

**UNITED STATES SENATE
COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION
SUBCOMMITTEE ON COMMUNICATIONS
HEARING ON BROADBAND TECHNOLOGY**

Statement of Bob Rowe

March 28, 2000

I. INTRODUCTION – THE TELECOMMUNICATIONS ACT TOOLBOX.

Mr. Chairman, Members of the Committee:

I am Bob Rowe. I am a Montana Public Service Commissioner and President of the National Association of Regulatory Utility Commissioners. I serve on the Federal-State Joint Board on Universal Service, the Federal-State Joint Conference on Broadband Access (which I will describe), and as Chairman of the thirteen-state Operations Support System Collaborative now working with U S WEST and a wide range of competitive providers. Until last November I chaired NARUC's Telecommunications Committee. I am here today speaking on my own behalf.

I thank the Members of this Committee for your thoughtful approach to competition, universal service, and technology deployment. I am sincerely honored to be here today.

Senator Burns, I particularly commend you for your vision and for your leadership. I distinctly remember meeting with you in 1995 when you first described to me your vision for what would become Section 706. You challenged me that we must do more than provide good quality voice grade service to Montana and America. You were thinking about high speed Internet access and other services. You "got it" (as the techies say). Your current work on the "Digital Dozen" bills, as well as your continued work on competition, universal service, and technology deployment confirms that you still "get it."

The Telecommunications Act is a cooperative federalist document. You appreciate the crucial

role of states as partners implementing your vision, and you gave us tall orders. I am pleased to report that state commissions and the FCC have forged a better, more productive partnership than existed several years ago. You helped make that happen. For example, tomorrow the FCC and NARUC are cosponsoring a workshop on consumer-friendly billing practices that will involve a wide range of providers and consumers. Technology deployment is another key area for federal-state cooperation.

State commissions and state governments are using many strategies to promoting access to advanced technology. Attachment 1 is an article, "Strategies to Promote Advanced Telecommunications Capabilities," published in the Federal Communications Law Journal in March. The article outlines why these issues are so important to state economic and community development. It also summarizes some approaches states are taking and the basis for the "cooperative federalist" approach I will describe today.

Fortunately, in addition to tall orders Congress gave us good tools. I will start by suggesting that there are many digital divides, not just one. I will then describe the good work of Montana's rural cooperatives and independent telecommunications companies, which give us examples of strategies that are currently working and the barriers they face. Then I will describe the tools in the Telecommunications Act toolbox. I will focus on Section 706, but will also mention the competition and universal service tools in the toolbox.

II. NOT ONE DIVIDE BUT MANY.

Over the last several years, I've become convinced there is no one "Digital Divide." Rather, there are many digital divides, and they may occur where least expected. The Section 706 Joint Conference will help us understand the specific nature of the broadband access problems in communities all across the country.

Based on what I've learned so far, I look at the "digital divides" on two axes: First, by layer of the network (from Network Access Points all the way down to the customer). In a particular situation, is the concern backbone or transport facilities? Internet points of presence? Is it switching? Is it loop facilities (of whatever type)? What are the relationships between layers of the network (switching and backhaul, for example), or the trade offs between investing in improved signal processing and investing in new distribution plant?

On the customer level, is the problem access to customer premises equipment or other network devices? Is it absence of appropriate applications? Or is it a question of human capital, possibly addressable through technical support?

On the other axis, I think about the types of problems faced at the particular network layer. Is the concern the physical absence of facilities in a particular layer? This is certainly an issue in some areas. Is the problem congestion or exhaustion of facilities? Is the problem the price to use existing facilities? This is a real problem in some areas – distance still costs money. Or, is the concern quality? (For example, outages, slow or incorrect provisioning, difficulty handling a complex order, or insufficient technical support.) Quality problems are big concerns in some areas, and for some customers. They can directly affect investment decisions by businesses considering where to locate or whether to expand. All the disparate issues I just summarized have been described to me by customers complaining specifically about what they (not me) labeled as the "digital divide."

