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# Current and Future Uses of Broadband in Libraries in the Northern Central Valley of California

Prepared by CENIC in Partnership with Libraries in the Northern Central Valley of California

## Executive Summary

California's education and research communities currently leverage their networking resources under CENIC, the Corporation for Education Network Initiatives in California, a non-profit corporation created in 1997 in order to obtain cost-effective, high-bandwidth networking to support their missions and respond to the needs of their faculty, staff, and students.

In Placer County, we have both rural and suburban communities, and there are great disparities in many areas regarding access to technology. Some communities just got telephone service recently, and some have the best Internet service in the country. Our libraries respond to the whole range of needs and reduce the disparities in access among our residents.

— Mary George, Placer County Library

Work is underway to secure funding to connect all of California's public libraries to CENIC as a sixth segment, with the California State Librarian acting as the libraries' interaction point with CENIC. As a part of a pilot designed to demonstrate the impact of this initiative, nine county libraries in the Northern Central Valley of California will be connected to CalREN, CENIC's high-speed network, in the fall of 2013.

This report discusses needs in the communities these libraries serve, describes current uses of technology in these libraries, identifies the obstacles librarians face as a result of limited bandwidth, and documents ideas librarians have for using expanded broadband capacity to serve their patrons.

## Needs

The communities served by these libraries in the Northern Central Valley of California have a larger immigrant population and higher rates of poverty than other area of the state. Low educational attainment, illiteracy, and unemployment are among many serious problems, and residents need greater access to education and employment. Libraries in these communities play a critical role in providing this access and technology is essential to this work.

## Current Programs and Services

Despite limited broadband, librarians are working hard to assist people in taking full advantage of the technology resources the libraries can currently provide. Libraries are offering classes and tutorials to build digital literacy, providing access to critical health information, using digital media with teens, and supporting patrons as they search for employment.

## Obstacles

Limited connectivity prevents librarians from offering many programs and services they perceive would be of value to their patrons. Videoconferencing, streaming media, content creation, specialized software, longer sessions on terminals, and unlimited wireless access are simply not possible due to limited connectivity.

## Future Plans

Librarians are eager to expand their broadband enabled programs and services once connectivity is expanded to 1 Gb/s per library as a result of the partnership with CENIC. Ideas include:

- Technology programs for teens
- Reference questions answered by librarians circulating throughout the library with iPads
- Videoconferencing for meetings, staff training and public programs
- Collection development: E-books, digital magazines, and digital music
- Supporting individual and group online learning
- Digitizing community history materials
- Expanded computer tutorials and classes
- Genealogy research
- Tele-health applications, especially in rural communities
- Developing assistive technology centers
- Use of streaming media to bring the world into the library

## Background

### About the Libraries

Nine county libraries in the North Central Valley of California are participating in the pilot:

- Amador County Library
- Colusa County Library
- El Dorado County Library
- Nevada County Library
- Placer County Library
- Stanislaus County Library
- Sutter County Library
- Tuolumne County Library
- Yuba County Library

These County libraries were identified both because they are in an underserved region of the state and because of their physical proximity to the CalREN backbone. Many residents of these communities face high unemployment, obstacles to educational attainment, and a low standard of living relative to other communities in the state. Their libraries share a commitment to their communities and a commitment to the highest level of patron service.

> "We began loaning e-books less than a year ago and we cannot keep up with the demand for them. Our collection is growing and is now at 8,000 titles. 70% of our e-books are checked out at any given time. If 30% of our hard copy collection is checked out, our librarians feel they are doing well.
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> — John Fleming, Stanislaus County Library

### About CENIC – www.cenic.org

California's education and research communities currently leverage their networking resources under CENIC, the Corporation for Education Network Initiatives in California, a non-profit corporation created by the California research and education communities in 1997 in order to obtain cost-effective, high-bandwidth networking to support their missions and respond to the needs of their faculty, staff, and students. CENIC designs, implements, and operates CalREN, the California Research & Education Network, a high-bandwidth, high-capacity Internet network specially designed to meet the unique requirements of these communities,

and to which the vast majority of the state's K-20 educational institutions are connected. CalREN consists of a 3,800-mile CENIC-operated backbone, shown at right, to which nearly 10,000 schools and other institutions in all 58 of California's counties connect via leased circuits obtained from telecom carriers or fiber-optic cable. Over ten million Californians use CalREN every day.

