The Digital Divide in San Francisco

Mayor's Office of Housing & Community Development

Eric Shaw, Director

Internet access for all SF households

Of the estimated 386,349 households in San Francisco, 64,800 lack broadband and 29,199 lack any Internet access.

	Households	Percentage
Total population	386,349	-
No broadband (wired)	64,800	16.8%
No Internet access	29,199	7.6%
Cellular data plan with no other type of Internet subscription	29,497	7.6%

Source: IPUMS USA. American Community Survey 2019 1-year estimate

By neighborhood: Households with no Internet access

Census tracts with the lowest Internet access rates:

- Chinatown

- Tenderloin

- Western Addition

- SOMA

- Mission

- Bayview-Hunters Point

- Visitacion Valley-Sunnydale

No Internet access

0%   13.1%   26.1%   39.2%   52.2%   65.3%

Source: Censusreporter.org, American Community Survey 5-year estimate (2015-2019)

SFUSD Students Without Access

According to SFUSD, 22,000 students have insufficient computer access for distance learning, and 13,750 have no reliable Internet access.

	# of students	Percentage
SFUSD total population	55,000	-
Insufficient computer access	22,000	40%
No reliable Internet access	13,750	25%

Spark SF Public Schools & SFUSD*

Internet Access By Race and Ethnicity

Race/Ethnicity	# of Households Total	% with No Internet Access	% with No Broadband (wired)
American Indian	2,998	17.2%	22.8%
Black	25,048	11.2%	25.4%
Chinese	71,881	12.8%	25.7%
Filipino	12,702	12.4%	22.5%
Latino	47,995	12.3%	26.9%
Other Asian	28,426	1.7%	8.3%
Other Race	1,956	0.0%	21.4%
Other Southeast Asian	11,151	11.5%	16.5%
Pacific Islander	3,003	2.9%	28.5%
White	181,189	4.1%	9.9%

Internet Access by Household Language

Household Language	# of Households Total	% No Internet Access	% No Broadband (wired)
English	243,490	4.6%	11.8%
Chinese	56,368	15.5%	29.1%
Spanish	33,981	16.2%	29.7%
Filipino, Tagalog	8,151	15.5%	29.7%
Russian	6,375	12.4%	21.2%
Vietnamese	5,262	8.5%	19.8%
Hindi and related	5,230	0.0%	15.4%
All Other Languages	27,492	5.0%	14.4%

Source: IPUMS USA. American Community Survey 2019 1-year estimate

Background & Vision

- Process led by MOHCD, Office of the City Administrator, COIT, DT, and HRC staff.

- 8 City departments involved in planning and advisory roles.

- Resident engagement included citywide survey and community needs assessment with 400 residents and 50 stakeholder organizations.

Vision

- Full and equitable access to digital technology and its benefits so all San Francisco residents and communities can thrive, regardless of demographics.

The "3-legged" stool of digital equity

- **Internet access**: high quality, reliable, and affordable Internet

- **Devices**: Appropriate for the use case

- **Digital skills**: Full spectrum of digital literacy, from basic to advanced

Approaches

- Affordable housing connectivity for internet service

- Device standards, coordination and prioritized distribution

- Expand technology access at community centers and neighborhood hubs

- Digital literacy innovation

- Build technology capacity for community-based orgs
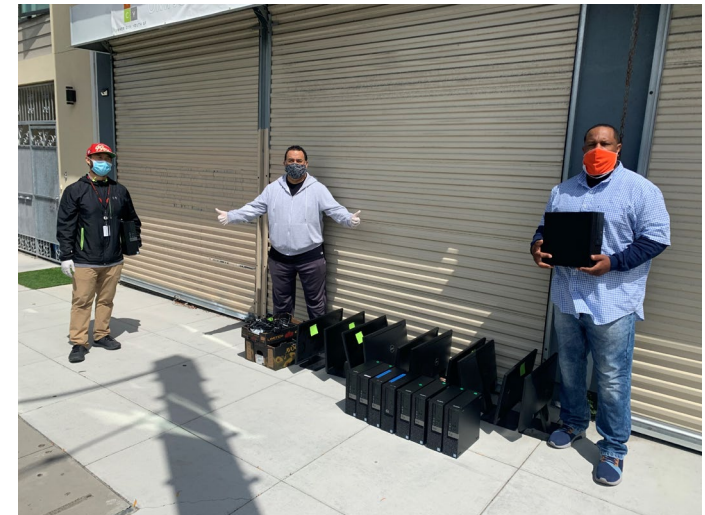
Responding to COVID-19

- DT Wi-Fi installation at family housing sites and shelters

- DCYF Community Hubs

- Supporting SFUSD families with hotspot and Chromebook setup

- Chromebook distribution with CBO partners

- City grantees providing devices and remote training for clients

CCSF Department Contributions To Close the Digital Divide

DT Internet Connectivity – Fiber to Housing

- **Program start 2018**

  - Units connected to broadband
  - Housing units connected to WiFi
  - Homeless units with WiFi
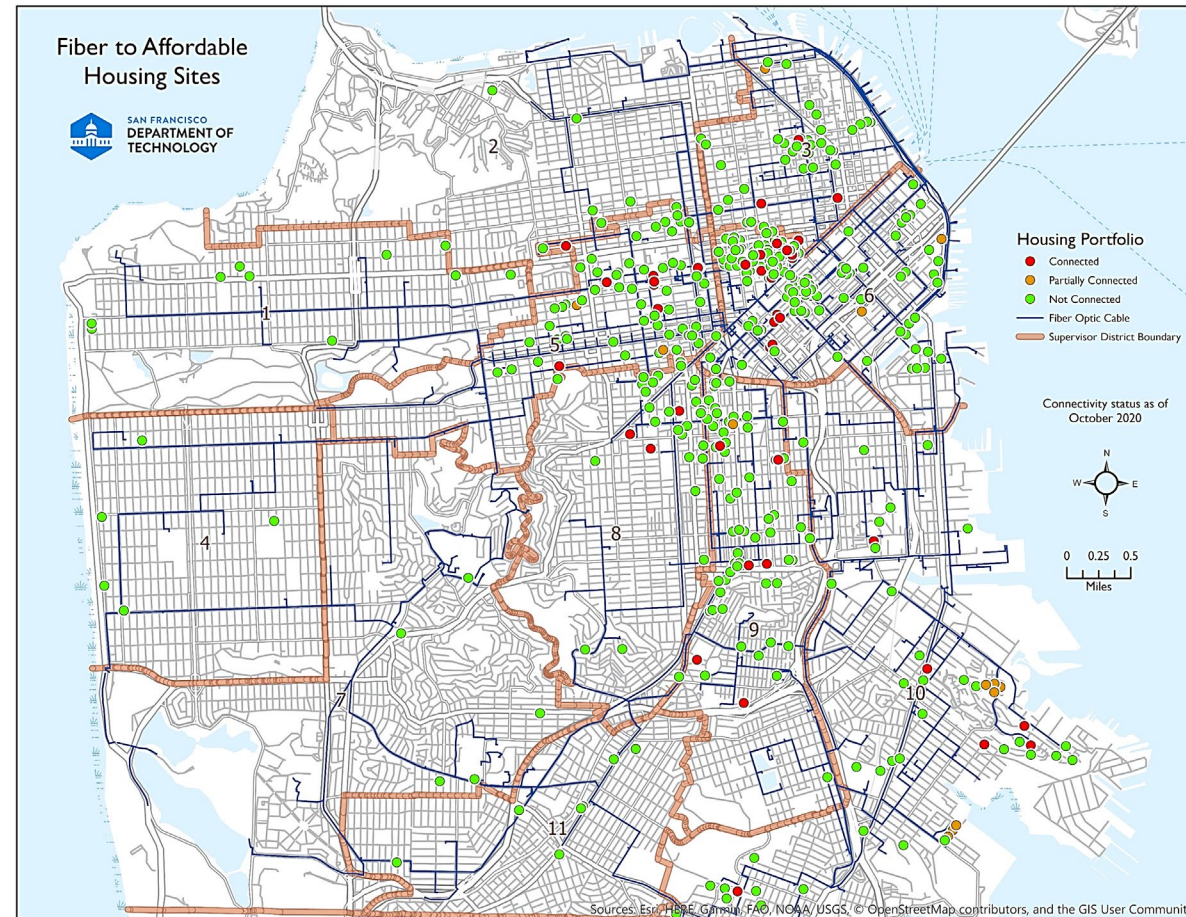 - Total locations connected
  - Community Hubs