**MULTIPLE DIGITAL DIVIDES
NETWORK LAYERS AND ISSUES**

NETWORK LAYER

Network Access
Points
Transport/backbone
Central Office/switching
Applications
Training and Support

ISSUES

Ph	Co	In	V	Q	Qual	Qu	Tra
ysi	st	te	o	u	ity -	alit	inin
cal	to	gr	i	a	Pro	y -	g/
abs	us	at	c	l	ision	Del	tec
en	e	io	e	i	ing	ay	hni
ce	exi	n	t	t			cal
of	sti	b	e	y			su
faci	ng	et	n	-			pp
litie	faci	w	g	O			ort
s	litie	e	i	u			
	s	e	n	t			
		n	e	a			
		la	e	r			
		y	r	g			
		er	e	e			
		s	d	s			
			s				
			y				
			s				

It may also be useful to think of digital divide issues based on the density of the customer base and the level of demand for advanced services. In a high-density area with high demand (for example a commercial core), competition solutions may solve any problems quickly. If a good business opportunity exists, the market will respond.

In a high-density/low-demand area (perhaps a lower income urban neighborhood) community and economic development strategies may make the most sense. These might include community access points, training programs, or even loaning laptops to schoolchildren, as has been done

successfully.

In a low-density/high-demand area (possibly a rural area with a high level of dial-up Internet use) universal service, aggregation (taking advantage of competitive opportunities), and new technology may all help solve the problems. Perhaps something like an Agricultural Extension Service for technology could help overcome demand-side barriers.

In a low-density/low-demand area the full panoply of strategies might be required. Education and other creative approaches may be needed to promote demand in order to justify expensive deployments in some areas.

DENSITY/ DEMAND

HIGH DENSITY/HIGH DEMAND Competition/market solutions	HIGH DENSITY/LOW DEMAND Economic and community development
LOW DENSITY/HIGH DEMAND Universal service, aggregation, technology	LOW DENSITY/LOW DEMAND "Throw the book at 'em"

The *bad news* is that there is no one strategy that will bridge all the digital divides.

The *good news* is that there are a multitude of approaches, each appropriate to address specific problems, and – in combination – to bridge the many digital divides. The *good news* is that there are enormous opportunities for creativity. The *good news* is that we can work together to solve real problems in real communities.

III. SUCCESSES ON WHICH TO BUILD – SOME STORIES FROM BIG SKY COUNTRY.

Montanans are excited about advanced technology. They're using what they have, and eager for faster and more robust access. Investment in telecommunications infrastructure, it is now agreed, leads to greater economic activity generally.

Streaming Solutions, Inc. (www.ss-i.com), based in Cut Bank, is a premiere provider of audio and video streaming systems. It has developed a range of strategic partnerships, and is eager to pursue global opportunities that will require good connections to the rest of the world.

Based in Missoula, **HealthDirectory.com** (<http://healthdirectory.com>) provides the nation's fastest growing database of Medical Society members' web pages, and provides innovative web-based health information to consumers around the nation.

Stream International, which provides Internet and voice-based customer support services for world-class technology companies and e-businesses, recently opened a customer and technical support center in Kalispell that may eventually employ 500 people. Their decision was based in significant part on the quality of telecommunications available in from Century Tel, which will provide redundant Sonet Ring technology and two way access out of the Flathead Valley.

(<http://www.stream.com/Stream.nsf/18ab8bd0d1e8cf818525663c001342ed/0d72dfc5c007ec93852568ab004e9304?OpenDocument>).

Dynamic community-based networks include the **KooteNet** in Libby (<http://www.libby.org>) and **Dillon-Net** (<http://www.dillon-net.org/>), both of which play valuable roles in these rural communities.

At each level of the network, it's possible to point to tremendous successes. Those successes should be our models. I will focus on the good work of Montana's rural telephone cooperatives and companies, which don't get their story told often enough. I'm pleased that Montana-based Touch America will be participating in today's hearing. They also have a great story to tell. U S WEST has all digital switches and interoffice facilities, and has deployed Frame Relay. It has also deployed DSL in Helena. AT&T has begun providing high-speed cable service in Billings. Several national carriers,

See, Edwin Parker, et al., Electronic Byways: State Policies for Rural Development Through Telecommunications, 2nd ed., (Aspen Institute, 1995), chapter 6, for a summary of the literature.

