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The Knowledge Now *series features practical research on timely topics from the Colorado Municipal League.*

BROADBAND: THE VOTERS HAVE SPOKEN, WHAT'S NEXT?

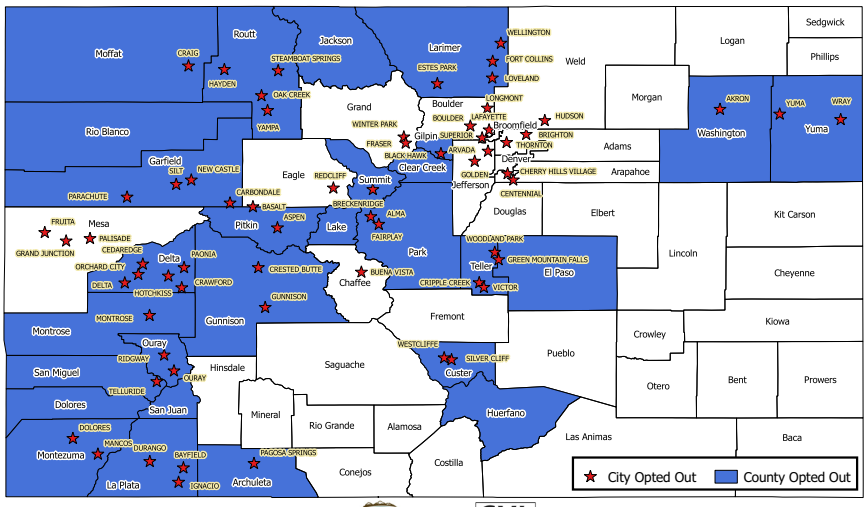
The nation is experiencing a major evolution in communications that is pulling in municipal government as a key player. High-speed Internet connectivity is transforming from a rarity into a necessity. The demand for high-speed connections from businesses and residents is driven by the large amounts of data transfer needed to support Internet video, business transactions, health care facilities, schools, and online gaming. And we want it everywhere we go. We want it on our PCs, laptops, and phones.

Are we seeing broadband Internet emerge as the new public utility? Are we experiencing the same public demand seen a century ago for universal telephone service, resulting in government action? The answers to these questions are beginning to unfold in Colorado and across the country. Broadband infrastructure is expensive to build and often the returns are not there to create a business model that will "pencil out" for a private provider. Yet, in 2005, the Colorado legislature passed a law excluding local government from entering the broadband market. SB 05-152 does provide an escape hatch for municipal residents: They can vote to exempt their municipal or county government from that restriction. To date, voters in 65 cities and towns have done just that — a list expected to continue to grow in the future.

A just released 2017 study from the National League of Cities finds that municipalities establish broadband networks for a wide range of reasons, including "increased residential property values, increased commercial business activity, and to spur viable employment options in isolated communities. Broadband opens doors to education, healthcare, recreation and business growth." Closer to home, Fort Collins Deputy City Manager Jeff Mihelich notes that universal broadband service provides a community with an economic advantage in attracting and retaining talent and providing for merchant services and cloud based businesses. As it formulates a broadband service plan, the City of Fort Collins is pursuing four objectives: network buildout reaching all residents, timely implementation, competitive market pricing, and outstanding customer service.

Voters' voices have been loud and clear in elections allowing municipal government in Colorado to provide broadband service. All 65 cities and towns that have asked have been given permission. The vote is in. Municipal government gets the green light. What happens next? This Knowledge Now provides examples from four Colorado municipalities with four different approaches to next steps after the vote.

Local Governments Repealing Prohibition on Public Investment in Broadband



IMPLEMENTING A FIBER MASTER PLAN

By Eric Eddy, Centennial assistant to the city manager

In November 2013, 76 percent of Centennial residents voted in favor of ballot question #2G, repealing certain parts of the SB 05-152 restrictions placed on all local governments in Colorado. The passing of this ballot question allows the City to indirectly provide services through competitive and nonexclusive partnerships with private businesses. Since that time, the City of Centennial has worked to implement its Fiber Master Plan, culminating in the installation of a City-wide, carrier-grade, competitively-neutral, dark fiber backbone.

Centennial's efforts began by cataloguing the existing City-owned fiber through an asset inventory. Simultaneously, the City examined potential partnership opportunities to benefit stakeholders through a series of meetings with community anchor institutions, such as fire districts, law enforcement, schools, and libraries. In addition, meetings took place with incumbent providers, private businesses, and residents. The information gathered was presented to city council as an analysis of options. Ultimately, this led to council direction to develop a Fiber Master Plan, which would guide the implementation and next steps of the installing the fiber backbone.

