadband adoption gaps in different geographic areas and among different population groups in Santa Clara County, these stakeholders may be key partners in the County’s strategic approach to digital equity. The Santa Clara County Office of Education (SCCOE) and the City of San José, for example, connected thousands of students to technology sufficient for online learning during the Covid-19 pandemic.

Analysis conducted during preparation of this study included engagement with stakeholders to gather data to address gaps in online participation and existing programs. An overview of those meetings follows, along with a more comprehensive list of other organizations and efforts within Santa Clara County that could inform future aspects of the comprehensive digital equity strategy.

County of Santa Clara Digital Equity Consortium (DEC)

The DEC is composed of high-level public officials committed to developing solutions to digital equity issues facing county residents. Representatives of the DEC include County departments/agencies (Technology Services and Solutions, Department of Roads and Airports, Office of Education, Social Services Agency, the County of Santa Clara Health System, and the Office of Cultural Competency) and San José Public Libraries.

The DEC’s focus is to coordinate efforts across the county in support of comprehensive action in pursuit of digital equity.

Silicon Valley Community Foundation

Silicon Valley Community Foundation (SVCF) has provided grant support to community-based organizations to help close the digital divide and funded a study by New America describing its impacts on low-income communities during the Covid-19 pandemic.

Based on project interviews with participants, the study found:

- 85% of interviewed parents reported lack of access to computing devices sufficient for their families’ needs.

- 71% of interviewed parents reported insufficient internet speeds. SVCF asserts in its report that:

“One major takeaway from this study is that the current system of internet access is not serving low-income families. For decades, the economic model of internet access in the United States has been to rely on private sector providers, such as AT&T, Comcast and Frontier, to deliver access and offer affordable plans. More recently, those same providers have invested billions of dollars laying fiber networks to speed up service, but nearly all investments have been in high-income communities.”

Joint Venture Silicon Valley

Joint Venture Silicon Valley (JVSV) has been engaged in several projects impacting digital equity, including its work with the Santa Clara County Office of Education to develop connectivity strategies for students.

The organization has several ongoing initiatives related to internet access, including a community broadband project working with the Los Altos Hills Community Fiber project to connect households to fiber broadband infrastructure. This project is a small-scale example of a community-based broadband initiative that directly involved households in the development, planning, and financing of a fiber broadband deployment project.

JVSV’s Wireless Communications Initiative is also working with the Santa Clara County Office of Education to support the development of CBRS networks and uses school sites to extend wireless networks into neighborhoods, as described in its white paper “Broadband Networks for Addressing Distance Learning and Homework Gap Challenges.”

East Side Union High School District

East Side Union High School District (ESUHSD) developed a solution using a public community Wi-Fi network to provide broadband access for nearly 70% of students. The school was able to utilize a \$113 million technology bond to fund technology for students; \$8 million of that bond funding was dedicated to developing the community Wi-Fi project, which focused on improving connectivity for surrounding neighborhoods as well as students.²⁸

Highlights of this project include:

- Developing a public-private partnership with SmartWave Technologies for network construction and engineering, resulting in a combination of mesh networks and Wi-Fi.
- Project utilized City of San José-owned fiber-serving streetlights, with the City providing permitting and right-of-way access. The City also provided data backhaul by routing through its equipment and back to the school site.

²⁸ More information about ESUHSD’s work can be found here: <https://sanjosespotlight.com/san-jose-school-districts-push-for-digital-equity> (accessed May 4, 2022).

- This effort demonstrates that to achieve maximum benefits digital equity projects require community-wide engagement: beyond relying on a service provider to identify and rectify needs, stakeholders at every level must collaborate to achieve a broader community benefit.
- The school system also relied on a program run by the City of San José that worked with Sprint to provide students with both phones and hotspots to augment their home connections to the internet and partnered with AT&T to provide an additional 8,000 hotspots for students, resulting in 11,000 student connections throughout the city.
- While this project developed a solution to a specific problem and had readily available funding to achieve its goals, it demonstrates the opportunity that creative public-private partnerships represent.

Balanced Access

Balanced Access²⁹ is a nonprofit, community-based organization founded by the CEO and executives of South Valley Internet to develop funding support for building infrastructure to serve families in Morgan Hill, Gilroy, and other parts of South Santa Clara County. The organization is currently fundraising to provide 100 Mbps service to more than 1,000 students in Aromas.

County of Santa Clara Social Services Agency, Department of Aging and Adult Services

The County of Santa Clara has a significant older population: in eight years, a quarter of the County's population will be over 65 years old. As with every other segment of the community, older adults were negatively impacted by the pandemic, and the County needed to rapidly develop tools to serve people who often lacked a means of connecting with virtual services. In spite of the challenges the Department of Aging and Adult Services (DAAS) faced, staff indicated that they would like to explore more ways to deliver virtual service to their clients.

DAAS worked extensively over the course of the pandemic to ensure that Santa Clara County's senior population did not get further left behind by lockdowns and the abrupt shift to online services by most businesses and government agencies. Prior to the pandemic, DAAS in partnership with community-based organizations had in place activities to mitigate social isolation for seniors, such as congregate meals sites for seniors to dine in community. However, the important practices that needed to be put in place to mitigate the spread of Covid-19 to vulnerable populations (including seniors) also exacerbated their social isolation. County staff developed recommendations to facilitate better engagement with a population who experience significant digital literacy deficiencies, lack technical understanding for operating internet-enabled computing devices, and also are on fixed incomes and may find internet subscriptions beyond their limited financial resources.

In response to the challenges faced by seniors in the county, the County developed a 2021 report titled "Promoting Digital Inclusion for Older Adults in Santa Clara County"—one of the earliest efforts by the

²⁹ <https://balancedaccess.org/about/>

County to quantify digital inclusion gaps. DAAS' focus on digital inclusion is consistent with by the goals outlined in the Master Plan for Aging developed by the California Department of Aging.

While there have been various solutions to connect older adults, DAAS indicated that an organized and comprehensive strategy is needed. The Digital Inclusion Workgroup (authors of the 2021 report mentioned above) was created to help achieve this level of coordination among stakeholders and inform the County's efforts.

DAAS also suggested there may be opportunities to improve the United Way Bay Area 211 system for providing support for the community. Improvements could be focused on more efficiently or effectively connecting individuals with services or support that they need, as well as a cross-system approach to service delivery. With United Way of Silicon Valley merging with its counterpart in San Francisco, there is a need for a local provider to aggregate the services encompassed by 211.

DAAS is also interested in exploring the value a grant program to support seniors access to internet services. The City of San José currently has a grant program that is designed to connect seniors to low-cost internet service. Currently, the program provides \$150 per person towards internet connectivity, a device, and digital literacy training. More information and research would be needed to determine the efficacy of such a program, as well as the appropriate value of a grant and how to fund such a program to ensure sustainability. Device donations are also another area to explore to ensure seniors not only have access to internet service but also a device to access to the internet on. However, DAAS staff have found that iPads can be difficult to use for those who do not have the digital literacy to set up an Apple ID, and they recommend prioritizing other internet-enabled devices that may be easier to use as part of these distribution programs.

County of Santa Clara Social Services Agency, Department of Employment and Benefit Services (DEBS)

The County has recently initiated outreach to eligible households via DEBS. Through this effort, the County is notifying clients of their eligibility for a broadband subsidy and referring them to the Federal ACP application site for more information and to sign up for the benefit.

Older Adults Technology Services/Senior Planet

Older Adults Technology Services (OATS)/Senior Planet³⁰ is a nationwide program that provides digital literacy training for older adults. Classes range from "What is Bitcoin" to "How to Send an E-mail." OATS' local representatives currently work in Palo Alto, but they were interested in finding creative ways to expand their programming countywide.

Providing technology support and interventions requires a lot of capacity, which can be hard for older adult community centers and organizations. OATS has an advantage in this area because it has two full-time employees working on a curriculum.

OATS offers a diverse array of programs for older adults, all of which are free:

³⁰ <https://seniorplanet.org/about/who-is-oats/>

- Community discussion groups
- Tech training and support
- National program in partnership with Verizon; every Friday a few Verizon employees provide tech support
- Hotline for internet related questions
- Provided some iPads
- Work with Aging Connected which is a senior program specifically supporting eligible elderly populations register for ACP and other affordable internet connection programs.

These programs are offered both online and in person. OATS relies on partners to provide meeting space, and it indicated that a partnership with the County to use County facilities may enable it to provide broader service in the region. Currently, there are some gaps in services OATS can deliver; a partnership with the County could help improve its overall service to the community.

OATS also echoed the Department of Aging and Adult Services' recommendation that the County allocate \$750 per person to provide seniors with a device, internet connection, and digital literacy training.

County of Santa Clara Health System³¹

The County's Health System provides an important safety net for comprehensive medical care, services, and programs to residents throughout the County. The Health System includes Santa Clara Valley Medical Center (SCVMC) and Clinics, O'Connor Hospital and Clinics, and Saint Louise Regional Center and Clinics, that collectively include 11 outpatient Health Centers and three hospitals.³² SCVMC interacts with thousands of residents in the Santa Clara County each day and has a vital role to play through healthcare services (including through telehealth and other virtual visits), and information and referral support in the County's efforts to expand access to affordable and robust broadband services and increase digital equity throughout the region.