Consistent with Section 706, retail provision of pure data service is not regulated in Montana. This presents the challenge and the opportunity of working with providers in different ways to promote access. Of course, to the degree wholesale networks are open to competition and firms are competing at the retail level,

including Avista and PSINet are also providing service in Montana.

Montana’s rural providers have massively rebuilt their local networks, with crucial support from universal service mechanisms and, in some cases, Rural Utility Service loans. These networks are of sufficient quality to support provision of wide-band for those customers close enough to be directly served from the central office. Almost all Montanans now have dial up Internet access.

A Montana consortium of rural cooperatives and small telcos has built the ATM-based MAIN (Montana's Advanced Information Network) network, which will finish looping most of Montana this year. Together, these companies have deployed over 5,000 miles of fiber. (Attachment 2 is a map of the MAIN network.) A related consortium, Vision Net, connects approximately ninety switched video studios, mainly in rural Montana and including a number of studios on Indian Reservations. (Attachment 3 includes video studios connected to the Vision Net network.) Many rural providers are committed to providing DSL and other services to their members over the coming year. These efforts are important, but may be risky. And, the further out access is deployed, the more expensive and therefore risky it becomes.

For example, the Jordan exchange, served by Mid-Rivers Telephone Cooperative, includes 790 access lines in an area of 4025 square miles. The capital cost of providing DSL to the 397 customers served directly from the central office will be only \$38 per customer, and Mid-Rivers will make this investment. In cold contrast, the average capital cost to provide DSL to the 390 customers too far away to be served directly from the central office is nearly \$32,000 per customer. It is impossible to make a business case to recover all of these costs.

EXCHANGE JORDAN SQUARE MILES 4026	TOTAL ACCESS LINES	CDOSA ACCESS LINES	DLC SUBS UPGRADE D	CDOSA DSLAM COST	DLC EQUIPMENT COST	DLC FIBER ADDITION	DLC FIBER COST	DLC COPPER ADDITION	DLC COPPER COST
	790	397	390	\$15,000.00	\$2,028,912.00	388 MILES	\$9,700,000.00	82 MILES	\$574,000.00

traditional retail regulation is less important.

MAIN and Vision Net's sponsors are generally members of either the Montana Telecommunications Association or Montana Independent Telephone Systems.

COST OF CDOSA UPGRADE	\$15,000.00		PER SUB COST WITHIN CDOSA	\$37.78	AVERAGE COST OF UPGRADE
		\$15,651.73			
COST OF DLC UPGRADE	\$12,302,912.00		PER SUB COST OUTSIDE CDOSA	\$31,545.93	PER SUB
TOTAL COST	12,317,912.00				

Once high-speed service is deployed locally, that traffic must be carried to the backbone network. A high-speed information side street is of little value if it connects to a washboard-surfaced country road at the edge of town. The presence of good capacity networks such as MAIN is essential to complete the link. Vision Net is also developing ways to provide cost-effective Network Access Point (NAP) connections using a combination of existing and new facilities. Skyland Technologies, Inc., also a consortium project recently opened a "fiber hotel" in Billings. The facility provides high-quality interconnection (caged or cageless) with redundant access to multiple networks, for a variety of national and regional carriers. Attachment 4, provided by Montana Independent Telephone Systems, describes MAIN, Vision Net, the Network Access Point peering proposal, the Skyland fiber hotel, and also several carriers' work to provide DSL and to improve service on the Crow Indian Reservation.

These examples raise questions:

What kind of support do successful efforts need to thrive?

How can they be replicated in other areas?

How can we build on or better these accomplishments?

IV. THE COMPETITION TOOLS.

The competition tools involve opening up local networks (I think of them as "hub networks") through tools such as interconnection under Sections 251 and 252. It has been a challenge for the FCC, state commissions, and (unfortunately) the courts to set the right balance between incumbents and

competitors over the past four years. As Justice Stephen Breyer remarked, “It is in the unshared, not in the shared, portions of the enterprise that meaningful competition would likely emerge.” I am pleased to report that “line sharing,” through which a competitor can lease the unused high frequency of a local loop to provide Digital Subscriber Loop (DSL) will be a successful competitive tool in Montana. U S WEST and competitive providers are currently negotiating a multi-state DSL agreement, that I expect to be finalized soon. Competitive providers, especially including Montana-based companies, will use their own DSL facilities over shared lines to provide DSL in several Montana towns. This will likely trigger a healthy competitive response from U S WEST. That’s just how competition is supposed to work, and just what Congress intended in opening local markets.

