



**RESOLUTION REQUEST**

I ask that the Public Utilities Commission grant the following relief. (What do you think the Commission should do to solve this problem?)

Insure that credit is given for Caller ID and 3 weeks without telephone service.  
Also resolution to updating telephone service in the area.

**NOTE: Please attach any additional pages, if necessary.**

**VERIFICATION**

*Complainant's signature must be witnessed by a notary public.*

*Loretta P Spear*

*9-2-98*

**Complainant's Signature**

**Date**

State of South Dakota )  
County of *Bennington* )  
):SS

On this *2<sup>nd</sup>* day of *September*, *1998*,

before me personally came and appeared *Loretta P. Spear*,  
known to me to be the individual described herein and who executed the foregoing instrument, and who  
duly acknowledged to me that he/she executed same for the purpose therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

*Lesia J McLaughlin*  
Signature of Notary Public

(SEAL)

My commission expires: *1-26-2002*

These are the facts giving rise to my complaint:

In retrospect our telephone problems began in the spring of this year (1998). Starting with noisy lines (static) and later followed by temporary interruptions in service lasting anywhere from a few minutes to a couple of hours.

These were not reported to repair service as the service would come back on.

During this time the volume on the callers voice would fluctuate. Several times the telephone would ring and when I answered, it would be a dead line.

Approx. 4 weeks ago the line went dead for a day and I called repair service. By the time the repair man came the phone had started to work again. He did work on the service but stated the equipment is old.

A week later the phone went dead again. (Friday, the day before the strike started) I called repair service again. This time supervisory personnel came out on a Sunday and worked on the line. I also advised him that our caller ID service which we had just purchased was not working. (see attached). He stated we did not have that service as the equipment was old and not available to us. He also stated that the equipment upgrade was on the books but not enough money to do the work now. **Perhaps next year.**

When calling to cancel Called ID the Customer Service office said that we should have that service available to us, but would cancel our order and issue credit.

I checked with repair service once again and was told by electronic voice that we might expect to have service by Sept.5. That will be 3 weeks without telephone service.



August 11, 1998



David W Spear  
12760 Old Hill  
City Rd  
Hill City, SD 57745

Dear David W Spear:

We're pleased to provide U S WEST service for you on phone number (605) 574-2258, and confirm the optional services you ordered. The services you ordered are:

Caller ID  
Anonymous Call Rejection (FREE)

We want to make sure you're happy with the service you ordered. If for any reason, though, you're not fully satisfied and decide to cancel within the first 60 days of service, we'll refund all applicable charges. This guarantee does not cover purchased equipment. Please check your owner's manual for information about equipment warranty.

If you have any questions or need help using your new services, don't hesitate to call 1-800-244-1111.

Thank you for selecting U S WEST.

Working  
Docket  
TC 98-155

~~230602~~

~~2199d~~

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

<b>IN THE MATTER OF THE COMPLAINT )</b>	<b>ORDER CLOSING DOCKET</b>
<b>FILED BY LORETTA SPEAR, HILL CITY, )</b>	
<b>SOUTH DAKOTA, AGAINST U S WEST )</b>	<b>TC98-155</b>
<b>COMMUNICATIONS, INC. REGARDING )</b>	
<b>TELEPHONE SERVICE OUTAGES AND )</b>	
<b>INADEQUATE SERVICE )</b>	

On September 3, 1998, the Public Utilities Commission (Commission) received a complaint filed by Loretta Spear (Complainant), Hill City, South Dakota, against U S WEST Communications, Inc. (U S WEST). Complainant stated:

"In retrospect our telephone problems began in the spring of this year (1998). Starting with noisy lines (static) and later followed by temporary interruptions in service lasting anywhere from a few minutes to a couple of hours. These were not reported to repair service as the service would come back on. During this time the volume on the caller's voice would fluctuate. Several times the telephone would ring and when I answered, it would be a dead line. Approximately 4 weeks ago the line went dead for a day and I called repair service. By the time the repair man came the phone had started to work again. He did work on the service but stated the equipment is old. A week later the phone went dead again. (Friday, the day before the strike started) I called repair service again. This time supervisory personnel came out on a Sunday and worked on the line. I also advised him that our caller ID service which we had just purchased was not working. He stated we did not have that service as the equipment was old and not available to us. He also stated that the equipment upgrade was on the books but not enough money to do the work now. Perhaps next year. When calling to cancel Caller ID the customer service office said that we should have that service available to us, but would cancel our order and issue credit. I checked with repair service once again and was told by electronic voice that we might expect to have service by September 5. That will be 3 weeks without telephone service."

Complainant requested the following remedies: (1) That she receive a credit for all charges made by U S WEST for "Caller ID" services, and a credit for charges made by U S WEST for telephone services not received for a period of three weeks; and (2) That U S WEST be ordered by the Commission to upgrade her telephone services to a level comparable to other U S WEST subscribers residing in her residential area. U S WEST credited Complainant for the Caller ID billings, and has credited her account for the days she was without telephone service. The second remedy, an upgrade of service, is the subject of this Order.

The Commission reviewed the complaint during its duly noticed meeting on October 20, 1998, during which it voted unanimously to find probable cause and served the Complaint on U S WEST. U S WEST filed its Answer to Complaint on November 16, 1998.

A hearing was held on December 15, 1998, beginning at 1:30 o'clock P.M., in Room 3rd Floor East, Rapid City Area School Administrative Offices, 300 6th Street, Rapid City, South Dakota. At the hearing, U S WEST stated it would test the facilities and take necessary steps to improve service to Complainant. On March 1, 1999, and April 2, 1999, U S WEST provided updates on the testing.

In its April 2, 1999, letter, U S WEST stated it was proposing to replace the buried drop serving the Complainant and then test the service afterwards.

The Commission considered how to proceed on this matter at its May 12, 1999, meeting. After listening to comments from the parties, the Commission ordered U S WEST to replace the drop and test the system by June 8, 1999.

The matter again came before the Commission at its duly noticed June 8, 1999, meeting. U S WEST representative Edward Peters, who had been a witness at the December hearing, commented on work completed by U S WEST. Staff requested deferral of this matter to allow comment by a Staff witness who was not present at the June 8, 1999, meeting.

The deferred matter came before the Commission at its regularly scheduled July 29, 1999, meeting for decision. The Commission ordered U S WEST to provide the Complainant a telecommunications plant capable of furnishing digital services at an acceptable internet speed and ordered U S WEST to develop a plan identifying the manner, time, cost, and resources required to provide digital telecommunications delivery to the Complainant. It was further required that the plan specify an internet speed, be submitted to the Commission within 90 days from receipt of the order, be subject to Commission approval, and include a cost-recovery schedule.

On September 16, 1999, the Commission received a Petition for Reconsideration and a Motion to Take Judicial Notice from U S WEST. On November 16, 1999, the Commission received U S WEST's Plan as required by the Commission's August 17, 1999, Order Requiring Service Upgrade and Filing of Plan. On January 14, 2000, the Commission received Staff's Response to U S WEST's Plan.

At its January 18, 2000, meeting, the Commission considered how to proceed in this matter. The Commission deferred action on U S WEST's Petition for Reconsideration and Motion to Take Judicial Notice. The Commission unanimously voted to hold a hearing on U S WEST's proposed implementation plan, the issue of cost recovery, and the Complainant's quality of service.

A hearing in this matter was scheduled for March 29, 2000. On March 27, 2000, the Commission received a letter from U S WEST stating that its technician had discovered an available copper pair to serve the Complainant. U S WEST stated that it would not object to continuing the hearing to assure that the service with the new copper pair that is now serving the Complainant is providing satisfactory service. Based on this letter, Commission Staff contacted the Complainant who stated she had no objection to continuing the hearing. Thus, the hearing scheduled for March 29, 2000, was cancelled and the hearing was continued to a date to be determined at a later time. On July 18, 2001, Mrs. Spear reported to Commission Staff that she was satisfied with her service and wished to have the docket closed.

The Commission has jurisdiction in this matter pursuant to SDCL Chapters 1-26, 49-13, and SDCL Chapter 49-31, including 49-13-1 through 49-13-14.1, inclusive, 49-31-3, 49-31-4, 49-31-7, 49-31-7.1, 49-31-7.2, 49-31-10, 49-31-11, 49-31-38, 49-31-38.1, 49-31-38.2, 49-31-38.3, 49-31-58, 49-31-60, 49-31-84, 49-31-85, and 49-31-98, and ARSD 20:10:01:07.01 through 20:10:01:15.01, inclusive, and ARSD Chapter 20:10:33.

On July 24, 2001, at a regularly scheduled meeting, the Commission considered this matter. Upon recommendation of Commission Staff, the Commission voted to close the docket. It is therefore

ORDERED, that the docket shall be closed.

Dated at Pierre, South Dakota, this 27<sup>th</sup> day of July, 2001.

<b>CERTIFICATE OF SERVICE</b>	
The undersigned hereby certifies that this document has been served today upon all parties of record in this docket, as listed on the docket service list, by facsimile or by first class mail, in properly addressed envelopes, with charges prepaid thereon.	
By:	<u>    <i>Delaine Kaelbo</i>    </u>
Date:	<u>    8/3/01    </u>
(OFFICIAL SEAL)	

BY ORDER OF THE COMMISSION:

    *James A. Burg*      
JAMES A. BURG, Chairman

    *Pam Nelson*      
PAM NELSON, Commissioner



**BOYCE, MURPHY, MCDOWELL & GREENFIELD, L.L.P.**  
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J.W. Boyce (1884-1915)  
John S. Murphy (1924-1966)

March 27, 2000

Mr. William Bullard, Executive Director  
Public Utilities Commission  
500 East Capitol Avenue  
Pierre, SD 57501

**VIA FACSIMILE - 605-773-3809**

Re: In the Matter of the Complaint Filed by Loretta Spear, Hill City, South Dakota, against US WEST Communications, Inc. Regarding Telephone Service Outages and Inadequate Service (TC 98-155)

Dear Mr. Bullard:

This letter will advise the Commission regarding a material development that has occurred in this matter. U S WEST technicians were doing testing on Mrs. Spear's line. This testing occurred on or about March 21, 2000. During the testing, it was discovered that there was an available copper pair to serve Mrs. Spear. She has now been cut over on a copper pair and is able to order Caller Identification.

Colleen Sevold called Mrs. Spear during the middle of last week to advise her of this development and asked her if she wanted to order Caller Identification. Mrs. Spear did not know if she wanted to order Caller Identification. Colleen indicated that she would call her back on Friday to discuss the matter. Colleen has been unable to make contact to determine whether Mrs. Spear wants to order Caller Identification.

U S WEST, the Commission and Mrs. Spear are going to be expending a great deal of time and effort to attend the hearing this week. U S WEST would not have any objection to having the hearing continued to assure that the service with the new copper pair that is serving Mrs. Spear is providing satisfactory service and to allow her to order the Caller Identification if she so desires to make sure that it works. Please advise whether the Commission desires to continue the hearing to another date.

Sincerely yours,  
BOYCE MURPHY, MCDOWELL  
& GREENFIELD, L.L.P.



Thomas J. Welk

TJW/vjj

Enclosure

cc: Karen Cremer (via fax)  
Rolayne Wiest (via fax)  
Colleen Sevold

Alex Duarte  
Loretta Spear

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

<b>IN THE MATTER OF THE COMPLAINT )</b>	<b>ORDER CANCELLING</b>
<b>FILED BY LORETTA SPEAR, HILL CITY, )</b>	<b>HEARING</b>
<b>SOUTH DAKOTA, AGAINST U S WEST )</b>	
<b>COMMUNICATIONS, INC. REGARDING )</b>	<b>TC98-155</b>
<b>TELEPHONE SERVICE OUTAGES AND )</b>	
<b>INADEQUATE SERVICE )</b>	

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A hearing was scheduled for March 29, 2000, beginning at 12:30 o'clock P.M. (MST), in Room 3rd Floor West, Rapid City Area School Administrative Offices, 300 6th Street, Rapid City, South Dakota.

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ORDERED, that the hearing scheduled for March 29, 2000, is cancelled and the hearing is continued to a date that shall be determined at a later time.

Dated at Pierre, South Dakota, this 28th day of March, 2000.

<b>CERTIFICATE OF SERVICE</b>	
The undersigned hereby certifies that this document has been served today upon all parties of record in this docket, as listed on the docket service list, by facsimile or by first class mail, in properly addressed envelopes, with charges prepaid thereon.	
By:	<u>Melaine Kalbo</u>
Date:	<u>3/28/00</u>
(OFFICIAL SEAL)	

BY ORDER OF THE COMMISSION:

James A. Burg  
JAMES A. BURG, Chairman

Pam Nelson  
PAM NELSON, Commissioner

Laska Schoenfelder  
LASKA SCHOENFELDER, Commissioner

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

TC 98-155

**IN THE MATTER OF THE COMPLAINT  
FILED BY LORETTA SPEAR, HILL CITY,  
SOUTH DAKOTA, AGAINST U S WEST  
COMMUNICATIONS, INC. REGARDING  
TELEPHONE SERVICE OUTAGES AND  
INADEQUATE SERVICE**

**U S WEST COMMUNICATIONS, INC.  
RESPONSE TO REQUEST FOR  
INFORMATION BY STAFF**

U S WEST Communications, Inc. ("U S WEST") provides the following information requested by the Commission Staff in the Staff's Response to U S WEST Communications, Inc. Plan dated January 14, 2000:

Commission Staff would request the following information be provided so that it may further assess the plan:

1. A general description of the carrier system, including product specifications, that is more detailed than the hand sketched Exhibit A.

**RESPONSE:** The FDS-1 (GO DIGITAL) is a universal (TR 57) carrier system that provides voice service to customers. This system can be used in urban, suburban and rural areas.

A single FDS-1 (GO DIGITAL) system can provide up to 192 subscriber lines. The system consists of two major components: a central office terminal called a Host Digital Terminal (HDT) and field units called Optical Network Units (ONUs) are in a cabinet and are placed near the customer.

The central office equipment consists of up to 3 shelves in one bay. There are 36 cards per shelf each card will support 4 POTS lines. Six of the 36 cards will support one ONU.

2. It is Commission Staff's understanding that E/O Networks is filing for bankruptcy. Please explain how U S WEST will obtain parts for maintenance.

**RESPONSE:** It is correct that E/O Networks has filed for bankruptcy. The rights to build and sell the E/O Networks Digital Carrier system has been purchased by GO DIGITAL NETWORKS. GO DIGITAL will continue to manufacture the same product, although they will use their name rather than the E/O name. New systems and maintenance spare parts will be available from GO DIGITAL NETWORKS.

RESPONSE. U S WEST engineers its network to meet Revised Resistance Design and Carrier Serving Area Standards as found in Bellcore Notes on the Network, SR2275 (Telcordia), and engineers individual POTS services to meet the IEEE Standard Telephone Loop Performance Characteristics, ANSI/IEEE Std.820-1984.

4. Were any other systems looked at? If so, what are the cost comparisons versus the service received.

RESPONSE: Yes. U S WEST has a department whose full function is to evaluate all new telephone products. Products that meet U S WEST's rigid standards for reliability, safety, and that are economical on a subscriber line basis are included in U S WEST's Standard Products List. These products are then incorporated into the U S WEST's processes and Engineering models and configurations on a region wide basis. The E/O product was selected for this type of application because it was large enough to handle the growth while minimizing the cost on a per line basis. Other larger systems would provide the same services as the E/O Carrier system but would be more expensive because of the greater capacity provided but not needed at this time.

5. What factors were used to forecast growth on Mrs. Spear's route?

RESPONSE: The sizing of the digital carrier system was based on the existing number of customers presently working on the analog carrier plus growth for 2 to 4 years. Growth was estimated based on past history and additional demand that can reasonably be projected based on new construction activities.

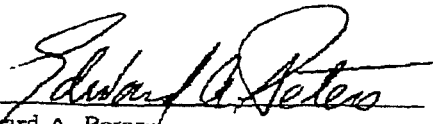
6. How many more customers can be added to the new system once deployed?

RESPONSE: There will be approximately 25 spare lines on this route after all analog carrier system workers are moved to the digital carrier system. Existing customers working on copper loops will not be affected by the placement of this digital carrier system.

7. Will the new system be capable of delivering the custom calling features, as found in ARSD 20:10:33:04, to the Spears' residence?

RESPONSE: ARSD 20:10:33:04 is a standard that applies to switches and does not apply to the digital carrier system or to other outside plant facilities. Nevertheless, the combination of the Hill City switch and this digital carrier system would permit Mrs. Spear to obtain custom calling features.

Dated: March 24, 2000

  
Edward A. Peters  
U S WEST Communications, Inc.  
1801 California Street - #400  
Denver, CO 80202  
Attorney for U S WEST Communications, Inc.

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

<b>IN THE MATTER OF THE COMPLAINT )</b>	<b>ORDER FOR AND NOTICE OF</b>
<b>FILED BY LORETTA SPEAR, HILL CITY, )</b>	<b>HEARING</b>
<b>SOUTH DAKOTA, AGAINST U S WEST )</b>	
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The Commission has jurisdiction in this matter pursuant to SDCL Chapters 1-26, 49-13, and SDCL Chapter 49-31, including 49-13-1 through 49-13-14.1, inclusive, 49-31-3, 49-31-4, 49-31-7, 49-31-7.1, 49-31-7.2, 49-31-10, 49-31-11, 49-31-38, 49-31-38.1, 49-31-38.2, 49-31-38.3, 49-31-58, 49-31-60, 49-31-84, 49-31-85, and 49-31-98, and ARSD 20:10:01:07.01 through 20:10:01:15.01, inclusive, and ARSD Chapter 20:10:33.

A hearing shall be held on March 29, 2000, beginning at 12:30 o'clock P.M. (MST), in Room 3rd Floor West, Rapid City Area School Administrative Offices, 300 6th Street, Rapid City, South Dakota. All persons testifying will be subject to cross-examination by the parties.

The issues at the hearing are: (1) whether U S WEST's implementation plan and cost recovery plan should be approved, changed, or rejected; (2) if the quality of service being provided by U S WEST has been reliable and adequate; and (3) if U S WEST has failed to provide reliable and adequate service, what action should now be taken by the Commission.

The hearing shall be an adversary proceeding conducted pursuant to SDCL Chapter 1-26. All parties have the right to be present and to be represented by an attorney. These rights and other due process rights shall be forfeited if not exercised at the hearing. If you or your representative fail to appear at the time and place set for the hearing, the Final Decision will be based solely on the



testimony and evidence provided, if any, during the hearing or a Final Decision may be issued by default pursuant to SDCL 1-26-20. After the hearing, the Commission will consider all evidence and testimony that was presented at the hearing. The Commission will then enter Findings of Fact, Conclusions of Law, and a Final Decision regarding this matter. As a result of the hearing, the Commission shall determine: (1) whether U S WEST's implementation plan and cost recovery plan should be approved, changed, or rejected; (2) if the quality of service being provided by U S WEST has been reliable and adequate; and (3) if U S WEST has failed to provide reliable and adequate service, what action should now be taken by the Commission. The Commission's Final Decision may be appealed by the parties to the state Circuit Court and the state Supreme Court as provided by law. It is therefore

ORDERED, that a hearing shall be held at the time and place specified above on the issues listed above.

Pursuant to the Americans with Disabilities Act, this hearing is being held in a physically accessible location. Please contact the Public Utilities Commission at 1-800-332-1782 at least 48 hours prior to the hearing if you have special needs so arrangements can be made to accommodate you.

Dated at Pierre, South Dakota, this 6th day of March, 2000.

<b>CERTIFICATE OF SERVICE</b>	
The undersigned hereby certifies that this document has been served today upon all parties of record in this docket, as listed on the docket service list, by facsimile or by first class mail, in properly addressed envelopes, with charges prepaid thereon.	
By:	<u><i>Delaine Koels</i></u>
Date:	<u>3/6/00</u>
(OFFICIAL SEAL)	

BY ORDER OF THE COMMISSION:

*James A. Burg*  
JAMES A. BURG, Chairman

*Pam Nelson*  
PAM NELSON, Commissioner

*Laska Schoenfelder*  
LASKA SCHOENFELDER, Commissioner

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

IN THE MATTER OF THE COMPLAINT FILED ) BY LORETTA SPEAR, HILL CITY, SOUTH ) DAKOTA, AGAINST U S WEST ) COMMUNICATIONS, INC. REGARDING ) TELEPHONE SERVICE OUTAGES AND ) INADEQUATE SERVICE )	)	STAFF'S RESPONSE TO U S WEST COMMUNICATIONS, INC. PLAN  TC98-155
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---	------------------------------------------------------------------------------

On August 17, 1999, the South Dakota Public Utilities Commission entered an Order Requiring Service Upgrade and Filing of Plan in the above captioned matter. On November 16, 1999, U S WEST filed its plan to comply with the August 17, 1999, Order Requiring Service Upgrade and Filing of Plan. Commission Staff files this response to U S WEST's plan.

Based upon the limited information provided by U S WEST's plan, Commission Staff would request the following information be provided so that it may further assess the plan:

1. a general description of the carrier system, including product specifications, that is more detailed than the hand sketched Exhibit A;
2. it is Commission Staff's understanding that E/O Networks is filing for bankruptcy. Please explain how U S WEST will obtain parts for maintenance;
3. what are the basic service industry standards (FCC DOC. 97-420/Bellicore) that U S WEST says it complies with;
4. were any other systems looked at? If so, what are the cost comparisons versus the service received;
5. what factors were used to forecast growth on Mrs. Spears' route;
6. how many more customers can be added to the new system once deployed;
7. will the new system be capable of delivering the custom calling features, as found in ARSD 20:10:33:04, to the Spears' residence.

## COST RECOVERY ISSUE

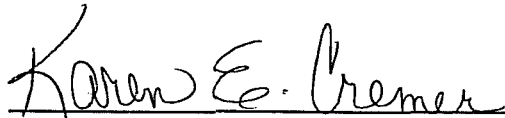
U S WEST's plan includes a proposal to assess a surcharge on all U S WEST access lines, both retail and wholesale, in South Dakota. The cost would be approximately \$1.35 per line ( $\$364,054 \div 270,000$  access lines = \$1.348).

Commission Staff would submit that U S WEST is not entitled to any cost recovery in this matter for two reasons. First, SDCL 49-31-98 did not become effective until July 1, 1999. This matter was docketed on September 3, 1998, and heard on December 15, 1998. The general rule of law is that statutes are to be construed as prospective only, unless it is clearly made retrospective. A statute should not be applied retroactively unless an intention to have it so operate is clearly expressed. State v. Westling, 130 N.W.2d 109 (S.D. 1964). SDCL 49-31-98 may only be applied prospectively as there is no language to indicate that the legislature intended it to be applied retroactively, which it would be in this case if U S WEST were permitted to recover its cost. U S WEST is not entitled to recover its costs of providing a telecommunications plant capable of furnishing digital services at an acceptable internet speed.

Second, even if it is determined that SDCL 49-31-98 does apply retroactively, that statute specifically refers to "the provision of telecommunication services, in excess of voice grade local exchange service, shall establish a cost recovery method. . . ." This is not a case where telecommunications services in excess of voice grade local exchange service will occur. U S WEST specifically states that the public switched telephone network is a voice grade network and that it complies with basic service industry standards. As the Commission is not requiring a service in excess of voice grade local

exchange service, but merely a system that will provide the statutorily defined "local exchange service," U S WEST may not recover its costs.

Dated this 14th day of January, 2000.



Karen E. Cremer  
Staff Attorney  
South Dakota Public Utilities Commission  
500 East Capitol  
Pierre, SD 57501  
(605) 773-3201

#### CERTIFICATE OF SERVICE

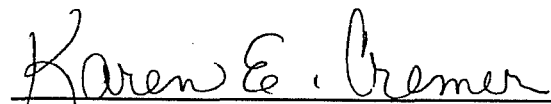
I hereby certify that copies of Staff's Response to U S WEST Communications, Inc. Plan were served on the following by facsimile on this the 14th day of January, 2000.

Mr. Alex Duarte  
Senior Attorney  
U S WEST Communications, Inc.  
1801 California, Suite 5100  
Denver, CO 80202

Mr. Thomas J. Welk  
Ms. Tamara A. Wilka  
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Boyce, Murphy, McDowell & Greenfield  
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Sioux Falls, SD 57117-5015

Ms. Colleen E. Sevold  
Manager-Regulatory Affairs  
U S WEST Communications, Inc.  
125 South Dakota Avenue, 8th Floor  
Sioux Falls, SD 57194

Ms. Loretta Spear  
12760 Old Hill City Road  
Hill City, SD 57745



Karen E. Cremer  
Staff Attorney  
South Dakota Public Utilities Commission  
500 East Capitol  
Pierre, SD 57501

FAX Received NOV 16 1999

RECEIVED

NOV 17 1999

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA

SOUTH DAKOTA PUBLIC  
UTILITIES COMMISSION

TC 98-155

IN THE MATTER OF THE COMPLAINT  
FILED BY LORETTA SPEAR, HILL CITY,  
SOUTH DAKOTA, AGAINST U S WEST  
COMMUNICATIONS, INC. REGARDING  
TELEPHONE SERVICE OUTAGES AND  
INADEQUATE SERVICE

U S WEST COMMUNICATIONS, INC.  
PLAN

The Public Utilities Commission of the State of South Dakota (the "Commission") entered in this docket an Order Requiring Service Upgrade and Filing of Plan dated August 17, 1999 (the "Order"). Subsequent to the Order, U S WEST Communications, Inc. ("U S WEST") filed a petition for reconsideration dated September 15, 1999 ("the Petition") along with a motion to take judicial notice. No answer was filed to the Petition. Without waiving any of the arguments or positions that U S WEST stated in the Petition, U S WEST submits the following plan to comply with the Order:

**DIGITAL CARRIER PLAN**

**EO digital carrier description:** EO is a small digital carrier system (24 channels) capable of single channel distribution. EO is used for sporadic growth in developed areas and for deployment on smaller routes with consistent positive demand or pockets of growth activity.

**Spear route design:** A bay equipped with a 24 channel EO shelf, provisioned with common equipment, POTS (Plain Old Telephone Service) cards, etc. will be placed in the central office, and a 24 channel shelf will be placed in a remote terminal near the subscriber site. See attached Exhibit A for a general description of the proposed new system. There are no spare pairs in the cable for T1 lines, so 27,218 feet of 24 pair fiber cable will be plowed into the ground. Twenty-four (24) fibers is the smallest fiber placement U S WEST typically deploys. Based on the current forecasted growth rate for the Hill City east route -2- (U S WEST route designation) i.e., Mrs. Spear's route, the 24 fibers will provide augmentation to the route well beyond the next century, i.e., 2100.