During discussions with the SCVMC team, SCVMC expressed an interest in serving at the most basic level as a critical information and referral service and a community hub. SCVMC recognized the vital role broadband access plays toward innovative and effective health care for all County residents. Therefore, they see the need to ensure that the County's most vulnerable populations receive information about broadband affordability programs, such as the ACP, as well as resources for digital literacy and device distribution programs. On the other hand, SCVMC also noted that it is looking for County agencies and community stakeholders to refer its patients to so that they can take advantage of existing resources for broadband affordability, digital literacy, and access services.

SCVMC notes that, by looking at digital access as part of the health of the community, and by developing systems to collect data on the "broadband health" of county residents, SCVMC could create valuable

³¹ The County of Santa Clara Health System includes the Behavioral Health Services Department, Public Health Department, SCVMC, O'Connor Hospital, St. Louise Regional Hospital, and Emergency Medical Services,

<https://health.sccgov.org/home>
³² <https://www.scvmc.org/home>

information and data for other County digital equity and inclusion initiatives. As health systems, including SCVMC, continue to expand telemedicine, online patient portals, and remote doctor's visits, failure to support vulnerable populations in accessing these resources could result in health care disparities due to the digital divide. Instead, tailored information from health systems about who is accessing such resources (and, conversely, who is not) can help inform policy decisions about how to build programs that target the right level of broadband access and digital literacy to support successful healthcare delivery.

As SCVMC continues to expand online and video health care services, it recognizes that it will be critical for all residents of the county to have reliable access to high-speed broadband services. For example, SCVMC noted that over 200,000 patients utilized some type of virtual visit with a SCVMC provider in the past year. Yet only slightly over 22,000 patients used the video function for these services, while 185,000 used voice-only phone capabilities.

At this time, SCVMC does not have sufficient data to make a finding of causation or even correlation between broadband access in the county and the success of telemedicine and online health care visits. But it is clear that use of innovative remote health care capabilities requires sufficient broadband access by both the patient and the provider. SCVMC is currently conducting focused patient and provider surveys, building data gathering capabilities into its electronic record-keeping system, and considering innovative ways to provide access to on-line health care services, such as device lending systems or setting up remote locations at anchor institutions such as libraries, schools, and other clinics to provide private areas where a patient can conduct a remote visit.

County Roads and Airports Department

The County Roads and Airports Department plays an important role in the deployment of telecommunications infrastructure in the county. By facilitating access to the County's rights-of-way that are often major pathways for broadband assets, the department helps to expand internet access.

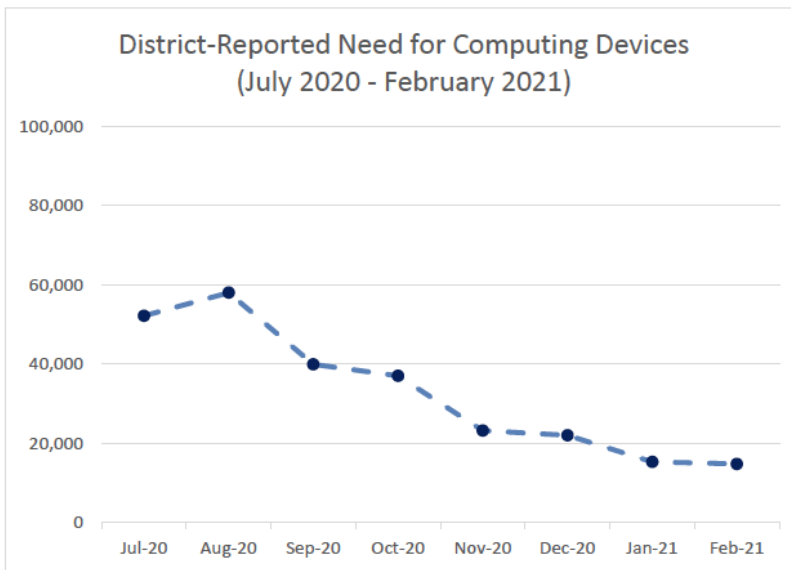
Roads and Airports has some fiber on County expressways providing connectivity to the network of County-operated traffic signals and cameras; however, the fiber is more than 20 years old and buried at relatively shallow depths, making it unideal for further usage. AT&T and Verizon have both expressed interest in using Roads and Airports' streetlights for small cell and 5G deployments, but providers are generally disinterested in using the infrastructure to provide broadband. The County's general receptiveness to use of utilizing public facilities for deploying data transmission infrastructure is generally considered a best practice but marrying this to a 5G or wireless infrastructure deployment often raises concerns from community members who are wary of radio frequency emissions.

Roads and Airports has acknowledged that internet service providers currently actively utilize the County expressway system to provide service to multiple adjacent communities but do so in accordance with their business strategies. Most of these areas adjacent to expressways are already served by ISPs, but there may be some low-investment areas where ISPs have not found a business case for expansion; these areas might be candidates for publicly funded infrastructure projects.

Santa Clara County Office of Education

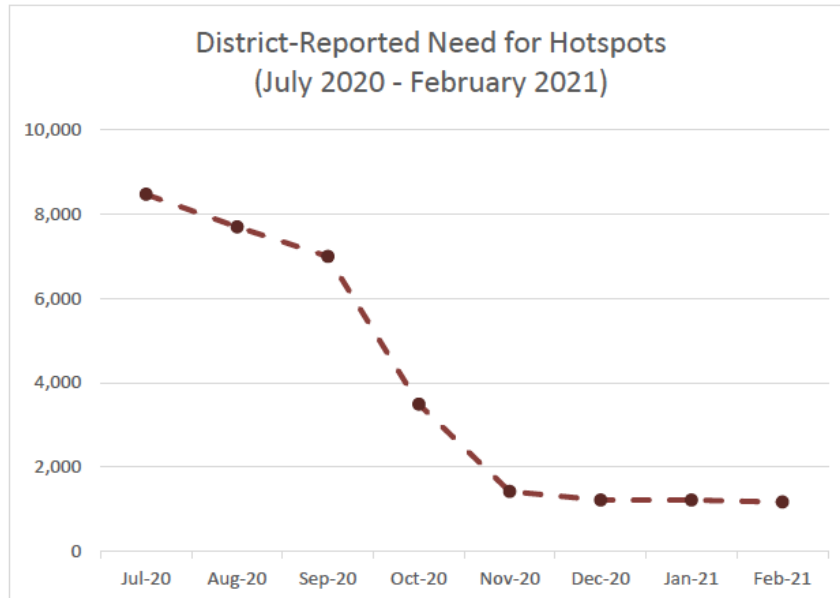
SCCOE has done extensive work to connect its students as a direct response to Covid-19. Since 2020 SCCOE spent \$14.5 million to deliver 20,800 computing devices, 14,200 hotspots, and 16,000 internet connections to its students. As a result, according to the SCCOE, some connectivity and device needs of most students were largely met as of 2021, as illustrated in Figure 13 and Figure 14.

Figure 13: District-reported need for computing devices³³



³³ SCCOE reported data.

Figure 14: District-reported need for hotspots³⁴



Survey data shows the impacts of these efforts on students and families. According to the San José Digital Inclusion Partnership Fund Families Surveys Impact Report,³⁵ just under 60% of all students given computer devices found them “extremely helpful for completing school assignments,”³⁶ while approximately an additional quarter found the devices “helpful.” Additionally, roughly 63% of parents said those devices were “extremely helpful” or “helpful” for checking their children’s report cards and learning about school activities.

SCCOE’s method of utilizing various funding mechanisms and leveraging community relationships to forge stronger partnerships offers a model for a comprehensive approach to connecting the unconnected and reorganizing operations to better serve a virtual community.

Highlights from its work include:

- A CBRS pilot project in one district.
- Through its efforts it has learned the imperative of working directly with families to truly understand their needs. Frequently, a device is not a solution; if there are multiple children in the household and also poor connectivity, one laptop will not solve all issues.
- Reliance on hotspots is an insufficient solution: Often these devices only provide 10-20 Mbps connectivity.

³⁴ SCCOE reported data.

³⁵ As received from the SCCOE.

³⁶ Report obtained from SCCOE. Authored in 2021 by SCCOE, City of San José, and California Emerging Technology Fund.

- Recommend a layered approach to serving the community by utilizing both internal teams and partnerships with external organizations to help provide technical support to students and families.

In many ways, SCCOE possesses the most robust data regarding connectivity and needs among at-risk populations in the county, and its experience promoting digital inclusion for students makes it an invaluable asset to the County. SCCOE's own data collection efforts can inform the County's work gathering granular data to support programmatic and infrastructure initiatives.

Its website also provides extensive resources to promote digital equity, and its understanding of community needs makes it a vital resource as the County proceeds with its digital equity strategy.