Section 271 is another critical competition tool you gave us. The nuts and bolts of opening markets, which you laid out in the competitive checklist, is not an easy task for anyone. Success requires absolute commitment and focus. Fortunately, four years after the Act passed, parties on both sides have moved past the posturing and are hard at work to succeed. The structure of Section 271 creates two especially important roles for state commissions: developing a thorough record, and – especially – working with the Bell Operating Company and its competitors to solve problems and implement systems that work. State commissions including New York and Texas have devoted substantial resources (including lots of creativity) to using the Section 271 tool to construct the framework for competitive local markets in their states. Where that tool is used well, as in New York and Texas, the FCC should give especially great weight to state commission decisions. That is what

Separate Opinion of Justice Breyer, concurring in part and dissenting in part. *AT&T Corporation v. Iowa Utilities Board*, 525 U.S. 366, 429; 119 S. Ct. 721, 754; 1999 U.S. LEXIS 903, 102-103 (S.Ct. 1999).

occurred in New York. That is what should occur in Texas.

Thirteen commissions in states served by U S WEST are working together on a collaborative effort to conduct independent, third party testing of the Operations Support Systems (OSS) that are critical to the success of local competition. That process is open to all competitors, with all documents available on the Web (<http://www.nrri.ohio-state.edu/oss.htm>). Both U S WEST and the competitors are working together seriously and in good faith. Issues associated with the ability of competitors to provide DSL are an important part of the Regional OSS Collaborative. (While the pending U S WEST-Qwest merger presents many serious issues now being examined by state commissions including Montana's, it is my *personal* belief that one result of the merger has been to focus U S WEST much more clearly on opening its local market.)

In March, NARUC adopted a resolution affirming its support for the 1996 Act; opposing legislation that would permit the Bell Operating Companies to provide data services across LATA boundaries without first fully opening their local markets to competition as required under the 1996 Act; or, that would limit the ability of public utility commissions to fulfill their obligation to regulate core telecommunications facilities used to provide both voice and data services and to promote deployment of advanced telecommunications capabilities. We took this action because Section 271 is a valuable tool that states are using effectively to open markets, which in turn is helping to spur deployment of new services.

V. THE UNIVERSAL SERVICE TOOLS.

I was recently appointed by FCC Chairman Kennard to the Federal-State Joint Board on Universal Service. (Attachment 5 is my statement at the March 6, 2000 Joint Board meeting.) Over the next year, the Joint Board will be considering an appropriate high cost fund mechanism for the hundreds of small companies that provide generally excellent service throughout rural America. We will be paying particular attention to the reports and recommendations of the Rural Task Force.

In Section 254(b)(2) you instructed us that, "Access to advanced telecommunications and information services should be provided in all regions of the Nation." In Section 254(b)(3) you declared that residents of rural and insular areas should have access to "reasonably comparable" services, including advanced services, at prices that are reasonably comparable to those in urban areas. In Section 254(c)(1) you directed us to consider the "evolving level" of universal service, taking into account whether services are "subscribed to by a substantial majority of residential customers." I hope the Joint Board will be considering all these issues. Additional FCC proceedings, including those concerning the cap on the size of the high cost fund for rural providers and the consideration of bandwidth that will be supported by high cost fund are also relevant. These present complex questions with often conflicting objectives among parties. The outcomes, however, will directly affect the

See Comments of the Montana Telecommunications Association Regarding Rural Telephone Companies Seeking Removal of Individual Caps Placed on High Cost Loop Support (February 11, 2000), In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45. MTA suggests that modifying or removing the overall cap on universal service support for high cost rural providers would be a key step in expanding access to higher speed services in rural areas.