**Spear route cost/timing:** While deployment as such would provide a different variety of frequency modulation, i.e., pulse code modulation (digital) vs frequency modulation (analog) to Mrs. Spear, her voice grade service quality remains the same, i.e., 300Hz to 3000Hz. The combined cost of fiber deployment (\$252,521) and EO digital line carrier (\$109,533) technology is \$364,054. From equipment design to construction complete the standard interval for the analog to digital carrier replacement will be approximately 325 days. Once engineered, specific dates will be established. This assumes that there will be no extraordinary circumstances associated with the deployment, (e.g., difficulty with weather, discovery of a need for additional equipment requirements associated with unexpected circumstances particular to the Spear digital carrier deployment for analog carrier placement).

**GUARANTEED BAUD TRANSMISSION RATE**

Guaranteed baud transmission rate over voice grade access is not a requirement of voice grade access in the United States, including South Dakota, as stated in the Petition. A presumption of guaranteed connect rate as implicit in basic rate voice grade access definition attempts to redefine basic service to include data connect rate as an expectation of voice grade access. The public switched telephone network is a voice grade network. U S WEST complies with basic service industry standards (FCC DOC. 97-420 / Bellcore) i.e., voice frequency (300 to 3400Hz) analog access to the public switched network.

**CONNECT RATE RANGES**

Assuming optimum\* modem to modem / end to end infrastructure; the following **ranges** could be achieved:

<b>(kbps)</b>	
<b><u>Connect Rate</u></b>	<b><u>Range</u></b>
<b>9.6kbps</b>	(4.8kbps to 9.6kbps)
<b>14.4kbps</b>	(9.6kbps to 14.4kbps)
<b>28.8kbps</b>	(26.4kbps to 28.8kbps)

**56.6kbps** (28.8kbps to 56.6kbps)

- \* A modem connection requires two modems working together to establish a high rate-quality connection. Connections between two U S WEST customers served by long, voice grade loops have additive impairments to overcome. In some cases, these impairments are enough to produce less than optimal connections, i.e., a connect rate of something other than 9.6kbps, 14.4kbps or 28.8kbps. U S WEST cannot guarantee that the modem connection destination will not degrade the connection as a whole.

The condition and quality of a customer's inside wiring, customer modem vintage and modem equipment quality at the sending and receiving ends, internet service provider transmit and receive equipment, along with distance design considerations, contribute to variations in modem connect rates.

Because U S WEST cannot ensure a customer's environment or equipment choices or that the customers choice of Internet Service Provider with their equipment choices and design considerations will accommodate optimum connect rates, U S WEST cannot be held responsible for any connect rate beyond its own infrastructure.

**Cost Recovery**

The Order requires this Plan to include a cost recovery schedule. SDCL 49-31-98 provides:

Any decision or order by any agency which requires the provision of telecommunications services in excess of voice grade local exchange service, shall establish a cost recovery method or mechanism to ensure that the telecommunications company will be able to recover the cost of the investment or expense in a period not to exceed ten years, from the services that result from such mandate. These costs may be recovered regionally or statewide at the discretion of the agency. This section does not affect any decision or order made by an agency to comply with 47 U.S.C. § 251 as of January 1, 1999.

The Order does not require a specific service be provided but rather requires plant to be provided which is to "provide digital telecommunications delivery". The same plant (fiber and carrier) which is "capable of furnishing digital service" is also capable and, in fact, will carry all other services.

The same plant will carry basic exchange services, toll, carrier access, custom calling services, private line, ATM, frame relay, internet service, etc. The access line is the only guaranteed service to recover from because the other services are optional. Assigning a certain service to this plant is not possible because it is a vehicle for **all** services. U S WEST would propose that a surcharge be placed on **all** U S WEST access lines, both retail and wholesale, in South Dakota.

The only probable revenue increase from providing this plant would be for Mrs. Spear to subscribe to Caller ID. This would increase annual revenues \$72 which would not begin to cover the annual carrying charges. In addition, Mrs. Spear could subscribe to a reseller for service at any time resulting in discounted basic exchange revenues and potential loss of toll and other service revenue. With little or no incremental revenue and the risk of even losing some of the current revenues U S WEST would recommend that all recovery occur not over time but in a single charge imposed upon **all** access lines in South Dakota. At the present time, U S WEST has approximately 270,000 access lines (retail and wholesale) in South Dakota. U S WEST would propose that all access lines be assessed a one-time charge for this service, as allowed by SDCL 49-31-98 in the State of South Dakota which would be approximately \$1.35 per line ( $\$364,054 \div 270,000$  access lines = \$1.348)

DATED this 16th day of November, 1999.



Thomas J. Welk  
Tamara A. Wilka  
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1801 California Street #5100  
Denver, CO 80202  
(303) 672-5871  
Attorneys for U S WEST Communications, Inc.




## CERTIFICATE OF SERVICE

I, Thomas J. Welk, do hereby certify that I am a member of the law firm of Boyce, Murphy, McDowell & Greenfield, L.L.P., and on the 16<sup>th</sup> day of November, 1999, true and correct copies of U S WEST Communications, Inc.'s Plan were sent via US mail, postage prepaid, to the following addresses:

Loretta Spear  
12760 Old Hill City Road  
Hill City, SD 57745

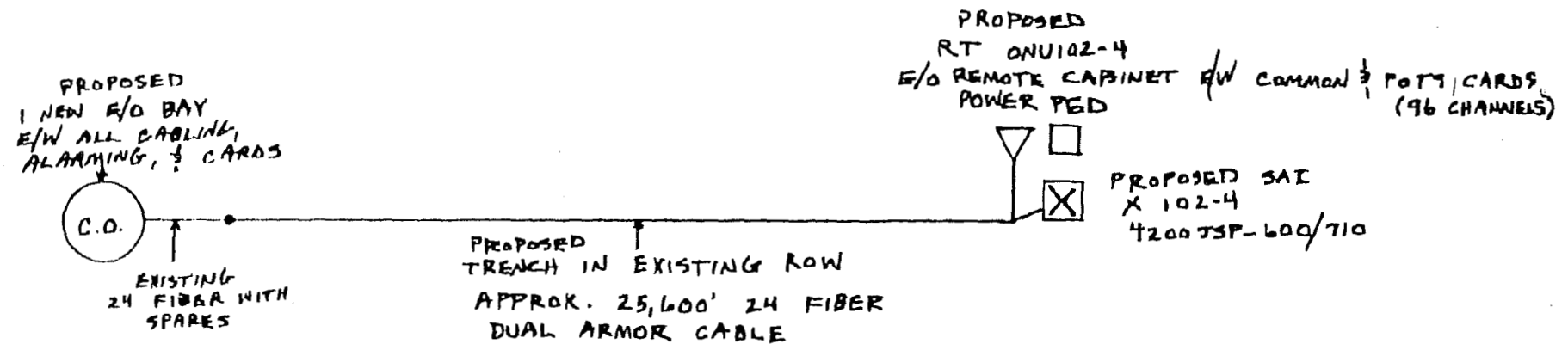
Karen Cremer  
SD Public Utilities Commission  
500 East Capitol  
Pierre, SD 57501



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Thomas J. Welk

HILL CITY - PROPOSAL TO REPLACE EXISTING ANALOG CARRIER WITH E/O FIBER DISTRIBUTION SYSTEM.



FAX Received ~~SEP 16 1999~~

RECEIVED

SEP 17 1999

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA

SOUTH DAKOTA PUBLIC  
UTILITIES COMMISSION

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TC 98-155

**IN THE MATTER OF THE COMPLAINT  
FILED BY LORETTA SPEAR, HILL CITY,  
SOUTH DAKOTA, AGAINST U S WEST  
COMMUNICATIONS, INC. REGARDING  
TELEPHONE SERVICE OUTAGES AND  
INADEQUATE SERVICE**

**U S WEST COMMUNICATIONS,  
INC.'S PETITION FOR  
RECONSIDERATION**

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U S WEST Communications, Inc. ("U S WEST"), pursuant to ARSD 20:10:01:30.01, requests reconsideration and rehearing of the August 17, 1999 Order Requiring Service Upgrade and Filing of Plan ("the Order") entered by the South Dakota Public Utilities Commission ("Commission") in this docket. In support of this petition, U S WEST relies on the Affidavit of Edward Peters<sup>1</sup> in support of the Petition for Reconsideration, and the evidence requested to be considered in the Motion to Take Judicial Notice, which are filed contemporaneously herewith. U S WEST respectfully submits that the findings of fact in the Order are erroneous. Moreover, the Order is so vague and ambiguous that U S WEST cannot reasonably interpret or comply with it. Furthermore, the Order violates SDCL 49-31-85 and Section 254 of the Telecommunications Act of 1996, 47 U.S.C. 151 *et seq.* ("the Act"), as well as U S WEST's rights to due process under the United States and South Dakota Constitutions. Thus, U S WEST respectfully submits that the Order should be reconsidered because it is erroneous and because it fails to consider the consequences resulting from compliance with the Order which would violate both South Dakota and federal law.

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<sup>1</sup> In this petition, his affidavit will be referred to as "Peters Aff" followed by the number of the paragraph referred to in the affidavit.

## PROCEDURAL HISTORY

The Order correctly summarizes the basic procedural history of this docket. However, the Order fails to address the undisputed evidence that U S WEST has provided Mrs. Spear with good voice grade telephone service to satisfy the complaint in this docket. In fact, at the evidentiary hearing held on December 15, 1998, Staff counsel specifically asked Mrs. Spear the following question:

Q. And can you tell the Commission what relief you're seeking, what you want?

A. Reliable phone service.

(Transcript, p. 19.)

At the December 15th hearing, U S WEST's witness Ed Peters conceded that the signals serving Mrs. Spear were not within the design limits. (Transcript, pp. 30-31.) Thereafter, U S WEST expended a great deal of time, money and effort to provide the "reliable phone service" which Mrs. Spear desired. Indeed, Mr. Peters' March 1, 1999 letter to the Commission's executive director outlined the testing and work that U S WEST had completed to provide the service Mrs. Spear required. In addition, Mr. Peters provided undisputed testimony at the subsequent June 8, 1999 Commission proceedings before the Commission that the "drop" to Mrs. Spear's residence had been replaced and that, as a result of U S WEST's repairs and work, Mrs. Spear's voice grade service quality exceeded industry standards. Thereafter, at that same June hearing, Commission Staff requested that the matter be deferred to allow comment by a Staff witness after Mr. Peters had testified. No other witness or evidence, however, has been presented challenging U S WEST's test results or the work that U S WEST has completed.

Accordingly, the record before the Commission is undisputed that what Mrs. Spear wanted, "reliable phone service", has now been satisfied. The Order, however, fails to

acknowledge even the existence any of the these unchallenged facts. As such, the Order is clearly erroneous because it fails to recognize these undisputed facts.

**I.**

**THE ORDER'S FINDINGS OF FACT ARE ERRONEOUS**

The Order contains five numbered paragraphs, which arguably contain both findings of fact and a conclusion of law. Paragraph 1 sets forth the basis for the Commission jurisdiction.

The Order then makes the following finding of fact in paragraph 2:

The telephone services provided by U S WEST to the complainant, at all times relevant hereto, are not comparable to services being provided to certain other U S WEST subscribers residing in her immediate neighborhood. (Emphasis added.)

Mrs. Spear testified, however, that she resides on a country road five miles between Hill City and Keystone. (Transcript, p. 12) She further testified that there is a neighbor across the road that lives up a hill. The next closest neighbor is a quarter mile. (Transcript, p. 13) She does not reside in a defined subdivision. Rather, her area of residence is a rural area where there are no physical boundaries. (Peters Aff. 2). Paragraph 2, however, fails to adequately identify what is Mrs. Spear's "immediate neighborhood", especially in light of the record. As such, this paragraph is impermissibly vague and ambiguous such that U S WEST cannot reasonably interpret it.

This vagueness, and the resulting confusion, is further compounded by paragraph 3 of the Order, which states:

The telephone services provided by U S WEST to the complainant, at all times relevant hereto, were delivered through an analog carrier system whereas certain other U S WEST subscribers in her neighborhood are served through a system capable of delivering digital services. (Emphasis added.)

Mr. Peters testified at the December 15th hearing that there are eight (8) other carrier systems that serve the general area in which Mrs. Spear lives. The majority of the trouble, however, has occurred on the particular system that serves Mrs. Spear. (Transcript, p. 30) Thus, the finding of fact in paragraph 3 of the Order continues to be bewildering in its reference to the ill-defined phrase "her neighborhood," as well as the "certain" other U S WEST subscribers "in her neighborhood".

In addition, the finding of fact in paragraph 3 is unclear in the use of the phrase "a system capable of delivering digital services". As shown in Mr. Peters' Affidavit in paragraph 3, the finding confuses digital services and digital facilities. Furthermore, Mrs. Spear's "neighborhood" is served by metallic loops and analog facilities out of the same switch that serves Mrs. Spear. (Peters Aff. 8.) When the findings of fact in paragraphs 2 and 3 are considered together with the record, they are so vague and confusing that they are simply not capable of any reasonable interpretation.

The only remaining finding of fact in the Order is paragraph 4, which states:

The analog system does not allow U S WEST to provide services to the complainant at levels comparable to certain neighbors, and in the absence of such an upgrade to digital delivery, the complainant will continue to sustain service discrimination. (Emphasis added.)

Again, the record fails to identify the "certain neighbors" to which the Order refers, or the type of "service discrimination" which purportedly exists. (Peters Aff. 2 and 8) The phrases "upgrade to digital delivery" and the "neighborhood" are again vague and confusing. More importantly, the undisputed facts are that no unjust or unreasonable service discrimination exists because Mrs. Spear receives no different services than others of "her neighbors". (Peters Aff. 8)

Moreover, that portion of the Order requiring to U S WEST to do certain acts and furnish certain information (paragraph 5) is also vague and ambiguous and, thus, is not reasonably

capable of being implemented by U S WEST. Specifically, the Order requires that "U S WEST provide the complainant a telecommunications plant capable of furnishing digital services at an acceptable Internet speed." As shown in Mr. Peters' Affidavit, the Order is unclear as to whether U S WEST should provide all or certain digital services or digital facilities. (Peters Aff. 3) In addition, as also shown in Mr. Peters' Affidavit, the phrase "acceptable Internet speed" is vague and ambiguous, and thus is not reasonably capable of being understood with any reasonable certainty. This is especially so because Internet speeds are available at a range of speeds. Thus, what may be "acceptable" to one person may not be acceptable to another. (Peters Aff. 5) Furthermore, as is also shown in Mr. Peters' Affidavit (paragraph 5), U S WEST does not have control as to all of the factors that are required to provide Internet speed. The U S WEST network is only one portion of what is required for customers to have Internet access at their homes. (Id.)

Finally, and perhaps most importantly, the portion of the Order requiring U S WEST to furnish telecommunications plant capable of providing "acceptable Internet speed" fails to cite to any statute authorizing such a requirement. There is simply no statutory authority for such a mandate, and thus the Commission has exceeded its authority in entering the Order.

## II.

### **THE ORDER ATTEMPTS TO ADOPT THE RULES THAT THE COMMISSION REJECTED IN 1998**

The Order attempts to do what the Commission specifically rejected late last year in the Commission's rulemaking docket. That is, the Order attempts to impose on U S WEST a requirement to provide to its customers a certain Internet access speed. The subject of Internet access speed was an issue of considerable controversy in the Commission's rulemaking docket in 1998 which resulted in a substantial number of Commission rules effective December 27, 1998.

For example, the Commission had proposed a rule, ARSD 20:10:33:04, which would have provided as follows:

**20:10:33:04. Minimum transmission levels for local exchange service.** A local exchange company's subscriber loops shall meet the following minimum transmission levels from the subscriber network interface or demarcation point:

- (1) Transmission loss from the central office to the subscriber network interface or demarcation point for existing subscriber loops may not exceed 10 dB at 1004 Hertz. All new, upgraded, or replaced subscriber loops may not exceed 8dB at 1004 Hertz;
- (2) Loop current shall be above 20 milliamperes;
- (3) Total external loop resistance, excluding customer premises equipment, may not exceed the basic range requirement of the terminating electronics. Range extension equipment shall be applied to those subscriber loops that are longer than the basic working range of the terminating electronics;
- (4) Circuit noise objective on subscriber loops measured at the subscriber network interface or demarcation point shall be equal or less than 20 dBmC;
- (5) The minimum data rate shall be 14,400 bps;
- (6) The frequency response range shall be 300 Hertz to 3,000 Hertz with an amplitude deviation not to exceed four dB;
- (7) The power influence level shall be less than 90 dBmC; and
- (8) The longitudinal balance shall be greater than 60 dB.

All subscriber loops shall meet these minimum transmission levels by January 1, 2001.

Both U S WEST and the South Dakota Independent Telephone Coalition ("SDITC") provided extensive comments on this proposed rule. Proposed subsection 5 would have required the subscriber loops to have a data transmission rate of 14,400 bps. This is the connect speed of modem-to-modem data transmissions from a dial-up connection. The independent companies' testimony to the Commission indicated that a study performed for them by Martin & Associates showed that there were more than 6500 customers of SDITC companies (roughly 40%) who are



more than 18,000 feet from the central office switch and who are being served by analog carrier systems. (Transcript of November 2, 1998 (“Rulemaking Tr.”), p. 42.) The SDITC showed that providing such data speed would require their investment of more than \$480 million.<sup>2</sup> U S WEST also provided evidence to the Commission if this proposed rule would have, if deployed, required U S WEST to make an investment of an approximately additional \$1.7 billion. (Rulemaking Tr., p. 97.) The Commission, therefore, rejected the proposed rule in its entirety.

The Commission in the 1998 rulemaking proceeding had also proposed a rule, ARSD 20:10:33:05, which would have stated:

**20:10:33:05 Minimum requirements for new, upgraded, or replaced facilities.** Outside plant, including subscriber loops, constructed, upgraded, or replaced after January 1, 1999, shall be able to provide, as built or with additional equipment, transmission and reception of data at a rate no lower than 1 Mbps. New or replacement switching systems installed after January 1, 1999, shall be capable of providing custom calling features. At a minimum, custom calling features must include call waiting, call forwarding, abbreviated dialing, caller identification, and three-way calling. New or replacement switching systems installed after January 1, 1999, shall also be capable of providing enhanced 911 service. (Emphasis added.)

Again, this rule was the subject of considerable comment by U S WEST and the SDITC, especially with respect to the required data transmission speed of 1 Mbps. The Commission thereafter rejected a specific data speed requirement. Thus, the Commission deleted the first sentence of the proposed rule, and thereafter enacted the rule (minus the first sentence) as ARSD 20:10:33:04 (since the previously proposed ARSD 20:10:33:04 discussed above had been rejected).

Moreover, on December 28, 1998, Mr. Peters testified in this docket that U S WEST has approximately 233 Anaconda systems in South Dakota that serve approximately 1600 customers. (Transcript, p. 40) In addition, as the independent companies testified at the rulemaking hearing,

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<sup>2</sup> See Martin & Associates Cost Study, table 3-6, which was filed with the Commission in the rulemaking

more than 6500 of **their** customers are being served by similar Anaconda systems. (Transcript, 42.) Thus, the consequences of the Commission's Order here would, as a practical matter, arguably reinstate regulations the Commission had previously rejected.

Accordingly, the Order attempts to expand on the Commission's rulemaking authority by requiring U S WEST to provide to its customers certain services that are not authorized by either statutory law or by the Commission's own rules or rulemaking authority. As such, the Order exceeds the Commission's authority and should be reconsidered.

### III

#### THE ORDER VIOLATES SDCL 49-31-85

The Commission's Order also violates recently enacted SDCL 49-31-85 ("Section 85").

Section 85 provides:

Any regulation of telecommunications service by the commission pursuant to chapters 49-13 and 49-31 shall be fair, reasonable, nondiscriminatory and applicable to all telecommunications carriers providing service in the state. The commission shall establish, by rules promulgated pursuant to chapter 1-26, quality of service standards. (Emphasis added.)

The Order, however, is not fair, reasonable, nondiscriminatory nor applicable to all telecommunications providers in South Dakota. To U S WEST's knowledge, the Commission has not required any other telecommunications carriers in South Dakota to provide the type of service or telecommunications plant it apparently wants to require U S WEST to provide (to the extent such requirements can even be interpreted with any reasonable certainty). There are numerous telecommunications carriers with relatively similar analog carrier systems providing local service in South Dakota. Nevertheless, the Commission has never ordered them to provide the services that it has ordered U S WEST to provide. Accordingly, unless the Commission is prepared to order all local exchange carriers, including the independent companies (which have

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proceeding.

more (6500) similarly-situated customers) to replace all analog carrier systems throughout the state, and to provide "acceptable Internet speed" to all of their customers, the Order has the effect of being unfair, unreasonable and discriminatory to U S WEST. As such, the Order violates Section 85.

Finally, the Order violates that part of Section 85 which requires the Commission to establish service quality standards by rules. This is so because, as stated in the previous section, there are no **rules** that have been adopted requiring the type of service quality "upgrade" that the Commission attempts to promulgate in this docket. Indeed, the Commission rejected rules now being implemented by the Order. In addition, U S WEST submits that, as both a procedural and a substantive matter, the Commission in its Order essentially attempts to expand one individual residential customer's complaint about voice grade service quality into a universal rulemaking docket on advanced or enhanced services without proper notice to U S WEST and in conformance with SDCL 1-26. Indeed, SDCL 1-26-6.8 states:

No agency rule may be enforced by the courts of this state until it has been adopted in conformance with the procedures set forth in this chapter.

As no such rule has ever been adopted, the Order is unenforceable and violates Section 85.

#### IV

#### **NO DISCRIMINATION EXISTS AS TO SERVICES PROVIDED TO MRS. SPEAR UNDER SDCL 49-31-11**

The Order in numbered paragraphs 3 and 4 concludes, in essence, that service discrimination exists because Mrs. Spear is served by an analog system as compared to subscribers in "her neighborhood" (whatever that term means in the context of this docket) who are served by a "system capable of delivering digital services." The Order is erroneous as to what is service discrimination. South Dakota law does not require every customer in South

Dakota to be offered the same services. SDCL 49-31-11, which is the applicable South Dakota statute, in relevant part:

No person or telecommunications company may **unjustly** or **unreasonably** discriminate between persons in providing telecommunications services . . . No telecommunications company may make or give any **unjust or unreasonable** preference or advantage to any person, nor unjustly or unreasonably prejudice or disadvantage any person, in the provision of any telecommunications service . . .

The law is clear that only **unjust or unreasonable** discrimination is prohibited. Telecommunication companies must be able to change networks and offer services that may only be initially available to certain customers. Otherwise, a company could only offer a new service when a single network providing the same services could be offered simultaneously to all South Dakota customers. Technology and economics must be considered in determining whether disparity in service offerings are unjust or unreasonable. For example, U S WEST has a new high speed data service called DSL (Digital Subscriber Line). This service is currently limited to customers within a designated distance of central offices. Thus, all customers in South Dakota cannot receive this service because of where they live. (Peters Aff. 3) The relevant question is whether providing DSL service to only certain customers is **unjust** or **unreasonable** discrimination. Clearly, no unjust or unreasonable discrimination exists because of technical and economic limitations. Under the Order, however, U S WEST would be guilty of service discrimination.

Such analysis is no less applicable in this case. It is true that some of Mrs. Spear's neighbors are able to receive caller identification and Mrs. Spear cannot. However, there are other customers of U S WEST and the independent companies who cannot receive caller identification. Does that mean the U S WEST and the independent companies are unjustly and unreasonably discriminating against certain customers? If that service situation is to be rectified,

all facilities not capable of providing caller identification of all companies would have to be replaced, even if they provide basic telephone service. However, it is not unjust or unreasonable for U S WEST and the independent companies to not provide enhanced services, as opposed to only basic local service.

Indeed, under federal law, as discussed in the next section, the Commission is precluded from ordering the provision of services beyond basic voice service without compliance with universal support mechanisms. If the Commission cannot, under federal law, order the provisioning of enhanced services at this time, how can the actions of U S WEST in failing to offer caller identification to Mrs. Spear be unreasonable or unjust?

## V.

### **THE ORDER VIOLATES THE FEDERAL ACT**

The Order also violates Section 254(f) of the Act, as well as other subparts of Section 254. Section 254(f) states:

A State may adopt regulations not inconsistent with the Commission's rules to preserve and advance universal service. Every telecommunications carrier that provides intrastate telecommunications services shall contribute, on an equitable and nondiscriminatory basis, in a manner determined by the State to the preservation and advancement of universal service in that State. A State may adopt regulations to provide for additional definitions and standards to preserve and advance universal service within that State only to the extent that such regulations adopt additional specific, predictable and sufficient mechanisms to support such definitions or standards that do not rely on or burden Federal universal service support mechanisms.

47 U.S.C., § 254(f) (emphasis added.)

The Order requires U S WEST to provide facilities for services that are in excess of the universal service standards that the Federal Communications Commission ("FCC") has defined. The FCC has defined the supported services for rural, insular and high cost areas, and lists nine

services or functionalities designated for federal universal support mechanisms. These listed services are:

1. Voice grade access to the public switched network;
2. Local usage;
3. Dual tone multi-frequency signaling or its functional equivalent;
4. Single-party service or its functional equivalent;
5. Access to emergency services;
6. Access to operator services;
7. Access to interexchange service;
8. Access to directory assistance; and
9. Toll limitation for qualifying low-income consumers.

47 C.F.R., § 54.101.

Digital services and Internet access, or other enhanced or advanced services for that matter, are **not** within the basic universal services stated in Section 54.101. Under Section 254(f), the Commission is allowed to adopt “regulations” to preserve and advance universal service so long as they are not inconsistent with the FCC’s regulations. The Commission has not, however, adopted any universal service regulations.

Moreover, even if the Commission had adopted a regulation stating the “advanced services” were supported services, such regulation would be inconsistent with Section 254(c), which is the Federal Act’s provision defining supported services. Section 254(c) requires that support should only be provided to those services that:

- (a) are essential to education, public health or public safety;
- (b) have, through the operation of market choices by customer, been subscribed to by a substantial majority of residential customers;

- (c) are being deployed in public telecommunications networks by telecommunications carriers; and
- (d) are consistent with the public interest, convenience and necessity.

47 U.S.C., § 254(c) (emphasis added).

The record is barren of any facts that any advanced services to be furnished to Mrs. Spear meet any of the foregoing requirements.