Vietnamese American Service Center

The Vietnamese American Service Center (VASC), a new County facility under the authority of the County's Public Health Department, opened its doors in December 2021. Located in an area of the County known as Little Saigon in east San José, it describes itself as a "one-stop hub for the County's Health and Human Services, facilitating service delivery and client engagement in a culturally competent and language-accessible manner."³⁷

VASC has proven to be a critical and popular gathering place for community members of all ages from around the county, and it is creating opportunities to engage clients about the importance of digital literacy and access. It currently provides computers and other devices for checkout or use at the facility. It has also partnered with a local community nonprofit, the International Children Assistance Network (ICAN), to provide education and outreach about digital literacy resources and affordability programs such as the Affordable Connectivity Program (ACP).³⁸ ICAN conducts education and enrollment support for these critical programs on site at VASC. VASC also refers its clients to ICAN's direct services for ACP information and support.

VASC hopes to continue its work with ICAN and to expand its own digital literacy classes and computer access offerings, especially as additional parts of the facility are built out to provide more programming for youth clients and more space for services. VASC also expressed interest in expanding its information and referral services to include additional affordability programs and opportunities to help clients access more robust broadband services and better devices.

VASC notes that many of its clients do not qualify for programs such as the ACP, but still struggle to afford services that provide necessary broadband connectivity for their households. Therefore, VASC would not only be interested in increasing its own services but working with the Digital Equity Consortium to provide information and data to help expand existing affordability and subsidy programs. Finally, VASC also noted that it has the resources to provide translation services and conduct surveys and focus groups to help the County better understand the broadband and digital access needs of the communities VASC serves.

³⁷ <https://vasc.sccgov.org/home?msclkid=a3771eefcd5111ec877827477a7c9ea9>

³⁸ <https://www.ican2.org/>

San José Public Library

The San José Public Library (SJPL) has done extensive work to promote digital equity.³⁹ SJPL oversees the City's Digital Equity program, which includes three primary project areas: Community Wi-Fi, hotspots and computing device access, and digital literacy.

Community Wi-Fi: As noted earlier in this report, the City has partnered with ESUHSD to deploy free community Wi-Fi networks throughout high school attendance areas. This project is organized under the SJ Access program. The three active community Wi-Fi networks average between 40,000-60,000 unique logins per month. An additional three attendance area networks will be deployed for public use in summer 2022. Two more attendance area networks will be available for public use in winter 2022/2023. Additionally, to expand access to high-speed internet connections in outdoor spaces, the SJ Access program expanded access to outdoor Wi-Fi at civic buildings in 2021. This project provided 24 libraries and community centers with public wireless internet, and "wired" seven parks through a partnership with AT&T.

Hotspots and Computing Devices: SJPL offers 4,200 unfiltered and 4,000 filtered Wi-Fi hotspots, 1,500 LTE enabled Chromebooks, 600 Wi-Fi enabled Chromebooks, 120 iPads, and 35 laptops for checkout. This program is expensive to maintain—costing an estimated \$1.5 million or more per year—and only offers a temporary solution for household connectivity, given that the device must be returned to SJPL.

Digital Literacy: SJPL has also developed curricula that could be adopted by the Santa Clara County Library District. SJPL offers digital literacy trainings that are partially funded by the City of San José's Digital Inclusion Fund. It offers regular multilingual courses, both synchronous and asynchronous, that cover topics such as online safety, setting up and writing email, and definitions and understanding of common digital terms (e.g., "the cloud" and "http").

The City of San José's work on digital literacy and equity, as well as the SJPL's digital literacy curriculum development and programming, pre-dated the pandemic. Still, the need to expand digital literacy programming was understood immediately at the onset of Covid, and resources were realigned to allow for a swift expansion of programming to meet the needs of the community. Moving forward, the SJPL is analyzing how systems and processes can be made more efficient to allow for the scale of digital literacy programming to continue alongside the other programs offered at SJPL. The robust response to its programs has led it to begin conversations about creating a sustainability strategy that would re-orient its programming to fundamentally embrace digital inclusion.

In 2016, the City Librarian was designated by the City Manager as the "lead staff" in coordinating an Education and Digital Literacy Initiative with multiple city departments, school districts and community stakeholders. As part of this initiative, in 2020 the City adopted "Digital Literacy Quality Standards"

³⁹ <https://www.sjpl.org/equity-inclusion>. For digital access resources and device programs, see, <https://www.sjpl.org/sjaccess>. For the Digital Literacy standards and programs promoting digital literacy, see, <https://www.sjpl.org/education-digital-literacy>

designed to help all City agencies integrate digital literacy efforts into their work.⁴⁰ The California Emerging Technology Fund (CETF), through its role as fiscal agent and manager of the City's Digital Inclusion Grant Program, served on the Advisory Team for the SJPL's efforts to craft these standards. In 2020, the SJPL called CETF a "key partner" in this work and noted that CETF and the Digital Inclusion Grant Program will use these standards in their work on digital literacy and digital divide issues.⁴¹

SJPL delivered a comprehensive report to the City of San José highlighting its work and lessons learned, which is a guide for efforts to promote digital equity.

SJPL also administers <https://www.sjpl.org/sjaccess>, a multi-agency effort funded and developed by the City to expand access to high-speed internet connections in public spaces. This program lit community centers with internet in 2021, provided 24 libraries and community centers with public wireless internet, and "wired" seven parks through a partnership with AT&T. Additionally, an outdoor Wi-Fi initiative in partnership with East Side Union High School District resulted in an estimated 40,000 logons per month.

To maximize funds available to community-based organizations, the SJPL has declined further grant support from the Digital Inclusion Grant Program. As of 2022, it is looking to pursue supplemental funding through philanthropy, ECF, and ARPA funds to support its San José Access digital literacy program.

San José Digital Inclusion Fund

The City of San José established a Digital Inclusion Fund (DIF) in 2018 to support efforts to close the digital divide for the residents of San José, with a focus on low-income youth as well as other vulnerable populations, such as the elderly and disabled. In 2019, the City launched its Digital Inclusion Grant Program, which is funded by the DIF. The goal of the grant program is a coalition of public and private agencies devoted to improving digital equity by providing grant support over a 10-year period to connect 50,000 unconnected households in San José by 2029 with universal device and broadband access, and to further support those households with digital literacy training.

The grant program is funded by small cell lease revenue from the City's public-private partnerships with telecommunications companies and philanthropic funding from private donors and investors. Annually, the Digital Inclusion Fund aims to disburse up to \$1 million in funding for grants to community-based organizations each year. The purpose of the grant program is to digitally empower residents through digital adoption programs that provide access to affordable home broadband subscription services, access to suitable computing devices, and access to training to achieve and sustain digital skills proficiency.

⁴⁰ "Memorandum from Jill Bourne to the Library and Early Education Commission recommending adoption of the Digital Literacy Quality Standards," March 18, 2020, <https://www.sjpl.org/sites/default/files/2020-03/6C.%20DLQS%20March%202020.pdf>

⁴¹ "Memorandum from Jill Bourne to the Library and Early Education Commission recommending adoption of the Digital Literacy Quality Standards," March 18, 2020, p. 3, <https://www.sjpl.org/sites/default/files/2020-03/6C.%20DLQS%20March%202020.pdf>

The grant program and implementation are managed by CETF, including the annual grant application process. CETF tracks and manages the grant program's performance and regularly reports to the City status updates and outcomes. City staff take to the San José City Council reports on the grant program's performance and the annual grant award recommendations. The annual grant award recommendations are developed in consultation with CETF and the City Manager's Digital Inclusion Advisory Board—a cross-disciplinary group of public and private sector digital inclusion stakeholders and experts appointed by the City Manager.

Over the past three years, the Digital Inclusion Grant Program has built a network of community leaders known as “navigators” to facilitate digital inclusion activities implemented by grantees and partner agencies. One such model is its outreach program to facilitate eligible households' applications to the ACP in concert with ISPs' affordable internet programs—resulting in free internet subscriptions.

Grantees also provide digital literacy training, which is essential to full participation in online activities such as bill paying, applying for benefits, or simply sending an e-mail.

The DIF is seeking a regional partner to expand this service and would be interested in discussing this further with the County. The DIF has also collected extensive data on its program participants, which can inform the County's efforts moving forward.

City of San José

The City of San José has developed innovative approaches to improving digital inclusion for residents. These activities include partnering with AT&T to provide immediate access for 115,800 unconnected students and developing policies that leverage telecommunications permit fees to fund further digital inclusion efforts in the City.

Specific public policy lessons learned in San José will be covered in more detail in a following report, but some features of its efforts are unique to San José and could not be replicated by the County. For example, its use of small cell permitting fees to fund digital inclusion has been pre-empted by the FCC⁴² and is not a viable strategy for new agreements by other local governments moving forward.

The City engages directly with philanthropic organizations, telecommunications companies, internet service providers, and state and Federal agencies. The City discussed the need for regional coordination and expansion of its best practices.

Other regional digital equity projects

In addition to the extensive stakeholder outreach discussed above, research conducted for this study identified other projects throughout the county and surrounding areas that expand digital literacy and broadband access for low-income and other underserved communities. These types of projects could serve as a catalyst for the County's future projects and partnerships.

