

SCOMM

120:2



Alaska State Legislature

Representative Bill Hudson

State Capitol
Juneau, Alaska
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Phone: (907) 465-3744
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Committees:

Chair
Fisheries
Utilities
Restructuring

Member
Transportation
State Affairs

UTILITY RESTRUCTURING COMMITTEE

Wednesday March 3, 1999 @ 8AM in room # 120

(posted 2/25/98)

Representatives Bill Hudson-Chair, John Cowdery- Vice Chair, Pete Kott, Norman Rokeberg, Brian Porter, John Davies and Ethan Berkowitz, Joe Green-alternate

AGENDA

Call to order
Roll Call
Discussion

Pilot Study presentation by CH2M Hill 1 hour
Marlow Power and Steam

Notice of public hearing

*HB 101 Reinstatement of public utility corporations

If you have any question please call me, or Committee Aide Walter Wilcox Sr.

*Bill Wednesday
packet*
Walt

*3379 Meander
789-7376*

Public hearing on HB 101
3/3/99
Utilities Restructuring Committee
Contents

HB 101 "reinstatement of corporations that are public utilities"

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Fiscal note

Comments by AK Telephone Assn.

Comments by Bush-Tell inc.

HOUSE BILL NO. 101

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-FIRST LEGISLATURE - FIRST SESSION

BY REPRESENTATIVE MORGAN

Introduced: 2/19/99

Referred: House Special Committee on Utility Restructuring, Labor and Commerce

A BILL**FOR AN ACT ENTITLED**

1 "An Act relating to the reinstatement of corporations that are public utilities; and
2 providing for an effective date."

3 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

4 * Section 1. Reinstatement of public utility corporations. Notwithstanding
5 AS 10.06.633(e), a corporation that is a public utility, that has been involuntarily dissolved
6 by the commissioner under AS 10.06.633, and that has failed to apply for reinstatement during
7 the period established under AS 10.06.633(e) may be reinstated under AS 10.06.633(e) on or
8 before December 31, 1999. A reinstatement authorized under this section is retroactive to the
9 date of the involuntary dissolution, and the reinstated corporation and its shareholders have
10 all of the rights, privileges, liabilities, and obligations that would have applied to them if the
11 corporation had not been dissolved. If a corporation elects to seek reinstatement under this
12 section and if the corporation's previously used corporate name is no longer available for use
13 by the corporation, then, notwithstanding AS 10.06.502 - 10.06.510, an amendment to the
14 articles of incorporation changing the previously used corporate name may be adopted by

1 action of the corporation's board of directors alone. In this section, "public utility" has the
2 meaning given in AS 42.05.990.

3 * Sec. 2. This Act takes effect immediately under AS 01.10.070(c).

Alaska State Legislature

SESSION

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MEMBER

Community & Regional Affairs Committee
Health, Education & Social Services Committee
House Resources Committee
Special Committee on Fisheries



Representative Carl M. Morgan, Jr. District 36

Sponsor Statement HB 101

**"An Act relating to the reinstatement of corporations that are public utilities;
and providing for an effective date"**

This legislation is a vehicle to allow the Alaska Department of Commerce and Economic Development the discretion to reinstate, as a corporation, a local exchange (telecommunications) company that serves several communities in western Alaska.

After reviewing the facts and circumstances surrounding the issue, I hope that you will agree that this measure warrants our attention and support. The following are the facts surrounding the involuntary dissolution of Bush-Tell.

Bush-Tell is a small, rural local exchange telephone company located in Aniak, Alaska, which provides local exchange telephone service to ten small villages in Western Alaska. Bush-Tell was incorporated on November 10, 1969 and has been providing telecommunications service since 1970. Mr. Harry "Bob" Colliver, Jr., the President and sole shareholder of Bush-Tell, recently contacted the Alaska Division of Banking, Securities & Corporations to find out about registering a "dba" and was informed that Bush-Tell was no longer registered as a corporation with the division. Bush-Tell had been involuntarily dissolved in 1993 for failing to file its biennial report and/or failing to pay its biennial corporate tax for the period ending December 31, 1992. Upon investigation, it was discovered that Bush-Tell's registered agent had failed to follow the proper statutory procedures for resigning as a registered agent and that his omissions resulted in the involuntary dissolution of Bush-Tell.

Bush-Tell's designated agent was a sole practitioner in Anchorage, Alaska who also served as Bush-Tell's general counsel. In the early 1980's, Bush-Tell hired another law firm to do its legal work but continued to retain the sole practitioner as its registered agent. The forms for Bush-Tell's biennial reports were sent to the registered agent and were filed by the registered agent up to and including the period ending December 31, 1990.

In 1991, the registered agent left the private practice of law, closed his office and left a forwarding address for his mail with the U.S. Postal Service. The registered agent did not inform the Alaska Division of Banking, Securities & Corporations that his address was changing or that he was resigning as Bush-Tell's registered agent. Alaska Statute 10.06.170(b) requires that, if a registered agent resigns, the registered must file a

Page Two
Sponsor Statement
HB 101

written notice with the commissioner setting out the latest address of the principal office of the corporation and the names, addresses and titles of the most recent officers of the corporation. The commission must then immediately mail a copy of the notice to the corporation at its principal office.

On July 12, 1993, the Alaska Division of Banking, Securities & Corporations sent a notice by certified mail to Bush-Tell, care of the registered agent, informing Bush-Tell that it had not filed its biennial report and/or tax for the period ending December 31, 1992 and that, if the biennial report and/or tax are not mailed by September 19, 1993, the Certificate of Involuntary Dissolution will be issued and the corporation will cease to exist as of September 20, 1993. This notice was returned to the Alaska Division Banking, Securities & Corporations because the register agent's forwarding notice had expired. On September 20, 1993, Bush-Tell was involuntarily dissolved.

Since the time of dissolution, and even after discovering the involuntary dissolution, Bush-Tell has observed all of the corporate procedures required by its Bylaws and Alaska law including holding regular board of directors meetings and paying corporate income tax.

I urge your support of HB 101.

FISCAL NOTE

STATE OF ALASKA
1999 LEGISLATIVE SESSION

BILL NO. HB 101

Revision Date/Time (Note if correction) _____

Title Corporate Public Utility Reinstatement

Dept. Affected Commerce & Econ. Dev.

BRU Banking, Securities and Corporations

Component Banking, Securities and Corporations

Sponsor Rep. Morgan

Requester House URS

Component Serial No. 1233

Expenditures/Revenues

(Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Personal Services						
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES						
-----------------------------	--	--	--	--	--	--

CHANGE IN REVENUES ()	0.0	0.0	0.0	0.0	0.0	0.0
-------------------------------	------------	------------	------------	------------	------------	------------

FUND SOURCE

(Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type)						
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

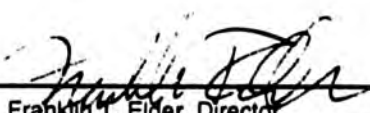
Estimate of any current year (FY99) cost: _____

POSITIONS

Full-time						
Part-time						
Temporary						

ANALYSIS: (Attach a separate page if necessary)

Prepared by
Division
Approved by Commissioner
Agency


Franklin T. Elder, Director
Banking, Securities and Corporations
Deborah B. Sedwick
Commerce and Economic Development

Phone 465-2521
Date/Time 3/1/99 3:58 PM
Date 3/1/99

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STATE OF ALASKA

DEPARTMENT OF COMMERCE AND ECONOMIC DEVELOPMENT

DIVISION OF BANKING, SECURITIES, AND CORPORATIONS

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HOUSE BILL NO. 101

REINSTATEMENT OF PUBLIC UTILITY CORPORATIONS

In reviewing HB 101, the Division of Banking, Securities and Corporations supports the language and intent of this bill. Indeed, the Division feels that it is in the best interest of the State of Alaska to continue to help keep entities active and in good standing with the State. Public utility corporations provide important public services to citizens of Alaska.

In the past, it has been the Division's policy to send statutorily required biennial reports to a corporation's, or an entity's, registered agent. Corporations complete the report and return it with any required taxes or fees to the Division. Receipt of these completed reports and fees by this Division determine the compliance of each entity. However, an episode occurred a couple of years ago in which a service company, who acts as registered agent for a large number of Alaska corporations, misplaced a large number of reports. Because of this episode, the Division changed policy and started sending these reports to the principal business address of each corporation. Unfortunately, not all corporations keep the Division apprised of their address changes. Therefore, for those reports that are returned as undeliverable by the U. S. Post Office, the Division resends the report to the registered agent. We have increased our diligence in working with corporations to avoid to the maximum extent possible inadvertent dissolving of businesses.

Alaska Telephone Association

201 E. 56th, Suite 114
Anchorage, AK 99518
(907) 563-4000
FAX (907) 562-3776

David Fauske
President

James Rowe
Executive Director

BY FACSIMILE

The Honorable Bill Hudson, Chairman
House Utility Restructuring Committee
State Capitol
Juneau, Alaska 99801

Re: H.B. 101

Dear Representative Hudson:

I am writing in support of H.B. 101, which is the reinstatement of public utility corporations. The Alaska Telephone Association supports this measure because of its importance to local telephone service provider Bush-Tell, Inc.

The current ownership and management of Bush-Tell, Inc. has been the same since its inception in 1969. Since that time the corporation has provided service, often in challenging conditions, to many small communities in western Alaska, including Aniak, Red Devil, Crooked Creek, Shageluk, Sleetmute and Stony River. This corporation has always done an outstanding job of providing reliable telecommunications services while being an integral part of the community and good corporate citizen.

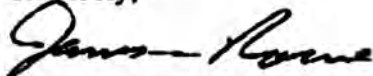
Through a set of unfortunate circumstances Bush-Tell, Inc. was involuntarily dissolved in 1993. Even after learning of the involuntary dissolution last summer, Bush-Tell continued to hold Board meetings, conduct business, pay all corporate income taxes, and conduct its affairs as if it had not been dissolved.

Upon discovering that it had been involuntarily dissolved, Bush-Tell, Inc. approached the Department of Commerce and learned that it would take an act of the Legislature to obtain reinstatement.

Given this unique set of circumstances and the excellent record that Bush-Tell, Inc. has in providing telephone service in rural Alaska, I hope that the Legislature recognizes the importance of Bush-Tell to its customers and quickly passes this legislation. The members of the Alaska Telephone Association believe that Bush-Tell, Inc. has in the past and will in the future provide a very necessary public service.

Thank you for your consideration.

Sincerely,



James Rowe

BUSH-TELL, INC.

Box 109 • Aniak, Alaska 99557 • (907) 675-4311

The Honorable Bill Hudson, Chairman
House Utility Restructuring Committee
State Capitol
Juneau, Alaska 99801

Re: H.B. 101

Dear Representative Hudson:

I am President and sole shareholder of Bush-Tell, a small, rural local exchange telephone company located in Aniak, Alaska. Bush-Tell, Inc. provides local exchange telephone service to ten small villages in Western Alaska.

I moved to Alaska in 1958 and worked as a technician providing maintenance and operations services to the White Alice Communications system from 1958 to 1978. I started Bush-Tell in 1969 and worked as both the full-time manager of Bush-Tell and as a technician on the White Alice Communications and have since devoted all of my time to managing Bush-Tell. I have lived in Aniak for approximately 39 years.

This year, I contacted the Alaska Division of Corporations to find out about registering as a "dba" and was informed that Bush-Tell was no longer registered as a corporation with the Alaska Division of Corporations. I further learned that Bush-Tell had been involuntarily dissolved in September 1993 for failing to file its biennial report and/or failing to pay its biennial corporate tax for the period ending December 31, 1992, that Bush-Tell's registered agent failed to follow the proper statutory procedures for resigning as a registered agent and that his omissions resulted in the involuntary dissolution of Bush-Tell in 1993. (The State did not send any notices to me informing me that Bush-Tell had not filed its biennial report and/or paid the biennial corporate tax for the period ending December 31, 1992 and that, if the biennial report and/or tax were not mailed by September 19, 1993, the certificate of Involuntary Dissolution would be issued and the corporation would cease to exist as of September 20, 1993.)

Since the time of dissolution, and even after discovering the involuntary dissolution, Bush-Tell has observed all of the corporate procedures required by its Bylaws and Alaska law including holding regular board of directors meetings and paying corporate income taxes.

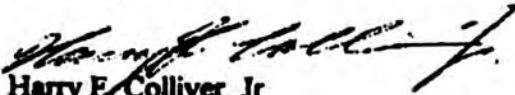
My company performs a necessary public service, especially for residents of rural Alaska. Telecommunications services are vital for emergencies, for businesses and for a full range of human and social needs. Bush-Tell, Inc. has provided an outstanding job in providing service in rural Alaska, and its corporate dissolution took place through no fault of mine or any of my

employees. Rather, the dissolution arose out of the neglect of a registered corporate agent.

Upon learning of Bush-Tell's involuntary dissolution, I sought reinstatement from the Alaska Department of Commerce. However, the Department of Commerce advised me that it was unable to reinstate Bush-Tell because too much time had passed and that a legislative enactment would be required. I understand that the Alaska Legislature has passed similar legislation in the past. Under the circumstance, I am hopeful that the Alaska Legislature would pass H.B. 101.

Thank you for consideration of this matter, which is extremely important to my customers and to me,

Sincerely,



Harry E. Colliver, Jr.
President, Bush-Tell, Inc.

Subject: CH2M Hill Pilot Program Rpt

Date: Mon, 01 Mar 1999 14:09:06 -0900

From: Paul Morrison <paul_morrison@ent.state.ak.us>

Reply-To: paul_morrison@commerce.state.ak.us

Organization: Alaska Public Utilities Commission

To: Walter J Wilcox SR <Walter_Wilcox@legis.state.ak.us>

CH2's pilot program report is now available on our WEB page. The address is <http://www.state.ak.us/apuc/>

Karl put together a brief press release that may be useful for you. Here it is:

As for the press, here are some quick ideas:

Consultants Submit Detailed Recommendations on Electricity Pilot Program

APUC consultant CH2M HILL delivered the first set of recommendations under a contract to study and comment upon electric utility restructuring today.

The detailed recommendations, authored by consultants Karl R. Rabago of CH2M HILL, and Tom Feiler of Econergy International Corporation, relate to the conduct of a retail electricity pilot program and would test the application of competitive market forces in the electric utility industry in Alaska. Retail pilot programs typically operate as a "trial run" on competition within the electric utility industry, and provide some customers with an opportunity to choose from among competing electricity suppliers. The consultants grouped their recommendations to Alaska policy makers in three areas:

1. Consultants recommended initiating and expanding program efforts for rural Alaska: (1) to improve utility operating efficiency, and (2) to develop and deploy new electricity technologies.
2. Consultants recommended initiating a "no-regrets" regulatory reform agenda at the Alaska Public Utilities Commission to apply lessons learned from other states in order to make electric utility regulation more efficient and more market oriented.
3. Consultants set forth a detailed roadmap of the competitive market issues that should be considered before proceeding with a retail pilot program.

###

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~~~~~  
Paul C. Morrison V-(907)263-2146 AK Public Utilities Commission  
Chief Utility Engineer F-(907)276-0160 1016 W. 6th Ave., Suite 400  
Paul\_Morrison@commerce.state.ak.us Anchorage, AK 99501  
<http://www.state.ak.us/apuc/>

**Recommendations  
to the  
Alaska State Legislature  
and the  
Alaska Public Utilities Commission  
Regarding a Retail Pilot Program**

**Karl R. Rábago**

CH2M HILL

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303.473.9007

**CH2M HILL - Anchorage Office**

Deanna Gamble - 907.278.2551

**March 1, 1999**

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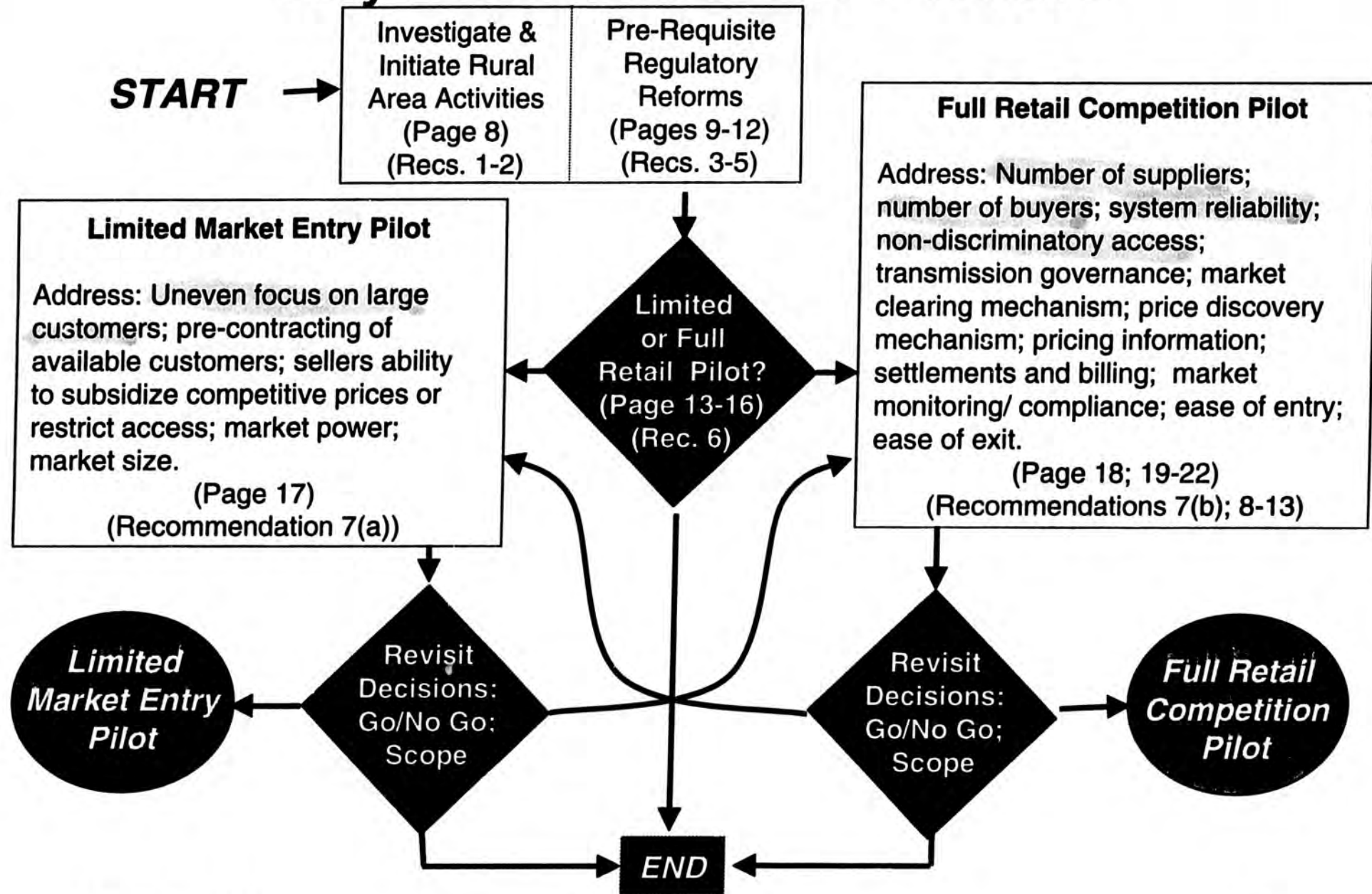
# Objective: Maximizing the Opportunities for Learning and Competition

To provide recommendations to the Alaska Public Utilities Commission and the Alaska State Legislature on the scope, character, and structure of a pilot program:

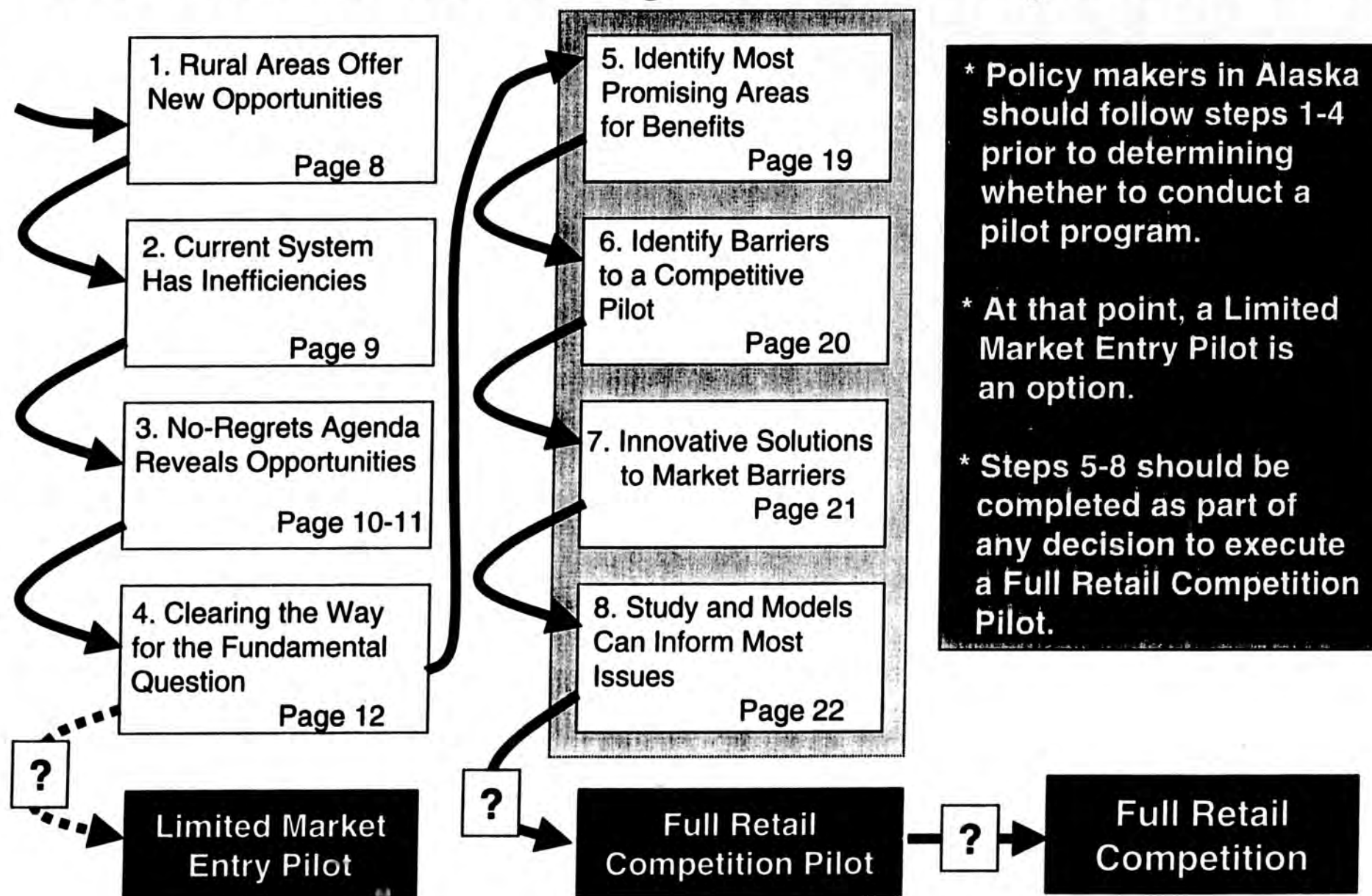
- To support and inform public policy decisions regarding restructuring the electric power industry.
- To most effectively use regulatory reforms and competitive market forces to reveal and deliver cost savings to Alaska electricity customers.
- To apply the lessons learned from other jurisdictions and industries to the unique characteristics of the electricity industry in Alaska.
- To recommend two distinct, but not mutually exclusive, pathways to discover and to learn about competitive markets.



# Key Decisions in the Process



# Process for Informing Public Policy Decisions



# Competition - What Do You Need to Know?

- What are the minimum number of sellers to ensure a liquid supply market and effectively mitigate market power and market collusion?
- What are the minimum number of buyers to ensure demand responsiveness (demand elasticity and diversity)?
- How do you structure and manage the transmission system to ensure system reliability and stability?
- How do you structure and manage the transmission and distribution system to ensure non-discriminatory access to all facilities?
- How do you structure and manage the transmission system to balance system reliability and nondiscriminatory access?
- How can you provide a robust, competitive and credible marketplace where utilities, power marketers, load aggregators, cogenerators and large customers can do business quickly and easily?
- How do you establish an electronic auction mechanism to accept supply and demand bids to determine a market clearing price for each of the 24 periods in the trading day?

# Competition - What Do You Need to Know?

- How do you provide real time information to all market participants and interested parties about trading volumes and market clearing prices over the course of a trading day?
- What is the most cost effective way to coordinate scheduling and arrange delivery of power, and to provide transactions settlement and billing services to buyers and sellers?
- Who has the responsibility for monitoring the activities of market participants to detect practices or behaviors that indicate that the markets are being manipulated to the detriment of their fairness or efficiency?
- Under what circumstances will current ownership of generating resources be maintained, or required to be sold to affiliate companies or new market entrants?
- What analytic methodology should be used to calculate and allocate stranded costs?



# Rural Areas Offer New Opportunities

- A policy that makes sense for ALL of Alaska must address the rural areas.
- An important objective is to improve resilience to Power Cost Equalization challenges.
- Several promising and isolated projects are currently underway, but have not appeared on the regulatory agenda.
- Recommendation 1: Continue and expand efforts to improve rural system efficiencies through aggregation of administrative, fuel-purchasing, operations, logistical and other appropriate functions among geographically separate but proximate villages.
- Recommendation 2: In order to build practical experience in the use and deployment of distributed energy systems which offer potential long-term cost savings, consider the creation of a pilot program based on technology demonstration and deployment, conducted in coordination with government and non-governmental organizations.



# Current System Has Inefficiencies

- Structural inefficiencies exist in wholesale, transmission, and retail services - largely as a result of history.
- Most of this inefficiency remains because Alaska has not yet applied the market-informed learning of other jurisdictions to its electricity system.
- Aurora Power Resources, Inc.'s (Aurora) proposal demonstrates that inefficiencies are large enough to motivate a profit-making company.
- Policy Question: Are the opportunities created by current structural inefficiencies most effectively addressed through regulatory reform or by introduction of competitively motivated 3d party intermediaries.
- Recommendation 3: Permitting 3d party intermediaries to pursue economic opportunities created by structural inefficiencies does not necessarily prove the benefits of competition. Initiate a specific set of market-friendly regulatory reforms today in order to bring the real competitive opportunity into focus.

# No-Regrets Agenda Reveals Competitive Opportunities

- Market thinking in other states and industries, and the October 1998 Black & Veatch Study, have revealed new tools for improving efficiency, which can be implemented through a more aggressive regulatory agenda.
- Absent positive action today, market and structural uncertainties dissuade many potential competitors.
- Regulatory reforms form a foundation for competitive regimes; by removing inefficiencies and defining market rules, they allow focus on competitive opportunities.

# **No-Regrets Agenda Reveals Competitive Opportunities** (cont'd.)

**Recommendation 4: Complete a regulatory agenda that -**

- (a) calculates and allocates component costs for Railbelt utilities in a rational and uniform manner (unbundling and cost allocation);**
- (b) rationalizes access to, and governance of, the transmission system to create a non-discriminatory open access network while ensuring reliability;**
- (c) rationalizes oversight of generation siting and construction to minimize stranded cost exposure and to foster the emergence of a competitive wholesale market with new merchant generators; and**
- (d) implements central dispatch/power pooling recommendations of the October 1998 Black & Veatch Study in the Railbelt to harvest near-term savings and to facilitate emergence of a competitive wholesale market over the longer term.**

# Clearing the Way for the Fundamental Question

- Regulatory reforms allow assessment of the magnitude of the residual market inefficiencies.
- Regulatory reforms reveal savings and/or other public policy goals and objectives. These, in turn, establish the economic and policy justifications for a pilot program and/or the implementation of retail competition.
- The Fundamental Question:

**Can retail competition produce savings or benefits beyond those from improved regulation?**

- Recommendation 5: Don't ask the fundamental question until you are ready to answer it. Then, decide what kind of pilot to conduct.

# Pilot Program Design - The Key Decision

- The primary value of a pilot program is to learn about and gain practical experience with selected elements of a more open and competitive industry environment.
- Careful focus on which elements to test informs both design of the pilot and criteria for performance measurement.
- By revealing what kind of competitive system is reasonably obtainable, a well-designed pilot program can inform critical public policy decisions.
- In essence, pilot program design and implementation should reflect learning objectives.
- Recommendation 6: Carefully review the elements of competitive markets and craft a pilot which demonstrates/tests the desired model of competition.



# Deciding the Scope of the Pilot

|   | ELEMENT                   | CRITICAL QUESTION                                                                                                                                                                           | IS THIS ADDRESSED<br>IN THE PROPOSED<br>AURORA PILOT? | IS THIS ADDRESSED<br>IN THE PROPOSED<br>CHUGACH PILOT? | CAN THIS BE<br>ADDRESSED IN A<br>MORE<br>COMPREHENSIVE<br>PILOT DESIGN? |
|---|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------|
| 1 | Number of Suppliers       | What are the minimum number of sellers to ensure a liquid supply market and effectively mitigate price fixing and market collusion?                                                         | No                                                    | No                                                     | Yes                                                                     |
| 2 | Number of Buyers          | What are the minimum number of buyers to ensure demand responsiveness (demand elasticity and diversity)?                                                                                    | No                                                    | No                                                     | Yes                                                                     |
| 3 | System Reliability        | How do you structure and manage the transmission system to ensure system reliability and stability?                                                                                         | No                                                    | No                                                     | Yes                                                                     |
| 4 | Non-discriminatory Access | How do you structure and manage the transmission and distribution system to ensure non-discriminatory access to all facilities?                                                             | No                                                    | No                                                     | Yes                                                                     |
| 5 | Transmission Governance   | How do you structure and manage the transmission system to balance reliability and nondiscriminatory access?                                                                                | No                                                    | No                                                     | Yes                                                                     |
| 6 | Market Clearing Mechanism | How can you provide a robust, competitive and credible marketplace where utilities, power marketers, load aggregators, cogenerators and large customers can do business quickly and easily? | No                                                    | No                                                     | Yes                                                                     |

# Deciding the Scope of the Pilot (cont'd.)

|    | ELEMENT                          | CRITICAL QUESTION                                                                                                                                                                                                       | IS THIS ADDRESSED<br>IN THE PROPOSED<br>AURORA PILOT? | IS THIS ADDRESSED<br>IN THE PROPOSED<br>CHUGACH PILOT? | CAN THIS BE<br>ADDRESSED IN A<br>MORE<br>COMPREHENSIVE<br>PILOT DESIGN? |
|----|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------|
| 7  | Price Discovery Mechanism        | How do you establish an electronic auction mechanism to accept supply and demand bids to determine a market clearing price for each of the 24 periods in the trading day?                                               | No                                                    | No                                                     | Yes                                                                     |
| 8  | Pricing Information              | How do you provide real time information to all market participants and interested parties about trading volumes and market clearing prices over the course of a trading day?                                           | No                                                    | No                                                     | Yes                                                                     |
| 9  | Settlements and Billing          | What is the most cost effective way to coordinate scheduling and arrange delivery of power, and to provide transactions settlement and billing services to buyers and sellers?                                          | No                                                    | No                                                     | Yes                                                                     |
| 10 | Market Monitoring and Compliance | Who has the responsibility for monitoring the activities of market participants to detect practices or behaviors that indicate that the markets are being manipulated to the detriment of their fairness or efficiency? | No                                                    | No                                                     | Yes                                                                     |
| 11 | Ease of Entry                    | Under what circumstances will current ownership of generating resources be maintained, or required to be sold to affiliate companies or new market entrants?                                                            | No                                                    | No                                                     | Yes                                                                     |
| 12 | Ease of Exit                     | How do you calculate and allocate stranded costs?                                                                                                                                                                       | No                                                    | No                                                     | Yes                                                                     |

# Pilot Complexity Dictates Cost & Effort and Learning Opportunities

**Limited Market  
Entry Pilot**

**Full Retail  
Competition Pilot**



## What You Learn:

1. Customers accept/  
seek price discounts
2. Diffusion rate of  
Customer Awareness
- 3 Impacts associated  
with loss of customers
4. Competitive tactics

## What You Learn:

1. No. of suppliers
2. No. of buyers
3. Reliability impacts
4. Openness of access
5. Trans. Governance
6. Market clearing  
mechanism
7. Price discovery  
mechanism
8. Information  
dissemination
9. Settlements &  
billing
10. Market policing
11. Ease of entry/exit,  
Plus - lessons from  
Limited Market  
Entry pilot

# Implementing a Limited Market Entry Pilot

| <b>Problem:</b>                                                                  | <b>Recommendation 7(a):</b>                                                           |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Uneven focus on large customers                                                  | Match customer participation in proportion to current rate class percentages (by kWh) |
| Pre-contracting limits pool of available customers                               | Fresh start for all eligible customers, with cooling off period                       |
| Sellers may subsidize competitive prices from captive customers                  | All sellers must satisfy APUC that captive customers are held harmless                |
| Sellers may leverage incumbency to restrict access or gain competitive advantage | APUC ensures captive customers held harmless and equal access to customer information |
| Exercise of market power                                                         | Require generating resources used in pilot program to be removed from ratebase        |
| Market size too small to support competition                                     | Increase contestible market size; change trading unit; and/or cap market shares       |

# Implementing a Full Retail Competition Pilot

| <b>Element:</b>                  | <b>Recommendation 7(b):</b>                                                                                       |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Number of Suppliers              | Use computer models to assess market power                                                                        |
| Number of Buyers                 | Use computer models to assess demand responsiveness                                                               |
| System Reliability               | Study transmission reliability issues and recommend operating criteria                                            |
| Non-discriminatory Access        | Design rules and protocols for open access                                                                        |
| Transmission Governance          | Establish governing principals and draft bylaws                                                                   |
| Market Clearing Mechanism        | Design and implement power exchange                                                                               |
| Price Discovery Mechanism        | Design software for aggregating all valid supply bids and demand bids to determine market clearing price          |
| Pricing Information              | Design internet-based real-time information system                                                                |
| Settlements and Billing          | Design customer information and billing systems                                                                   |
| Market Monitoring and Compliance | Establish rules and protocols to coordinate scheduling and arrange delivery of power, and settle all transactions |
| Ease of Entry                    | Study and design rules and procedures for divestiture of generating assets                                        |
| Ease of Exit                     | Determine analytic methodology and allocation formulas for possible stranded investment                           |



# Identify Most Promising Areas for Benefits

- Experience in other industries and locations demonstrates that market benefits exceed expectations when markets are properly structured.
- Recommendation 8: Maximize potential for market success -

| <b>What?</b>                                                                        | <b>Why?</b>                                                               |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Mitigate regulatory and structural inefficiencies                                   | To produce near-term savings and encourage efficient market behavior      |
| Design pilot and retail competition to encourage technology-based competition       | To realize the potential for technological innovation to reduce costs     |
| Design efficient commodity markets                                                  | To enable value-added service innovation                                  |
| Exploit Alaska's small electricity systems                                          | To lead the industry trend toward new, modular distributed energy systems |
| Harmonize restructuring agendas in telecommunications, natural gas, and electricity | To realize convergence benefits                                           |

# Identify Barriers to a Competitive Pilot

- What are the costs associated with piloting competition?
- To what extent are the costs indifferent to the size of the pilot?
- To what extent should these cost considerations drive a decision to bypass a pilot and move directly to full retail competition?
- Recommendation 9: Any market, regardless of size and scope, must carry its own administration and oversight costs.