There are currently five Charter Associates (CENIC participants, all connected to CalREN): the California K-12 System, California's Community Colleges, the California State University, the University of California, and Private Universities (Caltech, Stanford, and USC). CENIC also serves non-Charter research and education institutions when this is in the interest of their Charter Associates. A full list of the CENIC Associates can be found at www.cenic.org.

## About the Collaboration

Work is underway to secure funding to connect California's public libraries to CENIC as a sixth Associate, with the California State Librarian acting as the libraries' interaction point with CENIC. This would involve adding California's libraries to the fabric of education institutions already connected to CalREN. As a result, libraries would have the capability to collaborate more seamlessly with one another as well as draw on content, expertise, and opportunities from schools, colleges, and universities, extending these capabilities to individual libraries and library patrons statewide and thereby enhancing access to information, research, and credit/non-credit distance learning.

"Expanded bandwidth will allow us to record events taking place in the library and share them with all members of our community on our website.

— Wendy Burke, Colusa County

The nine county libraries in the Northern Central Valley of California are one of three groups of libraries in California participating in a pilot project to demonstrate both the feasibility and benefits of joining CENIC's high speed network, CalREN. The other two pilot groups are the San Joaquin Valley Library System and the Peninsula Library System. By the fall of 2013, these libraries will increase their connectivity to 1 Gb/s.

This report describes current uses of technology in those libraries, discusses the obstacles their current limited connectivity creates, and documents ways in which librarians intend to use the greatly enhanced broadband capacity as a result of their participation in CENIC to more effectively serve their patrons.

## Need for Technology Access and Training in Northern Central Valley Communities

The communities served by these libraries have larger immigrant populations and higher rates of poverty than other area of the state. Low educational attainment, illiteracy, and unemployment are among many serious problems. English is the second language for many residents, and they need greater access to education and employment; libraries play a critical role in providing access to these resources. While the main county libraries are in cities or towns, their branch libraries are mostly rural and located in areas with limited access to the Internet and few services.

The **Amador County** library jurisdiction is primarily made up of small, rural communities. Some communities are so rural that there is limited cell phone access and limited Internet access as well. The population is older (mean age is 42), and a significant number of residents are over 65. Residents have little local access to higher education as there are no colleges in the region. Residents face high unemployment, and many people have been laid off as employers have left the community. When residents begin to look for jobs, they often realize they need to improve their computer literacy in order to find a new position.

"As a part of our literacy program at the Sutter County Library, there are ESL, citizenship, and adult basic education classes, as well as classes in civics and family literacy, offered with funding from the Title 2 program. Two full-time staff and 80 volunteers serve 700 students, and the entire program uses the four computers in a small office. We received 20 Chrome books from the State Library and, as soon as the connectivity is in place, we will use them in all literacy classes. Right now bandwidth makes their use impossible although they are desperately needed.

— James Ochsner, Sutter County Library"

**Colusa County** libraries also serve small, rural communities and the total population of the county is 22,000 people. The population of the largest town is 6,000 and the smallest is 200. The towns are spread out across the county; in many cases, children are being bussed 50 miles in order to go to school. In some communities, Internet access is only available via satellite.

Approximately 27% of residents in the Stanislaus County library jurisdiction are illiterate. The economy is struggling: many businesses have left the area, and there has been significant job loss as the 19.2% unemployment rate demonstrates. There is a large homeless population in the county, a significant seasonal population of migrant workers, and a high foreclosure rate. Given these realities, and the tax-based funding of the library, it is difficult to maintain a high level of service. Librarians are increasingly relying on technology to meet the needs of their patrons

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Our librarians have always done their best to keep up with technology and the increasingly online world with limited resources. We created our website ourselves from scratch and are pleased with the result. We have built our digital collections and resources. It is important to us that we stay current and, although we are not a wealthy community, provide our patrons with state of the art service.

— Jeanne Amos, El Dorado County Library

Unemployment is high in Sutter County as well, and this is the most serious challenge the community is facing. About 20% of residents work in agriculture, and this work is seasonal and insecure. As in other towns in the region, the population in Tuolumne County has dropped significantly, and they have lost several large businesses over the last few years (a paper mill, a major department store). These are very rural communities; many people do not have computers and until 18 months ago, Internet access was limited.