See Comments of Rural Utilities Service, In the Matter of Common Carrier Bureau Seeks Comment on Requests to Redefine "Voice Grade Access" for Purposes of Federal Universal Service Support, CC Docket 96-45. RUS suggests that the FCC should redefine voice grade access to require bandwidth comparable to the real level of performance of urban voice grade service, specifically 3400 Hertz; that voice grade access service should include the requirement to provide 28.8 Kb/s modem connection to the substantial majority of rural customers, since the substantial majority of urban customers receive this performance; and, that states should be authorized to "grandfather" ETCs who cannot provide this service. Based on its experience implementing the Rural Electrification and Loan Restructuring Act of 1993, RUS believes these plant improvements "cost little if work is done at the time of a plant rebuild that is otherwise necessary."

provision of high quality basic and advanced services to many parts of this country. I will not comment on whether "Eligible Telecommunications Carriers" should be required to provide all customers advanced services in order to receive high cost fund support. However, it is significant that perhaps as many as seventy percent of all customers are within 18,000 feet of the central office, which is currently considered the maximum reasonable distance for most DSL service. It has been estimated that as much as eighty percent of the loop enhancements necessary to provide DSL could be funded under the current system but for the high cost fund cap.

III. The Section 706 Tools.

Section 706 demonstrates how far sighted Congress truly was. Its champions, especially including Senator Burns, told us "do more, don't be satisfied." NARUC passed a resolution two years ago saying Section 706 is an opportunity to "grab the brass ring of new technology," not an "invitation to pick the low-lying fruit."

Last Summer NARUC submitted to the FCC a detailed proposal for a Section 706 Joint Conference. Specific functions set out in the NARUC proposal included monitoring deployment through regional hearings, studies, and other efforts; activating stakeholders; coordinating efforts by seeking synergies, removing barriers, and transferring implementation to stakeholders; and disseminating information to those best able to use it. The proposal also discussed coordinated deployment, for example through "Section 706 zones."

As we developed the Section 706 Joint Conference proposal last year, we particularly benefited from the efforts of the Alliance for Public Technology, which proposed a Section 706 Joint Board two years ago. The Joint Conference's success, in my opinion, will depend on the continued involvement of citizens' organizations, providers, users and potential users at the community level. Through the regional field hearings, site visits and other efforts, I hope we will emphasize the importance

of these direct contributions.

Depending on the location, the customer, and the specific circumstances, a particular Digital Divide issue may have a competition answer, a universal service answer, or an answer that involves supporting state and local economic development efforts, for example through training efforts. The Rural Utility Service and NTIA also have important contributions to make.

As federal and state commissioners, we don't have all the answers, the resources, or the legislative direction to answer all these questions. And we shouldn't! I hope through the Joint Conference we will be able to assist in bringing together the parties who can help assemble the pieces in the kinds of creative, new combinations that are the essence of entrepreneurialism.

Within the constraints of federal law, the FCC worked hard to be faithful to the NARUC proposal. Created in October, the Federal State Joint Conference on Broadband Services is intended as a forum to:

- examine how to accelerate deployment of affordable advanced services to rural and under-served citizens;
- conduct an on-going cooperative dialogue regarding deployment of advanced services;
- promote an exchange of information between and among state and federal jurisdictions; and,
- explore regulatory and deregulatory mechanisms that will facilitate the widespread availability of advanced services.

Chairman Kennard and his four fellow commissioners will all participate in the Joint Conference. Each will join with state commission members as co-hosts of regional field hearings. The opening hearing, held Washington on March 8, included a very lively kickoff and also a site visit focusing on broadband deployment in inner cities. An April 17th hearing in Anchorage will focus on the relationship between advanced services deployment and economic development. An April 19th hearing in Sioux City, Nebraska, will emphasize cable and fixed wireless deployment and rural deployment. A May 22nd hearing in Lowell, Massachusetts, will concern public/private partnerships, deployment in remote areas, and data gathering initiatives. On June 9th, a hearing in Miami will focus on deployment to rural and urban multicultural communities, fixed wireless deployment, and public private partnerships. On June

Chairman Nanette Thompson of Alaska, Jo Anne Sanford of North Carolina, Brett Perlman of Texas, Irma Muse Dixon of Louisiana, Furtney of Wyoming, and Bob Rowe (ex officio).