- **Broadband Fiber and WiFi**

  - Broadband service

    (comparable to Comcast Xfinity)

  - Wireless service

    (3-4 devices, signal strength will vary in Unit)

Total 7,378 Units

2,600+440 in-progress

3,258

1,080

46+4 in-progress sites

41 locations

up to 1 GB

50 Mbps

Fiber to Affordable Housing Sites

SAN FRANCISCO DEPARTMENT OF TECHNOLOGY

Housing Portfolio
- Connected
- Partially Connected
- Not Connected
- Fiber Optic Cable
- Supervisor District Boundary

Connectivity status as of October 2020

0 0.25 0.5 Miles

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Digital Equity Connectivity Budget

Project start: 2018

Units connected: 7,378 out of 30,000

Investment: $3,400,000 ($500/unit)

	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23
Budget Approved	$500,000	$1,800,000	$900,000 $200,000 BOS add		

DT – Fiber for Public and Affordable Housing

This project will build a fiber broadband network to support free internet access to tenants in public and affordable housing sites, navigation centers, and homeless shelters that are sponsored by the City. City investment to deliver fiber-based internet service to affordable housing is an important equity initiative, since the project seeks to provide very low-income residents and those struggling with homelessness with internet access that will open educational, health care and work resources. In partnership with MOHCD's Digital Equity Program, DT could connect, manage and support an additional 300 affordable housing sites over the next four years.

This project is expected to cost $42 million over four years. A possible funding source includes FY2022 Certificates of Participation.

Accomplishments for Digital Equity Internet Service

INSTALLATIONS

Fiber to Housing (33 locations, 3,227 units)

COVID Shelters, Navigation Centers, Isolation Hotels (10 locations)

Tele-health Senior Low-Income Complexes (2 locations)

Community Rooms at Affordable Housing (31 locations)

Low-income Housing with High Number of Students (15 sites, 1,800+ students)

Park/Rec Centers used for Community Hubs (7 locations)

Community Hubs (40 locations) and 1,300 Chromebooks

Test of SRO WiFi connectivity in Chinatown - in progress

North Beach Apartments

Allice Griffith

201 Turk

Hunters View Phase I & II

111 Jones
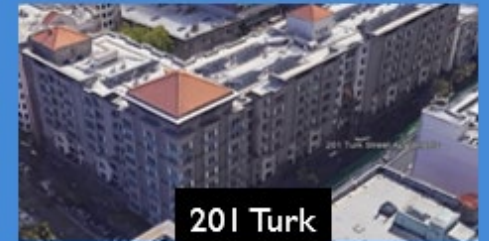
Connectivity Challenges for Digital Equity

- Geographic distribution of unserved areas and housing

- Ensuring a consistent experience for all connected residents

- Security and control of the service delivery

- Speed service delivery and lower cost of deployment:
  - DT and Public Works are currently reviewing proposals to reduce the cost of deployment
    - Standard installation
    - Common infrastructure
    - Alternative construction technologies for installing fiber - trenching
    - Restoration requirements
    - Review ramp replacement requirements
    - Permit process

- Cost, operational overhead and funding

Near Term: Sunnydale Installation

- Sunnydale Housing Complex

- 563 Units

- WiFi Service: 25-50 Mbps

- $670,000

- 6-8 months to complete

Near Term: 5G Industry Workgroup

5G Industry Workgroup:

- Reviewing technology options
- Reviewing service delivery
- Reviewing other City programs
- Identify opportunities
  - Improving capacity density
  - Leveraging new 5G and CBRS technology
- Identifying incentives and City priorities
- Recommendations on City Strategy

City Team	Industry Team
Office of Housing & Community Dev.	Verizon
Office of Economic & Workforce Dev.	ATT
Planning Department	T-Mobile/Sprint
Public Works Department	Sonic
Department of Technology	Extenet Systems
PUC (SFWater)	Modus
MTA	Crown Castle
	Ene-Hub
	Mobility
	Converge One

Human Rights Commission

Sheryl Davis, Director

COIT FY 2022-26 ICT Plan Preview

- The City & County of San Francisco provides **967** resident facing services across all 51 departments.

- Only **194** of these services are designed to be used on a mobile device or by populations with low digital literacy or a disability.

- The FY 2022-26 Information and Communication Technology (ICT) Plan is focused on supporting the development of universally accessible services citywide.