# Innovative Solutions to Market Barriers

- Number and/or diversity of suppliers may be insufficient to prevent exercise of market power.
- Number and/or diversity of buyers may be insufficient to produce robust demand responsiveness.
- Market for electricity may be too illiquid to support secondary markets.
- Recommendation 10: Consider contract-based competition in small increments of energy, e.g., 500 kWh contracts, to increase market liquidity.
- Recommendation 11: Consider a BTU Exchange, e.g., create a market exchange where both gas and electricity are traded as BTU contracts, to increase market liquidity.

# Study and Models Can Inform Most Issues

- Most structural and operational issues associated with a full retail competition pilot and competitive markets can be studied using sophisticated market simulation models.
- The goal of modeling is to determine whether viable retail competition is reasonably obtainable.
- Recommendation 12: Commission retail market simulation modeling as part of the decision to move to a full retail competition pilot.
- Recommendation 13: Full retail market opening must be preceded by modeling and simulation in any case.

# Comparison of Pilot Characteristics

|             | <b>Limited Market Entry Pilot</b>                                                                                     | <b>Full Retail Market Pilot</b>                                                                                                                                 |
|-------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Implements regulatory reforms; introduces limited market forces                                                       | Implements regulatory reforms; studies and learns about the scope, character and structure of competitive power markets in the unique context of Alaska.        |
| Goal        | Optimizes and updates the status quo; most direct path to limited customer choice                                     | Provides the necessary information and insights to the Alaska State Legislature and the APUC to make the decision whether to implement full retail competition. |
| Drivers     | Any retail market experience creates an opportunity to discover benefits of competitive forces in electricity markets | Retail competition pilots should be preceded by careful study, and should serve as a means to explore the contours of a more competitive electricity market.    |



# Comparison of Pilot Characteristics (cont'd.)

|                  | <b>Limited Market Entry Pilot</b>                                                                                                                                                  | <b>Full Retail Market Pilot</b>                                                                                                                                                                               |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rural Areas      | Offers new opportunities to improve rural system efficiencies; takes leadership position in development of distributed energy systems through a technology-based competitive pilot | Offers new opportunities to improve rural system efficiencies; takes leadership position in development of distributed energy systems through a technology-based competitive pilot                            |
| Biggest Risk     | Exercise of market power                                                                                                                                                           | Lost opportunities in near-term; sufficiently liquid market for competition may not develop                                                                                                                   |
| Regulatory Role  | Addresses and removes regulatory inefficiencies; comprehensive oversight and management for public benefit                                                                         | Addresses and removes regulatory inefficiencies; reveals barriers to competitive markets; studies and designs structures and rules to ensure that markets are structured to operate efficiently and equitably |
| Legislative Role | Provides public policy direction; clarifies APUC jurisdiction in several important areas                                                                                           | Establishes public policy goals and objectives regarding electric industry restructuring; provides APUC with broader authority and jurisdiction as necessary; appropriates additional funds as required       |

# Comparison of Pilot Characteristics (cont'd.)

|                  | <b>Limited Market Entry Pilot</b>                                               | <b>Full Retail Market Pilot</b>                                                                                                                      |
|------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Market Operation | Collaboration and limited competition among incumbent utilities                 | Functionally or structurally separated generation dispatch and transmission system operations, perhaps under new independent governing organizations |
| Wholesale Market | Limited number of players; competition primarily among 3rd party intermediaries | More robust and transparent; partially segmented according to new retail market demands                                                              |
| Retail Market    | Very limited choices -- price and maybe green                                   | Burgeoning array of novel energy products and services                                                                                               |
| New Entrants     | Exclusive and traditional group; narrow play in quiet market                    | Broad range of companies from non-utility industries team and compete to establish novel products and services in wide open new markets              |

# Summary of Recommendations

1. Continue and expand efforts to improve rural system efficiencies through aggregation of administrative, fuel-purchasing, operations, logistical and other appropriate functions among geographically separate but proximate villages.
2. In order to build practical experience in the use and deployment of distributed energy systems which offer potential long-term cost savings, consider the creation of a pilot program based on technology demonstration and deployment, conducted in coordination with government and non-governmental organizations.
3. Permitting 3rd party intermediaries to pursue economic opportunities created by structural inefficiencies does not necessarily prove the benefits of competition. Initiate a specific set of market-friendly regulatory reforms today in order to bring the real competitive opportunity into focus.

# Summary of Recommendations (cont'd.)

4. Complete a regulatory agenda that -
  - (a) calculates and allocates component costs for Railbelt utilities in a rational and uniform manner (unbundling and cost allocation);
  - (b) rationalizes access to, and governance of, the transmission system to create a non-discriminatory open access network while ensuring reliability;
  - (c) rationalizes oversight of generation siting and construction to minimize stranded cost exposure and to foster the emergence of a competitive wholesale market with new merchant generators; and
  - (d) implements central dispatch/power pooling recommendations of the October 1998 Black & Veatch study in the Railbelt to harvest near-term savings and to facilitate emergence of a competitive wholesale market over the longer term.

## Summary of Recommendations (cont'd.)

5. Don't ask the fundamental question - "Can retail competition produce savings or benefits beyond those from improved regulation?" - until you are ready to answer it. Then, decide what kind of pilot to conduct.
6. Carefully review the elements of competitive markets and craft a pilot which demonstrates/tests the desired model of competition.
7. Execute recommendations specific to implementation of (a) Limited Market Entry Pilot and/or (b) Full Retail Competition Pilot, as appropriate.



# Summary of Recommendations (cont'd.)

8. Maximize potential for market success -
  - (a) Mitigate regulatory and structural inefficiencies to produce near-term savings and encourage efficient market behavior.
  - (b) Design pilot and retail competition to encourage technology-based competition and to realize the potential for technological innovation to reduce costs.
  - (c) Design efficient commodity markets to enable value-added service innovation.
  - (d) Exploit Alaska's small electricity systems to lead the industry trend toward new, modular distributed energy systems.
  - (e) Harmonize restructuring agendas in telecommunications, natural gas, and electricity to realize convergence benefits.

## Summary of Recommendations (cont'd.)

9. Any market, regardless of size and scope, must carry its own administrative and oversight costs.
10. To increase market liquidity, consider contract-based competition in small increments of energy, e.g., 500 kWh contracts.
11. To increase market liquidity, consider a BTU Exchange, e.g., create a market exchange where both gas and electricity are traded as BTU contract.
12. Commission retail market simulation modeling as part of the decision to move to a full retail competition pilot.
13. Full retail market opening must be preceded by modeling and simulation in any case.

# Recommended Legislative Positions - Rural

- The Alaska Legislature supports the application of innovative ideas and programs to increase the value and decrease the costs of electricity services in rural Alaska, and encourages the Alaska Public Utility Commission (APUC), working with other governmental and non-governmental organizations, to craft and conduct programs to:
  - improve rural system efficiencies through aggregation of administrative, fuel-purchasing, operations, logistical and other appropriate functions among geographically separate but proximate villages,
  - build practical experience in the use and deployment of distributed energy systems, which offer potential long-term cost savings, through a pilot program based on technology demonstration and deployment, and
  - develop and execute other appropriate pilot activities in rural Alaska.
- The Alaska Legislature finds that the APUC's current statutory authority is sufficient to conduct such activities.

# Recommended Legislative Positions - Railbelt

- The Alaska Legislature supports the conduct of a retail electricity pilot program to explore the potential for improved electric services and reduced costs in a more competitive, market oriented electricity services environment.
- The Alaska Legislature finds that, while the implementation of full retail competition in the electricity sector merits the passage of specific enabling legislation, the APUC currently enjoys sufficient statutory authority to implement such a pilot program, including:
  - making provisions for streamlined registration and oversight mechanisms for pilot program participants under Alaska Statutes Title 42, Chapter 05 (including, specifically, AS §§ 42.05.141, .221, .241, and .431); and
  - imposing such other structural and administrative requirements upon pilot program participants as may be appropriate to protect the public interest and advance the purposes of the pilot program.

# Recommended Legislative Positions

## - Railbelt (cont'd.)

- The Alaska Legislature concludes that prior to the opening of any retail electricity pilot program, and no later than July 1, 2000, the APUC must complete a regulatory agenda that:
  - calculates and allocates component costs for Railbelt utilities in a rational and uniform manner (unbundling and cost allocation);
  - rationalizes access to, and governance of, the transmission system to create a non-discriminatory open access network while ensuring reliability;
  - rationalizes oversight of generation siting and construction to minimize stranded cost exposure and to foster the emergence of a competitive wholesale market with new merchant generators; and
  - implements central dispatch/power pooling recommendations of the October 1998 Black & Veatch study in the Railbelt to harvest near-term savings and to facilitate emergence of a competitive wholesale market over the longer term.



# Recommended Legislative Positions

## - Railbelt (cont'd.)

- The Alaska Legislature concludes that, prior to the opening of any retail electricity pilot program, the APUC should ensure that the design and execution of such a program addresses a full range of competitive market issues, including, but not limited to:
  - number of suppliers,
  - number of buyers,
  - system reliability,
  - non-discriminatory access,
  - transmission governance,
  - market clearing mechanism,
  - price discovery mechanism,
  - price discovery mechanism,
  - pricing information,
  - settlements and billing,
  - market monitoring/ compliance,
  - ease of entry, and
  - ease of exit.

7897376

7897376



# Alaska State Legislature

**Representative Bill Hudson**

State Capitol  
Juneau, Alaska  
99801-1182  
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Fax: (907) 465-2273

Committees:

Chair  
Fisheries  
Utilities  
Restructuring

Member  
Transportation  
State Affairs

## UTILITY RESTRUCTURING COMMITTEE

**Wednesday March 10, 1999 @ 8AM in room # 120  
(posted 3/4/98)**

**Representatives Bill Hudson-Chair, John Cowdery- Vice Chair, Pete Kott, Norman Rokeberg, Brian Porter, John Davies and Ethan Berkowitz, Joe Green-alternate**

---

### AGENDA

**Call to order  
Roll Call**

#### **Notice of public hearing**

**HB 101 Reinstatement of public utility corporations-Morgan  
HB 62 APUC Sunset-Therriault**

#### **Presentations**

- 1. Alaska Telephone Association- Dave Fauske, President  
Sunset bill, APUC reform/reorg, issues of concern (15 minutes)**
- 2. Four Dam Pool (15 minutes)**

#### **Packet Items**

- 1. Four Dam Pool & Four Dam Pool PCE transfer fund**
- 2. Four Dam Pool-AIDEA Power sales agreements**
- 3. Southeast Alaska Electric Intertie System Plan**
- 4. TelAlaska Inc. APUC audit observations**
- 5. APUC- regulated utilities and statistics**
- 6. Briefing on the adoption of proxy cost models by telecommunications regulators as the means to calculate universal service support.**
- 7. Restructuring and Small Electric customers- NCSL**
- 8. Last dance for the regulated disco- Public Utilities Fortnightly**
- 9. PCE restructuring proposal Rep. Kohring**

**If you have any question please call me, or Committee Aide Walter Wilcox Sr.**

**AMENDMENT**

OFFERED IN THE HOUSE  
TO: HB 62

BY  
UTILITY RESTRUCTURING COMMITTEE

1 Page 1, following line 3:

2 Insert new bill sections to read:

3 **\*\* Section 1.** AS 42.05.020(b) is amended to read:

4 (b) The governor shall designate one member of the commission as chair  
5 [CHAIRMAN] of the commission. This member shall serve as chair [CHAIRMAN]  
6 for a term of four years, but may be appointed for successive terms. The chair is  
7 responsible for the administration of the commission and commission employees.

8 **\* Sec. 2.** AS 42.05.101(a) is amended to read:

9 (a) The chair of the commission shall establish for the commission a  
10 principal office and branch offices necessary to discharge its business efficiently. For  
11 the convenience of the public or of parties to a proceeding, the commission may hold  
12 meetings, hearings, or other proceedings at other locations.

13 **\* Sec. 3.** AS 42.05.111(b) is amended to read:

14 (b) The chair of the commission may employ temporary legal counsel for the  
15 commission from time to time in proceedings before the commission in which the  
16 attorney general is representing the public interest or a party before the commission.

17 **\* Sec. 4.** AS 42.05.121 is amended to read:

18 **Sec. 42.05.121. Employment of commission personnel.** (a) The chair of  
19 the commission may employ an executive director of the commission. The  
20 executive director [WHO] shall have had at least five years of experience in public  
21 utility management or regulation, law, accounting, engineering, or an allied field. The  
22 executive director is responsible for directing the administrative functions of the  
23 commission and carrying out the policies as set by the commission. The chair of the  
24 commission may employ engineers, hearing officers, administrative law judges to the  
25 extent provided by AS 42.06.140(b), experts, clerks, accountants, and other agents and

assistants considered [IT CONSIDERS] necessary. Employees and agents of the  
commission who are not partially exempt under AS 39.25.120, other than legal  
counsel, are in the classified service under AS 39.25.100.

(b) In addition to the [ITS] staff of regular employees, the chair of the  
commission may contract for and engage the services of consultants and experts the  
chair [COMMISSION] considers necessary."

Page 1, line 4:

Delete "Section 1"

Insert "Sec. 5"

Renumber the following bill section accordingly.



# Alaska State Legislature

REPRESENTATIVE  
**GENE THERRIAULT**

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While in session  
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House District 33

## House Of Representatives

### House Bill 62

**"An Act relating to the Alaska Public Utilities Commission; and providing for an effective date."**

### Sponsor

Representative Gene Therriault

A handwritten signature in dark ink, appearing to read "Gene J. Therriault", written over the printed name.

### Sponsor Statement

---

Under AS 42.05 and 42.06, the Alaska Public Utilities Commission regulates public utilities by certifying qualified providers of public utility and pipeline services. It is designed to ensure that utilities provide safe and adequate services and facilities at reasonable rates. The five-member Commission also determines the eligibility and the per kilowatt-hour support for electric utilities under the Power Cost Equalization program (AS 42.45).

The Alaska Public Utilities Commission is set to expire June 30, 1999 under AS 44.66.010, Termination of state boards and commissions. If the Legislature does not act to extend the Commission, it would have one year, until June 30, 2000, to conclude its affairs. House Bill 62 will extend the Commission for another four years.

The title has intentionally been left broad enough to allow leeway for discussion of several issues of concern that have arisen during the past four years of the Commission's existence.

# FISCAL NOTE

**STATE OF ALASKA**  
**1999 LEGISLATIVE SESSION**

**BILL NO. HB 62**

Revision Date/Time (Note if correction) \_\_\_\_\_

Title Alaska Public Utilities Commission

Dept. Affected \_\_\_\_\_

BRU \_\_\_\_\_

AK Public Utilities Commission

Component \_\_\_\_\_

APUC Operations

Sponsor Rep. Theriault

Requester Com.on Util. Restructuring, Labor & Commerce

Component Serial No. \_\_\_\_\_

346

**Expenditures/Revenues**

(Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

| OPERATING EXPENDITURES | FY 2000    | FY 2001    | FY 2002    | FY 2003    | FY 2004    | FY 2005    |
|------------------------|------------|------------|------------|------------|------------|------------|
| Personal Services      |            |            |            |            |            |            |
| Travel                 |            |            |            |            |            |            |
| Contractual            |            |            |            |            |            |            |
| Supplies               |            |            |            |            |            |            |
| Equipment              |            |            |            |            |            |            |
| Land & Structures      |            |            |            |            |            |            |
| Grants & Claims        |            |            |            |            |            |            |
| Miscellaneous          |            |            |            |            |            |            |
| <b>TOTAL OPERATING</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> |

|                             |  |  |  |  |  |  |
|-----------------------------|--|--|--|--|--|--|
| <b>CAPITAL EXPENDITURES</b> |  |  |  |  |  |  |
|-----------------------------|--|--|--|--|--|--|

|                               |  |  |  |  |  |  |
|-------------------------------|--|--|--|--|--|--|
| <b>CHANGE IN REVENUES ( )</b> |  |  |  |  |  |  |
|-------------------------------|--|--|--|--|--|--|

**FUND SOURCE**

(Thousands of Dollars)

|                          |            |            |            |            |            |            |
|--------------------------|------------|------------|------------|------------|------------|------------|
| 1002 Federal Receipts    |            |            |            |            |            |            |
| 1003 GF Match            |            |            |            |            |            |            |
| 1004 GF                  |            |            |            |            |            |            |
| 1005 GF/Program Receipts |            |            |            |            |            |            |
| 1037 GF/Mental Health    |            |            |            |            |            |            |
| Other 1110 APUC Rcpts    | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| <b>TOTAL</b>             | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> |

Estimate of any current year (FY99) cost: \_\_\_\_\_

0.0

**POSITIONS**

|           |   |   |   |   |   |   |
|-----------|---|---|---|---|---|---|
| Full-time | 0 | 0 | 0 | 0 | 0 | 0 |
| Part-time | 0 | 0 | 0 | 0 | 0 | 0 |
| Temporary | 0 | 0 | 0 | 0 | 0 | 0 |

**ANALYSIS:** (Attach a separate page if necessary)

The zero fiscal note, has attached to it the summary of the Governor's FY2000 request for the Commission of \$4699.2 The Commission anticipates this level of funding would continue from FY 01-FY 05, in the event that the Commission's sunset date is extended.

Prepared by \_\_\_\_\_

Division APUC

Phone 263-2112

Date/Time 2/11/99 3:51 PM

Approved by Commissioner \_\_\_\_\_

Agency \_\_\_\_\_

Date \_\_\_\_\_

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For further distribution information, call the Governor's Legislative Office

**Component Detail**  
**Department of Commerce and Economic Development**

**Component: APUC Operations**  
**BRU: Alaska Public Utilities Commission**

|                          | FY1998 Actuals | FY1999 ABS<br>Conference<br>Committee | FY1999 Authorized | FY2000 Adjusted | FY2000 Governor | FY1999 Authorized Vs<br>FY2000<br>Governor |              |
|--------------------------|----------------|---------------------------------------|-------------------|-----------------|-----------------|--------------------------------------------|--------------|
| 71000 Personal Services  | 2,628.2        | 2,839.9                               | 2,850.8           | 3,287.0         | 3,287.0         | 436.2                                      | 15.3%        |
| 72000 Travel             | 51.3           | 35.0                                  | 35.0              | 35.0            | 35.0            | 0.0                                        | 0.0%         |
| 73000 Contractual        | 1,084.3        | 1,525.2                               | 1,961.4           | 1,600.9         | 1,300.9         | -660.5                                     | -33.7%       |
| 74000 Supplies           | 71.9           | 62.5                                  | 62.5              | 62.5            | 62.5            | 0.0                                        | 0.0%         |
| 75000 Equipment          | 16.2           | 13.8                                  | 13.8              | 13.8            | 13.8            | 0.0                                        | 0.0%         |
| 76000 Land/Buildings     | 0.0            | 0.0                                   | 0.0               | 0.0             | 0.0             | 0.0                                        | 0.0%         |
| 77000 Grants, Claims     | 0.0            | 0.0                                   | 0.0               | 0.0             | 0.0             | 0.0                                        | 0.0%         |
| 78000 Miscellaneous      | 0.0            | 0.0                                   | 0.0               | 0.0             | 0.0             | 0.0                                        | 0.0%         |
| <b>Totals</b>            | <b>3,851.9</b> | <b>4,476.4</b>                        | <b>4,923.5</b>    | <b>4,999.2</b>  | <b>4,699.2</b>  | <b>-224.3</b>                              | <b>-4.6%</b> |
| <b>Funding Sources :</b> |                |                                       |                   |                 |                 |                                            |              |
| 1110 APUC Rcpts          | 3,851.9        | 4,476.4                               | 4,923.5           | 4,999.2         | 4,699.2         | -224.3                                     | -4.6%        |
| <b>Positions :</b>       |                |                                       |                   |                 |                 |                                            |              |
| Permanent Full Time      | 46             | 46                                    | 46                | 55              | 55              | 9                                          | 19.6%        |
| Permanent Part Time      | 0              | 0                                     | 0                 | 0               | 0               | 0                                          | 0.0%         |
| Non Permanent            | 0              | 0                                     | 0                 | 0               | 0               | 0                                          | 0.0%         |

**Public hearing on HB 101**  
**3/3/99**  
**Utilities Restructuring Committee**  
**Contents**

**HB 101** "reinstatement of corporations that are public utilities"

**Sponsor statement** by Rep. Morgan

**Fiscal note**

**Comments** by AK Telephone Assn.

**Comments** by Bush-Tell inc.

# Alaska State Legislature

## SESSION

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## MEMBER

Community & Regional Affairs Committee  
Health, Education & Social Services Committee  
House Resources Committee  
Special Committee on Fisheries



## Representative Carl M. Morgan, Jr. District 36

### Sponsor Statement HB 101

**"An Act relating to the reinstatement of corporations that are public utilities;  
and providing for an effective date"**

This legislation is a vehicle to allow the Alaska Department of Commerce and Economic Development the discretion to reinstate, as a corporation, a local exchange (telecommunications) company that serves several communities in western Alaska.

After reviewing the facts and circumstances surrounding the issue, I hope that you will agree that this measure warrants our attention and support. The following are the facts surrounding the involuntary dissolution of Bush-Tell.

Bush-Tell is a small, rural local exchange telephone company located in Aniak, Alaska, which provides local exchange telephone service to ten small villages in Western Alaska. Bush-Tell was incorporated on November 10, 1969 and has been providing telecommunications service since 1970. Mr. Harry "Bob" Colliver, Jr., the President and sole shareholder of Bush-Tell, recently contacted the Alaska Division of Banking, Securities & Corporations to find out about registering a "dba" and was informed that Bush-Tell was no longer registered as a corporation with the division. Bush-Tell had been involuntarily dissolved in 1993 for failing to file its biennial report and/or failing to pay its biennial corporate tax for the period ending December 31, 1992. Upon investigation, it was discovered that Bush-Tell's registered agent had failed to follow the proper statutory procedures for resigning as a registered agent and that his omissions resulted in the involuntary dissolution of Bush-Tell.

Bush-Tell's designated agent was a sole practitioner in Anchorage, Alaska who also served as Bush-Tell's general counsel. In the early 1980's, Bush-Tell hired another law firm to do its legal work but continued to retain the sole practitioner as its registered agent. The forms for Bush-Tell's biennial reports were sent to the registered agent and were filed by the registered agent up to and including the period ending December 31, 1990.

In 1991, the registered agent left the private practice of law, closed his office and left a forwarding address for his mail with the U.S. Postal Service. The registered agent did not inform the Alaska Division of Banking, Securities & Corporations that his address was changing or that he was resigning as Bush-Tell's registered agent. Alaska Statute 10.06.170(b) requires that, if a registered agent resigns, the registered must file a



Page Two  
Sponsor Statement  
HB 101

written notice with the commissioner setting out the latest address of the principal office of the corporation and the names, addresses and titles of the most recent officers of the corporation. The commission must then immediately mail a copy of the notice to the corporation at its principal office.

On July 12, 1993, the Alaska Division of Banking, Securities & Corporations sent a notice by certified mail to Bush-Tell, care of the registered agent, informing Bush-Tell that it had not filed its biennial report and/or tax for the period ending December 31, 1992 and that, if the biennial report and/or tax are not mailed by September 19, 1993, the Certificate of Involuntary Dissolution will be issued and the corporation will cease to exist as of September 20, 1993. This notice was returned to the Alaska Division Banking, Securities & Corporations because the register agent's forwarding notice had expired. On September 20, 1993, Bush-Tell was involuntarily dissolved.

Since the time of dissolution, and even after discovering the involuntary dissolution, Bush-Tell has observed all of the corporate procedures required by its Bylaws and Alaska law including holding regular board of directors meetings and paying corporate income tax.

I urge your support of HB 101.

# FISCAL NOTE

**STATE OF ALASKA**  
**1999 LEGISLATIVE SESSION**

**BILL NO. HB 101**

Revision Date/Time (Note if correction) \_\_\_\_\_ Dept. Affected Commerce & Econ. Dev.  
 Title Corporate Public Utility Reinstatement BRU Banking, Securities and Corporations  
 Component Banking, Securities and Corporations  
 Sponsor Rep. Morgan  
 Requester House URS Component Serial No. 1233

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

| OPERATING EXPENDITURES | FY 2000    | FY 2001    | FY 2002    | FY 2003    | FY 2004    | FY 2005    |
|------------------------|------------|------------|------------|------------|------------|------------|
| Personal Services      |            |            |            |            |            |            |
| Travel                 |            |            |            |            |            |            |
| Contractual            |            |            |            |            |            |            |
| Supplies               |            |            |            |            |            |            |
| Equipment              |            |            |            |            |            |            |
| Land & Structures      |            |            |            |            |            |            |
| Grants & Claims        |            |            |            |            |            |            |
| Miscellaneous          |            |            |            |            |            |            |
| <b>TOTAL OPERATING</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> |

|                             |  |  |  |  |  |  |
|-----------------------------|--|--|--|--|--|--|
| <b>CAPITAL EXPENDITURES</b> |  |  |  |  |  |  |
|-----------------------------|--|--|--|--|--|--|

|                               |            |            |            |            |            |            |
|-------------------------------|------------|------------|------------|------------|------------|------------|
| <b>CHANGE IN REVENUES ( )</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> |
|-------------------------------|------------|------------|------------|------------|------------|------------|

**FUND SOURCE** (Thousands of Dollars)

|                          |            |            |            |            |            |            |
|--------------------------|------------|------------|------------|------------|------------|------------|
| 1002 Federal Receipts    |            |            |            |            |            |            |
| 1003 GF Match            |            |            |            |            |            |            |
| 1004 GF                  |            |            |            |            |            |            |
| 1005 GF/Program Receipts |            |            |            |            |            |            |
| 1037 GF/Mental Health    |            |            |            |            |            |            |
| Other (Specify Type)     |            |            |            |            |            |            |
| <b>TOTAL</b>             | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> |

Estimate of any current year (FY99) cost: \_\_\_\_\_

**POSITIONS**

|           |  |  |  |  |  |  |
|-----------|--|--|--|--|--|--|
| Full-time |  |  |  |  |  |  |
| Part-time |  |  |  |  |  |  |
| Temporary |  |  |  |  |  |  |

**ANALYSIS:** (Attach a separate page if necessary)

Prepared by  
 Division  
 Approved by Commissioner  
 Agency

  
 Franklin T. Elder, Director  
 Banking, Securities and Corporations  
 Deborah B. Sedwick  
 Commerce and Economic Development

Phone 465-2521  
 Date/Time 3/1/99 3:58 PM  
 Date 3/1/99

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# STATE OF ALASKA

## DEPARTMENT OF COMMERCE AND ECONOMIC DEVELOPMENT

*DIVISION OF BANKING, SECURITIES, AND CORPORATIONS*

**TONY KNOWLES, GOVERNOR**

333 Willoughby Avenue, 9<sup>th</sup> Floor  
P.O. BOX 110808  
JUNEAU, ALASKA 99811-0808  
Corporation Section (907) 465-2530  
Banking & Securities (907) 465-2521

ANCHORAGE  
Corporation Information (907) 269-8140  
TDD: (907) 465-5437

### HOUSE BILL NO. 101

#### REINSTATEMENT OF PUBLIC UTILITY CORPORATIONS

In reviewing HB 101, the Division of Banking, Securities and Corporations supports the language and intent of this bill. Indeed, the Division feels that it is in the best interest of the State of Alaska to continue to help keep entities active and in good standing with the State. Public utility corporations provide important public services to citizens of Alaska.

In the past, it has been the Division's policy to send statutorily required biennial reports to a corporation's, or an entity's, registered agent. Corporations complete the report and return it with any required taxes or fees to the Division. Receipt of these completed reports and fees by this Division determine the compliance of each entity. However, an episode occurred a couple of years ago in which a service company, who acts as registered agent for a large number of Alaska corporations, misplaced a large number of reports. Because of this episode, the Division changed policy and started sending these reports to the principal business address of each corporation. Unfortunately, not all corporations keep the Division apprised of their address changes. Therefore, for those reports that are returned as undeliverable by the U. S. Post Office, the Division resends the report to the registered agent. We have increased our diligence in working with corporations to avoid to the maximum extent possible inadvertent dissolving of businesses.

# Alaska Telephone Association

201 E. 50th, Suite 114  
Anchorage, AK 99518  
(907) 563-4000  
FAX (907) 562-3776

David Fauske  
President

James Rowe  
Executive Director

## BY FACSIMILE

The Honorable Bill Hudson, Chairman  
House Utility Restructuring Committee  
State Capitol  
Juneau, Alaska 99801

Re: H.B. 101

Dear Representative Hudson:

I am writing in support of H.B. 101, which is the reinstatement of public utility corporations. The Alaska Telephone Association supports this measure because of its importance to local telephone service provider Bush-Tell, Inc.

The current ownership and management of Bush-Tell, Inc. has been the same since its inception in 1969. Since that time the corporation has provided service, often in challenging conditions, to many small communities in western Alaska, including Aniak, Red Devil, Crooked Creek, Shageluk, Sleetmute and Stony River. This corporation has always done an outstanding job of providing reliable telecommunications services while being an integral part of the community and good corporate citizen.

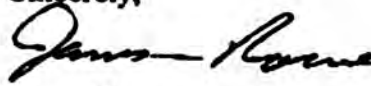
Through a set of unfortunate circumstances Bush-Tell, Inc. was involuntarily dissolved in 1993. Even after learning of the involuntary dissolution last summer, Bush-Tell continued to hold Board meetings, conduct business, pay all corporate income taxes, and conduct its affairs as if it had not been dissolved.

Upon discovering that it had been involuntarily dissolved, Bush-Tell, Inc. approached the Department of Commerce and learned that it would take an act of the Legislature to obtain reinstatement.

Given this unique set of circumstances and the excellent record that Bush-Tell, Inc. has in providing telephone service in rural Alaska, I hope that the Legislature recognizes the importance of Bush-Tell to its customers and quickly passes this legislation. The members of the Alaska Telephone Association believe that Bush-Tell, Inc. has in the past and will in the future provide a very necessary public service.

Thank you for your consideration.

Sincerely,

  
James Rowe





## **BUSH-TELL, INC.**

Box 109 • Aniak, Alaska 99557 • (907) 675-4311

The Honorable Bill Hudson, Chairman  
House Utility Restructuring Committee  
State Capitol  
Juneau, Alaska 99801

Re: H.B. 101

Dear Representative Hudson:

I am President and sole shareholder of Bush-Tell, a small, rural local exchange telephone company located in Aniak, Alaska. Bush-Tell, Inc. provides local exchange telephone service to ten small villages in Western Alaska.

I moved to Alaska in 1958 and worked as a technician providing maintenance and operations services to the White Alice Communications system from 1958 to 1978. I started Bush-Tell in 1969 and worked as both the full-time manager of Bush-Tell and as a technician on the White Alice Communications and have since devoted all of my time to managing Bush-Tell. I have lived in Aniak for approximately 39 years.

This year, I contacted the Alaska Division of Corporations to find out about registering as a "dba" and was informed that Bush-Tell was no longer registered as a corporation with the Alaska Division of Corporations. I further learned that Bush-Tell had been involuntarily dissolved in September 1993 for failing to file its biennial report and/or failing to pay its biennial corporate tax for the period ending December 31, 1992, that Bush-Tell's registered agent failed to follow the proper statutory procedures for resigning as a registered agent and that his omissions resulted in the involuntary dissolution of Bush-Tell in 1993. (The State did not send any notices to me informing me that Bush-Tell had not filed its biennial report and/or paid the biennial corporate tax for the period ending December 31, 1992 and that, if the biennial report and/or tax were not mailed by September 19, 1993, the certificate of Involuntary Dissolution would be issued and the corporation would cease to exist as of September 20, 1993.)

Since the time of dissolution, and even after discovering the involuntary dissolution, Bush-Tell has observed all of the corporate procedures required by its Bylaws and Alaska law including holding regular board of directors meetings and paying corporate income taxes.

My company performs a necessary public service, especially for residents of rural Alaska. Telecommunications services are vital for emergencies, for businesses and for a full range of human and social needs. Bush-Tell, Inc. has provided an outstanding job in providing service in rural Alaska, and its corporate dissolution took place through no fault of mine or any of my

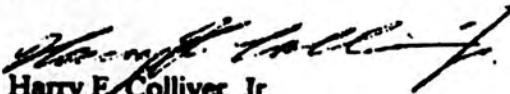


employees. Rather, the dissolution arose out of the neglect of a registered corporate agent.

Upon learning of Bush-Tell's involuntary dissolution, I sought reinstatement from the Alaska Department of Commerce. However, the Department of Commerce advised me that it was unable to reinstate Bush-Tell because too much time had passed and that a legislative enactment would be required. I understand that the Alaska Legislature has passed similar legislation in the past. Under the circumstance, I am hopeful that the Alaska Legislature would pass H.B. 101.

Thank you for consideration of this matter, which is extremely important to my customers and to me,

Sincerely,

  
Harry E. Colliver, Jr.  
President, Bush-Tell, Inc.

# FOUR DAM POOL and FOUR DAM POOL TRANSFER FUND

## General Information

### Four Dam Pool – Background

The following hydroelectric projects and related transmission lines compose the Four Dam Pool -- projects owned by the Alaska Energy Authority/AIDEA:

**Solomon Gulch Hydroelectric Project**

Copper Valley Electric Association (CVEA), serving the Glenallen-Valdez area, operates the project and purchases wholesale power from it.

**Swan Lake Hydroelectric Project**

Ketchikan Public Utilities, serving the Ketchikan area, operates the project and purchases wholesale power from it.

**Terror Lake Hydroelectric Project**

Kodiak Electric Association, serving the Kodiak-Port Lyons area, operates the project and purchases wholesale power from it.

**Tyee Lake Hydroelectric Project**

The City of Petersburg and the City of Wrangell purchase wholesale power from the project. Thomas Bay Power Authority, a consortium of the two communities, operates the project.

The hydroelectric projects were respectively initiated by the communities/utilities now served by the projects. CVEA financed the construction of Solomon Gulch with federal loans; the other projects were initiated with state loans. In 1981-1982 the communities asked the State to take over ownership of the projects, each at different stage of construction, to insure their financing and completion. Consequently, the state loans were re-designated as grants, the State appropriated capital funds to cover part of the costs to construct the facilities, and the former Alaska Power Authority issued \$200 million Variable Rate Demand Bonds for the interim financing of portions of the construction costs of three facilities.

The overall cost of construction of the four facilities as of December 31, 1992, based on AEA's records available to this Division, was about \$500 million, funded as follows:

|               | State<br>Appropriations | Proceeds from<br>Investment | State Loan        | Total Cost         |
|---------------|-------------------------|-----------------------------|-------------------|--------------------|
| Solomon Gulch | 47,490,000              | 23,692,000                  | 3,158,000         | 74,340,000         |
| Swan Lake     | 73,075,000              | -                           | 23,551,000        | 96,626,000         |
| Terror Lake   | 89,334,000              | -                           | 110,646,000       | 199,980,000        |
| Tyee Lake     | <u>85,000,000</u>       |                             | <u>44,040,000</u> | <u>129,040,000</u> |
| Total \$      | 294,899,000             | 23,692,000                  | 181,395,000       | 499,986,000        |

The hydroelectric systems were initially stand-alone projects. However, 1984 legislation recognized the four facilities as one project, AS 44.83.398 (a). On October 28, 1985, AEA and the utilities/communities purchasing wholesale power from the systems (purchasers), entered into a forty-five (45) year Long Term Power Sales Agreement (LTPSA). The LTPSA is a "take and pay" contract in that the purchasers obligation is limited to the power they opt to purchase, and AEA is not obligated to provide power if not available.