Additionally, Section 254(f) requires "specific, predictable, and sufficient mechanisms" to support a state's addition to supported services. The Order here violates this provision as well because there is currently no mechanism or funding in place whatsoever to support ubiquitous advanced services let alone high cost voice grade service. See also 47 U.S.C. § 254(b)(4) (requiring equitable and nondiscriminatory contributions by all telecommunications companies for the preservation and advancement of universal service); 47 U.S.C. § 254(b)(5) (requiring specific, predictable and sufficient federal and state support mechanisms to preserve and advance universal service); and 47 U.S.C. § 254(e) (providing that only Eligible Telecommunications Carriers (ETCs) (U S WEST here) are eligible for federal universal service support, and that any universal service support should be "explicit and sufficient" to achieve the purposes of this section).

Finally, Section 254(f) requires that "[e]very telecommunications carrier that provides intrastate telecommunication services shall contribute on an equitable and nondiscriminatory basis as determined by the State to the preservation and advancement of universal services in that State." There is no such system in South Dakota for any supported service, however, let alone "advanced services". Instead, the Order purports to require U S WEST to be the sole support for ubiquitous advanced services.

In essence, what the Order purports to do is to require U S WEST to provide advanced services beyond universal service without having South Dakota regulations or funding to provide nondiscriminatory contributions of a universal support mechanism by all carriers.<sup>3</sup> In simple terms, the Order has failed to consider the consequences of universal service and Section 254 of the Act, and thus should be reconsidered.

## VI.

### **THE ORDER VIOLATES THE UNITED STATES AND SOUTH DAKOTA CONSTITUTIONS AND VIOLATES U S WEST'S RIGHT TO DUE PROCESS**

Finally, the Commission's Order violates U S WEST's constitutional rights under both the United States and South Dakota Constitutions.

For example, the Order violates the Fourteenth Amendment of the United States Constitution and Article VI, §2 of the South Dakota Constitution because it denies U S WEST's rights to due process. This is especially so because the Order is discriminatory against U S WEST, without any legitimate state interest, in that it unfairly singles out U S WEST, and only U S WEST, to provide these advanced facilities and services.

In addition, the Order denies U S WEST's rights to due process because it essentially turns what was a voice grade (basic) service complaint by one residential customer (whose complaint has been remedied) into a universal rulemaking proceeding. Moreover, this rulemaking proceeding will potentially require U S WEST to expend more than \$1 billion to provide such services to any South Dakota customer who either requests "comparable" services or who complains that he or she cannot obtain "acceptable Internet speed". The Commission's Order does so without proper notice to U S WEST, and without giving U S WEST an adequate

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<sup>3</sup> It is noteworthy that the independent companies in the rulemaking proceedings brought this very issue to the Commission's attention. (Rulemaking Tr., pp. 45.)



opportunity to properly defend itself. Under the South Dakota Administrative Procedures Act, specifically SDCL 1-26-18, "Opportunity **shall** be afforded to all parties to respond and present evidence on issues of fact and argument on issues of law or policy . . ." These rights were not provided to U S WEST before entry of the Order. This is especially so because the scope of the issue in this docket was limited to the very narrow issue whether Mrs. Spear had "reliable phone service", and was never about advanced or enhanced services.

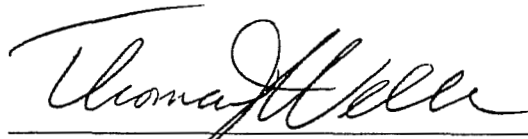
Finally, to the extent that the Commission does not provide for a reasonable, realistic and competitively neutral cost recovery mechanism for U S WEST, the Order would be a de facto violation of U S WEST's constitutional rights, in addition to a violation of SDCL 49-31-98 ("Section 98"). This is so because, while Section 98 on its face provides U S WEST with the right to recover these costs over 10 years, the Order nevertheless would be a de facto violation (as opposed to a de jure violation) of U S WEST's constitutional rights because under Section 98 there is no practical or realistic way to recover the hundreds of thousands of dollars to upgrade Mrs. Spear's loop (or the millions (and potentially billions) of dollars to upgrade all South Dakota loops) to the Commission's satisfaction. U S WEST submits that the Commission's Order does not provide a realistic manner for U S WEST to recover these costs.

In short, the Order violates U S WEST's constitutional rights under the laws of the United States and of South Dakota.

## CONCLUSION

The Order is erroneous in its findings of fact and conclusions of law, and further, fails to consider violations of South Dakota and federal law. Accordingly, U S WEST respectfully requests that the Commission reconsider the Order and thereafter withdraw it **in its entirety**.

DATED this 15th day of September, 1999.



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BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA

TC 98-155

**IN THE MATTER OF THE COMPLAINT  
FILED BY LORETTA SPEAR, HILL CITY,  
SOUTH DAKOTA, AGAINST U S WEST  
COMMUNICATIONS, INC. REGARDING  
TELEPHONE SERVICE OUTAGES AND  
INADEQUATE SERVICE**

**AFFIDAVIT OF EDWARD A. PETERS  
IN SUPPORT OF U S WEST  
COMMUNICATIONS, INC.'S  
PETITION FOR  
RECONSIDERATION**

STATE OF COLORADO    )  
                                          :SS  
COUNTY OF ARAPAHOE )

I, Edward A. Peters, being duly sworn upon oath, depose and state:

1. I am the same Ed Peters that testified at the hearings on this matter for U S WEST Communications, Inc. ("U S WEST") on December 28, 1998 and June 8, 1999 and provided a report dated March 1, 1999 to the Commission regarding the testing and work done by U S WEST regarding the complaint in this docket. In addition, I have personally inspected and tested the telephone facilities to Mrs. Spear that were and have been furnished by U S WEST. Moreover, I am personally familiar with the telephone facilities that serve the general area in which Mrs. Spear resides.

2. I have read the Order Requiring Service Upgrade and Filing of Plan dated August 17, 1999 ("the Order") entered by the Public Utilities Commission of the State of South Dakota ("Commission"). I cannot reasonably interpret the references made in the Order to the "immediate neighborhood" contained in paragraph 2, OR the phrase "her neighborhood" in paragraph 3. Mrs. Spear's residence is not within a defined subdivision; rather, it is in a rural area of the exchange where there are no physical boundaries that would identify a "neighborhood."

3. In regard to paragraph 3, I cannot reasonably interpret what the phrase "a system capable of delivering digital services" means. There appears to be confusion between the terms "digital/analog facilities" and "digital/analog services." Many telecommunications services commonly thought of as digital are really analog services while other services can neither be classified as digital or analog. For instance, Caller ID utilizes an analog transmission between the switch and the Caller ID box to transmit the phone number and caller name. Caller ID can be provided over both analog and digital facilities depending on the technical parameters of the facility itself. Some existing digital subscriber loop carriers are not capable of providing Caller ID services, while newer types of analog carrier systems can provide Caller ID. Most CLASS (Custom Local Area Signaling Services) and Custom Calling features, such as Call Waiting and Three-Way Calling, cannot be classified as either digital or analog. They are switch-based features available in some analog and digital switches. Copper loops are metallic facilities capable of providing both analog and digital services within the limitations of the loop design. Plain Old Telephone Services ("POTS") are analog services. The ability to provide some digital services to customers, such as Digital Subscriber Line ("DSL") and other high-speed data services, are dependent on the design of the loop facility. There are technical limitations associated with the distance from the central office to the customer that may prevent US WEST from providing certain digital services to some customers. Thus, I find the Commission's order "to provide digital telecommunications delivery to the Complainant" to be vague. I do not know if the intent of the order is to require U S WEST to make available all possible digital services to the complainant, or if it is to require U S WEST to build an all digital facility to the complainant. Due to this confusion, U S WEST cannot comply with this order without further clarification.

4. In regard to paragraph 4 of the Order, I am unable to interpret what the phrase "levels comparable to certain neighbors" and the phrase "upgrade to digital delivery" mean. See paragraphs 2, 3 and 6 of this Affidavit for purposes of demonstrating the confusing nature of these phrases.

5. I am also unable to determine the meaning of the phrase "telecommunications plant capable of furnishing digital services at an acceptable Internet speed". Similar to my statement in paragraph 3, although the computer-to-computer interface used for internet access is digital in nature, the dial-up access used in reaching an Internet Service Provider ("ISP") is an analog service. Mrs. Spear's phone service is capable of being used for internet access as it exists today (although internet access is not a U S WEST offered service). Actual Internet speed is a function of many factors, including:

- a. the type of the customer's modem;
- b. the type of the U S WEST local network facilities;
- c. the long distance network connecting the local line to the ISP;
- d. the type of the ISP modem platform and the capacity on that platform;
- e. the number of trunks from a local calling area to the service platform; and
- f. the software used by the ISP for managing the service platform.

U S WEST has control only of a portion of the total network that would impact the user's perception of whether the Internet speed was "acceptable". Furthermore, the Internet operates at a range of speed from 1.2 kilobits per second to speeds in excess of 600 megabits per second. Moreover, what speed is "acceptable" depends on the user. Some users may find lower speeds acceptable while complex business operations need high data speed for business operations. U S WEST cannot comply with this portion of the Order because it is vague and ambiguous and thus is not capable of a reasonable interpretation.

6. The Order also is based upon several erroneous facts and assumptions. First, the Order assumes that Mrs. Spear cannot have Internet service over her existing telephone facilities. As stated above, this assumption is incorrect. Internet access is available over her existing facility. This fact has been previously demonstrated to the Commission in the following dockets:

In the Matter of the Complaint Filed by Randy Kieffer, Sturgis, South Dakota, against U S WEST Communications, Inc. Regarding Service Problems (TC 99-002);

In the Matter of the Complaints Filed by Sheryl L. Klein, Valentine, Nebraska (TC 98-183), Mrs. Clifford (JoAnn) Klein, Valentine, Nebraska (TC 98-184), Lawrence Klein, Valentine, Nebraska (TC 98-199) and Margaret Figert, Mission, South Dakota (TC 98-212) against US WEST Communications, Inc. Regarding Poor Service and a Request to Have Lines Updated.

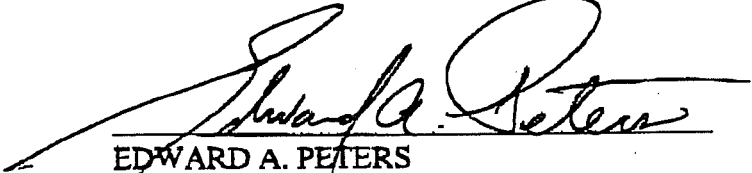
The complainants in these other dockets were also served on analog systems, such as the system serving Mrs. Spear, and they have been able to have Internet service.

7. Second, the Order appears to assume that Mrs. Spear cannot receive any service commonly perceived to be a digital service over her existing telephone facilities. This assumption is also incorrect. She is able to receive, if she so desires, modern services such as call waiting, three-way calling, and most CLASS services, except caller identification as well as Internet access as stated above.

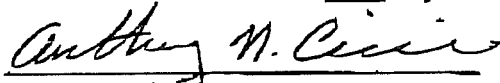
8. Third, the Order determines that some subscribers in "her neighborhood" (whatever that means) receive telecommunication services "through a system capable of delivering digital services" (paragraph 3 of the Order). Again, this assumption is an error. In fact, none of her "neighbors" obtain their voice telephone services over a "digital delivery" network, assuming this means an all digital carrier facility. Mrs. Spear's "neighbors" obtain telephone services over facilities consisting of either an metallic loop or an analog carrier with both the copper loop and derived analog carrier channel terminating into the same serving switch. The only service that Mrs. Spear wants at this time which she cannot receive is caller identification, an enhanced service not

considered a part of basic service. However, some of "her neighbors" likewise cannot receive Caller ID. Thus, U S WEST has not intentionally or unreasonably discriminated against Mrs. Spear as any limitations in service availability are limitations inherent in the current facilities that serve her and which were placed prior to the creation of Caller ID as a service offering.

DATED this 15th day of September, 1999.

  
EDWARD A. PETERS

Sworn to before me this 15 day of September, 1999.



Notary Public

My Commission Expires:

**State of Colorado, County of Arapahoe**  
**My Commission Expires June 19, 2000**

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA

SOUTH DAKOTA PUBLIC  
UTILITIES COMMISSION

TC 98-155

IN THE MATTER OF THE COMPLAINT  
FILED BY LORETTA SPEAR, HILL CITY,  
SOUTH DAKOTA, AGAINST U S WEST  
COMMUNICATIONS, INC. REGARDING  
TELEPHONE SERVICE OUTAGES AND  
INADEQUATE SERVICE

U S WEST COMMUNICATIONS,  
INC.'S MOTION TO TAKE  
JUDICIAL NOTICE

U S WEST Communications, Inc., and hereby move the Commission pursuant to SDCL 1-26-19(3), 19-8-1, 19-10-2, 19-10-4 and 1-26-7 to take judicial notice of the attached:

- (1) Proposed Administrative Rules 20:10:33:04 and 20:10:33:05 as contained in the Commission's Proposed Rules dated September 28, 1998 (Attachment 1);
- (2) Transcript of rule promulgation hearing of November 2, 1998 pp. 41-42 and 97 (Attachment 2);
- (3) Comments of U S WEST Communications, Inc. on Proposed Rules dated November 13, 1998, pp 1-5, Appendix A, pp. 7-9 (Attachment 3);
- (4) Comments of SDITC dated November 20, 1998, pp. 1, 9-12 (Attachment 4); and
- (5) Martin & Associates cost study dated April, 1998 (Attachment 5).

DATED this 15th day of September, 1999.



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Attorneys for U S WEST Communications, Inc.



facilities to provide satisfactory transmission and reception of telecommunications services among users in its service area.

**Source:**

**General Authority:** SDCL 49-31-77, 49-31-85.

**Law Implemented:** SDCL 49-31-3, 49-31-77, 49-31-85.

**20:10:33:03. Level of service applicable to all subscribers within an exchange.**

Local exchange access line service furnished by means of line concentrators or subscriber carrier equipment in a given exchange shall be substantially equivalent in technical performance to that furnished to other subscribers in that exchange served by means of normal physical loops.

**Source:**

**General Authority:** SDCL 49-31-77, 49-31-85.

**Law Implemented:** SDCL 49-31-3, 49-31-77, 49-31-84, 49-31-85.

**20:10:33:04. Minimum transmission levels for local exchange service.** A local exchange company's subscriber loops shall meet the following minimum transmission levels from the subscriber network interface or demarcation point:

(1) Transmission loss from the central office to the subscriber network interface or demarcation point for existing subscriber loops may not exceed 10 dB at 1004 Hertz. All new, upgraded, or replaced subscriber loops may not exceed 8dB at 1004 Hertz;

(2) Loop current shall be above 20 milliamperes;

(3) Total external loop resistance, excluding customer premises equipment, may not exceed the basic range requirement of the terminating electronics. Range extension equipment shall be applied to those subscriber loops that are longer than the basic working range of the terminating electronics;

(4) Circuit noise objective on subscriber loops measured at the subscriber network interface or demarcation point shall be equal or less than 20 dBmC;

- (5) The minimum data rate shall be 14,400 bps;

(6) The frequency response range shall be 300 Hertz to 3,000 Hertz with an amplitude deviation not to exceed four dB;

(7) The power influence level shall be less than 90 dBmC; and

(8) The longitudinal balance shall be greater than 60 dB.

All subscriber loops shall meet these minimum transmission levels by January 1, 2001.

**Source:**

**General Authority:** SDCL 49-31-77, 49-31-85.

**Law Implemented:** SDCL 49-31-3, 49-31-77, 49-31-85.

**20:10:33:05. Minimum requirements for new, upgraded, or replaced facilities.**

Outside plant, including subscriber loops, constructed, upgraded, or replaced after January 1, 1999, shall be able to provide, as built or with additional equipment, transmission and reception of data at a rate no lower than 1 Mbps. New or replacement switching systems installed after January 1, 1999, shall be capable of providing custom calling features. At a minimum, custom calling features must include call waiting, call forwarding, abbreviated dialing, caller identification, and three-way calling. New or replacement switching systems installed after January 1, 1999, shall also be capable of providing enhanced 911 service.

**Source:**

**General Authority:** SDCL 49-31-77, 49-31-85.

**Law Implemented:** SDCL 49-31-3, 49-31-77, 49-31-85.

THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE ADOPTION AND  
AMENDMENT OF PROPOSED ADMINISTRATIVE  
RULES )  
TRANSCRIPT OF  
PUBLIC HEARING )

HEARD BEFORE THE PUBLIC UTILITIES COMMISSION

PROCEEDINGS: November 2, 1998  
8:30 A.M.  
Room 412, Capitol Building  
Pierre, South Dakota

PUC COMMISSION: Jim Burg, Chairman  
Laska Schoenfelder, Commissioner  
Pam Nelson, Commissioner

COMMISSION STAFF  
PRESENT: Rolayne Ailts Wiest  
Karen Cremer  
Camron Hoseck  
Harlan Best  
Bob Knadle  
Gregory A. Rislav  
Steve Wegman  
David Jacobson  
Shirleen Fugitt  
Kylie Tracy  
Bill Bullard

Reported by: Lori J. Grode, RMR

1 PROCEEDINGS  
2 CHAIRMAN BURG: Good morning. Good to see so  
3 many here. I hope everybody is here to endorse the  
4 able work our staff did, and we can make this real  
5 short and get out of here early. But I'm guessing that  
6 might not be the case.  
7 We'll now begin the public hearing to  
8 consider the adoption and amendment of the proposed  
9 rules listed in the Notice of Public Hearing. This  
10 hearing is being held in Room 412, fourth floor of the  
11 State Capitol, Pierre, South Dakota. The date is  
12 November 2nd, 1998, and the time is 8:30. I am Jim  
13 Burg, Chairman of the Commission, and Commissioners  
14 Schoenfelder and Nelson are also present today.  
15 Persons interested in presenting data,  
16 opinions, and arguments for or against the proposed  
17 rules may do so today by appearing in person at this  
18 hearing or by sending them to the South Dakota Public  
19 Utilities Commission, State Capitol, 500 East Capitol,  
20 Pierre, South Dakota. Materials sent by mail must  
21 reach the Public Utilities Commission by November 13th,  
22 1998, to be considered.  
23 The Commission will consider all written and  
24 oral comments it receives on the proposed rules. The  
25 Commission may modify or amend a proposed rule at that

A P P E A R A N C E S

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1 time to include or exclude matters that were described  
2 in the public notice.  
3 We'll now begin to take comments on the  
4 proposed rules. Rolayne Wiest, the Commission Counsel,  
5 is going to conduct this hearing; and I think she's a  
6 primary author of the rules as well. So I'll turn it  
7 over to Rolayne at this time.  
8 MS. WIEST: What we plan on doing is taking  
9 comments on a chapter by chapter basis. We made  
10 changes to ARSD chapter 20:10:01, procedural rules;  
11 20:10:24, certificate of authorities rules; 20:10:25,  
12 construction of facilities; 20:10:28 switched access  
13 rules with respect to payphones; and 20:10:29, also  
14 switched access to delete recovery of payphone. We  
15 also have added three new chapters: 20:10:32,  
16 20:10:33, and 20:10:34. So we're just going to take  
17 them in order, and we will begin with Chapter 20:10:01;  
18 our changes to our procedural rules. And I would ask  
19 if anybody had any comments on those changes?  
20 MR. WELK: Good morning, Commissioners. My  
21 name is Tom Welk. I'm an attorney from Sioux Falls  
22 representing U S West. And for purposes of this  
23 proceeding today, I wanted to inform the Commissioners  
24 that U S West intends to submit written comments, and  
25 we will do so by the date Chairman Burg indicated, by

I N D E X

Chapter	Page
20:10:01, Procedural Rules	4
20:10:24, Certificate of Authorities	15
20:10:25, Construction of facilities	21
20:10:28, Switched Access Rules to Payphones	22
20:10:29, Switched Access Delete Recovery Payphones	22
20:10:32, Local Exchange Service Competition	28
20:10:33, Service Standards	37

cost areas needs to be addressed. We firmly believe in South Dakota we need a state universal service fund.

With respect to the specific language in ARSD 20:10:33:03, we would propose that instead of using the word substantially equivalent, we would like the Commission to use the reasonably comparable language that's in the statute. That's what's in the statute.

And to make the rule consistent with the statute, we think that is the language that should be used.

Already in ARSD 20:10:33:04, the subsequent rule, you propose certain minimum technical requirements. Those are already applicable to all loops, so therefore using the reasonably comparable language rather than the substantially equivalent language should be sufficient for 20:10:33:03.

We've referenced in our comments the study that we provided to you not all too long ago, about a about month or so ago, that was prepared by Martin & Associates entitled 1997 Telecom Act of South Dakota Summary and Impacts, which was completed this past spring by the SDITC. What that study intends to do is reasonably quantify the costs that would be incurred by independent local exchange companies in the state, and that would include all LEC's other than U S West.

Assuming the deployment of the current

1 So basically our position is that if the  
2 Commission adopts 20:10:33:03, we believe the  
3 Commission has a corresponding obligation to commit  
4 itself to supporting any efforts in the industry to  
5 establish a state universal service funding mechanism.

6 CHAIRMAN BURG: Question on that. Do you  
7 think -- I mean are you indicating that somehow we  
8 should put it in these rules that we're going to  
9 support U.S.F. funding?

10 MR. COIT: No. I'm just clarifying for you  
11 that --

12 CHAIRMAN BURG: You think it's necessary?

13 MR. COIT: We support what you're trying to  
14 do. But, you know, there's obviously cost recovery  
15 issues, and we -- there's an obligation as well to  
16 support those efforts when the time comes.

17 Does anybody have any questions for Larry on  
18 any of that stuff that that section deals with? If  
19 not, going on to the next section, 20:10:33:04, we do  
20 have a suggested change to subsection one. The last  
21 sentence of subsection one, which talks about the  
22 transmission law standard, which is 10dB at 1004 Hert  
23 or what is it, existing loops. And then there's a  
24 standard proposed of 8dB at 1004 Hertz for new or  
25 upgraded or replaced subscriber loops. We believe that

technology to meet the narrowband network requirements and to some extent the wideband network goals that were set forth in the 1997 state legislation, we think the information in that report is relevant to analyzing or evaluating 20:10:33:03 and also some of the other requirements the service standard requirements that are set forth in the service standard rules.

As I've noted on page eight of my written comments, our study showed that roughly 40 percent of the subscribers served by independent LEC's are located more than 18,000 feet from a central office switch, and this would include those rural subscribers that presently are served by analog carrier systems, which according to a survey we've recently done, approximates approximately about 6,500 customers within the SDITC membership.

In order to get the advanced type services mentioned in the state legislation, 1997 state legislation, to all subscribers to be deployed on a ubiquitous basis, some certainly substantial investments in loop facilities, electronics, and switching equipment are going to be needed. The study gives indication of those costs and also an indication of what it would generally cost to upgrade the analog carrier equipment that's referenced in the 33:03 rule.

1 the word upgraded is too vague. And we believe it  
2 should be deleted because it could be interpreted to  
3 mean that almost any type of work or equipment chang  
4 occurring on a loop facility would mean that you have  
5 to turn around and make that consistent with the 8dB.  
6 We believe it could force premature replacement of  
7 existing loop facilities.

8 Larry, do you have any additional comments on  
9 that?

10 MR. THOMPSON: The old requirements used to  
11 be 10dB, and that's why we liked that requirement for  
12 existing, although a lot of existing plant has been  
13 designed over the 8dB for the last ten or fifteen  
14 years. If we did do some sort of upgrade like let's  
15 say replace a small section of cable in a long loop, we  
16 wouldn't be able to still meet the 8dB if it was  
17 designed for a 10dB because often it means replacing o  
18 gauging the gauge of the cable or some substantial  
19 upgrade would be required to go from the 10dB to the  
20 8dB in some instances.

21 MR. COIT: We also have comments on Section  
22 Subsection 05, which is the minimum data transfer  
23 speed. We agree with the Commission that high speed  
24 modem access, this is an increasingly important issue  
25 with consumers, and we agree it is in the public

1 distance inside wiring modem type software  
2 configurations, the Internet service provider that the  
3 customer is going through, their transmit and receive  
4 equipment. There's so many variables, most of which we  
5 have no control over.

6 We can, as you put it, control the  
7 infrastructure in between; and that's what I priced  
8 out. The operating assumptions that we could use a  
9 narrowband infrastructure, 144 kilobyte infrastructure,  
10 to accommodate 14.4; and we did a detailed analysis and  
11 priced at for 144 kilobytes to every home in South  
12 Dakota. It wasn't a 30,000-foot broad brush look.

13 This was a look that used an engineering tool we use to  
14 deploy network for regular growth and reinforcement.  
15 And we looked at the infrastructure that would have to  
16 be deployed based on the distances from the central  
17 office that Mr. Ulanskas discussed, and we're looking  
18 at approximately 17 -- pardon, 1.7 billion dollars, or  
19 about \$6,500 per South Dakotan to guarantee that  
20 infrastructure in between those two modems. And that,  
21 again, presumes ubiquitous deployment of narrowband  
22 capability.

23 You know, from a recovery perspective, you  
24 know, beyond just giving a terrible number from a  
25 recovery perspective, the operating assumption is there

1 MR. MARTINEAU: Loops.  
2 COMMISSIONER SCHOENFELDER: Or loops across  
3 the state?

4 MR. MARTINEAU: Loops across the state.  
5 COMMISSIONER SCHOENFELDER: I don't -- so  
6 you're costing out the independent territory also?

7 MR. MARTINEAU: No.  
8 COMMISSIONER SCHOENFELDER: That's what I  
9 want to know whether it's U S West numbers or  
10 everybody's numbers.

11 MR. MARTINEAU: This is U S West. This is  
12 based on switched, which was approximately 104 million  
13 interoffice facility, which was 207 or so, and I'm  
14 rounding up. I don't have the figures right in front  
15 of me. And 1.4 billion or so for switched.

16 COMMISSIONER SCHOENFELDER: I needed to know  
17 that. Thank you.

18 MR. MARTINEAU: You're welcome. Are there  
19 any more questions about subpart five?

20 MR. BULLARD: Were you talking about  
21 including the SONET technology in the loops to the  
22 customer?

23 MR. MARTINEAU: This is basic rate. This is  
24 not primary. And in order to deploy 144 kilobytes,  
25 what the tool does is it has several different screens

1 would be some sort of cost recovery. Our presumption,  
2 at least from a planning perspective, is get it up  
3 front or get it in the near term. And from a capital  
4 use analysis, that's three to five years. In the olden  
5 days we did fifteen- and twenty-year studies. We don't  
6 do that any more. Our equipment depreciates in a  
7 three- to five-year time frame. So the recovery  
8 mechanism would get it at the onset or get it over a  
9 period of three to five years.

10 Again, that was based on ubiquitous  
11 deployment. Everybody gets it, not a forecast. And  
12 some of the initial work we did in forecasting in South  
13 Dakota suggests maybe that requirement isn't there for  
14 basic rate level ISDN, which would use the same  
15 infrastructure.

