

Q. TELECOMMUNICATIONS

1. Line Connections to the Valley

The Valley is connected to the other parts of the state with several different fiber optic, cable, and telephone lines and radio routes. An additional fiber path from Alamosa to Salida also exists for E-911 and other emergency connections.

CenturyLink currently has ROADM technology deployed which transmits 44 OC192's in and out of the Valley. That equates to 5,677,056 simultaneous phone calls or 44 Gigabits of data. This system upgradable to double this capacity. Additional systems could be deployed on the existing fiber routes as well. CenturyLink has completed a redundant route over Poncha Pass, the north gate to the Valley, up through the Granite area, and out to the I-70 corridor.

San Luis Valley Rural Electric Cooperative (SLVREC) is implementing a fiber optic base telecommunications network throughout the San Luis Valley from the central portion of the Valley west beyond Creede in Mineral County, north to Poncha Pass, south to the New Mexico state line, and east to Fort Garland in Costilla County. The backbone of this network will consist of 300 miles of high count 96- of 144-strand cable. A fiber to the premises (FTTP) deployment will follow the construction of the backbone in mid-2014. The FTTP deployment will deliver fiber to the side of residences and businesses, providing up to 1 Gbps symmetric broadband service and voice services. The backbone will also support delivery of cable television and video, if needed. Rates for broadband and voice are competitive, relative to current market offerings. SLVREC offers other services including "dark" fiber.

Blanca Telephone has completed a fiber optic route over La Veta Pass, the Valley's east gate, and is researching a southern route out of the Valley.

Viaero Wireless has a radio shot into the Valley over La Veta Pass.

There is an additional microwave radio shot by Skywerx deployed over Wolf Creek Pass, the Valley's west gate, that serves Crestone Telephone and Adams State University.

EagleNet has also deployed fiber over La Veta Pass and to various communities in the Valley.

From CenturyLink's central office, fiber optic lines branch out to connect to the POPs (points of presence) in the county seats of all six counties in the Valley and in many municipalities. The current fiber, copper and radio routes are beginning to meet the ever-changing needs in the region. Residential DSL service is more available, yet potential users are still advised to verify that service is established in a specific area before subscribing. Due to the limitations on fiber, copper and radio, special circuits may be more expensive, and subject to interruptions.

2. Telecommunication Services (Table Q-1)

Table Q-1 lists six of the 30 existing telecommunication service providers. Blanca Telephone, CenturyLink, and Fairpoint offer land line telephones and also double as Internet Service Providers (ISPs) offering dial-up, DSL, wireless, or satellite alternatives. In addition to these established companies, other startup ISPs may also exist. Charter Communications, is primarily a cable TV company, with expanded services including ISP and broadband telephone service known as VOIP.

Rates range from about \$39.99-\$44.95 per month for a basic residential phone line. Select extra services are available at additional costs. CenturyLink services most areas of the Valley; Columbine's provides service north and east of Alamosa; and Blanca Telephone serves most of the east and in between.

The four major cellular service providers in the Valley are Verizon Wireless, AT&T, Viaero Wireless and T-Mobile. Wireless cell phone service is available throughout much of the Valley floor. All four provide wireless data.

3. Internet Services

Dial-up prices in the Valley range from \$9.95 - \$23.95, depending on what services the customer orders. In addition to dial-up, all six ISPs provide DSL. DSL requires that the user be within a certain distance from the hub, usually three miles. DSL prices start at \$21.95 for the most basic service, on up to several hundred dollars per month. Rates vary depending on how fast the user wants their connection to be. Wireless DSL is also available in some areas, and costs are in the same proximity as ground-based DSL service. Technology is constantly changing, and we would advise potential users and businesses to contact the ISPs regarding availability of services and pricing for any proposed projects.

According to the Census Bureau, 74.8 percent of all households had Internet access in their homes in 2012. This was up from 41.5 percent in 2000. In Colorado, 76.3 percent had home Internet access.

4. Internet Access to Schools, Libraries, and Project Assistance

In addition to the commercial ISPs, Adams State University, Trinidad State Junior College, and some public schools have T1 access for their students and staff. The Colorado Rural Technology Project (CRTP) has the purpose of making telecommunications affordable and accessible to rural Coloradans. According to our source, funding from the CRTP project provided wireless T1 connections to San Luis and Antonito, and the National Science Foundation provided wireless equipment to Evans Elementary (now closed) and Monte Vista School District. Free on-site technical assistance and workshops are also being provided to local libraries throughout the Southwest Regional Library Service System.

5. The Multi-Use Network (MNT)

In order to make the state's electronic communications more efficient, the Multi-Use Network Program (MNT) was established in 1996. The driving motive behind this legislation was to link all state offices electronically.

Qwest was selected to build the network, with the state as the anchor tenant guaranteeing a large percentage of use. The four stated goals of the MNT were: 1) bridging the digital divide; 2) increasing economic development; 3) creating a backbone for e-government; and 4) aggregating traffic to reduce cost. The hope was that once a large electronic network of fiber optics and cable was in place, individual consumers and businesses would be able to tap into the resources as well.

