

**REG10N**  
**Board of Directors**  
**MINUTES**  
**November 17, 2011**

**1) EDUCATIONAL SESSION: Issues in Regional Broadband Planning**

Paul Recanzone of OHlvey, a Utah based consulting firm, presented information regarding regional broadband development. Paul has a long family history in telecommunications and his firm helps bring telecommunication capacity into to 21<sup>st</sup> century. Paul believes that we need to move into the 'packet based' system, and need high speed bandwidth in western Colorado, since we are way below front-range capabilities in up/down megabytes per second. A summary of his presentation is attached.

Lynn Padgett asked about the possibility of leasing excess capacity in the local system and was told it is legally possible. Peter Crowell asked how to consolidate the variety of situations municipality wise, and the services available, and was told we need to have knowledge of exactly what services are currently available, future plans, and policy objectives to accomplish this. Lynn Black noted that the Beanpole project of the 1990's brought fiber to all but one municipality, but it is limited by a 3 mile limit. Paul said in rural areas the expansion is gradual, and slow, but technology continues to improve. Paula Swenson asked if there is anything 'in the air'. Paul said not to oversell models based on distribution from towers as density diminishes with volume. Microwave is good for 'point to point' over difficult build areas, but there are issues with microwave services to consumers. More useful is point -to-multiple point services, coupled with fiber optic to spread access geographically.

Peter Crowell asked if cheap effective connectivity for residents and businesses can be feasible, and was told we would need a coalition of governments and providers to commit to and fund the process. Appeals to the good graces of existing providers, whether large or small, are prone to collapse due to purely competitive and financially driven decision making. A coalition of public organizations, preferably with financial incentives, is necessary to move things along. To fund this, said Paul, we need to be creative, tapping federal and state funds if available, but perhaps requiring local tax revenues. However it's done, this region needs to generate sufficient sources of funds as soon as possible.

Paul Gray thanked Paul Recanzone for his time and suggestions.

**2) CALL TO ORDER and INTRODUCTIONS**

Heidi Albritton, Chairperson, called the meeting to order at 1.12pm

**Introductions:** All those present introduced themselves.

Executive Committee Members: Heidi Albritton Peter Crowell Lynn Black  
Paula Swenson Bill Raley Bruce Hovde Kathy Ellis

Board Members: Bob Drexel Bill Patterson Jim Peak Chris Miller  
Bill Miller Joe Saunders Ron Henderson

Staff: Paul Gray Michele Gad Vince Fandel Rhona Keckler Barbara Powell

Visitors: Lynn Padgett Ed Ulibarri Randy Cassingham Gary Hansen  
Dave Casler Sandy Head

**3) APPROVAL OF AGENDA ITEMS**

Heidi Albritton requested that we a vote approving Bob Drexel as an Executive Committee member. Also added was a verbal report for the Enterprise Zone from Rhona Keckler.

***Motion: Peter Crowell moved to approve the Agenda with the added items. The motion was seconded by Paula Swenson and passed unanimously.***

#### 4) APPROVAL OF Executive Committee Minutes of October 27, 2011

Heidi Albritton indicated that she would have preferred an open (public) meeting on October 27. She was also concerned about the subsequent press release that was distributed without the Board's knowledge.

***Motion: Paula Swenson moved to approve the minutes of the October 27<sup>th</sup> 2011 meeting, which was seconded by Peter Crowell and passed unanimously.***

#### 5) OLD BUSINESS

##### a. Board Subcommittee recommendations on Goals Development, Salary and Benefit Adjustment Process, and Performance Appraisal System

Paula Swenson, Lynn Black, Dick Allison (the Subcommittee) reported the recommendations of the Subcommittee. A key issue is the lack of strategic goals for the organization. Ideas suggested included:

- A possible retreat at the March Executive Committee meeting to develop Goals to feed into the Annual Objectives for the coming fiscal year.
- Salary and benefits adjustments to be proposed and reviewed in advance of preparation of the annual budget. These would be submitted to the Executive Committee by the Executive Director in April and a final proposal would be included with the budget to the Board in May.
- A Performance review procedure will hopefully be in place by the end of 2011. (*Note: a performance review procedure was developed by the Executive Director and endorsed by the Subcommittee in November 2011, and is attached for reference.*) Performance review of the Executive Director will be in a similar format, with the Executive Committee submitting written input and a Subcommittee of three will gather input, summarize and meet with the Executive Director. Forms will be distributed by the Executive Director to all Executive Committee members for completion and return to the Subcommittee by 12/10/11.

***Motion : Bill Miller moved to approve the suggestions of the subcommittee with regard to the retreat, salary & benefits proposals, and performance evaluation procedure. Chris Mille seconded, with the suggestion that the performance appraisal system be included in the Region 10 Personnel Manual. The motion, with suggestion, passed unanimously.***

#### 6) NEW BUSINESS

##### a. FY2012 Objectives Update

Paul Gray introduced the Objectives Update and staff briefly reviewed the objectives. There were no questions.

##### b. Non-Elected Board Representatives: Potential Bylaws Change

Peter Crowell reminded the Board regarding an earlier discussion about the number of non-elected Directors appointed from each County. The proposal was that either in the bylaws, or in policy, that there should be exactly two non-elected members from each county, appointed as per the bylaws for a two-year period. Paul Gray pointed out that the Bylaws do not specify the number of non-elected Directors that may be appointed by a county. The reason Montrose County has five non-elected Directors is that at one point Montrose appointed new Directors while the existing Directors were still serving their two-year terms, resulting in more appointments than intended. This has simply been perpetuated. Paul also pointed out that the Bylaws do not have to be amended, and that a simple policy can be adopted that up to two non-elected Directors may be appointed by any one member county.

***Motion: Peter Crowell moved that it is to be the policy of the Board that each county may appoint up to two non-elected Directors, effective in January 2012, and that each Director so appointed will serve for a term of 2 years as stipulated in the Bylaws. The motion was seconded by Paula Swenson, and passed unanimously.***

#### 7) REPORTS

##### a. Financial Report for September 30, 2011

Barbara Powell reviewed the report. There were no questions.

**b. Area Agency on Aging Report**

Michele Gad reviewed the report in Lee Bartlett's absence. A concept for senior housing in San Miguel County was brought to the attention of staff. Peter Crowell suggested we can discuss this if and when the idea is properly researched and presented.

**c. Three Rivers Regional Transit Coordinating Council & Gunnison Valley Transportation Region Committee Reports**

Paul Gray reported that the 3RRTCC has been approved for a 5304 planning grant for a total of \$20,000, with a match of \$5,000 from Region 10's transportation assessment. The RFPs have been sent to 10 contractors soliciting proposals.