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Despite these challenges, these communities have much strength. Several librarians describe their community as "tight-knit" and remarked that people know one another and look out for one another. In communities like this, libraries become a center of activity where people can meet and help one another. The library is a connection point, connecting residents to one another and to the broader world of information and ideas.

## Current Broadband Enabled Programs and Services

Despite very limited connectivity, libraries in the Northern Central Valley are using available resources to serve their patrons. Library computer terminals are heavily used, and librarians report that top uses include e-government, online classes, shopping, travel planning, social media, and job searches. Library patrons also have access to many online reference services including AskNow's law librarian service which lets patrons ask questions and get answers live in real-time from law librarians throughout California via the Internet. Digital content including e-books and audiobooks are available through OverDrive, and libraries have been expanding their collections of e-books over the last 2 years. Librarians regularly help patrons use their mobile devices to access e-books, and a number of libraries offer formal classes on this topic. Some libraries have sought out volunteers to expand their capacity to help patrons with their technology needs.

> "Changing technology demands more broadband capacity. As more and more people walk into the library with a laptop or smart phone, the bandwidth use goes higher and higher. The library's proprietary software for RFID technology and for operation of OverDrive uses a great deal of bandwidth, too. As a result, our library users find that PDF files are slow to load, no streaming media is possible, and the whole system runs very slowly at peak periods, especially right after school."
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> — Mary George, Placer County Library

The Amador County Library has created a small Lifeskills Computer Learning Lab where patrons can receive help with all aspects of the job search process. A volunteer comes in two days a week and works with individuals to help them achieve the goals they have set for themselves. Their literacy coordinator also helps with job applications, unemployment applications, and resume preparation.

The Tahoe branch of the El Dorado County Library has begun loaning iPads to their patrons loaded with some of the best apps for children. Librarians are concerned that the content young children access on iPads is not of the highest quality. They want to educate parents about the range of high quality books, games and websites available for children. Building on their commitment to serving young people, two of their library branches have teen councils, and they host video tournaments and Wii tournaments. Neither library has much equipment, just a few video cameras.

Often, equipment is brought in by the teens that are participating. One of the teen participants made a video about the library for YouTube called "Night of the Living Librarians."

The El Dorado County Library recently received an Innovation Grant from Northnet for a local history project. After seeing a demonstration of an icell kiosk at a California Library Association conference, they knew they wanted to utilize this technology to tell the story of their local history. They are producing a video on the history of the county for display on this kiosk and have found a volunteer videographer and an editor to work with them on this project.

The Stanislaus Library System hired their first Digital Services Librarian, John Fleming, last October. His job is to assist all libraries in finding innovative uses of technology in the library and creating technology enabled programs and services within the constraints of budget and equipment. Bridges to Technology is a program that was originally created by the Stanislaus County Library in partnership with The Great Valley Center, Central Valley Digital Network, and the Corporation for National and Community Service to address the area's digital divide. This program promotes access to technology and information to all people in Stanislaus County. The computer classes administered through this program are taught by trained Stanislaus County Library volunteers dedicated to the issue of Digital Literacy on the topics such as Microsoft Word, Excel, Internet Basics, Computer Basics, and E-books. The library also has a strong interest in engaging teens. They regularly hold Wii gaming contests and video contests for teens. In a recent contest, teens were asked to make a video trailer of their favorite book, and these are posted on the library's YouTube channel. The library has also seen a surge in interest in e-books.

As technology becomes more important, libraries are redesigning their facilities and reprioritizing their equipment budgets. For an overview of the current facilities and equipment supporting patron use of technology in the libraries, see Section X, Table 1.

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> Even in smaller and rural libraries that do not have staff dedicated to technology, there is still a huge need for high-speed Internet access and technology training. It is often the only access to technology that our patrons have. I hope they can count on the library to help them better their lives and enrich their leisure time. Technology in rural libraries can create a better community and a better future for our region.
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> — Jessica Hudson, Nevada County Library
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## Significant Community Partnerships

In small communities with limited resources, organizations must work together to serve residents well. Libraries in the Northern Central Valley are partnering with a range of community organizations to maximize their resources.

- The Amador County Library is partnering with the Amador Community College Foundation to assist local students in taking online classes at the library. The library also proctors exams.