⁴² FCC 18-133 Declaratory Ruling and Third Report and Order, September 27, 2018, <https://docs.fcc.gov/public/attachments/FCC-18-133A1.pdf>

San Francisco Office of Digital Equity

The Office of Digital Equity (<https://sfmohcd.org/digital-equity>) has been working on these issues for several years. It has developed its own Digital Equity five-year Strategic Plan (2019-2024) and Playbook (posted on its website). The Office has also coordinated work among many different city agencies, including working with the Department of Aging and Adult Services to create SF Connected, which helps seniors with digital literacy and improving connections to the community; working with the Department of Technology to implement extensive public Wi-Fi; and working with the Office of Housing and Community Development to create “Fiber to Housing” projects within some of the affordable housing developments in the city.

In addition to public agency work in this area, other organizations like the SF Tech Council, Community Technology Network, and the San Francisco Unified School District have projects bringing services to the area.⁴³

San Mateo County

San Mateo County (<https://www.smcgov.org/smc-digital-equity-portal>) has an extensive public Wi-Fi network that it has been building since at least 2014. San Mateo is expanding the locations for this service and updating mapping using CARES Act funding. Further, San Mateo created a Digital Inclusion pilot initiative in 2020 that has been ongoing. This work will support public-private partnerships in offering digital literacy and other services to end users and will allow connection between students in four school districts.

San Mateo is also working on expanding the San Mateo County Labs Innovation Program (<https://smclabs.io/>). While not exclusively linked to broadband deployment or innovation, the invitation by this project to collaborate and form partnerships with county cities, business leaders, residents and technology companies will necessarily focus on robust broadband access as this project tackles the area’s most pressing social and economic challenges.

#OaklandUndivided

The #OaklandUndivided campaign (<https://www.oaklandundivided.org/>) is a partnership between the city of Oakland’s Office of Education and the Oakland Unified School District, as well as private funding entities Oakland Promise, Oakland Public Education Fund, and Tech Exchange. This consortium of public and private entities has raised millions of dollars to provide devices, broadband access services, and technology support to Oakland families with school-aged children.

This consortium began in response to critical gaps in broadband and device access in Oakland that were exposed at the beginning of the pandemic. However, this initiative continues to expand through new partnerships with technology and utility companies.⁴⁴ Beyond the school-based device distribution

⁴³ SF Tech Council (serves SF older adults and adults with disabilities, <https://www.sftechcouncil.org/>; Community Technology Network (serves Bay Area more generally), <https://www.communitytechnetwork.org/>; Verizon Innovative Learning Schools, <https://www.sfusd.edu/learning/resources-learning/technology-resources-families/verizon-innovative-learning-schools-vils-program-sfusd>

⁴⁴ “Community Coalition Expands Vision for Closing Digital Divide in Oakland,” May 7, 2022, <https://www.oaklandundivided.org/news/community-coalition-expands-vision-for-closing-digital-divide-in-oakland>.

program, this effort uses local entities, such as Tech Exchange, to provide culturally-competent technology support, subsidized broadband access service, and digital literacy classes.⁴⁵ Moreover, members of the consortium work within the community to gather data on local gaps and needs and to advocate for strong digital equity and access policies at the local and state levels.⁴⁶

Santa Clara County Housing Authority

This independent local government agency established by the County Board of Supervisors in 1967, has the potential to reach thousands of low-income county residents through its 2,700 owned and controlled units. The Authority (<https://www.scchousingauthority.org/about-SCCHA/>) is already working with many local nonprofits to provide a wide variety of social and economic well-being programs to the residents of its properties.

In partnership with nonprofits, it offers adult education classes, computer access, support for people experiencing homelessness, and after-school programs. Any one of these types of activities could help to support digital equity in the county. Moreover, the County could investigate opportunities to work with the CPUC's Public Housing Account to fund inside wire and network installation in public housing buildings.

First 5 Commission

This statewide organization (www.first5kids.org) is active in Santa Clara County and could provide a direct connection to several education-based nonprofits, institutions, and the parents of young children who may not have resources to access robust broadband services. It also has a network of family resource centers and gathers significant geographically disaggregated data about income, education, and wellness throughout the county. Importantly, First 5 is already looking into opportunities to promote digital equity and access as an important policy matter as it makes these policy items a priority for young children and their families in its 2021-2022 Children's Policy Agenda.⁴⁷

Community Health Partnership

This membership organization (<https://chpscc.org/>) serves to coordinate and represent nonprofit health centers and clinics throughout Santa Clara and San Mateo Counties. This group has direct affiliation with ten community-based organizations providing health services at 40 sites and works closely with many County partners to advocate for affordable and quality health care for disadvantaged communities in addition to telehealth policies and support. This group has filed a motion to participate in relevant CPUC proceedings on broadband policy and could serve as a valuable partner on expanded access to telehealth services, patient portals, electronic medical records, and other health care issues as they are impacted by lack of digital equity.

⁴⁵ <https://www.techexchange.org/oakland-undivided-resources.html>

⁴⁶ "CA Selects Oakland for Historic Investment to Close the Digital Divide," November 18, 2021, <https://www.oaklandundivided.org/news/ca-selects-oakland-for-historic-investment-to-close-the-digital-divide>

⁴⁷ <https://first5.ca.gov/pdf/commission/meetings/handouts/Commission-Handouts-2021-10-28/Item-7-Attachment-A-F5CA-2021-22-Childrens-Policy-Agenda.pdf>

South County Collaborative

This network of local community-based organizations, schools, hospitals and clinics, and public agencies comes together to serve the County's most underserved and vulnerable communities (<http://southcountycollaborative.org/scc-home/>). The mission of this organization is generally to support services to low-income communities so they can access social services, education, and community support. However, the network of community leaders and the framework of the Collaborative to provide support to low-income communities could serve as a vehicle for several programmatic efforts to expand digital access and provide affordable broadband services to these communities.

Silicon Valley Council of Nonprofits

Founded in 1996, this longstanding member of the community represents hundreds of nonprofits in the county and regularly communicates and works with these organizations that provide critical services to their clients (<https://www.svcn.org/>). At one time, this group worked with community technology organizations and AmeriCorps on a project called Hands on Tech to support digital literacy, device upgrades, volunteers, and general capacity building for local nonprofit organizations. This training and work supported both the internal operations of small nonprofits and their work to provide digital equity programs to its clients. While this project is no longer operational, it identifies the willingness of the community to work on these projects.

California Advanced Services Fund Adoption Account – County Grantees

Since 2018, at least 12 Santa Clara County nonprofits and local agencies have received grants from the CPUC to conduct digital literacy and equity projects for their constituencies. These nonprofits are a diverse set of organizations that include education, affordable housing, social services, and community support. While many of these organizations do not have significant resources or extensive digital equity programs, they represent potential partners for outreach, education, and training to help support these communities and fill gaps in broadband access. The CPUC lists all of the grantees since 2018, including a very brief description of the project and the funding level.⁴⁸ The following Santa Clara County organizations have received grants since 2018:

- Christian Church Homes Providence Senior Housing
- City of Sunnyvale; Latino Digital Literacy (six schools)
- EAH Inc. (affordable housing)
- Eden Housing Inc. (affordable housing)
- Everyone On/Opportunity Connect
- First Community Housing - Access for All
- Goodwill of Silicon Valley

⁴⁸ <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/documents/casf-adoption-and-access/approved-adoption-account-projects-ongoing-june-2021.pdf>

- Sequoia Living; Town Park Towers
- Sikh Gurdwara Digital Inclusion
- San José Public Library Foundation/Access San José
- United Way (\$1.4 million for a call center on referrals to affordable services/literacy)
- Vietnamese Voluntary Foundation, VIVO Computer Training



Appendix D: Digital Equity Funding Opportunities

Since the start of the Covid-19 pandemic—which highlighted and deepened the digital divide—the federal government and the State of California have committed billions of dollars of funding to address broadband access and adoption gaps. Both state and federal agencies are in the process of further developing these programs and new programs are on the horizon.

Broadband funding opportunities supported by federal funding from the Infrastructure Investment and Jobs Act are being designed and funding from these programs will likely roll out over the next 12 to 18 months. Much, but not all, of the federal funding will go directly to state agencies that will then further develop programs to fund projects at the local level. A significant amount of state funding is expected to go to entities directly providing service to end users.


The project team is analyzing the current opportunities and will continue to analyze emerging program rules as they are developed by State and Federal governments.⁴⁹ The programs described below represent opportunities for the County to seek to advance its digital equity efforts. This can be accomplished either through direct participation or through partnerships and other initiatives that leverage County assets and resources for the benefit of third-party efforts.

Program	Description	Applicants/Eligibility
Affordability Connectivity Program (Outreach Program, FCC) https://www.fcc.gov/acp-grants	The Outreach Grant Program provides funding and resources needed to increase awareness of and participation in the ACP among those eligible households most in need of affordable connectivity.	Governmental and non-governmental entities.
Adoption Account (California Advanced Services Fund, CASF) \$20 million distributed FY22-23. https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone/california-advanced-services-fund/casf-adoption-account	Surcharge-funded program for “digital inclusion” and “broadband access” projects.	Broad scope of eligible applicants including local governments. County could be its own applicant or coordinate with other agencies or nonprofits.

