



Memorandum

TO: HONORABLE MAYOR
AND CITY COUNCIL

FROM: Jill Bourne

**SUBJECT: DIGITAL LITERACY AND PUBLIC
TECHNOLOGY STATUS REPORT**

DATE: October 5, 2021

Approved

Date

10/5/21

RECOMMENDATION

Accept the status report on Digital Literacy and Public Technology efforts, which includes providing internet access to children and neighborhoods with partners, project and funding statuses, key metrics, opportunities, and management approach.

OUTCOME

The Committee will be aware of and provide feedback on the current implementation of the Digital Equity program. The digital literacy aspect of the Digital Equity program is discussed at length in the Education and Digital Literacy Annual Report, which is also being considered by the Neighborhood Services and Education Committee at the October 14, 2021 meeting. The Smart Cities and Service Improvements Committee will provide feedback on the program on October 7, 2021.

BACKGROUND

In response to the COVID-19 pandemic, the City activated the Digital Inclusion Branch of the Emergency Operations Center in April 2020 and funded a suite of initiatives intended to provide immediate and near-term connectivity support to residents. On June 23, 2020, the City Council approved the Digital Inclusion Expenditure Plan, which outlined the use of various funding streams to support 1) the purchase of hotspots for students and residents, 2) the rapid development of outdoor wi-fi networks at civic buildings, and 3) the expedited buildout of five additional community wi-fi networks in East Side Union High School District (ESUHSD) attendance areas. The Council took separate actions to authorize contracts associated with these projects throughout the 2020-2021 fiscal year. The Council also approved funding in the Adopted 2021-2022 Operating Budget for the continuation of these initiatives in the current fiscal year.

To coordinate and organize the work in a manner that would be easily relatable and accessible to the public, SJ Access was developed as the all-encompassing brand for the Digital Inclusion/Equity initiatives. The programs included in the SJ Access program are student hotspot lending, general public hotspots lending (filtered and unfiltered), computing device lending, wi-fi at civic buildings, and public/outdoor community wi-fi networks. City programs and initiatives that are not part of SJ Access/Digital Equity Roadmap item but are relevant and critical to advancing outcomes in Digital Equity are: the Digital Inclusion Fund grant program and Small Cell Public Private Partnership program.

The Digital Equity Roadmap item is led by the San Jose Public Library and is being implemented by a citywide team from the Library, Parks, Recreation, and Neighborhood Services, Public Works, Information Technology, Department of Transportation, and the City Manager's Office.

ANALYSIS

While the pandemic response has shifted between response and recovery over time, the emergence of the Delta variant now requires both response and recovery operations. The Digital Equity work has operated in an emergency response posture since first authorized by the City Council. The transition between various stages of the emergency have not changed the City's commitment of funding or the expectations for an expedited delivery of projects and services. The Council has received several presentations on the status of the program and taken actions on various aspects of the work. This report intends to provide a comprehensive update on the entire program. The information is organized below by project, offering a review of 2020-2021 outputs and investments and 2021-2022 implementation plans.

Focus on Equity: Built and managed the region's first Digital Equity Priority Index

Immediately upon activating the EOC Digital Inclusion Branch, staff worked to identify which specific underserved communities were most in danger of being pushed further from socioeconomic prosperity, due to a lack of digital access and infrastructure. To focus these efforts and maximize the impact of the City's resources, staff identified key indicators and relevant data sets to construct the Digital Inclusion Priority Index. The index was built largely using 2018 American Community Survey data. Based on the rapid shift to distance learning, staff calculated the census tract-level index scores using: K-12 population density, poverty rate, households without access to the internet, households without a computer at home, and households that self-reported speaking English less than very well. Mapping the index scores across San Jose, staff was able to accurately identify geographic areas with the largest concentrations of people who would benefit the most from the City's digital inclusion investment.

The index has been the first, but not the only consideration when driving decisions about funding and allocation of physical resources. The Digital Equity team has monitored COVID-19 transmission data in addition to the Priority Index to inform decision making. To improve the precision of the City's investment, the collective knowledge of staff and community partners was heavily relied upon. That knowledge provided greater precision to locate, within these high priority areas, our investment to ensure that specific underserved communities are reached.

