

Challenges of Closing the Digital Divide

BY CORY GOLDEN



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California has reached 97 percent broadband deployment and could hit its statutory target of 98 percent by the end of 2015. Although broadband service is available, not all residents are able to afford it. For residents of small communities and older neighborhoods with clunky broadband or no broadband access at all, being counted among the 3 percent left out makes all the difference.

Just ask Cecilia Aguilar-Curry, the mayor of Winters. For six years, she has worked to close the digital divide in her city of 7,000 people on the Sacramento Valley's western edge.

Winters Offers a Snapshot of the Struggle

Aguiar-Curry will tell you about the children who sit outside the Winters Public Library after it closes so they can use its wireless access to do classwork, because they don't have a reliable Internet connection at home, or about international agricultural companies unable to conduct business during hours when local broadband demand is high. She may even tell you about the young couple working in San Francisco's booming tech industry who approached her to say, "Mayor, we'd love to move to Winters and telecommute — if only it had adequate broadband."

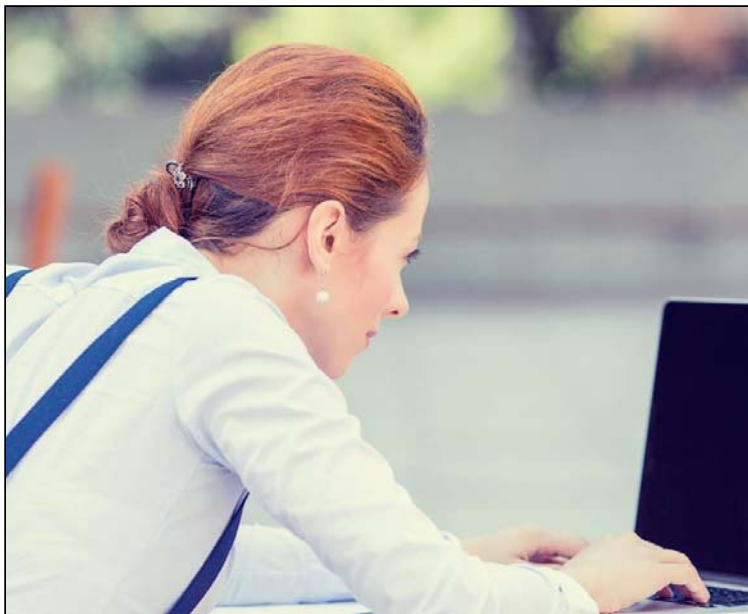
"Rural communities had to wait for the railroad, we had to wait for telephone lines, and we had to wait for running water," Aguiar-Curry says. "How long must we wait for this?"

Winters' leaders aren't sitting still. They're pursuing several paths in hopes of securing broadband, perhaps as fast as 1 gigabit per second, with deployment beginning next year.

According to Sunne Wright McPeak, president and CEO of the California Emerging Technology Fund (CETF), Winters epitomizes the state's small communities in terms of the challenges related to broadband deployment. McPeak says, "California is a leader in technology and applications companies, but it still has large pockets that are unserved or underserved by broadband."

The California Public Utilities Commission (CPUC) established CETF in 2005 with \$60 million in seed capital contributed by AT&T and Verizon as a public benefit from mergers. CETF's mission is to close the digital divide. Its goal is to achieve 98 percent access to broadband at home for residents and 80 percent of residents adopting broadband by 2017 — with no region or demographic group falling below 70 percent.

In January 2015 the Federal Communications Commission changed its definition of "broadband" to 25 megabits per second (Mbps) for downloads and 3 Mbps for uploads. The CPUC standard remains 6 megabits per second in download speed, 1.5 Mbps for uploads. (See "About Bits and Bytes" below for an explanation of the terminology.)



A Field Poll released in June 2015 found 79 percent of Californians have a broadband connection at home. Several demographic groups remain behind, however. They include households earning less than \$20,000 annually (65 percent) and Spanish-speaking Latinos (63 percent).

Aguiar-Curry's effort to close the digital divide in her community began during the Great Recession. She says, "Instead of wallowing in pain, I asked myself, what are we going to do about the economic downturn in Winters? I thought, eventually housing is

going to come back, and the first thing people ask a realtor is, 'What are the schools like?'"

The mayor found the city's classrooms had fallen behind the technological times. She helped make the case for investment to Yolo County neighbors the Yocha Dehe Wintun Nation, which awarded a pair of grants totaling about \$600,000 to the local Parent Teacher Association and Winters Education Foundation.