⁴⁹ <https://www.grants.gov/web/grants/search-grants.html?keywords=internet>

Program	Description	Applicants/Eligibility
Infrastructure Account (CASF) \$24.8 million distributed FY22-23. https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone/california-advanced-services-fund/casf-infrastructure-grant	Surcharge-funded program for last-mile infrastructure deployment projects.	Pending rules changes.
Consortia Account (CASF) \$10.7 million distributed FY22-23. Grants capped at \$200,000 per year; can seek multiple-year funding. https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone/california-advanced-services-fund/casf-consortia-account	Surcharge-funded program to support regional broadband consortia in “facilitating broadband deployment” and assist infrastructure applicants with project development and the application process.	An eligible consortium includes a broad scope of community entities including local and regional governments. The County of Santa Clara is not currently part of a regional consortium, but can apply for funding to create a consortium that covers the county and boundaries of other adjoining counties (San Mateo County is also currently not part of a regional consortium).
Local Technical Assistance \$50 million distributed until funds are exhausted. Grants capped at \$1 million per year; streamlined review for requests of \$500,000 or less. https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone/broadband-implementation-for-california/local-agency-technical-assistance	Grant-funded program to reimburse pre-project costs related to the development of broadband infrastructure projects.	Local governments and tribal governments that will provide service to unserved areas. County can apply for funding to support a project where it is a partner or lead agency, and the local agency or partner will provide service directly.
Loan Loss Reserve Fund \$750 million allocated for the Fund. https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone/broadband-implementation-for-california/loan-loss-reserve-fund	Grant-funded program for costs related to the financing of broadband infrastructure projects by local governments, tribal governments, and nonprofits.	Local governments, tribal governments and nonprofits. County can apply for these funds only to support the financing for its own infrastructure project.
Federal Funding Last Mile Account \$2 billion statewide over three years	Grant-funded program for last-mile infrastructure deployment	Broad scope of eligible applicants, including local governments.

Program	Description	Applicants/Eligibility
<p>The CPUC has reserved \$36 million for projects in Santa Clara County.</p> <p>https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone/broadband-implementation-for-california/last-mile-federal-funding-account</p>	<p>projects in areas deemed by the CPUC to be "priority unserved".</p>	<p>County can apply for funding if it will directly offer service on the funded network, or can partner with a service provider or other government agency to build and provide service.</p>



Appendix E: Broadband Availability and Pricing in the County

Residential Broadband Availability in Santa Clara County

Research and analysis conducted for this assessment identified ISPs delivering services in Santa Clara County.⁵⁰ The evaluation below covers fiber, hybrid fiber-coaxial cable, DSL, wireless services, and low Earth orbit satellite services. High orbit satellite providers were not assessed, as they do not provide consistent or adequate residential broadband speeds or service quality, and typically offer blanket availability. The following ISPs are active in the county:

- **Fiber ISPs:**
 - Astound/Wave Broadband
 - AT&T
 - Comcast
 - Frontier
 - Hankins Information Technology
 - PAXIO
 - South Valley Internet
 - Community network projects (Los Altos Hills Community Fiber, Madrone Broadband.net, and Adobe Creek.net)
- **Cable ISPs:**
 - Astound/Wave Broadband
 - Charter
 - Comcast
- **DSL ISPs:**
 - AT&T
 - Frontier
 - Raw Bandwidth Communications
 - Sonic
 - South Valley Internet
- **Wireless ISPs:**
 - Cruzio
 - Etheric Networks
 - Hankins Information Technology
 - Razzolink

⁵⁰ The information presented here represents the project team's best understanding of the information presented by service providers at the time the research was conducted. Prices and plans are subject to change.

- South Valley Internet
- SurfNet Communications
- WilloWeb
- Home cellular services
 - T-Mobile
 - Verizon
- **Satellite ISPs:**
 - Starlink

Broadband Maps

As background for the development of the Digital Equity Strategy, the following maps are presented to focus on priority areas of need. Broadband access and adoption maps are available at census block and tract level in the county.

Fiber Broadband Availability

The primary residential, last-mile fiber provider in the county is AT&T, which reports a scattered service area throughout the northwest quadrant of the county. Both AT&T and Frontier are actively expanding their fiber footprints at this time, with Frontier's fiber-based services expected to become available in parts of Morgan Hill and Gilroy in the coming year.

Additionally, Astound/Wave Broadband reports small fiber service areas scattered around Mountain View, while PAXIO offers service in select areas of San José, Sunnyvale, and Milpitas. South Valley Internet and Hankins Information Technology have both received grant support to bring fiber service to unserved and underserved areas in the south of the county. In addition to these providers, a handful of community fiber organizations in the county have formed micro-ISPs to design, construct, and operate small fiber-to-the-home networks that provide service to member households.

AT&T and Frontier have announced plans to invest their own capital to pass between half and two-thirds of their historic copper customers with fiber.⁵¹ Their investments will target the portions of their territories with the most attractive business cases, prioritizing areas with relatively low cost per passing (e.g., high-density areas, areas with aerial plant or existing conduit, areas with low installation costs) or areas that likely will offer relatively high returns (e.g., business districts, high-income areas).

In addition, Astound/Wave Broadband and PAXIO both appear to be making opportunistic investments in some neighborhoods and business districts in the densely populated areas in the north of the county. Even with these investments, however, many underserved and lower-income areas may still have only a single legacy network provider—unable to access the symmetrical high-speed service tiers available from fiber providers, and unable to realize the benefits of a competitive broadband marketplace.

⁵¹ AT&T has announced capital investment plans to build fiber to 30 million of the 60 million locations in its copper footprint by 2025: <https://investors.att.com/~media/Files/A/ATT-IR-V2/events-and-presentations/11mar22-presentation.pdf>. Frontier has announced capital investment plans to build fiber to 10 million of the 15 million locations in its copper footprint by 2025: https://s1.q4cdn.com/144417568/files/doc_financials/2021/q2/FYBR-2021-Investor-Day-Presentation.pdf. Frontier is actively constructing new fiber in parts of Morgan Hill and Gilroy: "Fiber brings high speed internet to South County," Michael Moore, Morgan Hill Times, July 28, 2022, <https://morganhilltimes.com/fiber-brings-high-speed-internet-to-south-county/> (accessed September 7, 2022).

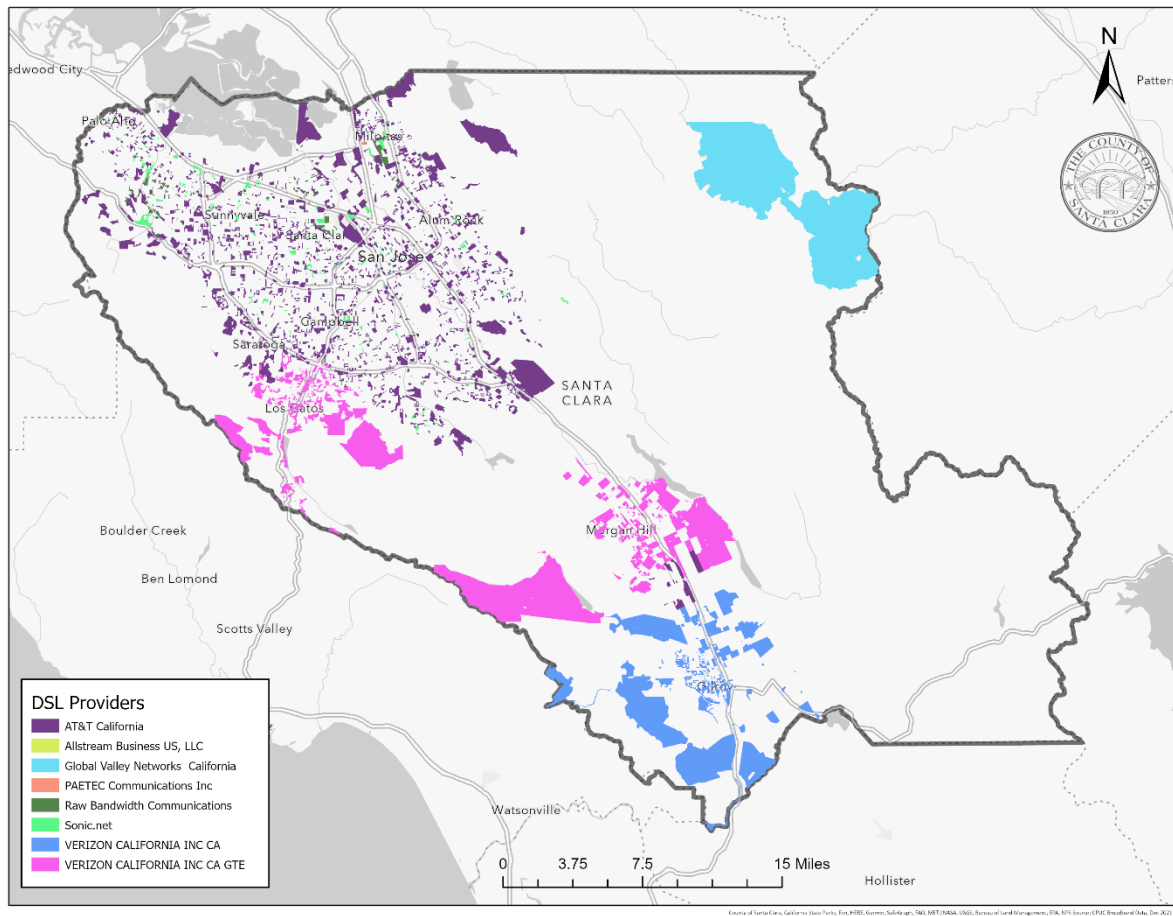
Charter and Comcast are the primary cable providers in the county, and as seen in Figure 4. Charter reports its service area throughout the southern Santa Clara Valley, Comcast reports a service area that covers the northwestern quadrant of the county.