Student Hotspots: Distributed and managed 12,800 student hotspots through 32 Local Education Agencies

Through the San Jose Public Library and the EOC Digital Inclusion branch, in partnership with the Santa Clara County Office of Education (SCCOE), the City distributed 12,800 hotspot devices to public schools to serve student households.

Participating local education agencies (LEAs) provided aggregated data to the Santa Clara County Office of Education on 9,842 students who received a hotspot. This result represents an underreporting of the total student distribution, which is attributed to reporting inconsistencies and documentation errors. The analysis showed:

- The average attendance rate for students who received a hotspot was 93%.
- Over 60% of the students qualified as "socioeconomically disadvantaged" which is an indicator produced by the schools based on enrollment in several income-related programs, but is not reported based on income. For reference, 32% of students countywide qualify as socioeconomically disadvantaged.
- 16% of the students served qualified for special education; higher than the Countywide total of 11.2%.
- 4,901 students were English Language Learners – 49.7% - as compared to 19.92% Countywide.
- 64% of the students served are Hispanic/Latino; the second highest served ethnicity was Asian students at 17%.
- The top three zip codes of students who received hotspots were 95122 (1,181), 95127 (1,180), and 95111 (1,034).

Staff worked with LEAs to understand student needs for connectivity over the summer months and maintained service on those devices. To facilitate repair, refurbishment, and prepare for redistribution of devices in advance of the start of the new school year, the City suspended service on all unused devices on August 1, 2021. Staff is working with each LEA to reactivate devices as needed.

The 2021-2022 Adopted Operating Budget allocated funding for 3,200 student hotspots. As they developed their plans in preparation for the 2021-2022 academic year, several LEAs shared that their needs for hotspots exceeded the 3,200 funded hotspots, driving the actual need closer to 6,200 hotspots. To fund the difference in quantity, staff applied for funding through the Emergency Connectivity Fund (ECF). The ECF is a \$7.1B fund authorized through the American Rescue Plan for schools and libraries to fund connectivity and devices for education

and learning purposes. The Federal Communications Commission and the Universal Service Administrative Company released regulations that authorized funding for schools and libraries for purchases and contracts for hotspots, tablets, laptops and other hardware, as well as the monthly recurring service costs. Eligible devices must provide internet filtering compliant with the Children's Internet Protection Act. Eligible end-user recipients must certify that they do not have sufficient internet access to complete learning, and the device must be used for education and learning purposes.

The ECF application window opened on June 29, 2021, and closed on August 13, 2021. A timeline for award announcements has not been made available.

Public Hotspots: Provided 3,000 hotspots for checkout at 24 Library branches

The San Jose Public Library circulated 3,000 AT&T hotspots through 24 library branches. Hotspots are loaned to members of the public for an initial 90-day period, with a 30-day extension. A customer can renew their device if no other customers have requested that device. Customers are provided with a quick start guide translated into Spanish, Vietnamese, and Chinese. Library staff offers customers a quick tutorial on using the device and connecting any devices to the hotspot before leaving the checkout location. Library hotspots circulated 9,892 times in FY 2020-2021 and have been 100% checked out since Spring 2021.

A voluntary survey of Library customers checking out a hotspot provided insight into how customers intended to use devices. 68.7% of customers reported needing the hotspot for distance learning/education; remote work 41%; socializing with family/friends 30%; telehealth 25%; virtual programs and services 24.75%, and job search was reported at 23.8% by respondents. 46.4% of survey respondents reported not having a broadband subscription at home.

To meet the ongoing need for connectivity in our community, staff recommends the following distribution of devices through the Library in 2021-2022:

- Create a Youth Device Collection, funded by the ECF:
 - Add 4,500 filtered hotspots to the Library, prioritized for students, to serve as a failsafe if devices are not available through schools and/or in-person instruction is interrupted during the academic year;
 - Add 1,500 connected Chromebooks to the Library collection targeted to single-person households and/or young adults, with a majority of funding from the ECF and \$33,270 funded through the existing Digital Equity appropriation.
- Add 1,200 devices to the Library's collection for the general public to meet the current demand, funded through the existing Digital Equity appropriation.