Homelessness and Supportive Housing

Abigail Stewart-Kahn, Director
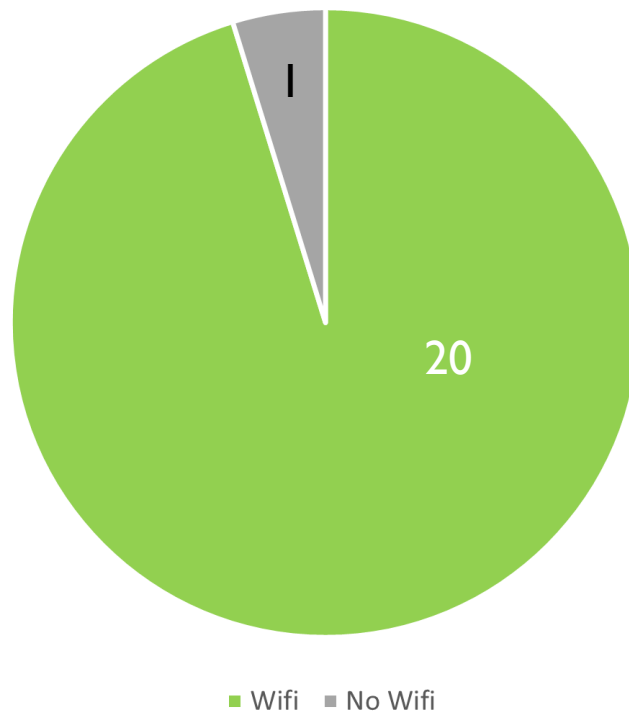
Dylan Schneider, Presenter

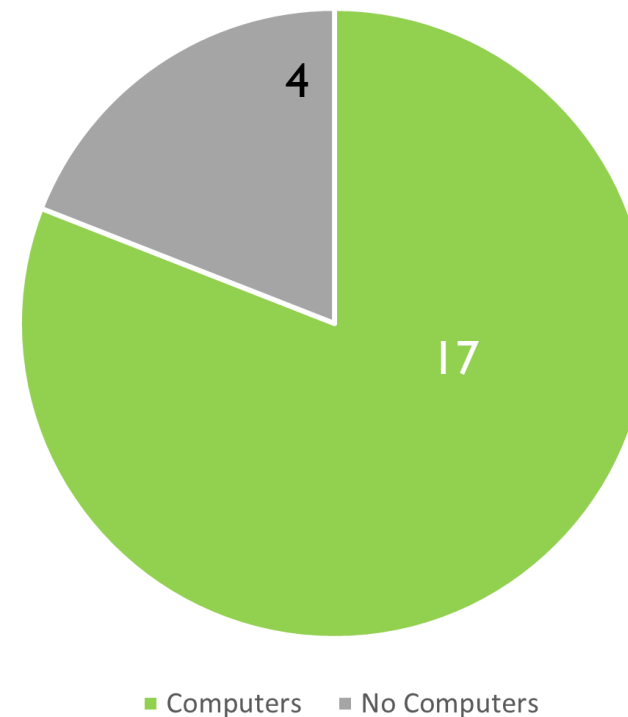# Department of Homelessness and Supportive Housing (HSH)

The Bayview SAFE Navigation Center.

Digital Access in Temporary Shelters

Shelters with Wifi Access

1

20

■ Wifi ■ No Wifi

Shelters with Computer Access

4

17

■ Computers ■ No Computers

Digital Access in our Permanent Supportive Housing (PSH)

48 sites offer free Wifi

39 sites offer computer access

The Granada. Image courtesy of Flickr.

# Department of Homelessness and Supportive Housing (HSH)

Initiatives During COVID-19

- COVID-19 Command Center provided digital access to guests accessing the Alternative Shelter Program
  - COVID emergency shelter, SIP hotels, I&Q and majority of Safe Sleep
- Connected school-age guests at the Vehicle Triage Center to the Powerhouse Community Hub
- Partnered with DT and MOHCD to provide free City Wifi at new Navigation Centers opened in 2021

Opportunities

- Continue to explore opportunities and partnerships that support the 14,000+ households across our system of care with digital access and literacy.
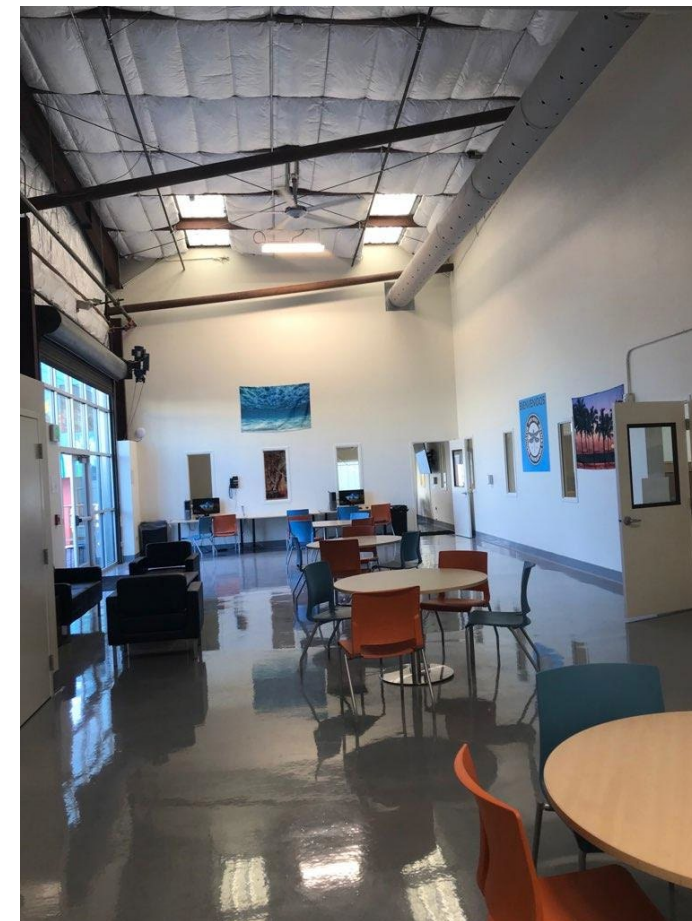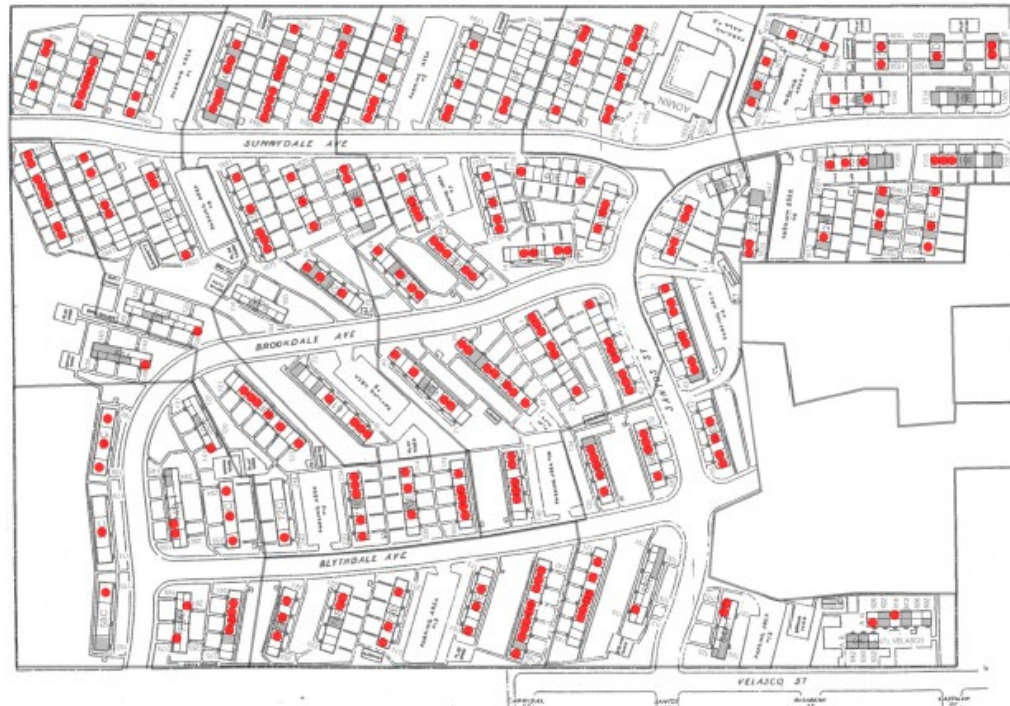