Figure 4: Residential cable providers in Santa Clara County



The county has five DSL providers, depicted in Figure 5. AT&T offers DSL in the same northwest county quadrant as its fiber services, but at a more concentrated level. Frontier reports service in the south and along the western county border. Raw Bandwidth Communications reports smaller pockets of service in Santa Clara and Los Altos. Sonic claims to serve small pockets throughout the greater San José area. Finally, South Valley Internet offers DSL in scattered areas, primarily in Morgan Hill and Gilroy.

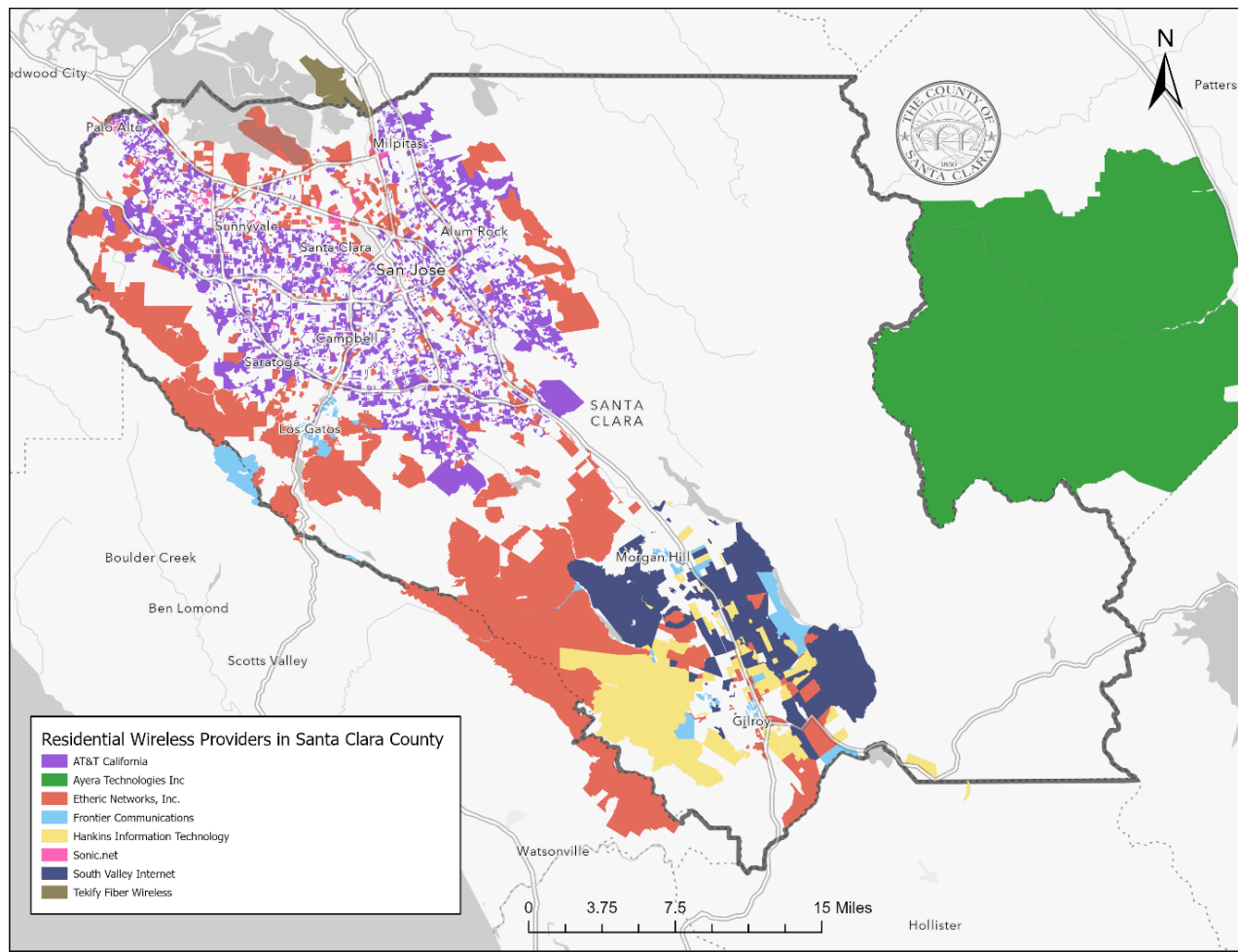
Figure 5: Residential DSL providers in Santa Clara County



Fixed Wireless Availability

Fixed wireless services (Figure 17) generally use a combination of millimeter wave technologies, which require direct line-of-sight between an antenna and customer premises, and the same unlicensed spectrum bands as Wi-Fi, which does not have strong long-distance transmission qualities. Both T-Mobile and Verizon offer home fixed wireless services in the county.

Figure 6: Residential wireless providers in Santa Clara County



Satellite Service Availability

Starlink advertises a standard residential internet option available in the county. While Starlink does not advertise service speeds, a recent report found that in the fourth quarter of 2021, Starlink's median download speed was about 105 Mbps, and its median upload speed was about 12 Mbps. Its median latency was 40 ms.⁵² Starlink service became available in parts of the county in 2021 and 2022 and is expected to become available in the rest of the county in 2023.⁵³ Starlink breaks its service territory into cells; capacity in each cell is limited, so the company caps the number of customers who can sign up for service in a given area.⁵⁴

⁵² "Starlink Hits 100+ Mbps Download Speed in 15 Countries During Q4 2021," Ookla,

<https://www.ookla.com/articles/starlink-hughesnet-viasat-performance-q4-2021#:~:text=Starlink's%2014.84%20Mbps%20median%20upload,for%20all%20fixed%20broadband%20combined>

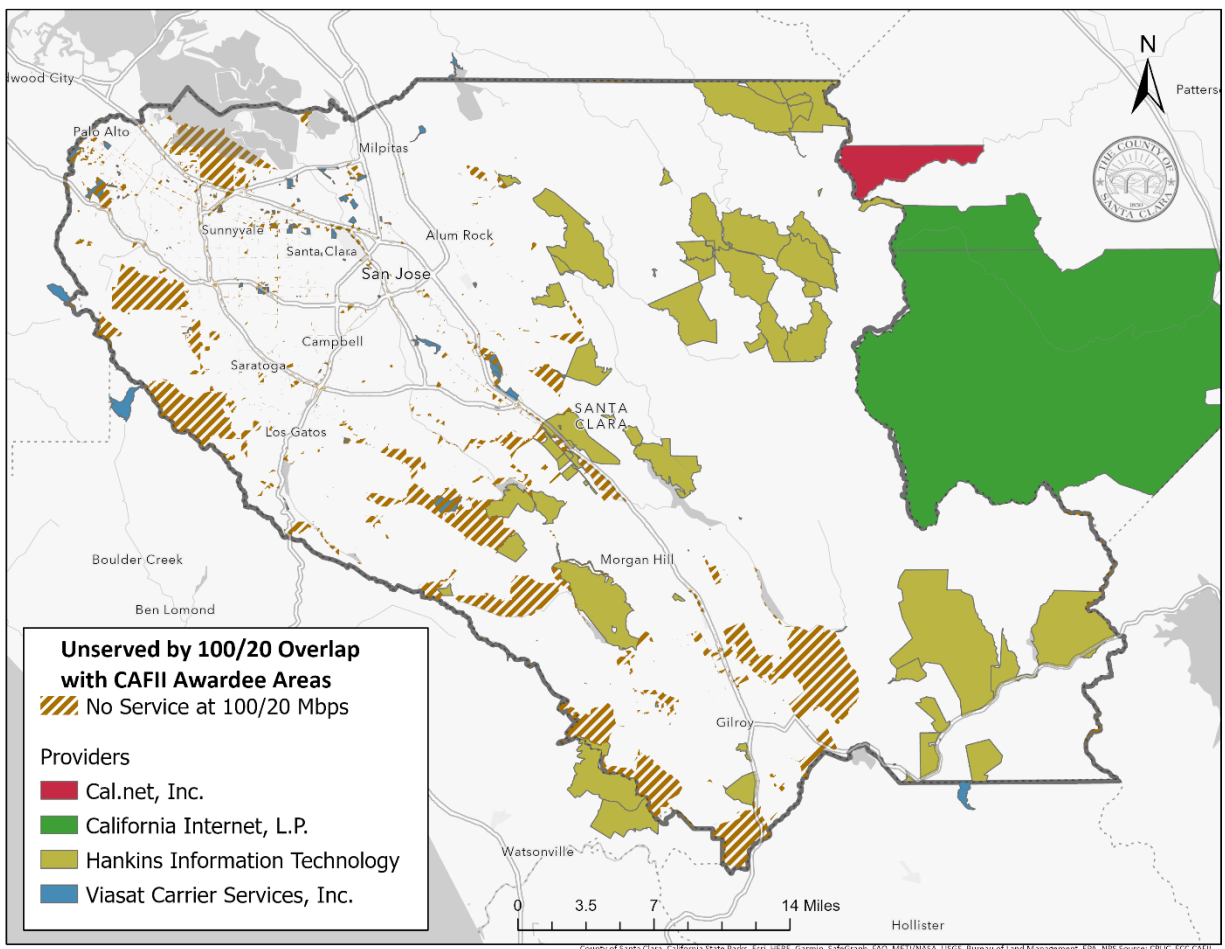
⁵³ "Map," Starlink, <https://www.starlink.com/map>