**d. Business Loan Fund Report**

Vince Fandel reviewed the report. He noted the BLF meeting had been cancelled due to lack of a quorum. Bob Drexel has been appointed to the BLF committee by Gunnison County. Painted Sky has a revolving loan fund which it has asked Region 10 to assume. After review, it was determined that the loan fund has only two loans, neither collateralized properly, only \$11,000 in remaining funds, and no potential in the contract to draw fees from the fund or the borrowers for loan expenses, meaning that managing the fund would be done gratis. Consequently, the proposal was rejected. The BLF is applying for its own USDA funds (both a Rural Business Enterprise Grant and an Intermediary Relending Program Loan).

**e. Executive Director Report**

Paul Gray presented the written report and noted that the Stronger Economies Together Module 1 will be held on Friday November 18 with attendance from all six counties and over forty registrations. SET is a result of Region 10 winning a competitive USDA grant which will cover all expenses for the SET training and economic data analysis for the six counties. USDA and CSU Extension staff are conducting these modules. Details and materials are available at [www.region10.net](http://www.region10.net).

**8) NEXT MEETINGS**

- a. Three Rivers Regional Transit Coordinating Council:** January 12, 2011, 9:00 a.m. Gunnison Conference Room
- b. Executive Committee:** January 26, 2011, 12:00 p.m. Sneffels Conference Room
- c. BLF Committee:** February 23, 2012, 10:00 a.m., Sneffels Conference Room
- d. Board of Directors Meeting:** February 23, 2012, 12:00 p.m. Sneffels Conference Room
- e. AAA Regional Advisory Committee:** January 11, 2012 11:30 a.m. Gunnison Conference Room

**9) ADJOURNMENT** The meeting adjourned at 2.30pm.

# Region 10 Telecommunications Planning

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22 November 2011  
Updated 16 November 2011



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Advanced telecommunications services offered through true broadband networks represent a significant foundational element for economic development and quality of life in the 21st Century. Unfortunately, too many rural communities have been overlooked by the status quo. This report outlines one potential path available to Montrose, Montrose County and the Region 10 Economic League for Economic Assistance & Planning.

## Overview

Advanced telecommunications services offered through true broadband networks represent a significant foundational element for economic development and quality of life in the 21st Century. Unfortunately, too many rural communities have been overlooked by the status quo.

This report briefly summarizes the need for true choice of true broadband and defines some of the characteristics of a solution that meets that need. Next, we look at several conceptual methodologies different communities have taken across America to meet these needs. We then turn our attention to some of the initiatives and opportunities relevant to Colorado and Region 10. Finally, we look at some of the high level “next steps.”

This report is by no means meant to provide a comprehensive study but rather should serve as a “jumping off place” for regional conversations.

## Change History

Date	Change	Author
25 Oct 2011	First version	Paul Recanzone
27 Oct 2011	Added overview and updated table of contents	Paul Recanzone
16 Nov 2011	Some typographical editing Updated “The Need” section	Paul Recanzone
22 Nov 2011	Added the “Some Special Opportunities” section Integrated images and data from the regional broadband slide presentation	Paul Recanzone

Table 1 – Document Change History

## Contents

Overview .....	a
Change History .....	a
Contents .....	b
Tables.....	b
Figures .....	b
The Need.....	1
What is the Problem.....	1
Policy/Community Objectives .....	3
True Choice on True Broadband .....	3
The Solutions .....	6
Some Special Opportunities.....	10
Federal Initiatives .....	10
State Initiatives .....	11
EAGLE-Net.....	11
Regional Cooperation .....	12
Next Steps.....	14
Preparation and Planning.....	14
Determine Needs and Objectives .....	14
Define the Status Quo.....	14
Resolve on a Course of Action .....	14
Implementation.....	14
Develop a Plan.....	14
Identify and Secure Funding.....	15
Project Implementation .....	15
Operations and Maintenance .....	15
Appendixes .....	i
Appendix A – Consulting Firms.....	i

## Tables

Table 1 – Document Change History.....	a
--	---

## Figures

Figure 1 - The Need for Broadband Access .....	1
--	---

Figure 2 - US Broadband Ranks Poorly Internationally ..... 2  
Figure 3 - Southwest Colorado Broadband Pales in Comparison with the Front Range ..... 2  
Figure 4 – Community Aggregation ..... 8  
Figure 5 - Colorado Economic Development Regions..... 13

## The Need

For more than 40 years, IBM dominated all aspects of the computing business. IBM maintained their dominance in part by tying application software to hardware and individual hardware components together in tightly controlled proprietary packages. In the mid-1970's, IBM misread the growing demand for smaller, more accessible computing services. A grass roots revolution to create "personal" computers with interchangeable components and application software that could run on multiple vendors' hardware platforms grew in basements and garages across the country. This "open" model was a disruptive force in the computing world and ultimately led to the marginalization of mainframe computers and of IBM as a computer manufacturer.

Today, a similar revolution is growing in the telecommunications industry. For decades, Bell Telephone, the "Baby Bells" and a handful of cable providers have maintained monopolistic control of telecommunications networks throughout the country. While the components to build a telecommunications network cannot easily be stored in one's garage, many municipalities, cooperatives and other organizations are recognizing the growing grass roots demand for true consumer choice on true broadband networks. The disruptive business model represented by public/private partnership open access fiber to the premises networks stands as the best model to answer this grass roots demand and to revolutionize the delivery of telecommunications services.



Figure 1 - The Need for Broadband Access

## What is the Problem

Much like the rail systems of the late 1800's, today's advanced communications infrastructures represent a means by which communities may participate in, or find themselves left out of, the global economy. Many communities, especially those in rural areas, are discovering that critical telecommunications needs in their business and residential markets are going unmet. Incumbent network owners consume limited public easement space with monopoly controlled networks. Quarterly reporting requirements encourage these companies to maximize apparent profits by delaying infrastructure upgrades in order to maintain the appearance of scarcity.

Nationally, the Information and Technology Innovation Foundation has ranked the United States fifteenth out of the thirty advanced nations studied in a comparison of the quality of broadband connections based on the percentage of households with access, the speed of the connections, and costs. Based on speed alone, the US ranks even lower – at 28<sup>th</sup> according to a survey by Speed Matters. In rural areas of the country, in rural Colorado, the quality of broadband connections and available speeds is significantly worse than in urban areas. Recent studies have demonstrated that bandwidth to community anchor institutions in the Denver metropolitan area is significantly higher than in rural southwestern Colorado (see “Figure 3 - Southwest Colorado Broadband Pales in Comparison with the Front Range”).