- The Colusa County Library enhances their services to members of the Hispanic community by providing literacy materials for classes offered in a community center. In addition, literacy students at the library go to the community center to have conversation with ESL classes. They also have an active partnership with the Family Action Centers. The primary function of these Centers is to distribute food. Recently, the library brought in a program that sells refurbished computers at very low cost, and the library offered training to individuals who purchased one of these computers.

- Many libraries work closely with their First 5 Commission. This organization funds early literacy programs in a number of libraries. They collaborated with the El Dorado Libraries to create an iPad pilot project focusing on what parents should be looking for in a quality app for their children.

- The Placer County Library works closely with the County Probation Department to offer a literacy program to people on probation. They want to expand this program by training people who are or have been incarcerated to be literacy volunteers.

- The Sutter County Library works closely with OneStop, an organization in the community that counsels the unemployed. OneStop has a computer lab in their facility and the library coordinates with them to provide information and services to assist job seekers.

## Obstacles Created by Limited Bandwidth

Despite these innovative efforts and partnerships, limited connectivity continues to prevent librarians from offering programs and services they perceive would be of value to their patrons. Videoconferencing, streaming media, content creation, specialized software, longer sessions on terminals, and unlimited wireless access are simply not possible due to limited connectivity.

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Our community room is used 15 times per week by a wide range of community organizations including the genealogy club, homeless advocacy group, book clubs, and business training programs. The Mousetrap Computer Club has met there for the last several years. Members would bring in their laptops and play games and do programming and other computer-based activities. As membership in this club grew and computer activities became more bandwidth-intensive, the currently available connectivity kept failing them and consequently, they no longer meet at the library. Without upgrading our technology and connectivity, we will no longer be able to serve our community users.

— Mary George, Placer County Library

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Amador County librarians report that computers are very slow and that staff computers can take up to five minutes to boot up in the morning. At peak times, all the computers in the library are in use, and the response time becomes sluggish. All branches of the El Dorado County Library experience slow connectivity, and many people wait in line to access computer terminals. Patrons have one hour at most on slow computers and often are not able to complete their job applications or research.

Librarians at the Stanislaus County Library have experimented with videoconferencing for author talks and staff trainings. However, with the current connection speed they experience delays, movement is slow and splotchy, and people grow frustrated. None of the library computers have sound because bandwidth does not allow this. Because of this, patrons cannot complete certain training courses because they are sound-based (for example, a restaurant training course required of newly hired servers).

At many branches, wait time for computers can go beyond one hour and people are almost always waiting to get to computers. Despite this, librarians are hesitant to add more computers given current connectivity because the network would become even slower. Finally, staff are asked not to do certain computer tasks

when libraries are open to the public (for example, staff can't stream a webinar during public hours). This limitation requires the library to sacrifice its own operational needs in order to serve its patrons.

In Sutter County, literacy programs cannot be developed to the next level because of bandwidth constraints. Equipment purchased for these programs sits idle since it cannot be used until bandwidth is expanded. There are services they would like to provide, such as videoconferencing and streaming media, but they are prevented from doing so due to limited bandwidth,

Two years ago, the Yuba County Library received a donation from a private foundation to buy thirty computers and a dedicated server. The public was excited about this technology upgrade as the new computers created an expectation among patrons that they would be faster. But these computers are as slow as the old computers due to limited broadband, leaving the public frustrated and disappointed. The infrastructure is in place to receive a connection, but broadband is very limited.

## Future Plans: Broadband Enabled Programs and Services

Librarians are eager to expand their broadband enabled programs and services once the obstacle of limited connectivity is removed. Below are some of the ideas librarians have for programs and services once connectivity is expanded to 1 Gb/s per library as a result of the partnership with CENIC.

In Amador County, librarians plan to create an area in the library where a wide range of e-readers are available for patrons to "test drive" their options and determine which might best meet their needs. They would also like to purchase a number of different e-readers, load them with content, and allow patrons to check them out to read in the library. Librarians also aspire to provide more educational opportunities to their patrons. They plan to create a computer lab where a range of courses are offered and where groups of students enrolled in online courses could take classes together. They have designed a "technology buddies" program with the local high school, in which high school seniors will offer technology assistance to library patrons after school. They are currently in the process of trying to recruit students for the program.

Finally, librarians report that a tele-health program in the library would be of tremendous benefit to the community, as some areas only have a doctor in town one day a week.