⁵⁴ Noah Clarke, "How Long Is The Waitlist For Starlink?" Starlink Hardware <https://www.starlinkhardware.com/how-long-is-the-waitlist-for-starlink/>

Federal Funding is Expected to Reduce the Number of Underserved Areas in Santa Clara County

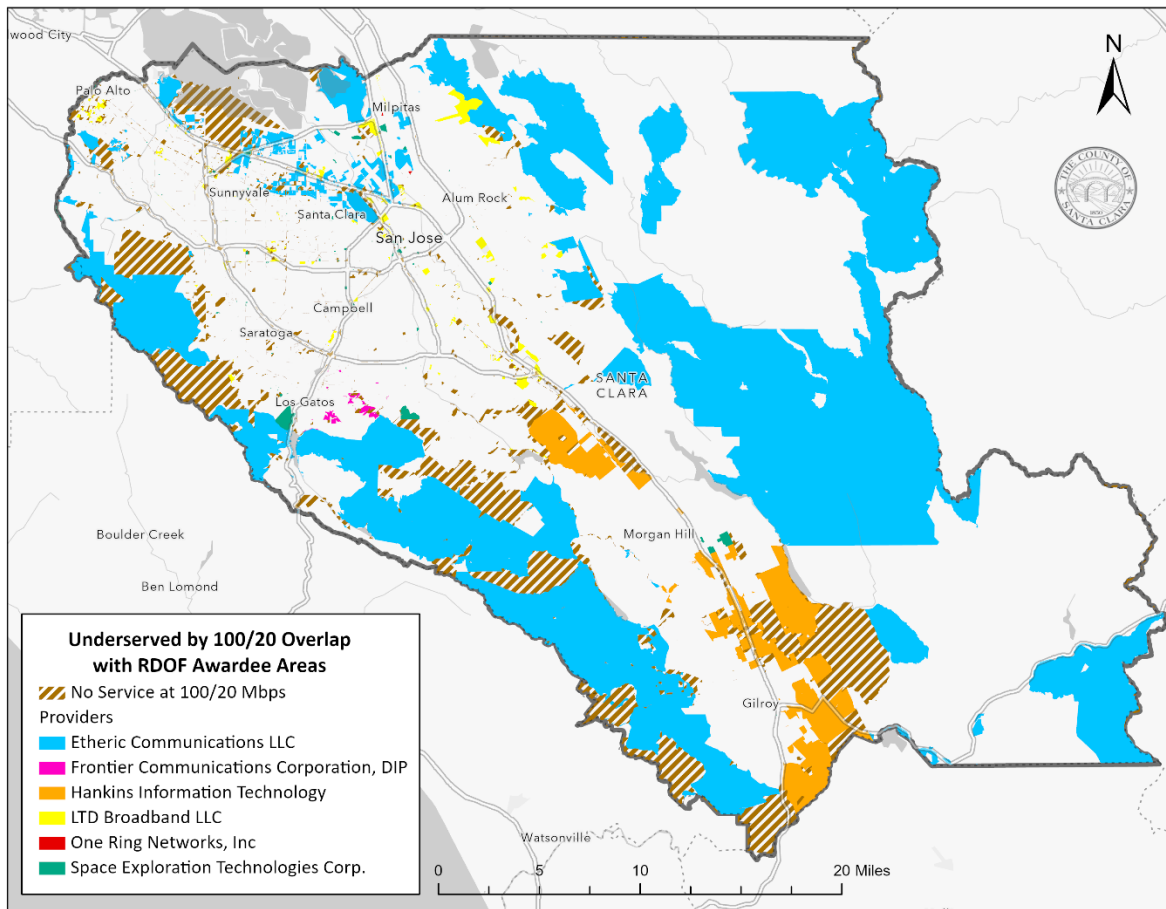
Funding awarded to ISPs by the FCC is expected to increase the availability of 100/20 service in parts of the county over the next several years, therefore reducing the number of underserved residents. Figure 18 illustrates the currently underserved areas where ISPs have committed to building new infrastructure capable of delivering at least 100/20 service using funds from the FCC's Connect America Fund Phase II Auction (CAF II) and Rural Digital Opportunity Fund (RDOF)⁵⁵.

Figure 18: Overlap between underserved areas and CAF II awarded areas



⁵⁵ The FCC held the Rural Digital Opportunity Fund (RDOF) Phase I auction in 2020. "Auction 904: Rural Digital Opportunity Fund," Federal Communications Commission, <https://www.fcc.gov/auction/904/factsheet> (accessed June 9, 2022). The California Public Utilities Commission (CPUC) offers last-mile broadband infrastructure funding opportunities through its California Advanced Services Fund (CASF) program. In 2017, the CPUC approved a grant of just over \$1 million to South Valley Internet for the Light Saber Broadband Project. "CASF Infrastructure Approved Projects," California Public Utilities Commission, <https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone/california-advanced-services-fund/casf-infrastructure-grant/casf-infrastructure-approved-projects> (accessed June 9, 2022).

Figure 19: Overlap between underserved areas and RDOF-awarded areas



The portions of the county that will remain underserved after federally funded build-outs will be in areas of low population density and do not include the bulk of residential or commercial addresses. These underserved areas primarily comprise agricultural land, parks, open space, and golf courses. Within the City of San José, the areas that have been identified as underserved are mainly located in parks such as Kelley Park and Rotary PlayGarden, and along major thoroughfares like Highway 87. South of San José, in the central region of the county, areas that receive less than 100/20 Mbps service include Almaden Quicksilver County Park, Rancho Canada del Oro Open Space Preserve, Santa Teresa County Park, and Coyote Creek Golf Club. In the southern portion of the county, surrounding the City of Gilroy, areas identified as underserved by 100/20 Mbps coverage span across agricultural land, open space and parks such as Mount Madonna County Park, Coyote Lake Harvey Bear Ranch County Park, Henry Coe Park, and Ruby Canyon.

Residential Broadband Pricing in Santa Clara County

Pricing research was conducted for the following active ISPs in the county. **Table 1** provides a summary of pricing for fiber services in the county.

Table 1: Fiber services offered in Santa Clara County

AT&T Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Internet 300	300/300	\$60	\$5 monthly discount available with paperless billing; no contract required; no equipment costs; installation may cost extra.
Internet 500	500/500	\$70	
Internet 1000	1,000/1,000	\$85	
Internet 2000	2,000/2,000	\$115	
Internet 5000	5,000/5,000	\$185	
Access ⁵⁶	100/100	\$30	No data cap; no contract required; no installation or equipment charges; eligibility requirements
Comcast Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Gigabit Pro	3,000/3,000	\$299.95	Two-year contract required; installation and equipment costs may be incurred
Frontier Service ⁵⁷	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Frontier Fiber	500/500	\$49.99	\$5 per month discount available with autopay; equipment included
Frontier Fiber	940/880	\$74.99	
Frontier Fiber	2,000/2,000	\$154.99	
Paxio Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
PAXIO Fiber	50/50	\$39.50	PAXIO has service available in select areas of San José, Santa Clara, Sunnyvale, and Milpitas
PAXIO Fiber	100/100	\$49.50	
PAXIO Fiber	250/250	\$69.50	

In addition to the fiber providers reported above, there is a collection of community fiber projects in or very close to the county that are not reported on Form 477. These initiatives are small scale, locally

⁵⁶ AT&T also offers an eligibility-based low-cost program, AT&T Access. Households are eligible if they participate in the Supplemental Nutrition Assistance Program (SNAP), National School Lunch, Supplemental Security Income (SSI) for California households only, or if their household income is below 200% of the federal poverty line. Additionally, households that enroll with AT&T via the federal Affordable Connectivity Program are also eligible.