Bayshore Navigation Center

SF Housing Authority

Tonia Lediju, Director

San Francisco Housing Authority

Wi-Fi Installation for Public Housing Residents (estimated cost of $1.4 million)

Sunnydale

Potrero Terrace

Legend
- Vacant units
- Units with youth in grades 3 to 12

	Sunnydale	Potrero Terrace	Potrero Annex (not shown)
Total number of occupied units	563	301	96
Total number of units with youth in grades 3-12	268	130	15
Total number of youth	418	191	27

San Francisco Housing Authority

Distance Learning Support

- 500 Chromebooks purchased in collaboration with HOPE SF and HRC to bridge the gap for students outside of the unified school district

- 230 Chromebooks delivered to community partners

- 75 laptops for recent public housing high school graduates to help them transition to higher learning institutions

San Francisco Housing Authority
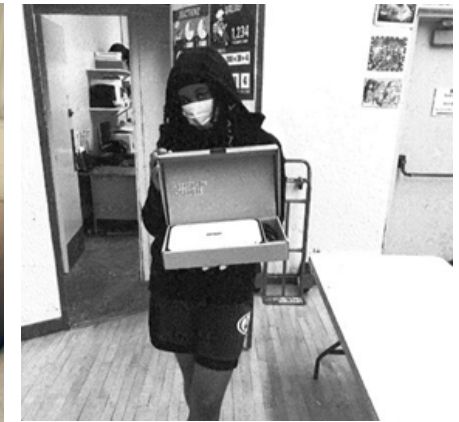
Increase Academic & Mental Health Support

- $260,000 combined grant for youth academic services and mental health services to serve youth at both Potrero and Sunnydale sites

- **Ongoing Challenge:** Continued support for digital literacy and mental health services

Sunnydale Boys and Girls Club

- 160 youth served weekly

- Culturally-competent tutoring and academic skill-building

- 1-on-1 and small groups

- Liaisons to improve coordination among families, schools, and CBOs serving youth

- Provide professional development for Sunnydale CBOs

Potrero Neighborhood House

- 120 youth served weekly

- Responsive mental health services with consistent presence onsite

- Addresses gaps from previous mental health programs that led to low youth uptake

- Services provided by Black practitioners who can meet the unique needs of low-income families of color

San Francisco Housing Authority

COVID-19 Communication Initiatives

- Mass outreach by text, email, and mail to tenants, residents, and landlords

- Streamlined procedures for reporting income changes and processing quickly

- Increased online presence and call center remains staffed

COVID-19 Direct Service Initiatives

- Weekly distribution of culturally competent groceries to address food insecurity:

  - Over **24,200** households served at 60 distinct sites

- Weekly distribution of PPE and household cleaning supplies, including over:

  - **71,500** masks and gloves; **19,900** rolls of toilet paper and paper towels; **14,300** bottles of hand sanitizer; **7,000** bottles of cleaning supplies

- Monthly distribution of diapers:

  - Over **2,200** diaper boxes

HSA: Dept. of Disability and Aging Services

- **DAS-Funded "SF Connected" Spotlight (launched in 2011)**
  - Computers, internet access, and digital literacy training in 50+ CBO labs
  - Purchased almost 200 computers for the community labs
  - Serves over 2,000 older adults and adults with disabilities annually
  - Operates in every District, with focus on racial equity/digital divide
  - 6 lead CBO partners provide the digital literacy training
- **Pandemic services pivot:**
  - Virtual group computer sessions and 1:1 customized support
  - Distributing home devices (520) and assisting with connectivity

HSA: Dept. of Disability and Aging Services

DAS-Funded SF Tech Council

- Inter-sectoral council to expand digital inclusion for older adults & people with disabilities
- 24 members and includes reps from City, Tech, Telecomms, CBOs & advocates

Behavioral health and technology

- Long Term Care Coordinating Council Behavioral Health Project
- LGBTQ+ behavioral health telehealth pilot (early stage)

HSA: Dept. of Benefits & Family Support

- New Digital Services Program

  - Devices, internet service reimbursements, tech support and digital literacy training for 600 HSA clients seeking employment (recent RFP)

  - Soft launch with existing CBO workforce partners

- BFS Service Center lobbies open for any client without internet/devices/phones

SFPL: Digital Skills Training

Topics include basics, job skills and advanced tech training

Instruction in English, Spanish, Cantonese and Mandarin

FY21 so far: 40 technology classes hosted online.
- Average FY21 tech class size: 59