There are three phases in the MNT, which are designed to create Aggregated Network Access Points (ANAPs) of at least 20 MBit/Sec. The first phase was started in the year 2000, and included Alamosa County. Phase 2 (2001) included Conejos, Costilla, and Saguache. Phase 3 (2002) included Mineral and Rio Grande.

Having passed the 10-year anniversary since its authorization, the State noted progress in completing the

ANAP installation in 2003, and credits the MNT with making all but the last mile of fiber-optic connectivity possible to every county seat in the State. This also stimulated private carrier offerings of last-mile broadband (DSL, cable, wireless) to homes and businesses in 97 percent of the county seats. According to the MNT 2006 Annual Report, the strategic goal to bridge the Digital Divide was met, and it also accomplished a public-private partnership in telecommunications investment by using the public sector as an anchor tenant.

Future plans for the MNT are to continue its role of anchor tenant to stimulate telecommunications investment in the underserved areas of the state. Competitive re-procurement of telecommunications services to meet the state's data communications needs is also planned for 2010. A key business goal for the re-competition will be to achieve price discounts for MNT circuits commensurate with the large scale of state government business (about \$10 million/year).

A key technical goal of the re-competition will be to move from the current megabit per second (Mbps) speeds of the MNT backbone and last-mile circuits toward gigabit per second (Gbps) speeds. This will address future application requirements in 2010-2020, which will include video and voice over IP. A second technical objective of the re-competition will be to procure services, not just connections, therefore minimizing the need for the state and its users to own, operate, or maintain telecommunications network equipment.

According the MNT Annual Report, MNT Qwest cost per circuit was \$597.93 for T1 ATM UBR 1.54MB service; and \$2,751.84 for DS-3 ATM UBR 10MB.

6. Current Status and Recommendations

We are advised telecommunication/data services are readily available in and near the major and small towns that dot the Valley, but are more limited in the rural surroundings. The major service providers strive to keep current with ever-changing technology, but the cost for most basic and advanced services is more expensive than in a metropolitan city. Investment in rural technology is necessary to help the growth of school, medical care, government, and other local institutions in order to remain competitive with urban areas. Advancement for the San Luis Valley depends on state and federal government providing a stronger assistance role, along with an increased level of support from the private sector.

The San Luis Valley is participating in the Colorado Broadband Data and Development Program through the formation of a Local Technology Planning Team. The CBDDP performed extensive research and selected four regions of the state for pilot projects. Additional teams have formed in southwestern, southeastern and northwestern Colorado.

A survey of state agency directors indicated the San Luis Valley was one of the most deserving candidates for a Local Technology Planning Team. Census data indicated the region has limited resources to change its broadband environment. The region has a long history of attempting to address telecommunications infrastructure shortfalls through initiatives of the San Luis Valley Development Resources Group. The San Luis Valley Telecommunications Co-op, a 501c3 non-profit, registered with the State of Colorado in 2011. The co-op meets monthly at the SLVDRG offices.

The San Luis Valley Telecommunications Co-op personifies the Local Technology Planning Team for the San Luis Valley and provides the region with an entity focused on improving the broadband environment for schools, local government, residents and businesses.

SLV Telecommunications, 2013

Telephone and Internet Service Providers

Service Provider	Svc Area	Internet Services	Monthly cost	Advanced Svcs	Telephone
Amigo.net www.amigo.net	Alamosa, Center, Conejos County, Del Norte, Monte Vista, South Fork	Dial-up, DSL, Wireless	\$29.99-58.99	Static Public IP address, VPN svcs, 24/7 monitoring, web-hosting	none
Blanca Telephone www.gojade.org	Alamosa, Conejos and Costilla counties	Wireless, Satellite	\$39.99-\$79.95	none	Yes. Eastern Alamosa County and northern Costilla County.
CenturyTel	San Luis Valley	High speed, Broadband	\$19.95-\$70.00	Web-hosting, networking	Yes
Crestone Telcom www.crestonetelcom.com	Crestone, Baca Grande, Moffat areas	Wireless broadband	\$44.95-\$99.95	none	VoIP
FairPoint www.fairpoint.com	Eastern Saguache County & northern Alamosa County	Broadband	\$34.95-\$59.95	none	Yes
Charter Communications www.charter.com	Alamosa, Monte Vista	High speed	Bundles with cable TV service	none	VoIP

Source: Company Web sites.

The following companies also provide some level of telecom service the the San Luis Valley:

AT&T	JED Enterprises
CAP Cable	MegaPath Corp
CenturyTel	Northeast Cellular – Viaero
Colorado 7 – Saguache Limited Partnership	Wireless
Comcast	San Luis Valley Rural Electric
Commnet Wireless	Coop
Crestone Telecom	Skywerx
Crickett – Leap Wireless	Sprint Nextel
Dish Network	Time Warner
Eagle Net	T-Mobile
FastTrack Communications	Verizon/Alltel Wireless
Hughes Net	ViaSat
iLOKA - Mircotech-Tel	WildBlue
Internet Colorado	

Sources:

<http://www.colorado.gov/oit/broadband>
<http://fjallfoss.fcc.gov/cgb/form499/499a.cfm>