A consultant firm was hired to conduct a strategic planning and feasibility study, focusing on the data gathered in the opportunity analysis resulting in the development of the Centennial Fiber Master Plan. Additional public outreach was conducted with anchor institutions and private businesses to discuss next steps of the plan execution. Council considered a range of alternatives, from doing nothing to implementing City-owned fiber-to-the-home. Ultimately, the council-adopted Fiber Master Plan identified the City's goal as developing a City-wide dark fiber backbone to enable competition throughout Centennial.

In late 2016, the City began construction of its dark fiber backbone, with the first phase connecting the City's Public Works Yard with the City offices. Additional construction will be ongoing throughout 2017 and into 2018. This dark fiber will be available to the private sector and others on a competitively-neutral basis, eventually enabling competition and ensuring the City maintains control over its destiny into the future.

There is no one-size-fits-all framework for Colorado municipalities when it comes to fiber and related efforts. Each municipality should consider its strengths and weaknesses and develop a defined strategy and policy to address community goals.

OUR GOAL IS BECOMING A GIGABIT COMMUNITY

By Glen Black, Delta community development director

For several years, the City of Delta has been looking for ways to bring affordable high-speed broadband to the area.

Affordable broadband was identified as the key economic development factor for Region 10 communities during a USDA Stronger Economies Together training process and report. That report just confirmed what we already knew from the many requests for better Internet service from local businesses and residents.

Inadequate broadband has retarded business growth. Economic development efforts have been hampered by a lack of high-speed broadband according to several potential businesses that would not consider locating in Delta after determining lack of broadband.

If there was any doubt about public demand, it was laid to rest by the results of Delta's SB 05-152 exemption election that passed with a 71 percent "yes" vote. Citizens told the City to get involved in bringing better service to the community.

One of the first steps the City took was working with Eagle-Net Alliance to try and bring fiber to Delta. Eagle-Net is an intergovernmental entity operating under a federal grant to provide broadband connections for schools, libraries, and government facilities. Unfortunately it was unable to complete its Delta project.

Delta then took the bull by the horns in forming a cooperative effort through the state's Region 10 partners, including Delta County, City of Montrose, and the Delta Montrose Electric Association (DMEA) in phase one of a regional approach with sights set on Delta becoming a gigabit community. The Region 10 partnership is building the middle-mile backbone that will spread broadband availability throughout Delta via both underground and aerial infrastructure. Work has been progressing rapidly, the infrastructure for phase one is expected to be completed by mid-year.

Funding such an ambitious project requires millions of dollars and has only been possible through major grants from the Colorado Department of Local Affairs and the Economic Development Administration, along with significant contributions from DMEA, Region 10, the El Pomar Foundation, and participating local governments.

Once the backbone is up and running, the final step is the last-mile connections to hook up businesses and residences. DMEA has created a for-profit company (Elevate Fiber), which is an ISP provider for fiber connections from the middle mile to the end user. This cooperative construction of broadband infrastructure has stimulated renewed interest from private Internet service providers looking to provide last mile connections. What a great result this will be for consumers — high speed broadband in a competitive environment.

TURNING ON THE NEXTLIGHT™

By Scott Rochat, Longmont Power & Communications public relations and marketing specialist

Longmont's community-owned fiber-optic network, NextLight, is due to complete network construction this year, achieving a vision that has been more than 20 years in the making for Longmont Power & Communications.

It began in 1996 with a proposed upgrade to the electric substation communications connections. In a white paper to city council, Longmont Power & Communications (LPC) noted that fiber-optics could offer the speed and reliability needed — and that with additional fibers, the resulting loop could be the core of a citywide broadband network.

The 17-mile loop was built in 1997. But creating a network to provide services took longer. LPC first looked for a private partner, reaching an agreement with Adesta Communications in 2000. But in 2001, Adesta filed for bankruptcy, starting the process over.

In 2005, Senate Bill 152 barred local governments from involvement in telecommunications with limited exceptions. A community could vote to exempt itself, and Longmont ultimately did so in 2011, emphasizing that the measure would re-establish a local right that had been taken away and that no tax dollars would be used to build the network. That year, opponents spent nearly $420,000, but the measure passed with about 60 percent in favor.

By 2013, a business plan was ready and another vote approved up to $45.3 million in bonds for the build. The initial timeline called for a six-phase build out, with construction starting August 2014. By October, the NextLight name was unveiled, reflecting Longmont's history of providing electric power for itself since 1912. Now, light through fiber would be the "next light." This time, no private partner took part.

When the first service areas opened in November 2014, signup requests quickly overwhelmed the call center and the installation schedules. By spring, a new schedule accelerated construction to answer the demand.