16 COMMISSIONER SCHOENFELDER: Can I interrupt  
17 you and ask a question? You said \$6,500 per South  
18 Dakotan in U S West territory or across the board?

19 MR. MARTINEAU: Well, if you just say there  
20 are approximately 250 -- or 60,000 South Dakotans and  
21 divide it into the 1.7 billion dollars, that's what it  
22 works out.

23 COMMISSIONER SCHOENFELDER: You're talking  
24 about loops? You're talking about per capita? You're  
25 talking about loops in U S West territory or loops.

1 and it says, okay, in a metropolitan area, given a  
2 center of mass, how many customers is there? How many  
3 could we capture? Could we serve it with a carrier  
4 that would serve 2,000 customers? And if it were  
5 further out, is there a smaller digital carrier that  
6 would do that? So what kind of infrastructure could we  
7 deploy on a basic rate that would accommodate that?  
8 And so what we tried to do -- because primary rate  
9 would be to put a T-1 to every home would be just --  
10 this was pricy, to say the least, but it would be much  
11 more pricy. So we felt this was the more conservative  
12 approach to pricing out 14.4 infrastructure, albeit we  
13 can't guarantee connect rate. But to price out 14.4  
14 infrastructure for infrastructure that would  
15 accommodate 14.4.

16 MR. BULLARD: Is there a percentage of your  
17 customers that are already receiving this level of  
18 service?

19 MR. MARTINEAU: We believe that about 30,000  
20 -- or, pardon me. We believe that about 70 percent or  
21 within, you know, the 18.0 to 18 kilofoot range. But,  
22 again, every single loop has to be prequalified, and  
23 every loop is different. The design parameters, the  
24 one -- and John talked about every loop is different  
25 and you have to look at the location and the bridge tap

BEFORE THE PUBLIC UTILITIES COMMISSION OF  
THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE PROPOSED ADOPTION  
OF NEW RULES BY THE PUBLIC UTILITIES  
COMMISSION OF THE STATE OF SOUTH DAKOTA

**COMMENTS OF U S WEST COMMUNICATIONS, INC.**

U S WEST Communications, Inc. ("U S WEST") submits the following comments on the proposed rules ("Rules") of the Public Utilities Commission of South Dakota's ("Commission"). General principles that U S WEST believes are important are discussed in this document. Specific proposals for revisions are set out in Appendix A (attached). To the extent the Commission has delineated revisions to existing rules using redline and ~~strikeout~~, U S WEST has underlined its additions. Because Chapter 20:10:33 is a new chapter which contains no Commission revisions, U S WEST has used **bold** to indicate its proposed additions and ~~strikeout~~ to indicate proposed deletions. Any new Rule proposed by U S WEST is printed in **bold**.

U S WEST commends the Commission and Staff for their efforts in drafting the Rules. U S WEST has suggested a number of changes to the Rules that are designed to meet the needs of both providers and customers. In addition, U S WEST has proposed two additional rules. The first rule clarifies the procedure for filing motions with the Commission (20:10:01:22.02). The second rule provides for cost recovery (20:10:33:33). U S WEST is pleased to have the opportunity to participate in the promulgation of these important rules.

**GENERAL PRINCIPLES**

Several broad principles operate to define the nature and direction of U S WEST's comments. The Rules must recognize the character of the existing telecommunications network as a network that was designed and engineered to be a voice grade network, treat all providers equally, and provide for

cost recovery. Finally, adopting unnecessary rules should be avoided and every attempt should be made to limit the rules whenever it is reasonable to do so.

**The Rules must recognize the character of the existing network.**

U S WEST opposes any service quality standard that would make data grade standards applicable to the telecommunications network generally. The network has been engineered and built to voice grade standards. Universal Service requirements are met by voice grade service. The embedded loop base is a voice grade base that is capable of data transmission but at a variety of speeds because of the characteristics of the infrastructure in place. That variability cannot be eliminated without significant infrastructure investment.

Designing new infrastructure and redesigning and rebuilding existing infrastructure to ensure that data grade standards can be met would be a tremendously expensive undertaking. Meeting data grade standards cannot be accomplished without increases in the price of basic service or the establishment of a state universal service fund. Notwithstanding SDCL 49-31-76, none of the Rules address universal service financial support. Adopting data grade standards will thus force price increases upon a great majority of customers who want to purchase only voice grade service.

As the number of consumers who want data grade service increases, demand will drive upgrading the network to data standards on a broad basis over time and that is as it should be. Consumers should not be forced by Commission edict to bear the cost of a data grade network they do not demand and will not use.

**The Rules must provide for nondiscriminatory treatment of providers.**

Administrative rules promulgated pursuant to a statute cannot expand upon the statute they purport to implement. South Dakota Division of Human Rights v. Prudential Ins., 273 NW2d 111, 114 (SD 1978). SDCL 49-31-85 requires the Commission to establish service quality standards. In

so doing, the Commission must regulate telecommunications carriers in a nondiscriminatory manner. SDCL 49-31-85 provides that “[a]ny regulation of telecommunications service by the commission pursuant to chapters 49-13 and 49-31 shall be fair, reasonable, nondiscriminatory and applicable to all telecommunications carriers . . . .” (emphasis added). Under the statute, if the Commission grants a waiver to one telecommunications carrier, it must grant the same exemption to all other carriers. Failure to do so would violate the statute. In addition it would shortchange customers and place providers on an unequal competitive footing. The Rules must operate on a competitively neutral basis.

**The Rules must provide for cost recovery.**

The Commission cannot exceed its statutory authority. U S WEST Communications, Inc. v. Public Utilities Comm’n, 505 NW2d 115, 123 (SD 1993). SDCL 49-31-60 provides in relevant part:

It is the intent of the Legislature that all of the future rules, policies, actions and decisions of the State of South Dakota . . . shall be made consistent with and further the purposes and directives of §§ 49-31-60 through 49-31-68, inclusive. Any rule, policy, action, decision or directive from a regulatory agency shall consider . . . a fair return on the investment made by facility providers to implement §§ 49-31-60 through 49-31-68, inclusive.

(emphasis added).

The mandates proposed by the Commission would require unprecedented multi-billion dollar investments by local exchange companies. U S WEST estimates it would cost in excess of \$56 million dollars to provide an infrastructure capable of carrying a data stream of 14.4 Kbps for South Dakota U S WEST customers. The cost of Narrow Band deployment is estimated to exceed \$1.7 billion dollars, while the cost of connecting each switch to a diversely routed, fully protected, survivable ring is estimated to cost another \$17 million dollars. These costs do not include the costs independent telephone companies would incur to comply with the mandates, which are already part



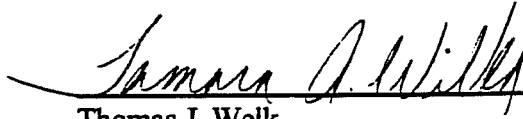
of the record. Notwithstanding the magnitude of these costs, the Commission's proposed Rules make no provision for cost recovery. As such, they are contrary to SDCL 49-31-60 and exceed the scope of the Commission's statutory authority and would constitute a taking of U S WEST's property without just compensation in violation of the state and federal constitutional provisions.

The Rules must provide for cost recovery. U S WEST has drafted proposed Rule 20:10:33:33. It provides for cost recovery over a period not to exceed five years.

**Unnecessary rules should be avoided.**

Passage of the federal Telecommunications Act of 1996 evidences a determination by lawmakers that regulation of the telecommunications industry should be minimized. Consistent with this intent, rules should be avoided where the marketplace will drive the behavior of providers to provide adequate service. Rules should likewise be avoided when they do no more than require providers to act in their own best interest. The marketplace and the business interests of providers should be allowed to operate free of regulatory requirements whenever possible. The Commission should indulge a presumption that no rule is necessary and adopt rules only upon a showing that such rules are in fact needed.

Dated this 13th day of November, 1998.



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## APPENDIX A

### CHAPTER 20:10:01

#### GENERAL RULES OF PRACTICE

20:10:01:01.1. Definitions. Terms used in this chapter mean:

(4) "Party," a person by or against whom a proceeding is commenced or a person admitted by the commission or properly seeking and entitled as of right to be admitted as a party, including commission staff when representing the public interest. Commission staff is not required to intervene to be a party; and

COMMENT: Commission staff should be required to intervene in every proceeding in which it believes it has an interest just like any other party. There is no reason to single out commission staff for preferential treatment.

20:10:01:07.01 Contents of a complaint. A complaint shall be in writing and ~~an original and three copies shall be filed with the commission with as many additional copies as there are parties complained against.~~ A complaint shall contain:

(6) ~~A verification for relief to which the complainant believes himself entitled.~~ An affirmation that the statement of facts are accurate to the best of the complainant's knowledge

COMMENT: As a matter of policy a complainant should be required to verify a complaint. Carriers are required to answer interrogatories and furnish other documents to the Commission under oath. Complainants should similarly be required to verify their complaints before a notary public.

U S WEST proposes the following new rule:

**20:10:01:22.02 Motions. Unless otherwise ordered by the commission, a party responding to a motion shall have five days from receipt of the motion to file and serve a response. The movant shall have three business days from receipt of a response to file and serve an optional reply. The computation of time shall be in accordance with SDCL 15-6-6(a). Facsimile service shall be allowed with respect to the filing of any pleadings pursuant to the commission's rules unless a party objects or facsimile service is unavailable.**

COMMENT: The proposed rule is designed to clarify the procedure for filing, service and hearing of motions.

**the noise signal at various frequencies to determine the composite average noise signal value. [A] ratio expressed in decibels above reference noise;**

COMMENT: The proposed revisions reflect a more complete definition of the term.

20:10:33:02. Level of service provided by local exchange companies. A local exchange company shall furnish and maintain adequate and reliable plant, equipment, and facilities to provide satisfactory transmission and reception of **voice grade** telecommunications services among users in its service area.

COMMENT: The rule, as proposed by the Commission, is unduly economically burdensome if it applies to more than voice grade telecommunications services. The existing network has been engineered and built to voice grade standards. Universal Service requirements defined by the Federal Communications Commission ("FCC") are met by voice grade service. FCC 97-420, Fourth Order on Reconsideration in CC Docket No. 96-45 ¶ 15 (Dec. 30, 1997). Any rules adopted by the Commission should be consistent with Universal Service requirements. To the extent that the Commission imposes more stringent Universal Service requirements, it must provide a means for cost recovery. 47 USCA § 254(f).

20:10:33:03. Level of service applicable to all subscribers within an exchange. Local exchange access line service furnished by means of line concentrators or subscriber carrier equipment in a given exchange shall be ~~substantially equivalent in technical performance to that furnished to other subscribers in that exchange served by means of normal physical loops.~~ **consistent with Universal Service requirements. —**

COMMENT: The proposed rule is overly broad and vague in failing to describe how "substantially equivalent" service will be determined and is unduly economically burdensome. If all subscribers have voice grade access to the public switched network, local usage, dual tone multi-frequency signaling (touch-tone), access to interexchange service, access to operator services, directory assistance and emergency services, such service should be deemed to be "substantially equivalent."

If the Commission adopts the rule as written, it must allow carriers to recover the costs incurred in order to meet the rule. Failure to provide for such cost recovery would violate Art. VI, § 13 of the South Dakota Constitution and the Fifth Amendment of the United States Constitution and would be contrary to SDCL 49-31-60.

20:10:33:04. Minimum transmission levels for local exchange service. A local exchange company's subscriber loops shall meet the following minimum transmission levels from the subscriber network interface or demarcation point:

- (2) Loop current shall be above 20 milliamperes, **allowing a maximum design value of 430 ohms for customer premises equipment;**
- (5) ~~The minimum data rate shall be 14,400 bps;~~

(6) ~~The frequency response range shall be 300 Hertz to 3,000 Hertz with an amplitude deviation not to exceed four dB; Attenuation distortion requirements should have a value of -2.5 dB/+11.5 dB across the frequency range of 304 hertz to 3004 hertz;~~

COMMENT: The proposed change to (2) is consistent with the limit established by the industry in "An American National Standard, IEEE Standard, Telephone Loop Performance Characteristics," dated March 1984. Telecommunications engineers need this standard in order to design a network with some known quantity of customer equipment at the other end.

Subsection (5) is unduly economically burdensome and is in excess of statutory authority. The existing network has been engineered and built to voice grade standards. Universal service requirements are met by voice grade service. The embedded loop base is a voice grade base that is capable of data transmission but at a variety of speeds because of the characteristics of the infrastructure in place. That variability cannot be eliminated without significant infrastructure investment.

U S WEST cannot guarantee a 14.4 Kbps modem connect rate. A connect rate is the modem to modem connection speed in kilobits per second on a dial up connection. While end to end connect rates cannot be guaranteed, infrastructure capable of carrying a given connect rate can be deployed. The total new capital requirement to provide an infrastructure capable of carrying a data stream of 14.4 Kbps is \$56,140,000 for South Dakota U S WEST customers whose loops are not currently capable of 14.4 Kbps. To require U S WEST to upgrade its facilities to allow for a minimum data rate of 14,400 bps without providing for cost recovery would violate Art. VI, § 13 of the South Dakota Constitution and the Fifth Amendment of the United States Constitution. In addition, the proposed rule fails to consider SDCL 49-31-60 and, thus, is in excess of the Commission's statutory authority.

It should be noted that the existing legislation requiring Narrow Band infrastructure would also meet or exceed the 14.4 Kbps data speed requirement. The cost of Narrow Band deployment for U S WEST would be \$1.7 billion. This amount accounts for those customers who already have loop facilities capable of providing ISDN/Narrow Band services. Here again, cost recovery needs to accompany any mandatory rule.

The proposed requirement of four dB in (6) would be a stringent requirement even for specially designed data circuits. The recommended distortion requirement proposed by U S WEST is consistent with Bellcore document SR-4255, which is an existing industry standard.

20:10:33:05. Minimum requirements for new, upgraded, or replaced facilities. ~~Outside plant, including subscriber loops, constructed, upgraded, or replaced after January 1, 1999, shall be able to provide, as built or with additional equipment, transmission and reception of data at a rate no lower than 1 Mbps.~~ New or replacement switching systems installed after January 1, 1999, shall be capable of providing custom calling features. At a minimum, custom calling features must include call waiting, call forwarding, abbreviated dialing, caller identification, and three-way calling. New or replacement switching systems installed after January 1, 1999, shall also be capable of providing enhanced 911 service.

COMMENT: The proposed rule fails to provide for cost recovery and, as such, violates Art. VI, § 13 of the South Dakota Constitution and the Fifth Amendment of the United States Constitution and is in violation of SDCL 49-31-60. Basic telephone service has historically been and is currently engineered to voice grade. Voice access lines, by definition, are not conditioned for data access. Universal Service requirements defined by the FCC are met by voice grade service. Any rules adopted by the Commission should be consistent with Universal Service or must, pursuant to federal law, include a cost recovery mechanism, if enhanced. 49 USCA §254(f).

As a matter of policy, upgrades in the existing network to achieve a 1Mbps data grade of service for customers should properly be made in response to marketplace demand. It is inappropriate to use the rulemaking process as a mechanism for requiring providers to invest in ubiquitous network upgrades because such an approach imposes significant costs on customers who neither need nor want to pay for 1Mbps data grade service.

The proper solution to the problem created by the conflicting desires of customers who want data grade service and those that do not want and do not want to pay for data grade service is to let the market operate. Where demand for data grade service exists, providers will create and provide services targeted to customers who require such services. The alternative is to impose the cost of enhancement only on those requesting the service.

In the event the Commission adopts the proposed rule, it should clarify that the rule requires only that outside plant placed after January 1, 1999 be "capable" of achieving a 1 Mbps data grade of service with enhancements. The cost of any enhancements necessary to achieve 1 Mbps must be borne by the customer. One Mbps data speed requires deployment of a technology beyond ISDN/Narrow Band, which as stated earlier, would cost U S WEST approximately \$1.7 billion to deploy. This proposed rule and all of the proposed rules fail to consider a fair return on investment as required by SDCL 49-31-60.

20:10:33:09. Requirement for sufficient equipment and adequate personnel. Each telecommunications company shall employ prudent management and engineering practices ~~so that sufficient equipment and adequate personnel are available at all times, including busy hours.~~ **consistent with industry standards for normal hours of operation.**

COMMENT: The proposed rule is overly broad and vague in failing to describe the terms "sufficient" and "adequate." To require a telecommunications company to have equipment and personnel ready at all times and in all circumstances would be unduly economically burdensome. Such a requirement would be the equivalent of requiring the Department of Transportation to have a snowplow waiting at every curve and hill.

~~20:10:33:10. Required documentation to show sufficient equipment and adequate personnel. Each telecommunications company shall conduct traffic studies, employ reasonable procedures for forecasting future service demand, and maintain records necessary to demonstrate to the commission that sufficient equipment is in use and that an adequate operating workforce is provided. However, average schedule companies are not required to conduct traffic studies. The records shall be available for review by the commission upon request.~~

NOV 1998  
Recd

**INITIAL COMMENTS OF THE SOUTH DAKOTA  
INDEPENDENT TELEPHONE COALITION ("SDITC")  
ON PROPOSED ADMINISTRATIVE RULES**

SDITC, on behalf of its member local exchange companies, submits the following comments in response to the Commission's Notice released on or about October 7th, 1998, which proposes (1) amendments to various administrative rules found in ARSD Chapters 20:10:01, 20:10:24, 20:10:28, and 20:10:29; (2) the repeal of ARSD Chapter 20:10:25; and (3) new administrative rules consisting of ARSD Chapters 20:10:32, 20:10:33 and 20:10:34.

**I. Revisions to ARSD Chapter 20:10:01, General Rules of Practice.**

SDITC has no comments concerning the rule revisions proposed for ARSD Chapter 20:10:01 which clarify and update some of the Commission's procedural rules.

**II. Revisions to ARSD Chapter 20:10:24, Interexchange Carrier and Classification Rules.**

ARSD § 20:10:24:01. Definitions.

A revision is proposed to subsection (9) that would remove the word "adjacent" from the existing "extended area service" definition.

Even though there may be cases where non-adjacent or non-contiguous local exchange areas share a "community of interest" and where, consequently, extended area service may be viewed as desirable, SDITC believes that specified criteria should be applied in determining whether the "community of interest" standard is met and that this criteria should include a geographic element. The respective geographic location of the local exchange areas subject to any EAS petition is an important consideration in determining whether a "community of interest" actually exists between the exchanges.

If the Commission does revise ARSD § 20:10:24:01(9) as proposed, SDITC asks the Commission to clarify whether, despite the change, it will continue in the future to consider whether or not EAS petitioning exchanges are "adjacent" or "contiguous" in reviewing EAS petitions.

SDITC believes the Commission must in its EAS review process at least consider whether or not the exchanges involved are "adjacent". If the new EAS definition is adopted, we

analog carrier subscribers, very substantial additional investments the loop facilities, field electronics, and switching equipment are needed.

The Study gives an indication of the extensive costs that are necessary to upgrade existing analog carrier equipment and, more broadly, all access lines serving rural, high cost consumers. The Study clearly shows that the investments required for ubiquitous deployment of advanced, as needed to bring like services to all customers, will not be feasible absent some State USF support.

If the Commission adopts ARSD § 20:10:33:03, SDITC believes the Commission has a corresponding obligation to commit itself to supporting any further efforts by SDITC and others in the industry to establish a State USF mechanism.

ARSD § 20:10:33:04. Minimum transmission levels for local exchange service.

With regard to ARSD § 20:10:33:04, SDITC would propose the following change to the language contained in subsection (1):

- (1) Transmission loss from the central office to the subscriber network interface or demarcation point for existing subscriber loops may not exceed 10dB at 1004 Hertz. All new, ~~upgraded~~, or replaced subscriber loops may not exceed 8dB at 1004 Hertz;

SDITC believes that the word “upgraded” is too vague and should be deleted because it could be interpreted to mean almost any type of work or equipment change occurring on a loop facility. Could it mean, for example, that companies would have to meet the 8dB standard when simply putting new repeater equipment on a subscriber loop? If the word “upgrade” is interpreted too broadly, it could force a premature replacement of existing loop facilities that could have very substantial financial impacts. The 8dB standard should only apply to the placement of new loop facilities or when the existing loop cable is actually replaced.

Regarding subsection (5) of the rules, SDITC does believe that high speed modem access is becoming an increasingly important issue with many consumers and that it is in the public interest to provide the highest modem speeds possible. The speed requirement defined in this rule is conservative and the great majority of SDITC member LEC subscribers will exceed this speed by a substantial margin. Unfortunately, however, 10 to 20 percent of the subscribers are very difficult to serve and even the data transmission standard prescribed in this rule could be difficult and expensive to meet for these consumers. It is SDITC’s desire that these consumers



should enjoy the same level of services that others enjoy, but in the process of mandating a ubiquitous data transmission requirement, cost recovery issues also need to be considered.

This is especially true because the federal definition of universal service as established by 47 C.F.R. § 54.101 does not include any data transfer speed. The FCC rule requires “voice grade access” which is defined as “a functionality that enables a user of telecommunications services to transmit voice communications, including signaling the network that the caller wishes to place a call, and to receive voice communications, including receiving a signal indicating that there is an incoming call.” *Emphasis added.* The FCC rule specifies a specific minimum frequency range for the voice grade access of 300 to 3,000 Hertz, but does not indicate that the frequency range must accommodate any specific level of data transmission.

It therefore appears that if the Commission does mandate a minimum data transfer speed, that it may be establishing a definition of universal service that is different from that established at the federal level. The Federal Telecommunications Act of 1996, 47 U.S.C. § 254(f), gives the states authority to “adopt additional definitions and standards to preserve and advance universal service.” The Act further provides, however, that this can only be done to the extent that the state regulations also adopt “specific, predictable, and sufficient mechanisms to support such definitions or standards that do not rely on or burden Federal universal service support mechanisms.”

Along the lines of what ARSD § 20:10:33:04 proposes, SDITC supports the Commission’s position that all customers, regardless of location, should have access to reasonable data transmission services. To the extent, however, that any different state definition of universal service is established, clearly under the federal law the state has a corresponding obligation to provide for any universal service funding that is necessary to make the additional required services available on a ubiquitous basis. The federal law specifically prohibits states from expanding the definition of universal service without also addressing universal service funding needs.

ARSD § 20:10:33:05. Minimum requirements for new, upgraded, or replaced facilities.

SDITC was informed by Commission Staff that the provisions of this rule are based on provisions found within the State Telecommunications Modernization Plans (STMPs) that Rural Utility Service (RUS) borrowers were required to prepare and file with the RUS. Upon review

of the specific, related language contained in the STMP forms referencing the 1 Mbps requirement, it appears that the rule provisions are not entirely consistent with the STMPs.

The language in the STMPs filed by South Dakota's rural telephone companies contains a 1Mbps requirement within a "Short-Term Requirements" section. That section reads as follows:

*Short-Term Requirements*

*The short-term requirements start date is the date one year after the date RUS approves this Plan.*

*All new facilities providing wireline service after the short-term requirements start date, even if the construction began before such date, shall be constructed so that:*

- every customer can be provided 1-party service*
- the new facilities are suitable, as built or with additional equipment, to provide transmission and reception of data at a rate no lower than 1 Mb/sec.*

*All switching equipment installed by a telecommunications provider after the short-term requirements start date shall be capable of:*

- providing custom calling features; at a minimum, customer calling features must include call waiting, call forwarding, abbreviated dialing, and three-way calling*
- providing E911 service for areas served by the telecommunications provider when requested by the government responsible for this service.*

*Emphasis added.*

For further reference purposes, a copy of the complete STMP as filed by all of the RUS borrowing LECs in the State is attached hereto as Appendix A.

The language used in ARSD § 20:10:33:05 is different in a couple of key respects from the STMP language. First, the word "upgraded" is used in the first sentence of the rule and it is not used in the STMP. The STMP 1 Mbps requirement only applies to the installation of new wireline service facilities. Secondly, that same sentence of the rule provides that the

“constructed, upgraded, or replaced” outside plant or subscriber loops “shall be able to provide, as built or with additional equipment, transmission and reception of data at a rate no lower than 1Mbps.” The STMP does use this same language. It references that the “new facilities” must be “suitable, as built or with additional equipment” to provide the 1Mbps data transmission. SDITC believes that the word “suitable” should be used in ARSD 20:10:33:05 rather than the words “shall be able to provide”. The words “shall be able to provide,” to some degree, seem to conflict with the words “as built or with additional equipment” and imply that 1Mbps service would have to be made immediately available to customers, regardless if additional equipment may be needed to provide the service. The word “suitable” is cleaner and would allow for less misinterpretation.

SDITC asks the Commission to revise ARSD § 20:10:33:05 as follows:

Minimum requirements for new, upgraded, or replaced facilities. Outside plant, including subscriber loops, ~~constructed, upgraded,~~ or replaced after January 1, 1999, shall be ~~able to provide~~ suitable, as built or with additional equipment, to provide transmission and reception of data at a rate no lower than 1Mbps. New or replacement switching systems installed after January 1, 1999, shall be capable of providing custom calling features. At a minimum, custom calling features must include call waiting, call forwarding, abbreviated dialing, caller identification, and three-way calling. New or replacement switching systems installed after January 1, 1999, shall also be capable of providing enhanced 911 service.

ARSD § 20:10:33:09 Requirement for sufficient equipment and adequate personnel.

SDITC is concerned that ARSD § 20:10:33:09, as proposed, is extremely vague and might be interpreted to mean that all telephone companies, regardless of size, must at all times have an employee or employees physically present in the telephone office who are able to immediately fix any customer service problems. If interpreted as such, the rule could pose an enormous burden on smaller LECs. It would help to strike the word “available” and insert in its place the word “accessible”. This would take into account the fact that many of the telephone companies rely on outside entities to provide some of their support services. SDITC proposes revising the rule as follows:

Requirement for sufficient equipment and adequate personnel. Each telecommunications company shall employ prudent management and engineering practices so that sufficient equipment and adequate personnel are ~~available~~ accessible at all times, ~~including busy hours to respond to customer service problems.~~

**1997 Telecom Act of South Dakota  
Summary and Impacts**

for

**South Dakota Independent  
Telephone Coalition (SDITC)**

Issue: 03

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**April 1998**

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## Section 0 - EXECUTIVE SUMMARY

During the 1997 session of the South Dakota State Legislature, HB 1227 was passed and signed by the Governor. This bill is often referred to as the "1997 Telecom Act of South Dakota". The 1997 Telecom Act of South Dakota called for the establishment of three public communication networks, accessible by all citizens and communities of interest within the State, which would enable any-to-any voice, data, videoconferencing, graphics, imaging, and multimedia communications. The three networks, were identified as the:

- Narrowband Network
- Wideband Network
- Broadband Network

The Wideband network builds upon the foundation of the Narrowband network, in terms of bandwidth and services available to the consumer. Likewise, the Broadband network builds on both the Wideband and Narrowband networks, providing additional enhanced services. The key elements of each of these networks are summarized in Table 0-1. These networks are discussed in detail later in this report.