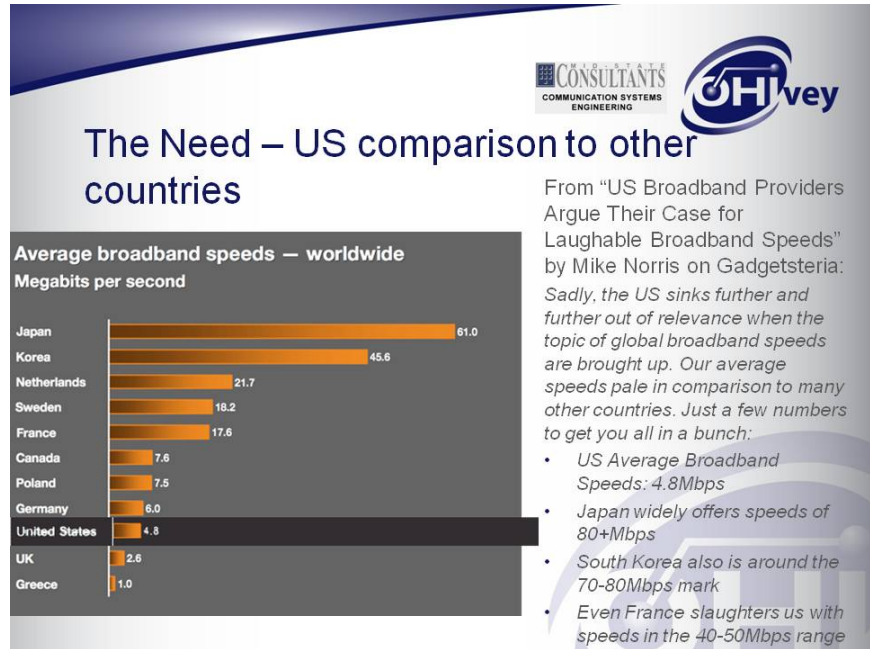


Figure 2 - US Broadband Ranks Poorly Internationally

The study also showed significant per Mbps cost differences between the Denver metropolitan area and southwest Colorado. Reported costs for T1 like services in the Denver metropolitan area average \$167

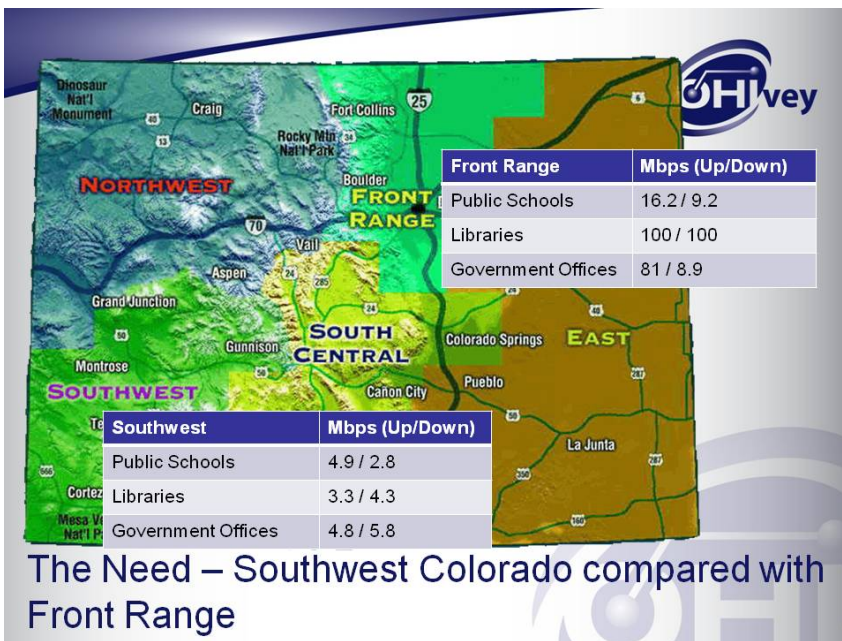


Figure 3 - Southwest Colorado Broadband Pales in Comparison with the Front Range

per month per Mbps. In southwest Colorado, reported costs for these same services average \$438 per month per Mbps. For larger scale purchases, monthly cost per Mbps in the Denver metropolitan area can be as low as \$1.25. The lowest reported bulk purchase price in southwest Colorado was \$12 per month per Mbps.

In sum, bandwidth is less available and more costly in southwest Colorado than in Denver and more costly and less available in the US than in other advanced countries. So, does it matter? It matters a lot because speed and cost determine the opportunities for using the Internet to create jobs and maximize innovations in telemedicine, education, energy conservation, and other areas.

Communities have begun to see the need to break the cycle of monopoly driven scarcity. Just as city councils have traditionally grappled with municipal infrastructure issues including, roads, electricity, and water, they now find themselves adding broadband availability to that list.

### Policy/Community Objectives

Elected representatives and city staff must base their decisions on the public policy objectives of the communities they serve. Cities generally attempt to capture their public policy philosophy in mission statements, “report card” objectives, or in other forms. Sometimes a city’s objectives are very specific to the affected community but usually municipal objectives can be categorized as economic development, public safety, infrastructure development and maintenance, building a sense of community, education, quality of life, and so forth. The National Broadband Plan identifies critical broadband needs across health care, economic opportunity, education, energy and the environment, government performance, and other areas. In all areas, service levels considered more than adequate just ten or fifteen years ago are now considered archaic and prohibitively slow (consider a 28.8 baud modem).

### True Choice on True Broadband

Having suggested the need for action, what should that action look like? Public policy suggests true choice on true broadband is the best telecommunications solution available to meet the needs of residents and the objectives of governments. True choice of true broadband should conform to certain principles: 1) open and wholesale, 2) “carrier class”, 3) high scalable bandwidth, and 4) open and independent architecture.

### Open and Wholesale

By definition, “open” implies that the system facilitate a true public/private partnership. Philosophically, open access networks should oppose the idea of delivering retail services themselves. Rather, they should perceive for themselves a more traditional municipal role – providing infrastructure. The actual delivery of services should be left to private service providers – as many as are qualified to service the market. The municipal open access model recommends that publicly-owned infrastructure is made available to a wide variety of competing private firms for the delivery of goods and services.

## The Capacity of Fiber

### The Capacity of Fiber

Consider the following analogy to illustrate the long term scalability of fiber: if a standard drinking straw represent dial up speeds (56K), then a pipe about a foot in diameter equals a 100 Mbps connection. Using the same scale, a Gigabit connection would roughly be a pipe one meter in diameter. The fastest commercial connections for a single fiber would equal a pipe about 35 meters in diameter and the theoretical capacity of a fiber would be represented by a structure over a half a kilometer in diameter - or as large as the Hoover Dam. Clearly, if we are using a one-foot diameter straw today, we have room to scale a network given the theoretical capacity of fiber.



The straw on the left represents the capacity of a dial-up connection; the one on the right, DSL.



Typical OSPN initial fiber connections operate at 100 and 1,000 Mbps. The pipes shown illustrate those capacities relative to dial-up or DSL connections.