Under the terms of the LTPSA, the cost of wholesale power must include production costs plus about 4 cents per kwh, called debt service component, to cover AEA's financing costs on the state loan. In the years 2000 and 2015, the wholesale power rate can be "re-opened" and the debt service component may include interest and principal on the state loan. The purchasers have contractually agreed to accept debt service on a capital of \$189,642,600, subject to the rate re-opener clause.

The power purchasers pool the respective cost of operating the four hydroelectric projects and the debt service; this results in an equal wholesale hydroelectric power rate for all purchasers. The annual common wholesale rate is about 6 cents/kwh.

#### **Four Dam Pool Transfer Fund and State Loan**

In 1984, as the \$200 million Variable Demand Bonds became due, the State appropriated \$210 million to the Power Development Revolving Loan Fund (PDRLF) for a loan to AEA for the long-term financing of the Four Dam Pool hydroelectric projects. AEA paid off the interim financing, lapsed substantial amounts to the general fund, and used the remaining loan proceeds to complete construction of the facilities.

The PDRLF was initially administered by the Division of Investments/DCED. In 1989 the fund was transferred to AEA (AS 44.83.500). Chapter 18, SLA 93 repealed the PDRLF and transferred its assets to the Four Dam Pool Transfer Fund (AS 42.45.040), administered by the Division of Energy.

The Four Dam Pool Transfer Fund is now the holder of the Loan Agreement between the State of Alaska and AEA. The loan is secured by: Promissory Notes totaling about \$185 million; all revenues from the Four Dam Pool systems; AEA's rights under any agreement related to the systems and AEA's resulting rights to receive payments. The loan is also secured by the assets of the hydroelectric projects in the Four Dam Pool.

Until the year 2000, the estimated annual stream of revenue to the Four Dam Pool Fund, for debt service on the state loan, is about \$ 10-11 million (interest only). The debt service is equal to the debt service component that AEA collects under the terms of the LTPSA, represented by a charge of 4 cents/kwh on contracted forecast sales, and 3 cents/kwh additional sales.

As mentioned earlier, the revenue to the Four Dam Pool Transfer Fund is subject to the terms of the LTPSA. Therefore its amount varies depending on the power purchased and/or available; it also depends on determinations made by AEA and the wholesale power purchasers to retain part or all of the debt service to cover certain project risks.

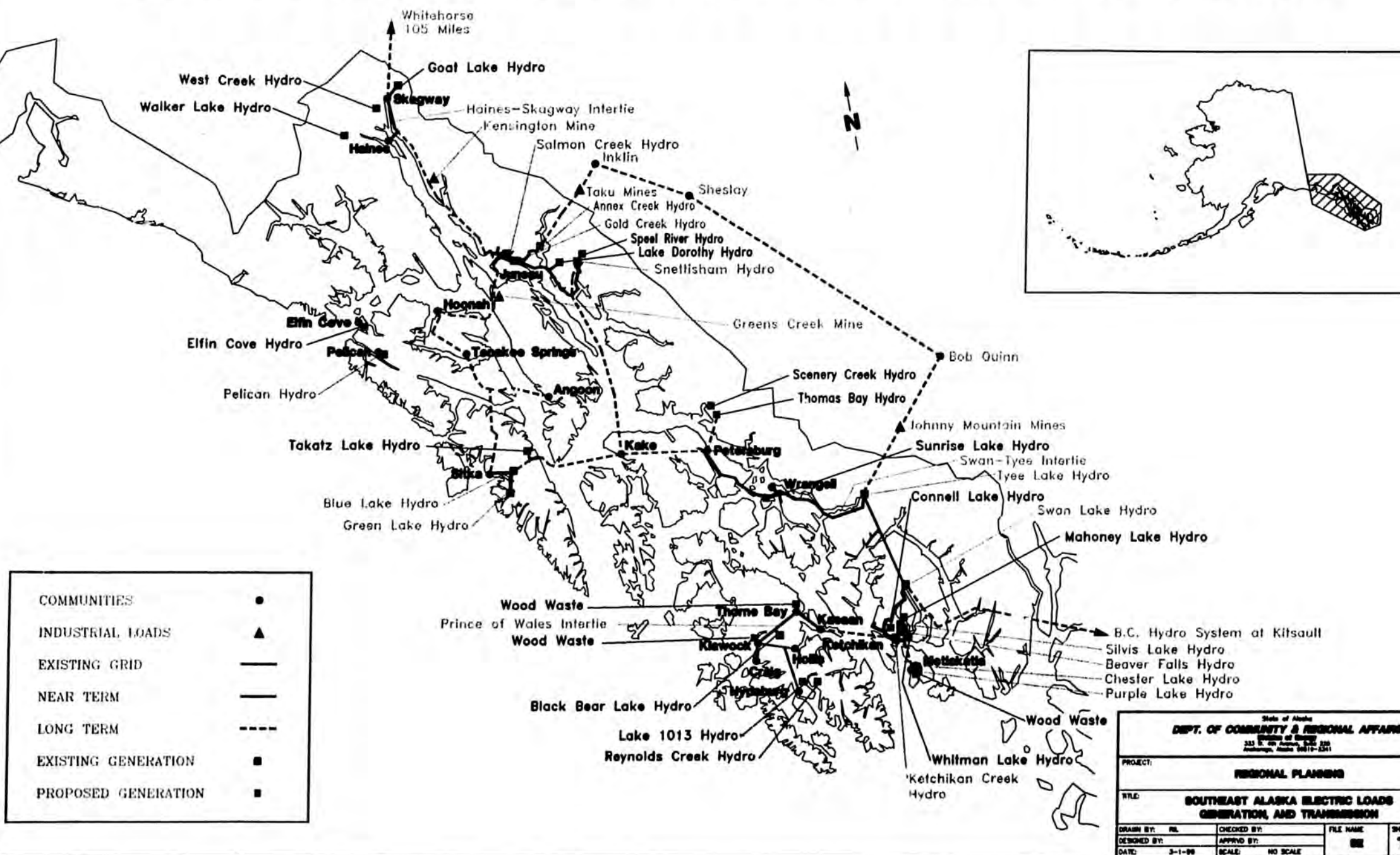
When available, the revenue for a given fiscal year period (July 1-June 30) is deposited directly in the fund by the wholesale power purchasers in a lump amount, by July 31<sup>st</sup>. Subject to appropriation, the balance of the Four Dam Pool Transfer Fund can be allocated to other named statutory funds as follows:

- 40% to the Power Cost Equalization and Rural Electric Capitalization Fund;
- 40% to the Southeast Energy Fund;
- 20% to the Power Project (revolving loan) Fund.

AEA and the wholesale power purchasers retained debt service up through July 1998, for a total of about \$16 million.



# SOUTHEAST ALASKA ELECTRIC LOADS, GENERATION, AND TRANSMISSION





**DEPARTMENT OF COMMUNITY AND REGIONAL AFFAIRS  
DIVISION OF ENERGY**

**POWER COST EQUALIZATION (PCE)**

PCE is a statutory program established in AS 42.45.100-170. The program helps rural electric utility customers by paying part of their electricity costs through the local utility. PCE provides relief to over 32,000 electric customers: residential, commercial, public schools and community facilities. Customers that are state or federal offices are not eligible for PCE. PCE reaches 195 communities with a total population of 77,000. In those communities the cost of electric service without PCE would affect a great part of a customer's disposable income.

In FY99 the program is being funded by the Power Cost Equalization and Rural Electric Capitalization Fund, and the same source is reflected in the FY2000 Operating Budget request. The program was funded by the General Fund through FY94.

**Program Chronology**

The first electric power assistance program was established in 1980 and was administered by the Alaska Energy Authority/DCED (formerly Alaska Power Authority) as the Power Production Cost Assistance program under AS 44.56.162 (renumbered AS 44.83.162). The program was amended and renamed Power Cost Assistance in 1981 and again, amended and renamed Power Cost Equalization in 1984. In August 1993, upon enactment of Chapter 18 SLA. 1993, it was transferred from the Alaska Energy Authority to the Department of Community and Regional Affairs/Division of Energy.

**Program Background**

The program addresses one of the many facets of the energy needs in Alaska. It has always been part of the state energy plan to balance the needs and solutions applicable to different areas of the state. The program, in its initial form, was established as part of HCS SB 438/SLA 1980, an omnibus energy bill that established several other new energy programs for the State. Prior legislatures provided capital appropriations for the development of state-owned electric systems providing long-term benefits to the local population. The following major projects were funded and developed:

- 1) Willow to Healy Intertie (commonly referred to as the Anchorage-Fairbanks Intertie), 50% funding of the Bradley Lake Hydroelectric Project, serving the railbelt area;
- 2) The Four Dam Pool, comprised of four hydroelectric projects:

Solomon Gulch, serving the Valdez-Glennallen area;  
Swan Lake, serving the Ketchikan area;  
Terror Lake, serving the Kodiak-Port Lyons area, and  
Tyee Lake, serving the Petersburg and Wrangell areas.

These projects were developed with about 60% in capital appropriations and a state loan that covered the remaining 40%.

PCE was established to provide relief in other parts of the state where the development of major projects was not financially feasible. These communities are not served by roads and experience very high costs of producing electricity, usually by diesel generation and include the high costs of transportation. These high costs must be recovered from the limited number of residents/customers with limited, disposable income associated with a generally low economic development.

During SLA 1993, the legislature provided again for the statewide energy needs in Chapters 18 and 19 and continued to tie PCE to other state energy programs. Among other things, the state provided:

- 1) over \$150 million in grants and loans for the development of electric interties in the railbelt and Southeast Alaska;
- 2) \$ 66.9 million for the capitalization of the new Power Cost Equalization and Rural Electric Capitalization Fund (PCE&RECF). This fund provided for PCE and for Small Utility Improvements matching grants (up to 75% state match) to utilities participating in PCE for projects that will reduce the cost of power. Funding for Utility Improvement grants was eliminated in FY97.
- 3) established the Four Dam Pool Transfer Fund. This fund is expected to receive all the revenue associated with the state loan that financed the construction of the Four Dam Pool. The fund owns promissory notes totaling about \$185 million, and the projected annual debt service revenue through the year 2000 is \$10-11 million.

Subject to annual appropriation, the balance in this fund is allocated to energy needs in rural Alaska:

- 20% to the Power Project Fund and
- 40% to the PCE&RECF
- 40% for the development of an intertie between Swan Lake and Tyee Lake.

### **Concerns**

Assuming a regular stream of revenue to the PCE&RECF, the fund could provide for PCE up to FY99 but no monies would be available for Utility Improvement grants. In FY2000 the fund would be depleted except for the assumed revenues from the Four Dam Pool Transfer Fund (FDPTF). A point of concern is that the revenue stream from the FDPTF may be interrupted or reduced at anytime due to a lack of revenue, or lack of legislative appropriation permitting the transfer. Any change to this stream of revenue would affect the PCE&RECF projections in Attachment 1.

The Alaska Energy Authority/AIDEA, is responsible for collecting the revenues for deposit in the FDPTF. Revenues collected for the past 5 fiscal years are as follows:

FY94: \$11,685,254 transferred to the Division of Energy;  
 FY95: \$10,734,405 transferred to the Division of Energy;  
 FY96: \$6,638,525 transferred; \$4,000,000 retained by AIDEA/AEA  
       for repairs/upgrades to the hydroelectric projects;  
 FY97: \$5,100,000 transferred; \$4,400,000 retained by AIDEA/AEA;  
 FY98: \$5,345,311 transferred; \$5,500,000 retained by AIDEA/AEA for  
       repairs/upgrades to the hydroelectric project;  
 FY99: Reduction of \$1,600,000 per AIDEA/AEA for repairs; debt service payment is  
       estimated to be \$9,600,000

### **Program Growth and Funding Levels**

The growth of the program requirements are linked to the growth of the electric customers, resulting from increased population in the communities served, and to the increased cost of the local utilities for generating and transmitting power (fuel and non fuel costs). The resulting impact on program requirements equate to a fiscal growth of about 2% from year to year.

The program growth does not result from increased use of electricity by the eligible customers. The program wide, average monthly eligible consumption has been consistently well below 400 kwh per month, while the program permits PCE benefits up to 700 kwh per month.

However, independent from its growth, the program requirements have not always been fully funded. Attachment 2 shows the history of pro-rata reductions while Attachment 3 shows by fiscal year, the annual expenditures and percentage of actual program requirement at which disbursements were made.

According to the 4DP Power Sales Agreement, a rate re-opener with respect to Four Dam Pool debt service can be exercised by the State in the year 2000. However, the rate re-opener cannot lead to retail rates that exceed the statewide average.

**Department of Community and Regional Affairs  
Division of Energy**

**Power Cost Equalization and Rural Electric Capitalization (PCE) Fund  
Projection of Revenues and Expenditures**

|                                                            | FY | 1999     | 2000    | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   |
|------------------------------------------------------------|----|----------|---------|--------|--------|--------|--------|--------|--------|
| <b>Fund balance at beginning of fiscal year</b>            |    | \$17,144 | \$3,202 | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |
| <b>Revenues</b>                                            |    |          |         |        |        |        |        |        |        |
| G. F. Appropriation To Fund PCE at \$17.0 Million per Year |    | 0        | 9,619   | 12,138 | 12,088 | 12,039 | 11,989 | 11,939 | 11,931 |
| PCE Fund Investment Income                                 |    | 1,000    | 495     | 495    | 495    | 495    | 495    | 495    | 495    |
| 40% of Four Dam Pool Debt Service                          |    | 2,058    | 3,685   | 4,367  | 4,417  | 4,467  | 4,517  | 4,567  | 4,574  |
| Total                                                      |    | 3,058    | 13,798  | 17,000 | 17,000 | 17,000 | 17,000 | 17,000 | 17,000 |
| <b>Expenditures</b>                                        |    |          |         |        |        |        |        |        |        |
| PCE Expenditure Capped at \$17.0 Million per Year          |    | 17,000   | 17,000  | 17,000 | 17,000 | 17,000 | 17,000 | 17,000 | 17,000 |
| Utility Improvement Grants -- Zero                         |    | 0        | 0       | 0      | 0      | 0      | 0      | 0      | 0      |
| Total                                                      |    | 17,000   | 17,000  | 17,000 | 17,000 | 17,000 | 17,000 | 17,000 | 17,000 |
| <b>Surplus (Shortage)</b>                                  |    | (13,942) | (3,202) | 0      | 0      | 0      | 0      | 0      | 0      |
| <b>Fund balance at end of fiscal year</b>                  |    | \$3,202  | \$0     | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |

**Notes:**

- All dollars in thousands.
- PCE Fund investment income (FY1999) = actual 1st qtr plus estimated for balance of year.
- PCE Fund investment rate (FY2000 - 2006) = 6% of average Fund balance.
- Four Dam Pool FY2000 debt service estimated at \$10.8 million minus \$1.6 million "self-help"
- Four Dam Pool FY2001-2006 debt service estimates not adjusted for "self-help." Projected debt service will be reduced when self-help estimates are available from AIDEA.

|                                                          |        |        |        |        |        |        |        |        |
|----------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| PCE "Full Formula" -- Revised (Plus 2.5% Annual Growth): | 22,400 | 22,960 | 23,534 | 24,122 | 24,725 | 25,344 | 25,977 | 26,627 |
| Projected Four Dam Pool Debt Service:                    | 5,145  | 9,212  | 10,918 | 11,043 | 11,167 | 11,292 | 11,417 | 11,436 |



**POWER COST EQUALIZATION****History of Pro-Rata Reductions  
per AS 42.45.110 (i)**

|                              |      |
|------------------------------|------|
| FY92 (Annual Average 81.67%) |      |
| July 91                      | 100% |
| August 91-June 92            | 80%  |
| FY93 (Annual Average 89.17%) |      |
| July 92                      | 80%  |
| August 92-June 93            | 90%  |
| FY94 (Annual Average 95%)    |      |
| July-August 93               | 90%  |
| September 93-April 94        | 95%  |
| May-June 94                  | 100% |
| FY95 (Annual Average 97.5%)  |      |
| July 94-April 95             | 100% |
| May-June 95                  | 85%  |
| FY96 (Annual Average 97.5%)  |      |
| July-August 95               | 85%  |
| September 95-June 96         | 100% |
| FY97 (Annual Average 85%)    |      |
| July 96-June 97              | 85%  |
| FY98 (Annual Average 85%)    |      |
| July 97-June 98*             | 85%  |
| FY99 (Annual Average **%)    |      |
| July 98-**                   | 85%  |

\*Base rate change to 9.9 ¢/kwh was approved by APUC on 1/29/99, effective with 9th month billing cycle (March 1999).

\*\*FY98's 15% reduction will remain in effect for FY99 and it is expected that the reduction will remain in effect throughout FY99. Program costs will continue to be monitored to determine if further reduction is necessary.

Prepared by Division of Energy/DCRA

February 1999

PCE ITD EXP & PRORATA RED HISTORY



# POWER COST EQUALIZATION and Preceding Programs

Annual Expenditures  
(extracted from PCE Statistical Reports)

| Program Title                    | Fiscal Year | Amount Disbursed                   | Percentage of Actual Program Requirement |
|----------------------------------|-------------|------------------------------------|------------------------------------------|
| Power Production Cost Assistance | 81          | \$ 2,183,168                       | 100%                                     |
| Power Cost Assistance            | 82          | 6,419,408                          | 100%                                     |
| Power Cost Assistance            | 83          | 8,327,152                          | 100%                                     |
| Power Cost Assistance            | 84          | 8,740,820                          | 100%                                     |
| Power Cost Equalization          | 85          | 13,770,449 <sup>A</sup>            | 100%                                     |
|                                  | 86          | 17,785,390                         | 100%                                     |
|                                  | 87          | 16,771,338                         | 100%                                     |
|                                  | 88          | 17,018,680                         | 100%                                     |
|                                  | 89          | 17,104,631                         | 100%                                     |
|                                  | 90          | 17,785,256                         | 100%                                     |
|                                  | 91          | 19,607,435                         | 100%                                     |
|                                  | 92          | 15,731,165                         | 81.67%                                   |
|                                  | 93          | 17,341,042                         | 89.17%                                   |
|                                  | 94          | <u>17,615,024</u>                  | 95%                                      |
| Subtotal                         |             | \$ 196,200,958                     |                                          |
|                                  | 95          | 18,493,448 <sup>B</sup>            | 97.5%                                    |
|                                  | 96          | 19,201,515 <sup>B</sup>            | 97.5%                                    |
|                                  | 97          | 17,906,275 <sup>B&amp;C</sup>      | 85%                                      |
|                                  | 98          | 18,536,691 <sup>B&amp;C</sup>      | 85%                                      |
|                                  | 99          | <u>9,556,067<sup>B&amp;D</sup></u> | 85%                                      |
| Subtotal                         |             | 83,693,996                         |                                          |
| ITD Total                        |             | \$ 279,894,954                     |                                          |

<sup>A</sup> Includes three months of PPCA.

<sup>B</sup> Funded from the Power Cost Equalization and Rural Electric Capitalization Fund, established in 1993 and capitalized with \$66.9 million.

<sup>C</sup> FY97 & FY98 PCE Statistical Reports not yet published. FY98 Amount disbursed is the amount expended as of 2/25/99, including two remaining encumbrances.

<sup>D</sup> FY99 Amount disbursed is the sum of invoices processed as of 2/25/98. FY99 legislative appropriation is \$17 million.

# MEMORANDUM

## State of Alaska Department of Law

TO: D. Randy Simmons  
Executive Director  
Alaska Industrial Development  
and Export Authority

FROM: Keith A. Laufer   
Assistant Attorney General  
Governmental Affairs Section, Anchorage

DATE: January 27, 1997

FILE NO:

TEL. NO: 269-5135

SUBJECT: Four Dam Pool

### I. INTRODUCTION

Recently there have been developments with respect to the Four Dam Pool projects owned by the Alaska Energy Authority ("AEA"). This memorandum will provide a background with respect to the projects and the existing power sales agreement between the State and the purchasing utilities. In addition, this memorandum will discuss the proposal received from former United States Senator Mike Gravel on behalf of a group of investors, the Energy Group, to purchase the projects.

### II. BACKGROUND

#### A. The Projects and the Power Sales Agreement

The State constructed and acquired the projects constituting the Four Dam Pool in the mid 1980's. The cost of the projects to the State was approximately \$483 million. The Four Dam Pool is owned by AEA and consists of four hydroelectric projects serving five communities. Power from the Tyee Lake project is sold through Thomas Bay Electric Association to the communities of Wrangell and Petersburg. Power from the Swan Lake project is sold to Ketchikan Public Utilities. Power from the Solomon Gulch project is sold to the Copper Valley Electric Association serving the Glennallen and Valdez areas. Finally, power from the Terror Lake project is sold to Kodiak Electric Association. The power from all the projects is sold under the terms of a Long Term Power Sales Agreement (the "PSA") between the purchasing utilities and the AEA. The projects are operated by the individual utilities pursuant to operating agreements between the utilities and AEA.

The PSA was executed in October, 1985 and has an initial term of 45 years; terminating October, 2030. Under the PSA, to the extent the purchasing utilities require power, they are required to first purchase the power produced from the Four Dam Pool. The price of the power is established by a formula in the PSA. Under the formula, the power rate has two components. The first component covers the operating cost of the four projects. For this purpose, operation costs of the four projects are pooled to determine one operating cost component for the entire

Four Dam Pool. The second component of the rate is the "debt service component." The debt service component is somewhat a misnomer as no debt was issued by the State to finance the projects (although funds were loaned from the Department of Commerce and Economic Development to AEA to partially finance the projects). The debt service component is the payment to the State in partial repayment of the State's investment in the projects. The debt service component is determined by reference to a debt service schedule contained in the agreement. The debt service component provides for rate "re-openers" in certain events based on the cost of power in the railbelt. In AEA's view, the likelihood of the next rate re-opener significantly altering the current rate is unlikely.

In fiscal year 1996, the power rate for energy produced by the Four Dam Pool was 6.4 cents per kWh. This rate consists of an operating cost component of 2.4 cents and a debt service component of 4.0 cents. For fiscal year 1996, the debt service component produced a debt service payment of about \$11 million dollars. AEA has estimated that the present value of the debt service payments to the State over the remaining term of the PSA is approximately \$165 million dollars. This amount assumes a discount rate of 7%.

Under the PSA, AEA retains significant liabilities related to the projects. In particular, AEA is responsible for uninsured facility failures, substandard performance, and deficiencies in the reserve and replacement fund. Moreover, the utilities obligation to purchase power is not a "take or pay" obligation. Rather, the utilities only pay for power actually purchased from the projects. While the utilities are required to purchase power first from the Four Dam Pool projects to the extent they require power, if the projects are not producing power for some reason, there is no obligation for the utilities to continue to pay.

The PSA also creates a "self-help right" on the part of the utilities. Under that provision of the PSA, if AEA does not fulfill its obligations regarding repairs to the projects, the utilities may withhold their debt service payment to the State and utilize the funds withheld to perform the necessary repairs.

As part of the 1993 legislation that re-organized AEA, the legislature has pre-allocated the debt service payments that are received from the Four Dam Pool to specific funds. Pursuant to AS 42.45.050, debt service payments made by the Four Dam Pool utilities are to be appropriated by the legislature as follows: 40% to Power Cost Equalization and Rural Electric Capitalization Fund; 40% to the Southeast Energy Fund; and 20% to the Power Project Fund to be used for Statewide energy projects. None of the Four Dam Pool debt service payment has been allocated to AEA to fulfill any of its repair obligations under the PSA, nor has AEA been appropriated any other funds to perform such obligations.

#### **B. Funding of Required Repairs**

In March, 1994, it became apparent that significant repairs were required to be made to the Tyee Transmission Line which is a part of the project. In addition, required repairs were identified for



the Terror Lake and Swan Lake projects and for spill prevention controls at the projects. Under the PSA, these repairs were the obligation of the State. Because AEA had no funds with which to make the repairs, the purchasing utilities filed suit against AEA in an effort to invoke their self-help rights under the PSA to withhold their debt service payments and utilize those funds to conduct the required repairs. In settlement of that lawsuit, the State agreed with the utilities that limited self-help would be invoked for fiscal year 1996. Funds withheld by the utilities were used for engineering studies to determine the proper scope of the repairs which were required to the projects. As part of the settlement AEA agreed to enter into discussions with the purchasing utilities regarding the possible transfer of ownership of the projects to the utilities.

In fiscal year 1996, the Administration proposed legislation that would have altered the allocation of revenues from the Four Dam Pool. Under the Administration's proposal, debt service payments would have first been allocated to AEA to pay debt service on debt that would have been issued by AEA to fund the required repairs. The legislature, however, failed to pass the proposed legislation and, as was expected, the utilities elected to utilize their self-help rights to withhold the entire debt service payments for fiscal year 1997 and 1998 in order to fund the necessary repairs. Because of the disruption in the debt service payments, no contributions from the Four Dam Pool will be made in either fiscal year 1997 or 1998 to the Power Cost Equalization and Rural Capitalization Fund, the Southeast Energy Fund, or the Power Project Fund.

#### C. Divestiture Discussions with Purchasing Utilities

In August 1994, the utilities and AEA agreed to mutually explore the possibility of transferring ownership of the Four Dam Pool projects to the utilities. As part of the settlement of the 1995 litigation with the utilities, AEA agreed that it would continue these discussions with the utilities. Chief of Staff Ayers sent a letter to the utilities which described certain requirements which must be met for the Administration to support a transfer of the projects to the utilities. The requirements were that (1) the PSA remain in effect through the transfer, (2) AEA's duties and obligations under the PSA be completely transferred to a joint utility entity and AEA be fully released from those obligations and duties, (3) the State receive adequate value (to be determined) for the projects, and (4) the transfer be subject to review by the legislature.

Authority staff met with the utilities in several meetings over the course of the period from August, 1995 to February, 1996. Ultimately, these discussions broke down over the proper value to be paid by the utilities for the projects. AEA proposed that the reasonable value of the facilities, assuming the utilities completed, at their own cost, the repairs to the Tyec Transmission Line, was \$84 million. AEA arrived at this purchase price by first discounting to present value the payment stream of the debt service payments that would be made to the State over the remaining term of the PSA. The present value of the payment stream utilizing a 7% discount rate was approximately \$165 million dollars. From this amount, AEA subtracted the estimated cost of AEA's continuing repair and risk obligations under the PSA. To arrive at this number, AEA utilized the results of an engineering and risk analysis prepared for the projects by

Harza Engineering Corporation. This study was jointly directed and funded by the purchasing utilities and AEA.

The utilities rejected AEA's proposal. The utilities indicated that, if they were to be required to complete the Tyee repairs, they believed the value of the projects to be somewhere between \$0 - \$20 million. The primary differences between the State and utility values were that the utilities perceived a high risk that energy loads for the region could significantly decline and that inflation could significantly increase the costs of ownership. In addition, the utilities stated that they believed that any transfer of the project would have to result in an immediate significant rate reduction in the wholesale power rate. The utilities factored in a 1 cent per kWh reduction in rates as part of their review of value.

Because the utility and AEA opinions of value were so disparate, the parties agreed to take a hiatus in the discussions to determine if other approaches were possible. Recently, AEA sent a letter to the utilities indicating that divestiture discussions could be reopened if the discussions looked promising and requesting that the utilities bring forth a new proposal in which to open discussions. The purchasing utilities are meeting in February, 1997 and will be preparing a response and counter proposal to AEA.

### **III. PROPOSAL FROM FORMER U.S. SENATOR GRAVEL**

In September, 1996, the Authority received an unsolicited proposal from Former United States Senator Mike Gravel indicating a desire on behalf of the Energy Group to purchase the Four Dam Pool projects from the State for \$84 million plus additional funds to repair the projects up to a cap of \$100 million. The Authority indicated to Mr. Gravel that AEA was in discussions with the purchasing utilities regarding divestiture and, pending the conclusion of those discussions, that the Authority would not entertain discussions regarding other options. Mr. Gravel took his proposals to the communities themselves and began preliminary due diligence with respect to the projects. To our knowledge, the purchasing utilities, while not receptive to the proposal, have nonetheless been courteous and cooperated with Mr. Gravel's due diligence. In December, 1996, at Mr. Gravel's request AEA staff met with Mr. Gravel. Once again, Mr. Gravel was informed that the Authority would not open discussions or entertain proposals regarding the purchase of the Four Dam Pool until and unless the utilities agreed that AEA entertain such discussions.

Mr. Gravel nonetheless went on to explain his proposal. Under Mr. Gravel's proposal, a new entity would acquire the Four Dam Pool Projects from the State. Ownership of the new entity would be comprised of two ownership groups. The first group would be the lower 48 utility investor group that Mr. Gravel represents. The second group would be a community stock ownership plan ("CSOP") under which utility purchasers in the various communities served by the Four Dam Pool would gain ownership shares. As proposed, the utility investor group would obtain financing for one half of the project purchase price while the trustee of the CSOP would obtain financing for the other half of the purchase price. Under the proposal, the community



stock ownership plan trustee would obtain a guarantee or other financial assistance from the State in order to facilitate the CSOP financing.

An important element of Mr. Gravel's proposal is the termination of the PSA. According to Mr. Gravel, the sale would not be viable unless the PSA were terminated and a new power sales agreement or agreements were entered into. The Energy Group proposal calls for a rate of return to the Energy Group investors of between 12% and 15%. Mr. Gravel indicated that under his proposal the communities would be guaranteed a wholesale power rate of 6.5 cents per kWh for 30 years, the period of the anticipated financing necessary to consummate the purchase. The operational component of that rate, however, would be subject to regular adjustments utilizing an index such as the Consumer Price Index.

Mr. Gravel indicated that the new entity could obtain operational savings by consolidating operational responsibility in the new entity. Mr. Gravel stated that this would likely result in the elimination of a number of jobs. Under the proposal, the new entity would be responsible for compensating those employees whose jobs are eliminated.

Mr. Gravel has commenced efforts in the local communities to increase knowledge about his proposal and has met with various community groups. Mr. Gravel has indicated to AEA that, unless the communities or the utilities come up with some sort of fatal flaw with his proposal, he intended to pursue the proposal with the legislature. I understand that Mr. Gravel has begun his legislative efforts in earnest by engaging several lobbyists on behalf of his investor group.

#### **IV. PURCHASING UTILITY POSITION ON GRAVEL PROPOSAL**

The purchasing utilities have sent a letter advising AEA of the utilities' continuing interest in pursuing divestiture discussions with the State. A copy of that letter is attached as Exhibit A. In addition, the utilities have asked AEA to reject the Gravel group's proposal and that AEA negotiate a sale with the utilities. The utilities have indicated that they have numerous objections to the proposal provided by Senator Gravel. It is our understanding that the principle objections are that any savings or profits that could be created by the projects would be shared 50% with Outside investors and that the Energy Group would be a "limited liability" company. In the utilities view, all savings or profits should benefit the communities. In addition, the utilities have stated that it would be difficult, if not impossible to gain the consent of all the communities to any change in the current PSA.

#### **V. CONCLUSION**

The proposal submitted by former Senator Gravel focuses attention on the existing structure of the Four Dam Pool and the need to develop a long term plan to put the projects on a sound economic footing. Should you require any additional information, please let me know.

Date **APR 26 1997**

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## The Anchorage Times

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"Believing in Alaskans, putting Alaska first"

Editors: DENNIS FRAULEY, PAUL JENKINS, WILLIAM J. TOBIN

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# Gravel's offer for dams adds insult to injury

By LEW M. WILLIAMS JR.

**KETCHIKAN** -- Rep. Ramona Barnes' resolution calling for the sale of four state dams to the highest bidder accomplished two things. It woke up the communities in the Four Dam Pool and state officials in the Alaska Industrial Development and Export Authority that they must reach agreement on disposal of the projects. And it brought an offer from former Sen. Mike Gravel -- who represents unidentified investors -- to buy the dams for \$84 million.

Barnes, R-Anchorage, is unhappy because the Four Dam Pool projects cost so much compared with what the Southcentral area received for energy projects, and because she perceives a move to give the dams to the communities as a state grant instead of the communities repaying some funds, which could be used in Southcentral.

On the other hand, the Four Dam Pool communities are justifiably angry. Even though more money was spent on the four dams -- Swan Lake, Tyee Lake, Terror Lake and Solomon Gulch -- than was anticipated, there was faulty design which will take another \$20 million to \$30 million to correct.

Here's some of the background:

Back in the early 1980s, when the state was rolling in surplus oil revenue, the Legislature agreed to build the four dams for \$250 million. At the same time, the Railbelt Energy Fund was created with the idea that \$200 million a year would be put into it until the fund reached \$1 billion to finance construction of the Susitna Dam. The Susitna project was abandoned. So was the plan to put more money into the Railbelt Fund.

Democratic legislators from Anchorage led a \$100 million raid on the \$210 million Railbelt Energy Fund for projects other than energy. But Southcentral wasn't left penniless. The \$150 million Redoubt Lake power project and the \$120 million Fairbanks-Anchorage Intertie were constructed with state grants.

The plan was formulated for the state to build the four dams -- Swan Lake for Ketchikan, Tyee Lake for Wrangell and Petersburg, Terror Lake for Kodiak and Solomon Gulch for Valdez and Glenallen. In order to gain Anchorage's sup-



Williams



port, Southcentral lawmakers insisted on what has been called the blackmail clause -- support for the Railbelt Energy Fund and for the Susitna project.

The original idea was that the state would pay for construction of the four dams. The utility companies would pay operation and maintenance.

Because of the huge cost overrun for construction -- what was to cost \$250 million actually cost \$483 million -- the state insisted that the utilities repay a portion of the construction costs. A 45-year payment schedule requires communities to repay at the rate of 4 cents per kilowatt hour with another 2.4 cents going to operation of the projects.

...

Among the clauses in the power sales agreement is a provision that if the state fails to take care of major maintenance, money for major repairs could be taken by the project management committee out of the payments to the state.

The management committee initially paid the state about \$11 million per year under the sales agreement. Of that, \$4 million went to the Power Cost Equalization Program. Barnes says that 20 percent was supposed to go to the Railbelt Energy Program and 40 percent was to stay in the Four Dam Pool for future expansion. The Power Cost Equalization program, by the way, subsidizes diesel fuel costs to small communities to bring their power costs more in line with large towns that have cheaper power sources.

When the four dams were completed, two had serious design problems: Terror Lake and Tyee Lake. It is estimated that fixing the Tyee Lake power line will cost \$17 million and Terror Lake's dam, \$5 million, plus engineering costs. Those are the costs above the regular operation and maintenance paid for by the Four Dam Pool and are an obligation of the state under the power sales agreement.

The state sued the contractors and settled for \$10 million. It took most of the settlement money for its cost of legal action -- so repairs weren't made to the projects. Last year, the projects' management committee notified the state, that it would take the entire \$11 million a year as long as needed to make the required repairs.

That, of course, didn't sit well with Rep. Barnes, because it meant no money from the Four Dam Pool for Power Cost Equalization and the Railbelt.

In 1993, the Legislature rolled the Anchorage Energy Authority into the Alaska Industrial Development and Export Authority. That and the obligation to make \$15 million in major repairs, led the state to start negotiating with the Four Dam Pool members to get rid of the dams and get out of the business. The management committee spent \$300,000 for an appraisal of the system, which was valued at \$84 million.

Then, former Sen. Mike Gravel comes in and offers to buy the four dams from the state for \$84 million. His company is called Citizens Power of Alaska. It proposes that the Four Dam Pool communities own 50 percent. He is promising to reduce operating costs.