In Colusa County, as in many communities in the Northern Central Valley, the libraries are true community centers, and it would be a real service to the community to record library events and make them available for patrons to access. In towns this size, everyone knows each other, and people come together often. Recently, a family who lost their young son donated $2,500 which was used to create a toddler literacy area. The dedication ceremony was very moving, and community members who could not attend would like to have seen a recording of it online. Other library events

> We are committed to demonstrating the value of technology to our patrons. People find out that they need technology when someone explains to them all the things they are able to do that they could not do before. There are many people in the county who think that technology has passed them by, and that it is too late for them to derive any benefit. The library can show them how important technology can be in their lives.
>
> — Mary George, Placer County Library

could be taped and put online as well, including story time, special events, and literacy games for children. Recently, the library offered "Geek at the Library," a technology program for teens. Participants took pictures and would like to have put them online so their parents could download them.

Expanded broadband would enable librarians to use rich media in the library. There are many uses for this and Librarian Wendy Burke describes two: "There are certain questions that are asked over and over again by our patrons. We would like to produce 3-5 minute online tutorials for frequently asked questions. We have also discussed approaching community members to give book talks. We would give them 3 minutes to entice people to read a specific book. This would be a great way to get teens involved in doing book reviews."

> We want our library to be a community activity center. In an increasingly virtual world, the space that was built for storage and retrieval of hard copy materials can be transformed. We are asking ourselves what this could look like and are hoping this question will be answered through an organic process of exploration with the community driving it.
>
> — Kevin Mallon, CDSA Director, Yuba County

Librarians recognize that expanded bandwidth has the potential to help them trim their administrative budgets. For example, by using videoconferencing for some staff meetings. With the distance between communities, it costs over $1,000 for staff to meet for 3 hours. Face-to-face online time would be invaluable. In addition, switching to Voice-over-IP phone service would allow them to realize additional cost savings.

There are three priority areas of community need that librarians in El Dorado County hope to address through expanded broadband. First, there is a need to document and share local history. Although the gold rush started in El Dorado County, there is very little available on this topic online. The local history museum is part of the library and is stuffed full of information, documents, photographs, and other materials; virtually none of it has been digitized. When a fourth-grader has to do a report on the gold rush, an El Dorado County history website should be the first thing to come up in a web search. In addition to the materials in the history museum and in people's homes, there are long-time residents who are in their 90s and will not live long. It is critical to capture their knowledge and experience through local histories, and to make this available on-line.

Secondly, the library would like to play a role in stimulating the economy and addressing unemployment. Connectivity is so poor in some of the rural areas that people cannot start a business from home or operate a website. Librarians would like the library to be part of economic development activity and support small business start-ups, although the role of the library and specific strategies to be used are not clear.

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Our librarians have always done their best to keep up with technology and the increasingly online world with limited resources. We created our website ourselves from scratch and are pleased with the result. We have built our digital collections and resources. It is important to us that we stay current and, although we are not a wealthy community, provide our patrons with state of the art service.

— Jeanne Amos, El Dorado County Library

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Finally, tele-health is a priority for them once broadband is expanded. A number of medical grants have been investigated to play a role in improving health outcomes in the community, but they have not had the ability to pursue this further. A number of health care organizations have also approached them to investigate whether the library could be a vehicle for distribution of health care information and a site for consulting with health care personnel. The need is great, as most people need to travel to Sacramento to consult with specialists. This is a top priority area for program development. In Placer County, digital materials such as e-books, DVDs, music, and magazines are an increasing part of library collections, a trend which will only increase over time. With bandwidth expansion, librarians are eager to change their collection development practices to include streaming media (DVDs and music). Staff trainings will also benefit from broadband, enabling staff to do more training online, attend webinars, and participate in virtual staff meetings. The head librarian would like to buy a device for every staff member so they can become more deeply acquainted with the features and benefits of e-readers. The library currently has a thriving literacy program and it is increasingly important to Integrate technology into the literacy program for both program operation (conducting initial literacy assessments on iPads) and program content (classes on digital literacy).

The Friends of the Library in Sutter County have been collaborating on a long-term plan to create a new meeting room that would feature the latest technology, including a projector built into the ceiling. This room will be used by study groups,

special meetings, and classes. For example, they intend to collaborate with a workforce development organization to provide direct instruction for people starting small businesses

Children's services are very popular at the Sutter County Library, and the children's librarian is talented and visionary. They would like to create a more interactive, up-to-date children's room in the library. The six PCs they have now confine children to their desks. They are planning to reconfigure the children's room to feature technology and are looking at other libraries and children's museums as models. They envision a space in which children can walk up to touch screens, access games or books hanging on the wall (some of which would be electronic), and learn in a more interactive, immersive environment.