The order for 1,200 general public hotspots was made in September 2021, and received into the Library on October 1, 2021. Hotspots will be distributed to branches on or before October 14, 2021. Hotspots will be allocated to Branches using an analysis that aligns with the Digital

Inclusion Priority Index and is augmented by a local understanding of COVID transmission rates and the capacity of the neighborhood schools to distribute hotspots. At a baseline, the following Branches will see higher allocations of hotspots, though inventories will be continuously reevaluated to ensure that the collection is being used to achieve maximum impact for those in need: Alum Rock, Bascom, Biblioteca Latinoamericana, East Branch, Edenvale, Educational Park, Evergreen, Hillview, Joyce Ellington, Mt. Pleasant, Seven Trees, and Tully.

In addition to ensuring the appropriate allocations at Branches, staff will reopen the Community Based Organization referral process created at the beginning of the pandemic response. Throughout the month of October, staff will survey Community Based Organizations to gauge interest and need for hotspots among clients.

The City Council approved an amendment to the contract with AT&T for hotspots on August 29, 2021. The total contract value for hotspots in 2021-2022 is \$4.1M; the City is responsible for \$989,000, and the ECF is expected to pay the remaining balance directly to AT&T.

Computing Devices: Circulated 35 laptop kits, 120 Apple iPads, and 600 HP Chromebooks through Library Branches

The Library leveraged several gifts and grants to the San Jose Public Library Foundation to acquire a variety of devices to start the Library's first at-home lending collection of computing devices. Computing device lending terms align with the hotspot term of an initial 90-day checkout and one 30-day extension.

- A grant from the California Public Utilities Commission funded 35 laptop/hotspot lending kits which are available for checkout at the Alum Rock, Educational Park, Evergreen, Hillview, and Tully Library Branches. Laptop kits have been 100% reserved for a full year.
- A grant from Apple enabled the distribution of 120 iPads at the same Branch locations that are circulating laptop kits. iPads are also available at Alum Rock, Educational Park, Evergreen, Hillview, and Tully Library Branches and have also been 100% checked out since shortly after their introduction to the system in January 2021. The iPads do not have data plans, and require the customer to have internet access, or checkout a hotspot as well.
- The San Jose Public Library Foundation combined several digital inclusion contributions to purchase and gift 600 HP Chromebooks to the Library. Chromebooks entered circulation in March 2021 and are available at all locations. Chromebooks have shown a gradual increase in circulation and are currently 60% checked-out. The Chromebooks are not connected to a data plan and require the borrower to have access to the internet, or checkout a hotspot.

The devices were gifted or granted to the Library, relieving the Library of the initial cost burden. The Library has paid for annual Google Licenses to operate the Chromebooks from the existing Library budget. Staff is currently studying the cost to operate, repair, and replace device parts.

Civic Building Wi-Fi Improvements: Constructed outdoor wi-fi networks at 16 Libraries and Community Centers, and 8 Parks

Moving quickly to expand access to high-quality connectivity, the City Council authorized the construction of 16 new outdoor wi-fi networks in library and community center parking lots. In February 2021 high-speed networks were open for public use at: Alum Rock Branch, Alviso Branch, Bascom Library & Community Center, Biblioteca Latinoamericana Branch, East Branch, Educational Park Branch, Evergreen Branch, Hillview Branch, Joyce Ellington Branch, Alma Community Center, Alum Rock Youth Center, Cypress Community Center, Evergreen Community Center, Gardner Community Center, Mayfair Community Center, and Willow Glen Community Centers. These locations were selected based on the Digital Inclusion Priority Index.

A smart cities pilot through the small cell public private partnership agreement with AT&T provided funding for the construction of networks at the following community centers: Almaden, Berryessa, Camden, Hank Lopez, Roosevelt, Seven Trees, and Southside. All outdoor networks funded under this partnership are operational.

Staff is analyzing additional libraries and community centers for outdoor wi-fi networks, and may bring additional projects forward in 2021-2022, but do not have a project list identified at this time.

Community Wi-Fi – ESUHSD Attendance Areas: Opened Overfelt and Yerba Buena networks; Advanced Independence, Andrew P Hill, and Oak Grove through to final design

The City Council approved the City's first partnership with ESUHSD to construct the first community wi-fi network area in 2016. The partnership, which leverages ESUHSD's technology bond as the sustaining funding source, uses City staff and contracts to manage the design and construction of an outdoor wi-fi network in high school attendance areas in Central, South, and East San Jose. The James Lick attendance area was opened to students in November 2017 and opened for public access in April 2019.