⁵⁷ Although Frontier does not yet report fiber service in the County, the company reportedly is in the process of upgrading some of its legacy DSL customers to fiber in Morgan Hill and Gilroy, with its fiber-based services likely to become available in some areas in 2023. When the fiber-based service becomes available, pricing and services will likely resemble Frontier's offerings in other fiber markets where the company offers three near-symmetrical services.

focused builds that typically aim to bridge a specific connectivity need in a neighborhood or community. At least three such projects have been deployed in partnership with Next Level Networks: Los Altos Hills Community Fiber, Madrone Broadband.net, and Adobe Creek.net.

Table 2 provides a summary of pricing for cable services in Santa Clara County.

Table 2: Cable services offered in Santa Clara County

Wave Service ⁵⁸	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Wave cable	50/5	\$49.95	Additional router and/or modem charges may be incurred; \$5 autopay and electronic billing discount may be available
Wave cable	100/5	\$69.95	
Wave cable	600/10	\$89.95	
Wave cable	940/10	\$99.95	
Charter Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Internet Standard	200/10	\$74.99	No contract requirement; \$5 monthly equipment fee; current promotions include \$25 off per month for first 12 months
Internet Ultra	400/20	\$94.99	
Internet Gig	1,000/35	\$114.99	
Internet Assist ⁵⁹	30/4 – 5	\$17.99	\$5 monthly equipment fee; no contract required; eligibility requirements
Comcast Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Connect	50/5	\$60	\$10 per month discount available with autopay and paperless billing; no contract requirement, though introductory prices are \$2 less per month for first 12 months with one year contract; equipment costs may be incurred
Connect More	100/5	\$70	
Fast	300/10	\$80	
Superfast	600/20	\$90	
Ultrafast	900/20	\$100	
Gigabit	1,200/35	\$110	
Internet Essentials ⁶⁰	50/10	\$9.95	Equipment included; eligibility requirements
Internet Essentials Plus ⁶¹	100/10	\$29.95	

⁵⁸ Wave (now Astound Broadband powered by Wave) company representatives indicated that the company has or is working to build fiber and coaxial plant within the County, including in the following areas: Los Gatos/Los Altos, Cupertino, Gilroy, Morgan Hill, Mountain View, Palo Alto, Stanford, San José, and Sunnyvale.

⁵⁹ Charter also offers Internet Assist, its low-cost program for eligible households. This product makes 30 Mbps service available for \$17.99 per month, plus an additional \$5 per month for home Wi-Fi service. Households are eligible if they participate in the NSLP, SNAP, or SSI.

⁶⁰ Comcast's offerings also include Internet Essentials, a low-cost program for eligible households. Eligible low-income customers pay \$9.95 per month for a wired internet connection with equipment included. Customers can purchase a refurbished computer for \$149.99, and can access out-of-home Wi-Fi on Comcast's Wi-Fi hotspots across the country.

⁶¹ Comcast also offers "Internet Essentials Plus"—a 100 Mbps download, 10 Mbps upload product for \$29.99, which is designed to match the new Affordable Connectivity Program subsidy of \$30 toward broadband service.

Table 3 provides a summary of pricing for DSL services in the county.

Table 3: DSL services offered Santa Clara County

AT&T Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Internet 25	25/2 to 25/55	\$70	\$10 monthly discount available for the first 12 months, additional \$5 monthly discount available with autopay and paperless billing; no contract requirement; no equipment costs; installation cost may be extra; 1 TB/month data cap
Internet 50	50/10	\$70	
Frontier Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Frontier Internet	115/7	\$54.99	No contract required; \$5 per month discount available with autopay; equipment included
Frontier Internet	25/2	\$44.99	
Frontier Internet	18/1	\$44.99	
Raw Bandwidth Communications Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
ADSL2+/VDSL2	3 Mbps/512 Kbps	\$29.95	No contract requirement, though installation and activation fees may be waived with a 12-month agreement; discounted prices available with pre-pay options; equipment and installation costs may be incurred
ADSL2+/VDSL2	12/1 Mbps	\$39.95	
ADSL2+/VDSL2	20/1.5 Mbps	\$49.95	
ADSL2+/VDSL2	50/5 Mbps	\$49.95	
Bonded ADSL2+/VDSL2	6/1 Mbps	\$54.95	
Bonded ADSL2+/VDSL2	15/1.5 Mbps	\$64.95	
Bonded ADSL2+/VDSL2	24/2 Mbps	\$74.95	
Bonded ADSL2+/VDSL2	40/3 Mbps	\$84.95	
Bonded ADSL2+/VDSL2	100/10 Mbps	\$84.95	
Sonic Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Fusion X1	50/–	\$49.99	\$10 off per month promotional price currently available; equipment and installation costs may be incurred
Fusion X2	100/–	\$69.99	
FUSION IPBB-C	50/–	\$49.99	No installation fee; equipment cost may be incurred
FUSION IPBB-F	1,000/–	\$69.99	

South Valley Internet offers a DSL product that advertises download speeds up to 100 Mbps. The project team was unable to obtain upload speeds or pricing information from South Valley Internet.

Table 4 provides a summary of pricing for fixed wireless services in the county.

Table 4: Wireless services offered in Santa Clara County

Cruzio Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Cruzio Broadband	10/10 Mbps and 300/300 Mbps pending location	\$74.95	No contract required
Etheric Networks Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Silver NG	15/15 (3/3 guaranteed)	\$99	Installation and equipment charges incurred; two-year contract term required
Gold NG	30/30 (6/6 guaranteed)	\$139	
Platinum NG	38/38 (10/10 guaranteed)	\$179	
Mobile Home – Basic	10/10	\$79	
Mobile Home – Family	20/20	\$99	
Mobile Home – Heavy	35/35	\$139	
Hawkins Information Technology Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Hankins Wireless	15/3	\$100	No contract required; no equipment fees; installation cost may be incurred
Hankins Wireless	25/5	\$165	
Hankins Wireless	50 – 100/50 – 100	\$200	
Razzolink Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
RL 5	5/ –		No data caps. Upload speeds and pricing unavailable
RL 10	10/ –		
RL 20	20/ –		
South Valley Internet Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Standard Wireless	8/ –		No data caps; installation fee may be incurred; customer provides router. Upload speeds and pricing unavailable
Nitro High Speed Wireless	30 – 50/ –		

SurfNet Communications Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Basic	10/2	\$55.96	These rates require a two-year agreement; different rates may be available month-to-month
Advanced	15/3	\$79.96	
Premium	25/5	\$119.96	
WilloWeb Service ⁶²	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
Residential Basic	200/200	\$59	One month free available if paid a year in advance; equipment or installation costs may be incurred
Residential Plus	200/200	\$66	One month free available if paid a year in advance; equipment or installation costs may be incurred; includes a static IPv4 address

Furthermore, T-Mobile and Verizon each offer home internet service in the county, although their service areas are not captured by CPUC data, and the companies do not share maps of where their home services are available. These services provide a fixed home broadband connection via carriers' cellular networks.

While these nascent products can offer an internet option for many customers that may otherwise be unserved, or that may otherwise have no competitive choices for internet, their ability to offer consistent broadband services is yet to be determined. Home internet customers will compete with mobile cellular customers for bandwidth, and in some cases, face stringent data caps. Both companies offer an unlimited service option to home internet customers in select locations where their network currently has sufficient excess capacity, but the companies can only support a set number of home internet subscribers in any given location, and there is no guarantee unlimited home service options will remain available in perpetuity if their network becomes congested.

Table 5 provides a summary of pricing for home cellular services in Santa Clara County.

⁶²Although WilloWeb does not report its coverage area to the CPUC, the company offers fixed wireless service in select areas of the Willow Glen neighborhood of San Jose. WilloWeb offers two wireless products, which differ only in whether they include a static IPv4 address. WilloWeb noted on its website that the prices are applicable for on-net and select off-net locations. Other pricing structures may apply to off-net locations WilloWeb, <https://willoweb.net/>

Table 5: Home wireless services offered in Santa Clara County

T-Mobile Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
5G Home Internet	33 – 182 / 8 – 25	\$55	No data cap
5G Home Internet Lite – 100 GB	–	\$55	100 GB data cap per month; then throttled to 128 kbps
5G Home Internet Lite – 150 GB	–	\$80	150 GB data cap per month; then throttled to 128 kbps
5G Home Internet Lite – 200 GB	–	\$105	200 GB data cap per month; then throttled to 128 kbps
5G Home Internet Lite – 300 GB	–	\$155	300 GB data cap per month; then throttled to 128 kbps
Verizon Service	Advertised download/upload speeds (Mbps)	Monthly price (non-promotional)	Notes
LTE Home	25 – 50 / 4	\$60	\$5 monthly discount available with autopay; no contract required; no equipment costs; no data cap
5G Home	85 – 300 / 10 – 50	\$60	\$10 monthly discount available with autopay; no contract required; no equipment costs; no data cap
5G Home Plus	85 – 1,000 / 10 – 50	\$80	\$10 monthly discount available with autopay; no contract required; no equipment costs; no data cap

Table 6 provides a summary of pricing for satellite services in the county.

Table 6: Satellite service offered by Starlink

Service	Monthly price (non-promotional)	Notes
Starlink Residential	\$110	\$599 one-time hardware cost; no data caps; no contract requirement