In the short term, Tuolumne County librarians expect to see an increase in patrons and use because the computers they do have will run considerably faster. They are beginning to consider ways to meet the computer education needs of a larger group of patrons and hope to partner with the County Office of Education to offer computer classes regularly. They are upgrading their community room to enable them to do live streaming of author talks, events, and speakers.

Yuba County Library has made a significant investment in equipment, which cannot currently be used fully due to limited connectivity. High-speed broadband will finally support the full use of e-readers, terminals, and laptops and begin to stem the tide of complaints about slow connection speed. Librarians plan to make the existing community room into a multimedia room with video-conferencing and streaming media capability. This multimedia room could be better used by a whole variety of groups in the community as a result of the infusion of technology.

## SPOTLIGHT – Reinventing the Library:
## Collaborative Technology Center in the Nevada County Library

Two years ago, Steve Monaghan, CIO for Nevada County, learned that a grant funded project would provide Internet connectivity through CENIC that would be twenty-five times faster (from 40 Mb/s to a 1 Gb/s). He worked with incoming County Librarian Jessica Hudson to make it a reality in Nevada County. She knew that it would fundamentally change the ways in which she would be able to serve her patrons. She also knew that the library would have the fastest Internet speed of any library in California and that this capacity could be leveraged to help eliminate the other obstacles she faced in the provision of technology programs and services: facilities, equipment, and limited technology training opportunities for the public.

The main branch of the Nevada County Library was built in 1991, and was not designed to accommodate the amount or variety of technology that is essential to library operation today. Their computers are often used to the limits of their connection capacity, and use is limited to one hour per patron. On an average day they have to restart their router frequently, 3 or 4 times per day.

Librarians in Nevada County had long recognized the increasingly central role for technology in the library. Despite the limitations of current facilities and connectivity, technology is heavily used at the library. On any given day, the computers in children's section are being used for homework, teens are playing play games in the teen area, and adults are using terminals for a wide range of purposes, including searching for information about benefits and other government services. The library has invested in an extensive collection of e-services and databases, and provides eBooks and audiobooks through LibraryToGo, a service from OverDrive that supplies digital media to libraries across the nation.

The prospect of high-speed broadband and the needs of their community inspired them to plan and search for grants for a new Collaborative Technology Center to dramatically expand their services to the public. This center is an addition to the Helling Library that adds 2,000 square feet of space dedicated to technology and community development. The space houses 15 PCs, 5 Macs, 20 iPads, 20 netbooks, small class sets of e-readers, a 3-D printer, videography equipment, 68 seating spaces, a classroom, and two whiteboard-painted collaborative use rooms. The Collaborative Technology Center is publically accessible and is used for technology classes and programs, small group work on classes or projects, workforce development, digital literacy classes and special events. Funding was provided by the California State Library's "Pitch a Grant" program, through AB2766 funding and through collaboration with CALWorks.

## SPOTLIGHT – Reinventing the Library: Librarian for Digital Services

Librarians in the Stanislaus County Libraries are currently spending time combatting technology rather than using it, and the next generation equipment that high speed broadband will enable them to use is much more user-friendly. In order to support patrons and librarians to take advantage of the opportunities high-speed broadband will create, Stanislaus County Libraries created the position of Digital Services Librarian. John Fleming, appointed to that position in October of 2012, has a host of innovative ideas about transforming library operations and patron service through technology, made possible by the connection to CalREN.

- Library staff will use iPads to consult with patrons when answering reference questions, bringing the reference librarian out from behind the desk.

- Virtual desktops (VDI) will be used to maintain software in the cloud so that library technical staff no longer support software on individual computers. This will allow great flexibility in library operations. For example, by using this technology, all the computers can be turned into children's computers immediately.

- Librarians envision the creation of an all-digital library. The library would not have hard copy books but would have digital materials, terminals, loaner laptops and iPads, etc. There are several models for this around the country.

- Stanislaus County Librarians plan to update their auditorium and meeting rooms so that they can stream content into these facilities.

- There is a great need to expand their literacy programs. Currently, there are 150 volunteers and limited seating in their computer lab. By virtualizing the literacy program, people can check out laptops and work with a volunteer anywhere in the library.