The construction of the William C. Overfelt and Yerba Buena attendance areas pre-dated the pandemic response, but the networks opened for student and public use during the pandemic. The project delivery team became part of the Digital Inclusion EOC branch, and the projects were moved under the SJ Access umbrella. On June 23, 2020, the City Council authorized the use of City funds to accelerate and fund the construction of the Independence, Andrew P. Hill, and Oak Grove High School attendance areas using a combination of federal Community Development Block Grant funding and City General Funds. The community wi-fi deployment in the Overfelt attendance area went live on June 30, 2020. The Yerba Buena attendance area opened for use in January 2021.

The focus of the 2020-2021 fiscal year was on 1) finishing and opening the Yerba Buena network, 2) administering procurements and issuing awards for the contracts necessary to advance the three new areas funded by the City, 3) managing the design and review process for

the three new areas, and 4) planning for additional fiber infrastructure installation to the Mt. Pleasant area to enable the construction of networks in the Mt. Pleasant and Silver Creek attendance areas.

The City Council authorized the City Manager to negotiate and execute Master Consulting Agreements with three vendors equipped to provide network design services for the three network areas in November 2020. The Independence area proved to be the most complex area, due to the large size and diverse vegetation and topography of the attendance area. Typical attendance area networks were planned and budgeted to support 200 wireless access points each. Through further analysis, staff prioritized service areas by using data from the District and the Digital Inclusion Priority Index, and the CDBG low-moderate income census tracts. The final build will total 340 wireless access points. CDBG made an additional \$1.7M available to cover the additional access points, for a total of \$2.7M to construct the area. The area will be under construction in December 2021 and is expected to be open for public use in March 2022.

Andrew P. Hill is designed for 200 access points, and will be under construction in January 2022, opening in March 2022. The Oak Grove attendance area required additional design services, which the current consultant, Infinity Communications, is no longer able to provide to the City. Therefore, an amendment to the SmartWave Master Consultant Agreement is required for the project to proceed, moving \$400,000 in existing funding from the Infinity Communications agreement and to SmartWave to complete the project design work. The amendment is expected to be presented to the Council for review on October 19, 2021. Staff believes that the Oak Grove area can be open for public use at the end of May 2022, despite this delay.

On June 29, 2021, the City Council approved a cost sharing agreement between the City and ESUHS. The agreement identified the specific costs for which each organization is responsible and the specific amounts expected to be reimbursed to the City. The agreement also authorized the cost-sharing of the installation of fiber to the Mt. Pleasant area. This installation of fiber allows community wi-fi networks to be constructed in the Mt. Pleasant and Silver Creek High School attendance areas. The fiber installation is managed by the Department of Transportation and is expected to be complete in early 2022.

The budget for each area was estimated based on the costs associated with the three existing networks. Given the volatility of the construction market at this time, it is difficult to predict if the bids to construct the networks will be aligned with past costs. The Independence area construction bids will be awarded in December 2021. Staff will reevaluate the projected costs and available budgets of the three new networks and return to Council with a recommended course of action if additional funding is needed to fulfill the City's commitment.

Community Wi-Fi – Opened Downtown Network

On April 12, 2016, the City of San José and Facebook entered into a demonstration partnership agreement to deploy high-speed capacity backhaul for improved Wi-Fi user experience as a pilot

project in the Downtown area. The equipment reached the end of its useful life and was decommissioned in December of 2020. Facebook, supported by Cambium Networks, provided a preliminary network design for replacement equipment and recommended strategic corridors to prioritize for coverage and access, based on traffic patterns and potential use. The Office of Economic Development provided strategic direction and approved the final corridors and network coverage area.