23rd, a hearing in Cheyenne, Wyoming (with a Montana segment on June 21st) will focus on speeding deployment via community demand aggregation, deployment in rural areas and Indian Territory, and data gathering initiatives. Information about the Joint Conference is available at its web page, www.fcc.gov/jointconference.

The Joint Conference is an exciting project. It will help move us beyond the “Telewars” the armies of lawyers and advocates have been fighting, and focus us instead on what we can accomplish together. The most exciting and important work, however, will not occur in public hearings. It will take place in the big cities, in the small towns, and on the “frontiers” (as we say in Montana), where people are working diligently and creatively to solve real problems.

We are exploring the possibility of holding the hearing over the Vision Net System, and of streaming it over Streaming Solutions.

LIST OF ATTACHMENTS

ATTACHMENT 1 - Bob Rowe, "Strategies to Promote Advanced Telecommunications Capabilities," Federal Communications Law Journal (March 2000).

ATTACHMENT 2 – Montana's Advanced Information Network system map.

ATTACHMENT 3 - Vision Net Interactive Television Studios

ATTACHMENT 4 – Attachment 4 – Partial Summary of Key Small Company Initiatives

ATTACHMENT 5 – Statement, March 6, 2000, Universal Service Joint Board meeting

.

Attachment 1 - Bob Rowe, "Strategies to Promote Advanced Telecommunications Capabilities,"

Federal Communications Law Journal (March 2000).

ATTACHMENT 2 – Montana's Advanced Information Network system map.

Attachment 3 Vision Net Interactive Television Studios

ATTACHMENT 4 – PARTIAL SUMMARY OF KEY SMALL COMPANY INITIATIVES**DSL Services:**

-Nemont and its Subsidiaries

Valley Telecommunications has just installed its first equipment and is already offering DSL services to more than 30 customers in Glasgow. Equipment has been ordered (some has already been delivered) and will be installed this spring in six other exchanges operated by Valley, Nemont Telephone Cooperative, and Project Telephone Company. By mid-summer, 9,151 of the three companies' combined 19,582 access lines will be able to access DSL – this amounts to a 47% penetration rate as far as access goes. Of the 9,151 lines, 4,133 will be on the Fort Peck and Crow Indian Reservations. The three companies are now looking a new HDSL technology that can be repeated and therefore has a range of 28,000 feet that will allow a broader roll-out of DSL service in the next phase. Unfortunately, there will still be some customers who simply live too far out to be accessible via existing DSL technologies. Therefore, the companies are continuously exploring new technologies with various vendors and equipment manufacturers and will extend the reach of their broadband services farther and farther out as new solutions become available.

-Triangle and Central Montana Communications

While Triangle and CMC have not yet begun selling DSL, they have selected an equipment vendor and anticipate rolling out DSL in their four largest exchanges by the end of July. Their goal is to roll out DSL service in another 10-12 exchanges by the end of 2000. As with the Nemont companies, they will continue to look at developments that will allow the service to be pushed further out into the more remote locations in their service areas.

Project Telephone Company Service to the Crow Reservation:

Project serves more than 1700 access lines on the Crow Reservation in four exchanges, Crow Agency, Lodge Grass, Wyola and Fort Smith. Since 1994, when the exchanges were acquired from U S WEST, Project has invested \$1,869,054 to improve and expand the exchanges. These improvements, which included the installation of digital switches and fiber optics, allowed the provision of equal access and custom calling services. Dial-up Internet access on a toll-free basis has been available to all subscribers since 1997. Contrary to recent allegations by Western Wireless, Project's facilities are available to more than 99% of the homes and businesses on the Crow Reservation and more than 72% of the residential homes on the reservation currently subscribe to Project's service.

Project is also in the first year of an \$800,000 network upgrade for the two most populous exchanges on the Reservation. On completion of this project, high speed Internet access and other DSL-based services will be available.

Project has also worked closely with Vision Net to bring increased educational opportunities to the Crow Reservation. Vision Net currently has several interactive video education studios on the Reservation, including one at the Little Big Horn College in Crow Agency, Dull Knife Community College in Lame Deer, and at Lodge Grass. One of the studios, installed at the Pryor high school, is not yet fully operational because unfortunately, the Pryor exchange is served by U S WEST and U S WEST has only one high-speed line (a T1) into the town. Instead of paying U S WEST the more than \$444,600 they require to install a second T1 into town, Project Telephone Company will likely bypass U S WEST and install a microwave DS-1 facility into Pryor to get the school's studio.