- Librarians hope to create a maker space where patrons can create their own digital content, making movies, creating animation, and using technology for other creative projects.

- Once bandwidth is expanded, librarians would like to use RFID tags to enhance security and enable self-check-out.

## Sources of Information on Technology and Libraries Identified by Interviewees

- Library Journal
- American Libraries
- American Library Association publications
- Association of Rural and Small Libraries (ARSL) listserv
- California Library Association (Calix) listserv
- California Library Association Conference
- Techsoup
- Northnet Library System updates
- Digital clipping service
- Publishers Weekly
- Wired Magazine
- Institute of Museums and Library Services
- Pew Internet and American Life Project

## Experts on Technology in Libraries Identified by Interviewees

- Sacramento Public Libraries
- Michael Liang, CTO, San Francisco Libraries
- San Rafael Public Libraries
- Contra Costa County Public Libraries
- Rancho Cucamonga Public Libraries
- Patty Wong, Yolo County Library Director
- Jessica Hudson, Nevada County Library Director
- Jeanne Amos, El Dorado County Library Director
- Roseville Library: collaboration with Power-up, who donated a portable computer lab

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## Table 1: Current Facilities and Equipment

| | Amador County | Colusa County | El Dorado County | Nevada County | Placer County | Stanislaus County | Sutter County | Tuolume County | Yuba County |
|---|---|---|---|---|---|---|---|---|---|
| Branches | 4 | 7 plus mobile | 6 plus mobile, museum | 6 | 11 and mobile | 13 | 4 | 3 plus mobile | 1 main |
| # Borrowers* | 26,000 | 5,500 | 85,000 | 60,716 | 131,000 | 250,000 | 40,000 | 28,000 | 42,000 |
| # Annual computer users* | 93,962 | 15,485 | | 38,819 | 69,000 | 196,000 | 115,000 | 39, 346 | 44,000 |
| # Public terminals w/ internet access | 25 | 23 | 45 | 44 | 76 | 129 | 40 | 31 | 30 |
| Estimated % reference questions re: computers | 75-80% | 20% | 75% | 50% | 70% | 25% | 70% | 40% | 30% |
| Time limit on computer use | 2 hrs. | 30 minutes, more if free | 30 min. | 1 hr, 2 hr laptops | 1 hr. | 2 one hour sessions per day | 2 hrs. | 3, 15 min rest, 1 hr | 2 hrs |
| Private Carrels or group study rooms | No | No | 3, no terminals | No | 3, no terminals | 2, no terminals | No | No | No |
| Classrooms with terminals | 1, 3 terminals | No | No | 3, main | No | No | 1, 4 terminals | No | No |
| Meeting rooms with terminals | No | 1, no terminal | Yes, no terminals | 1, no terminals | 5 no terminals | No | No | 1, no laptops | 1, no terminal |
| Loaner laptops | No | 10 | No | 40 | No | No | 20 | No | No |
| Scanners for public | No | No | No | No | No | 1 public, 5 staff | No | No | 2 |
| Video Conferencing | No | No | No | Yes | 1 branch, not used | 1, main | No | No | No |
| Public wireless | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| I pads, digital readers for loan | Staff only | No | Yes, 1 branch | 10 staff demos | No | No | 12 | No | No |
| Library use of social media | No | Facebook | Facebook | Facebook Flickr Pinterest | Facebook | Facebook Pinterest YouTube Flickr Twitter | No | Facebook | No |
| Current network capacity, main | 6-10mb/s | Shares 1 gig with Cty Ed. 3 mbps or less in branches | 45mb/s main; 1.5-3 branches | 40mb/s | 45 mb/s | 20 mbps total 6 branches with 1 T1 6 branches with 2 T1s | 10mg/s all libraries main 6.4mb/s | 3 mb/s | 3 mbps |
| Technology plan | Not current | No | No | Yes | Yes | In process | No | No | No |
| In-library technology support personnel | County IT | County IT | 1 It for system | 1 | Yes, 1 | 2 | 1 | County IT plus in house | 2 staff plus county IT |
| **Edge Initiative Participant | No | Yes | No | No | Yes | No | No | No | No |

*Source: California State Library Website, 2010-11 General Profile

**The Edge Initiative is a voluntary, assessment program being piloted through the California State Library, www.libraryedge.org.