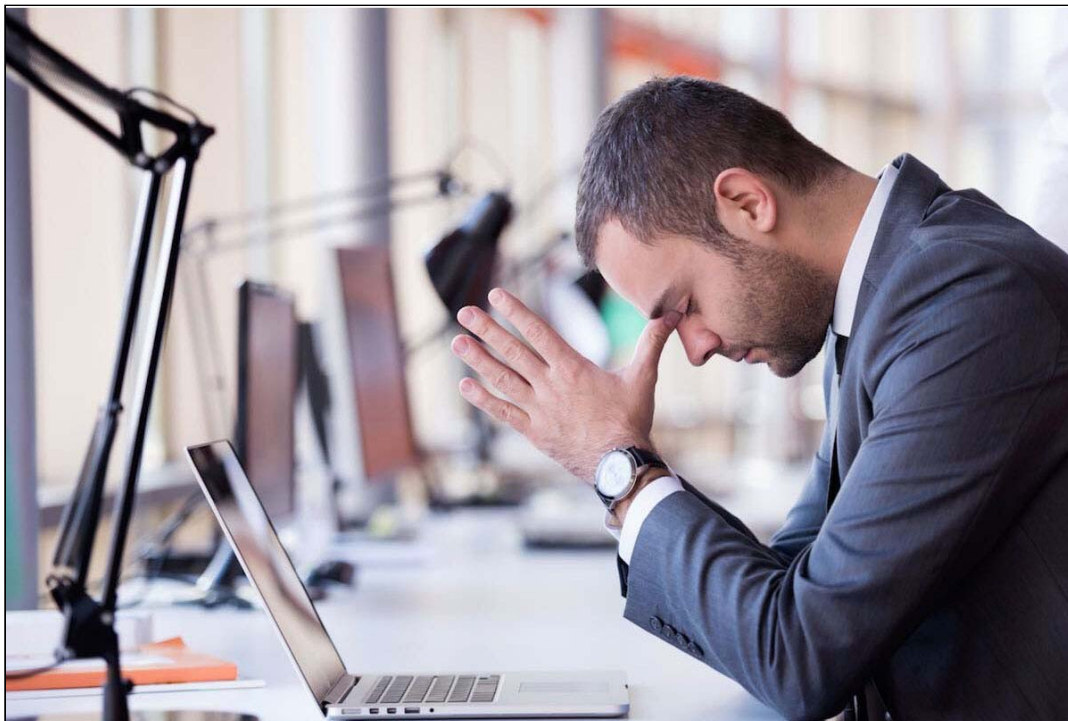
The Winters Joint Unified School District has since leveraged that initial funding into more than \$14 million, including the passage of a school bond, enabling the district to modernize learning tools and pay for teacher training.

Students and their families still lack reliable Internet access at home, however.

Aguiar-Curry began making regular treks to Sacramento, where workshops afforded her the chance to sit down at the table with large service providers like AT&T and Verizon.

"I asked what I thought was an easy question: When are you going to come to rural communities? They said, 'We're not.' And quite frankly, I get it," says Aguiar-Curry. "The infrastructure needed upgrading in the city; the urban development and the economies of scale are all so much different. It just doesn't pencil out. We're not a priority."

If she heard the cold, hard truth from companies providing Internet service, Aguiar-Curry received a warm welcome from representatives of state and federal agencies. Don't stop, they told her, keep pursuing what you want.



Slow connection speeds can severely limit business activity.

Strategic Plan Examines Speed and Infrastructure

Aguiar-Curry, Yolo County Supervisor Don Saylor and others invited representatives of the CPUC and various organizations to a “Yolo Leaders” group meeting in May 2013. That discussion led to the creation of the Yolo Broadband Strategic Plan. Coordinated by the Yolo Local Agency Formation Commission (LAFCo) and published in March 2015, the plan examines the current and future broadband needs of the county and its four cities and lays out a path to next-generation broadband.

The plan looks at more than 1,000 Internet speed tests throughout the county. About half those locations were underserved compared with CPUC maps that show them as served.

Christine Crawford, Yolo LAFCo executive director, explains that the tests were a way to respond to the speeds furnished to the CPUC by Internet providers. She says, “Part of what we set out to do is say, ‘Wait a minute, you broadband providers are putting the information out there that makes it seem like everyone is so well-served that no competitor has a reason to come in.’ We need to put out the real information so that people will realize, ‘Oh, there *is* a market opportunity there.’”