MAIN, Inc.:

Montana's Advanced Information Network, or MAIN is a joint venture of Montana independent telephone companies and cooperatives. MAIN combines the companies' smaller networks across Montana into a state-wide digital fiber network that stretches from North Dakota to the Idaho border. The MAIN network is capable of bringing state-of-the-art telecommunications to vast areas of Montana and can provide circuits at the T-1, DS-3 and OC-N levels for applications such as Internet, long distance, tele-medicine, distance learning, video conferencing and data networking. The MAIN network also ties to other networks in the U.S. and Canada to allow access to major metropolitan areas such as Denver, Spokane, Seattle, Dallas, Chicago,

Calgary, etc.

Vision Net, Inc.:

Vision Net, a joint venture of five Montana telephone cooperatives, was started in 1995 to provide two-way interactive video to rural schools in the state. The goal of the company is to provide technologically advanced services, and support for community, educational and business development in rural and urban communities throughout Montana. Vision Net utilizes asynchronous transfer mode (ATM) technology, a strong development team and existing fiber networks such as the MAIN network to bring interactive video business and education conferencing, Internet services, Wide Area Networks and broadband transport services to communities throughout Montana. Vision Net has 67 interactive video conferencing studios throughout Montana including studios in over 40 public schools, and studios in many of the state's colleges, including all 7 of the state's tribal colleges.

I have included a map of Vision Net's system in your materials. In addition to the studios pictured on the map, sites have been constructed in Lodge Grass, Crow Agency, Pryor, and Lame Deer on the Crow Indian Reservation. Additionally, the equipment has been ordered to install a new telemedicine network with sites in the hospitals/clinics in Plentywood, Scobey, Poplar, Glasgow, and Malta.

Vision Net's Network Access Point and Peering Concept:

Vision Net currently provides peering on it's own network to maximize the efficiency and bandwidth utilization for Internet circuit providers and others on the network and is working out a plan to expand this arrangement to include expanded broadband links to and peering relationships with one or more major Internet backbone providers.

Vision Net currently maintains 2 DS-3 circuits to the Internet backbone. One circuit is provided by Shaw Fiberlink of Calgary, Alberta, and the other by Global Crossing, Inc. Both circuits have been negotiated with an easy upgrade path to OC-3 and higher connectivity. Vision Net also has a multiple T-1 connection with Cable and Wireless, that is being upgraded to a DS-3.

Vision Net is working with several of Montana's rural telephone companies, and Montana's university system to develop one or more network access points in Montana, and is in the process of upgrading its peering routers and expanding its BGP-4 peering relationships with its major bandwidth providers. The company is well positioned to provide cost effective statewide peering and NAP services to multiple customers, including local, state and federal governmental entities, educational and healthcare institutions and ISPs.

Skyland Technologies, Inc.:

Skyland Technologies is a consortium of Montana and North Dakota telephone and electric cooperatives that have constructed a "Neutral Collocation and Network Connection Center" commonly referred to as a fiber hotel. The location of the fiber hotel is in Billings, Montana and offers ILECs, CLECs, IXCs, ISPs and other telecommunications providers the opportunity to physically locate their telecommunications equipment in a clean, professionally engineered and managed, controlled temperature environment with abundant, conditioned redundant power supplies.

Each tenant can locate equipment inside secured-entry "cages" if desired, or on a leased equipment rack. Tenants will be able to install, maintain, operate, replace and remove their equipment just as if the equipment were located inside their own premises. Although the facility will be secure, tenants will have access to the premises seven days a week, 24 hours a day.

This facility also serves as a physical and virtual meet-me point allowing inter-connectivity between tenants and other carriers. This allows them to share and supply emerging technologies, bandwidth, transit services, and peering arrangements all under one roof in a secure, scalable, non-congested environment. Redundant access to multiple fiber transit networks is readily available. One major advantage of the multiple-carrier environment is that it allows tenants to shop for the best rates and services among competing carriers in a single location. Other services provided by Skyland include equipment installation, maintenance, network monitoring, and diagnostic assistance.