98% of surveyed attendees use what they learned

One-on-one help at Digital Device Drop In, Main Library, June 2019

SFPL WiFi Usage

Wifi Visitors 2019		
	Daily Average	Yearly Total
Systemwide	12,730	4,646,450

Yearly # of Wifi Connections

Fiscal Year	Connections
FY15	1,491,025
FY16	2,100,210
FY17	2,409,365
FY18	4,475,210
FY19	4,718,358
FY20	3,824,725
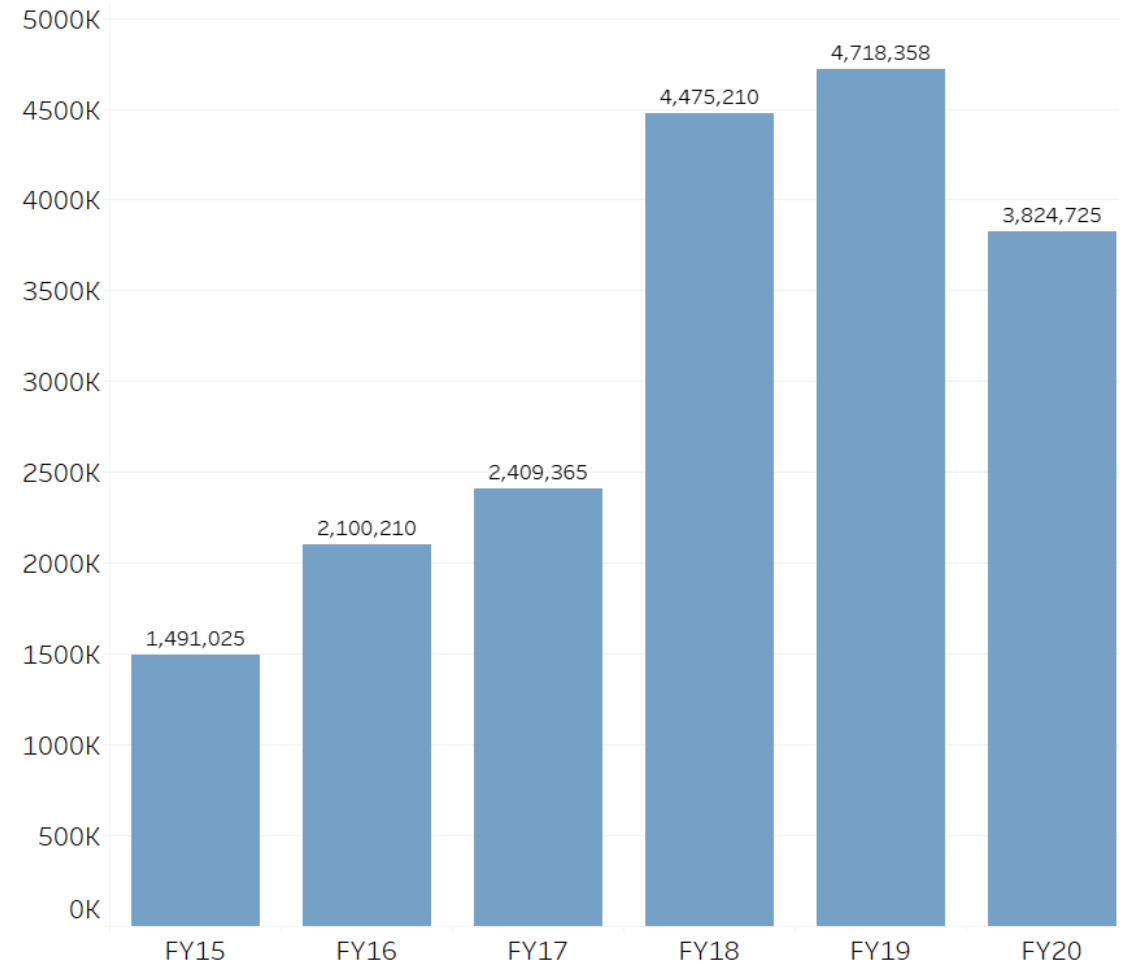
SFPL WiFi Locations

Locations	# of Public Access Terminals	Sessions	Total Session Time (in Hours)
Main Library	144	264,756	190,288
Branches	589	524,583	305,906
Grand Total	**733**	**789,339**	**496,194**
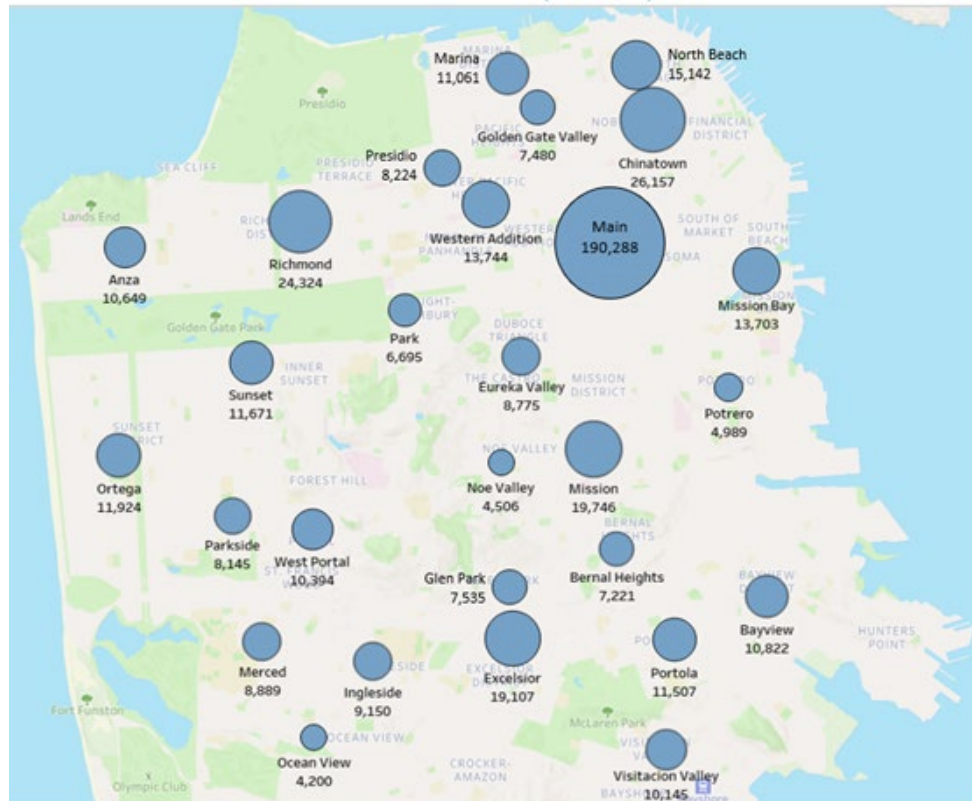
Branches	# of Public Access Terminals	Sessions	Total Session Time (in Hours)
Chinatown	36	42,338	26,157
Mission	36	32,658	19,746
Excelsior	33	31,137	19,107
Richmond	30	41,246	24,324
North Beach	28	28,193	15,142
Bayview	27	16,962	10,822
Bernal Heights	25	12,452	7,221
Visitacion Valley	25	17,104	10,145
Western Addition	23	22,278	13,744
Park	22	12,988	6,695
Ingleside	21	15,772	9,150
Ocean View	21	6,583	4,200
Eureka Valley	20	15,780	8,775
Mission Bay	20	21,340	13,703
Ortega	20	20,745	11,924
Anza	19	17,458	10,649
West Portal	19	17,804	10,394
Glen Park	18	12,975	7,535
Marina	18	19,208	11,061
Parkside	18	15,183	8,145
Portola	18	22,112	11,507
Presidio	18	14,147	8,224
Sunset	18	21,328	11,671
Golden Gate Valley	16	12,505	7,480
Merced	15	16,683	8,889
Potrero	15	9,455	4,989
Noe Valley	10	8,149	4,506
Grand Total	**589**	**524,583**	**305,906**

Total Session Time (in Hours)

Department of Children, Youth and Their Family

Maria Su, Director

Aumijo Gomes, Presenter

Community Hub Initiative
Bridging the Digital Divide, Board of Supervisors 3/11/21

Community Hub Initiative (CHI)

The Community Hub Initiative (CHI) is a citywide, neighborhood-based strategy to support children, youth, and families during the school year. Community Hubs provide support K-12 students engaged with SFUSD's Distance Learning.