The plan’s survey found significant speed disparities, even within the county’s four cities. While large businesses paid for upgrades, small- and medium-sized businesses just made do. The survey also found that the agricultural industry said broadband was its top need.

“When you’re a planner, you think about the roads and sewer and lights — the private companies always took care of the Internet,” Crawford says. “Now, somebody has to step in and fill the spaces that market forces didn’t fill. That was a huge piece of the study for us, just getting cities and the county to put it on the radar — understanding that broadband is a piece of infrastructure that we need to look at for conditions of approval, broadband policies and General Plans.”

In Winters, which is served by three Internet service providers, the strategic plan’s authors compared 72 speed samples from residential subscribers with 2013 data given to the CPUC by providers. That information showed full coverage across the city and download speeds in the downtown area up to 24 Mbps or even up to 100 Mbps in some places. Instead, the test found large swaths of the city were underserved, with speeds that were a fraction as fast as promised: only up to 10 Mbps download and 1.2 Mbps upload for cable broadband and 7 Mbps download and 1.1 Mbps upload for DSL broadband.

Eighty-nine percent of Winters residents surveyed reported speeds of less than 6 Mbps. Half said their service was unreliable, and 59 percent said service was not fast enough for their needs.

“Those speeds are not adequate for municipal needs, much less what residents expect,” McPeak says.

Business owners were even less pleased: 65 percent said their service was unreliable; 64 percent said it was not fast enough for their needs.

The strategic plan also found that compared to customers in the county’s other three cities, Winters’ customers were paying more — for example, \$100 to \$124 monthly for 1.9 Mbps.

The Economic, Health and Public Safety Impacts

The cost of connectivity in Winters makes it difficult to attract new businesses. To secure reliable service, the authors concluded, a business might pay over \$1,000 per month.

The lack of high-speed connectivity also hampers access to health care in the city. The Winters Healthcare Foundation reports that serious connectivity issues prevent doctors from treating patients whenever cloud-based medical records are inaccessible.

Winters dove right into the strategic plan's first recommendation: conducting a study to determine the feasibility of constructing a citywide broadband network.

Other recommendations include:

- Incorporating broadband as a public utility in the city's General Plan and policies, like dig-once and engineering standards;
- Maintaining broadband in the city's geographic information system (GIS);
- Evaluating ways to streamline permitting processes;
- Incorporating broadband into the city's development impact fee and capital improvement plan; and
- Evaluating fees to make sure they do not discourage broadband investment.

The plan also stresses regular coordination with entities like Pacific Gas and Electric, which is building a training center in Winters; Yolo County Housing, which maintains low-cost housing outside the city's boundaries; and Yolo County.



The city is pursuing broadband along several parallel paths. Winters hopes to make a public safety funding argument to the First Responder Network Authority (FirstNet). Created by a 2012 act of Congress and funded with up to \$7 billion, FirstNet has been given the mission of building, operating and maintaining a nationwide broadband network devoted to public safety.

Winters sits about 8 miles from the Monticello Dam, which retains Lake Berryessa. The area is susceptible to earthquakes, slides along the Blue Ridge, and wildfire. From July 22 to Aug. 5, 2015, the Wragg Fire burned more than 8,000 acres near the lake.

Winters City Manager John Donlevy Jr. says bringing fiber optic cable to the dam would benefit Yolo, Napa and Solano counties, along with state and federal agencies, including Cal Fire and the U.S. Bureau of Reclamation, and it would improve interoperability. From the dam, fiber could connect to Winters' Fire Department and other important facilities.

For its downtown, Winters has hired a consultant to complete a \$7,000 engineering study that will provide an estimate for broadband installation. A citywide assessment to cover the cost will be

considered after the study is reviewed.

“Right now, the big controversy throughout communications is that the Time Warners and Comcasts are picking winners and losers,” Donlevy says. “In our case, we’re going to see how much it might cost to get the infrastructure in the ground and then invite everyone in: ‘Who wants this customer base? All you will have to do is provide the service.’”

Winters also intends to amend the Public Facilities and Services Element of its General Plan to include broadband as a topic area. A planned subdivision has already been plumbed for broadband.

Aguiar-Curry and Donlevy recite long lists of reasons why broadband is important to the city’s future, beginning with education in the age of Common Core and an increased focus on science, technology and engineering. The list includes economic development, public safety, health care and lifestyle — whether it’s watching Netflix or, in the case of Donlevy’s son, playing video games against opponents around the world.