It is unclear how bringing in private investors, who will expect a return on their investment, will give better rates than can the public utilities. What Gravel proposes is to buy the cream off the top. It probably would mean an end to the Swan Lake-Tyee Lake Intertie and other future interties and power generation expansion, because investors would be more interested in maximizing financial returns.

This would add more insult to the injury. The injury of terrible cost overruns. The injury caused by failure to correct major problems. The injury of selling out cheap to contractors and engineers on faulty design.

Lew M. Williams Jr. is former editor and publisher of the Ketchikan Daily News.

ALASKA ENERGY AUTHORITY  
(a Component Unit of the State of Alaska)

Notes to Financial Statements

June 30, 1998 and 1997

(1) Organization and Operations

The Alaska Energy Authority (AEA) was created by the Alaska State Legislature in 1976. AEA is a public corporation and a component unit of the State of Alaska (State). AEA's mission is to promote, develop, and advance the general prosperity and economic welfare of Alaskans by providing a means to operate and maintain existing power projects that tap Alaska's natural resources to achieve the lowest reasonable consumer power costs.

Throughout the 1980's, AEA worked to develop the State's energy resources as a key element in diversifying Alaska's economy. A number of large-scale projects were constructed. Today, AEA's six hydroelectric projects have an installed capacity of 164 megawatts, and the Alaska Intertie's 170 miles of transmission line link Interior Alaska with the cheaper energy available in the Southcentral portion of the State.

Pursuant to statute, on August 12, 1993, the Board of Directors of the Alaska Industrial Development and Export Authority (AIDEA), a public corporation and a political subdivision of the State, became the Board of Directors of AEA. Concurrently, the Executive Director of AIDEA was also appointed as Executive Director of AEA. The corporate structure of AEA was retained but the ability to construct and acquire energy projects was eliminated. AEA retained its operating assets including the Four Dam Pool (Solomon Gulch, Swan Lake, Terror Lake and Lake Tyee Hydroelectric Projects), the Bradley Lake Hydroelectric Project, the Alaska Intertie and the Larsen Bay Hydroelectric Project. The intent of the legislation was that ongoing operation of the operating assets be assumed by the electric utility companies that use or purchase power from the assets with oversight responsibility retained by AEA; this has occurred to the extent possible.

The following is a description of AEA's existing projects:

***Bradley Lake Hydroelectric Project***

The project has installed capability of 126 megawatts and transmits its power to the State's main power grid via two parallel 20-mile transmission lines. The project, which cost in excess of \$300 million, went into commercial operation in 1991. The project is now operated by Homer Electric Association under contract with AEA. Bradley Lake serves Alaska's Railbelt from Homer to Fairbanks as well as the Delta Junction area.

 ***Four Dam Pool Project***

The Solomon Gulch, Swan Lake, Terror Lake and Lake Tyee Hydroelectric projects, collectively known as the Four Dam Pool, came on line in the 1980's and serve, respectively, the communities of Valdez and Glennallen, Ketchikan, Kodiak, and Petersburg and Wrangell.

(Continued)



**ALASKA ENERGY AUTHORITY**  
**(a Component Unit of the State of Alaska)**

**Notes to Financial Statements**

The project gained its name from the fact that all costs are pooled, with the same kwh rate charged for electricity drawn from any one of the four projects. The local utilities are responsible for day-to-day operation of the projects.

***Alaska Intertie***

The 170-mile, 345-kilovolt transmission line interconnects the power distribution systems of Anchorage and Fairbanks. The Alaska Intertie allows Golden Valley Electric Association in Fairbanks to purchase electricity produced with lower cost energy, such as natural gas and hydroelectric, from the Anchorage and Kenai Peninsula utilities. The Alaska Intertie reduces the number of black/brownouts throughout the system. Operations and maintenance duties are overseen by the Intertie Operating Committee.

***Larsen Bay Hydroelectric Project***

The 475-kilowatt project went into commercial operation in mid-1991. In addition to producing electricity for this isolated Kodiak Island community, the project replaced the City of Larsen Bay's old water supply system and provides a better source of water with reduced maintenance and improved water quality. The City of Larsen Bay operates the project.

**(2) Summary of Significant Accounting Policies**

***Basis of Accounting - Enterprise Fund Accounting***

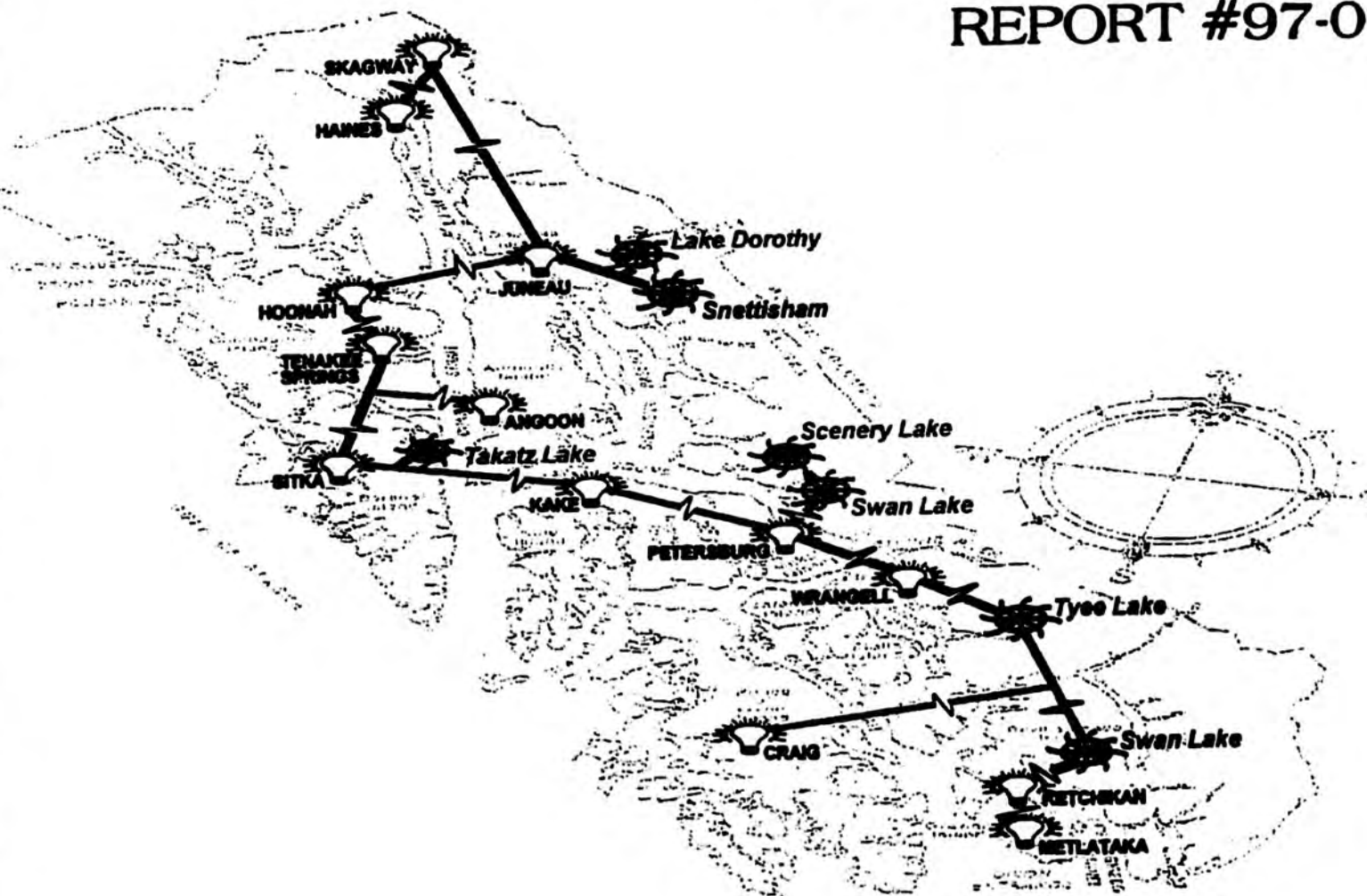
The accounts of AEA are organized as an Enterprise Fund. Accordingly, the financial activities of AEA are recorded using the accrual basis of accounting, whereby revenues are recorded when earned and expenses are recorded when goods or services are received or the related liability is incurred.

Statement Number 20 of the Government Accounting Standards Board (GASB), Accounting and Financial Reporting for Proprietary Funds and Other Governmental Entities That Use Proprietary Fund Accounting, provides two options for reporting proprietary fund activities (including component units using proprietary fund accounting). AEA has elected to apply all applicable GASB pronouncements and all FASB Statements and Interpretations, Accounting Principles Board Opinions and Accounting Research Bulletins issued on or before November 30, 1989, unless they conflict with or contradict GASB pronouncements.

**(Continued)**

# Southeast Alaska Electrical Intertie System Plan

REPORT #97-0







23 January 1998

Mr. Berne C. Miller  
Executive Director  
Southeast Conference  
213 Third Street, Suite 124  
Juneau, Alaska 99801

Dear Berne:

**Southeast Alaska Electrical Intertie System  
Transmittal of Final Report # 97-01**

We are pleased to provide this final report to the Southeast Conference and the Participants in the proposed Southeast Alaska Electrical Intertie SYSTEM. It has been a privilege and an honor to work with you and representatives of the participating municipalities and utilities on this assignment. We are grateful for this opportunity and we sincerely wish you and the communities who will benefit from an interconnected electrical system our very best as you take the vision that is presented in this report forward to reality. We would be honored to continue to serve the region and look forward to a continuing relationship with you.

Yours very truly,

A handwritten signature in dark ink, appearing to read "Nan A. Nalder".

Nan A. Nalder  
Project Manager

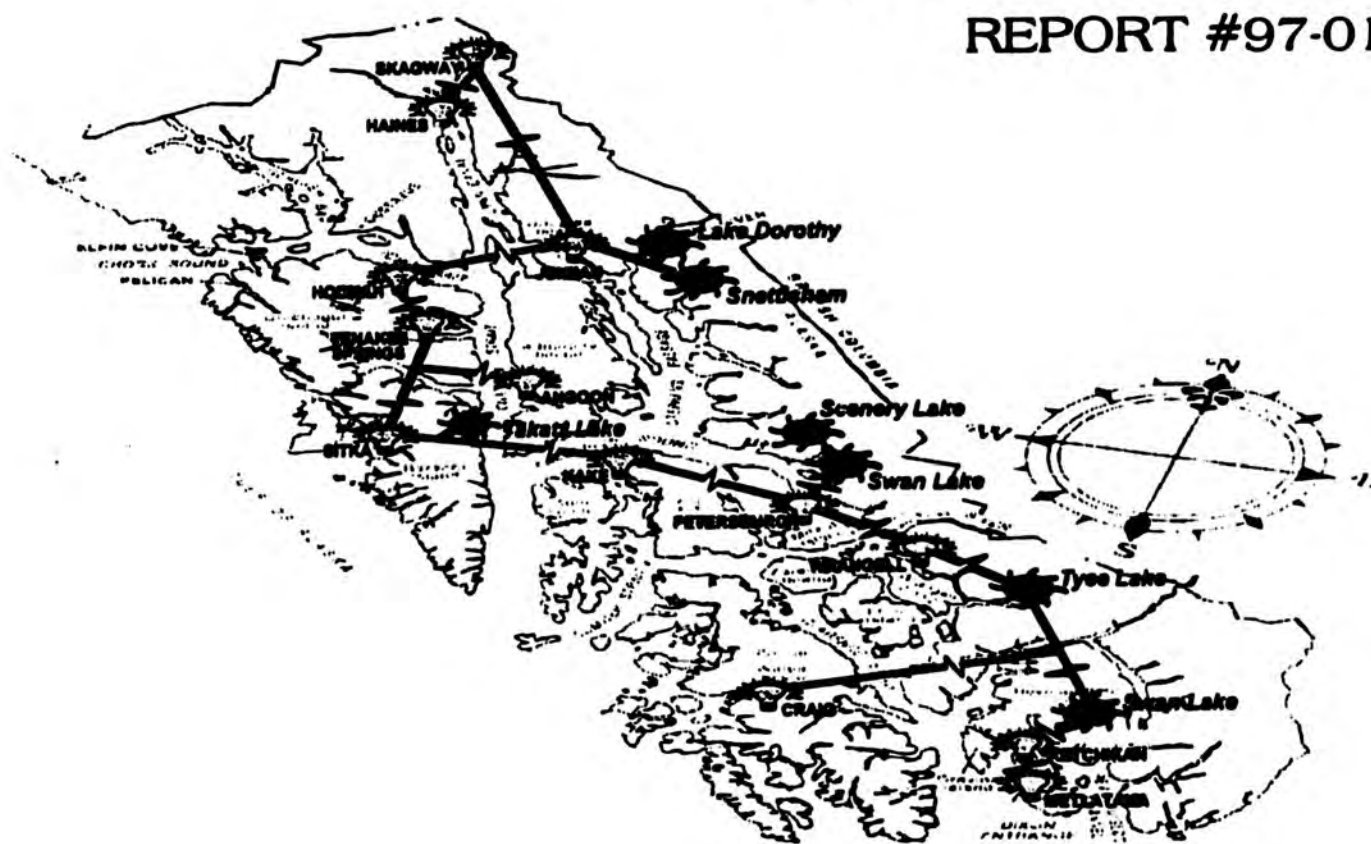
enc.

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# Southeast Alaska Electrical Intertie System Plan

REPORT #97-01



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# Executive Summary

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The purpose of this report is to present technical information in support of a proposed electrical intertie system to interconnect presently remote isolated load centers; increase system reliability; reduce or avoid diesel dependence; encourage economic development; and stabilize and equalize power rates. This report presents a proposed SYSTEM Plan to assess final feasibility; prepare detailed design and construction documents; and construct and operate an integrated electrical intertie system in Southeast Alaska.

"The communities of Southeast Alaska support the concept of a southeast electric grid as a means of reducing or avoiding diesel dependence, encouraging economic development and stabilizing and equalizing power rates. The communities intend to prioritize the development of a regional intertie system, in accordance with individual communities' power needs. The next step is to seek the necessary funding on a partnership basis with the state and federal governments." ("White Paper", July 1997, as revised in December 1997)

Southeast Alaska is comprised of thousands of islands known as the Alexander Archipelago. The region offers significant natural resources and a quality of life conducive to attract new clean economic development to the area. With few exceptions, no roads or bridges connect islands. People travel between islands by boat, floatplane, and/or wheeled plane. Current limitations imposed by a lack of infrastructure and related availability of low-cost clean energy restrict development of economic development and related improvement in basic quality of life in the participating Southeast Alaska communities. The participants have determined that an integrated electrical transmission grid will enhance delivery of reliable and low-cost electric service; and support development of an integrated energy, communications, and transportation infrastructure to serve regional needs and attract new economic opportunities to the region.

The communities, acting through the Southeast Conference, contracted with Acres International Corporation (Acres) to prepare a Southeast Alaska Electrical Intertie SYSTEM Plan (SYSTEM Plan) that integrates development of proposed intertie segments with new hydroelectric generation capacity designed to serve the needs of the region. The SYSTEM Plan provides a "living" plan that can be updated as the participants proceed through development of the SYSTEM.

Participating entities include: Alaska Electric Light and Power Company (AEL&P), Alaska Power & Telephone Co. (AP&T); City and Borough of

## Executive Summary

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- ▶ The ability to attract new industry and to modernize traditional industry is dependent on enhanced telecommunications, fibre optic networks, internet access, and efficient transportation systems.
- ▶ Existing hydroelectric projects are inadequate to serve future growth; isolated load centers will site additional diesel generation to meet immediate needs.
- ▶ Communities need reliable, cost effective, long-term sources of energy for the future that provide stable electric rates and employment and reduce environmental impacts within the region.

One of the critical issues facing the Participants is availability of adequate funds to Completing to support the level of professional engineering and construction services and related physical features to construct the proposed intertie SYSTEM. Participants recognize that a combination of State, Federal, and Community funding will be required. Communities and utilities would finance new generation facilities. Regional electric utilities will operate and maintain SYSTEM transmission facilities. Sources of potential private investment will also be explored.

The central policy question regarding future generation in Southeast Alaska is whether it is better to continue to develop many load-specific small hydropower projects and additional diesel generation units, or to develop a long-term collective solution to meet future energy demand with larger regional hydropower plant that develop the generation potential of sites with fewer cumulative environmental impacts. Alaskans are interested in protecting air quality and are therefore reluctant to continue to add fossil-fuel-fired generation in highly scenic areas that draw tourists from around the globe and provide a significant source of revenue to local communities. Developing regional power projects to meet future demand will require a regional grid.

Normally, the phasing of hydroelectric projects within a power system grid is based largely on the estimated cost of each respective potential project. By nature, hydroelectric projects are capital cost intensive and are generally very site specific. The selected new projects have very similar characteristics consisting of lake taps at perched lakes with tunnels of reasonable length leading to powerhouses at tidewater. Therefore, development costs can be expected to be comparable and consistent with others recently developed in the region.

Accordingly, it is appropriate to phase project development on the basis of projected needs for the intertie itself coupled with due consideration to the load

## **Executive Summary**

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others and reviewed by the Acres team during the course of this assignment and do not represent an independent assessment.

### **Phase III**

Construct interties connecting Angoon, Tenakee Springs, Hoonah, Green's Creek and Juneau to Sitka, Kake, Petersburg, Ketchikan and Metlakatla (North-South Grid). At this point the load growth for Juneau becomes the major factor in determining the needs of the interconnected system. If mining loads develop during the next few years, Lake Dorothy may be brought on-line before 2015. Further, based on the load growth as projected for Juneau, the system loads can also fully utilize the proposed Swan Lake project within the 2015 - 2020 time frame. Preliminary cost estimates for development of intertie segments specified during Phase III are \$173,788,000/1996\$ for the Tenakee Springs/Angoon/Hoonah/Greens Creek/Juneau Intertie. Estimated costs were presented in documents prepared by others and reviewed by the Acres team during the course of this assignment and do not represent an independent assessment.

### **Phase IV**

Construct interties connecting Skagway, Haines, and Kensington to North-South Grid. Construct Takatz Lake Hydropower Project. By 2020, either the Takatz Lake project or the Scenery Lake project could be added to the system. Takatz Lake is shown on Figure 2 as a part of Phase IV on the basis of the proposed road interconnection from Warm Springs and the transmission system to Sitka as factors in reducing the environmental effects and cost of development. Preliminary cost estimates for development of intertie segments specified during Phase IV are \$79,160,000/1996\$ for the Juneau - Skagway Intertie. Estimated costs were presented in documents prepared by others and reviewed by the Acres team during the course of this assignment and do not represent an independent assessment.

### **Phase V**

Construct intertie connecting Prince of Wales Island to North-South Grid. With this addition in 2025, the cumulative load projections of the respective communities indicate that the output of Scenery Lake would be fully utilized in its first year of operation. Preliminary cost estimates for development of intertie segments specified during Phase V are \$39,089,000/1996\$ for the Ketchikan - Prince of Wales Intertie. Estimated costs were presented in documents prepared by others and reviewed by the Acres team during the course of this assignment and do not represent an independent assessment.

The general evolution of analyses presented in the 1987 Intertie Study is entirely appropriate for the purpose of progressively narrowing down the options to find the optimal development sequence. However, we identified a



## Executive Summary

### Proposed Sequencing and Cost Estimates for Southeast Alaska Transmission Grid Segments

| PHASE         | NEW LINE SEGMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | LOAD CENTERS                                                                                                                   |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| I             | Swan Lake - Lake Tye (KPU, Initial Draft Power Supply Planning Study, 1996)<br>57 mi 138-KV line connects Swan-Tye hydro<br>Status: Final EIS/ USFS Record of Decision issued 8/97.<br>Construction bids to be requested in late 1997.<br>Estimated cost: \$69,772,000/1996\$                                                                                                                                                                                                                                                                                                                              | Petersburg, Wrangell & Ketchikan                                                                                               |
| I             | Ketchikan - Metlakatla (Alaska Power Authority, Southeast Alaska Transmission Intertie Study, 1987)<br>15 mi 34.5 KV line (14 mi OH / 1 mi submarine) Connect KPU's Mountain Point Sub / Race Point, MP&L.<br>Status: Final documents to be prepared once Swan-Tye line is under construction.<br>Estimated cost: \$8,785,000/1996\$*                                                                                                                                                                                                                                                                      | Petersburg, Wrangell, Ketchikan & Metlakatla                                                                                   |
| II            | Petersburg - Kake - Sitka<br>II-A - Petersburg - Kake (DCRA, Division of Energy, Kake-Petersburg Intertie Feasibility Study, 1996)<br>46.7 mi 69 KV (44.3 mi OH / 2.4 mi submarine) capable of upgrade to 138 KV.<br>Status: 1996 update to 1987 appraisal level engineering / environmental review.<br>Estimated cost: \$19,734,600/1996\$<br>II-B - Kake - Sitka (Alaska Power Authority, Southeast Alaska Transmission Intertie Study, 1987)<br>55.4 mi 138 KV (20.2 mi OH / 35.2 mi DC submarine) cable<br>Status: Reconnaissance engineering / environmental.<br>Estimated cost: \$45,489,000/1996\$* | Sitka, Kake, Petersburg, Wrangell, Ketchikan & Metlakatla                                                                      |
| III           | Sitka - Tenakee Springs/Angoon - Hoonah - Greens Creek - Juneau (Alaska Power Authority, Southeast Alaska Transmission Intertie Study, 1987)<br>148.6 mi 138 KV (120.8 mi OH / 27.8 mi AC submarine)<br>Status: Appraisal level engineering / environmental review.<br>Estimated cost: \$173,788,000/\$1996\$*                                                                                                                                                                                                                                                                                             | Sitka, Angoon, Tenakee Springs, Hoonah, Greens Creek, Juneau to Petersburg, Wrangell, Ketchikan, Metlakatla (North-South Grid) |
| IV            | Juneau - Skagway (Alaska Power Authority, Haines-Skagway Region Feasibility Study, 1981)<br>70.5 mi (6.5 miles 69 KV OH / 64 miles 100 KV DC submarine)<br>Status: Appraisal level engineering / environmental review.<br>Estimated cost: \$79,160,000*                                                                                                                                                                                                                                                                                                                                                    | Connects Skagway, Haines, and Kensington, north of Juneau, to North-South Grid                                                 |
| V             | Ketchikan - Prince of Wales Island (Alaska Power Authority, Black Bear Feasibility Report, 1981)<br>19 mi 69 KV or 115 KV (1 mi OH / 18 mi submarine)<br>Status: Appraisal level engineering / environmental review.<br>Estimated Cost: \$ 39,089,000*                                                                                                                                                                                                                                                                                                                                                     | Connects Thorne Bay, Kasan, Klawock, Hollis, Craig, and Hydaburg to North-South Grid                                           |
| SYSTEM TOTALS | 243.8 mi OH / 148.4 mi submarine<br>392.2 total miles<br>Construction Cost Estimate \$435,817,000/1996                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                |

\* Indicates cost prepared using standard cost curves to escalate earlier estimate.



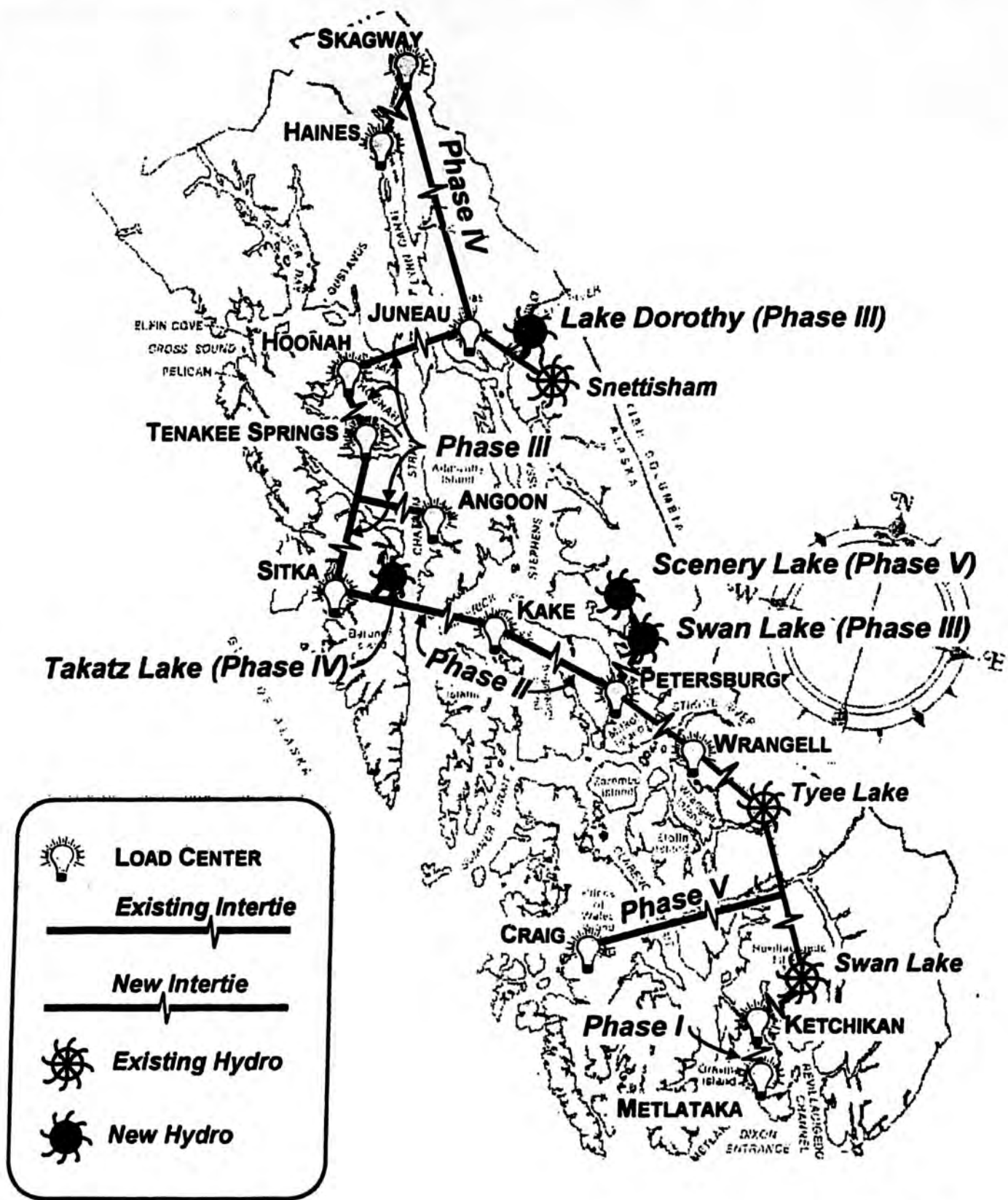
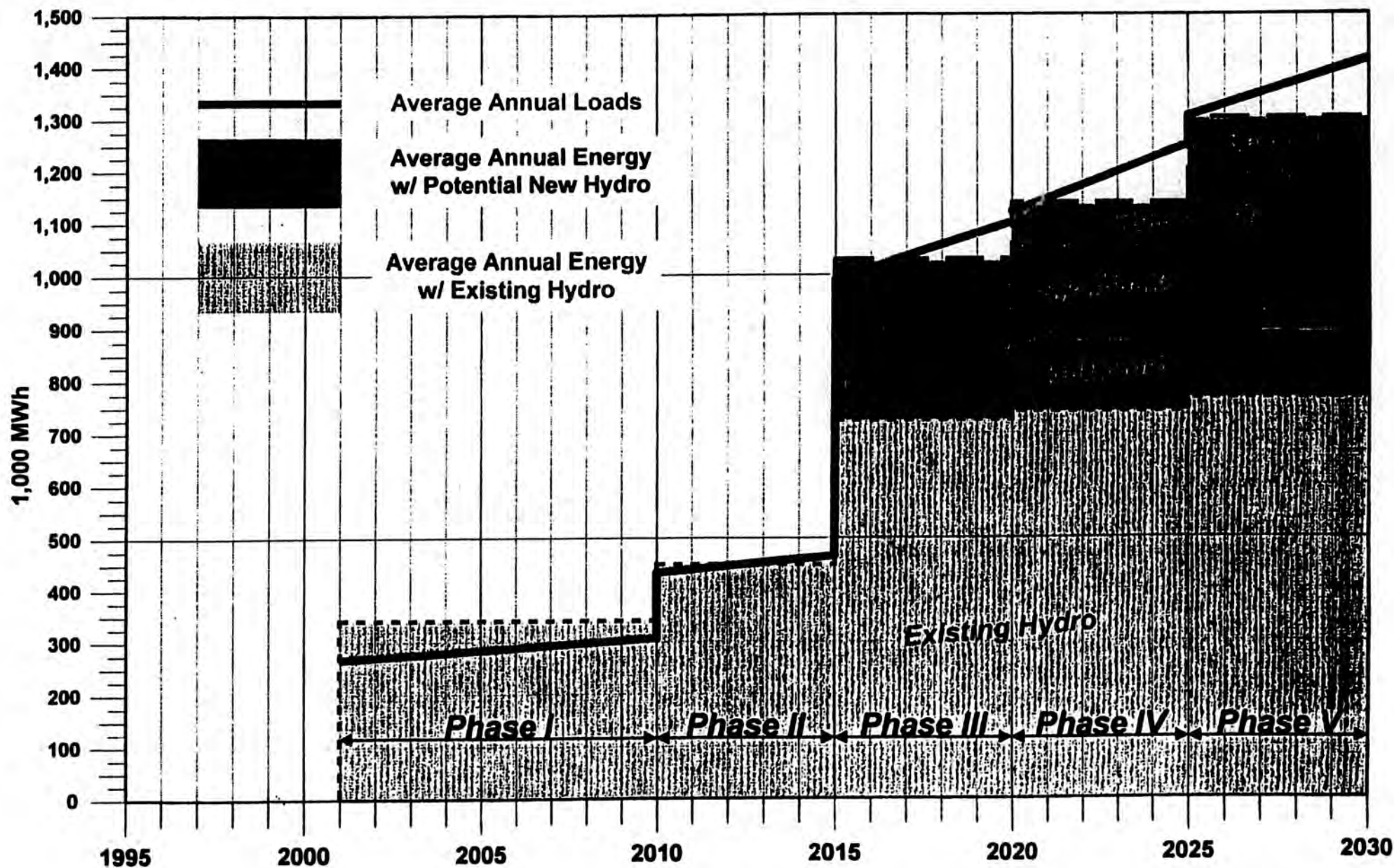


Figure 1

Southeast Alaska Utilities  
ELECTRICAL INTERTIE SYSTEM PLAN





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**“White Paper” Prepared  
by Participants**

# **"White Paper" Prepared by Participants**

Representatives from communities in Southeast Alaska met during 1997 with the purpose of preparing a "white paper" on regional power generation and distribution needs. The white paper focus is on a regional power grid development plan for Southeast Alaska that is responsive to each community's needs and time lines.

The Southeast Conference, an Alaska Regional Development Organization and USDA Resource Conservation and Development Council, issued a request for proposals to provide professional engineering services to update and summarize information contained in the Southeast Alaska Electrical Intertie & Transportation Corridors Study and other related documents on June 20, 1997. Acres International Corporation (Acres) was awarded a contract on August 5, 1997 to undertake this effort. The white paper set the tone for this assignment and one of the requirements in the RFP was to "Review paper and recommend changes needed to make paper agree with results of this effort." (Section Four, Scope of Work, 4.2 Approach, item 1, RFP # 97-01)

The July 1997 White Paper focused on a 20-year regional power grid development plan. An initial draft of the report was presented to participants and discussed at the September 1997 Southeast Conference Annual Meeting in Petersburg. Following that meeting, participants provided additional comments and also discussed the appropriate schedule for phasing development of the regional power grid. During a December 1997 meeting in Sitka, participants determined that the plan should not be limited to a 20-year horizon as full realization of the proposed plan could extend beyond a period of 20 years and participants determined that a flexible timeframe was more appropriate. Acres revised the original draft of the report to address this change in timeframe. The July 1997 White Paper was revised accordingly and following this brief introductory section, readers will find a copy of the December 1997 version of the White Paper with recommended changes as approved by the participants. A list of participating communities is included at the end of the text. Copies of resolutions passed by participating communities are available upon request from the Southeast Conference.



## **WHITE PAPER**

### **SOUTHEAST ALASKA ELECTRICAL INTERTIE SYSTEM**

**July 1997, as Revised December 1997**

Major economic and social changes are taking place in Southeast Alaska to minimize adverse impacts of those changes, and to facilitate economic revitalization and diversification, adequate infrastructure is a must.

The most basic of infrastructure is electricity, because without adequate generation and transmission capacity, communities will be unable to sustain services, let alone grow. Even other infrastructure, such as water and sewer facilities, is dependent on electricity. Moreover, from an environmental impact standpoint, failure to construct a regional electric grid will result in increased local diesel generation rather than taking advantage of the substantial hydro power potential that exists in Southeast Alaska. Building a generation and intertie grid takes a long time, so a regional construction plan is needed now.

In 1987, the then Alaska Power Authority completed a study that identified a Southeast Alaska electrical grid system. The study found that such a grid is both technically and economically feasible, with a twenty year planning horizon. Today, after a decade of growth in demand and numerous studies confirming the need for this network, virtually none of these electrical interties have been constructed. Last month, the communities of Southeast Alaska came together in Sitka to start getting the job done. The group initiated efforts to develop a plan drawing heavily on work in the previous intertie studies.

At present, most every community in Southeast Alaska generates its own power in a largely isolated electrical environment. In an area with rich hydroelectric potential, most smaller communities remain entirely diesel dependent. Even in larger communities such as Juneau, Ketchikan and Sitka which currently have hydroelectric power, those facilities are reaching the limit of their capacity and supplemental diesel power is being pursued or contemplated. This, despite the fact there is adequate hydroelectric potential to serve all of Southeast for decades to come if an intertie system existed to transport power to the load centers.

The communities of Southeast Alaska therefore support the concept of a southeast electric grid as a means of reducing or avoiding diesel dependence, encouraging economic development and stabilizing and equalizing power rates. The communities intend to prioritize the development of a regional intertie system, in accordance with individual communities' power needs. The next step is to seek the necessary funding on a partnership basis with the state and federal governments.

**Participants Supporting a Regional Effort to Promote a 20-Year Power Grid Plan for the Southeast Alaska Region include:**

- ▶ Alaska Electric Light and Power Company
- ▶ Alaska Power & Telephone Co.
- ▶ City and Borough of Juneau, Alaska
- ▶ City of Kake
- ▶ City of Ketchikan
- ▶ Ketchikan Public Utilities
- ▶ Metlakatla Power & Light
- ▶ City of Petersburg
- ▶ City and Borough of Sitka
- ▶ Tlingit & Haida Regional Electrical Authority
- ▶ City of Wrangell



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## **Purposes and Objectives**

## **Section 2**

# **Purposes and Objectives**

"The communities of Southeast Alaska support the concept of a southeast electric grid as a means of reducing or avoiding diesel dependence, encouraging economic development and stabilizing and equalizing power rates. The communities intend to prioritize the development of a regional intertie system, in accordance with individual communities' power needs. The next step is to seek the necessary funding on a partnership basis with the state and federal governments." ("White Paper", July 1997, as revised December 1997).

The communities, acting through the Southeast Conference, contracted with Acres International Corporation (Acres) to prepare a Southeast Alaska Electrical Intertie SYSTEM Plan (SYSTEM Plan) that integrates development of proposed intertie segments with new hydroelectric generation capacity designed to serve the needs of the region. The SYSTEM Plan provides a "living" plan that can be updated as the participants proceed through development of the SYSTEM.