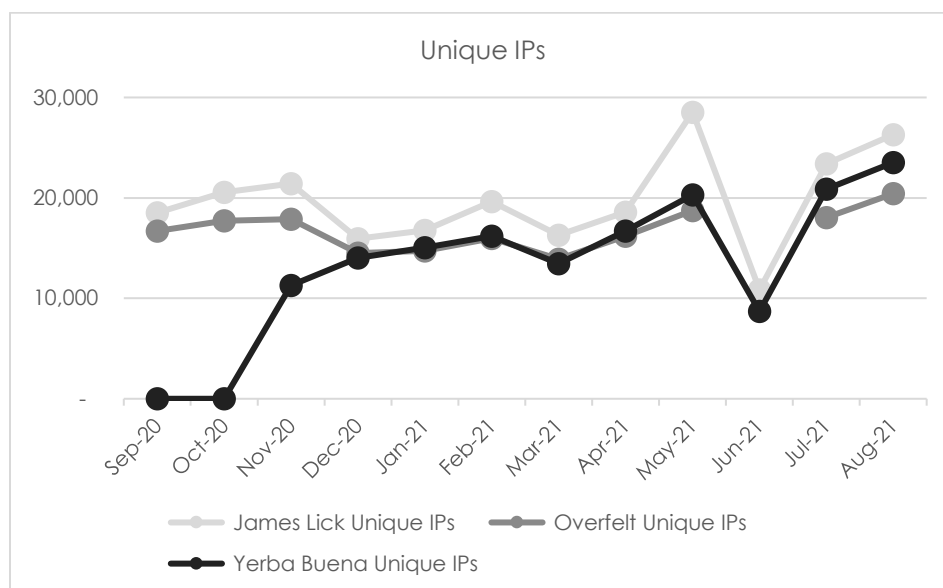
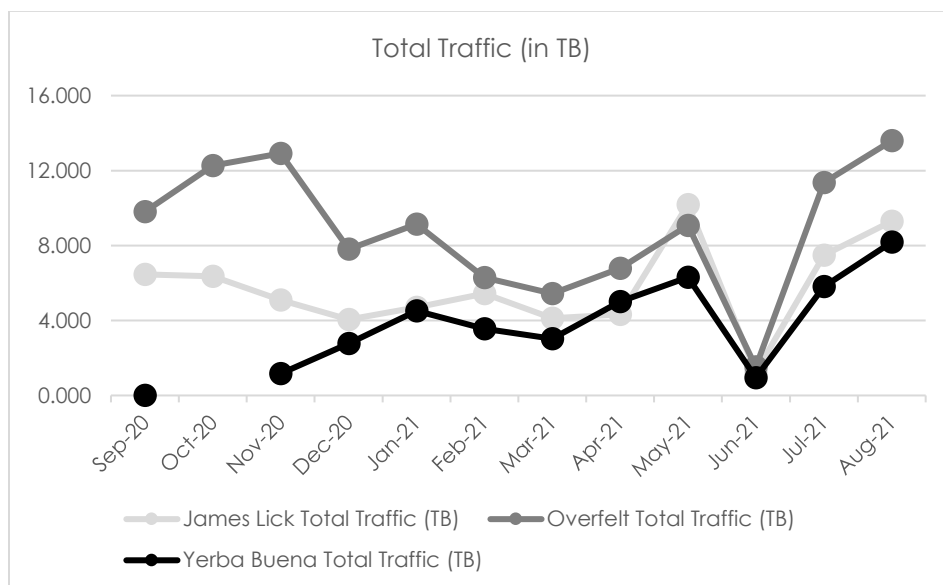
The new downtown network is built with 92 radios and 56 access points that provide customers with average download speeds of 70 Mbps and 44 Mbps upload. The network is an outdoor-only network and provides coverage along the Santa Clara Street corridor between SAP Center/Arena Green and City Hall; Market Street from St. John down through the South of First Arts district including Plaza de Cesar Chavez; St. James Park, and several smaller corridors.

Community Wi-Fi: Analysis of existing areas open for public use

In 2021-2022, staff will continue to prioritize the on-time delivery of new community wi-fi networks. In addition to opening these networks, a deeper analysis of the performance of the existing community wi-fi networks will be conducted. This analysis will include regular review of the network performance, number and length of logons, and a location-based review of lower-performing indicators.

In addition to maintaining regular system reporting, staff is preparing to re-launch a customer service survey via Survey Monkey and potentially through SJ311. The quantitative data from the network equipment will be analyzed alongside qualitative data from customers to troubleshoot areas that are either performing at lower levels than expected, or experiencing high demand but lacking the equipment to sufficiently meet the needs of the residents in the area. The City has allocated \$500,000 for the purchase and installation of additional access points in underserved areas. The analysis of both datasets is expected to produce a series of locations to expend these funds for the purpose of effectively increasing the service experience.