Site Type	Number
Community-Based Organization (CBO)	50
Museum	1
Pro-Bono	2
Public Housing	2
Recreation & Parks Department (RPD)	20
SF Public Library (SFPL)	9
TOTAL SITES	**84**
TOTAL YOUTH SERVED	**2,304**

Community Hubs support high needs children and youth including those impacted by the digital divide:

Homeless Youth	223
SRO Residents	86
Public Housing Residents	654
Foster Youth	31
English Language Learners	460
African American/Black Youth	669
Asian Youth	269
Latinx Youth	841
Pacific Islander Youth	84

(total youth served as of 2/24/21)

DCYF relies on partnerships with DT, the Office of Digital Equity, SFPL, RPD, SFUSD & Comcast:

- Partners assessed sites for capacity and assisted with upgrades:
  - **City, RPD & SFPL Sites:** DT, Office of Digital Equity, RPD & SFPL
  - **CBO Sites:** DT & Digital Equity
  - **CBO & Private Subscriber Sites:** Comcast

- SFUSD helped register CHI devices through their Google console system

- DT, Digital Equity, RPD & Comcast assisted with troubleshooting for bandwidth and connectivity issues

Devices, supplies, connectivity and bandwidth costs total $1,476,200 since the CHI began in 2020.

Category	Item	Cost
Devices & Supplies	1825 Chromebooks (1325 from DT) & 2300 Headphones	$800,000
	Chromebook Licenses via SFUSD	$55,200
	50 Cubecarts for Storage & Charging	$95,000
	Cradlepoint Devices & Monthly Fees	$52,000
Connectivity & Bandwidth Support	Ongoing Technology Consulting Services	$370,000
	Wiring & Equipment for 7 RPD Sites	$74,000
	ServiceNow HelpDesk Ticketing System for CHI Sites	$30,000

OEWD

- **TechSF - Inputs:**
  - TechSF has invested $1.65MM in program year '20-'21 across 9 local training programs that allow San Franciscans to access technology and tech training offerings.
  - OEWD invested $584K into programs and outreach efforts in neighborhoods that have low digital literacy and low internet access rates.
  - TechSF will provide services and resources for **more than 600 San Franciscans** in program year '20-'21.
- **TechSF - Outputs:**
  - Since 2012, TechSF has supported more than 3,000 local job seekers matriculate into tech jobs.
  - On average, TechSF students placed into employment earn $28/hr, which amounts to $5.824MM in wages going back into the community for every 100 students who attain employment. (On average TechSF, invests $3,000 per training participant).
- **TechSF - Gaps:**
  - Being in the world's most competitive tech labor market limits opportunities for our students who cannot afford advanced degrees or lack the social capital required for tech employment.
  - TechSF does not have the resources to provide computers and high-speed internet.

OEWD

- Small Business Technical Assistance

  - OEWD is working with neighborhood economic development partners under existing grants to support small businesses on building their online presence including marketing and sale of their products

  - Moving forward OEWD will be increasing recovery efforts and services that focus on building the technical capacity of businesses online

Looking Ahead

Economic Recovery Task Force
Digital Equity Recommendations

	Recommendation	Current Action
1.0	Ensure affordable connectivity and Internet service	
1.a	Expand free access to affordable/public housing, aka FTH "include dedicated annual funding to support the maximum feasible level of expansion on an annual basis"	DT is continuing to install fiber to housing units based on priorities identified by MOHCD
1.b	Work with DPW to consider ways to lower the cost of fiber installation;	DT and DPW are meeting with industry providers to understand new options and concerns around construction
1.c	Dept. of Homelessness & Supportive Housing should expand efforts to provide broadband internet at SROs	Chinatown pilot of WiFi service to SROs in progress
1.d	Advocate for affordable broadband through State & Federal programs.	New, temporary Emergency Broadband Benefit (EBB)
2.0	Distribute computers/devices to vulnerable populations	Drafting standards and business plan for procurement, distribution and management
3.0	Build technology capacity of new users, small businesses, and nonprofits	Working with Office of Civic Innovation on playbook for e-commerce implementation for small business

Report to Board: 201373 [History & Report]

201373 RECEIVED AND ASSIGNED to Public Safety and Neighborhood Services Committee.

Sponsor: Safai

Resolution urging the adoption of certain Sections in the October 2020 Economic Recovery Task Force Report that recommend the City pursue economic justice, provide high-quality computers to vulnerable populations; bridge the digital divide with affordable connectivity and internet service, and build technology capacity of news users, small businesses, and non-profits; and seeking the Department of Technology to provide a literature review of the past 20 years of the City's efforts to close the digital divide, and provide the Board with a written estimate of cost for the implementation of the three Sections proposed for adoption.

- Will provide:
  - History, Strategy, Plan, Cost, and Schedule for closing the digital divide with connectivity, devices & training

- Will include:
  - Industry participation (service discounts, funding, cost sharing)
  - Explore Federal Funding Opportunities

Appendix:
Additional slides included for informational purposes

Defining Internet access

Data were analyzed for access to different types of Internet service, including:

- Any Internet access: including those with only smartphone/cellular data access, free Wi-Fi access, or dialup
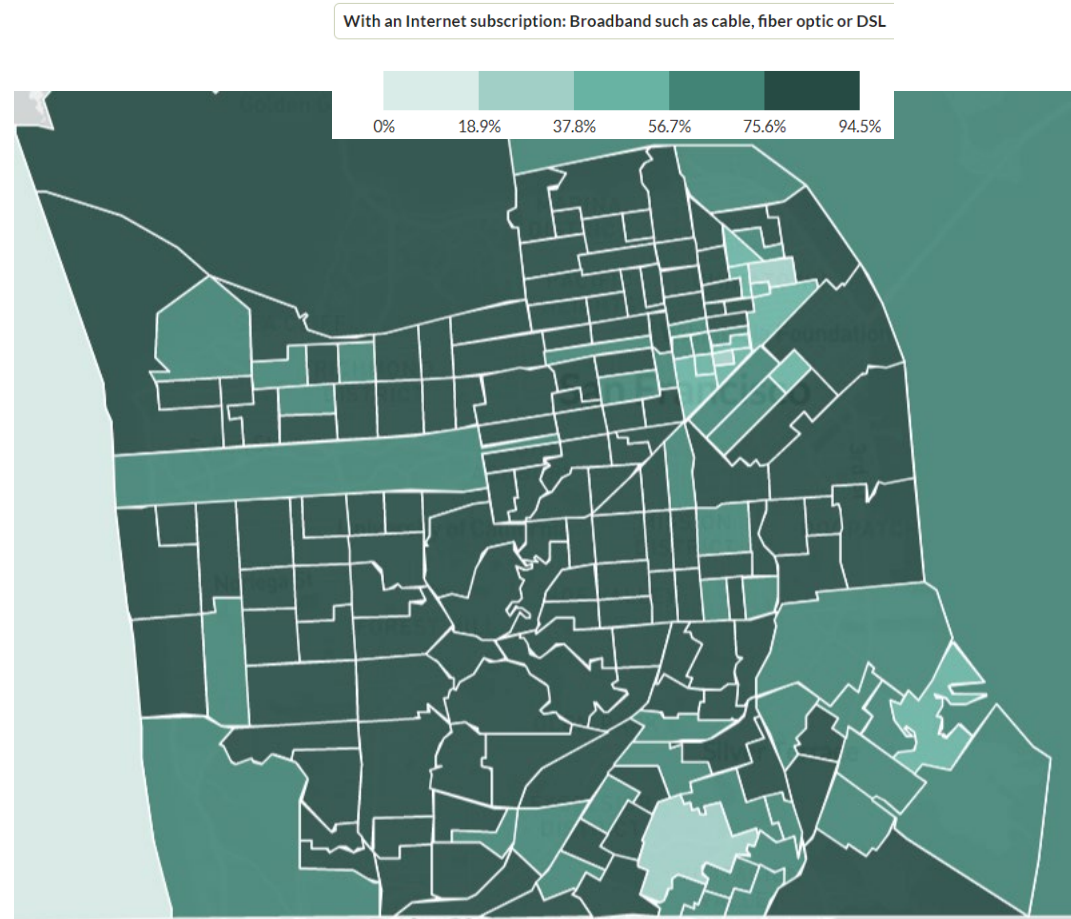- Broadband (wired): including fiber, cable Internet, or DSL.