Participating entities include: Alaska Electric Light and Power Company (AELP), Alaska Power & Telephone Co. (AP&T); City and Borough of Juneau; City of Kake; City of Ketchikan; Ketchikan Public Utilities (KPU); Metlakatla Power & Light (MP&L); City of Petersburg / Petersburg Municipal Power & Light (PMP&L); City and Borough of Sitka, Tlingit & Haida Regional Electrical Authority (THREA); and City of Wrangell. Copies of Resolutions in support of the Intertie System are included in Appendix A.

This report documents investigations and analyses conducted by Acres under the terms of the August 5, 1997 Letter of Agreement with the Southeast Conference pursuant to the Request for Proposals #97-01, Southeast Electrical Intertie, as augmented in January 1998.

### **2.1 Purpose**

The purpose of this report is to present technical information in support of a proposed electrical intertie system to interconnect presently remote isolated load centers; increase system reliability; reduce or avoid diesel dependence; encourage economic development; and stabilize and equalize power rates. This report presents a proposed SYSTEM Plan to assess final feasibility; prepare detailed design and construction documents; and construct and operate an integrated electrical intertie system in Southeast Alaska. This report will be used to brief legislators, Members of Congress, and other public officials; and to inform residents in the communities and elicit their support for the proposed Southeast Alaska Electrical Intertie SYSTEM.

## Purposes and Objectives

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In preparing this report, Acres interviewed federal and state energy officials; community leaders; and electric utilities to elicit their interests and recommendations and identify studies and plans that have been completed. Studies and plans used in preparing this report are identified in the text. A complete bibliography is included at Appendix B, Volume 2 and is available from the Southeast Conference.

### 2.2 Objectives

Develop a 20-year power grid plan for the Southeast Alaska Region responsive to each community's needs and time lines that will enhance opportunities to increase the region's economic base and result in regional economic development opportunities that will provide a basis to achieve:

- effective and efficient coordination of the electrical resources and enhanced reliability of electrical service through a regional power grid;
- clean renewable hydroelectric regional energy resources, thereby avoiding increased environmental effects associated with additional diesel generation;
- an environment that will enhance opportunities to locate new commercial and industrial business;
- lower cost hydroelectric power to communities now solely dependent on diesel generation, thereby increasing opportunities to attract new business and provide jobs to communities with high unemployment; and
- stable electric rates and cost equalization.

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**Approach and Proposed  
System Development Phasing**



# **Approach and Proposed System Development Phasing**

The State of Alaska and the Federal Government have conducted numerous reconnaissance level investigations and identified potential sites and corridors for the development of hydroelectric power generation facilities and electrical power grids throughout Southeast Alaska. This report draws on the content of existing documents and, where necessary, includes updates to existing data based on Acres' experience with similar projects. Original research and analysis were not part of this assignment. Our purpose in developing this plan was to confirm feasibility of a regional electrical intertie SYSTEM and to identify logical steps to pursue development of grid segments and regional hydroelectric generation facilities.

We interviewed leaders in a number of municipalities and utilities to identify existing studies and plans, and discussed their vision and expectations for an integrated regional electrical system. Based on these interviews, we understand that the participants seek a flexible plan that presents logical steps to take to get from here – a set of preliminary documents – to an interconnected electrical system that will serve the region's needs from a number of perspectives. Data was requested of each municipality and utility in the region regarding power generation and distribution needs, and plans and load forecasts.

Based on our interviews and information provided by the participants, review of existing documents, and our analyses, we present this proposed SYSTEM Plan in five phases:

## **Phase I 1995 - 2010**

Construct interties connecting Swan Lake and Tyee Lake hydroelectric projects to KPU's electrical system; and construct an intertie connecting MP&L to KPU's electrical system.

## **Phase II 2011 - 2015**

Construct interties connecting Sitka and Kake to Petersburg, Ketchikan and Metlakatla.

## **Phase III 2016 - 2020**

Construct interties connecting Angoon, Tenakee Springs, Hoonah, Green's Creek and Juneau to Sitka, Kake, Petersburg, Ketchikan and Metlakatla (North-South Grid). Construct Lake Dorothy and Swan Lake hydropower projects.

## **Approach and Proposed System Development Phasing**

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### **Phase IV 2021 - 2025**

Construct interties connecting Skagway, Haines, and Kensington to North-South Grid. Construct Takatz Lake Hydropower Project.

### **Phase V 2026 - 2030**

Construct intertie connecting Prince of Wales Island to North-South Grid. Construct Scenery Lake Hydropower Project.

Section 7 of this report presents further details of the proposed SYSTEM and includes two figures which provide the following graphic representations.

**Figure 1, Southeast Alaska Utilities ELECTRICAL INTERTIE SYSTEM PLAN**, presents a map of Southeast Alaska with a schematic diagram superimposed to depict load centers, existing and proposed new interties, and existing and proposed new hydroelectric generation facilities. **Figure 2, Southeast Alaska Utilities ELECTRICAL INTERTIE SYSTEM PLAN: LOADS AND RESOURCES** presents a schematic diagram showing phasing of new generation as loads grow and the transmission intertie SYSTEM is constructed.

Detailed Technical Analyses and Cost Information Appendices are available upon request from the Southeast Conference.

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**Need for System**

## **Section 4**

# **Need for System**

### **4.1**

#### **Demographics and Local Economy**

Southeast Alaska is comprised of thousands of islands known as the Alexander Archipelago. The region offers significant natural resources and a quality of life conducive to attract new clean economic development to the area. With few exceptions, no roads or bridges connect islands. People travel between islands by boat, floatplane, and/or wheeled plane. Current limitations imposed by a lack of infrastructure and related availability of low-cost clean energy restrict development of economic development and related improvement in basic quality of life in the participating Southeast Alaska communities. The participants have determined that an integrated electrical transmission grid will enhance delivery of reliable and low-cost electric service; and support development of an integrated energy, communications, and transportation infrastructure to serve regional needs and attract new economic opportunities to the region.

Southeast Alaska electric utilities currently operate isolated systems. Lacking transmission interconnections to other electric systems, each utility must plan independently to provide full power requirements to meet customer needs. Developing hydropower generation and major transmission projects requires a long lead time and significant capital investment.

Population growth in Southeast Alaska has increased from approximately 65,000 to 75,000 persons over the ten year period 1986 - 1996. Annual average employment increased during the ten year period from 29,000 to 36,000 persons. During this period the real average annual salary declined from \$34,000 to \$30,000 and total payroll increased from \$1 billion to \$1.1 billion. Government accounts for over \$800 million in annual personal income in Southeast Alaska. (McDowell Group, Inc., 1997)

The three main load centers in the region are Juneau, Sitka, and Ketchikan. Expansion of transmission grid legs as presented in the 1997 Report focused on these three load areas. Recent trends for several of the participating utilities are presented in a table following this text section.

The Southeast Alaska economy is built on timber, fishing, and tourism. An increase in hardrock mining development is proposed, but as yet is not a major factor. Communities are investigating "value-added" timber and fishery products in order to expand these traditional industries. New industrial development is being actively sought, however absence of an interconnected electric system and improved transportation tends to discourage significant investment in the region. (AEA 1990).

## Need for System

**Table 4.1**  
**Private Sector Industry**  
**Trends in Southeast**  
**Alaska 1990 - 1996**

| Private Industry Sector       | Change Since 1990 | Change 1995 - 1996 |
|-------------------------------|-------------------|--------------------|
| Construction                  | + 600             | + 150              |
| Lumber & Wood Products        | - 1,300           | + 300              |
| Seafood Processing            | + 50              | - 150              |
| Transportation                | + 200             | No Change          |
| Retail Trade                  | + 1,200           | + 100              |
| Services (ex. transportation) | + 3,750           | + 350              |

Source: Presentation Materials prepared by McDowell Group, Inc., for the Southeast Conference Annual Meeting, September 18 - 20, 1997

**Table 4.2**  
**Government Employment**  
**Trends - Southeast**  
**Alaska 1990 - 1996**

| Level   | Change Since 1990 | Change 1995 - 1996 |
|---------|-------------------|--------------------|
| Federal | - 100             | No Change          |
| State   | - 250             | - 50               |
| Local   | + 450             | + 150              |

Source: Presentation Materials prepared by McDowell Group, Inc., for the Southeast Conference Annual Meeting, September 18 - 20, 1997



**Table 4.3**  
**Recent Population and**  
**Local Employment**  
**Trends for Selected**  
**Southeast Alaska**  
**Communities**

| Phase /<br>Community | 1997<br>Population | % Change<br>Population 96-97<br>Employment 95-96 |                | 1990-97<br>% Change<br>Population | Actual<br>Population<br>Growth |
|----------------------|--------------------|--------------------------------------------------|----------------|-----------------------------------|--------------------------------|
| I / Ketchikan        | 14,599             | pop<br>emp                                       | -0.9%<br>-1.1% | 0.8%                              | 771                            |
| I / Petersburg       | 3,432              | pop<br>emp                                       | 2.3%<br>-2.3%  | pop 1.0%                          | 225                            |
| I / Wrangell         | 2,543              | pop<br>emp                                       | -2.0%<br>-2.3% | 0.3%                              | 64                             |
| I / Metlakatla       | 1,595              | pop<br>emp                                       | 0.5%<br>NA     | NA                                | NA                             |
| II / Kake            | 767                | pop<br>emp                                       | 7.7%<br>NA     | NA                                | NA                             |
| II / Sitka           | 8,733              | pop<br>emp                                       | 1.2%<br>1.2%   | 0.2%                              | 145                            |
| III / Juneau         | 29,813             | pop<br>emp                                       | 1.0%<br>2.2%   | 1.6%                              | 3,062                          |
| III / Angoon         | 571                | pop<br>emp                                       | -5.6%<br>-5.7% | NA                                | NA                             |
| III / Hoonah         | 906                | pop<br>emp                                       | 0.7%<br>-5.7%  | NA                                | NA                             |
| IV / Skagway         | 816                | pop<br>emp                                       | 6.4%<br>-5.7%  | NA                                | NA                             |
| IV / Haines          | 2,421              | pop<br>emp                                       | 2.0%<br>9.6%   | 1.9%                              | 304                            |
| V / Craig            | 2,043              | pop<br>emp                                       | -3.1%<br>-0.3% | 7.0%                              | 783                            |
| V / Klawock          | 704                | pop<br>emp                                       | -3.0%<br>-0.3% | NA                                | NA                             |
| V / Thorne Bay       | 625                | pop<br>emp                                       | -3.1%<br>-0.3% | NA                                | NA                             |

Sources: Presentation Materials prepared by McDowell Group, Inc., for the Southeast Conference Annual Meeting, September 18 - 20, 1997

## Need for System

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- Communities need reliable, cost effective, long-term sources of energy for the future that provide stable electric rates and employment and reduce environmental impacts within the region.

### 4.2

#### Financing the SYSTEM

One of the critical issues facing the Participants is availability of adequate funds to Completing to support the level of professional engineering and construction services and related physical features to construct the proposed intertie SYSTEM. Participants recognize that a combination of State, Federal, and Community funding will be required. Communities and utilities would finance new generation facilities. Regional electric utilities will operate and maintain SYSTEM transmission facilities. Sources of potential private investment will also be explored.

In support of its proposed request for federal support, the Participants state that Southeast Alaska and its residents have borne a significant burden due to federally imposed limitations on development of the State's natural resources pursuant to Federal Legislation. These limitations have resulted in significant reductions in traditional timber and fishing industries and related reductions in local employment as discussed in the above section 4.1, Demographics and Local Economy.

### 4.3

#### Joint Regional Planning and Implementation

The existing electric transmission facilities in Southeast Alaska are a collection of remote communities solely dependent on their own resources to meet load. With the exception of existing connections between Petersburg and Wrangell there are no interconnections to import or export power among Southeast Alaska communities and electric utilities. The planned intertie between Swan Lake and Lake Tyee will add Ketchikan to the Petersburg/Wrangell interconnection. AP&T also plans to interconnect Skagway and Haines in 1998.

The opportunity to develop a regional system through joint planning will avoid the need to come in later and try to fix problems similar to those inherent in the interconnected systems in the "lower 48". Joint planning and system operation will facilitate open access to regional SYSTEM facilities at fair and non-discriminatory rates. SYSTEM ownership could be available to all interested parties - utilities, municipalities, independent power project owners, and large industrial customers. Users of the SYSTEM would fund operation and future improvements. Joint ownership and operation would reduce the potential for monopoly control and related potential discrimination, and related costly lengthy litigation regarding alleged abuse of monopoly power, that have restricted efficient use of existing facilities in the "lower 48." Southeast Alaska provides an opportunity to "do it right" the first time by facilitating development that requires joint planning and operation.

## Need for System

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### 4.4

#### **Future Electric Generation Resource Development**

The central policy question regarding future generation in Southeast Alaska is whether it is better to continue to develop many load-specific small hydropower projects and additional diesel generation units, or to develop a long-term collective solution to meet future energy demand with larger regional hydropower plant that develop the generation potential of sites with fewer cumulative environmental impacts. Alaskans are interested in protecting air quality and are therefore reluctant to continue to add fossil-fuel-fired generation in highly scenic areas that draw tourists from around the globe and provide a significant source of revenue to local communities. Developing regional power projects to meet future demand will require a regional grid.

### 4.5

#### **Future Growth and Need for Improved Services in Southeast Alaska**

Communities need to improve services to attract new commercial and industrial development to expand employment opportunities in an area where the traditional logging, pulp, and fishing industries are in decline. A key element is stabilizing electric rates so that communities are not disadvantaged due to lack of access to hydropower generation. Competitive electric rates are essential to local regional development.

The transmission infrastructure needs to be linked with development of improved transportation to and within Southeast Alaska. Improved access will attract new product-oriented industry, improve tourism opportunities, enhance interaction between communities in Southeast Alaska, and generally improve the lifestyle of residents by enabling them to travel for business and personal needs on a reliable and timely basis.

A regional dedicated utility corridor could accommodate regional and energy transmission/transportation (electricity, fibre optics, and natural gas) and multi-modal transportation. This report addresses electricity transmission and notes the community preference to expand corridor use to provide transportation opportunities. We understand that the Southeast Conference is exploring opportunities to perform a similar review regarding transmission in Southeast Alaska. We also note that the State of Alaska Department of Transportation has embarked on an examination of multi-modal transportation needs in Southeast.

The potential to serve new large mining and related industrial loads in the region and across the border in Canada will also require expanded transportation and electric transmission infrastructure and additional generating capacity. Proposals to open the Kensington and Jualin mines north of Juneau are currently being considered. Greens Creek Mines has already installed its own diesel generation sources. The direct energy requirements for mining are assumed to be 60 million KWH/year for the Kensington mine, and

## Need for System

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20 million KWH/year for the Jualin mine. "Take-or-pay" provisions in power contracts with the mines will mitigate the economic risk of developing major new resources associated with mining operations.

### 4.6

#### **Electric Rate Equalization and Regional Economic Stability**

From a public policy perspective, the need to enhance local communities' ability to maintain an appropriate level of economic well-being is a primary interest. During the interviews with local communities, the high unemployment and lack of potential to maintain existing and attract new industry and related employment opportunities, were identified as motivating factors to construct an interconnected system so that lower cost power could be provided to these communities. *The Alaska Electric Power Statistics - 1960-1995* at page 85 presented cost comparisons for 1995 typical monthly electric bills at varying levels for residential customers. Figure 3 and Table 4.1, based on statistics from the above noted document, depict the range from high to low for communities included in this analysis.

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**Existing Electrical Transmission  
and Generation Facilities**



# Existing Electrical Transmission and Generation Facilities

### 5.1

#### Existing Electrical Transmission Segments

Existing transmission facilities in Southeast Alaska were constructed to deliver power from generation to specific load centers. Due to the remote locations, many communities are situated on islands, and lack of electrical interconnections among locations, electrical utilities in Southeast Alaska operate their systems to deliver power to their customers and do not have opportunity to import power from other systems to meet electric customer needs. Ability to construct an interconnected system is exacerbated by these remote locations and rough terrain. The one current exception is the interconnection between Lake Tyee and municipally owned and operated electric utilities in Petersburg and Wrangell who share output from the Lake Tyee Project. Nearterm planned interconnections include the intertie between Swan Lake and Lake Tyee that would connect KPU to Petersburg and Wrangell and a planned submarine interconnection between Skagway and Haines to share output of the planned Goat Lake Hydroelectric Project.

In 1995 there were approximately 320 total transmission circuit miles in major load centers in Southeast Alaska: 20 miles @ 25 KV; 25.0 miles @ 34.5 KV; 80 miles energized @ 69 KV, built @ 138 KV; 120.5 miles @ 120.5 KV; 30 miles @ 115 KV; 44 miles at 138 KV. Areas covered by these statistics include Snettisham/Crater Lake, AELP, Sitka Electric System, KPU, and Swan Lake / Tyee Lake. Tables 5.1 and 5.2 provide detailed information regarding these existing facilities.

### 5.2

#### Existing Hydropower Generation Facilities

Existing hydro projects in Southeast Alaska are identified in two categories:

- (1) developed by local utilities to serve local load, and
- (2) system hydroelectric projects developed by the State of Alaska or the Federal Alaska Power Administration to serve shared interconnected load centers. Existing hydro projects constructed by utilities to meet specific loads are located in Skagway, Juneau, Sitka, Petersburg, Ketchikan, Metlakatla, and Prince of Wales Island. Existing system hydro electric projects include: Snettisham/Crater Lake, Lake Tyee, and Swan Lake. Figure 1 shows existing system hydropower units and transmission segments; and proposed new system hydropower units and transmission segments. Table 5.3 presents generation capacity and net generation by sector; Table 5.4 lists federal and state-owned hydro generation sources; and Table 5.5 lists all existing generation facilities by utility.

## Existing Electrical Transmission and Generation Facilities

Areas served by system hydro projects currently maintain backup diesel capacity equal to 100% peak demand. Diesel units cover emergency operation, peaking requirements, voltage regulation, or meet remaining load requirements not available from the hydro projects. Areas not interconnected to a system hydro project currently maintain diesel capacity equal to 125%-130% of the peak load depending on the ratio.

**Table 5.1**  
Existing Transmission Lines  
and Major Interconnections  
over 34.5 kV

| Area                                                                                  | Circuit Voltage<br>(kv) | Circuit<br>Miles |
|---------------------------------------------------------------------------------------|-------------------------|------------------|
| <b>Juneau (APA &amp; AEL&amp;P)</b>                                                   |                         |                  |
| Snettisham/Crater Lake - Thane (Federally owned)                                      | 138                     | 44.0             |
| Thane - Capital Avenue Sub                                                            | 69                      | 5.0              |
| Thane Loop Sub (Mendenhall Valley)                                                    | 69                      | 17.0             |
| Upper Mendenhall Bridge - Auke Bay -<br>Brotherhood Bridge                            | 69                      |                  |
| <b>Sitka Electric Department</b>                                                      |                         |                  |
| Blue Lake - Sitka and through City                                                    | 69                      | 5.0              |
| Green Lake - Blue Lake                                                                | 69                      | 9.0              |
| <b>Ketchikan Public Utilities</b>                                                     |                         |                  |
| Silvis Lake - Beaver Falls - Ketchikan and<br>through City to North Point Higgins Sub | 34.5                    | 25.0             |
| Swan Lake - Ketchikan (State owned)                                                   | 115                     | 30.0             |
| <b>Petersburg - Wrangell</b>                                                          |                         |                  |
| Tyee - Wrangell                                                                       | 69*                     | 39.0             |
| Wrangell - Petersburg                                                                 | 69*                     | 42.0             |

\* Line is built to 138 kv standards.

**Table 5.2**  
Existing Transmission Line  
Design and Operating  
Capabilities

| Area                                     | Designed       | Operated       |
|------------------------------------------|----------------|----------------|
| Juneau - Snettisham/Crater Lake to Thane | 138 KV         | 138 KV         |
| Juneau - Annex Creek to Thane            | 23 KV          | 23 KV          |
| Juneau - Thane to Juneau                 | 69 KV          | 69 KV          |
| <b>Sitka</b>                             | <b>69 KV</b>   | <b>69 KV</b>   |
| Tyee to Petersburg/Wrangell              | 138 KV         | 69 KV          |
| Petersburg                               | 25 and 138 KV  | 25 and 69 KV   |
| Petersburg to Wrangell                   | 138 KV         | 69 KV          |
| Wrangell                                 | 25 and 138 KV  | 25 and 69 KV   |
| <b>Ketchikan - Swan Lake to Bailey</b>   | <b>115 KV</b>  | <b>115 KV</b>  |
| <b>Ketchikan - Higgins to Silvis</b>     | <b>34.5 KV</b> | <b>34.5 KV</b> |

## Existing Electrical Transmission and Generation Facilities

**Table 5.3**  
Generation Capacity and  
Net Generation by Sector

| Sector            | Installed Capacity<br>(KW) | Net Generation<br>(MWb) | Net Growth<br>1994 - 1995 |
|-------------------|----------------------------|-------------------------|---------------------------|
| Utility           | 344,093                    | 714,950                 | 4.0%                      |
| U. S. Coast Guard | 1,500                      | 0                       | 0.0%                      |
| Industry          | 90,184                     | 202,481                 | -14.1%                    |
| <b>TOTAL</b>      | <b>435,777</b>             | <b>917,431</b>          | <b>-0.6%</b>              |

**Table 5.4**  
Existing System Hydro  
Generation Sources

| Plant        | Installed Capacity<br>(MW) | Average Annual<br>Generation (Mwh) |
|--------------|----------------------------|------------------------------------|
| Snettisham   | 46.0                       | 216,000                            |
| Crater Lake  | 27.0                       | 118,000                            |
| Tyce Lake    | 20.0                       | 114,100                            |
| Swan Lake    | 22.5                       | 85,400                             |
| <b>Total</b> | <b>115.5</b>               | <b>533,500</b>                     |

## Existing Electrical Transmission and Generation Facilities

Table 5.5  
Existing Resources

| Project Name / Location                          | Fuel Type      | Installed Capacity |
|--------------------------------------------------|----------------|--------------------|
| <b>Alaska Electric Light &amp; Power Company</b> |                |                    |
| Annex Creek                                      | Hydroelectric  | 3,600 KW           |
| Auke Bay                                         | Diesel         | 2,500 KW           |
|                                                  | Gas Turbine    | 24,800 KW          |
| Gold Creek                                       | Hydroelectric  | 1,800 KW           |
|                                                  | Diesel         | 7,300 KW           |
| Lemon Creek                                      | Diesel         | 22,500 KW          |
|                                                  | Gas Turbine    | 35,000 KW          |
| Salmon Creek No. 1                               | Hydroelectric  | 5,000 KW           |
| <b>Alaska Power Administration</b>               |                |                    |
| Snettisham / Crater Lake                         | Hydroelectric  | 78,210 kW          |
| <b>Alaska Power &amp; Telephone Company</b>      |                |                    |
| Dewey Lake / Skagway                             | Hydroelectric  | 975 KW             |
| Goat Lake / Skagway                              | Hydroelectric  | 4,000 KW           |
| Diesel / Skagway                                 | (proposed)     | 3,865 KW           |
|                                                  | Diesel         |                    |
| Black Bear / Craig                               | Hydroelectric  | 4,500 KW           |
|                                                  | Diesel / Craig | 3,820 KW           |
| Haines                                           | Diesel         | 5,770 KW           |
| Hydaburg                                         | Diesel         | 1,001 KW           |
| Hollis                                           | Diesel         | 150 KW             |
| <b>Ketchikan Public Utilities</b>                |                |                    |
| S. W. Bailey                                     | Diesel         | 13,450 KW          |
| Beaver Falls                                     | Hydroelectric  | 7,300 KW           |
| Ketchikan Lakes                                  | Hydroelectric  | 4,200 KW           |
| Swan Lake / Revillagigedo Island (State-Owned)   | Hydroelectric  | 22,500 KW          |
| Totem Bight / Ketchikan                          | Diesel         | 2,000 KW           |

## Existing Electrical Transmission and Generation Facilities

| Project Name / Location                          | Fuel Type     | Installed Capacity |
|--------------------------------------------------|---------------|--------------------|
| <b>Metlakatla Power &amp; Light</b>              |               |                    |
| Purple Lake                                      | Hydroelectric | 3,900 KW           |
| Centennial                                       | Diesel        | 3,300 KW           |
| Chester Lake                                     | Hydroelectric | 1,000 KW           |
| <b>Petersburg Municipal Power &amp; Light</b>    |               |                    |
| Blind Slough                                     | Hydroelectric | 2,200 KW           |
| Petersburg Generation Plant                      | Diesel        | 7,650 KW           |
| Tyee (State Owned)                               | Hydroelectric | 20,000 KW          |
| <b>City and Borough of Sitka</b>                 |               |                    |
| Blue Lake                                        | Hydroelectric | 6,000 KW           |
| Green Lake                                       | Hydroelectric | 18,000 KW          |
| Indian River                                     | Diesel        | 7,500 KW           |
| <b>Thorne Bay</b>                                |               |                    |
| Thorne Bay Plant                                 | Diesel        | 1,235 kW           |
| <b>Tlingit-Haida Regional Electric Authority</b> |               |                    |
| 5 Small Plants (17 units)                        | Diesel        | 6,067 kW           |
| <b>Wrangell Electric Department</b>              |               |                    |
| Wrangell Municipal Plant                         | Diesel        | 8,350 kW           |



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**Status of New Facilities  
Development**

## Section 6

# Status of New Facilities Development

### 6.1

#### New Intertie Segments Development

##### 6.1.1

##### Tyee-Swan Intertie

The planned 57-mile-long 138-Kv Tyee-Swan Intertie is a key element in the proposed interconnected electric transmission SYSTEM. KPU's system is connected electrically to the Swan Lake project. Wrangell and Petersburg are connected to the Lake Tyee project. We include the proposed Tyee-Swan Intertie in Phase I of the SYSTEM Plan. The line will intertie the electrical systems of KPU, PMP&L, and WML&P, thereby increasing reliability and operating efficiency for all three systems. Once the Tyee-Swan Intertie is in place, a grid leg connecting Metlakatla will be feasible.

In 1994, KPU received a grant from the State of Alaska to hire consultants to design the transmission line and prepare the EIS for the Forest Service, August 1997 *Swan Lake-Lake Tyee Intertie Final Environmental Impact Statement Summary* (Swan-Tyee EIS). The USDA Forest Service issued its decision on the proposed Intertie in August 1997 *Swan Lake-Lake Tyee Intertie Record of Decision* (Swan-Tyee ROD). Formal bids were solicited during November - December 1997; and \$76 million in State and Federal funds has been obligated to construct the Tyee-Swan Intertie.

##### 6.1.2

##### Upper Lynn Canal Intertie

Alaska Power & Telephone Co. (AP&T) plans to construct a 14-mile 33 KV submarine cable transmission interconnection between Skagway and Haines Light & Power (HLP) to provide energy from the new Goat Lake Hydroelectric Project to both locations during 1988. AP&T estimated cost for the intertie is \$5,400,000/1997\$. Annual operating expense for the connection is expected to be \$15,000. AP&T also proposes to construct a 20 mile overhead and underground line between Haines and Klukwan at an estimated cost of \$1,600,000/1996\$. Annual O&M expense is expected to be \$10,000. (*Upper Lynn Canal Regional Power Supply Review*, April 1997). These proposed intertie segments are included in Phase IV of the SYSTEM Plan as existing infrastructure.

##### 6.1.3

##### Interties on Prince of Wales Island

AP&T is developing transmission lines to deliver energy from AP&T's Black Bear Lake Hydropower Plant to several communities on Prince of Wales Island. (Correspondence from Bob Grimm, AP&T, to Randy Cornelius, Sitka, June 20, 1997). These proposed intertie segments are included in Phase V of the SYSTEM Plan as existing infrastructure.

## Status of New Facilities Development

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### 6.2

#### Current Status of New Generation Facility Development

New hydropower generation currently being investigated by utilities in Skagway, Ketchikan, and Metlakatla are designed to serve specific remote load centers and is not included in the proposed SYSTEM Plan. We note that a number of communities, including Ketchikan and Sitka, are also planning to install additional diesel generation facilities to meet expected shortfall in the near future. We identified the following active hydropower project proposals.

#### 6.2.1

##### Goat Lake

The Alaska Power & Telephone Co. has received a FERC license and other necessary approvals for the 4.0 MW Goat Lake Project. The project is currently under construction and the expected on-line date is 1998. AP&T is constructing a submarine cable to connect Haines to Skagway which will allow full utilization of the project output.

#### 6.2.2

##### Mahoney Lake

The Cape Fox Corporation (Cape Fox), permittee for the proposed Mahoney Lake Hydroelectric Project, submitted a draft license application to the FERC in May 1996. That application is currently under evaluation by the FERC. The proposed 9.6 MW run-of-river Mahoney Lake Hydroelectric Project site is located approximately 5 miles northeast of Ketchikan. KPU and Cape Fox are currently discussing development options that might be beneficial to both parties.

#### 6.2.3

##### Ketchikan Small Hydro Additions

KPU is investigating the potential to install hydropower generation at three existing dams located in close proximity to Ketchikan: Lake Whitman (2.7 MW), Carlanna Lake (0.5 MW), and Lake Connell (1.7 MW); and potential upgrades to its Beaver Falls and Ketchikan Lakes hydropower projects. A preliminary review of these potential future additions is discussed in the *KPU Power Supply Planning Study*, December 20, 1996.

#### 6.2.4

##### Metlakatla Small Hydro Upgrades/Additions

In March 1997, MP&L issued a report, *Energy Generation Feasibility Study Report*, regarding the quantity of energy available from MP&L's system to export to KPU on a monthly basis. MP&L is currently pursuing proposed improvements at its existing hydropower projects, which are not jurisdictional to the FERC. MP&L will add a 3 MW Pelton-type turbine and generator to augment the existing 1.0 MW unit at its Chester Lake Project; construct a tunnel between Edgecombe and Chester Lakes and new 2800-foot-long 24-inch penstock; and related revisions. At Tamgas Lake MP&L will add a 550 KW Francis-type turbine and generator; modify the existing rock-fill dam to raise lake elevation 10 feet; and will include related revisions. MP&L also proposes to construct a new project at Triangle Lake (commence construction June 2000; complete June 2002) including a new dam, penstock, powerhouse with one 4 MW machine or two 2.0 MW machines, and a tie line.

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**Action Plan**

## **Section 7**

# **Action Plan**

Communities in Southeast Alaska strongly support development of an integrated electrical system. Copies of Resolutions adopted in participant communities are included in Appendix A; copies of appendices are available from the Southeast Conference. Participants' expectations expressed during interviews include:

- ▶ identify appropriate sequencing for development - present basic assumptions regarding timing;
- ▶ determine the optimum electric grid to interconnect major load centers in Southeast Alaska, reduce need for redundant diesel generation, and enhance reliability; and
- ▶ determine optimum locations for new hydro generation to provide for future needs for the collective communities.

### **7.1**

#### **Proposed Phasing of Development**

We present this proposed SYSTEM Plan in five phases based on assumptions regarding projected load growth and engineering feasibility:

##### **Phase I 1995 - 2010**

Construct interties connecting Swan Lake and Tyee Lake hydroelectric projects to Ketchikan Public Utilities' (KPU's) electrical system; and construct an intertie connecting Metlakatla Power & Light to KPU's electrical system.

##### **Phase II 2011 - 2015**

Construct interties connecting Sitka and Kake to Petersburg, Ketchikan and Metlakatla.

##### **Phase III 2016 - 2020**

Construct interties connecting Angoon, Tenakee Springs, Hoonah, Green's Creek and Juneau to Sitka, Kake, Petersburg, Ketchikan and Metlakatla (North-South Grid). Construct Lake Dorothy and Swan Lake hydropower projects.

##### **Phase IV 2021 - 2025**

Construct interties connecting Skagway, Haines, and Kensington to North-South Grid. Construct Takatz Lake Hydropower Project.

##### **Phase V 2026 - 2030**

Construct intertie connecting Prince of Wales Island to North-South Grid. Construct Scenery Lake Hydropower Project.



Figure 1, Southeast Alaska Utilities ELECTRICAL INTERTIE SYSTEM PLAN, presents a map of Southeast Alaska with a schematic diagram superimposed to depict load centers, existing and proposed new interties, and existing and proposed new hydroelectric generation facilities. Figure 2, Southeast Alaska Utilities ELECTRICAL INTERTIE SYSTEM PLAN: LOADS AND RESOURCES presents a schematic diagram showing phasing of new generation as loads grow and the transmission intertie SYSTEM is constructed.

### 7.2

#### Regional Electrical Interties

Existing transmission facilities in Southeast Alaska were constructed to deliver power from generation to specific load centers. Due to remote islands and rough terrain, electrical utilities in Southeast Alaska currently operate their systems to deliver power to local customers and do not have opportunity to import power from other systems to meet customer needs. The line segments proposed in this SYSTEM Plan are designed to provide equal opportunities for all participating systems to access hydropower generation, thereby lowering power costs in communities currently dependent solely on diesel generation and also providing enhanced reliability of service throughout the region. The integrated electrical SYSTEM will also reduce the level of backup power currently maintained in communities and enhance the opportunity to develop cost-effective and environmentally preferred regional hydropower generation facilities as opposed to proliferation of additional diesel generation and development of numerous dispersed smaller hydropower sites.

#### 7.2.1

##### Proposed Intertie Segments and Estimated Cost

The primary source of information regarding proposed intertie segments was the 1987 *Southeast Alaska Transmission Intertie Study* (1987 Intertie Study) prepared by Harza for the Alaska Energy Authority. The 1987 Intertie Study presented recommended configurations based on the fundamental objective of sharing then surplus hydro generation at the Snettisham and Lake Tye projects with hydro-deficient supply centers, recognizing technical constraints and practical limitations imposed by terrain and construction costs. Surplus hydro generation at Lake Tye is expected to be fully utilized as a result of constructing the intertie with Ketchikan during Phase I. Snettisham is close to full energy utilization. During critical water years, such as 1997, it was necessary to run AELP diesels to cover hydro energy deficits. For average water years there could be as much as 60 million KWH of surplus energy during the summer and early fall months.

A brief discussion of each of the transmission intertie phases as shown on Figure 1 follows. Table 7.1 presents estimated costs, based on existing reports and escalated to 1996 dollars, for the proposed five phased development. Sources of estimated costs are identified below.