**“Carrier-Class”**

This requirement, though seemingly obvious, is sustained as a guiding principle through market research. Scientifically administered surveys have been used to determine the characteristics markets demand in networks. In nearly every case, the number one or two concern for businesses and residents is reliability. Reliability along with security (consistently in the top five desired characteristics for both businesses and residents) are the fundamental characteristics of a carrier class system.

An open and wholesale network depends on retail service providers. Service providers require the network to perform with carrier class reliability. From the smallest start-up to global giants with international reputations, each is willing to entrust those reputations to the network only if they are guaranteed carrier class reliability. From the physical design to the overarching operational model, the infrastructure must deliver exceptional performance and offer absolute security.

**High Scalable Bandwidth**

In addressing the first principle – opening the system to multiple service providers – municipal open access networks have to meet the needs of multiple service providers simultaneously. In other words, they have to be capable of delivering all the current services available as well as higher-bandwidth consuming future services from all service providers on the network. Thus, the system has to start out with tremendous bandwidth capacity and be able to grow larger still. And in growing, it has to also evolve. In a way, this is a requirement to make the system "future proof," meaning that it is capable of adapting to new and emerging technologies that otherwise might obsolete the investment.

The value of incorporating this principle is obvious. Just as "whistle stop" communities had an advantage over those bypassed by the railroad in the old west, cities with the ability to support multiple current and future services will have economic as well as quality-of-life advantages over other communities. And it ensures that the investment made today won't become outdated because the system is designed to scale to meet future demands.



*Current technology can deliver terabits (1 million megabits) over the same strand of fiber.*  
**Current technology can deliver terabits (1 million megabits) over the same strand of fiber.**



*The theoretical capacity of a single fiber is equal to a pipe the size of the Hoover Dam!*  
**The theoretical capacity of a single fiber is equal to a pipe the size of the Hoover Dam!**

*Open and Independent Architecture*

While many proprietary solutions could be employed to deliver the first three principles, this fourth principle aims at ensuring that the efficiencies of the system are always maximized. By requiring solutions to be standards-based and founded on open technologies, municipal network owners can "shop around" for the best deals and are not beholden to any one particular company or proprietary invention. While there is often a benefit to a proprietary solution that can outweigh the negatives of diminished choices, the ultimate benefits usually derive from vendors who are actively competing for business and responding to competition with efficient pricing and more innovative solutions.

## The Solutions

Having established the need for true choice on true broadband let's now look at possible solutions. First, let us look briefly at the applicability of private enterprise telecommunications solutions.

Unfortunately, the public good often lies crossways with the interests of incumbent private network owners. The private sector typically under-invests in infrastructure – to the point of developing their economic models around the management of scarcity. Government, on the other hand, has historically provided the infrastructure to support business and residents: directly, as in the case of highways and airports, or indirectly through the support of monopolies such as industrial revolution era railroads or the 20<sup>th</sup> Century telephone companies. The reason for the different approaches to infrastructure between the public and private sectors is easy to explain: return on investment. Private companies are often driven by their quarterly reports; those capital investments with slow returns, such as telecommunications infrastructure, are usually abandoned in preference for those with higher and more rapid returns. Governments, by contrast, measure returns differently, looking at community impact and accomplishment of public policy objectives rather than profit.

With the private sector exhibiting some signs of market failure in the realm of delivering true choice of true broadband, what are some of the public sectors options?

### *Regulatory Solutions*

Governments sometimes work to resolve the gap between private enterprise profit motives and public policy objectives through regulation.

Telecommunications regulation has been effectively used to extend voice services with a reasonable degree of equity, efficiency, security, and liberty. However, the new era of 21<sup>st</sup> Century true broadband need has come about in the era of deregulation. Even if the FCC were functioning in the same way it did during the Bell Telephone/AT&T sponsored monopoly years, it is questionable that a regulatory regime would result in the true choice of true broadband needed to meet today's telecommunications challenges.

Furthermore, telecommunications regulation is a patchwork of federal (through the FCC), state (through the PUC) and local (through franchise agreements and management of public rights of way) authority. The byzantine regulatory environment leaves many municipalities without effective means to drive their telecommunications future through local regulation. Many rural communities lack the staff and expertise to focus on their franchise agreement. Even the expertise exists, it is often difficult for a small community to leverage their franchise agreement to effect policy results. Cable companies are often very large with locations around the country. Montrose, for example, is served by Optimum (a division of Cablevision). Cablevision has nearly 20,000 employees. That is, the cable company employs as many people as live in Montrose. It would seem unrealistic that Montrose could wield a big regulatory stick to in order to influence Optimum to meet policy objectives.

### *Aggressive Private Enterprise Courtship*

Many municipalities work to extend advanced telecommunications services throughout their communities by aggressively courting private enterprise network owners. The city offers tax advantages, uses franchise agreements as leverage, maximizes the use of lucrative government contracts, and leverages other tools to encourage private companies to build and upgrade networks suitable to today's needs.

This model is most effective in more urban areas where the city has significant potential revenue to offer the network owner.