Note: These are considered measures of Internet **adoption**, rather than simply **availability**.

By Neighborhood: Households with broadband

Census tracts where fewer than 60% of households have broadband subscriptions located in:

- Visitacion Valley-Sunnydale

- Tenderloin

- Mid Market

- Chinatown

- SOMA

- Bayview-Hunters Point

With an Internet subscription: Broadband such as cable, fiber optic or DSL

0%   18.9%   37.8%   56.7%   75.6%   94.5%

Internet access among limited English speaking households and foreign-born residents

Household Language Status	# of Households Total	% No Internet Access	% No Broadband (wired)
Non limited English speaking household	352,125	5.4%	14.1%
Limited English speaking household	34,224	29.5%	44.2%

Foreign-born Status	# of Households Total	% No Internet Access	% No Broadband (wired)
Non foreign-born	242,149	4.3%	12.1%
Foreign-born	144,200	13.0%	24.7%

Note: US Census Bureau defines a household as limited English speaking if no one in the household 14 and over speaks English only or speaks English "very well.

Source: IPUMS USA. American Community Survey 2019 1-year estimate

Groups Most At-Risk

Groups most at-risk
for digital divide

Low-income residents and families

Seniors

People with limited English proficiency

People with disabilities

Barriers

- **Affordability**: of both Internet service and devices

- **Digital literacy learning curve**: especially common among older adults

- **Language barriers**: among newcomers

- **Online safety**: vulnerable populations more likely to express concern about online safety and be impacted by cyberscams

- **Sustainability**: technology requires constant updating and ongoing support in terms of access, hardware, software, and skills.
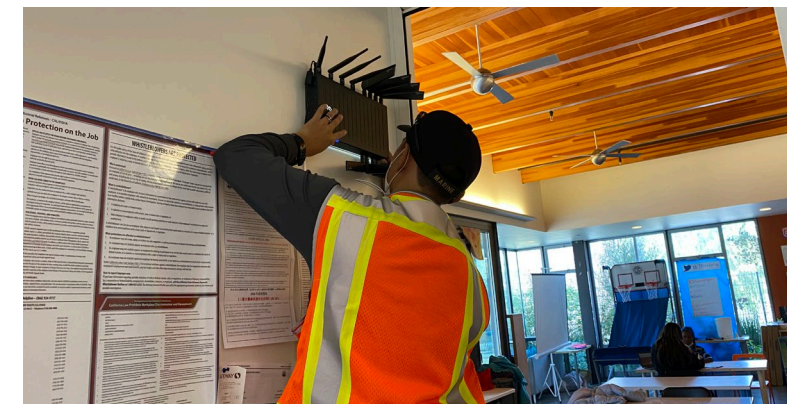
HSA: Dept. of Benefits & Family Support
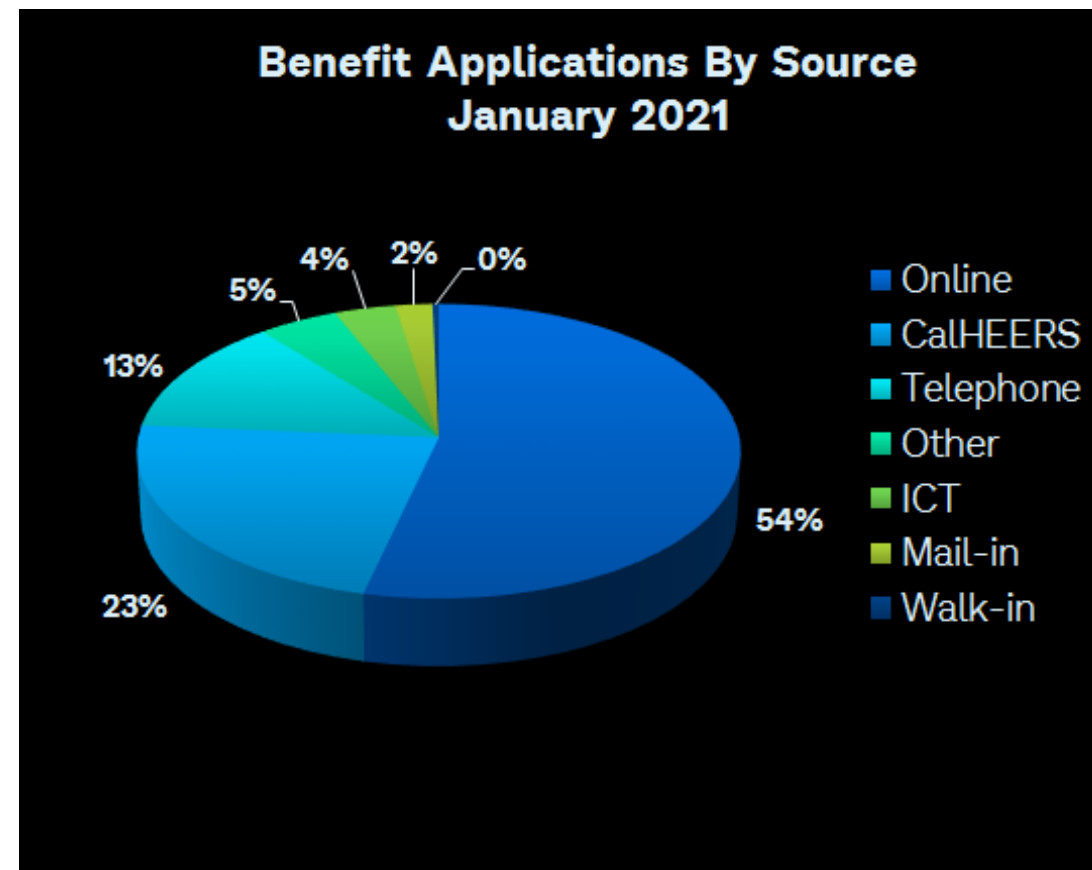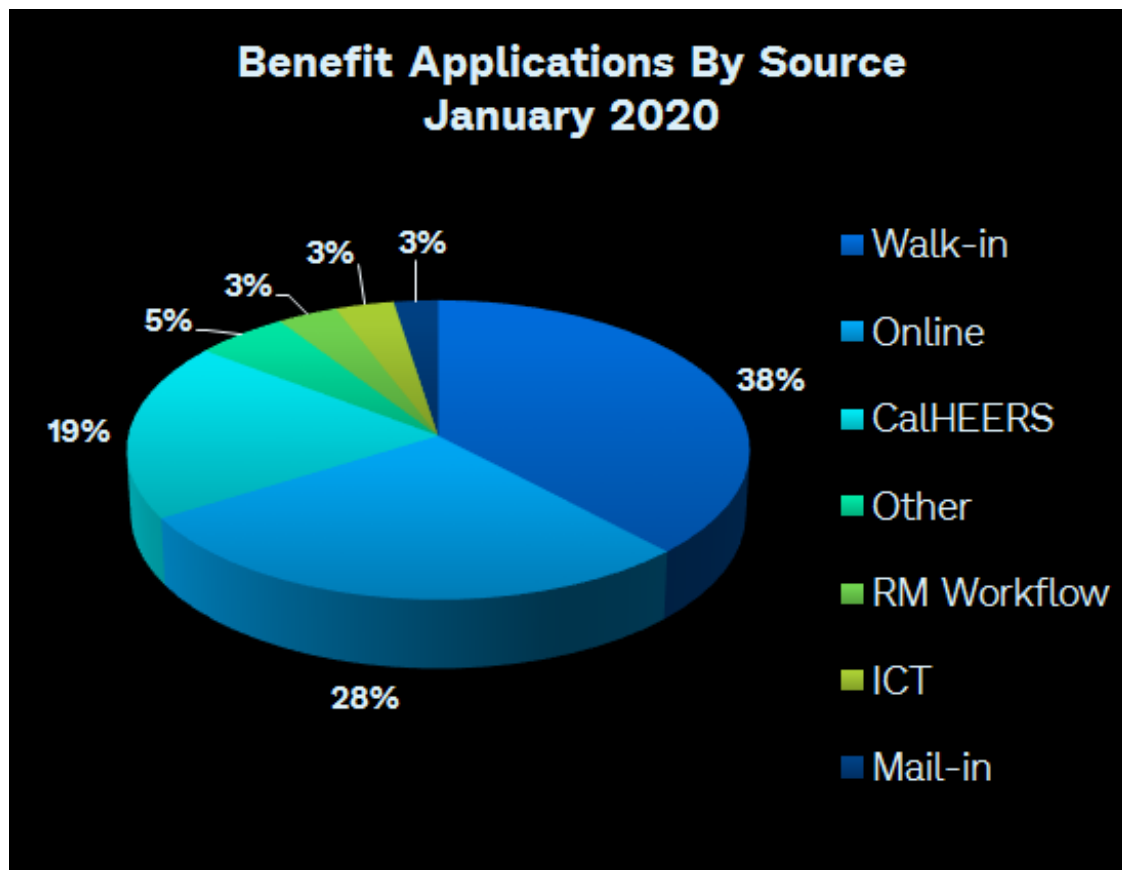
Comments from Residents About City Internet Service