To ensure that residents are aware that they live in a community wi-fi coverage area, staff is preparing a multi-lingual outreach and awareness campaign which is expected to feature print, radio, mail, and large-scale visual marketing.



Network data indicates a sustained use of the networks in each attendance area, though seasonal variations in volume are evident in the data. The charts above visualize the total amount of data transmitted in each attendance area, as well as the total number of unique IP addresses (devices) accessing the network each month. This data includes student and community users. The reduction of data transmission and unique log-ons in June was the result of a data reporting failure.

Attendance Area	# of Unique IP addresses August 2021
James Lick	23,520

Overfelt	20,420
Yerba Buena	26,310

The data provided in the charts gives some insight into how the network is being used; James Lick as the longest operating network area has the highest number of unique logons while Overfelt shows the lowest number of unique logons but transmits the most data. The development of a stronger data aggregation tool and the inclusion of customer reported data, along with the expanded marketing and outreach campaign will allow for expanded awareness and enhanced data analytics on the performance of the network.

Ongoing Management

Over the next year, staff will engage in three efforts to further refine and optimize the management approach and sustainability planning for SJ Access.

1. Update the 2017 Digital Inclusion and Broadband Strategy: The 2021-2022 Adopted Operating Budget includes funding to update the 2017 study, expand its scope, and potentially scale the study Countywide. Procurement has not yet started.
2. Community Wireless Management & Sustainability study: The 2021-2022 Adopted Operating Budget includes funding to procure a consultant to provide recommendations on the organizational and funding structure necessary to sustain community wireless efforts, including wi-fi, beyond the existing relationship with ESUHSD. Procurement has not yet started.
3. Ongoing Federal Funding/Opportunities review: Continue to understand and aggressively pursue any and all funding available for last-mile connectivity solutions for San Jose residents.

CONCLUSION

The proposed device distribution plan meets the known need for connectivity and provides contingency collections that will allow adaptation, as needed. The proposed agreement with AT&T provides for highly competitive pricing, high performing devices, and provides the City with flexibility to expand the devices and lines of service, as needed. Continued advancement of community wi-fi projects and data collection will ensure that the City fulfill its commitment to connectivity for the many of the most under-resourced and unconnected neighborhoods and residents.

EVALUATION AND FOLLOW-UP

This report will be provided to the Neighborhood Services and Education Commission on October 14, 2021. Staff will keep the Council apprised of the project status through regular reporting via the regular EOC Updates to City Council.

An amendment to the SmartWave Master Consulting Agreement will be presented for consideration by City Council on October 19, 2021.

CLIMATE SMART SAN JOSE

The recommendation in this memorandum has no effect on Climate Smart San José energy, water, or mobility goals.

PUBLIC OUTREACH

This memorandum will be posted on the Committee Agenda website for the October 14, 2021 Neighborhood Services and Education Committee meeting.

COORDINATION

This memorandum has been coordinated with the City Manager's Office.

COMMISSION RECOMMENDATION/INPUT

The Library and Education Commission heard this item at the September 15, 2021 meeting and provided positive feedback.

FISCAL/POLICY ALIGNMENT

This action aligns with the City's existing Broadband and Digital Literacy Strategy, which identifies the current state of unconnected households, and stipulates that the City's role in closing the digital divide is to provide connectivity solutions and leverage private investment from existing telecommunications companies.

This action also aligns with the City's Education Policy – Council Policy 0-30. The policy states clearly the City's position that the educational attainment of San José residents is a critical necessity to several priority City outcomes such as a strong economy, a safe city, and thriving residents. The policy states that wherever possible, City assets should be utilized to reduce barriers to accessing education.

COST SUMMARY/IMPLICATIONS

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This action has no cost implications. All projects included in the Digital Equity/SJ Access program are fully funded through the Digital Equity Allocation of the American Rescue Plan Appropriation included in the 2021-2022 Adopted Operating Budget.

CEQA

Not a Project, File No. PP17-009, Staff Reports, Assessments, Annual Reports, and Informational Memos that involve no approvals of any City action.

/s/
JILL BOURNE
Director, Library Department

For questions, please contact Ann Grabowski, Division Manager – Digital Equity, at ann.grabowski@sjlibrary.org