*“Dig Once” Policies*

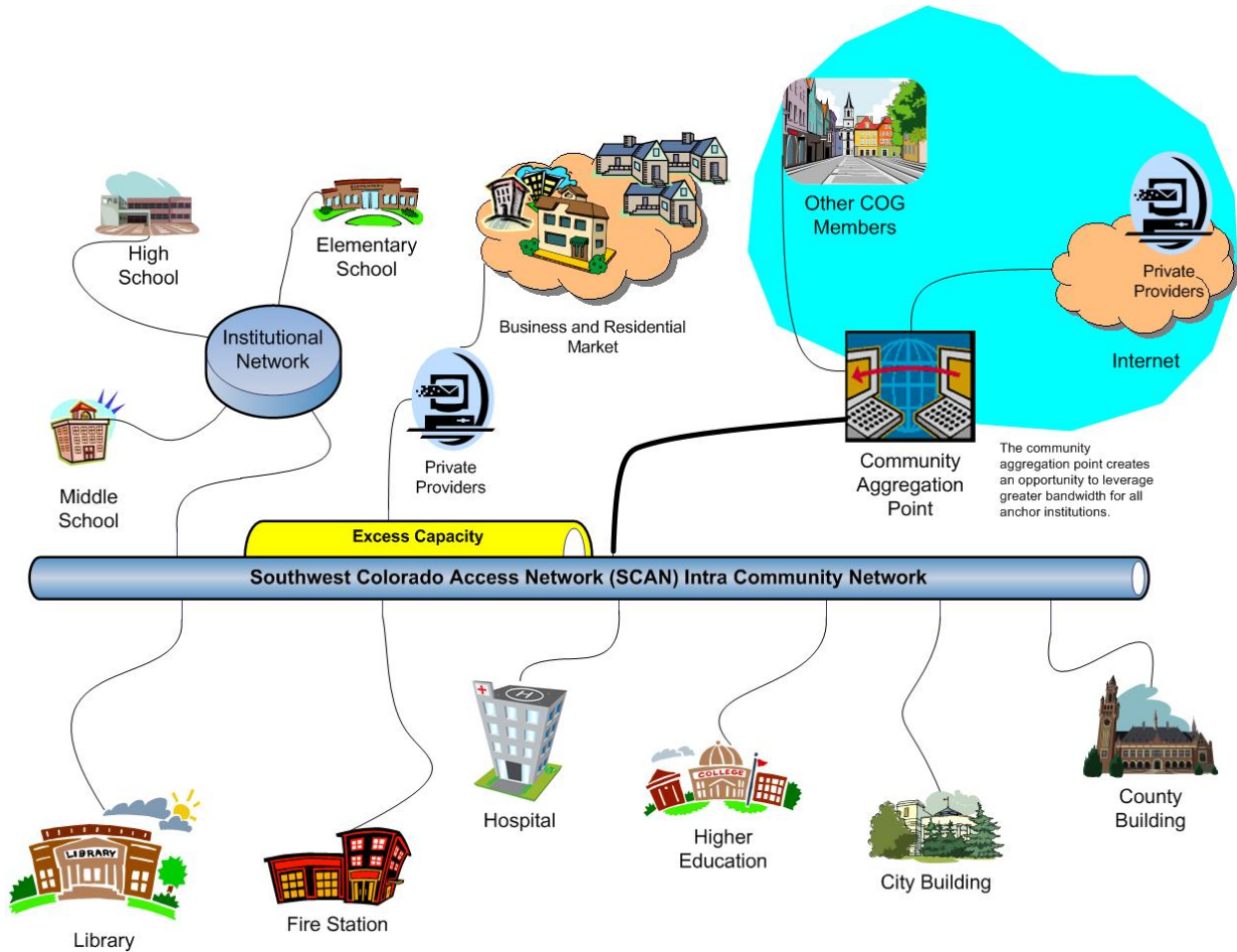
“Dig once” policies simply require new road construction, housing developments, utility work, and other work to include telecommunications conduit as part of the project. This conduit can then be used by an eventual public or private advanced telecommunications provider.

“Dig once” policies lower the barriers of entry for advanced telecommunications services but they do not implement a network or provide service. Some communities have found the gap between a “dig once” policy and actual service to be insurmountable. Nonetheless, “dig once” policies are inexpensive. Montrose and the other Region 10 communities could benefit by passing “dig once” ordinances.

*High Value Target Programs*

High value target programs typically build network infrastructure to reach out to high value target facilities. Value can be determined by type of entity or potential revenue. The Southwest Colorado Council of Governments (SWCCOG) Southwest Colorado Access Network (SCAN) represents an example of a high value target program with the SCAN defining community anchor institutions (CAIs) as the high value targets.

In 2010, the Southwest Colorado Council of Governments, with the assistance of the Region 9 Economic Development District, applied for and received a grant for the Colorado Department of Local Affairs. The premise of the grant was to create local community or intra-community networks connecting the various CAIs in towns throughout the region in order to aggregate their data traffic. The aggregated customers could then work as a purchasing consortium to lower data costs and improve access to advanced telecommunications services.



**Figure 4 – Community Aggregation**

The SCAN network hopes to further add value to the region by capitalizing on the middle mile network EAGLE-Net intends to deploy with its federal grant. The SCAN hopes to connect the various community aggregation points throughout the region to regional aggregation points. These regional aggregation points serve to greatly expand the purchasing consortium and significantly increase the SCAN's purchasing power.

Furthermore, the SCAN hopes to spur economic development in the region and to improve quality of life. To do this, the SCAN will make excess capacity on the SCAN network available to private providers with the hope that the additional reach the SCAN provides will entice existing private providers to offer service in new areas and may even encourage the development of new services.

Mid-State Consultants and OHLvey are working to help the SCAN coordinate the efforts of key stake holders and to move the project forward.

**Modest Scale Pilot Programs**

Some communities are working to deploy modest scale fiber to the premises pilot projects they intend to capitalize on in similar manner as described above.

*Publicly Owned and Operated Fiber to the Premises*

Communities like Lafayette, Louisiana have elected to deploy full service telecommunications enterprises similar to municipally owned power or garbage collection divisions.

Deployment of a full service telecommunications enterprise is a bold initiative often times restricted by state law – in Colorado, a ballot initiative is required before a city can follow this course.

Unfortunately, in most cases, cities with publicly owned and operated fiber to the premises have chosen to simply compete with private providers and offer another monopoly network. While the city's network may offer true broadband, choice is still limited to three or four providers.

*Municipal Open Access Fiber to the Premises*

An alternative that appears to resolve the policy objectives, the demands of the people, and the needs of private enterprise appears to be one in which governments build, manage, and maintain the natural monopoly element in the telecommunications environment (that is the transport mechanism) as a public utility. This utility is then made available to private service providers who can then offer retail services. The hallmarks of this solution are that it is financially responsible ubiquitously deployed public/private partnership open access fiber to the premises.

## Some Special Opportunities

The advanced telecommunications environment is constantly changing and evolving. At any given time unique opportunities present themselves.

One key struggle for localities across the country and in Colorado is coordinating the multiple opportunities and ensuring the most efficient deployment of the infrastructure needed to support advanced telecommunications services and the outreach needed to show the economic development and quality of life benefit of said services.

### Federal Initiatives

President Obama has consistently included access to broadband as a foundation in the green economy and a tool for helping end the current economic malaise.

The 2009 American Recovery and Reinvestment Act (ARRA) allocated \$7.2 billion for broadband projects. Funds were divided between mapping initiatives, the Agriculture Department's Rural Utility Service (RUS) broadband loan program as the Broadband Initiatives Program (BIP) and The Commerce Department's National Telecommunications and Information Administration's Broadband Technology Opportunities Program. While nearly all of this money has been awarded, the communities in Region 12 can still find ways to influence spending to their optimum benefit (this will be discussed more below).

Mapping initiatives have resulted in both the National Broadband Map at <http://broadbandmap.gov/> and the Colorado Broadband Map at <http://maps.co.gov/ColoradoBroadband/>. Both maps have certain flaws in that they depend heavily on network owner reported service coverage areas and speeds. These network owner reports suggest intermittent broadband availability throughout the Region 10 area. However, a pocket of 50 Mbps service is reported around Delta and Montrose. 50 Mbps service may be available in these areas but there is some reason for skepticism.

The BIP program does not appear to have awarded any projects in the Region 10 area.