Implementation of the 1997 Telecom Act of South Dakota by the telecommunications providers in the State is intended to result in a more feature rich, reliable, and robust network than what is currently in place. This report deals only with the impact of the 1997 Telecom Act of South Dakota on the Independent Local Exchange Carriers (ILECs). An ILEC is defined as any independent, cooperative, or municipal-owned local exchange carrier providing service in any non-US West service area. The ILECs have approximately 135,000 access lines in South Dakota.

The implementation of the Narrowband, Wideband, and Broadband networks also carries a price tag. Some of the Wideband network requirements and most of the Broadband network requirements are not economically feasible with today's technology. Because of this, only the costs associated with the Narrowband network and the Wideband network up to DS-1 and ISDN-PRI are included in this report. We refer to the Wideband network services up to and including DS-1 and ISDN-PRI as "Wideband Phase I." The Wideband network services from DS-1 and ISDN-PRI up to DS-3 will be referred to as "Wideband Phase II."

Network	Key Capabilities	Primary Implementation Considerations
<b>Narrowband</b>	ISDN-BRI is the key element. ISDN-BRI is a circuit-switched technology and fully digital. ISDN-BRI has two 64 kbps B-channels that can be used independently for voice, video, or data. ISDN-BRI uses an out-of-band D-channel (16 kbps) for call setup and control. Ubiquitous deployment is required in five years, with significant results achieved in two years.	<ul style="list-style-type: none"> <li>• Not widely available in South Dakota, since ISDN-BRI is just now becoming available for some of the common telephone switch platforms, such as the Nortel DMS-10.</li> <li>• Field electronics must be widely deployed throughout South Dakota, since ISDN-BRI is designed to work on local loops up to 18,000 ft.</li> <li>• New locally-powered subscriber equipment would be required and telephone service could be lost during power outages at the customer premise.</li> </ul>
<b>Wideband</b>	Services from ISDN-BRI rates up to and including DS-3 rates (45 Mbps). No implementation timeframe is specified.	<ul style="list-style-type: none"> <li>• For delivery of DS-3 services to the home, either optical fiber would be required to each consumer, or the field electronics would have to be located within 900 feet of the consumer. Large-scale enhancements to the architecture used for the Narrowband network would be required.</li> <li>• Part of the Wideband requirements (up to DS-1 and ISDN-PRI rates) could be met using the Narrowband network architecture—at substantially lower costs.</li> </ul>
<b>Broadband</b>	Services from DS-3 rates up to and including OC-12 rates (622 Mbps). Elements of a cell switched network, such as Broadband ISDN are included. No implementation timeframe is specified.	<ul style="list-style-type: none"> <li>• Fiber to each consumer is required.</li> </ul>

**Table 0-1. Brief Summary of 1997 Telecom Act of South Dakota**

When calculating the costs, a 25% penetration rate was assumed for ISDN-BRI and a 10% penetration was assumed for DS-1 and ISDN-PRI. The cable plant was upgraded as part of the Narrowband network to provide these services to all consumers, but the electronics were only partially equipped. As the penetration rate increases, the services can be offered quickly and at a fairly nominal cost, since no cable plant changes are required.

The costs associated with the Narrowband network and the Wideband Phase I network can be seen in Table 0-2. Approximately 80% of the costs associated with the Narrowband are due to rural and urban cable construction costs to accommodate ISDN-BRI. The other 20% is due to switching equipment upgrades and upgrading of the interoffice transport to have all central offices on a SONET network.

Network	Total Investment	Investment per Access Line
Narrowband Network	\$480,000,000	\$3,600
Wideband Network Phase I	\$93,000,000	\$690

**Table 0-2. SD ILEC Estimated Investments Required  
for the 1997 Telecom Act of South Dakota**

For Wideband Phase I, more than 50% of the implementation costs are associated with central office switching equipment. This includes upgrading the telephone switches to support ISDN-PRI as well as locating ATM switching equipment in several of the central offices to accommodate the cell-switching requirements.

Assuming that the investment could be depreciated over an average of a 15-year period (the cable plant would be longer and the electronics would be shorter), the ILEC carrying cost for this investment would be \$76 per access line **per month**. Because of the large amount of outside plant construction required for the Narrowband network, \$64 of the \$76 carrying cost per access line **per month** is associated with the Narrowband network.

Several methods of cost recovery for these infrastructure modernizations were explored in this report. A South Dakota Universal Service Fund (SD-USF) has been discussed by the legislature and attempts have been made to pass a SD-USF bill. As shown later in this report, the annual revenue required from the SD-USF to fund the Narrowband network and the Wideband Phase I network would be approximately \$113,400,000. This assumes that the average monthly consumer local service rate in the ILEC territories would also be increased from \$14 to \$20 (or



imputed by the ILEC as described later). The revenue needs of the SD-USF would be higher if this were not the case. With increased penetration of the enhanced services, the annual revenue required from the SD-USF could reduce to \$102,060,000, since it is estimated that the enhanced services will generate more revenue for the telephone companies.

Not every requirement of the 1997 Telecom Act of South Dakota is economically feasible at this point in time. As technology advances continue to reduce the investment required and if the SD-USF provides the needed cost averaging mechanism, it is likely that most, if not all, the requirements will be within our reach sometime in the future. In order to ensure that these requirements will be achieved in the future, a firm foundation needs to be developed today in the State telecommunication industry that will help ILECs meet these goals. When reviewing the goals, technology and associated infrastructure costs, two things become readily apparent. First, in order for the technology to be ubiquitous there must be an infrastructure cost averaging vehicle for the deployment of the technology, and second, that deployment must be phased in.

On a national level the principle of cost averaging is well established and accepted as a means to preserve, promote and enhance ubiquitous service offerings. For example, a long distance service provider can charge the same price for a 100 mile call between two densely populated high traffic areas in the eastern United States as it does for a 100 mile call from Bison, South Dakota to North Dakota. This is possible because the cost to the service provider for using the infrastructure is nearly the same in both instances. This is accomplished by averaging the cost of providing the infrastructure in high traffic low cost areas with low traffic high cost areas through the National Exchange Carriers Association (NECA) for interstate facility use. In addition, the dominant carriers pay a fee into the national Universal Service Fund to offset high costs. These cost averaging and high cost support principles have served the industry and the consumers very well for many years.

As for the 1997 Telecom Act of South Dakota, in order to achieve ubiquitous and affordable service where costs to provide the infrastructure vary dramatically from one area to the next, a cost averaging vehicle is the only apparent means available to accomplish the stated objectives. A vehicle, such as the SD-USF, could be used to average the costs of provisioning the telecommunications infrastructure across the state. Additionally, high cost support will be needed to allow telecommunications services to be truly ubiquitous. If that is accomplished, various service providers, including incumbent LECs, could provide services over an infrastructure that essentially costs the same everywhere, i.e. over a level playing field. Such a level playing field would remove or minimize any incentives for various service providers to NOT serve specific areas of the state. Thus, ubiquitous and affordable service offerings can be

offered everywhere to avoid creating a South Dakota telecommunications world of "haves" and "have nots".

Fundamental to this concept is that the infrastructure costs are averaged and high cost support is provided for deploying the infrastructure and NOT as a subsidy for the price of services being offered over that infrastructure.

It has been estimated that telecommunication providers in South Dakota generate \$400 million in retail telecommunications revenue annually. Assuming that the SD-USF would be financed through a fee placed on the telecommunications providers (similar to what is done in the interstate jurisdiction), a fee of 21% to 23% of gross revenues would be required to fund just the Narrowband network portion of the 1997 Telecom Act of South Dakota, if it were immediately and completely deployed. This fee level creates what we call a non-trivial problem. As stated previously, the ILEC investments assumed a 15-year depreciation period. Therefore, this SD-USF would have to be in place for at least that long for the ILECs to recover their investment. While the methodology of establishing a universal service fund "contribution" is clearly fair to all service providers, the 23% amount required is, in this writers opinion, just not doable. Therefore, a more modest level of funding must be established and a phased-in approach established for the deployment of infrastructure, unless, of course, a source of more immediate and aggressive funding is found. If the ILECs are compelled to implement the requirements of the 1997 Telecom Act of South Dakota without any means of cost averaging and high cost support, it will be the equivalent of a rural development train wreck.

It is clear that in order to accomplish the goals in the 1997 Telecom Act of South Dakota we must first begin. A SD-USF is that beginning.

## Section 1 - INTRODUCTION

In 1934 when the Federal Communications Commission was established, our Federal government saw the importance of an effective and available communication system. The Communications Act of 1934 States:<sup>1</sup>

*“For the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges, for the purpose of the national defense, for the purpose of promoting safety of life and property through the use of wire and radio communication. . .”*

The task of achieving a “rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges” is an ongoing process.

The State of South Dakota has similar goals to those expressed in this Federal legislation. During the 1997 session of the South Dakota State Legislature, Chapter 49-31 of the South Dakota Codified Laws was amended to include a new section. This section became known as the “1997 Telecommunications Act of South Dakota” or simply the “1997 Telecom Act of South Dakota”. This act called for the establishment of three public communication networks, accessible by all citizens and communities of interest within the State, which would enable any-to-any voice, data, videoconferencing, graphics, imaging, and multimedia communications. These three networks, known as the Narrowband Network, the Wideband Network, and the Broadband Network, would establish a public telecommunications infrastructure that would carry South Dakota into the next century.

South Dakota’s vast and varied geography and low population density present unique challenges to meeting the requirements of the 1997 Telecom Act of South Dakota. Although South Dakota’s telecommunications infrastructure has greatly improved over the last few years, more

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<sup>1</sup> *Communications Act of 1934*, SEC. 1. [47 U.S.C. 151], titled, “Purposes Of Act, Creation Of Federal Communications Commission”

changes are required to meet the requirements set forth in the 1997 Telecom Act of South Dakota and to meet the needs of South Dakota consumers.

For the new network and services to become a reality, additional effort is required in the form of legislation, regulation, and resolution of the remaining technical issues. Once these issues are resolved, the stage would be set for all consumers in South Dakota to step into a new era of telecommunications.

During this same South Dakota legislative session, another bill was introduced to establish a South Dakota Universal Service Fund (SD-USF). The SD-USF was to be the funding mechanism for the 1997 Telecom Act of South Dakota. However, this bill eventually failed to pass. The defeat of this bill may have significant implications on the Local Exchange Carrier (LEC) industry in the State, especially those LECs serving rural, high cost areas.

Because of the large variations in population densities across South Dakota, the vast distances, and the varied terrain, the cost to provide telecommunication services can differ drastically from one consumer to the next. In order to make the telecommunication services universally available and affordable, a SD-USF would be instrumental. The SD-USF should:

- Ensure that the price of essential services remains reasonable *and affordable* for all consumers
- Minimize price differences between consumers based on their geographic location within South Dakota
- Base drawing of any funds from the Universal Service Fund on the investment in the infrastructure
- Require every entity providing telecommunications services in South Dakota to contribute to the Universal Service Fund

Essentially, every LEC is required by law (pursuant to the 1997 Telecom Act of South Dakota) to provide narrowband, wideband, and broadband services to all consumers. Currently, the LECs operating in the State are left to figure out how their respective companies are going to provide to their consumers the necessary services required by the 1997 Telecom Act of South Dakota and at the same time offer reasonably and affordably priced service.

The 1997 Telecom Act of South Dakota was developed using a forward-looking policy. The drafters of the bill wanted to make sure that all South Dakota consumers, whether residential or business, urban or rural, would have access to the same state-of-the-art telecommunication services. LECs would not be required to provide all these services all at once. Instead, LECs

operating in the State would make the necessary investments to modernize their infrastructure in order to offer these "enhanced services" over a period of time. The 1997 Telecom Act of South Dakota only assigns a specific deadline to those investments required to implement the narrowband public telecommunications network. According to the 1997 Telecom Act of South Dakota, the Narrowband Network is to achieve ubiquitous deployment across South Dakota within five years, and significant results achieved within two years.<sup>1</sup>

The intent of this report is to inform the reader regarding the 1997 Telecom Act of South Dakota, to discuss its impact on the ILEC, and provide implementation alternatives. This will be done in the following sections in the order shown below:

- 1997 Telecom Act of South Dakota Overview
- Investment Required to Satisfy the Act
- ILEC and Consumer Revenue Impacts
- ILEC Investment Recovery Alternatives
- The SD Universal Service Fund
- Conclusions

We begin now with an overview of the 1997 Telecom Act of South Dakota.

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<sup>1</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-65 *Narrowband network deployment goal.*

## Section 2 - 1997 TELECOM ACT OF SOUTH DAKOTA OVERVIEW

In Governor Janklow's 1997 "State of the State" address, he spelled out some goals that the 1997 Telecom Act of South Dakota intended to achieve. First of all, the Governor wanted South Dakota to become a national leader in telecommunications. He also felt that every consumer (residential, business, urban, or rural), in the State should have access to the same types of services, and these services should be "comparably" and "affordably" priced. These "enhanced services" would be available to every consumer via access to the public telecommunications infrastructure comprised of three networks known as the "Narrowband Network", "Wideband Network", and "Broadband Network". Together, these three networks would offer bandwidth rates up to the OC-12 rate of 622.08 Mbps to every household and business in the State. Governor Janklow also wanted every consumer to be redundantly routed to these networks to increase the reliability and survivability of the connection between the consumer and the telephone company central office facilities (often referred to as the "local loop" or "access line").

When considering the implementation of the 1997 Telecom Act of South Dakota, it should be noted that South Dakota could become a national leader in telecommunications without meeting every objective of the 1997 Telecom Act of South Dakota. Not every requirement of the 1997 Telecom Act of South Dakota is economically feasible at this point in time. As technology advances continue to reduce the investment required and a cost averaging mechanism such as the SD-USF levels the playing field for all consumers, it is likely that most, if not all, the requirements will be within our reach sometime in the future. In order to ensure that these requirements will be achieved in the future, a firm foundation needs to be developed today in the State telecommunication industry that will help ILECs meet these goals. ILECs operating in the State could modernize their infrastructure to offer "enhanced services" requiring high-bandwidths to all consumers (residential, business, urban, or rural), which demonstrates the need for such services at prices that would be somewhat uniform for every consumer regardless of where they live. However, ILECs would have difficulty recovering the annual carrying charges associated with the necessary investments required to offer these services just through existing revenue-generating activities. As discussed later in this report, the infrastructure modernization required to offer the "enhanced services" may be possible through the creation of a SD-USF, which involves cost averaging across the State.

The 1997 Telecom Act of South Dakota refers to the Narrowband, Wideband, and Broadband Networks. There are some common requirements that apply to all three networks in the 1997 Telecom Act of South Dakota. According to the 1997 Telecom Act of South Dakota, all three networks are required to:<sup>1</sup>

- Fully support the following capability requirements: ubiquitous, feature rich, standard, secure, private, survivable, robust, addressable, switched, symmetric, affordable, and available.
- Be reasonably and affordably priced.
- Grow and enhance with expanding user needs and advancements in technologies' bandwidth and feature capabilities.
- Transport information in full switched, secure, survivable communications.
- Be based upon a fully integrated SONET backbone of interconnected, switched survivable rings that will carry independent and fully integrated voice, data, and video communications.
- Enable access and interconnection points for public-to-public, public-to-private, and wireline-to-wireless inter-networking.

There are also many requirements that are specific to the Narrowband, Wideband, and Broadband Networks. These are discussed in the following sections.

## 2.1 Narrowband Network

The Narrowband Network is the only network to have an implementation timeframe in the 1997 Telecom Act of South Dakota.<sup>2</sup> The Act defines the Narrowband Network as:

“A fully switched digital network covering the transport range from 0 to 144,000 bits per second (144 Kbps), offering two 64 Kbps information B (Bearer) channels and a 16 Kbps signaling D (Delta) channel such that the two 64 Kbps channels can be coalesced to achieve 128 Kbps information transport using ISDN BRI

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<sup>1</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-60 *Telecommunications infrastructure – Legislative intent.*

<sup>2</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-65 *Narrowband network deployment goal.*

international ITU-CCITT standards providing both B channels circuit and B channel packet switching capabilities.”<sup>1</sup>

It is clear from the definition that the Narrowband Network is referring to a service called the Basic Rate Interface version of Integrated Services Digital Network. Commonly referred to as ISDN-BRI. According to the 1997 Telecom Act of South Dakota, the Narrowband Network is required to:

- Be designed with the specific feature and traffic handling capabilities to handle ever-increasing loads of data and video users;<sup>2</sup>
- Utilize an ISDN address scheme, including standard interfaces, to support private-to-public-to-private inter-networks;<sup>3</sup>
- Establish any-to-any connectivity for data and videoconferencing communications on a dial-up basis;<sup>4</sup>
- Be allowed to overlay the existing voice telephone network, supporting data and video conferencing traffic and shall become fully integrated with the existing voice network;<sup>5</sup>
- Utilize a base-satellite fully digital architecture, where stand-alone remote switches located in smaller communities will home-in on larger host switches;<sup>6</sup>
- Allow local switching within a community for emergency services in the event that the link to the host is cut;<sup>7</sup>
- Have ubiquitous deployment across South Dakota within five years, with significant results achieved within two years where 75% of each of the four strategic communities of interest (education COI, medical COI, business COI, and government COI) are provided access to the Narrowband Network.<sup>8</sup>

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<sup>1</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-1 *Definitions*.

<sup>2</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-63 *Narrowband network usage rates – Data traffic encouraged*.

<sup>3</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-64 *Narrowband network address scheme – Data and videoconferencing connectivity - Architecture*.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-65 *Narrowband network deployment goal*.



ISDN Basic Rate Interface (ISDN-BRI) consists of two 64 kbps bearer (“B”) channels and one 16 kbps delta (“D”) channel. These are often referred to as “2B+D.” The B channels can be used for transmitting voice, data, or video. The D channel is primarily used for signaling and supervision, but can also be used for data. Each B channel can carry one voice channel. When used for data or video transmission, there are standard methods for “bonding” the two B channels together to effectively achieve a 128 kbps data channel.

When used as a telephone, each of the B channels can have one voice call. ISDN is a circuit-switched technology like an existing Plain Old Telephone Service (POTS) telephone. This means that the circuit is setup when the telephone number is dialed and remains up until the call is terminated. All voice, data, or video is transmitted between the originating and destination stations. Since ISDN-BRI has two B channels, it is like having two telephone lines. Each B channel can operate independent of the other. For example, one B channel could be involved in a voice call while the other is transmitting data. ISDN-BRI telephones also provide features typically found only on a PBX, such as conferencing, forwarding, message waiting indicators, etc.

ISDN transmits its signal digitally. It uses a technique called Digital Subscriber Line (DSL) developed by Bellcore. The implementation of DSL (ANSI T1.601 and ITU L431) uses echo cancellation techniques, so that it can transmit and receive on a single cable pair. Echo cancellation allows the receiver at one end of the line to cancel out the effects of the transmitter so the data being received can be decoded. This method of transmission was a novelty in the mid 1980s when ISDN was first developed, but is quite common today.

ISDN-BRI can be provisioned on standard twisted pair copper wires. ANSI T1.601 allows for a distance of 18,000 feet when using mixed cable gauges, typical noise sources, and various configurations of bridged-taps. The 2B+D channels in ISDN occupy the bandwidth from 0 to 80 kHz. This precludes the use of a standard POTS telephone on the same line, since a POTS line uses the bandwidth from 0 to about 3.3 kHz. Special adapters can sometimes be purchased for ISDN equipment to allow the use of standard analog POTS telephones and fax machines. The ISDN equipment digitizes the analog telephone or fax machine and transmits the signal on one of the B channels.

A series of ITU-T interoperability standards, called H.320 governs the transmission of video over ISDN. In reality, H.320 is an “umbrella” standard that specifies H.261 for video compression, H.221, H.230, and H.242 for communications, control, and indication, and G.711, G.722, and

G.728 for the audio signal and other specialized applications. With only 128 kbps of bandwidth for video, the video quality would be acceptable for some business applications such as teleconferences. It would not be adequate for many educational or healthcare uses.

If ISDN-BRI is to be implemented on a statewide basis, it is important to understand both the pros and cons. Here are a few observations to note about ISDN-BRI before proceeding:

1. ISDN-BRI uses inexpensive twisted pair copper cable. In most instances, the cable between the central office and the customer can be used, provided the distance is less than 18,000 feet. When using high quality cable or heavier gauge cable, this distance can be exceeded, but a maximum distance of 18,000 feet is used throughout the industry. For loops that exceed 18,000 feet (there are many of these in South Dakota), additional plant construction and engineering work may have to be done.
2. ISDN is based on international standards. It is widely accepted, especially in Europe and most telephone manufacturers either support it today or have plans of supporting it in the future.
3. Normal telephones (POTS) do not work with an ISDN-BRI circuit. Telephones would have to be upgraded to ISDN-BRI telephones, and a standard POTS telephone could not use the same line with the ISDN telephone. Some ISDN-BRI telephones have analog ports to help overcome this deficiency.
4. Because of the large expense to add ISDN capability to telephone switches and its limited availability from the manufacturers, many telephone central office switches do not yet support ISDN.
5. Most existing POTS telephones are powered by the telephone company. When commercial power is lost, a POTS telephone will still operate. ISDN-BRI telephones require local premise powering. The customer would have to provide backup power to use the ISDN-BRI telephone during a power outage. Without local battery backup, the ISDN-BRI telephone customer could not even call 911 for an emergency.

## 2.2 Wideband Network

The second network addressed in this report is the Wideband Network, which is defined in the 1997 Telecom Act of South Dakota as:

“The wideband network extends the range of fully switched, digital, addressable information transport from the BRI rate of 144 Kbps to the DS-3 rate of 44.736

Mbps, including the DS-1 and DS-2 rates of 1.544 Mbps and 6.312 Mbps, respectively. The wideband network physically encompasses two transport mediums; it utilizes the expanded capabilities of the copper wire telephone network, as well as fiber optic networking facilities. The wideband network includes new local fiber facilities and rings utilizing the virtual tributary sub-SONET rates access switches to provide direct local public network access close to the customer supporting a variety of network switching technologies and interfaces, including one or more of the following: (a) Fractional ISDN-NX 64 Kbps & NX BRI: ranging from 128 Kbps to 45 Mbps, (b) Wideband ISDN: Primary Rate ISDN (PRI) @ 23B (64 Kbps) + D (64 Kbps) H0, H11.”<sup>1</sup>

This definition identifies the services that are required for the Wideband Network. These include many of the existing services between ISDN-BRI and DS-3, including DS-1, DS-2, DS-3, and ISDN Primary Rate Interface (ISDN-PRI). Of importance here is that the Wideband Network requires “local fiber facilities.” From a practical standpoint, there is little equipment currently available that allows the transmission of a symmetric signal with a line rate greater than 2 Mbps over copper cable for more than a distance of about 900 feet. Therefore, based on current technologies, fiber facilities will be needed in the local loop, either directly to the consumer’s premise or in close proximity of the consumer premise.

According to the 1997 Telecom Act of South Dakota, the Wideband Network is required to:

- Utilize an architecture that shall provide robust, diverse routing in the local loop;<sup>2</sup>
- Have Class level switching nodes located close to the consumer, to extend the Class level hierarchy;<sup>3</sup>
- Provide direct local public network access, supporting a variety of network switching technologies and interfaces, facilitating public-to-private inter-networking including one of more of the following: (1) Fractional ISDN – N X 64 kbps and N X BRI: ranging from 128 kbps to 44.736 Mbps; (2) Wideband ISDN: Primary Rate ISDN (PRI) @ 23B (64 kbps) + D (64 kbps)H0 H11;<sup>4</sup>

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<sup>1</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-1 *Definitions*.

<sup>2</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-66 *Wideband network – Transport mediums – User access to channels - Architecture*.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

- Have a wideband fully switched, addressable, supportable, growable, integrated network architecture that supports the open access requirements of the Federal Telecommunications Act of 1996;<sup>1</sup>
- Allow alternative resellers to provide transport to consumers via these new local fiber rings, while isolating their activities from the critical class 5 switch functions;<sup>2</sup>
- Allow ISP's (Information Service Providers) and ESP's (Enhanced Service Providers) to either access or bypass the public network's higher level class 5 and broadband's super 5 switches offerings when communicating locally or regionally with an ASC (Applications Service Center), or globally via an IXC's (Interexchange Carrier's), ATP's (Alternative Transport Providers), or CAP's (Competitive Access Provider's) point of presence.<sup>3</sup>

The local loop contains large amounts of existing copper cable. To replace this would require a large investment. Because of this, the Wideband Network was broken into two phases. Phase I deals with data rates up to and including DS-1 and ISDN-PRI (1.544 Mbps). Phase II deals with data rates from DS-1 to DS-3 (44.736 Mbps). It is not until Phase II that the local loop needs to be upgraded to fiber optic cable.

ISDN Primary Rate Interface (ISDN-PRI) consists of 23 "B" channels and one "D" channel. As with ISDN-BRI, the B channels are 64 kbps. The D channel in ISDN-PRI is 64 kbps rather than 16 kbps as in ISDN-BRI. Since it has twenty-four 64 kbps channels, an ISDN-PRI can be transported on a DS-1 circuit. The D channel carries the setup and signaling information for all 23 B channels.

Most of the technical requirements of the Wideband Network are possible today. However, the fiber required in the local loop and the electronics make it very costly. This will be shown later in this report. Also, the requirement for a "Class Level" switch to be located close to the consumer would be a very unusual architecture. The current generation of Fiber-in-the-Loop (FITL) equipment does not perform switching. A new breed of equipment would have to emerge to make this practical.

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<sup>1</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-67 *Wideband network to support open access requirements of Telecommunications Act.*

<sup>2</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-67 *Wideband network to support open access requirements of Telecommunications Act.*

<sup>3</sup> Ibid.