## Action Plan

**Table 7.1**  
Proposed Sequencing and  
Cost Estimates for  
Southeast Alaska  
Transmission Grid  
Segments

| In-Service<br>Date   | Phase New Line Segments                                                                                                                                                                                                                                                                                                                                                     | Load Centers                                                                                                                   |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| 2001                 | <b>PHASE I: Swan Lake - Lake Tyee</b> (KPU, <i>Initial Draft Power Supply Planning Study</i> , 1996)<br>57 mi 138-KV line connects Swan-Tyee hydros<br>Status: Final EIS/ USFS Record of Decision issued 8/97.<br>Construction bids to be requested in late 1997.<br>Estimated cost: \$69,772,000/1996\$                                                                    | Petersburg, Wrangell & Ketchikan                                                                                               |
| 2002                 | <b>PHASE I: Ketchikan - Metlakatla</b> (Alaska Power Authority, <i>Southeast Alaska Transmission Intertie Study</i> , 1987)<br>15 mi 34.5 KV line (14 mi OH / 1 mi submarine) Connect KPU's Mountain Point Sub / Race Point, MP&L.<br>Status: Final documents to be prepared once Swan-Tyee line is under construction.<br>Estimated cost: \$8,785,000/1996\$*              | Petersburg, Wrangell, Ketchikan & Metlakatla                                                                                   |
| 2002                 | <b>PHASE II: Petersburg - Kake - Sitka</b><br><b>II-A - Petersburg - Kake</b> (DCRA, Division of Energy, <i>Kake-Petersburg Intertie Feasibility Study</i> , 1996)<br>46.7 mi 69 KV (44.3 mi OH / 2.4 mi submarine) capable of upgrade to 138 KV.<br>Status: 1996 update to 1987 appraisal level engineering / environmental review.<br>Estimated cost: \$19,734,600/1996\$ | Sitka, Kake, Petersburg, Wrangell, Ketchikan & Metlakatla                                                                      |
| 2008                 | <b>II-B - Kake - Sitka</b> (Alaska Power Authority, <i>Southeast Alaska Transmission Intertie Study</i> , 1987)<br>55.4 mi 138 KV (20.2 mi OH / 35.2 mi DC submarine) cable<br>Status: Reconnaissance engineering / environmental.<br>Estimated cost: \$45,489,000/1996\$*                                                                                                  |                                                                                                                                |
| 2012                 | <b>PHASE III: Sitka - Tenakee Springs/Angoon - Hoonah - Greens Creek - Juneau</b> (Alaska Power Authority, <i>Southeast Alaska Transmission Intertie Study</i> , 1987)<br>148.6 mi 138 KV (120.8 mi OH / 27.8 mi AC submarine)<br>Status: Appraisal level engineering / environmental review.<br>Estimated cost: \$173,788,000/\$1996\$*                                    | Sitka, Angoon, Tenakee Springs, Hoonah, Greens Creek, Juneau to Petersburg, Wrangell, Ketchikan, Metlakatla (North-South Grid) |
| 2020                 | <b>PHASE IV: Juneau - Skagway</b> (Alaska Power Authority, <i>Haines-Skagway Region Feasibility Study</i> , 1981)<br>70.5 mi (6.5 miles 69 KV OH / 64 miles 100 KV DC submarine)<br>Status: Appraisal level engineering / environmental review.<br>Estimated cost: \$79,160,000*                                                                                            | Connects Skagway, Haines, and Kennington, north of Juneau, to North-South Grid                                                 |
| 2025                 | <b>PHASE V: Ketchikan - Prince of Wales Island</b> (Alaska Power Authority, <i>Black Bear Feasibility Report</i> , 1981)<br>19 mi 69 KV or 115 KV (1 mi OH / 18 mi submarine)<br>Status: Appraisal level engineering / environmental review.<br>Estimated Cost: \$ 39,089,000*                                                                                              | Connects Thorne Bay, Kasan, Klawock, Hollis, Craig, and Hydaburg to North-South Grid                                           |
| <b>System Totals</b> | 243.8 mi OH / 148.4 mi submarine<br>392.2 total miles<br>Construction Cost Estimate<br>\$435,817,000/1996                                                                                                                                                                                                                                                                   |                                                                                                                                |

\* Indicates cost prepared using standard cost curves to complete earlier estimates.

## Action Plan

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### 7.2.1.1 Phase I

The Swan-Tyee and KPU-Metlakatla transmission intertie components would interconnect electric systems in Ketchikan, Wrangell, Petersburg, and Metlakatla resulting in the first increment of the Southeast Alaska Electrical Intertie SYSTEM (SYSTEM). This intertie segment is expected to utilize current surplus generation available from Lake Tyee. As shown in Figure 2, the existing generation resources of the respective utilities in an interconnected grid will be adequate to supply the gross annual loads of the system through the year 2010. Therefore, no additional hydroelectric resources are required during this period.

- Lake Tyee-Swan Lake Transmission - 138 KV, 37 miles, to connect the two State-owned hydropower projects. Estimated total cost includes management, engineering, construction management, licensing and permitting, right-of-way costs, a contingency and owners administration; excludes maintenance costs (*Project Estimate Update, Lake Tyee-Swan Lake Intertie, Raytheon Infrastructure Services, Inc., July 25, 1996*).
- Ketchikan-Metlakatla - 34.5 KV, 15 miles, three-phased (14 miles overhead and 1 mile submarine) from KPU's Mountain Point Substation to Race Point on Annette Island. Estimated cost includes management, engineering, construction management, land acquisition, and owners administration; excludes maintenance costs. (Alaska Power Authority, 10/1/87, *Southeast Alaska Transmission Intertie Study*) A 1996 DCRA, Division of Energy, study, *Power Intertie Analysis*, prepared by Jaight and McLaughlin Consulting Engineers, Anchorage, confirmed the proposed route as presented in 1987. No update to estimated cost was provided. (*Rural Alaska Electric Utility Interties, March 1997*).

Preliminary cost estimates for development of intertie segments specified during Phase I are \$69,772,000/1996\$ for the Swan Lake - Lake Tyee Project and \$8,785,000/1996\$ for the Ketchikan Metlakatla intertie. Estimated costs were presented in documents prepared by others and reviewed by the Acres team during the course of this assignment and do not represent an independent assessment.

### 7.2.1.2 Phase II

Kake and Sitka would be connected to the SYSTEM. Again the existing resources match reasonable well the overall loads of the interconnected system, thereby requiring no further hydropower development through the year 2015.

- Petersburg-Kake - 69 KV, 46.7 miles (44.3 miles overhead and 2.4 miles submarine cable), capable of future upgrade to 138 KV. Estimated cost includes construction, engineering, construction management, right-of-way acquisition, permitting, and owners administration. Proposal does not



## Action Plan

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include previously proposed underground sections. A number of studies have been performed for this line segment. In 1996 DCRA, Division of Energy, commissioned an update: *Feasibility Study: Kake-Petersburg Intertie*, prepared by R. W. Beck, that incorporated and updated information presented in earlier reports.

- Kake-Sitka - 138 KV, 55.4 miles (35.2 miles DC submarine cable and 20.2 miles overhead wood pole design). Estimated cost includes management, engineering, construction management, land acquisition, and owners administration; excludes maintenance costs. Most of route follows existing road at anadromous fish stream crossings. (Alaska Power Authority, 10/1/87, *Southeast Alaska Transmission Intertie Study*).

Preliminary cost estimates for development of intertie segments specified during Phase II are \$19,734,600/1996\$ for the Petersburg - Kake Intertie and \$45,489,000/1996\$ for the Kake - Sitka Intertie. Estimated costs were presented in documents prepared by others and reviewed by the Acres team during the course of this assignment and do not represent an independent assessment.

### 7.2.1.3 Phase III

Angoon, Tenakee Springs, Hoonah and Juneau would be connected to the SYSTEM. At this point the load growth for Juneau becomes the major factor in determining the needs of the interconnected system. If mining loads develop during the next few years, Lake Dorothy may be brought on-line before 2015. Further, based on the load growth as projected for Juneau, the system loads can also fully utilize the proposed Swan Lake project within the 2015 - 2020 time frame.

- Sitka-Juneau - 138 KV, 148.6 miles (120.8 miles OH, 27.8 miles submarine AC cable) \$130,775,000/1987\$ This preferred routing would need further study as it was not proposed as part of the system in the APA 1987 *Southeast Alaska Transmission Intertie Study*. Total length of the West Route alternative considered in the 1987 study was 204 miles, including the Juneau-Green's Creek and Sitka-Kake segments. Alternative preferred in 1987 study was the Kake-Snettisham connection. (Alaska Power Authority, 10/87, *Southeast Alaska Transmission Intertie Study*) Descriptions of segments of the preferred routing are discussed below:
- Tenakee Springs-Sitka - 138 KV follows existing logging roads past Sitkoh Lake to Point Lindenburg, crosses Peril Strait via submarine cable, exits at Point Moses on Baranof Island to finally connect with Sitka's transmission system. Routing envisioned would go to Warm Springs and Takatz Lake Hydro crossing to Sitka along a proposed transmission/transportation corridor.

- ▶ Tenakee Springs-Angoon - 138 KV (submarine AC cable) crossing Tenakee Inlet to east of Kadashan Bay along existing logging roads to point NW of head of Sitkoh Bay, remote substation to facilitate 69 KV spur to Angoon.
- ▶ Tenakee Springs-Hoonah - 138 KV 35-mile utility corridor is designated in the Tongass Land Management Plan. The communities are almost connected by logging roads now. (*Rural Alaska Electric Utility Interties, March 1997*)
- ▶ Hoonah-Juneau - 69 KV, 50.4 miles (32.3 miles OH, 18.1 miles submarine cable) to connect Hoonah to Snettisham Hydro Plant (includes connection @ Greens Creek noted below). Estimated cost includes 20% for engineering and overhead plus 25% for contingencies. Feasibility depends upon hookup to Noranda mine. 3 substations, 2 separate segments of submarine cables (6.1 mile and 12 mile) (U.S. Department of Energy, Alaska Power Administration, 12/1/81, *Juneau-Hoonah Transmission Line Reconnaissance Evaluation*)(*Rural Alaska Electric Utility Interties, March 1997*).
- ▶ Juneau - Green's Creek - 69 KV, 29.4 miles (24.2 OH, 5.2 submarine cable) Douglas Island substation to Middle Point - cross Stephens Passage - Youngs Bay near Hawk Inlet on Admiralty Island. USFS recommended buried cable through portion of non-wilderness Admiralty Island National Monument. (Alaska Power Authority, 10/87, *Southeast Alaska Transmission Intertie Study*).

Preliminary cost estimates for development of intertie segments specified during Phase III are \$173,788,000/1996\$ for the Tenakee Springs/Angoon/Hoonah/Greens Creek/Juneau Intertie. Estimated costs were presented in documents prepared by others and reviewed by the Acres team during the course of this assignment and do not represent an independent assessment.

### 7.2.1.4 Phase IV

Skagway and Haines would be connected to the SYSTEM through a 70.5+ mile (64 miles 100 KV DC submarine cable, 6.5+ miles OH 69 KV) line segment from Juneau to Skagway. Estimate based on 1982 Teshmont study excludes escalation during construction but includes 25% contingencies and 15% engineering. (*Rural Alaska Electric Utility Interties, March 1997*) By 2020, either the Takatz Lake project or the Scenery Lake project could be added to the system. Takatz Lake is shown on Figure 2 as a part of Phase IV on the basis of the proposed road interconnection from Warm Springs and the transmission system to Sitka as factors in reducing the environmental effects and cost of development.



## Action Plan

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Preliminary cost estimates for development of intertie segments specified during Phase IV are \$79,160,000/1996\$ for the Juneau - Skagway Intertie. Estimated costs were presented in documents prepared by others and reviewed by the Acres team during the course of this assignment and do not represent an independent assessment.

### 7.2.1.5 Phase V

Communities on Prince of Wales Island would be connected to the SYSTEM. With this addition in 2025, the cumulative load projections of the respective communities indicate that the output of Scenery Lake would be fully utilized in its first year of operation. Connection is assumed to be between Ketchikan and Hollis - 69 or 115 KV, 19 miles (18 miles submarine cable and 1 mile overhead line). (Alaska Power Authority, 10/1/81, *Black Bear Lake Project: Feasibility Report*, Harza).

Preliminary cost estimates for development of intertie segments specified during Phase V are \$39,089,000/1996\$ for the Ketchikan - Prince of Wales Intertie. Estimated costs were presented in documents prepared by others and reviewed by the Acres team during the course of this assignment and do not represent an independent assessment.

### 7.2.2 Review of Existing Reports

The primary source of information used in preparing this Report was the 1987 *Southeast Alaska Transmission Intertie Study* prepared by Harza for the Alaska Energy Authority (1987 Intertie Study). The 1987 Intertie Study presented a comprehensive assessment of a large number of prospective interconnection projects, including route selection and preliminary design of many submarine cable links and overhead lines, and integrated these designs into an overall system expansion plan. The 1987 Intertie Study constitutes an important step towards an integrated system development plan, but the investigations must be expanded and updated to ensure the continued validity of several key conclusions.

Table 7.2 identifies sources of information relied on in preparing this Report and as requested in the RFP identifies the level of investigation and project development accomplished to date.

### 7.3 Regional Generation

Hydro generation is a major element in the existing power supply of the region. However, the water power potential of Southeast Alaska is still largely an undeveloped resource. A report entitled "Water Powers of Southeast Alaska" was prepared in 1947 by the Federal Power Commission (currently known as the Federal Energy Regulatory Commission) and the U.S. Forest Service (FPC/USFS Report) which identified 200 sites for potential hydropower development. A following statement as contained in the Forward

## Action Plan

by the Chairman of the Commission is as true today as it was some 50 years ago:

**Table 7.2**  
**Documents Reviewed -**  
**Potential New Transmission**

| Date         | Report                                                                                                                     | Level of Development      |
|--------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------|
| October 1987 | Alaska Power Authority<br>Southeast Alaska Transmission Intertie Study                                                     | Reconnaissance            |
| August 1997  | USDA Forest Service<br>Swan Lake - Lake Tyee Intertie<br>Final Environmental Impact Assessment<br>Final Record of Decision | Final Route Selection     |
| April 1996   | Alaska Department of Community and Regional Affairs<br>Kake-Petersburg Intertie Feasibility Study                          | Draft Reconnaissance      |
| April 1997   | Alaska Power & Telephone Co.<br>Upper Lynn Canal Regional Power Supply Review                                              | Draft Reconnaissance      |
| March 1997   | Alaska Department of Community and Regional Affairs<br>Rural Alaska Electric Utility Interties                             | Preliminary Design Survey |

*"...There are over 200 potential projects which it is estimated could develop 1,008,370 average horsepower. Of these, 27 range in size from 10,000 to 51,000 average horsepower each, or a total potential of 534,000 average horsepower. In developing a power system many of these projects would logically be interconnected with high voltage transmission. The remaining projects and some of less capacity, but susceptible to automatic control and operation, could be interconnected through the principal stations at lower voltage transmission..."*

Over the intervening years, slow but steady progress has been made in this direction. The current SYSTEM Development Action Plan, then, simply represents a continuation of this process. In more recent times, many of the projects identified in the FPC/USFS Report have either been developed as listed above or have been studied in further detail as summarized in Section 7.3.5 that follows. Of these, project that have been identified as having the highest potential for inclusion into the SYSTEM Development Action Plan include:

- 10 MW proposed 3rd unit at the existing Lake Tyee Project
- 26 MW proposed Lake Dorothy Project, Taku Inlet
- 48.5 MW proposed Swan Lake Project, Thomas Bay
- 20 MW proposed Takatz Lake Project, Baranof Island
- 45 MW proposed Scenery Lake Project, Thomas Bay

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A general description of each of the above listed projects and a discussion of the respective studies performed to-date follows. Table 7.3 presents potential average annual generation.

**Table 7.3**  
**Potential New SYSTEM**  
**Hydroelectric Projects**

| Plant                | Installed Capacity<br>(MW) | Average Annual<br>Generation (MWh) |
|----------------------|----------------------------|------------------------------------|
| Tyee Lake (3rd unit) | 10.0                       | 1,000                              |
| Lake Dorothy         | 26.0                       | 127,000                            |
| Swan Lake            | 48.5                       | 170,000                            |
| Takatz Lake          | 12.0                       | 86,000                             |
| Scenery Lake         | 45.0                       | 150,000                            |
| Total                | 141.5                      | 534,000                            |

### 7.3.1 Potential New Hydropower Projects

#### 7.3.1.1 Third Unit at Tyee Lake

A third unit bay was installed during original construction of the Tyee Lake project in anticipation of future growth in the region. A 10 MW turbine-generator would provide an additional 1,000 Mwh of peaking energy annually; an additional benefit of the third unit is to recover 1,050 Mwh of energy during maintenance on either of the two existing 10 MW units.

The third unit would support future growth in Wrangell and Petersburg, the two communities that have priority rights to power generated at Lake Tyee. With construction of additional interties, energy could be available to Ketchikan, Metlakatla, and Kake.

#### 7.3.1.2 Lake Dorothy

Lake Dorothy is located east of Juneau above Taku Inlet at elevation 2422. Hydroelectric power could potentially be developed at the site by the construction of a lake tap to supply water to an 11 foot diameter, 2¼ mile long tunnel leading to a powerhouse at tidewater containing two 13 MW units. A 4½ mile long submarine cable would be interconnected with the existing 138 KV Snettisham transmission line to provide 26 MW of capacity and 127,000 Mwh of firm and average annual energy to the Juneau area.

The Alaska Electric Light & Power Company (AELP) currently holds a Preliminary Permit from the FERC for study of the site. The Permit was applied for in anticipation of the re-opening of the A. J. Mine in Juneau. Since

the time of the permit application, however, Echo Bay Alaska has dropped plans for proceeding with AJ Mine development. A recent inspection of the Snettisham underwater cable crossing Taku Inlet indicates a redundant set of cables will have to be installed to insure the reliability of Juneau's Snettisham energy supply. The new cables will be sized to have the capacity to carry both Snettisham and Lake Dorothy generation and will substantially reduce Lake Dorothy's construction costs. AELP is also investigating other scenarios for reducing the scope and cost of Lake Dorothy so that it could be sized to serve the proposed Kensington Mine. The Kensington Mine is close to being fully permitted. These additional considerations may require AELP to apply for a subsequent Permit.

### 7.3.1.3 Thomas Bay - Swan Lake

Swan Lake is located approximately 15 miles northeast of Petersburg above Thomas Bay at elevation 1520. Hydroelectric power could potentially be developed at the site by the construction of a lake tap to supply water to a 7 foot diameter, 2½ mile long tunnel leading to a powerhouse at tidewater containing two 24.25 MW units. A combination of overhead transmission and submarine cable would interconnect the project with the grid at Petersburg to provide 46.5 MW of capacity and 170,000 Mwh of firm and average annual energy to the region.

The Swan Lake site was initially proposed in an application for a license to the Federal Power Commission in 1922. The license was issued but later terminated. Subsequently, the US Bureau of Reclamation completed an Interim Report on the potential of the Thomas Bay area dated, June 1965. The hydroelectric project was under consideration to meet the urgent power needs at that time in Petersburg, Wrangell, Kake, Ketchikan and Metlakatla. A geology report on the project had been developed earlier in January 1962.

Petersburg retained R. W. Beck and Associates to analyze electrical power requirements for the City which culminated in a report, "Analysis of Electrical System Requirements", dated March 1974, presenting the site as a potential power resource. Beck also prepared an Appraisal Report for the Thomas Bay Power Commission for review as a resource for the communities of Petersburg and Wrangell. However, the project was later dropped from consideration in favor of the Lake Tyee Project which was subsequently constructed.

Currently, the project's capability far exceeds the needs of the Petersburg / Wrangell area for the foreseeable future and would accordingly be available as a regional resource.



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### **7.3.1.4**

#### **Takatz Lake**

Takatz Lake is located approximately 15 miles directly east of Sitka above Takatz Bay at elevation 920. Hydroelectric power could potentially be developed at the site by the construction of a lake tap to supply water to a 8 foot diameter, 1¼ mile long tunnel leading to a powerhouse at tidewater containing two units. Studies conducted have proposed installations ranging from 12 MW to 20 MW.

Previous studies have consistently identified Takatz Lake as the next hydro project for development by the City and Borough of Sitka. In fact, the US Department of the Interior, Alaska Power Administration/Bureau of Reclamation made a fairly detailed evaluation of the Takatz Lake site in the 1960s, and it was considered a serious alternative to the existing Green Lake Project. Green Lake was ultimately developed due to the relative cost of transmission for the two sites.

Previous evaluations of the Takatz Lake site have included an overhead transmission line for the 25 mile distance between the powerhouse site and the existing Sitka distribution system. The resulting routing involved traversing some extremely rugged terrain, including two mountain passes -- one between the Takatz Lake drainage and the Baranof Lake drainage at about elevation 2100, and one between the upper Baranof drainage and the upper Sawmill Creek drainage at about elevation 2900. The resulting construction cost of this transmission connection is the primary reason why this site remains undeveloped.

Serious consideration is now being given to the construction of a road between the Baranof / Warm Springs area and Sitka as a means to improve ferry service along the Alaska Marine Highway as well as tourism from cruise ships. The proposed road would include a 1 mile long tunnel through the most rugged part of the terrain as referenced above. Clearly, the incremental cost of a transmission line constructed along the right-of-way of the proposed road would be significantly less than previously considered thereby greatly increasing the economic viability of Takatz Lake site for hydropower development.

Currently, the project's capability exceeds the needs of the Sitka area and would accordingly be available as a regional resource. The City anticipates, however, that at some point in time all of the output of the project will be needed within their system.

### **7.3.1.5**

#### **Thomas Bay - Scenery Lake**

Scenery Lake is located approximately 7 miles north of the Swan Lake site as discussed above or 22 miles northeast of Petersburg. It is situated above Thomas Bay at elevation 1,080. Hydroelectric power could potentially be developed at the site by the construction of a lake tap to supply water to a 7



foot diameter, 3½ mile long tunnel leading to a powerhouse at tidewater containing two 22.5 MW units. An overhead transmission line would interconnect the project with the grid at the Swan Lake site to provide 45 MW of capacity and 150,000 MWH of firm and average annual energy to the region. Unlike the other above listed projects, the Scenery Lake site has not been studied in any detail. The only identifiable reason for this lack of interest is that to-date no need for the project has occurred in the surrounding area beyond the potential provided by the Swan Lake site. A description of the features and the potential of the site was included in the FPC/USFS Report which has served as the basis of the data included herein.

### 7.3.1.6

#### Lake Grace Diversion to Swan Lake Hydroelectric Project

Lake Grace is located 28 miles from Ketchikan on the east side of Revillagigedo Island. A Power Project Withdrawal application was filed with the Federal Power Commission on November 21, 1926 but was vacated by the FERC on October 31, 1985. KPU is currently reviewing the long-term feasibility of diverting water from Lake Grace through a tunnel to Swan Lake. Water would be used to increase water storage capacity, thereby increasing generation at Swan Lake. KPU is considering installing a new turbine at Swan Lake.

A major regulatory barrier to developing Lake Grace is its location within the Misty Fjords National Monument in a designated Wilderness Area. Development of Lake Grace would require approval by the President of the United States with concurrence of the U. S. Congress. Language in Section 1105.2 of ANILCA further limits development by requiring that such authorization may be obtained only if "... there is no economically feasible and prudent alternative..."

### 7.3.2

#### Proposed Phasing of New Hydroelectric Projects

Normally, the phasing of hydroelectric projects within a power system grid is based largely on the estimated cost of each respective potential project. By nature, hydroelectric projects are capital cost intensive and are generally very site specific. In the present case, no consistent set of cost estimates are available as a means of comparison for the above identified projects. What is known, however, is the above listed projects have very similar characteristics consisting of lake taps at perched lakes with tunnels of reasonable length leading to powerhouses at tidewater. Therefore, development costs can be expected to be comparable and consistent with others recently developed in the region.

Accordingly, it is appropriate to phase project development on the basis of projected needs for the intertie itself coupled with due consideration to the load growth in the region as a whole. Thus, the intertie is the key factor in the phasing of hydro generation projects. A regional intertie will enable full

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utilization of each project as it would come on-line without the particular needs of the respective nearby communities. Shown on Figure 2 is a potential phasing of the five candidate projects listed above based on meeting the regional loads in step with the development of each component of a regional transmission grid. A brief discussion of each of the transmission intertie phases describing correlation to future hydro power project development follows.

### 7.3.2.1 Phase I

The proposed Phase I transmission intertie component would interconnect Metlakatla with Ketchikan, Wrangell and Petersburg. As shown on Figure 2, the existing resources of the respective utilities in an interconnected grid will be adequate to supply the gross annual loads of the system through the year 2010. Therefore, no additional hydroelectric resources are required during this period.

### 7.3.2.2 Phase II

The proposed Phase II would add Sitka and Kake to the transmission system. Again the existing resources match reasonably well the overall loads of the interconnected system, thereby requiring no further hydropower development through the year 2015.

### 7.3.2.3 Phase III

The proposed Phase III would add Angoon, Tenakee Springs, Hoonah and Juneau to the transmission system. At this point the load growth for Juneau becomes the major factor in determining the needs of the interconnected system. It indeed is possible that Lake Dorothy may have been brought on-line before 2015. Further, based on the load growth as projected for Juneau, the system loads can also fully utilize the Swan Lake project within the 2015 - 2020 time frame.

### 7.3.2.4 Phase IV

The proposed Phase IV would add Skagway and Haines to the transmission system. By 2020, either the Takatz Lake project or the Scenery Lake project could be added to the system. Takatz Lake has been shown on Figure 3.1 as a part of Phase IV on the basis of the proposed road interconnection from Warm Springs and the transmission system to Sitka as factors in reducing the environmental effects and cost of development.

### 7.3.2.5 Phase V

The proposed Phase V would add the communities on Prince of Wales Island to the transmission system. With this addition in 2025, the cumulative load projections of the respective communities indicate that the output of Scenery Lake would be fully utilized in its first year of operation.

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### 7.3.3

#### Review of Existing Reports - Hydropower Projects

Reports relied on in preparing this section are identified in the above narrative sections. Table 7.4 identifies the level of development of each of the relevant reports.

**Table 7.4**  
Documents Reviewed -  
Potential New Hydroelectric  
Projects

| Date    | Report                                                                                                                                                                                   | Level of Development                                                          |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 10/1987 | Alaska Power Authority<br><i>Southeast Alaska Transmission Intertie Study</i>                                                                                                            | Reconnaissance                                                                |
| 8/1997  | USDA Forest Service<br><i>Land and Resource Management Plan, Tongass National Forest</i><br><i>Tongass Land Management Plan Revision</i><br><i>Final Environmental Impact Assessment</i> | Identifies constraints on new development; list projects consistent with plan |
| 12/1996 | Ketchikan Public Utilities<br><i>KPU Power Planning Study</i>                                                                                                                            | Identifies potential projects; Feasibility study underway.                    |
| 3/1997  | Metlakatla Power & Light<br><i>Energy Generation Feasibility Study Report</i>                                                                                                            | Describes proposed upgrades and potential new project. No data provided.      |
| 1947    | Federal Power Commission and Forest Service - U.S.D.A.<br><i>Water Powers - Southeast Alaska</i>                                                                                         | Identifies 200 sites for potential hydropower development                     |
| 1992    | Ketchikan Public Utilities<br><i>Lake Tyee to Swan Lake Transmission Intertie Feasibility Study</i>                                                                                      | Update to existing reports and review of feasibility                          |
| 4/1974  | Electric Utility System - City and Borough of Sitka<br><i>Analysis of Electric System Requirements</i>                                                                                   | Project feasibility investigation                                             |
| 3/1974  | Petersburg Municipal Power & Light<br><i>Analysis of Electrical System Requirements</i>                                                                                                  | Appraisal                                                                     |
| 11/1975 | Thomas Bay Power Commission, Petersburg - Wrangell<br><i>Appraisal Report</i>                                                                                                            | Appraisal                                                                     |
| 1960    | U. S. Department of the Interior<br>Alaska Power Administration/Bureau of Reclamation<br><i>Takatz Creek Project - Alaska</i>                                                            | Detailed evaluation                                                           |
| 10/1985 | Alaska Electric Light and Power Company<br><i>Application for New License - Aniak Creek and Salmon Creek</i>                                                                             | Operating Projects discussion of Alternatives                                 |
| 10/1991 | City and Borough of Sitka, Alaska<br><i>Electric Resource Evaluation and Strategic Plan</i>                                                                                              | Feasibility analysis                                                          |
| 8/1990  | Alaska Electric Light and Power Company<br><i>Juneau 20-Year Power Supply Plan Update</i>                                                                                                | Reconnaissance review                                                         |
| 6/1991  | Alaska Power & Telephone Company<br><i>Application for License - Black Bear Lake Project</i>                                                                                             | Project feasibility and design                                                |

### 7.4

#### Economic and Financial Issues

##### 7.4.1

##### Economic Parameters

Economic parameters and assumptions used in evaluating alternatives presented in the 1987 Study were based on guidelines supplied by the Alaska Power Authority and local utilities. These criteria are generally accepted in performing economic analysis and should be updated and applied in future analyses regarding the proposed Southeast Alaska Electrical Intertie SYSTEM. Annual fixed carrying charges employed in the 1987 Intertie Study are listed on Table 7.5.

**Table 7.5**  
**Annual Fixed Carrying**  
**Charges - Alaska Power**  
**Authority Guidelines**  
**Employed in 1987**  
**Southeast Alaska**  
**Transmission Intertie Study**

|               |     | 20-Year<br>Life | 30-Year<br>Life | 50-Year<br>Life |
|---------------|-----|-----------------|-----------------|-----------------|
| Cost of Money | (%) | 3.50            | 3.50            | 3.50            |
| Amortization  | (%) | 3.54            | 1.94            | 0.76            |
| Insurance     | (%) | 0.25            | 0.20            | 0.20            |
| Total         | (%) | 7.29            | 5.64            | 4.46            |

Criteria include the following:

- Costs are expressed in dollars
- Present Worth Analysis covers a 30-year economic life / transmission
- Planning Horizon/Period of Study is 20 years
- Discount Rates used are as appropriate for participants
- Inflation Rate is the current rate
- Economic Life of Projects
  - Diesel Generators - 20 years
  - Transmission Lines - 30 years
  - Hydroelectric Plant - 50 years

The Economic Analysis presented in the 1987 Study was performed in two steps. The first step, an economic screening, compared the construction cost of each intertie link to the value of the potential displaced diesel fuel. The screening was performed by comparing



the net present worth life cycle costs of the intended transmission link with that of the existing diesel system. The sunk cost of existing hydroelectric developments and transmission and distribution systems were assumed to be the same for all economic cases considered and were excluded from further analysis. Analyses were conducted using Alaska Power Authority criteria for discount rates, energy demand, and fuel costs. The planning horizon for the study spanned 20 years.

An important goal of the 1987 Study was to determine the most practical way to utilize surplus energy available from the Snettisham/Crater Lake and Swan Lake-Lake Tyee hydroelectric projects. Transmission interties between Juneau and Sitka and Lake Tyee and Swan Lake were preferred new transmission segments. Completion of those segments was predicted to use nearly all (96%) of the surplus generation from the two hydro projects by 2006. The Swan Lake-Lake Tyee Intertie is proposed to be developed in Phase I; the intertie between Sitka and Juneau is proposed in Phase III. Power over the intertie will supply near-term Ketchikan, Petersburg, and Wrangell needs; any remaining surplus would be provided to Metlakatla and Kake. Based on predicted load growth in the Juneau area, surplus power cited in the 1987 report at Snettisham/Crater Lake would be fully utilized during Phase II.

### 7.4.2 Electric Load Characteristics and Forecasts

The scope and budget for this assignment did not include a rigorous update to load forecasts to accurately model the load distribution for evaluation of proposed transmission grid legs. All information regarding utility loads and resources is compiled from existing sources of information and included in this SYSTEM Plan as background information supporting the phased development of the SYSTEM. Discussions of predicted future load growth for municipalities and utilities in Southeast Alaska are based on existing documents and interviews with municipalities and utilities. Table 7.6 presents predicted loads.

Reports reviewed in preparing information in this section are identified below.

*Electric Load Forecast for Ketchikan, Metlakatla, Petersburg, and Wrangell, Alaska: 1990 - 2010 - ISER 1990 Forecast*



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**Table 7.6**  
Load Growth Projections for  
Participating Communities  
Average Annual Growth  
Rate

| UTILITY / LOCATION / PHASE           | 1990 | 2000 | 2010 | 2020 |
|--------------------------------------|------|------|------|------|
| KPU / Ketchikan / PHASE I(1)         | 2.0  | 2.0  | 2.0  | 2.0  |
| PMP&L / Petersburg / PHASE I(1)      | 1.3  | 1.3  | 1.6  | 1.6  |
| WMP&L / Wrangell / PHASE I(1)        | 1.3  | 1.3  | 1.6  | 1.6  |
| MP&L / Metlakatla / PHASE I(1)       | 1.7  | 1.7  | 1.5  | 1.5  |
| THREA / Kake / PHASE II(2)           | 1.2  | 1.2  | 1.2  | 1.2  |
| SED / Sitka / PHASE II(3)            | 1.0  | 1.0  | 1.0  | 1.0  |
| AELP / Juneau / PHASE III(4)         | 2.5  | 2.5  | 2.5  | 2.5  |
| THREA / Angoon / PHASE III(2)        | 1.2  | 1.2  | 1.2  | 1.2  |
| THREA / Hoonah / PHASE III(2)        | 1.2  | 1.2  | 1.2  | 1.2  |
| AP&T / Skagway / PHASE IV(5)         | 1.4  | 1.4  | 1.4  | 1.4  |
| AP&T-HLP / Haines / PHASE IV(5)      | 2.0  | 2.0  | 2.0  | 2.0  |
| THREA / Chilkat Valley / PHASE IV(2) | 1.2  | 1.2  | 1.2  | 1.2  |
| COCO / Coffman Cove / PHASE V(7)     | 1.2  | 1.2  | 1.2  | 1.2  |
| AP&T / Craig / PHASE V(6)            | 2.5  | 2.5  | 2.5  | 2.5  |
| AP&T / Hollis / PHASE V(6)           | 2.5  | 2.5  | 2.5  | 2.5  |
| AP&T / Hydaburg / PHASE V(6)         | 2.5  | 2.5  | 2.5  | 2.5  |
| THREA / Klawock / PHASE V(2)         | 1.2  | 1.2  | 1.2  | 1.2  |
| THREA / Kasan / PHASE V(2)           | 1.2  | 1.2  | 1.2  | 1.2  |
| TB / Thorne Bay / PHASE V(7)         | 1.2  | 1.2  | 1.2  | 1.2  |

- (1) Electric Load Forecast for Ketchikan, Metlakatla, Petersburg and Wrangell, AEA/ISER, 1990
- (2) 1997 - 1999 Three-Year Construction Work Plan, THREA, 1996
- (3) 1996 Electric System Load Forecast, SED, 1996
- (4) Juneau 20-Year Power Supply Plan, AELP, 1990
- (5) Upper Lynn Canal Regional Power Supply Review, AP&T, 1997
- (6) Environmental Assessment, Black Bear Hydroelectric Project, FERC, 1992
- (7) Alaska Electric Power Statistics - 1960-1995, DCRA/DE & ASCC, 1996

This report was prepared for the Alaska Energy Authority by the Institute of Social and Economic Research, University of Alaska Anchorage, dated June 25, 1990 (ISER 1990 Forecast). Utility electric energy requirements in these communities were projected to grow at an average annual rate of between - 3 and +4 percent per year between 1990 and 2010 from the 1988 level. Growth rates considered economic effects of the Quartz Hill mine and the Bradfield intertie, but did not include mine loads themselves. The Quartz Hill mine development did not begin operation in 1995 as predicted in the high and medium scenarios, therefore for purposes of this presentation the low growth scenario has been used.

### *Southeast Alaska Transmission Intertie Study - 1987 Study*

The 1987 Southeast Alaska Transmission Intertie Study (1987 Study) presented three load forecasts, high, medium, and low. Load growth during the past 10 years has deviated from the predictions. Planning criteria used to guide the 1987 Study projected the most economic development would include new transmission links between (1) Snettisham and Sitka via Juneau, Green's Creek Mine, Hoonah and Tenakee Springs; (2) Petersburg, Wrangell and Ketchikan via a Tye Lake-Swan Lake intertie; and (3) the Quartz Hill Mine and B.C. Hydro at Kitsault, British Columbia. Total estimated construction cost of these three interconnections was projected to be \$153 million at the January 1987 price level.