BTOP funded several projects in Colorado. Two of interest to Region 10 are the EAGLE-Net project (discussed more below) and the Colorado Board of Education's Bridging Colorado's Digital Divide project. The Colorado State Library, with support from the Bill and Melinda Gates Foundation, was awarded a \$3.3 million grant and match project that will fund computers, training, partnerships and a public awareness campaign to develop or augment Public Computer Centers in public libraries and Tribal centers. Coloradans in need of computer training and assistance with education, work force, health, and other support will find support through these public computing centers. According to the Colorado Department of Education's site (see <http://www.cde.state.co.us/cdelib/BTOP/>), Cedaredge, Crawford, Delta, Gunnison, Hotchkiss, Naturita, Nucla, Olathe, and Paoni are all beneficiaries of the project. Some opportunity may still exist to influence spending in other libraries throughout the region.

Another result of the administration's emphasis on broadband deployment is the FCC's National Broadband Plan. More information on the Broadband Plan can be found at [www.broadband.gov](http://www.broadband.gov). While the National Broadband Plan does not have any current funding mechanisms associated with it, it is influencing the redesign of how Universal Service Funds are distributed and may create broadband opportunities in the future. In late October 2011, the FCC announced its intent to pursue rule making for the new Connect America Fund (CAF). The language around the initial announcements and other information indicates the CAF may benefit incumbent exchange carriers over public projects and will have a stronger emphasis on mobile connectivity than the broadband stimulus packages did. Nonetheless, the

program warrants careful attention over the next several months as the rules mature and funds are made available.

Other departments (like Housing and Urban Development, Energy, Education and more) recognize the value of broadband services and have and may make federal funds available for broadband programs. Some of these other federal programs have already started to have an impact on services in the Region 10 area.

One such project is the Colorado Telehealth Network (CTN), a statewide information and communications platform and highway that will enable patients, providers and payers to improve the quality of care, reduce costs and increase access for health care services. By connecting patients and providers on a high speed and secure statewide network, CTN can provide access to educational, business process and clinical care products. Full production deployment began in August 2010 to connect 200 community medical facilities and another 170 health care provider facilities over this \$34 million initial network. The initiative is managed by the Colorado Hospital Association (CHA) and is a collaborative venture between CHA and Colorado Behavioral Healthcare Council (CBHC). Funding for CTN has been provided by the Colorado Hospital Association, Colorado Behavioral Healthcare Council, Federal Communications Commission, and the Colorado Health Foundation. Most of the funding is being used to secure service from CenturyLink – some of that service being offered over usually prohibitively expensive ATM circuits. However, much of the service is being offered via more reasonable optical Ethernet (that is packet based fiber). In some cases, provisioning optical Ethernet may require network improvements that could inure to the benefit of other potential subscribers. A list of CTN sites and the type of connectivity they are receiving can be found at:

[http://www.chaboard.com/telehealth/index.php?option=com\\_content&view=article&id=74&Itemid=112](http://www.chaboard.com/telehealth/index.php?option=com_content&view=article&id=74&Itemid=112).

The list shows Region 10 has 15 CTN sites with two in Delta, two in Gunnison, three in Montrose, one in Naturita, two in Norwood, one in Nucla, two in Olathe, and two in Telluride.

## **State Initiatives**

Colorado is making some headway developing and executing a statewide broadband plan. In particular, the Governor's Office of Information Technology has established the Colorado Broadband Data and Development Program (CBDDP). The CBDDP is responsible for the development of the local technology planning teams.

Some state grants and other funding may be available to regional planning teams and for regional broadband deployment. Region 9 is implementing the SCAN network (discussed above) through a Department of Local Affairs Energy and Mineral Impact Assistance Fund. While that grant program was suspended in 2010, there is some hope it will be renewed when funds become available again. The Office of Economic Development and International Trade may have some broadband planning grant money available. Other states have capitalized on transportation and energy funds to help expand broadband.

## **EAGLE-Net**

The EAGLE-Net (Educational Access Gateway Learning Environment Network) Alliance ([www.co-eaglenet.net](http://www.co-eaglenet.net)) is an intergovernmental entity which operates a Colorado cost-sharing consortium that provides a fully collaborative and secure high-speed broadband network. EAGLE-Net was awarded a round 2 BTOP grant of \$100,635,190 with over \$40 million of in kind and cash matches to establish a public-private partnership to bring broadband service to school districts, libraries, and other community

anchor institutions across Colorado. Project documents, status reports, and other grant tracking tools can be found at <http://www2.ntia.doc.gov/grantee/centennial-board-of-cooperative-educational-services-cbooces-transferred-to-eagle-net-allianc>.

Cooperation with EAGLE-Net can be a very valuable tool to a region. In studying EAGLE-Net and ways to influence early or new spending in a region, three things have become evident:

1. EAGLE-Net's plans are still in flux and may be influenced.
2. EAGLE-Net was delayed by a longer than expected environmental assessment process and they are now anxious to show progress connecting community anchor institutions. A community or region that can show their willingness to help EAGLE-Net reach more anchor institutions faster may have more influence on the project's spending than others. EAGLE-Net appears to prioritize the importance of community anchor institutions as follows:
  - a. School facilities and libraries included in the grant application documents. In Region 10 these include:

DELTA COUNTY 50(J) SCHOOL DISTRICT	Delta
GUNNISON WATERSHED RE1J SCHOOL DISTRICT	Gunnison
HINSDALE COUNTY RE 1 SCHOOL DISTRICT	Lake City
MONTROSE COUNTY RE-1J SCHOOL DISTRICT	Montrose
WEST END RE-2 SCHOOL DISTRICT	Naturita
NORWOOD R-2J SCHOOL DISTRICT	Norwood
NUCLA PUBLIC LIBRARY	Nucla
OURAY R-1 SCHOOL DISTRICT	Ouray
RIDGWAY R-2 SCHOOL DISTRICT	Ridgway
UNCOMPAGRE BOCES	Ridgway
TELLURIDE R-1 SCHOOL DISTRICT	Telluride

- b. School facilities and libraries not included in the grant application documents.
  - c. Other governmental facilities including city and county offices, emergency response facilities, and so forth.
  - d. Other non-governmental community anchor institutions.
3. EAGLE-Net must sustain the network after expenditure of capital funds. The primary tool the Alliance appears to be anxious to use to build sustainability is the provisioning of E-Rate services. EAGLE-Net is a registered E-Rate provider. Communities that are able to show probable E-Rate revenues for EAGLE-Net may have more influence on the project's spending than others. Some communities have noticed confusion regarding EAGLE-Net's E-Rate intentions. A subscriber who is not eligible for E-Rate may still subscribe to services via the EAGLE-Net network. Furthermore, a customer who chooses to use the EAGLE-Net infrastructure as transport to reach their selected E-Rate providers end point should be able to do so.