## 2.3 Broadband Network

The final network discussed in the 1997 Telecom Act of South Dakota is the Broadband Network. The 1997 Telecom Act of South Dakota defines the Broadband Network as:

“The broadband network extends the range of fully switched, symmetric, addressable, robust transport services over the fiber network, utilizing SONET rates which increase in multiples of OC-1 (51.84 Mbps), including OC-3 (155.52 Mbps) and OC-12 (622.08 Mbps). The broadband network will use one or more of the following switching technologies; ATM, STM, and channel switching, which will support the broadband ISDN UNI/NNI and SONET interfaces as defined by the ATM Forum, ANSI, and ITU-CCITT standards group.”<sup>1</sup>

Although there are not many additional requirements in the 1997 Telecom Act of South Dakota with regard to the Broadband Network, it does state that the Broadband Network shall provide ATM, STM, or channel switching. Also, the network must use advanced operational support systems that use expanding network management capabilities to ensure the ongoing support of the network infrastructure when commercially available.<sup>2</sup>

Based on the description of the Broadband Network, the 1997 Telecom Act of South Dakota appears to be referring to Broadband ISDN, or B-ISDN. It shares some of the same terminology as ISDN-BRI and ISDN-PRI, but is quite different. B-ISDN is transported on fiber optic cable rather than copper. The optical transmission interface for B-ISDN is SONET. Asynchronous Transfer Mode (ATM) is often confused with B-ISDN. ATM is actually a service that runs on top of B-ISDN. The common data rates for SONET transmission are 155 Mbps (OC-3), 622 Mbps (OC-12), and 2.5 Gbps (OC-48).

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<sup>1</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-1 *Definitions*.

<sup>2</sup> South Dakota Codified Laws, Volume 14B, Chapter 49-31-68 *Broadband network – Range of transport services*.

### Section 3 - INVESTMENT REQUIRED TO SATISFY THE ACT

The process of associating costs with the investments required to implement the 1997 Telecom Act of South Dakota involves making several assumptions. First of all, since the 1997 Telecom Act of South Dakota does not specifically dictate when LECs will have to be in full compliance, it is not possible to predict the level of technology that will be available when the LECs do in fact make these required investments. Since the costs associated with these investments are highly dependent on the level of technology available, estimates must be used to determine how much the LECs will have to invest in their infrastructure to comply with the 1997 Telecom Act of South Dakota. It is widely accepted that an inverse relationship exists between the costs associated with technology and time. As time goes on, the costs associated with technology will certainly decrease substantially as a result of efficiencies, economies of scale, and technological advancements.

The costs associated with implementing the 1997 Telecom Act of South Dakota were estimated using today's available technology. Since we are most familiar with the current state of technology and infrastructure of the ILECs operating in South Dakota, we will focus our attention on them. These estimates are believed to be solid, but a more detailed analysis of each ILEC would be required to gain a more accurate picture of the true costs associated with these investments. These cost estimates are presented in Table 3-1.

Network	Cost
Narrowband Network	\$480,104,000
Wideband Network Phase I	\$92,780,000
Wideband Network Phase II	TBD
Broadband Network	TBD

**Table 3-1. SD ILEC Estimated Investments Required  
for the 1997 Telecom Act of South Dakota**

Since the 1997 Telecom Act of South Dakota will be implemented over a period of time and the estimates were developed assuming today's technologies, they may not accurately reflect the actual final costs associated with implementation of the 1997 Telecom Act of South Dakota's

requirements. These costs are undoubtedly going to decrease from today's levels, but it is difficult to predict when they actually will and the magnitude of the decrease. If we were to use the technologies available today to implement Wideband Phase II and Broadband, the recovery of the costs would be beyond our reach. Because of this, it was determined that the implementation costs for Wideband Phase II and Broadband Networks will be left as "To Be Determined" (TBD) until a later date.

### 3.1 Cost Calculation Introduction

The following pages illustrate an estimate of the cost of constructing the statewide network as defined by the 1997 Telecom Act of South Dakota. These costs are only estimates. When calculating this estimate it was necessary to use a number of assumptions regarding system architectures, future technologies (and their prices), and cooperation among the ILECs for providing facilities.

The costs for each network (Narrowband, Wideband, and Broadband) are broken out separately in the following sections. Each section details the assumptions that were made to calculate the values and any interpretations that were made concerning the requirements of the 1997 Telecom Act of South Dakota.

It should be noted that the cost estimates do not assume 100% penetration of the required services. The 1997 Telecom Act of South Dakota states that the services shall be *available* to all South Dakota consumers, but does not say that they will be *used* by all South Dakota consumers. For example, all consumers in South Dakota may have ISDN-BRI available, but not all may order it. For purposes of this study, we have defined an "available service" as one that can be delivered to the consumer in 10 business days or less. This will allow enough time to order some electronic components, such as circuit cards, but would not allow for any new cable to be buried or fiber cable to be spliced. Therefore, the costs associated with making a service "available" will include all the cable, cable construction, and all the electronics (minus some circuit cards).

For each of the networks, the costs are broken into three categories. These three categories, with short descriptions of each, are as follows:

1. *Local Loop Costs* – These include all the costs associated with the facilities between the local telephone company central office and the consumer premise. This includes both cable costs (copper or fiber) and any electronics that may be required to serve the consumer.

2. *Central Office Switching Costs* – This includes any software or hardware needed to upgrade the telephone switch or Asynchronous Transfer Mode (ATM) switch to provide the service.
3. *Network Backbone Costs* – The costs associated with upgrading the backbone network between central offices are included in this section.

As a general rule, when providing the enhanced services such as ISDN-BRI, town consumers can be served directly out of the central office. Rural subscribers must be served out of some electronics located in the rural areas. For purposes of our discussion, town consumers are those within 18 kft (18,000 feet) of a central office. Rural consumers are those beyond 18 kft of a central office. The reason for defining town and rural consumers will become clear later in this report. Since the cost to provide service to a town consumer differs from the cost to provide service to a rural consumer, we must first estimate the quantity of ILEC town and rural consumers.

Cable plant designs for the companies being evaluated were used to estimate the number of Rural Access Lines (lines not within 18 kft of the central office). Seven companies with varying population densities across South Dakota were examined to determine the number of rural lines in each company's service area. The seven companies used were:

- Golden West Telecommunications Coop, Inc.
- McCook Cooperative Telephone Company
- Midstate Telephone Company
- Sanborn Telephone Cooperative
- Stockholm-Strandburg Telephone Company
- Sully Buttes Telephone Cooperative, Inc.
- West River Cooperative Telephone Company

Using these seven companies, the total rural access lines were found to be approximately 10,200. The total town access lines were found to be approximately 15,100. In other words, 40% of the access lines are rural and 60% are town. Since these companies represent a good cross-section of the South Dakota ILECs, this percentage is believed to be a good approximation of what could be expected for most ILECs in South Dakota on the average. Exception to this rule would have to be taken for the four "non-rural" telephone companies in South Dakota, since they have a significant percentage of the ILEC access lines in South Dakota.



The four "non-rural" telephone companies include Beresford Municipal Telephone (1,186 access lines), Jefferson Telephone Company (551 access lines), City of Faith Telephone Company (345 access lines), and Brookings City Telephone (14,421 access lines). These companies serve only a town (little or no rural subscribers), so all access lines served by these telephone companies would be considered to be within 18 kft of a switch and therefore would be considered town lines. The total access lines in these "non-rural" telephone companies is approximately 16,500.

When including all ILECs with more than 200 access lines, the 1996 PUC report shows approximately 135,000 total ILEC access lines. If the access lines for the four "non-rural" telephone companies mentioned above are subtracted from the total of 135,000, the remaining access line total is 118,500. Applying our 40% rural access lines to the 118,500 access lines, we find there is approximately 47,000 rural access lines in ILEC territory. The balance of the 135,000 access lines are town access lines, which results in 88,000 town access lines. This is summarized in Table 3-2. These values are used throughout the analysis.

SD ILEC Access Lines	
ILEC Rural Consumers	47,000
ILEC Town Consumers	88,000
<b>Total ILEC Access Lines</b>	<b>135,000</b>

Table 3-2. Town and Rural ILEC Access Lines

### 3.2 Narrowband Network

In order to comply with the Narrowband requirements of the 1997 Telecom Act of South Dakota, it is necessary to have the capability to provide every consumer with an ISDN-BRI line. In reality, all consumers will not immediately elect to take this service. However, the telephone company must be prepared to provide this service to anyone with only a minor upgrade (e.g., line card addition). The central office equipment, FITL electronics, and cable plant necessary to provide this service must be in place. This will allow the ability to provide the requested service in a short amount of time upon its request.

ISDN-BRI can be provided with a high probability of success to consumers within 18 kft of the central office or Digital Loop Carrier (DLC). A DLC is a generic term referring to electronics that are located in the local loop. A DLC can be connected back to the central office either using

copper or fiber cable. When connected back to the central office using fiber cable, the DLC is often referred to as Fiber in the Loop (FITL). For the SD ILECs, the consumers are broken into two categories: town consumers and rural consumers. Since most central offices are located in a town, town consumers would be located within 18 kft of a central office. Many rural consumers are more than 18 kft from the central office and must be served by a DLC. There are exceptions to both of these rules. For example, the central offices in Willow Lake and Artesian are not located in the town. There are also consumers that live outside of the town that are still within 18 kft of the central office. These instances are small and they tend to offset each other, so the estimate should not be significantly impacted.

### *Local Loop Costs*

To be capable of providing all consumers with ISDN-BRI, it is assumed that all consumers must be within approximately 18 kft of a central office or DLC. The 1997 Telecom Act of South Dakota proposes using fiber optic cable in the local loop. With high penetrations of ISDN-BRI, fiber is also more practical due to increased bandwidth needed. To calculate the cost per access line for the cable and electronics, existing cable plant designs were used. These cable plant designs contain fiber layouts designed for the rural areas and show the associated costs.

FITL equipment capable of providing ISDN-BRI is also required in the rural areas. The fiber cable from the central office will terminate on this FITL equipment. Each consumer will have a copper cable from this FITL equipment to their premise to deliver the ISDN-BRI circuit. An average cost per access line could not be calculated directly from the cable plant design data because of the fact that these designs were primarily for providing POTS services. Since the cable plant designs assume only POTS will be delivered from the FITL electronics, the cable plant design prices must be adjusted upward to account for consumers using ISDN-BRI, since ISDN-BRI line cards are more expensive.

We found that an ISDN-BRI service was approximately 1.5 times more expensive to provide (in terms of the FITL equipment) than POTS. If we assume 25% of the access lines will initially be converted to ISDN-BRI and the remaining 75% require only POTS, then the cost of the "POTS only" solution in the cable plant designs would have to be increased by a factor of 1.125  $[(1 \times 0.75) + (1.5 \times 0.25) = 1.125]$ .

Both the estimated cost of the cable and the estimated cost of the electronics would have to be adjusted down somewhat to account for the telephone company upgrades that are planned for the

1998 construction year. If the cost is already planned and budgeted for, then it should not be included in the estimated costs for implementation of the 1997 Telecom Act of South Dakota. We assumed that 5% of the proposed upgrade would occur this year, apart from the 1997 Telecom Act of South Dakota. Therefore, an implementation reduction factor of 0.95 was applied to the totals to arrive at the estimated costs. The total cost per access line for rural subscribers can be seen in Table 3-3.

Additional ISDN-BRI lines could be added to the FITL equipment at the cost of \$2,500 per consumer.

<b>Rural Consumer Investment Costs</b>	
<i>Cable Costs</i>	
Copper Construction	\$1,880
Fiber Construction	\$3,989
<b>Total Cable</b>	<b>\$5,869</b>
<i>Equipment Costs</i>	
FITL Equipment (POTS only)	\$2,130
ISDN-BRI 25% Penetration Factor	1.125
<b>Total Equipment</b>	<b>\$2,396</b>
<b>Subtotal (Cable + Equipment)</b>	<b>\$8,265</b>
Implementation Reduction Factor	0.95
<b>Total per Rural Access Line</b>	<b>\$7,852</b>
<b>Total Cost (47,000 Rural Access Lines)</b>	<b>\$369,044,000</b>

Table 3-3. Estimated Investment Costs per Access Line for Rural Consumers

Past cable plant design data was used to estimate an average cable cost per access line for town consumers just as was done for the rural consumers. Both copper plant and ductwork were considered when estimating the average cost per access line. Using the average cable plant design values of the same companies mentioned previously, the cost per access line for the town consumer is \$380 for cable construction. In the cable plant design, some cables are planned for replacement that would be adequate, at least in the short term, for delivering ISDN-BRI circuits. To make the number more realistic for our purposes, we will reduce the average cost to bring Narrowband services to the town subscriber by 50% (it is likely that this reduction could be anywhere from 30% to 70%). The actual value is not important, since it will not have a large impact on the analysis results (the total cost to serve the rural consumers is 20 times more than

the town consumers). Since there are 88,000 town subscribers, this would result in a total cable investment of \$16,720,000 [ $\$380 \times 0.5 \times 88,000 = \$16,720,000$ ].

### Central Office Switching Costs

The telephone switches were broken into three categories: host switches, small remotes, and large remotes. Each one of these categories has a different upgrade cost to make the switch ISDN-BRI capable. In addition to this cost, there is also a cost per line that applies.

Martin and Associates, Inc. is familiar with the switch types used by many of the telephone companies in the State. The number of host switches, small remotes, and large remotes were estimated in Table 3-4. These switch upgrade costs would be incurred if one consumer or all the consumers subscribed to ISDN-BRI.

Switch Type	Switch Upgrade Investment Costs		
	# of Switches	\$ per Switch	Total
Host Switch	124	\$60,000	\$7,440,000
Small Remote	97	\$25,000	\$2,425,000
Large Remote	9	\$40,000	\$360,000
<b>Totals</b>	<b>230</b>		<b>\$10,225,000</b>

Table 3-4. Estimated Investment Costs for Switch Upgrades

There are a total of 135,000 access lines connected to these switches and remotes, according to the PUC reports. We will assume 25% of the access lines will have ISDN-BRI and the cost is \$2,000 per access line to account for the individual line cards and other hardware. This results in the total cost to provide ISDN-BRI for all ILECs of \$67,500,000 [ $135,000 \times 0.25 \times \$2,000 = \$67,500,000$ ]. When the cost to provide ISDN-BRI and the switch upgrade costs (as shown in Table 3-4) are added together, the total cost is \$77,725,000.

### Network Backbone Costs

The 1997 Telecom Act of South Dakota requires all networks to be based upon a fully integrated SONET backbone of interconnected, switched survivable rings. In order to comply with this requirement it is necessary for every switch to be connected to a diversely routed SONET ring. To estimate costs associated with this SONET backbone it was necessary to look at each company individually. A potential SONET ring architecture was then laid out for each telephone

company. It was assumed that there would be a high level of cooperation between telephone companies. Lack of this cooperation could significantly increase the cost of the SONET backbone.

A cost of \$10,000 per mile (6-strand direct buried fiber optic cable) was used for the average cost of fiber construction. It was assumed that each OC-12 SONET terminal would cost an average of \$75,000 (includes add/drop cards, BITS clock, installation, and testing). When determining the cable needed to implement the SONET backbone, maps of existing fiber facilities in South Dakota were used to ensure fiber was not installed in areas that currently have fiber installed. It was determined that 846 additional miles of fiber cable are needed. Also, some central offices are currently on existing or planned SONET rings. When this is the case, no costs for SONET terminals were included in the estimates. The costs associated with the SONET backbone can be seen in Table 3-5.

<b>SONET Backbone Investment Costs</b>	
Fiber Construction (846 miles)	\$8,460,000
SONET Terminals	\$8,155,000
<b>Total</b>	<b>\$16,615,000</b>

**Table 3-5. Estimated Investment Costs for SONET Backbone**

### *Narrowband Cost Summary*

The total investment cost per access line for all consumers in ILEC territories to make Narrowband Network services available to all consumers and equipped for 25% ISDN-BRI penetration rate can be seen in Table 3-6. The carrying costs for these upgrades are shown in the following section. Methods of cost recovery for these upgrades are also discussed later in this report.

<b>Investment Cost Summary</b>	
Local Loop Costs (Rural)	\$369,044,000
Local Loop Costs (Town)	\$16,720,000
Switching Equipment	\$10,225,000
ISDN-BRI Equip. (25%)	\$67,500,000
Backbone Network	\$16,615,000
<b>Total</b>	<b>\$480,104,000</b>
<b>Total Per Access Line (135,000 total)</b>	<b>\$3,556</b>

**Table 3-6. Estimated Investment Costs for  
Narrowband Network (per Access Line)**

### 3.3 Wideband Network – Phase I

In order to comply with the Wideband Network requirements of the 1997 Telecom Act of South Dakota, it is necessary to have the capability to provide every consumer with data rates up to a DS-3 (44.736 Mbps). Keeping with the methodology presented earlier, the telephone company must be prepared to provide this service to any consumer with only a minor upgrade (i.e. line card additions). The central office equipment, base FTTL electronics, and cable plant necessary to provide this service must already be in place. This will allow the ability to provide the requested service in a short amount of time upon its request.

Data rates up to 1.544 Mbps (DS-1 and ISDN-PRI) should satisfy most consumers needs in the short term. Services up to 1.544 Mbps can be delivered over standard unshielded twisted copper pair wires that are widely installed. Higher rates will require fiber to be installed to the consumer premise. Because of this, the Wideband Network was broken into two phases. The first phase (Wideband Phase I) would allow the capability to provide DS-1 and ISDN-PRI service (1.544Mbps) to all consumers. The second phase (Wideband Phase II) would allow the capability to provide data rates up to DS-3.

#### *Local Loop Costs*

Cable plant that was installed during the Narrowband implementation phase will be adequate to support Wideband Phase I. No additional cable plant is needed. Also, the FTTL equipment that was installed for the Narrowband network will be capable of providing Wideband Phase I

services. DS-1 cards can simply be added to the FITL equipment to provide both DS-1s and ISDN-PRI lines.

For this study it was assumed that there would be an initial 10% penetration of Wideband Network services (DS-1s or ISDN-PRI). To estimate the cost for the rural consumer, an average of \$1800 per DS-1 card set (cards for central office and field equipment) was used.

In order to provide DS-1 and ISDN-PRI to town consumers, it would be necessary to install some transport equipment in the central office, customer premise, and possibly some field repeaters. As with the rural consumers, it was also assumed that there would be an initial 10% penetration of Wideband Network services (DS-1s or ISDN-PRI). To estimate the cost for town consumers, \$1500 was assumed for the electronics to deliver each DS-1 circuit (both central office and field equipment) to the consumer. The total cost estimates for both rural and town consumers can be seen in Table 3-7.

<b>Local Loop Investment Cost Summary</b>	
Cost per Rural Consumer	\$1,800
10% of Rural Consumers	4,700
<b>Rural Consumer Total</b>	<b>\$8,460,000</b>
Cost per Town Consumer	\$1,500
10% of Town Consumers	8,800
<b>Town Consumer Total</b>	<b>\$13,200,000</b>
<b>Total (Rural and Town)</b>	<b>\$21,660,000</b>

Table 3-7. Wideband Phase I Local Loop Investment Cost Estimate

The costs in Table 3-7 will allow the DS-1 and ISDN-PRI circuits to get from the consumer's premise to the telephone company central office. The next section calculates the costs associated with the switching equipment to handle the ISDN-PRI circuit.

### *Central Office Switching Costs*

The 1997 Telecom Act of South Dakota requires the ability to provide consumers with ISDN-PRI. A software upgrade at a cost of approximately \$20,000 per host switch or large remote is required to provide this service. An additional cost of around \$6,000 per ISDN-PRI line is required for ISDN-PRI interface cards in the telephone switch. In the previous section, it was assumed that 10% of the subscribers would want either a DS-1 service or an ISDN-PRI service.

We will assume that 5% of the subscribers want DS-1 and 5% want ISDN-PRI. Since there are 131 host telephone switches and large remotes in the ILEC exchanges, the cost would be \$2,620,000 to upgrade the switches and another \$40,500,000 [ $135,000 \times 0.05 \times \$6,000 = \$40,500,000$ ] to equip the switch for 5% ISDN-PRI penetration.

For the Wideband Network to be fully switched, ATM switches would be required to perform the cell switching required by the 1997 Telecom Act of South Dakota. We can assume that a large ATM switch would be located in 50 of the 230 central offices to serve the entire State. The cost is estimated at \$100,000 per switch. Based on this, the cost for the ATM switches would be \$5,000,000. The total Central Office Switching Equipment costs can be seen in Table 3-8.

Central Office Switching Investment Cost Summary	
Telephone Switch Upgrades	\$2,620,000
Line Cards (ISDN-PRI)	\$40,500,000
ATM Switches	\$5,000,000
<b>Total</b>	<b>\$48,120,000</b>

**Table 3-8. Wideband Phase I Central Office Switching Investment Cost Estimate**

### *Network Backbone Costs*

In order to handle the increased data rates incurred by the Wideband Network it would be necessary to upgrade the SONET terminals on the central office backbone. This would include the currently existing SONET terminals as well as those installed during the Narrowband Network implementation. All SONET terminals would be upgraded to support backbone data rates of OC-48 (approximately 2.5 Gbps). Also, additional DS-1 and DS-3 interfaces would have to be purchased to transport the increased data needs. It was estimated that this cost would be \$100,000 per terminal. Since there are 230 SONET terminals, the cost would be \$23,000,000.

### *Wideband Phase I Cost Summary*

The Wideband Phase I investment costs calculated in this section allow the ILEC exchanges to provide Wideband Phase I Network service to all consumers. The investment costs provide for a 5% DS-1 penetration rate, 5% ISDN-PRI penetration rate, and universally available ATM switching. These investment costs are summarized in Table 3-9. The carrying costs for these upgrades are shown in the following section. Methods of cost recovery for these upgrades are also discussed later in this report.



Investment Cost Summary	
Local Loop Costs	\$21,660,000
CO Switching Equipment	\$48,120,000
SONET Upgrade	\$23,000,000
<b>Total</b>	<b>\$92,780,000</b>
<b>Total Per Access Line (135,000 Access Lines)</b>	<b>\$687</b>

**Table 3-9. Estimated Investment Costs for  
Wideband Phase I Network (per Access Line)**

### 3.4 Wideband Network – Phase II

#### *Local Loop Costs*

Data rates as high as DS-3 cannot be provided over copper cable pairs for any extended distance (typically less than 900 feet). Therefore, it will be necessary to supply fiber to every consumer residence and business to meet the requirements of Wideband Phase II. Based on the cable plant design data, it was found that the average distance from the Digital Loop Carrier (DLC) to each rural consumer would be approximately 1.75 miles (9,240 feet). There are 47,000 rural subscribers in ILEC exchanges. Based on this alone, one can see that the costs would quickly become cost prohibitive, even if the installed cost for the fiber cable could be reduced from \$10,000 per mile to \$5,000 per mile.

Additionally, the FITL equipment that was installed for the Narrowband Network *will not* be able to handle the capacity required by the Wideband Phase II Network. It is likely that the existing FITL equipment would require upgrading to handle the additional capacity. Therefore, existing Narrowband Network equipment would have to be replaced with a larger SONET based architecture. Using today's prices for a SONET terminal capable of dropping the needed services in an environmentally hardened cabinet with generators would cost \$100,000 per DLC. Due to the long distances, on the average only about 15 consumers are served from a DLC in rural South Dakota. This being the case, more than 3,000 DLCs may be required. This also could be cost prohibitive using today's technologies.

### *Central Office Switching Costs*

The costs associated with the central office switching equipment to implement the requirements of the Wideband Network Phase II Network should also be small.

### *Network Backbone Costs*

The costs associated with the network backbone to implement the requirements of the Wideband Network Phase II Network should be small.

## **3.5 Broadband Network**

In order to comply with the broadband requirements of the 1997 Telecom Act of South Dakota, it is necessary to have the capability to provide every consumer with data rates in multiples of OC-1 (including OC-3 and OC-12). In reality, most consumers will not immediately elect to subscribe to data rates of this magnitude. However, we assume the telephone company must be prepared to provide this service to anyone with only a minor upgrade (i.e. addition of some cards in an existing SONET terminal). The central office equipment, base FITL electronics, and cable plant necessary to provide this service should be in place. This will allow the ability to provide the requested service in a short amount of time upon its request.

### *Local Loop Costs*

Fiber-to-the-home would already be in place from the Wideband Phase II implementation. It is expected that there would be very little additional cable costs associated with the local loop, since fiber has already been run to all consumer premises in redundant rings. However, since the equipment to provide these services is not economically feasible at this time, it is also difficult to predict what type of cable plant will be required in the local loop by the next generation of equipment. Depending upon the penetration of the high bandwidth services (OC-1, OC-3, OC-12, etc.), some of the SONET terminals used in the FITL design may need to be upgraded.

### *Central Office Switching Costs*

It is likely that most of the high bandwidth services will not terminate on the central office telephone switch. They will most likely be data (or voice in packets or cells) and will terminate on an ATM switch. The ATM switch may require some upgrades at this point in the implementation process.

The 1997 Telecom Act of South Dakota requires that the telephone company "use expanding network management capabilities to ensure the ongoing support of the network infrastructure when commercially available." To meet this requirement, a computer management system would also need to be purchased. Since the standard methods for managing equipment is different for telephony equipment and data equipment, two management systems may be required.

### *Network Backbone Costs*

The costs associated with the network backbone to implement the requirements of the Broadband Network should be relatively small, due to the infrastructure that was put in place for the Narrowband and Wideband networks.

## Section 4 - ILEC AND CONSUMER REVENUE IMPACTS

The focus of this study was the ILECs operating in the State of South Dakota. An ILEC is defined as any independent, cooperative, or municipal-owned local exchange carrier providing service in any non-US West service area. These ILECs provide service to approximately 135,000 access lines in the State. Emphasis was placed on this particular group of ILECs operating in the State because of two reasons. The reasons are:

1. ILECs typically serve rural, high cost areas;
2. The consumers located in these company's exchanges would experience significant rate shock if these ILECs were required to make the necessary investments required pursuant to the 1997 Telecom Act of South Dakota without a State Universal Service Fund.

### 4.1 ILEC Annual Revenue

The first step in performing this analysis involved estimating the annual revenue generated by a typical ILEC operating in South Dakota. A data request was developed and sent to Martin and Associates, Inc.'s cost company clients. This group consisted of seventeen companies that represented approximately 75,000 of the 135,000 access lines served by all South Dakota ILECs. The results of these data requests were used to calculate averages per access line and to develop a model representing revenue sources for a typical South Dakota ILEC. This model is shown in Figure 4-1.

This model presents revenue sources for a typical South Dakota ILEC, but in this context it is hard to see exactly how much revenue is required by an ILEC in order to cover their existing annual carrying charges. In order to present this material in more understandable terms, the figures used to develop the model in Figure 4-1 were used to develop monthly averages per access line. Figure 4-2 shows the monthly revenue per access line that a typical ILEC operating in South Dakota receives from each revenue source. Please note the fact that "Other Revenue" represents interstate special access revenue, intrastate special access revenue, carrier billing and collection revenue, Federal Universal Service payments, and other revenue. The average monthly revenue per access line shown in Figure 4-2 is \$64.