The facility is designed to get carriers up and running quickly (almost "plug and play"), and since the

conditioned space, power, etc. is readily available, the carriers will greatly reduce their up-front capital expenditures. Tenants can also "get connected" quickly and inexpensively because their links to other carriers are handled within a single building.

This facility will likely become the site of Montana's first network access point, providing an aggregation and peering hub for Internet-related data traffic.

ATTACHMENT 5
STATEMENT OF BOB ROWE
UNIVERSAL SERVICE JOINT BOARD EN BANC
March 6, 2000

I have great respect for the work of the Universal Service Joint Board, for its members and hardworking staff, and also for the joint board process. I have been participating in universal service matters referred to the Joint Board for many years, and am honored now to be member. The Joint Board referral process can be slow and sometimes frustrating (like democracy), but allows for thorough consideration of matters that are truly fundamental. Formal referral is not appropriate in every case, of course, and is not always required for the non-federal Joint Board members' views to be considered.

Over the coming months, Job Number One will be ensuring that rural customers continue to receive excellent telecommunications service. Members of this Board have correctly endorsed "do no harm" as a guiding principle. The Rural Task Force is documenting the ways in which rural providers truly are different, as well as the key role of high quality telecommunications service in rural community and economic development. Each report the Task Force produces leads to a more complete understanding, and ultimately will allow us to do our job better.

I also look forward to considering the relationship between Congressional direction in Section 254, concerning universal service, and Section 706, directing the FCC and state commissions to promote deployment of advanced telecommunications capabilities. The Section 706 Joint Conference will convene its first face-to-face meeting Wednesday, and will be working hard over the coming months. The FCC will issue its next Section 706 report in the coming months. Informed by both efforts, I hope this Board will be able to consider Section 254(b)(2), which states, "Access to advanced telecommunications and information services should be provided in all regions of the Nation," and also Section 254(b)(3) which provides that "reasonably comparable" service, including advanced services, should be available to residents of rural and insular areas. Congress, of course, has directed us to consider the "evolving level" of Universal Service under Section 254(c)(1). I take that charge seriously.

Starting from scratch, I would not necessarily endorse a cost modeling approach. Some criticisms of cost modeling as a basis for universal service support have been trenchant. At this late date, however, the cost model has been implemented for non-rural companies. That model is still very much a work in progress. Formally or informally, I hope this Board will work to improve both inputs and the model itself. Obviously, a model should not be applied to rural carriers unless it demonstrably preserves and advances consumers' access to high quality telecommunications services.

Section 254(b)(3) requires reasonable comparability of both rates and service. I hope we will be able to consider more directly what "reasonable comparability" means, especially as we address rural providers later this

The evolving universal service definition, the cap on the size of the fund for rural providers, and consideration of required bandwidth are related to one another, and must eventually be reconciled.

year.

I am committed to support efficient implementation of the Rural Health Care and Schools and Libraries programs. In Montana, we have worked closely with the USAC, Congressional offices and especially with program participants to ensure these programs are as effective as possible, and that they continue to improve. It is truly exciting to see what is now being accomplished in rural health care delivery, and also by geographically isolated schools and libraries. It is particularly important to support efforts, currently underway, to maximize effectiveness of the rural health care program.

Finally, let me introduce my Joint Board staff member, Joel Shifman, Senior Telecommunications Advisor to the Maine Public Utilities Commission. Maine and Montana, it turns out, have a lot in common. There's a lot of dirt between phones. Mr. Shifman is intimately familiar with strengths and limitations of various cost models, played a key role helping higher-average cost and lower-average cost states understand one another's concerns, and knows an enormous amount about the technical and arcane topics with which this Board deals. Name a rural telco almost anywhere in the country, and he'll tell you more than you want to know about it. He and I share a commitment, as do all of you, to doing the right thing for the citizens universal service is designed to benefit.

Commissioner Ness and Commissioner Schoenfelder, I commend you for your leadership on this Board. I appreciate your dedication and hard work, along with that of the other Joint Board members and -especially - the great work of the federal and state staff.

I am delighted to be a member of the team!