#### 7.4.2.1

##### Alaska Electric Light and Power Company

AELP a private utility, serves the City and Borough of Juneau (CBJ). The most recent information regarding AELP's system and projected future scenarios is presented in the *1990 Juneau 20-Year Power Supply Plan Update* (1990 Juneau Plan). Existing resources in 1990 totalled 152 MW. Primary sources of power are small hydroelectric projects owned and operated by AELP and the federal Snettisham/Crater Lake hydroelectric projects. Legislation was enacted to transfer Snettisham/Crater Lake to the State of Alaska; transfer proceedings are continuing as of October 1997. AELP operates and maintains Snettisham/Crater Lake. Snettisham is close to full energy utilization. During critical water years, such as 1997, it was necessary to run AELP diesels to cover hydro energy deficits. For average water years there could be as much as 60 million KWH of surplus energy during the summer and early fall months.

The Kensington Mine's annual energy requirement is 68,400,000 KWH (pg. 2-26 Environmental Impact Statement dated August

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1997). The annual energy requirement for the Jualin Mine is unknown.

The 1990 Juneau Plan identified demand side management (DSM) as having the greatest potential to reduce need for new capital investment in generation. Results of implementing DSM measures to date have been mixed. Projections in the 1990 Juneau Plan, including a projected 2.0% load growth rate over the period 1998 - 2018 were employed in preparing this SYSTEM Plan. However, if the state oil revenues continue to decline and potential mining activity does not materialize, AELP may not need future sources of generation.

### 7.4.2.2

#### Alaska Power & Telephone Co.

Alaska Power & Telephone Co. (AP&T) currently provides energy to the following communities of Craig, Klawock, Hollis, Hydaburg, Coffman Cove, and Whale Pass, on Prince of Wales Island; and the communities of Haines and Skagway in the Upper Lynn Canal Region. AP&T recently acquired Haines Light & Power (HLP). AP&T has developed future plans to serve Thorne Bay and Naukati on Prince of Wales Island and Klukwan and Chilkat Valley in the Upper Lynn Canal Region. Detailed information on AP&T's system was not made available to Acres.

### 7.4.2.3

#### City of Kake

The City of Kake is located on the northwestern tip of Kupreanof Island in Southeast Alaska. Electric service is currently provided to the 700 residents by the Tlingit-Haida Regional Electrical Authority (THREA) using 2,230 KW of installed diesel generation. THREA's electrical system is isolated from other communities and alternative sources of supply. Peak demand in 1994 was 1,020 KW and total energy generation was 4,248 MWH. Ratepayers in Kake pay the highest rate for electric service identified in this study. The proposed SYSTEM interconnections would significantly reduce power costs and would be expected to enhance potential for future economic development and related load growth.

### 7.4.2.4

#### City of Ketchikan - Ketchikan Public Utilities (KPU)

Ketchikan, located on Revilligedo Island, is Alaska's fourth largest city. Electric power is generated by hydroelectric plants at Swan Lake, Ketchikan Lakes and Lake Silvis/Beaver Falls with occasional back-up provided by the Bailey diesel plant. Ketchikan has experienced significant growth in electrical demand over the past decade. Residential use per KPU customer increased at an average annual rate of .4% between 1969 and 1987. Commercial use increased at a higher rate.

In recent years KPU has not been able to meet demand with hydroelectricity and has been forced to rely on the more expensive and less dependable power provided by aging diesel plant and surplus power from the Ketchikan Pulp Company (KPC). In October 1996, KPC announced that it would close its pulp mill and related electric generating facility in March 1997. (Initial Draft Power Supply Planning Study - Foreword) Loss of the pulp mill will affect 465 employees and eliminate a power source; if KPC continues to operate its sawmill about 150 jobs would be retained and a new electric load would occur.

### 7.4.2.5

#### Metlakatla Power & Light

Metlakatla is located on Annette Island approximately 15 miles southwest of Ketchikan within the Annette Islands Indian Reservation. Metlakatla's economy is fairly stable and is primarily supported by timber and fishing industries. Royalty payments for timber harvest through 1987 were \$5 million; an additional \$3 million is projected if the entire resource is harvested. Fisheries activities provide approximately 93 jobs. A community-owned sawmill operated by KPC under a long term lease provides 110 full-time, year-round jobs, and an additional 30 jobs are associated with longshoring activities. KPC has recently opened a second sawmill at Ward Cove near Ketchikan. The KPC-Annette Island sawmill lease ends in 2004. The sawmill consumes about 6,000 MWH/year (1989 data), or about 40% of Metlakatla's total sales. MP&L's hydroelectric plant cannot respond quickly enough to the second-by-second fluctuation and resulting load variation. MP&L is forced to run a 3,500 KW diesel generator loaded to 1,000 KW in order to respond to the sawmill load and maintain system reliability. Residential electricity use averages 17,250 KWH due to use of electricity for space and water heating and poorly insulated homes.

### 7.4.2.6

#### City of Petersburg - Petersburg Municipal Power & Light (PMP&L)

Petersburg Municipal Power & Light (PMP&L) serves approximately 1,860 consumers within the city limits and Mitkof Island. POWER Engineers, Inc. prepared a draft 20-Year Plan to define additions and modifications for PMP&L's system in April 1997. PMP&L has three sources of generation: Tyee Hydro Project, Crystal Lake Hydro Project, and downtown Diesel Plant. Crystal is base loaded with the remaining generation provided by Tyee; backup power is provided by the Downtown Diesel Plant.

Petersburg has historically relied on the ocean fishery and logging for its economic activity. Petersburg's system peaks in summer from fish plants' demands, but are starting to level out between winter and



summer. PMP&L energy requirements in 1995 were 37,400 MWH and peak demand was 9.2 MW. Current peak load for the PMP&L system is approximately 8.7 MW and available backup capability is 7.2 MW. Total PMP&L load growth has averaged 4.7% per year between 1984 and 1995. Petersburg states that it is preparing a new load forecast. Load curtailment occurs during peak demand hours if the Tyee source is lost. Tyee power is delivered to Petersburg at the 69-25 KV Petersburg Substation owned by the State of Alaska and operated by Thomas Bay Authority. PMP&L's 20 Year Plan evaluates five diesel scenarios for added generation on Mitkof Island.

### 7.4.2.7

City and Borough of  
Sitka - Sitka Electric  
Department

The Sitka Electric Department (SED) serves consumers on Baranof Island and Japonski Island. Past and projected future rate of population growth is 0.5% and employment growth is 0.55%. Major industries include: fish processing currently growing at an annual rate of 1.3 %; and tourism projected to increase at 5.0 % through 2001 and 2.5 % thereafter. The APC pulp mill, once a major source of employment, is no longer in operation. Plant closure and site redevelopment are expected to occur. The former APC site is attractive for commercial or industrial development as it enjoys direct access to open water and municipal utility infrastructure is in place.

In the medium ISER forecast, power requirements in Sitka are assumed to remain at the current level through 2000 and increase at 0.55 per year through 2010. Future energy system losses are assumed to equal 7%. System peak demand levels are based on assumed future system annual load factor of 56.6%. System peak demand is projected to increase to 23.8 MW in 2010. Electric rates are projected at the current level through 2000 and to increase at a 3.0% rate of inflation through 2010. The percentage of all-electric homes is projected to increase at a 40% rate in the medium scenario. Thompson Harbor facility is projected to double in size and fill up by 2003. Sitka is currently proposing to add a new diesel generation station this year.

### 7.4.2.8

Tlingit-Haida Regional  
Electric Authority

The THREA is a generation and distribution electric utility incorporated in 1977 to provide electric generation and distribution service to five Tlingit and Haida villages located in Southeast Alaska: Angoon, Hoonah, Kake, Kasaan, and Klawock, located on islands in the Alexander Archipelago. Chilkat Valley, THREA's sixth village, was added in 1994. A seventh village, Klukwan, part of the original study in 1976, has elected to join THREA.



Load growth is attributed to one-time events such as new housing and adding new communities to the system. Predicting new load growth has always been difficult. THREA serves no large power (1,000 KW or larger) loads. Village economies are primarily dependent on timber, fishing, government and service industries. Villages receive assistance through the Power Cost Equalization (PCE) program and are concerned that the State of Alaska address the potential demise of PCE in 1999. The timber industry has been most responsible for economic growth in the communities over the past ten years. Village and regional corporations will soon exhaust their private timber reserves and there is grave concern among community leaders that this will result in a loss of jobs. The fishing industry is cyclical with prices fluctuating considerable during the fishing season. It is difficult to justify the economics of a fish processing plant in rural village communities where energy costs are higher than other locations in Southeast Alaska.

Construction of the planned 8-mile intertie from Chilkat to Haines will allow THREA to access lower cost power from AP&T's Goat Lake Project for the Chilkat Valley and Klukwan. Southern Energy, an independent power producer, has started construction of a 500 KW run-of-river hydro plant with the goal of serving property owned by Southern Energy and selling excess power to THREA and HLP.

### 7.4.2.9

#### Wrangell Municipal Light & Power

Wrangell Municipal Light & Power (WML&P) is dependent on fishing and tourism for much of its economic base. Wrangell also benefits from a sawmill and is enjoying a new life as a staging area for mining activity just across the Canadian border, largely as a demand for airport and logistical services. Wrangell's recent loads were not significantly different than forecasted in the 1990 ISER Base Case.

### 7.5

#### Environmental and Regulatory Procedures

The environmental and regulatory review and related issuance of approvals in the form of licenses and permits often requires a long lead time in order to commence with construction and complete facilities on a timely and cost-effective basis. Issuance of a federal license or permit triggers environmental review requirements under a number of statutes, including the National Environmental Policy Act. Facilities envisioned in this SYSTEM Plan involve actions that will require federal licenses and permits including:

- permits to cross navigable waterways and wetlands, or to allow dredge and fill activities;

- preparation of a Special Use Authorization to occupy Tongass National Forest lands; and
- Hydropower projects and primary transmission lines jurisdictional under the Federal Power Act are required to be licensed by the Federal Energy Regulatory Commission (FERC).

Based on prior experience, time periods to complete regulatory approvals involving NEPA review are:

- Hydropower licenses for major unconstructed projects: 5 - 12 years; and
- Approvals for transmission line segments located on federal lands: 2 - 5 years.

### 7.5.1

#### Reconnaissance Level Review - "Fatal Flaw Analysis"

A "fatal flaw" environmental assessment for each of the selected line segment is typically performed concurrently with engineering feasibility investigations to determine whether an environmental issue of significant magnitude would preclude construction and operation of a line segment, even though reasonable mitigation measures could be implemented. Tasks involved in this assessment include:

- Reconnaissance review of the proposed project area to identify any critical habitat for aquatic and terrestrial species; fish and wildlife populations; navigable waterways; wetlands; listed cultural, archaeological, or historic properties; recreational use areas; and scenic vistas.
- Literature search to identify any resources and areas that will require significant enhancement or mitigation measures.
- Review of licensing, permitting and other approvals that will be required to design, construct, and operate facilities.
- Preliminary consultations with federal and state resource management agencies with authority over use and occupancy of lands, waters, and resources in the proposed project area.

### 7.5.2

#### Formal Licensing and Permitting Requirements

Once project feasibility is confirmed, the formal permitting and licensing procedures are accomplished. These include:

## Action Plan

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- formal consultations with state, federal, and local agencies and other governmental authorities; non-governmental organizations; and other interested parties;
- environmental data gathering and studies;
- applications for approval by regulatory authorities; and
- environmental protection and enhancement plans.

The Swan Lake - Lake Tyee Intertie development process provides insight into the potential environmental investigations that will be required to receive permits and other regulatory approvals in order to construct additional segments of an interconnected SYSTEM. The environmental and regulatory review follow in tandem with route selection and engineering feasibility and design. The recent FERC licensing of the proposed Goat Lake Project provides insight into environmental, engineering, and economic/financial investigations associated with applying for and receiving a FERC license.

Typical licensing and permitting requirements for transmission lines (T) and hydropower facilities (H) are listed in the Table 7.7.

**Table 7.7**  
Typical Licensing and Permitting Requirements for Transmission Lines and Hydropower Projects

Column "T" identifies transmission requirements; Column "H" identifies hydropower facilities requirements.

| T | H | PERMITS AND APPROVALS                                                                                                                                                                                                               |
|---|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X |   | Corps of Engineers Individual Section 10 Permit for each crossing of navigable waters                                                                                                                                               |
| X | X | Corps of Engineers Section 404 Permit where facilities affect wetlands or involve dredge and fill                                                                                                                                   |
| X | X | USFS Special Use Permit to construct and operate facilities on National Forest lands                                                                                                                                                |
|   | X | FERC License to construct and operate hydropower facilities jurisdictional under the Federal Power Act                                                                                                                              |
| X | X | Alaska Coastal Management Program Certificate of Consistency issued by Division of Governmental Coordination                                                                                                                        |
| X | X | Certification that proposed facilities can be constructed and operated in compliance with State Water Quality Standards and the Federal Clean Water Act (401 Certificate) issued by Alaska Department of Environmental Conservation |
| X | X | Spill Prevention Containment and Counter Measure (SPCC) Design/Plan required by EPA to comply with the Federal Clean Water Act                                                                                                      |
| X | X | Local government building permits and zoning requirements                                                                                                                                                                           |
| X | X | Lease agreements with Native Corporations to cross corporation lands                                                                                                                                                                |

## 7.5.3 Environmental Protection, Enhancement, and Mitigation Requirements

A significant element of the environmental approval process is determining environmental protection measures and enhancements, and any potential environmental mitigation measures, that may be required and assessing their effects on project feasibility. These requirements may significantly affect project costs during construction and through the life of the project. Under current federal law, a number of federal agencies and state agencies with delegated authority from federal statutes may prescribe mandatory terms and conditions. State and federal agencies can also impose terms and conditions through issuance of permits. Local jurisdictions may require certain measures through zoning and other local requirements. Table 7.8 presents typical environmental requirements associated with transmission and hydroelectric projects.



## Action Plan

**Table 7.8**  
Typical Environmental  
Protection, Enhancement  
and Mitigation  
Requirements Transmission  
Line Segments and  
Hydropower Projects

Typical environmental protection, enhancement, and mitigation are listed in Table 7.8. Column "T" identifies transmission requirements; Column "H" identifies hydropower facilities requirements.

| T | H | ENVIRONMENTAL PROTECTION, ENHANCEMENT<br>& MITIGATION MEASURES                                                                                                                                             |
|---|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | X | Water quality monitoring                                                                                                                                                                                   |
| X | X | Fish and wildlife<br>Scheduling construction activities to avoid adverse impacts<br>Habitat protection and enhancement<br>Avoid direct effects on anadromous fish streams                                  |
| X | X | Soil and erosion control measures                                                                                                                                                                          |
| X | X | Measures to avoid adverse project-related effects on threatened and endangered species                                                                                                                     |
| X |   | Raptor protection measures                                                                                                                                                                                 |
| X | X | Cultural, Historic, and Archaeologic Resources<br>Surveys<br>Avoid adverse impacts<br>Management plans where eligible or listed resources are present                                                      |
| X | X | Scenic and Aesthetic Resource Protection<br>Avoid areas of primary concern<br>Revegetation and landscaping<br>Treatment of facilities                                                                      |
| X | X | Recreational Resources<br>Surveys<br>Avoid areas of primary concern<br>Develop, operate, and maintain new facilities                                                                                       |
| X | X | Assess project-related effects on local services and facilities - schools, hospitals, police, etc., during construction and operation<br>May require payment for services or development of new facilities |

### 7.5.4

#### Review of Existing Reports - Environmental and Regulatory Procedures

We reviewed a number of reports and interviewed utilities, state government officials, and consultants to identify sources of available information regarding proposed transmission line segments and hydroelectric projects in Southeast Alaska. Reports relied on in preparing this report include the following:

- Alaska Power Authority, *Southeast Alaska Transmission Interline Study*, October 1997;
- Department of Community and Regional Affairs, Division of Energy, *Kake-Petersburg Interline Feasibility Study*, January 1996;



- *USDA Forest Service, Land and Resource Management Plan, Tongass National Forest, 1997;*
- *USDA Forest Service, Swan Lake - Lake Tye Intertie, Final Environmental Impact Statement Summary, August 1997;*
- *USDA Forest Service, Swan Lake - Lake Tye Intertie, Record of Decision, August 1997; and*
- *USDA Forest Service, Tongass Land Management Plan Revision, Final Environmental Impact Statement, January 1997.*

**Table 7.1, Level of Assessment for Proposed Transmission Segments,** lists primary environmental issues identified and states the existing level of review performed to date. Table 7.9 presents for each phase, the level of investigation performed on the proposed transmission segments and hydroelectric projects. A complete list of reports reviewed is included in Appendix B and is available from the Southeast Conference.

**Table 7.9**  
Level of Investigation  
Performed as of November  
1997 Proposed  
Transmission Segments  
and Hydroelectric Projects

| Phase | Proposed<br>Intertie Segments &<br>Hydro Projects | Status<br>Environmental Review<br>Approvals            |
|-------|---------------------------------------------------|--------------------------------------------------------|
| I     | Swan Lake - Lake Tye Intertie                     | EIS and USFS Record of Decision<br>Issued - 8/97       |
|       | Ketchikan - Metlakatla Intertie                   | Reconnaissance level - 1987                            |
| II    | Petersburg - Kake Intertie                        | "Fatal flaw" review - 1996                             |
|       | Kake - Sitka Intertie                             | Reconnaissance level - 1987                            |
| III   | Juneau - Sitka Intertie                           | Appraisal level - 1987                                 |
|       | Lake Dorothy Hydro Project                        | FERC Preliminary Permit -<br>Preliminary review - 1996 |
|       | Swan Lake Hydro Project                           | Appraisal level - 1965                                 |
| IV    | Juneau - Skagway Intertie                         | Reconnaissance level - 1987                            |
|       | Takatz Lake Hydro Project                         | Reconnaissance level - 1965                            |
| V     | Ketchikan - Prince of Wales                       | Reconnaissance level - 1987                            |
|       | Scenery Lake Hydro Project                        | Appraisal level - 1965                                 |

### 7.6

#### Recommendations

The general evolution of analyses presented in the 1987 Intertie Study is entirely appropriate for the purpose of progressively narrowing down the options to find the optimal development sequence. However, we identified a number of specific concerns that should be questioned in further analyses, and identified the need to elaborate on some of the cost functions used in the comparison of proposed line segments. The main issue in developing an integrated electrical system is optimal timing of transmission extensions, and ultimately the timing of future generation additions. Specific concerns identified include:

- ▶ suitability of assumed generation dispatch assumptions;
- ▶ appropriateness of adopted reserve margins;
- ▶ improved reliability of supply could not be quantified based on the 1987 analysis; and
- ▶ stated "Benefit-Cost" ratios are really the ratio between the Net Present Value of the cost of the Base Case Diesel development and the Net Present Value of the costs of the subject expansion plan.

General recommendations include:

- ▶ update relevant study results to a consistent basis;
- ▶ prepare a least-cost planning analysis; and
- ▶ evaluate cost-effective demand-side management programs options on a sub-regional basis.

Due to the passage of time since the release of the 1987 Intertie Study, we identified a range of concerns regarding the study findings:

- ▶ different base year;
- ▶ different base loads and growth rates, and later terminal year leads to changes in forecast of replaceable diesel consumption at each community, and more demanding load conditions for designed transmission elements;
- ▶ different diesel fuel price projections
- ▶ different transmission and substation costs;
- ▶ different system losses due to different system load conditions; and
- ▶ recent commitments to selected grid extensions.

Recommended investigations and analyses to complete this SYSTEM Plan include:

- ▶ update information available and relied on in preparing this Report as noted above;

## Action Plan

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- ▶ review basic designs for transmission lines and substations presented in existing reports for adequacy. Develop a level of detail adequate to provide a stronger foundation for developing refined cost estimates;
- ▶ develop generic designs for stand-alone diesel generation supply stations and for backup generating stations. Use stand-alone stations in refined Base-Case development plan; assume standby installation as grid is extended to each community;
- ▶ conduct a "fatal flaw" environmental assessment for each of the selected line segments concurrent with engineering feasibility investigations to determine whether an environmental issue of significant magnitude would preclude construction and operation of a line segment, even though reasonable mitigation measures could be implemented;
- ▶ update economic parameters and assumptions used in evaluating alternatives presented in the 1987 Study and apply in future analyses regarding the proposed Southeast Alaska Electrical Intertie SYSTEM.;
- ▶ prepare revised load forecasts for participating systems recognizing phased development identified in this SYSTEM Plan. Identify potential new large loads and determine each potential new large load's energy plan with regard to self-generation and interconnection with local utility to provide backup. Identify conservation program actions to be implemented by potential new large loads.
- ▶ investigate economies of scale available through multiple use corridors:
  - electricity transmission
  - communications and fibre optics
  - transportation

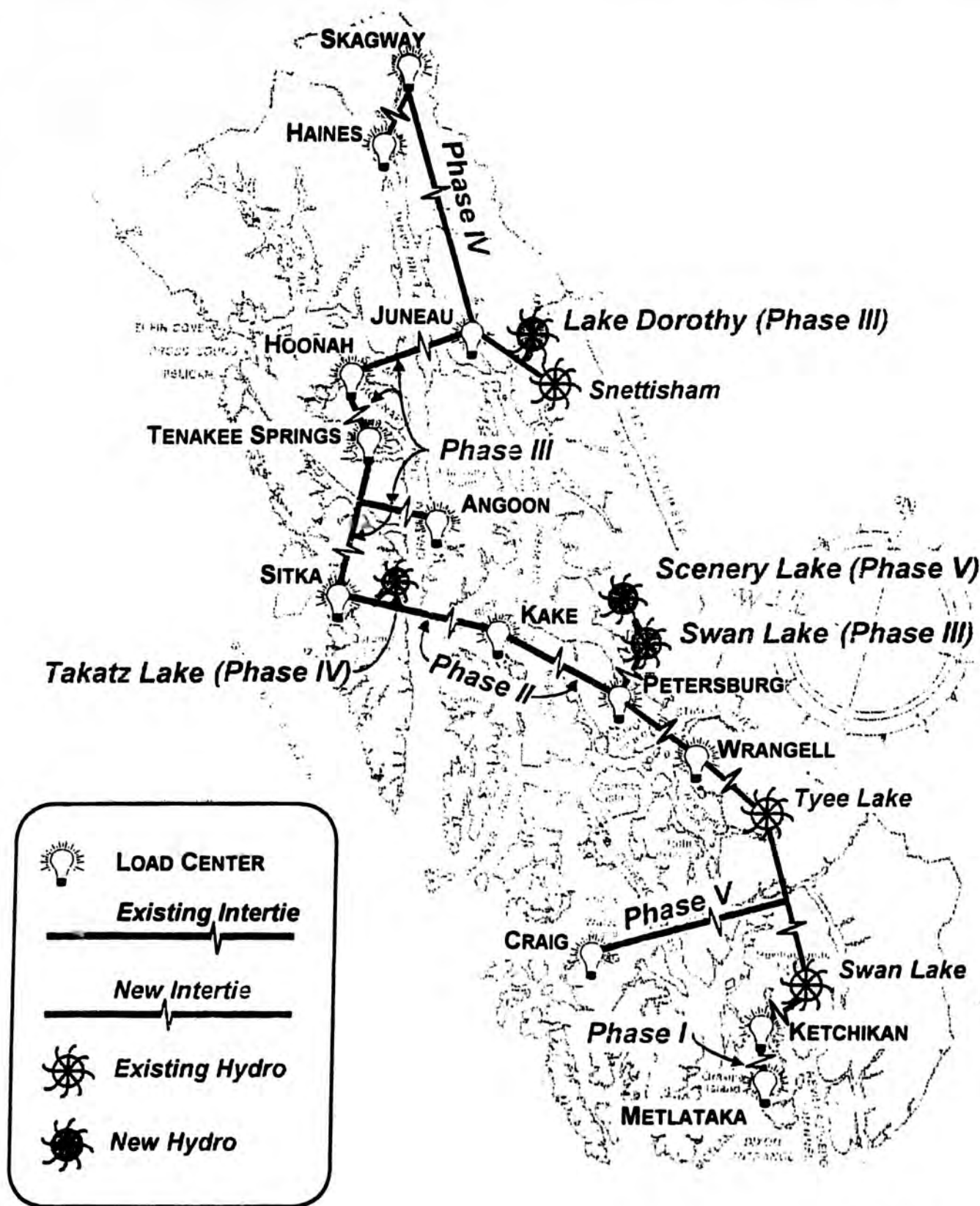


Figure 1

**Southeast Alaska Utilities  
ELECTRICAL INTERTIE SYSTEM PLAN**





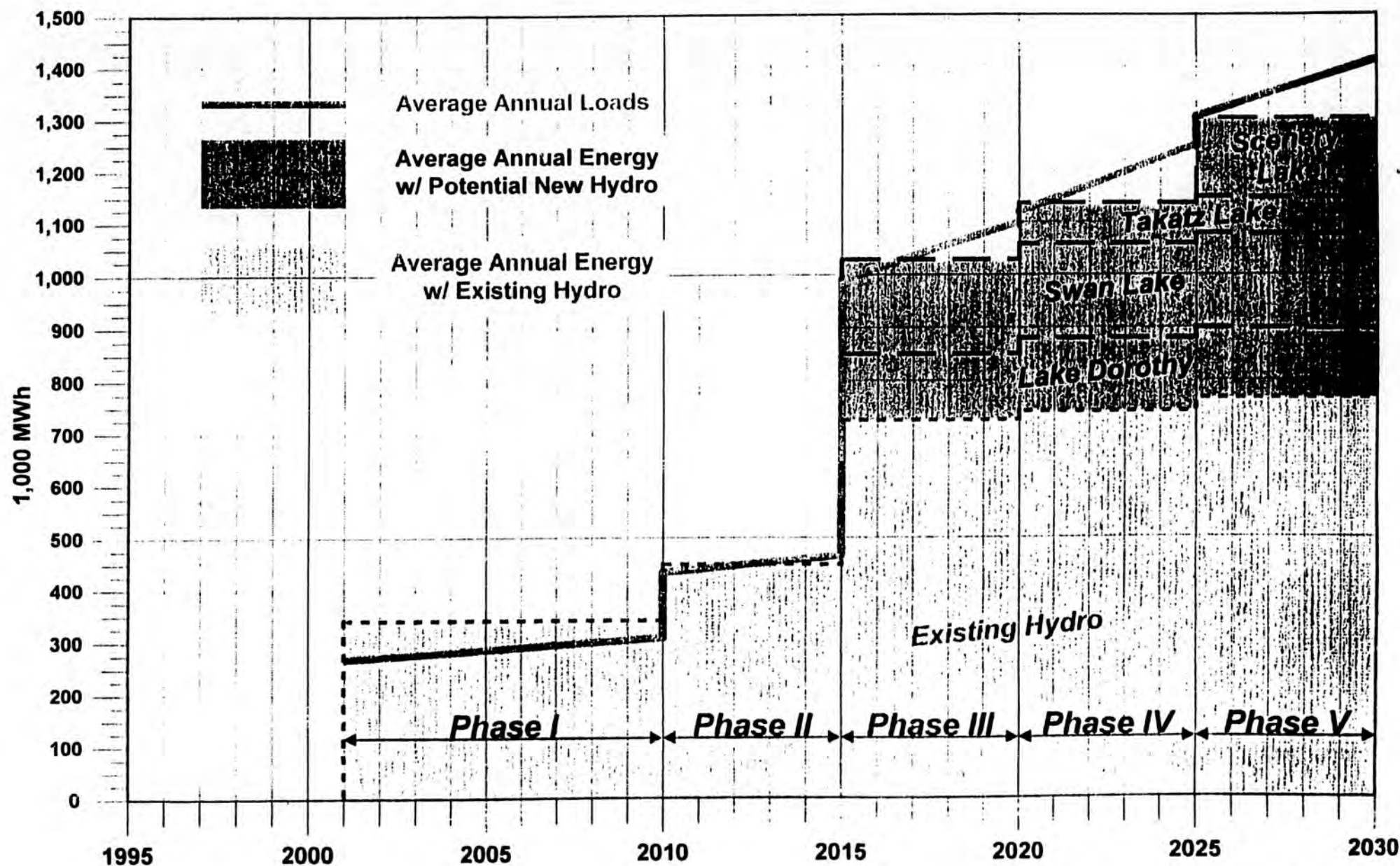


Figure 2

Southeast Alaska Utilities  
ELECTRICAL INTERTIE SYSTEM PLAN : LOADS AND RESOURCES



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**References and  
List of Preparers**

# **References Cited and List of Preparers**

### **8.1**

#### **References Cited**

The following documents were used in preparing this report. A full list of literature pertaining to topics covered in this report is located in Appendix B. Copies of Appendices are available upon request from the Southeast Conference.

**Alaska Department of Community and Regional Affairs, Division of Energy, *Kake-Petersburg Intertie Feasibility Study*. Prepared by R. W. Beck, Inc., 1996.**

**Alaska Department of Community and Regional Affairs, *Rural Alaska Electric Utility Interties Preliminary Draft Survey*. Prepared by Foster Wheeler Environmental, Bellevue, WA., March 1987.**

**Alaska Electric Light and Power Company, *Application for New License - Annex Creek and Salmon Creek*. Prepared by R. W. Beck, Inc., October 1985.**

**Alaska Electric Light and Power Company, *Juneau 20-Year Power Supply Plan Update*. Prepared by CH2M Hill, Bellevue, WA., August 1990.**

**Alaska Power & Telephone Company, *Application for License - Black Bear Lake Project*. Prepared by HDR Engineering, June 1994**

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- Electric Utility System, City and Borough of Sitka, *Analysis of Electric System Requirements*. Prepared by R. W. Beck, Inc., Seattle, WA, April 1974.
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- Petersburg Municipal Power & Light, *Analysis of Electrical System Requirements*. Prepared by R. W. Beck, Seattle, WA, March 1974.
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- USDA Forest Service, *Swan Lake-Lake Tyee Intertie Record of Decision*. August 1997
- U. S. Department of the Interior, Alaska Power Administration/Bureau of Reclamation, *Takatz Creek Project - Alaska*. Washington, D.C., 1960

## References Cited and List of Preparers

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### 8.2

#### List of Preparers

**Nan A. Nalder, MPA, Project Manager.** Project Descriptions, Economics and Demographics, Environmental, Geography, Policy, Regulatory, Research, and Report Editor. Acres International Corporation, Seattle, Washington.

**Myles Godfrey, P.Eng, Transmission Line Segments and Systems Operations.** Acres International Limited, Toronto, Canada.

**A. Richard Griffith, PE, Hydroelectric Projects.** Acres International Corporation, Seattle, Washington.

**Kenneth Salmon, P.Eng, Electrical Equipment and Systems.** Acres International Limited, Vancouver, B.C.

**Jeffrey Spence, PE, Electrical Distribution and Transmission Review.**  
**Elektron, Beaverton, Oregon.**





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December 9, 1998

Mikunda, Cottrell & Co.  
3601 "C" Street, Suite 600  
Anchorage, Alaska 99503

RE: Audit of the Alaska Public Utilities Commission and Request for Assistance

Gentlemen:

Thank you for the opportunity to present my view on how the operation of the Alaska Public Utilities Commission might be improved.

The enclosed was presented to the legislature during the prior sunset review. It remains timely because none of the problems outlined therein have been addressed. In fact the problem of ex-par-te contact between Commissioners and staff has become more pervasive as the work load of the APUC increases. While there is no suggestion that either the Commissioners or their staff are not well meaning and ethical people, the structure of the existing commission, in and of itself, creates the problem.

The suggested restructuring of the APUC would allow for an improved advocacy for the public interest and a much more fair environment for the utilities to make their case.

Please feel free to contact me if there are any questions.

Sincerely,

Jack H Rhyner  
President

## THE ALASKA PUBLIC UTILITIES COMMISSION

### A New Structure

In the course of the sunset review of the Alaska Public Utilities Commission (APUC), two facts became clear: There is a continuing need for the existence of the Commission and there is a need to change the manner in which it operates. This white paper will discuss the APUC's mission and its organizational structure.

#### Mission:

There is a need to focus on the mission statement of the APUC as laid out in statute. There are two basic functions to be served by the APUC. One is to protect the public interest; the other to assure the continued viability of the utilities.

In the case of the former, the APUC should have the mandate of assuring that utility rates are just, fair and reasonable. In the process of carrying out this mandate, they must determine appropriate rate of return, either on an industry or an individual company basis. To do so, they must make a determination of the costs of providing service, establish what is used and useful in rate base and be assured that management practices are prudent.

The latter function is equally important. If utilities are not financially viable, then service will be eroded and if carried to the absurd, service could become unavailable. It is in the public interest to protect the viability of the utilities.

As the APUC carries out these two functions, it must be mindful of the appropriate economies. They must, in other words, accomplish these two mandates by use of the most efficient and economical means possible to assure that the cost of regulation is not a major contributor to the cost of service. It is in neither the public interest nor that of the utilities for the staff of the APUC to engage the utility in a proceeding, the cost of which is ten to twenty times more than the cost or rate in question within that proceeding.

#### Structure:

There is a need to address the structure of the APUC using the Federal Communications Commission (FCC) as a model. Restructuring the APUC in this manner will provide for a more efficient operation and eliminate certain inequities which now exist.

The current structure of the Commission has staff moving back and forth in two roles. On the one hand, they are often party to dockets, representing the public interest. On the other hand, they serve in an advisory capacity to the Commission. To put the situation into context, the Commission serves as a quasi judicial body. Allowing the staff to move back and forth as both party to and advisors to the Commission in the same docket is much the same as allowing either

the plaintiff or defendant in a legal proceeding to advise the judge on his final decision, rather than just presenting evidence for the record.

Utilizing the FCC model, that portion of the staff designated as representative of the public interest would be established separate from the Commission itself. This "Staff" would serve under the direction of the commission's executive director and would be party to dockets as appropriate. Their participation in dockets would be as an autonomous party and they would be subject to the same rules regarding ex parte contact with the Commission as are other parties to dockets.

The commissioners, on the other hand, should have personal staff, as well as their own counsel, to assist them in research, writing orders and, in general, filling an advisory role.

As commissioners serve in the role of judges, they should not launch investigations or open dockets on their own motion. They should not issue notices of inquiry or engage in writing regulations. These functions should be the sole purview of "Staff".

The designated seats concept should be eliminated. The designated seats (accountant, legal and engineering) originated in the early days of statehood when the Commission was a part time body with no staff. In those days, it was necessary to have an engineer, a lawyer and an accountant on the Commission because they had no staff with such expertise. The two consumer seats were added in the mid seventies in the mistaken belief that the three assigned seats were charged with representing their special vocational interests. The fact is that the commissions must be neutral judges and should not be representing any special interest group. Under the structure outlined above, "Staff" would represent the public interest. To further emphasize the separation of "Staff" and the Commission, it must be clearly understood that the executive director will be in charge of the "Staff". *The "Staff" positions must be designated as exempt to allow the hiring of truly qualified people in these positions, who can be held accountable for the quality of work they produce.*

Doing away with the assigned seats on the Commission will also require language to make it clear that candidates for the Commission must be professional with some knowledge of utilities. There must also be a restriction which allows no more than one commissioner from anyone vocation.

Included here are examples of organizational structures.....

#### Current Operating Authority:

As a final note, one other amendment to current statute is proposed. AS 42. 05. 141(1) must be amended to eliminate the language "...the powers of the commission shall be liberally construed to accomplish its stated purpose." This language has become one of the most obvious barriers in relating to the Commission. The commissioners and the staff have used this language to offer differing interpretations of regulations and statute on a case by case basis.