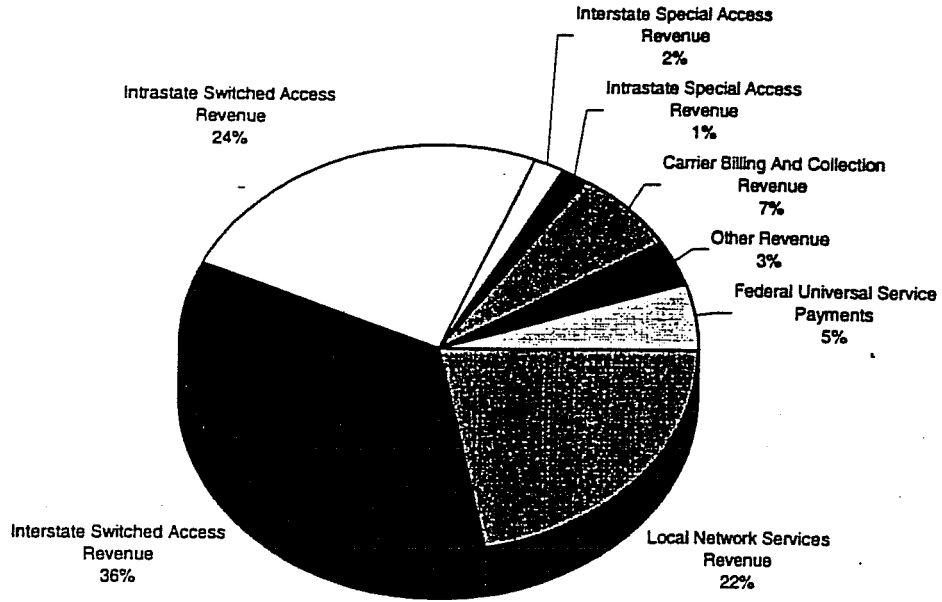


Figure 4-1. Typical South Dakota ILEC Revenue Sources

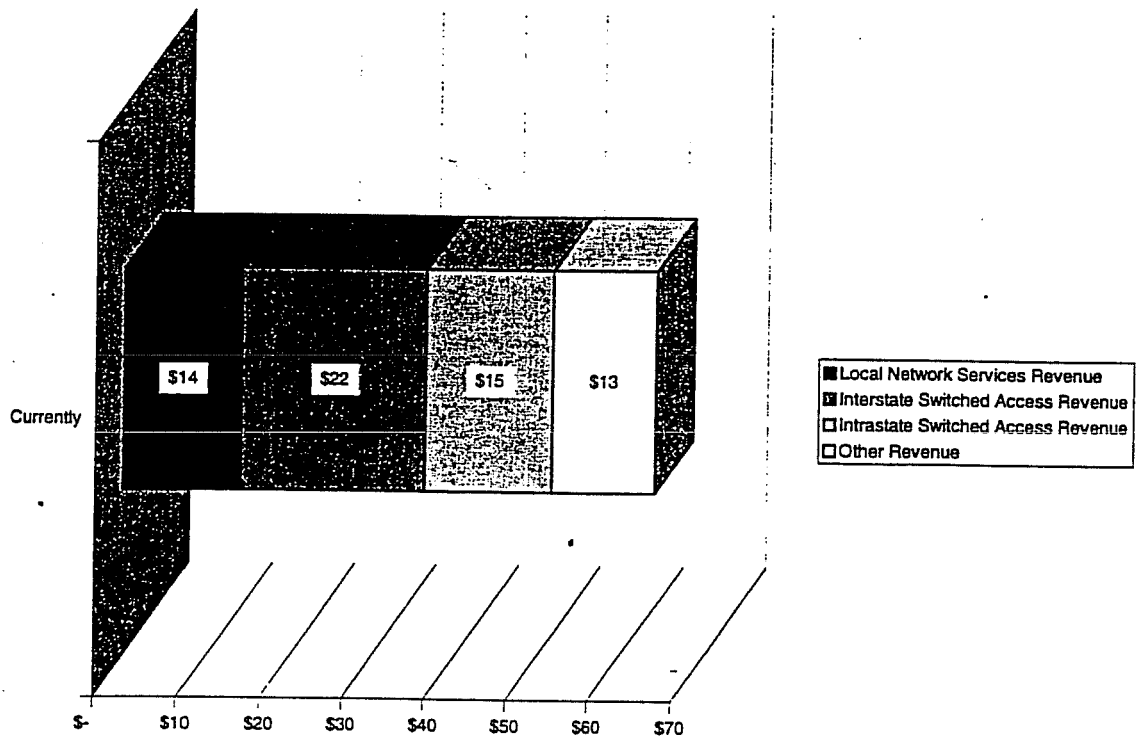


Figure 4-2. Typical SD ILEC's Monthly Revenue Per Access Line

Figure 4-2 should not be interpreted as showing that a consumer being served by an ILEC pays a monthly telephone bill of \$64. However, this table does show that an ILEC consumer does in fact pay an average of \$14 a month for local service. It should be pointed out that the consumer pays the monthly end user subscriber line charge in addition to this \$14 amount. The data requests submitted by Martin and Associates, Inc.'s cost company clients show that a range of \$8 to \$22 was paid by the respective companies' consumers for monthly local service.

## 4.2 Recovery of Annual Carrying Charges

ILECs must recover the annual carrying charges associated with the investments they make in order to operate. If an ILEC consistently does not recover its annual carrying charges, it will eventually become insolvent and will be forced out of business. For this study, a typical South Dakota ILEC's annual carrying charges were grouped into five areas. They are as follows: Maintenance, Depreciation, General & Administrative, "Cost of Money", and Taxes. In order to perform the analysis, percentages had to be associated with each carrying charge group that would accurately reflect the annual carrying charges of a typical ILEC operating in South Dakota. Please note that these annual carrying charges are based on a percentage of gross plant investment. These percentages were developed from information presented in the 1996 South Dakota PUC report. Table 4-1 depicts what a typical South Dakota ILEC's annual carrying charge percentages might be. The percentages are only estimates and should not be set in stone, but as a group, these annual carrying charges are believed to be realistic.

Maintenance	5.0%
Depreciation	7.0%
General & Administrative	6.0%
Cost of Money	10.0%
Gross Receipts Taxes	2.0%
<b>Total</b>	<b>30.0%</b>

Table 4-1. Existing Annual Carrying Charges for SD ILECs

The percentages in Table 4-1 represent the annual carrying charges a typical ILEC in South Dakota experiences based on current gross plant investment levels. What affect would the investments an ILEC may be required to make in order to comply with the 1997 Telecom Act of South Dakota have on these existing annual carrying charges? The answer to this question is not an exact science. To assume that the annual carrying charge percentages associated with these

new investments would be exactly the same as those represented in the preceding table would be a fallacy. Under this assumption, the total annual carrying charges would double as a result of a one hundred percent increase in investments. In reality, these charges will not double. They will go up, but they will not increase by one hundred percent or more. This is a direct result of economies of scale and operating efficiencies developed through an ILEC's operations. The question that needs to be answered then becomes one that has to deal with the carrying charges associated with these new investments. The only thing certain about the annual carrying charge percentages tied to these new investments is that they are going to be less than the annual carrying charge percentages experienced by a typical South Dakota ILEC today. Table 4-2 shows the annual carrying charge percentages that were used in this study for the new investments required pursuant to the 1997 Telecom Act of South Dakota.

Maintenance	2.0%
Depreciation	7.0%
General & Administrative	2.0%
Cost of Money	10.0%
Gross Receipts Taxes	0.5%
<b>Total</b>	<b>21.5%</b>

**Table 4-2. Estimated Annual Carrying Charges on  
Investments Required by the ACT**

The difference between the carrying charge percentages associated with these new investments and the carrying charge percentages currently experienced by a typical South Dakota ILEC can be attributed to efficiencies and economies of scale that would develop in the areas of maintenance and general and administrative expenses. Also, the annual carrying charge percentage associated with taxes would be less because in reality an ILEC's income isn't going to double as a result of these new investments. There is a possibility that since an ILEC would be able to offer high-bandwidth services that they could conceivably generate more revenue, which in turn, could possibly lead to a healthier bottom line assuming the revenue exceeded the costs associated with these investments. Thus, taxes might increase, but not double. A more reasonable tax increase as a result of the new investments would be somewhere in the neighborhood of twenty-five percent. A case could be made that this number is actually too high, but for this study, the annual carrying charge percentage associated with taxes depicted in the table preceding this paragraph is deemed sufficient.

Depreciation and “Cost of Money” represent two annual carrying charges that would probably double as a result of a one hundred percent increase in gross investment. ILECs operating in South Dakota would probably depreciate these new investments at the same composite rate at which they are currently depreciating their existing investments. Thus, in theory, an ILEC’s annual depreciation carrying costs should double. An ILEC’s annual “Cost of Money” carrying charge represents the ILEC’s annual interest payments along with a built in return for shareholders. Essentially, it represents the revenue an ILEC needs to generate in order to meet all its liability payments and generate a return to compensate the shareholders for the risk they endure. In this particular instance, a typical ILEC operating in South Dakota and making future new investments is probably going to require the same annual “Cost of Money” carrying charge percentage as they require today. If anything, this percentage might increase as a result of these new investments, but for this study an annual “Cost of Money” carrying charge percentage of 10% is deemed sufficient.

Using these annual carrying charge percentages associated with the investments required by a typical South Dakota ILEC pursuant to the 1997 Telecom Act of South Dakota along with the investment estimates presented in the previous section of this report, the total annual carrying costs for all South Dakota ILECs was estimated. Under the assumption that there are 135,000 access lines served by ILECs in the State, a monthly carrying charge per access line was calculated based on these estimates. Table 4-3 shows the monthly carrying charges per access line for the Narrowband Network. Table 4-4 shows the monthly carrying charges per access line for both the Narrowband Network and Wideband Network Phase I.

Please note that this revenue requirement represents the revenue a typical ILEC operating in South Dakota would need to generate to cover the carrying charges associated with the investments required to implement the Narrowband and Wideband Phase I Networks called for in the 1997 Telecom Act of South Dakota. This monthly revenue requirement of \$76 per access line would need to be added to the monthly revenue per access line of \$64 that a typical ILEC is currently generating.

Since the costs of implementation of the Wideband Phase II and Broadband Networks were considered to be beyond our reach with today’s technologies, the calculation of their carrying charges was not done at this time.



<b>Narrowband Network</b>	
Total Investment	\$480,104,000
<i>Annual Carrying Charges</i>	
Maintenance	\$9,602,080
Depreciation	\$33,607,280
General & Administrative	\$9,602,080
Cost of Money	\$48,010,400
Taxes	\$2,400,520
<b>Total</b>	<b>\$103,222,360</b>
<b>Monthly Carrying Charge per Access Line (135,000)</b>	<b>\$ 64</b>

**Table 4-3. Monthly Carrying Charge per Access Line for  
the Narrowband Network**

<b>Narrowband and Wideband Phase I Networks</b>	
Total Investment	\$572,844,000
<i>Annual Carrying Charges</i>	
Maintenance	\$11,456,880
Depreciation	\$40,099,080
General & Administrative	\$11,456,880
Cost of Money	\$57,284,400
Taxes	\$2,864,220
<b>Total</b>	<b>\$123,161,460</b>
<b>Monthly Carrying Charge per Access Line (135,000)</b>	<b>\$ 76</b>

**Table 4-4. Monthly Carrying Charge per Access Line for  
the Narrowband Network and Wideband Network Phase I**

### **4.3 Conclusions**

It is difficult to precisely predict the ultimate costs associated with the investments mandated by the 1997 Telecom Act of South Dakota. Although the previous analysis involved using investment estimates developed based on the assumption that current technology was utilized to meet every requirement of the 1997 Telecom Act of South Dakota, the results prove to be somewhat interesting. If the investment estimates that were used in the study were indeed cut in half, the results may still not be economically feasible. The analysis performed in the previous section does emphasize one significant point. ILECs operating in the State couldn't possibly make the necessary investments to comply with the 1997 Telecom Act of South Dakota and keep their rates affordable without the help of a cost averaging mechanism and high cost support, such as a SD-USF.

The next section of this report deals with alternatives for recovering the investments that the ILECs need to make to meet the requirements of the 1997 Telecom Act of South Dakota.

## Section 5 - ILEC INVESTMENT RECOVERY ALTERNATIVES

As shown in the previous section, an ILEC must recover the carrying charges associated with its investments in order to stay in business. The intent of this section is to determine a method for the ILECs to meet the requirements of the 1997 Telecom Act of South Dakota and recover the carrying charges on their investments. In this section, there were two alternatives that were analyzed to recover these costs. These alternatives were:

*Alternative #1* – The annual carrying charges associated with the investments required pursuant to the 1997 Telecom Act of South Dakota would be recovered through an increase in local service rates.

*Alternative #2* – The revenue necessary to recover the annual carrying charges associated with the investments required pursuant to the 1997 Telecom Act of South Dakota would be generated by the following allocation:

36%--Interstate Network Access Revenue  
24%--Intrastate Network Access Revenue  
40%--Local Service Revenue  
100%--Total

The above percentages associated with interstate network access revenue and intrastate network access revenue are the same revenue percentages a typical SD ILEC experiences today.

In the next section of this report, a third alternative is analyzed. This alternative assumes that a Universal Service Fund is implemented in the State.

### 5.1 Alternative #1 – Increased Local Service Rates

The intent of this alternative is to determine how much will local-service rates increase if an ILEC operating in the State is forced to recover the monthly carrying charges associated with the required investments using local service revenues alone. Figure 5-1 shows the increase in local service rates required in order for an ILEC to recover its monthly carrying charges if a local

service rate increase was the only means available to recover the added carrying costs associated with the investments required by the 1997 Telecom Act of South Dakota.

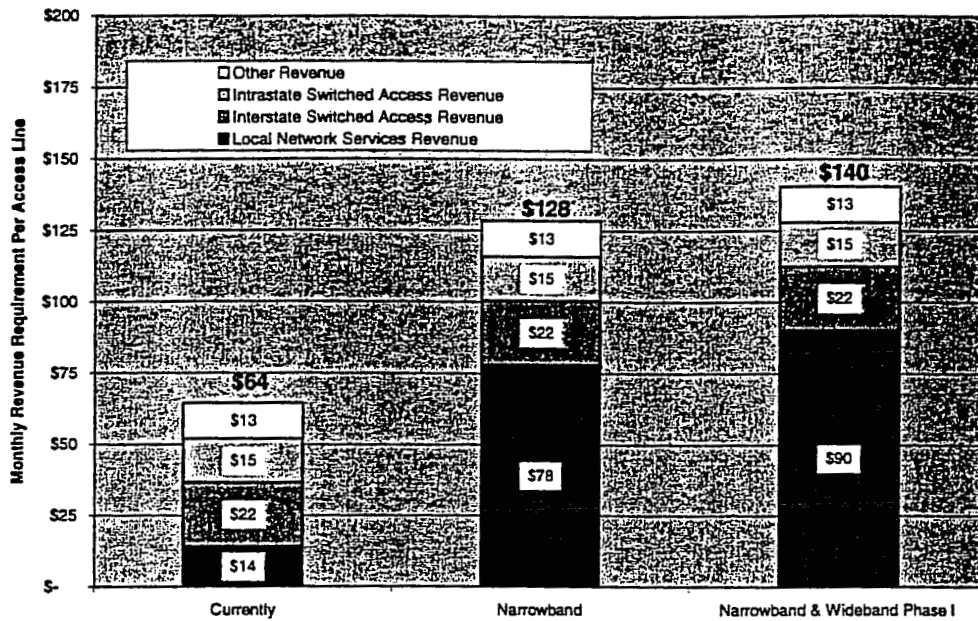


Figure 5-1. Monthly Revenue Requirement Per Access Line (Alternative #1)

Figure 5-1 illustrates that a typical ILEC operating in South Dakota couldn't possibly rely only on an increase in local network services revenue in order to cover its existing annual carrying charges along with the added carrying charges associated with the new investment required by the 1997 Telecom Act of South Dakota. ILECs operating in the State would have to increase local service rates by nearly 500% just to recover the carrying charges associated with the investment for the Narrowband Network. This fact alone proves the point that this alternative is unrealistic. Under this alternative, local service rates would have to increase drastically in order for an ILEC to recover the carrying charges through an increase in local service rates. Local service rates would have to be increased to the point that phone service would become unaffordable for most people living in the State.

## 5.2 Alternative #2 – Increased Network Access Charges and Increased Local Service Rates

Currently, a typical ILEC operating in South Dakota receives 36% of its revenue from Interstate Switched Access Revenue and 24% from Intrastate Switched Access Revenue. In order for these revenue generating percentages to remain the same, how much per access line would a typical ILEC operating in South Dakota need to generate from each of these activities in order to cover existing carrying charges plus those carrying charges associated with the investment required by the 1997 Telecom Act of South Dakota? Figure 5-2 shows how much monthly revenue an ILEC would need to generate per access line in order to recover the appropriate carrying charges.

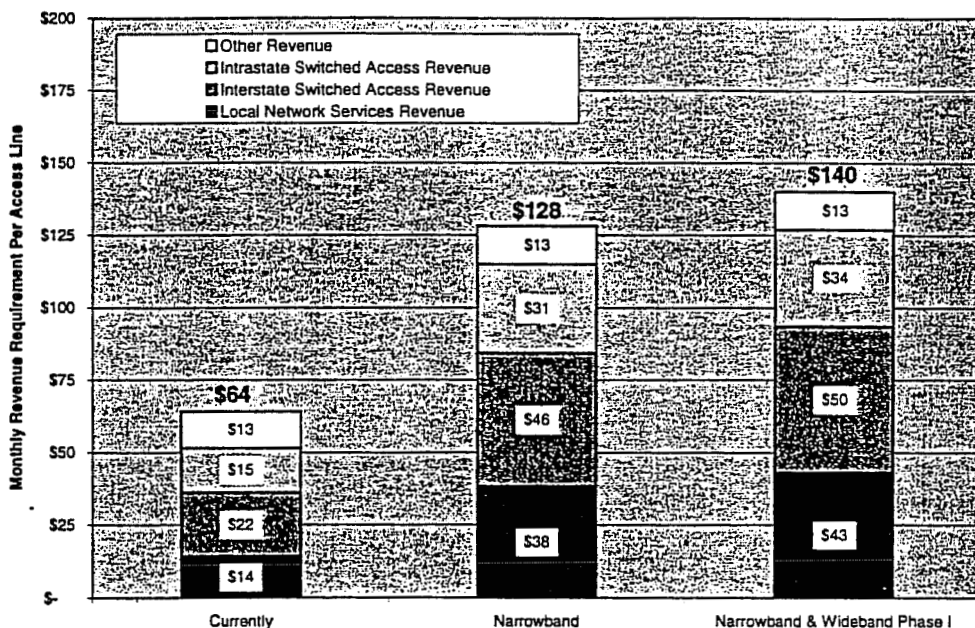


Figure 5-2. Monthly Revenue Requirement Per Access Line  
(Alternative #2)

Like Alternative #1, it would be difficult for South Dakota ILECs to recover the carrying charges associated with these investments using the proposed methods. First of all, although local service rates in this particular scenario would be lower than those rates involved under Alternative #1, they are still unaffordable. The number of South Dakota consumers who could pay \$38 or \$43 for monthly local service is quite small. Secondly, intrastate access charges would have to increase substantially. The approximately 135,000 access lines served by the ILECs in the State generate an estimated 350 million intrastate switched access minutes annually.

This being the case, intrastate switched access rates (originating and terminating) would have to be between \$0.15 and \$0.16 per minute. Today, ILEC intrastate access rates average approximately \$0.08 per minute.

## Section 6 - THE SD UNIVERSAL SERVICE FUND

One of the goals Governor Janklew emphasized in his 1997 “State of the State” address was bringing “enhanced services” to every consumer in the State and having these “enhanced services” priced uniformly regardless of where the consumer lived. Local service is not priced uniformly across the State today. Even if the prices are not uniform, they can be “comparable” and “affordable”. South Dakota is a rural state and the majority of the ILECs in South Dakota serve consumers who live in areas where the costs to provide service are significantly higher than providing service to consumers living in town. A rural consumer in South Dakota currently pays similar rates for service compared to a town consumer. The primary reason for this is because of cost averaging performed within each company.

With cost averaging, a company establishes a fixed rate for telephone service for all access lines in an exchange, or across the entire company. This rate is based in part on the average investment to provide the service for the exchange or the company. In nearly all instances, the majority of the access lines in an exchange are serving the lower cost *town* consumers. The relatively large number of town subscribers pay slightly more than what they would pay if the costs were based on the investment required to serve them. Because these town subscribers pay slightly more, the rural consumers can pay significantly less for telephone service than what it actually costs to serve them. Everyone in the exchange or the company then pays the same rate for telephone service, since the rates are based on investments required for the entire exchange or company, not an individual consumer. This cost averaging can be done across a single exchange, but it is often more effective to do this averaging over multiple exchanges or over a company-wide basis.

The Federal Universal Service Fund utilizes a pooling process as a means of cost averaging to assist with the cost recovery in high cost areas. In many cases, when considering the costs associated with local service, the cost averaging done by the companies provides a greater benefit to the rural consumer than does the Federal Universal Service Fund. More will be discussed about cost averaging and pooling later in this section. The point to realize is that cost averaging is currently being used effectively in the telephone industry and can be a valuable tool when considering South Dakota’s goal of uniform rates for “enhanced services.” The creation of a SD-USF could provide the mechanism for additional cost averaging, as will be shown in this section.

## 6.1 Rural vs. Town Cost of Service

It is a known fact in the telecommunications industry that LECs must invest significantly more dollars to serve rural consumers than to serve town consumers. This can be shown on a high level by comparing the average plant investment between US West and the ILECs in South Dakota.

US West serves the larger towns in the State and the majority of their consumers are town consumers. On the other hand, ILECs serve smaller communities and most of the rural areas throughout the State. A large percentage of the ILEC consumers are rural consumers. In 1996, US West's average gross plant investment per access line was \$2,350 compared to the SD ILEC's average gross plant investment per access line of \$3,125. It is a fair assumption, based on these numbers, that in order to make the investments required pursuant to the 1997 Telecom Act of South Dakota, ILECs will need to invest more dollars per access line than US West in order to offer equivalent "enhanced services". As a result of these higher investment dollars, the annual carrying costs per consumer associated with these investments are going to be considerably higher for ILECs serving rural, high cost areas than US West's annual carrying charges. It would be unlikely that the ILECs could recover through existing revenue sources the annual carrying charges associated with the type of infrastructure investments necessary to bring "enhanced services" to those consumers living in these rural, high cost areas. In our opinion, the best way to provide the infrastructure modernizations needed for comparably and affordably priced "enhanced services" is through a SD-USF. This universal service fund would utilize the pooling process as a means to average costs and provide high cost support.

## 6.2 Future of the Federal USF

Not only is a SD-USF needed as a result of the passage of the 1997 Telecom Act of South Dakota but also because of the known changes in the mechanics of the Federal Universal Service Fund and the uncertainties associated with this Federal telecommunications support mechanism. Based on a recent FCC ruling, the Federal USF will someday in the future comprise only 25% of the total Federal USF a qualifying company receives. During 1997, there were twenty-one LECs in South Dakota who were receiving payments from the Federal USF based on 1995 data. There is up to a two-year time lag between when a LEC's Federal Universal Service Fund payments are calculated and when they actually receive the payments. Although the decrease to 25% in Federal Universal Service Fund payments will not take full effect for these qualifying ILECs until they receive their payments in the year 2001, the point that needs to be emphasized is the



fact that, on the average, the amount these companies are going to receive in Federal USF support is likely to decrease in the future. As a result, these companies will be forced to find other means to recover this lost revenue. One option would be to increase their local service rates. The average monthly lost revenue per loop would be approximately \$2.80 for these twenty-one companies. One of these ILECs would have to increase their local service rates by approximately \$21.50 a month in order to recover the lost revenue from the decrease in the Federal USF support mechanism.

Another point to be emphasized is that this decrease in Federal USF is going to affect local service rates disproportionately across the State if ILECs are required to recover this lost revenue through local service rate increases. Thus, there is no possible way that some of these ILECs could provide existing services, let alone “enhanced services”, which would be comparably priced to equivalent services that are offered by other South Dakota LECs. A SD-USF is needed to mitigate the effects associated with this decrease in Federal USF support. Also, another reason a State USF program is needed is because there is a considerable amount of uncertainty that exists in regards to how rural telephone companies are going to receive Federal USF support in the future. The Federal Telecommunication Act of 1996 calls for Federal USF reform, and as of right now, changes have been made that focus on telephone companies with over 50,000 access lines. The only LEC in South Dakota that serves this many access lines is US West. It is not known how the Federal USF reforms will impact the ILECs in the State. The only thing that is known by the ILECS is that the new Federal USF program involving rural companies will be implemented by January 1, 2001.

### **6.3 A Possible USF Model**

The mechanics of a SD-USF program could be somewhat similar to the Federal USF program as it functions today. Just like the Federal USF program, the SD-USF could incorporate a pooling process as a means of cost averaging along with high cost support. Pooling would allow local service rates across the State to be comparable and somewhat uniform. The high cost funding would allow those LECs, which couldn't possibly recover the carrying charges associated with their existing and new investments, the ability to bring affordably priced enhanced services to their consumers.

The money necessary to create this high cost fund could come from a fee paid on all retail telecommunications revenue generated in South Dakota. Any telecommunications provider providing service to South Dakota consumers would be required to pay into this fund a certain

percentage of telecommunications revenue. Telecommunications revenues could include, but not be limited to, the following: cellular telephone and paging services; mobile radio services; operator services; personal communication services (PCS); 900 services; message telephone services (MTS); private line services; telex; telegraph; video services; and satellite services. The companies would report their prior year's revenues to the SD-USF administrator. The administrator would then determine the fee necessary to fund the SD-USF. There may be a time lag between when this fee is calculated and when telecommunications providers would begin paying this rate into the SD-USF.

#### **6.4 Providing Investment Incentive**

In order to enable their consumers to receive the types of enhanced services described in the Telecommunication Act of South Dakota, LECs will undoubtedly have to make new infrastructure investments. The question then becomes one that deals with providing LECs incentives to make these investments for those consumers.

The SD-USF would provide this incentive. Earlier in this study, it was shown that a LEC's carrying charges associated with its investments can be broken down into the following five areas: Maintenance, Depreciation, General & Administrative, "Cost of Money", and Taxes. At that time, it was stated that the percentages associated with these carrying charges were based on gross plant investment. In order to provide incentive for LECs to make new investments, the SD-USF would require the "Cost of Money" carrying charge to be calculated using net plant investment instead of gross plant investment. Under this scenario, a sufficient "Cost of Money" percentage would be determined and then LECs would calculate the monetary amount associated with this carrying charge by multiplying this established rate by their total net investment. Thus, those companies who would potentially receive high cost funding wouldn't receive support for investments they never made.