One significant driver has been the Charter Member rate, which offers a $49.95-per-month symmetrical gigabit connection to residential users who sign up quickly. With that incentive, average take rates are consistently above 50 percent in areas that have been through the Charter Member process.

Some of the key lessons learned have included:

- Be open to changing design and procedures during construction. There will always be new factors and technologies to consider.
- Start early in securing access agreements with multi-dwelling units and similar managed properties.
- All municipal personnel are potential marketers. Make them excited about this!
- Carefully assess the impacts on those outside the utility, including permitting agencies and locating firms.
- Building a brand new utility encompasses myriad details. For Longment, that included new billing software, significant time on website updates and social media, space for a call center and other added employees, new policies and SOPs for details such as online piracy, and specialized tax and federal filing requirements.

Even after the initial build out, the network will grow with Longmont, providing a powerful tool for homes and businesses alike. Even with so much accomplished, NextLight's story has only just begun.

MEETING TODAY'S BROADBAND EXPECTATIONS

By Vince O'Connor, Steamboat Springs information services manager

Steamboat Springs' efforts to improve Internet broadband service began before city council sent a SB 152 exemption ballot question to voters in 2015. Frustration with Internet speeds had been mounting among residents and the business community as existing networks had been tapped out. This was of special concern as commerce in today's economy and future business development are dependent on reliable, high-speed Internet connections. Steamboat's many visitors have also have come to expect the availability of high-speed Internet service.

Citing the need for faster broadband, the City joined forces with the Steamboat Springs School District, the Yampa Valley Medical Center, and Yampa Valley Electric Association to form the Northwest Colorado Broadband Consortium. The voters approved the SB 152 exemption giving the City the green light to improve broadband service. The consortium set to work to better serve local government needs and bring superior bandwidth to the entire community by providing the backbone for the local system. A Wyoming company brought in the initial fiber pipeline from Denver, and efforts continue to create redundancy to the initial pipeline. The consortium is the middle-mile provider and is laying fiber optic underground and stringing wire overhead throughout the city, with 60 percent completion on the main trunk line and lateral lines.

The multimillion dollar project has been financed through a combination of private funds, local government dollars, and a Colorado Department of Local Affairs grant. Project completion is expected sometime next year.

The plan always has been for the City to be the middle mile and hand-off to private businesses for the actual hook-ups for end users. The public backbone network is open to all private Internet providers to tap into and provide consumer service connections.

As the system is being built out, the results are dramatic — better service for lower cost. Businesses and residents will see a many-fold increase in Internet speeds available. The system provides municipal government with enough bandwidth to satisfy not only its internal demands, but to meet the needs of the city's many visitors by offering free WiFi at several hotspots located throughout the city from which anyone can access the Internet from their phones or laptops.

Through this community cooperative venture residents, businesses, and local governments will all come out ahead.

STATE PLAYING A BIG ROLE SUPPORTING BROADBAND

By Rachel Harlow-Schalk, Colorado Department of Local Affairs Division of Local Government deputy director

The Colorado Department of Local Affairs (DOLA) broadband initiative began as a result of growing demand from rural Colorado to plan for and resolve community broadband service needs. DOLA recognizes that provision of high-speed broadband services can play a critical role in enhancing local government operations and community development efforts.

In 2015, DOLA kicked off its $20 million initiative within the Energy and Mineral Impact Assistance Fund (EIAF) to improve broadband in rural Colorado by working with communities and state partners. While the dollars are no longer set aside for just broadband grants, local governments still can apply for funds through primary EIAF grant program. Funding is offered for regional broadband plans, sub-plans for counties and municipalities, and middle-mile infrastructure projects.

- Applications for planning grants may be submitted at any time. Such applications shall be reviewed by the EIAF Advisory Committee and approved administratively.
- Applications for infrastructure (middle-mile) projects are made through the regular cycles of the Energy Mineral Impact Program, with three application deadlines per year.
- Applications for both planning and infrastructure are subject to review and comment by the Office of Information Technology, Office of Economic Development and International Trade, and the relevant Council of Governments.

The most successful grant applications are those that are developed and coordinated prior to submittal in consultation with local government's respective regional manager.

The scope of a successful application will define a regional or countywide/ municipal area that examines current assets, gaps in services, applicable matching funds to the grant, and a demonstrable effort to cooperate with private-sector partners on the implementation. All middle-mile grant funded projects must be included in a regional or sub-plan prior to funding. This program does not fund last mile infrastructure.

Contact your DOLA regional manager for more information at *dola.colorado.gov/regmanagers.*