- Arnett Watson Resident. She's very happy with the results - said it's much better than the Internet service she was paying for before. Speed test between commercial ISP and FTH Wi-Fi. Kudos to all for your great work!

- A Bernal Dwellings resident and member of the tenants' leadership council shared:

  - It's good, the speed is good. We're in a townhouse with several adults and children on it at the same time.

  - You should work to expand this program because so many people can't afford it. I'm online to do research all the time. Since it's COVID, there are so many City committees I sit on. So this has been so helpful. We used to have an onsite computer learning center that had Wi-Fi that people could use. But it was converted to a childcare center and people lost that Wi-Fi. So they're very appreciative to have this, especially since everyone is home and need to do online classes, all the kids need to do online learning. **This has been a lifesaver for a lot of people.**

- Alemany staff said the service is working very well and "I don't know what we'd do without it." She mentioned that residents have been surprised at the high quality given that it's a free service, while others may have not signed up yet because they think that free = low quality.

City FTH
Download speed
43.6 Mbps

Upload Speed	Latency (ping)	Provider	IP Address	Server location
51.3 Mbps	11 ms	AT&T U-verse	107.77.197.136	San Francisco Bay Area, US

ISP
Download speed
6.03 Mbps

Upload Speed	Latency (ping)	Provider	IP Address	Server location
915 kbps	31 ms	AT&T U-verse	107.77.197.136	San Francisco Bay Area, US

New Federal Benefit: Emergency Broadband Benefit (EBB)

- On February 25, the Federal Communications Commission issued rules Implementing EBB, to help lower the cost of high-speed internet for eligible households during the on-going COVID-19 pandemic

- The EBB provides eligible low income consumers:
  - Up to $50/month discount for broadband services
  - A one-time discount of up to $100 for a laptop, desktop computer, or tablet
  - To be available by the end of April

- A household is eligible if one member of the household:
  - Qualifies for the Lifeline program, including those who are on Medicaid or receive SNAP benefits;
  - Receives benefits under the free and reduced-price school lunch program ;
  - Experienced a substantial loss of income since February 29, 2020;
  - Received a Federal Pell Grant in the current award year; or
  - Meets the eligibility criteria for a provider's existing low-income or COVID-19 program.

- Opportunity to assist with outreach.

- Congress expected to consider making benefit permanent as part of pending infrastructure bill.

Remaining Unmet Program Needs

- **Fiber to Housing:** 32,000 low-income housing households still need to be connected
  - Solution for single family and ADU housing
  - Devices for connection – routers, PCs
  - Security and network/device management
- **Telehealth:** SF Health Network-DT-MOHCD federal proposal estimated need for devices and Internet for 1,400 low-income patients to access telehealth.
- **Training and Workforce Clients:** 30 CBOs, including 8 OEWD TechSF providers, requested computers and Internet for clients to participate in remote trainings.
- **Seniors and People with Disabilities:** Coalition of senior/disability-serving CBOs estimated need for remote digital literacy and devices for 1,000 clients.

Gaps in Commercial Service Delivery to Close Digital Divide

- **Affordability:** Cost of Internet and devices still most cited barriers to tech adoption.

- **Barriers to discount ISP programs:** Low uptake of ISP discount programs, including SFUSD-sponsored plans. Barriers include eligibility requirements and cumbersome signup / ordering process.

- **Mobile hotspot coverage:** Slow hotspot speeds due to cell coverage issues reported in several neighborhoods, e.g. Potrero and Vis Valley.

- **Broadband unavailability:** Lack of adequate broadband Internet options identified in parts of Chinatown and at several Community Hubs.