#### **6.5 Applying the USF Model to the 1997 Telecom Act of South Dakota**

To determine the amount needed from a SD-USF for the Narrowband and Wideband Phase I Networks we first have to make some assumptions. First of all, a cap of \$20 a month per access line would be placed on the amount of local network services an ILEC would generate for their existing analog local loops. This essentially means the average local service rate paid by all consumers (or imputed by the ILEC) served by ILECs would be \$20 a month. This analysis assumes \$20 per access line per month is generated by the ILEC, whether this comes entirely or

partially from charges to the consumer is immaterial. If the \$20 were recovered entirely in the form of a local service rate, it would represent a \$6 monthly increase from the average rate currently paid by a typical ILEC consumer. It is expected that the enhanced services will generate more revenue for the telephone companies than the current services. This will help to offset the amount required by the SD-USF. The price of ISDN-BRI varies considerably from one company to another. Since an ISDN-BRI provides two voice channels, we will assume that an ISDN-BRI will generate twice the revenue of an analog telephone loop (\$40 per month).

For purposes of this estimate, it was assumed that the amount of revenue received by the ILEC from interstate and intrastate switched access will remain unchanged. Also, it was assumed that the SD-USF would generate the remaining revenue needed to cover the carrying charges associated with the required investments.

In the early stages of implementation, the penetration of enhanced services will be quite low. The average revenue generated by an access line will be approximately \$20. Under this scenario, the SD-USF would have to provide \$58 per month per access line for the Narrowband network or \$70 per month per access line for the Narrowband and Wideband Phase I networks as shown in Figure 6-1.

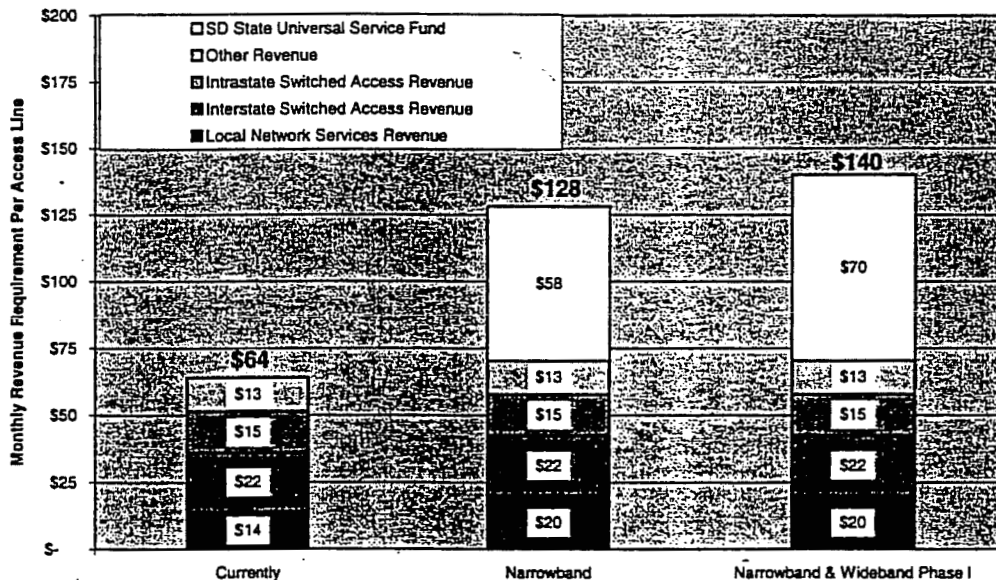


Figure 6-1. Monthly Revenue Requirement Per Access Line with No Enhanced Service Penetration (Alternative #3)

As consumers subscribe to the enhanced services over a period of time, the local network service revenue will increase, which will reduce the revenue needed from the SD-USF. For the Narrowband network, a 25% penetration level was assumed. If 25% of the 135,000 ILEC access lines were used for ISDN-BRI at a rate of \$40 per month, the average access line revenue would increase from \$20 to \$25 per access line per month. It is more difficult to determine the revenue impacts of the Wideband Phase I on the local network service revenue. The ISDN-PRI and DS-1 service will certainly provide more revenue for the telephone company, however, these services typically generate less per voice channel. So, if a business were to remove 20 analog lines with a single ISDN-PRI circuit, the telephone company revenue would actually decrease. To account for the revenue changes for Wideband Phase I, we will assume that the average local network service revenue increases from \$25 per access line per month to \$27 per access line per month. This can be seen in Figure 6-2.

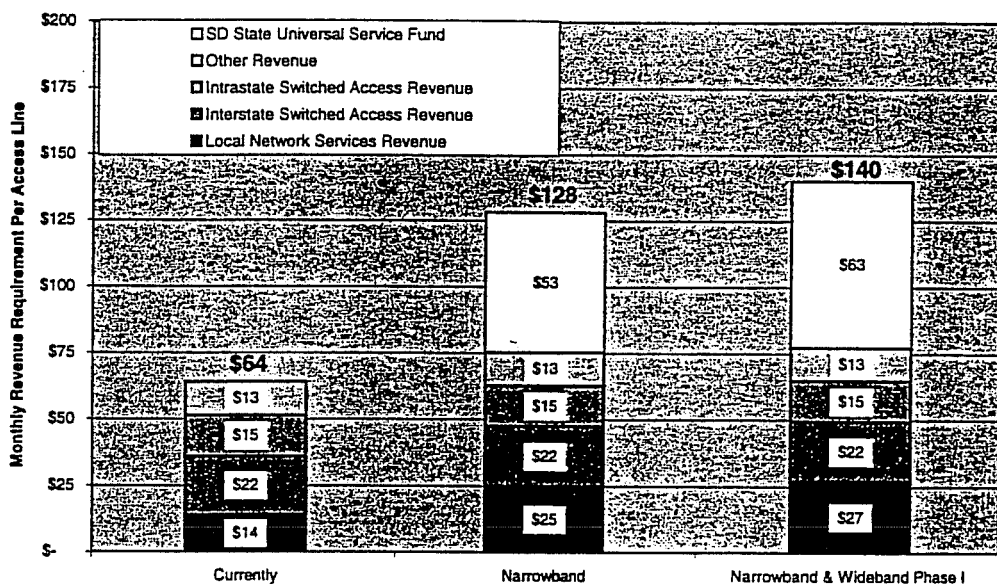


Figure 6-2. Monthly Revenue Requirement Per Access Line with Assumed Enhanced Service Penetration (Alternative #3)

As a result of the increased revenue, the monthly amount needed per access line from the SD-USF (with the assumed penetration levels for the Narrowband network) was reduced from \$58 to \$53 per month. Likewise, the monthly amount needed per access line from the SD-USF with the assumed penetration levels for Narrowband and Wideband Phase I networks was reduced from \$70 to \$63 per month. Since there are approximately 135,000 ILEC access lines, the SD-USF would have to generate the annual revenue amounts shown in Table 6-1.

<b>SD-USF Annual Revenue Required</b>		
	<b>No Enhanced Service Penetration</b>	<b>With Assumed Enhanced Service Penetration</b>
Narrowband Network	\$93,960,000	\$85,860,000
Narrowband and Wideband Phase I	\$113,400,000	\$102,060,000

**Table 6-1. SD-USF Annual Revenue Required**

Through another study performed along with this analysis, the annual telecommunications revenue generated in the State was estimated. This dollar figure was approximately \$400 million. The necessary revenue could be generated via a SD-USF to cover the carrying costs associated with the investments in Narrowband and Wideband Phase I, but it would require placing a fee on all telecommunications gross revenues. Every telecommunications provider would pay a percentage of their annual gross operating revenues to fund the SD-USF. The estimated percentages required from every telecommunications provider can be seen in Table 6-2.

<b>SD-USF Percent Revenue Required</b>		
	<b>No Enhanced Service Penetration</b>	<b>With Assumed Enhanced Service Penetration</b>
Narrowband Network	23%	21%
Narrowband and Wideband Phase I	28%	25%

**Table 6-2. SD-USF Percent Revenue Required From Telecommunications Providers**

These SD-USF fees would be difficult to assess, given the amount of revenue required in order to cover the annual carrying charges needed to make the proper investments to meet all of the requirements of the 1997 Telecom Act of South Dakota. Please note the fact that the carrying costs associated with these infrastructure investments are a result of providing the type of services required under the 1997 Telecom Act of South Dakota in order to make the enhanced services available to every South Dakota consumer served by an ILEC using technology that is available today.

## **Section 7 - CONCLUSIONS**

With the passage of HB1227 in 1997, the 1997 Telecom Act of South Dakota became law. The implementation of the 1997 Telecom Act of South Dakota was to result in enhanced services for South Dakota consumers that are feature-rich, robust, and reliable. Depending upon the implementation schedule, South Dakota consumers could be on the leading edge of technology.

One of the goals associated with the 1997 Telecom Act of South Dakota places high emphasis on these “enhanced services” being affordably and comparably priced by all LECs in the State. Unfortunately, some of the elements in the 1997 Telecom Act of South Dakota are not economically feasible with today’s technology. The vast geographic areas with low population densities present unique challenges to the ILECs when serving these consumers. Technological advances will likely make most elements of the 1997 Telecom Act of South Dakota more feasible for consumers in the future.

The implementation of the 1997 Telecom Act of South Dakota will require substantial investments by the ILECs. Due to the magnitude of the investments required for just the Narrowband network, these investments could not practically be recovered through an increase in local service rates. This report explored the possibility of a SD-USF as a mechanism of assisting cost recovery for these enhanced services. Of the alternatives explored in this report, the creation of a SD-USF is the most efficient and economically practical way to develop a telecommunications network infrastructure that would allow every consumer in the State access to the same enhanced services.

FAX Received SEP 16 1999

RECEIVED

SEP 17 1999

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA

SOUTH DAKOTA PUBLIC  
UTILITIES COMMISSION

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TC 98-155

**IN THE MATTER OF THE COMPLAINT  
FILED BY LORETTA SPEAR, HILL CITY,  
SOUTH DAKOTA, AGAINST U S WEST  
COMMUNICATIONS, INC. REGARDING  
TELEPHONE SERVICE OUTAGES AND  
INADEQUATE SERVICE**

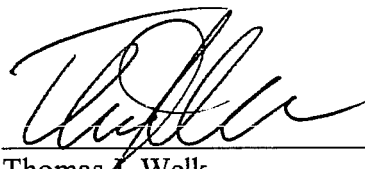
**CERTIFICATE OF SERVICE**

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I, Thomas J. Welk, do hereby certify that I am a member of the law firm of Boyce, Murphy, McDowell & Greenfield, L.L.P., and on the 15<sup>th</sup> day of September, 1999, true and correct copies of U S WEST Communications, Inc.'s Petition for Reconsideration, Affidavit of Edward A. Peters in Support of U S WEST Communications, Inc.'s Petition for Reconsideration dated September 15, 1999 and Motion to Take Judicial Notice were sent via US mail, postage prepaid, to the following addresses:

Loretta Spear  
12760 Old Hill City Road  
Hill City, SD 57745

Karen Cremer  
SD Public Utilities Commission  
500 East Capitol  
Pierre, SD 57501



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Thomas J. Welk

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

<b>IN THE MATTER OF THE COMPLAINT )</b>	<b>ORDER REQUIRING SERVICE :</b>
<b>FILED BY LORETTA SPEAR, HILL CITY, )</b>	<b>UPGRADE AND FILING OF PLAN</b>
<b>SOUTH DAKOTA, AGAINST U S WEST )</b>	
<b>COMMUNICATIONS, INC. REGARDING )</b>	<b>TC98-155</b>
<b>TELEPHONE SERVICE OUTAGES AND )</b>	
<b>INADEQUATE SERVICE )</b>	

On September 3, 1998, the Public Utilities Commission (Commission) received a complaint filed by Loretta Spear (Complainant), Hill City, South Dakota, against U S WEST Communications, Inc. (U S WEST). Complainant stated:

"In retrospect our telephone problems began in the spring of this year (1998). Starting with noisy lines (static) and later followed by temporary interruptions in service lasting anywhere from a few minutes to a couple of hours. These were not reported to repair service as the service would come back on. During this time the volume on the caller's voice would fluctuate. Several times the telephone would ring and when I answered, it would be a dead line. Approximately 4 weeks ago the line went dead for a day and I called repair service, By the time the repair man came the phone had started to work again. He did work on the service but stated the equipment is old. A week later the phone went dead again. (Friday, the day before the strike started) I called repair service again. This time supervisory personnel came out on a Sunday and worked on the line. I also advised him that our caller ID service which we had just purchased was not working. He stated we did not have that service as the equipment was old and not available to us. He also stated that the equipment upgrade was on the books but not enough money to do the work now. Perhaps next year. When calling to cancel Caller ID the customer service office said that we should have that service available to us, but would cancel our order and issue credit. I checked with repair service once again and was told by electronic voice that we might expect to have service by September 5. That will be 3 weeks without telephone service."

Complainant requested the following remedies: (1) That she receive a credit for all charges made by U S WEST for "Caller ID" services, and a credit for charges made by U S WEST for telephone services not received for a period of three weeks; and (2) That U S WEST be ordered by the Commission to upgrade her telephone services to a level comparable to other U S WEST subscribers residing in her residential area. U S WEST credited Complainant for the Caller ID billings, and has credited her account for the days she was without telephone service. The second remedy, an upgrade of service, is the subject of this Order.



The Commission reviewed the complaint during its duly noticed meeting on October 20, 1998, during which it voted unanimously to find probable cause and served the Complaint on U S WEST. U S WEST filed its Answer to Complaint on November 16, 1998.

A hearing was held on December 15, 1998, beginning at 1:30 o'clock P.M., in Room 3rd Floor East, Rapid City Area School Administrative Offices, 300 6th Street, Rapid City, South Dakota. At the hearing, U S WEST stated it would test the facilities and take necessary steps to improve service to Complainant. On March 1, 1999, and April 2, 1999, U S WEST provided updates on the testing. In its April 2, 1999, letter, U S WEST stated it was proposing to replace the buried drop serving the Complainant and then test the service afterwards.

The Commission considered how to proceed on this matter at its May 12, 1999, meeting. After listening to comments from the parties, the Commission ordered U S WEST to replace the drop and test the system by June 8, 1999.

The matter again came before the Commission at its duly noticed June 8, 1999, meeting. U S WEST representative Edward Peters, who had been a witness at the December hearing, commented on work completed by U S WEST. Staff requested deferral of this matter to allow comment by a Staff witness who was not present at the June 8, 1999, meeting.

The deferred matter came before the Commission at its regularly scheduled July 29, 1999, meeting for decision, during which it was determined that:

1. The Commission has jurisdiction in this matter pursuant to SDCL Chapters 1-26, 49-13, and SDCL Chapter 49-31, including 49-31-3, 49-31-7, 49-31-7.1, 49-31-7.2, 49-31-10, 49-31-11, 49-31-38, 49-31-38.1, 49-31-38.2, 49-31-38.3, 49-31-60, 49-31-85, and 49-31-98, and ARSD 20:10:01:07.01 through 20:10:01:15.01, inclusive, and 20:10:33:02, 20:10:33:03, 20:10:33:15, 20:10:33:16, and 20:10:33:25.

2. The telephone services provided by U S WEST to the Complainant, at all times relevant hereto, are not comparable to services being provided to certain other U S WEST subscribers residing in her immediate neighborhood.

3. The telephone services provided by U S WEST to the Complainant, at all times relevant hereto, were delivered through an analog carrier system, whereas certain other U S WEST subscribers in her neighborhood are served through a system capable of delivering digital services.

4. The analog system does not allow U S WEST to provide services to the Complainant at levels comparable to certain neighbors, and in the absence of an upgrade to digital delivery, the Complainant will continue to sustain service discrimination.

5. The manner, time, cost and resources required to provide digital delivery or to otherwise upgrade telecommunications services to the Complainant are unknown.

ACCORDINGLY, it is therefore

ORDERED, that U S WEST provide the Complainant a telecommunications plant capable of furnishing digital services at an acceptable internet speed; and it is

FURTHER ORDERED, that U S WEST develop a plan identifying the manner, time, cost, and resources required to provide digital telecommunications delivery to the Complainant. The plan shall specify an internet speed. The plan shall be submitted to the Commission within 90 days from receipt of this order and shall be subject to Commission approval. The plan shall include a cost-recovery schedule.

Dated at Pierre, South Dakota, this 17<sup>th</sup> day of August, 1999.

<b>CERTIFICATE OF SERVICE</b>	
The undersigned hereby certifies that this document has been served today upon all parties of record in this docket, as listed on the docket service list, by facsimile or by first class mail, in properly addressed envelopes, with charges prepaid thereon.	
By:	<u><i>Helaine Kalbo</i></u>
Date:	<u>8/17/99</u>
(OFFICIAL SEAL)	

BY ORDER OF THE COMMISSION:

*James A. Burg*  
JAMES A. BURG, Chairman

*Pam Nelson*  
PAM NELSON, Commissioner

*Laska Schoenfelder*  
LASKA SCHOENFELDER, Commissioner

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

<b>IN THE MATTER OF THE COMPLAINT )</b>	<b>ORDER SETTING DEADLINE</b>
<b>FILED BY LORETTA SPEAR, HILL CITY, )</b>	
<b>SOUTH DAKOTA, AGAINST U S WEST )</b>	<b>TC98-155</b>
<b>COMMUNICATIONS, INC. REGARDING )</b>	
<b>TELEPHONE SERVICE OUTAGES AND )</b>	
<b>INADEQUATE SERVICE )</b>	

On September 3, 1998, the Public Utilities Commission (Commission) received a complaint filed by Loretta Spear, Hill City, South Dakota, against U S WEST Communications, Inc. (U S WEST). Ms. Spear stated, "In retrospect our telephone problems began in the spring of this year (1998). Starting with noisy lines (static) and later followed by temporary interruptions in service lasting anywhere from a few minutes to a couple of hours. These were not reported to repair service as the service would come back on. During this time the volume on the caller's voice would fluctuate. Several times the telephone would ring and when I answered, it would be a dead line. Approximately 4 weeks ago the line went dead for a day and I called repair service, By the time the repair man came the phone had started to work again. He did work on the service but stated the equipment is old. A week later the phone went dead again. (Friday, the day before the strike started) I called repair service again. This time supervisory personnel came out on a Sunday and worked on the line. I also advised him that our caller ID service which we had just purchased was not working. He stated we did not have that service as the equipment was old and not available to us. He also stated that the equipment upgrade was on the books but not enough money to do the work now. Perhaps next year. When calling to cancel Caller ID the customer service office said that we should have that service available to us, but would cancel our order and issue credit. I checked with repair service once again and was told by electronic voice that we might expect to have service by September 5. That will be 3 weeks without telephone service." Ms. Spears is requesting that credit be given for Caller ID and 3 weeks without telephone service. She is also requesting resolution to updating telephone service in the area.

On October 20, 1998, at its duly noticed meeting, the Commission reviewed the complaint. The Commission voted unanimously to find probable cause and served the complaint on U S WEST. U S WEST filed its Answer to Complaint on November 16, 1998.

A hearing was held on December 15, 1998, beginning at 1:30 o'clock P.M., in Room 3rd Floor East, Rapid City Area School Administrative Offices, 300 6th Street, Rapid City, South Dakota. At the hearing, U S WEST stated that it would test the facilities and take any necessary steps to improve service to Ms. Spear. On March 1, 1999, and April 2, 1999, U S WEST provided updates on the testing. In its April 2, 1999, letter, U S WEST stated that it was proposing to replace the buried drop serving the Spears and then test the service afterwards.

The Commission considered how to proceed on this matter at its May 12, 1999, meeting. The Commission has jurisdiction in this matter pursuant to SDCL Chapters 1-26, 49-13, including 49-13-1 through 49-13-14, inclusive, and SDCL Chapter 49-31, including 49-31-3, 49-31-7, 49-31-7.1, 49-31-7.2, 49-31-10, 49-31-11, 49-31-38, 49-31-38.1, 49-31-38.2, 49-31-38.3, 49-31-60 through 49-31-68, inclusive, and ARSD 20:10:01:07.01 through 20:10:01:15.01, inclusive. After listening to comments from the parties, the Commission unanimously voted to require U S WEST to replace the drop and test the system by June 8, 1999. It is therefore

ORDERED, that U S WEST shall replace the buried drop to the Spears and test the Spear's telephone service by June 8, 1999.

Dated at Pierre, South Dakota, this 20<sup>th</sup> day of May, 1999.

<b>CERTIFICATE OF SERVICE</b>
The undersigned hereby certifies that this document has been served today upon all parties of record in this docket, as listed on the docket service list, by facsimile or by first class mail, in properly addressed envelopes, with charges prepaid thereon.
By: <u>    Allaine Keeso    </u>
Date: <u>    5/21/99    </u>
(OFFICIAL SEAL)

BY ORDER OF THE COMMISSION:

James A. Burg  
JAMES A. BURG, Chairman

Pam Nelson  
PAM NELSON, Commissioner

Laska Schoenfelder  
LASKA SCHOENFELDER, Commissioner

Edward A. Peters, Mgr.-Technical Witnessing  
U S WEST - Interconnection Planning  
700 W. Mineral, MN 520.16  
Littleton, Colorado 80120  
303-707-7035



April 2, 1999

William Bullard, Jr., Executive Director  
Public Utilities Commission  
State Capitol Building  
Pierre, SD 57501

Re: In the Matter of the Complaint Filed by Loretta Spear, Hill City, South Dakota, against  
U S WEST Communications, Inc. Regarding Updating Lines (TC 98-155)

Dear Mr. Bullard:

My status letter of last month on the Spear complaint committed to provide the Commission with another status by the end of March. Last week I talked to Mr. Spear about the quality of his phone service. He told me that it was significantly better and more reliable, but that they still experience some static on the line occasionally. This surprised us as testing at the terminal serving the Spears shows that the service should be very good. In order to further eliminate any potential sources of static on the line, U S WEST proposes replacing the buried drop serving the Spears. Due to weather and ground conditions, U S WEST would like to postpone doing this work to ensure that damage to the Spears yard is minimized. After the drop is replaced we need a few weeks to evaluate whether this has eliminated any remaining impairments to the service we are attempting to provide.

Based on these considerations, I would suggest that the resolution of this complaint be held open. I will provide you with another status report when the work is completed and we have had time to evaluate the service. Hopefully I will be able to report at that time that the Spears are ready to close out their filed complaint.

Sincerely yours,

*Edward A. Peters*  
Edward A. Peters, Manager  
U S WEST Communications

CC: Karen Cremer  
Loretta Spear  
Jon Lehner

Todd Lundy  
Tom Welk  
Dennis Warner

Larry James  
Colleen Sevold

FAX Received MAR 01 1999

RECEIVED

MAR 02 1999

SOUTH DAKOTA PUBLIC  
UTILITIES COMMISSION

Edward A. Peters, Mgr.-Technical Witnessing  
U S WEST - Interconnection Planning  
700 W. Mineral, MN F20.16  
Littleton, Colorado 80120  
303-707-7035

# U S WEST Communications, Inc.

March 1, 1999

FAXED TO 605-773-3809 3-1-99

William Bullard, Jr.  
Executive Director  
Public Utilities Commission  
State Capitol Avenue  
Pierre, SD 57501

MAILED OVERNIGHT DELIVERY 3-1-99

Re: In the Matter of the Complaint Filed by Randy Kieffer, Sturgis, South Dakota,  
against U S WEST Communications, Inc. Regarding Telephone Service Outages  
and Inadequate Service (TC 98-176);

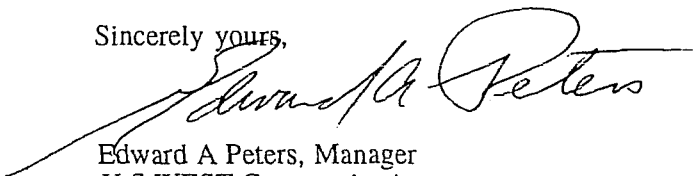
and

In the Matter of the Complaint Filed by Loretta Spear, Hill City, South Dakota,  
against U S WEST Communications, Inc. Regarding Updating Lines (TC 98-155)

Dear Mr. Bullard:

Please find enclosed letters regarding the two above referenced complaints with  
attachments. These letters provide the Commissions with a current status on these  
two matters. Answers to questions asked by the Commission during the hearing have  
also been provided. These letters and attachments are provided in sealed envelopes  
pursuant to ARSD 20:10:01:41

Sincerely yours,



Edward A Peters, Manager  
U S WEST Communications

cc: Carmon Hoseck  
Randy Kieffer  
Colleen Sevold

Tom Welk  
John Lehner

Paul Lowe  
Larry James  
Todd Lundy

In the Matter of the Complaint Filed by Loretta Spear, Hill City, South Dakota, against U S WEST Communications, Inc. Regarding Updating Lines (TC 98-155)

REQUEST FOR CONFIDENTIAL TREATMENT OF INFORMATION

Pursuant to ARSD 20:10:01:41, U S WEST Communications, Inc. ("U S WEST") requests confidential treatment as follows:

1. Confidential protection is sought for the letter dated March 1, 1999, addressed to William Bullard, Jr., and all attachments including Attachment #1 (Carrier Test Results), #2 (answers to Commissioner's questions) and Attachment #3 (Analog Carrier Report).

The pages are marked as confidential (proprietary information) and are provided in a sealed envelope.

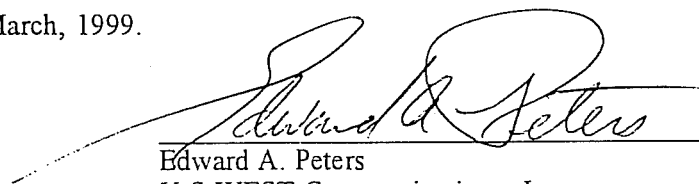
2. The exhibits must be protected for the life of this docket. When the docket is closed all protected information must be returned to U S WEST.

3. The person to be notified is Colleen Sevold, U S WEST Communications, Inc., 125 S. Dakota Avenue, 8th floor, Sioux Falls, SD 57194, telephone (605) 335-4596.

4. The claim for protection is based on ARSD 20:10:01:39 (4) and SDCL 37-29-1(4).

5. The letter and attachments contains company proprietary information. Disclosure of documents will provide actual and potential competitors with information which could provide them with a unique and unfair competitive advantage. Accordingly, U S WEST respectfully requests that the Commission grant this request for confidential protection.

DATED this 1st day of March, 1999.

  
Edward A. Peters  
U S WEST Communications, Inc.