Looking Ahead

“It is very clear that inaction on broadband now will limit what we can do tomorrow. It already limits what we can do,” Donlevy says. “When you’re looking to create sustainable jobs, ones where people can actually earn their livelihood, if you aren’t keeping up with the times, you’re going to be *behind* the times.”

McPeak of CETF says that like Winters, its neighboring cities and Yolo County, other local governments will need to work beyond their boundaries to get to scale and catch the eye of the large Internet companies, all of whom are based outside the state.

CETF plans to continue working closely with the League, California State Association of Counties, Rural County Representatives of California and nonprofit organization Valley Vision to promote its goal of Internet for all. McPeak says, “We need a chorus of voices to ensure that there are sufficient state policy and resources for California to compete globally.”

About Bits and Bytes

Bandwidth. The amount of data transmitted in a given amount of time, usually measured in bits per second, kilobits per second (kbps) and megabits per second (Mbps).

Bit. A single unit of data, either a one or a zero. In the world of broadband, bits are used to refer to the amount of transmitted data. A kilobit (Kb) is approximately 1,000 bits. A megabit (Mb) is approximately 1 million bits. There are 8 bits in a byte, which is the unit used to measure storage space; therefore, a 1 Mbps connection takes about 8 seconds to transfer 1 megabyte of data (about the size of a typical digital camera photo).

Broadband. A descriptive term for evolving digital technologies that provide consumers with integrated access to voice, high-speed data, video-on-demand and interactive delivery services.

These definitions are adapted from the glossary of the Yolo Broadband Strategic Plan.

Broadband Session at Annual Conference

Winters Mayor Cecilia Aguiar-Curry is scheduled to be among the speakers on “Digital Strategies for Economic Development” at a pre-conference session at the League of California Cities 2015 Annual Conference & Expo at the San José



Convention Center. The

session is tentatively set for Wednesday, Sept. 30. Visit www.cacities.org/AC for the session’s time and location or use the League’s conference mobile app to access updated information. (Find the app on your device by searching in the app store for “League of California Cities” or “CACities.”)

Michael Kasperzak, council member and former mayor of Mountain View, and Dennis Michael, mayor of Rancho Cucamonga and League first vice president, will lead the digital strategies session. Pauline Cutter, mayor of San Leandro, and Mark Wheatley, council member from Arcata, will join Aguiar-Curry as speakers.

The session will include perspectives on:

- How cities can use digital strategies to drive economic development while closing the digital divide;
- The role of local officials in setting forth a vision for digital inclusion; and
- Forging alliances to foster economic prosperity.

Broadband Bills of Note

AB 238 (Stone), Telecommunications: California Advanced Services Fund. Existing law establishes the California Advanced Services Fund to encourage economic growth, job creation and other benefits and requires the Public Utilities Commission to give priority for funding to households underserved by an existing broadband provider. This bill would set the broadband speeds to be pursued at 25 megabits per second (Mbps) download and 3 Mbps upload in all areas of the state. League position: No Position.

AB 1262 (Wood), Telecommunications: universal service, California Advanced Services Fund. This bill would transfer \$15 million to the nearly exhausted Rural and Urban Regional Broadband Consortia Grant Account. The consortia have been working to promote ubiquitous broadband deployment and to advance broadband adoption in unserved and underserved areas throughout the

state. League position: Support.

AB 1503 (Perea), Telecommunications universal service programs: teleconnect fund. Existing law requires the Public Utilities Commission to use a program paid for by the California Teleconnect Fund Administrative Committee Fund to advance universal service by providing discounted rates to qualifying schools, community colleges, libraries, hospitals, health clinics and community organizations. This bill would require the commission to include auxiliary organizations of the California State University in the program funded by the California Teleconnect Fund Administrative Committee Fund. League position: No Position.

Related Resources

California Emerging Technology Fund www.cetfund.org

Getting Connected for Economic Prosperity and Quality of Life: A Resource Guide for Local and Regional Government Leaders to Promote Broadband Deployment and Adoption www.cetfund.org/files/CETF_Resource_Guide_Model_Policies_2012_Web.pdf

Yolo Broadband Strategic Plan

www.yolocounty.org/general-government/yolo-lafco/shared-services/yolo-broadband/download-the-final-plan-here

California Public Utilities Commission

Information on the California Advanced Services

Fund www.cpuc.ca.gov/PUC/Telco/Information+for+providing+service/CASF/index.htm

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