## Regional Cooperation

A key advantage that comes to a community through the deployment of advanced telecommunications infrastructure is the introduction of new services that contribute to economic development and quality of life. Most new services are market driven and require a sufficient market base at a low enough cost of entry and ongoing operation and support in order to entice vendors. Coordinated efforts between Region 10 and other southwestern Colorado regions could work to create a regional marketplace large enough to wield significant influence with advanced telecommunications service providers.

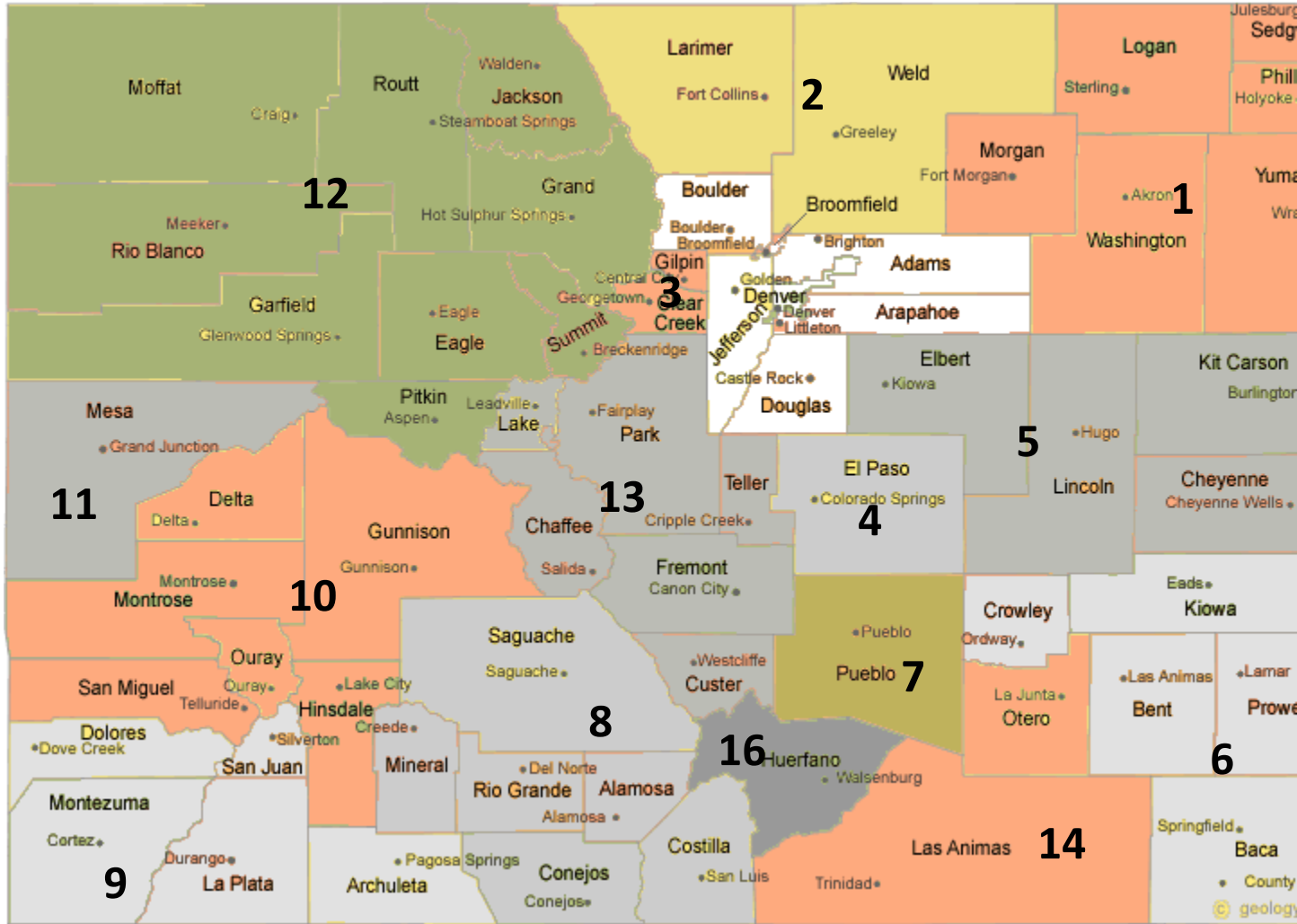


Figure 5 - Colorado Economic Development Regions

As has been mentioned above, Region 9 is in the process of deploying the SCAN. Region 13 has begun investigating possible regional solutions as well. Regions 8, 11, 12 and 13 may be looking at regional solutions too. The combined population of Regions 8, 9, 10, 11, 12, and 13 is nearly 713,000. While this still represents a modest market in the eyes of national and international services providers, it is at least a modest market. Alone any given city, county, or region is marginal.

## Next Steps

Developing a local or regional telecommunications plan involves certain known steps. These known steps provide the information that determines a future course.

## Preparation and Planning

### Determine Needs and Objectives

Too many communities embark on telecommunications projects based simply on a vague notion of advancing economic development or improving education. Unfortunately, vague notions most often lead to vague results. Before embarking on a telecommunications project the governing authority should be clear on what needs they intend to satisfy and how they will measure progress towards meeting those needs.

### Define the Status Quo

Once a good understanding of objectives is agreed upon, the next step is to evaluate existing available resources. This evaluation is of critical use to define the gap between the status quo and meeting needs and objectives. In some cases, existing infrastructure and services can easily be repurposed to close the need gap. In other cases, a survey of existing available resources may expose the need for significant capital improvement and business development before the community can be served at its desired level.

### Resolve on a Course of Action

If a gap between needs and available services exists, the community should then resolve on a course of action. This resolve may be that no action is feasible or it may be to deploy a fiber to the premises network or anything in between. Further, the course of action may identify multiple phases needed to achieve the defined objectives.

Some communities are tempted to jump to a course of action without a full understanding of the needs and objectives or of the status quo. This usually leads to failure. We have also seen communities flounder on defining objectives and defining the status quo for years and years.

## Implementation

### Develop a Plan

The first step towards bringing the resolved upon course of action to reality is to develop a plan. The plan will determine funding requirements and will establish realistic timelines. Of

## How Can a Consultant Help?

### How Can a Consultant Help?

The city or region may choose to work through most of the process on their own or they can use consulting services in any number of ways. Some suggestions for consulting services are included in this sidebar.

#### Determine needs and objectives

Key stake holders in the community and region need to take the lead in determining needs and objectives. Consultants can be used to conduct surveys and gather other community input. Consultants may also help refine objectives and develop success measures.

#### Define the Status Quo

Consultants can be effectively used to complete a survey of existing services and to document the need gap.

#### Resolve on a course of Action

It is up to the key stake holders in the community to resolve on a course of action. Consultants can be used to identify options, document the pros and cons of the options, and answer questions about potential courses of action. The key stake holders should carefully ensure they own the decision and that they are not being unduly influenced by their consulting team.

#### Develop a Plan

Most telecommunications consultants have significant expertise when it comes to developing implementation project plans.

course all parties must have realistic expectations of the plan at this point. General Dwight Eisenhower is quoted as saying, “No battle was ever won according to plan, but no battle was ever won without one.” The network project will not be completed according to the plan developed at this juncture but it will never get done without this plan.

### **Identify and Secure Funding**

With a plan in hand, the next step is to determine how to pay for it. Potential funding sources include, among others:

- Federal grant programs
- State grant programs
- Private investments and joint ventures
- Local subsidies
- Loans

In most cases projects will need to combine a variety of funding sources.

### **Project Implementation**

Once the objective is fully defined, a plan is developed and funding secured, the actual work of the project can begin. Of course, throughout the project the scope, schedule and budget must be carefully managed.

### **Operations and Maintenance**

From the beginning, the municipality or region should be aware of future ongoing operations and maintenance needs. Part of the plan should include sustainability planning to ensure the newly implemented infrastructure is utilitarian through time.

### *Identify and Secure Funding*

#### **Identify and Secure Funding**

Consultants can help identify funding sources, develop grant applications, provide data and narratives to help justify funding and otherwise support the funding process.

#### **Project Implementation**

Many consulting firms specialize in telecommunications project implementation. Consultants provide a wealth of information and expertise in this area.

#### **Operations and Maintenance**

Some projects choose to develop in house resources to manage ongoing operations and maintenance. Others outsource these functions.

## Appendixes

### Appendix A – Consulting Firms

Mid-State Consultants and OHLvey are capable of providing the consulting services suggested in this report and eager to provide a response to any proposed work. However, we recognize each community must find a team that fits well with their culture and environment. To that end, we have collected information on some consulting firms we are familiar with. This list does not represent a complete list of consulting firms with some or all of the capabilities needed to complete the work described in this report. This list simply represents some of the organizations Mid-State Consultants and OHLvey are familiar with.

#### **Mid-State Consultants** ([www.mscon.com](http://www.mscon.com))

Mid-State Consultants, Inc. specializes in providing comprehensive communication systems engineering. Service offerings range from project inception to final close-out, and all of the steps in between. Mid-State's singular focus is to provide the engineering services and support that will guarantee the successful outcome of each project.

On municipal and other government projects, Mid-State often works with OHLvey ([www.ohivey.com](http://www.ohivey.com)).

#### **Municipal Solutions** ([www.municipalsolutions.org](http://www.municipalsolutions.org))

We are not familiar with the specific work of Municipal Solutions. We include them in the list because we are familiar with the work of one of their Senior Associates, Kevin Manweiler. Mr. Manweiler is very familiar with telecommunication in Colorado and has done some significant work in the region.

#### **Design Nine** ([www.designnine.com](http://www.designnine.com))

Design Nine is a Virginia corporation, and was founded in 1987 by Andrew Cohill to provide technology advice and services to community, business, and public clients. Over the years, the company has grown steadily and now offers a comprehensive array of technology advisory services, telecommunications project management, and broadband design assistance. Design Nine is one of a very few firms in the United States with experience in open access broadband networks.

#### **Uptown Services** ([www.uptownservices.com](http://www.uptownservices.com))

Uptown's principals are highly skilled in all critical phases of developing and implementing a broadband strategy. Uptown has served as the implementation consultant on 6 FTTP start-ups.

#### **IBI Group** ([www.ibigroup.com](http://www.ibigroup.com))

The IBI Group has recently completed some significant strategic development and broadband planning work for the city of Portland, Oregon.

#### **G4S** ([www.g4s.com](http://www.g4s.com))

G4S is heavily involved with the EAGLE-Net project.



**Performance Review Procedure**  
**(To be added to the Personnel Policy Manual, Section 200)**  
**Approved November 17, 2011**

The performance of each employee will be reviewed on or before the six month anniversary of hire and annually thereafter on or before October 1. Special performance evaluations may be requested by the supervisor or employee at any time. Each employee shall be reviewed by his/her immediate supervisor. The supervisor of the Executive Director is the Executive Committee of the Region 10 Board.

**Preliminary Performance Review Notes:**

Each performance review will begin with a written self-evaluation by the employee and an evaluation by the supervisor. The supervisor and employee will each obtain a blank **Preliminary Performance Review Notes** (sample attached). The template includes these sections:

- **Duties and Responsibilities** and **Personal Attributes** as described in the employee's position description.
- Accomplishments and efforts on the **Annual Objectives** assigned to both the employee and his/her subordinates for the prior fiscal year and the current fiscal year to date.
- **Financial performance** for both the prior fiscal year and the current fiscal year to date (only for those employees responsible for one or more cost centers)
- **Personal Objectives** (if any) established at the previous annual performance evaluation.

The supervisor and employee will, for each section of the Notes, make comments on those aspects of the employee's performance that are felt to be **exceptionally meritorious**, or **of concern**. Aspects of performance that are satisfactory do not require any comment. These notes should be very brief, as they will simply serve as prompts for further discussion during the performance review meeting. Once completed, the employee and supervisor will share copies of their completed Notes with each other in advance of the Performance Review Meeting.

**Performance Review Meeting and Record**

The employee and supervisor will schedule a meeting to discuss, section by section, each performance aspect noted by the employee or supervisor as "exceptionally meritorious: or "of concern". The supervisor will document the discussion of each performance aspect mentioned in the supervisor or employee Notes in a **Performance Review Record** (sample attached). This discussion documentation will describe all areas of agreement or disagreement concerning each performance aspect discussed.

The supervisor and employee may agree to add **Personal Objectives** to address any performance aspects discussed during the meeting. The supervisor will document those personal objectives in the space provided in the Record.

At the conclusion of the Meeting, the supervisor will sign the Record. The employee may add any comments he/she wishes in the space provided, and will also sign the Record. Any disagreement with what has been recorded in the Record should be noted by the employee in this section.

Copies of the employee's **Position Description**, **Annual Objectives Report(s)**, and **Financial Report(s)** (if applicable) will be added for reference to the signed **Performance Review Record**, which will be filed in the employee's Personnel File in the fireproof safe. The **Preliminary Performance Review Notes** from both the supervisor and employee will be shredded and discarded, leaving the Performance Review Record as the sole documentation of the performance review.

The **Performance Review Record** is considered an official document and is strictly confidential. No copies other than the one stored in the employee's personnel file will be maintained. The Record may be freely accessed by the employee or the supervisor at any time, but may not be altered in any way.