The phrase has also allowed the Commission to state that it does not set precedent. Both utility management and the general public are placed in a precarious situation when they are unable to rely on past decisions of the Commission to determine proper conduct in relation to any particular issue because the Commission feels free to develop differing interpretations to similar conditions on a case by case basis. As a quasi judicial body, the Commission must be held accountable to its own decisions and interpretation.



# DISTRICT OF COLUMBIA PUBLIC SERVICE COMMISSION

Office - 450 5th Street, NW, Washington, DC 20001, Area Code (202) 626-5100

Commissioners appointed by the Mayor and confirmed by the Council for four-year staggered terms.

Jurisdiction: Electric (private); gas (private); telephone; radio common carriers; telegraph; enforcement of blue sky laws; securities.

## COMMISSIONERS

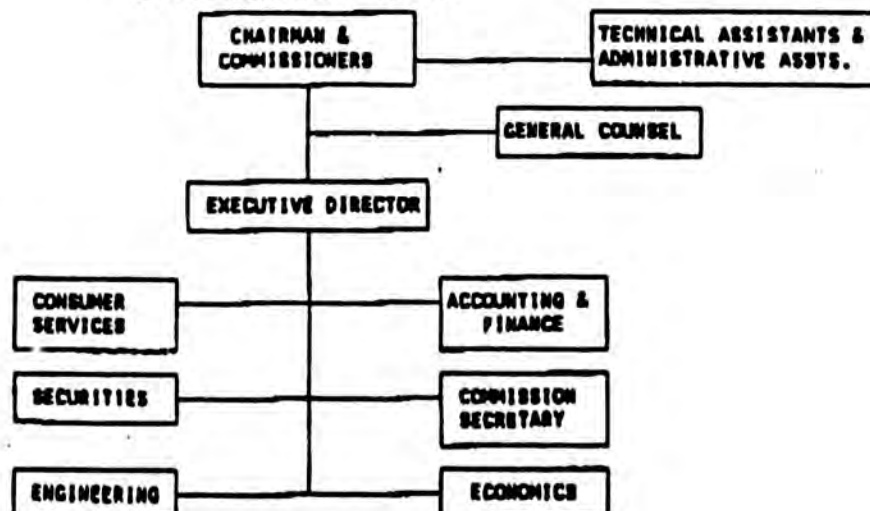
Patricia M. Worthy, Chairperson, 626-5110: Democrat; born May 28, 1944, in Fort Benning, Georgia; Brooklyn College (BA), Howard University (JD); private law practice, Deputy Assistant Secretary for US Department of Housing and Urban Development (1977-80), Adjunct Professor at Howard University Law School, Chair of Washington Metropolitan Area Transit Commission; assumed Commissionership August 1, 1980, current term ends June 30, 1991.

Wesley H. Long, Commissioner, 626-5125: Democrat; born May 6, 1932, in Boston, Massachusetts; University of Michigan (BA in Math, MA and PhD in Economics); Economics Professor at Bowdoin College (1963-66) and at Pennsylvania State University (1966-71), US Department of Commerce (1971-80) with final position as Deputy Director of Office of Industrial Economics; assumed Commissionership March 30, 1980, current term ends June 30, 1990.

Belva Newsome, Commissioner, 626-5114: Democrat; born August 7, 1952 in Wilmington, North Carolina; Duke University (BA Political Science/Black Studies), Georgetown University Law Center (JD, LL.M); private law practice, Chairperson of DC Rental Housing Commission (1985-89); assumed Commissionership December 15, 1989, current term ends June 30, 1992.

| Name of Division                          | Number of Personnel | Name of Division Head   |
|-------------------------------------------|---------------------|-------------------------|
| Office of the Chairman                    | 5                   | Patricia M. Worthy      |
| Office of the Commissioner                | 3                   | Ruth Hankins-Nesbitt    |
| Office of the Commissioner                | 3                   | Wesley H. Long          |
| Office of the General Counsel             | 18                  | Howard C. Davenport     |
| Office of the Executive Director          | 9                   | James E. Kerr           |
| Office of the Commission Secretary        | 8                   | Mary B. Jordan          |
| Office of Consumer Services               | 5                   | Vivian A. Jordan-Webb   |
| Office of Economics                       | 6                   | Dr. Phylcia Fauntleroy  |
| Office of Engineering and Pipeline Safety | 5                   | Richard D. Huriaux      |
| Office of Accounting & Finance            | 11                  | Norman Reiser           |
| Office of Securities                      | 6                   | James Whitescarver, Jr. |
| TOTAL                                     | 79                  |                         |

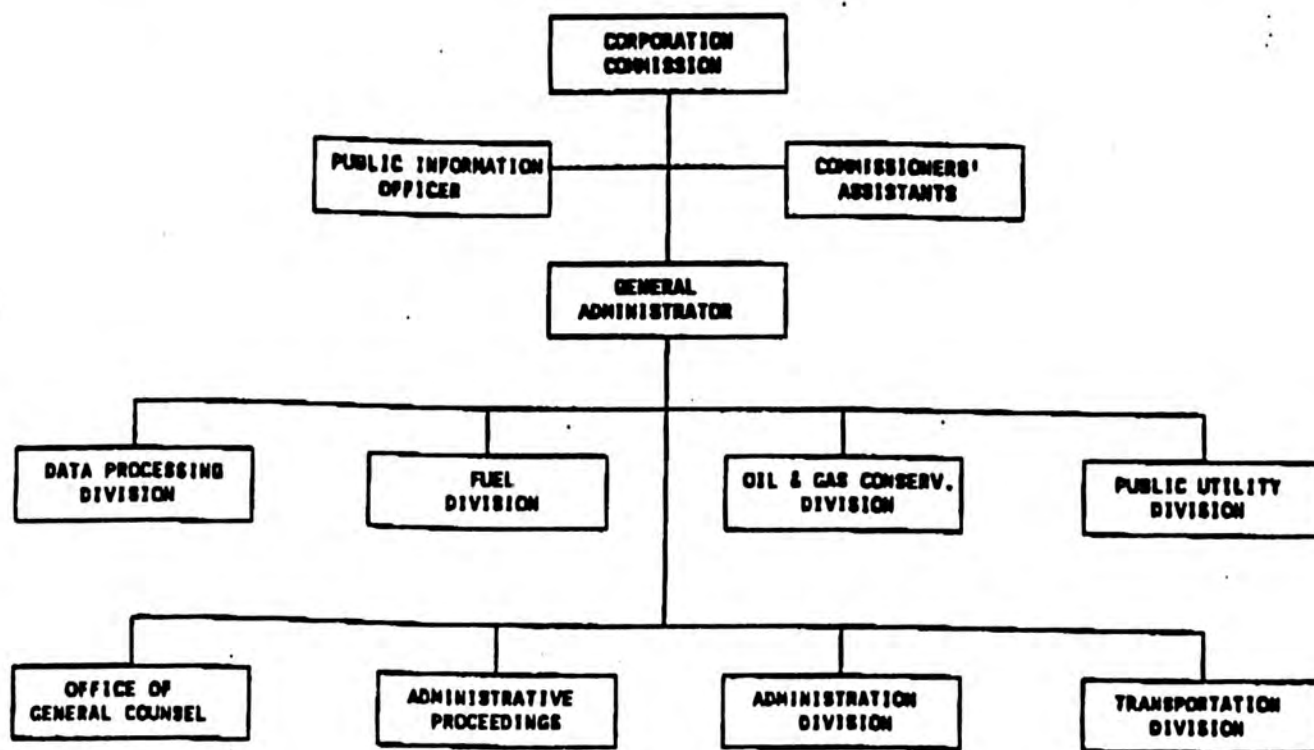
## ORGANIZATION CHART





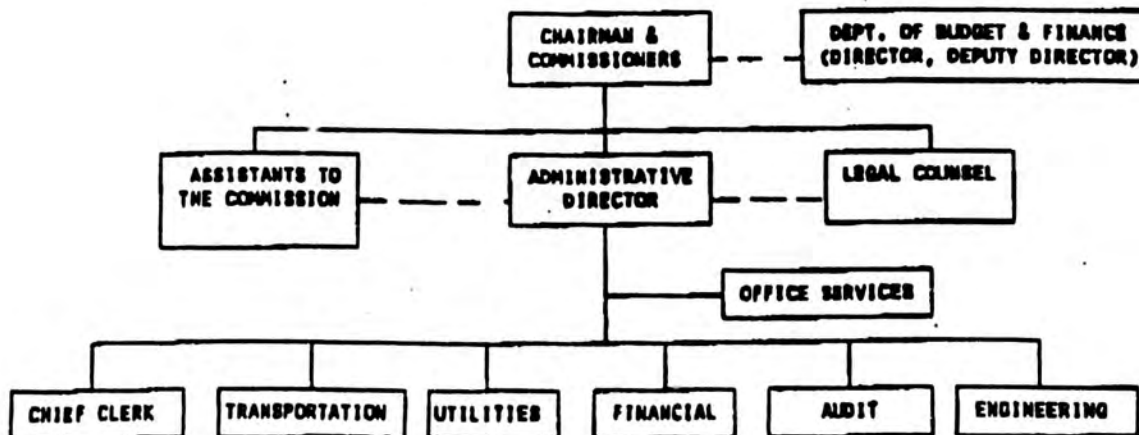
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**ORGANIZATION CHART**

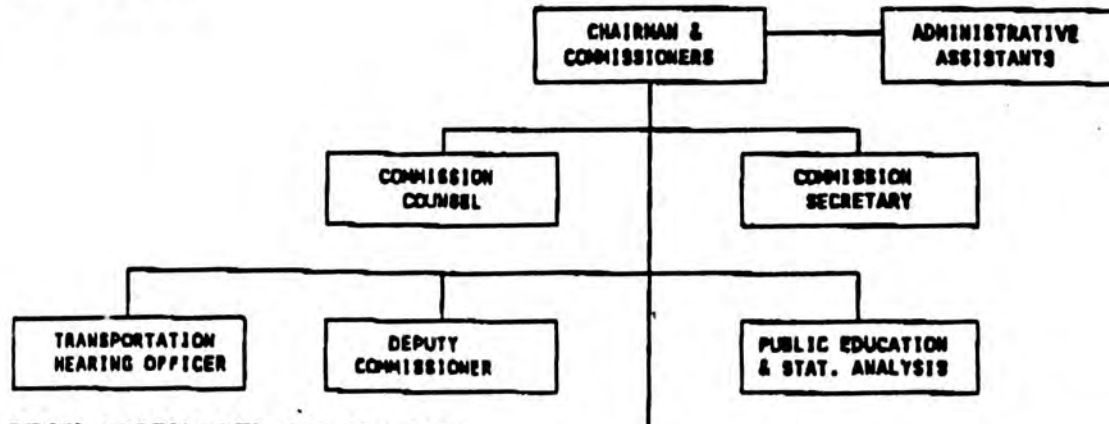


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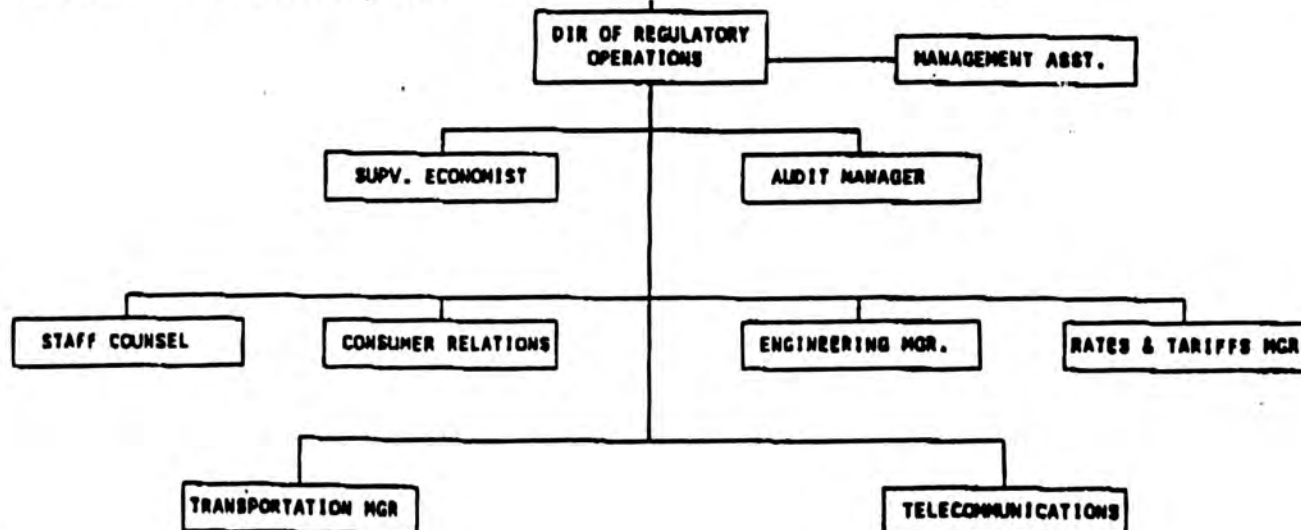
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Effective December 31, 1989

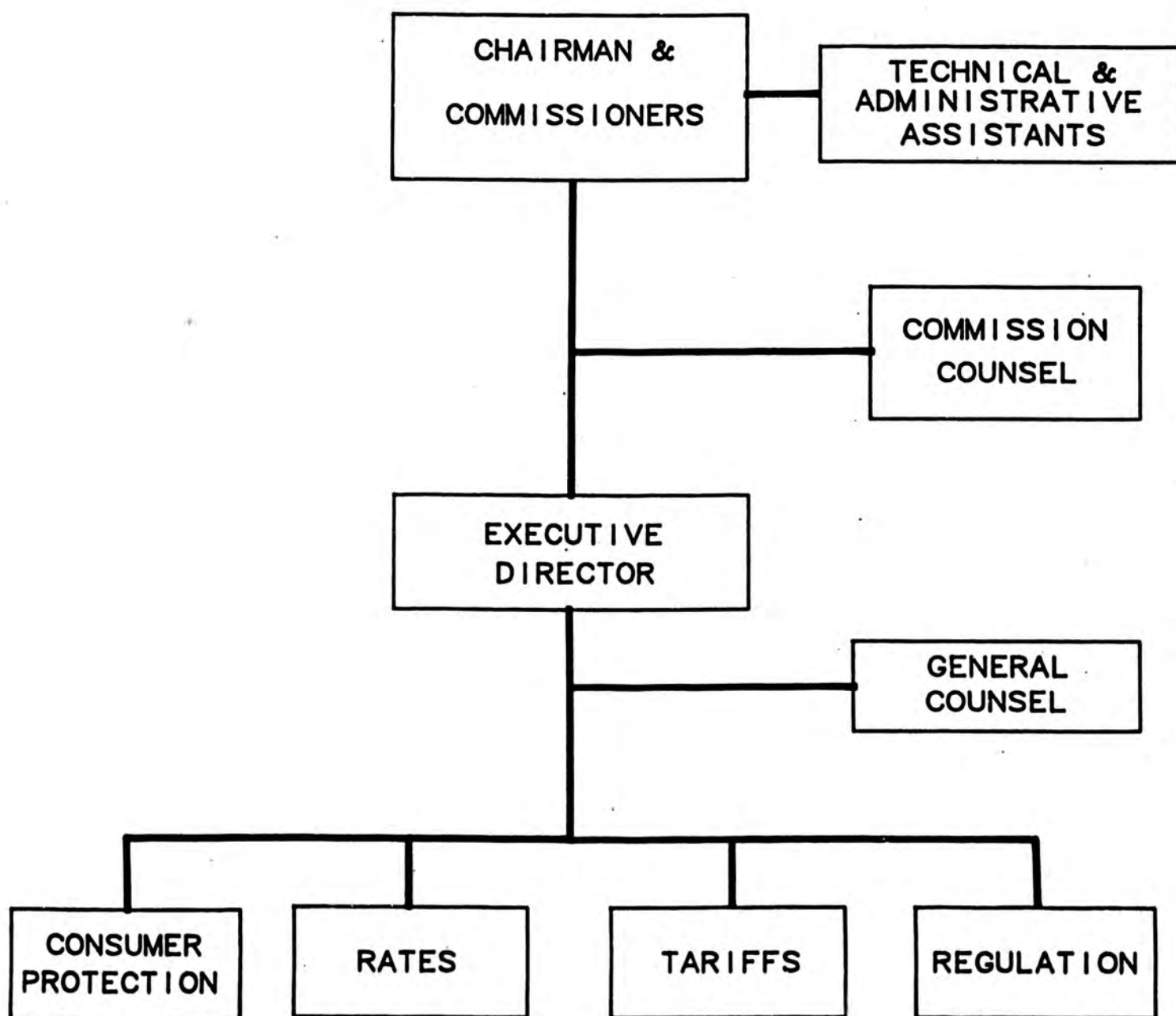
POLICY STAFF



REGULATORY OPERATIONS STAFF



# PROPOSED ORGANIZATIONAL CHART STATE OF ALASKA



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**Local Exchange Carriers Certificated**

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**Prepared by Stacy A. Moon**

**Alascom, Inc. d/b/a AT&T Alascom (A subsidiary of AT&T Corporation)**

Provides service to Anchorage, Girdwood and Hope.

**Alaska Telephone Company(A subsidiary of Alaska Power & Telephone)**

Provides service to Chisana, Craig, Dot Lake, T'na Bay, Healy Lake, Hollis, Hydaburg, Meyers Chuck, Naukati, S way, Tanacross, Tetlin, Tok and Whale Pass.

**Arctic Slope Telephone Association Cooperative, Inc.**

Provides service to Anaktuvuk Pass, Atkasuk, Barrow, Deadhorse, Kaktovik, Nuiqsut, Point Hope, Point Lay, Prudhoe Bay, and Wainwright.

**Bettles Telephone, Inc.(A subsidiary of Alaska Telephone Company)**

Provides service to Bettles and Evansville.

**Bristol Bay Telephone Cooperative, Inc.**

Provides service to Ekwok, Igiugig, King Salmon, Koliganek, Levelock, Naknek, and New Stuyahok.

**Bush-Tell, Incorporated**

Provides service to Aniak, Anvik, Crooked Creek, Grayling, Holy Cross, Lower Kalskag, Red Devil, Shageluk, Sleetmute, Stony River, and Upper Kalskag.

**Copper Valley Telephone Cooperative, Inc.**

Provides service to Cnistochina, Chitina, Copper Center, Gakona, Glennallen, Gulkana, Kenny Lake, Mentasta, McCarthy, Nelchina, Paxson, Slana, Tatitlek, and Valdez.

**\* Cordova Telephone Cooperative, Inc.**

**\* Fairbanks Municipal Utilities System, City of Fairbanks d/b/a**

Provides service to College, Fairbanks, and Fox.

**GCI Communication Corp. d/b/a General Communication, Inc. d/b/a GCI**

Provides service to Anchorage, Bird, Girdwood, Hope, and Indian.

**GTE Alaska Incorporated (A subsidiary of GTE Corporation)**

Provides service to Barrow, Bethel, Chilkat Valley, Etolin Island, Haines, Hyder, Klukwan, McGrath, Metlakatla, Moose Pass, Nome,

**Petersburg, Seward, Unalakleet, and Wrangell.**

**Interior Telephone Company (A subsidiary of TelAlaska, Inc.)**

**Provides service to Cold Bay, Cooper Landing, Dutch Harbor, Fort Yukon, Galena, Iliamna, King Cove, Newhalen, Port Lions, Sand Point, Squaw Harbor, and Unalaska.**

**\* Ketchikan, City of**

**Provides service to Clover Pass, Ketchikan, Saxman, and Ward Cove.**

**Matanuska Telephone Association, Inc.**

**Provides service to Anderson, Big Lake, Cantwell, Chickaloon, Chugiak, Clear, Eagle River, Eklutna, Healy, Houston, Kantishna, Knik, McKinley Park, Palmer, Peters Creek, Petersville, Point MacKenzie, Sutton, Talkeetna, Tyonek, Usibelli, Wasilla, and Willow.**

**Mukluk Telephone Company, Inc.**

**Provides service to Brevig Mission, Council, Elim, Golovin, Koyuk, Little Diomed, Saint Michael, Shaktoolik, Shishmaref, Stebbins, Teller, Wales, and White Mountain.**

**Municipality of Anchorage d/b/a Anchorage Telephone Utility a/k/a ATU Telecommunications**

**Provides service to Anchorage, Bird, Girdwood, Hope, and Indian.**

**\* North Country Telephone Company (A subsidiary of Alaska Telephone Company)**

**Provides service to Eagle and Eagle Village.**

**Nushagak Telephone Cooperative, Inc.**

**Provides service to Aleknagik, Clark's Point, Dillingham, Ekuk, and Manokotak.**

**OTZ Telephone Cooperative, Inc.**

**Provides service to Ambler, Buckland, Candle, Deering, Kiana, Kivalina, Kobuk, Kotzebue, Noatak, Noorvik, Selawik, and Shungnak.**

**Summit Telephone Company, Inc., The Summit Telephone & Telegraph Company of Alaska d/b/a**

**Provides service to Chatanika, Chena Hot Springs, and Cleary Summit.**

**Telephone Utilities of Alaska, Inc. (A subsidiary of Pacific Telecom, Inc.)**

**Provides service to Douglas, Eielson AFB, Fort Wainwright, and Juneau.**



**Telephone Utilities of the Northland, Inc. (A subsidiary of Pacific Telecom, Inc.)**

Provides service to Akhiok, Akutan, Alatna, Allakaket, Anchor Point, Angoon, Atka, Bartlett Cove, Birch Lake, Border City, Chatham, Chignik, Chignik Lagoon, Chignik Lake, Chiniak, Clam Gulch, Coffman Cove, Cube Cove, Delta Junction, Egegik, Elfin Cove, English Bay, False Pass, Fort Greely, Gustavus, Halibut Cove, Hobart Bay, Homer, Hoonah, Hughes, Huslia, Ivanof Bay, Kachemak, Kaguyak, Kake, Kalifonsky, Kaltag, Karluk, Kasaan, Kasilof, Kazakof Bay, Kenai, Keyes Point, Kiawock, Klawock Airport, Kodiak, Kokhanok, Koyukuk, Larsen Bay, Long Island, Meshik, Mount Edgecumbe, Nelson Lagoon, Nenana, Nikiski, Nikolaevski, Nikolski, Ninilchik, Nondalton, North Pole, Northway, Nulato, Old Harbor, Ouzinkie, Pedro Bay, Pelican, Perryville, Pilot Point, Point Baker, Port Alexander, Port Alsworth, Port Graham, Port Moller, Port Protection, Portage Creek, Saint George, Saint Paul, Salamatof, Seldovia, Sitka, Soldotna, Sterling, Tenakee Springs, Thorne Bay, Womens Bay, and Yakutat.

**United Utilities, Inc. (A subsidiary of United Companies, Inc.)**

Provides service to Akiachak, Akiak, Alakanuk, Arctic Village, Atmauthluak, Beaver, Birch Creek, Central, Chalkyitsik, Chuathbaluk, Chefnak, Chevak, Circle Hot Springs, Eek, Emmonak, Gambell, Goodnews Bay, Hooper Bay, Kasigluk, Kipnuk, Kongiganak, Kotlik, Kwethluk, Kwigillingok, Lake Minchumina, Lime Village, Livengood, Manley Hot Springs, Marshall, Mekoryuk, Minto, Mountain Village, Napakiak, Napaskiak, New Chenega Bay, Newtok, Nightmute, Nikolai, Nunapitchuk, Oscarville, Pilot Station, Pitkas Point, Platinum, Quinhagak, Rampart, Russian Mission, Saint Marys, Savoonga, Scammon Bay, Sheldon Point, Stevens Village, Takotna, Telida, Togiak, Toksook Bay, Tuluksak, Tuntutuliak, Tununak, Twin Hills, and Venetie.

**Yukon Telephone Company, Inc.**

Provides service to Ruby, Tanana, and Whittier.

**\* Not regulated by Alaska Public Utilities Commission as to rates and service.**

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# Telecommunications Utilities Gross Operating Revenues

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## (Interexchange & Local Exchange Carriers)

1996 Calendar Year Prepared by Parker Nation

| <u>Revenues I</u>                                                                 |                        |                      |                     |                |
|-----------------------------------------------------------------------------------|------------------------|----------------------|---------------------|----------------|
| Utility                                                                           | Net Plant              | Gross Revenue        | Net Income          | Customers      |
| <b>Gross Operating Revenue \$5,000,000 or Greater</b>                             |                        |                      |                     |                |
| Alascom, Inc.                                                                     | \$352,099,672          | \$265,087,449        | \$16,677,599        | Not Reported   |
| Anchorage Telephone Utility Municipality of Anchorage d/b/a                       | 241,554,442            | 104,743,934          | 13,857,268          | 215,077        |
| Copper Valley Telephone Cooperative, Inc.                                         | 17,414,463             | 6,337,359            | 133,647             | 5,533          |
| General Communication Inc.                                                        | 136,751,000            | 164,894,000          | 7,462,000           | Not Reported   |
| GTE Alaska Inc.                                                                   | 15,064,842             | 10,658,031           | 1,726,076           | 19,805         |
| Interior Telephone Company                                                        | 14,152,252             | 8,440,950            | 1,076,104           | 4,297          |
| Matanuska Telephone Association, Inc.                                             | 113,155,861            | 46,614,191           | 6,736,110           | 41,908         |
| Telephone Utilities of Alaska, Inc.                                               | 23,686,569             | 16,329,041           | 1,812,222           | 28,133         |
| Telephone Utilities of the Northland, Inc.                                        | 84,136,889             | 53,874,829           | 9,803,150           | 56,779         |
| United Utilities, Inc.                                                            | 19,466,536             | 11,761,078           | 1,308,302           | 5,073          |
| <b>Subtotal</b>                                                                   | <b>\$1,017,392,526</b> | <b>\$688,740,862</b> | <b>\$60,592,478</b> | <b>376,605</b> |
| <b>Gross Operating Revenue Greater Than \$1,000,000 but Less Than \$5,000,000</b> |                        |                      |                     |                |
| Alaska Telephone Company                                                          | \$5,436,763            | \$3,985,508          | \$1,078,642         | 3,871          |
| Arctic Slope Telephone Association Cooperative, Inc.                              | Deregulated 1996       |                      |                     |                |
| Bristol Bay Telephone Cooperative, Inc.                                           | 3,063,520              | 2,081,047            | 42,950              | 1,958          |
| Bush-Tell, Inc.                                                                   | 4,657,199              | 2,163,617            | 137,986             | 814            |
| Mukluk Telephone Company, Inc.                                                    | 3,804,094              | 2,061,634            | 71,409              | 1,040          |
| Nushagak Telephone Cooperative, Inc.                                              | 3,630,147              | 1,969,694            | 265,981             | 2,220          |
| OTZ Telephone Cooperative, Inc.                                                   | 5,555,767              | 2,986,088            | 140,731             | 3,044          |
| <b>Subtotal</b>                                                                   | <b>\$26,147,490</b>    | <b>\$15,247,588</b>  | <b>\$1,737,699</b>  | <b>12,947</b>  |

| <b>Gross Operating Revenues Less Than \$1,000,000</b>                                       |                        |                      |                     |                |
|---------------------------------------------------------------------------------------------|------------------------|----------------------|---------------------|----------------|
| ATU Long Distance, Inc.                                                                     | \$3,790                | \$2,000              | (\$542,282)         | Not Reported   |
| Betiles Telephone, Inc.                                                                     | \$291,763              | \$237,700            | \$42,040            | 77             |
| Circle Telephone Company                                                                    | 58,738                 | 93,299               | 70,351              | 35             |
| North Country Telephone Company                                                             | 213,146                | 211,938              | 19,250              | 179            |
| Summit Telephone Co., Inc.,<br>Summit Telephone &<br>Telegraph Co. of Alaska, Inc.<br>d/b/a | 773,359                | 598,769              | 123,440             | 124            |
| Yukon Telephone Company,<br>Inc.                                                            | 1,016,244              | 1,092,107            | 205,373             | 471            |
| Subtotal                                                                                    | \$2,357,040            | \$2,235,813          | (\$81,828)          | 886            |
| <b>TOTAL</b>                                                                                | <b>\$1,045,897,056</b> | <b>\$706,224,262</b> | <b>\$62,248,350</b> | <b>390,438</b> |
| 1. Revenue classes per 3 AAC 48.277.                                                        |                        |                      |                     |                |

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# Telephone Rates Sample Monthly Residential

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As of March 31, 1997 Prepared by Mary J. Vittone

| Community         | Single-Party<br>Access Line<br>Monthly Rate* | Utility Serving Community                  |
|-------------------|----------------------------------------------|--------------------------------------------|
| Akiok             | \$16.42                                      | Telephone Utilities of the Northland, Inc. |
| Akiachak          | \$19.37                                      | United Utilities, Inc.                     |
| Akiak             | \$19.37                                      | United Utilities, Inc.                     |
| Akutan            | \$16.42                                      | Telephone Utilities of the Northland, Inc. |
| Alakanuk          | \$19.37                                      | United Utilities, Inc.                     |
| Aleknagik         | \$14.10                                      | Nushagak Telephone Cooperative, Inc.       |
| Allakaket         | \$16.42                                      | Telephone Utilities of the Northland, Inc. |
| Ambler            | \$15.95                                      | OTZ Telephone Cooperative, Inc.            |
| Anchor Point      | \$16.42                                      | Telephone Utilities of the Northland, Inc. |
| Anchorage         | \$9.77                                       | Anchorage Telephone Utility                |
| Anderson          | \$8.96                                       | Matanuska Telephone Association, Inc.      |
| Angoon            | \$16.42                                      | Telephone Utilities of the Northland, Inc. |
| Aniak             | \$21.65                                      | Bush-Tell, Incorporated                    |
| Anvik             | \$21.65                                      | Bush-Tell, Incorporated                    |
| Arctic Village    | \$19.37                                      | United Utilities, Inc.                     |
| Atka              | \$16.42                                      | Telephone Utilities of the Northland, Inc. |
| Atmautluak        | \$19.37                                      | United Utilities, Inc.                     |
| Barrow            | \$11.78                                      | GTE Alaska Incorporated                    |
| Bartlett Cove     | \$16.42                                      | Telephone Utilities of the Northland, Inc. |
| Beaver            | \$19.37                                      | United Utilities, Inc.                     |
| Bethel            | \$10.88                                      | GTE Alaska Incorporated                    |
| Bettles           | \$27.90                                      | Bettles Telephone Company, Inc.            |
| Big Lake          | \$8.96                                       | Matanuska Telephone Association, Inc.      |
| Birch Creek       | \$19.37                                      | United Utilities, Inc.                     |
| Birch Lake        | \$16.42                                      | Telephone Utilities of the Northland, Inc. |
| Bird              | \$9.77                                       | Anchorage Telephone Utility                |
| Border City       | \$16.42                                      | Telephone Utilities of the Northland, Inc. |
| Bornite           | \$15.95                                      | OTZ Telephone Cooperative, Inc.            |
| Brevig Mission    | \$14.30                                      | Mukluk Telephone Company, Inc.             |
| Buckland          | \$15.95                                      | OTZ Telephone Cooperative, Inc.            |
| Candle            | \$15.95                                      | OTZ Telephone Cooperative, Inc.            |
| Cantwell          | \$8.96                                       | Matanuska Telephone Association, Inc.      |
| Central           | \$19.37                                      | United Utilities, Inc.                     |
| Chalkyitsik       | \$19.37                                      | United Utilities, Inc.                     |
| Chatanika         | \$20.14                                      | Summit Telephone Company                   |
| Chatham           | \$16.42                                      | Telephone Utilities of the Northland, Inc. |
| Chefornak         | \$19.37                                      | United Utilities, Inc.                     |
| Chena Hot Springs | \$20.14                                      | Summit Telephone Company                   |
| Chevak            | \$19.37                                      | United Utilities, Inc.                     |
| Chicago Creek     | \$15.95                                      | OTZ Telephone Cooperative, Inc.            |
| Chickaloon        | \$8.96                                       | Matanuska Telephone Association, Inc.      |
| Chignik           | \$16.42                                      | Telephone Utilities of the Northland, Inc. |
| Chignik Lagoon    | \$16.42                                      | Telephone Utilities of the Northland, Inc. |



|                    |         |                                            |
|--------------------|---------|--------------------------------------------|
| Chignik Lake       | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Chiniak            | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Chisana            | \$17.62 | Alaska Telephone Company                   |
| Chistochina        | \$11.38 | Copper Valley Telephone Cooperative, Inc.  |
| Chitina            | \$14.10 | Copper Valley Telephone Cooperative, Inc.  |
| Chuathbaluk        | \$19.37 | United Utilities, Inc.                     |
| Chugiak            | \$13.90 | Matanuska Telephone Association, Inc.      |
| Circle Hot Springs | \$19.37 | United Utilities, Inc.                     |
| Clam Gulch         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Clarks Point       | \$21.40 | Nushagak Telephone Cooperative, Inc.       |
| Clear              | \$8.96  | Matanuska Telephone Association, Inc.      |
| Cleary Summit      | \$20.14 | Summit Telephone Company                   |
| Coffman Cove       | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Cold Bay           | \$19.99 | Interior Telephone Company                 |
| Cold Foot          | \$20.14 | Summit Telephone Company                   |
| Cooper Landing     | \$19.99 | Interior Telephone Company                 |
| Copper Center      | \$11.38 | Copper Valley Telephone Cooperative, Inc.  |
| Council            | \$14.30 | Mukluk Telephone Company, Inc.             |
| Craig              | \$8.66  | Alaska Telephone Company                   |
| Crooked Creek      | \$21.65 | Bush-Tell, Incorporated                    |
| Cube Cove          | \$38.67 | Telephone Utilities of the Northland, Inc. |
| Deering            | \$15.95 | OTZ Telephone Cooperative, Inc.            |
| Delta Junction     | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Dillingham         | \$14.10 | Nushagak Telephone Cooperative, Inc.       |
| Dot Lake           | \$11.03 | Alaska Telephone Company                   |
| Douglas            | \$9.49  | Telephone Utilities of Alaska, Inc.        |
| Dutch Harbor       | \$19.99 | Interior Telephone Company                 |
| Eagle              | \$12.09 | North Country Telephone                    |
| Eagle River        | \$13.90 | Matanuska Telephone Association, Inc.      |
| Eagle Village      | \$12.09 | North Country Telephone                    |
| Edna Bay           | \$17.62 | Alaska Telephone Company                   |
| Eek                | \$19.37 | United Utilities, Inc.                     |
| Egegik             | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Eielson AFB        | \$9.49  | Telephone Utilities of Alaska, Inc.        |
| Eklutna            | \$13.90 | Matanuska Telephone Association, Inc.      |
| Ekuk               | \$21.40 | Nushagak Telephone Cooperative, Inc.       |
| Ekwok              | \$17.07 | Bristol Bay Telephone Cooperative, Inc.    |
| Elfin Cove         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Elim               | \$14.30 | Mukluk Telephone Company, Inc.             |
| Emmonak            | \$19.37 | United Utilities, Inc.                     |
| English Bay        | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Evansville         | \$27.90 | Bettles Telephone Company, Inc.            |
| False Pass         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Fort Greely        | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Fort Richardson    | \$9.77  | Anchorage Telephone Utility                |
| Fort Wainwright    | \$9.49  | Telephone Utilities of Alaska, Inc.        |
| Fort Yukon         | \$19.99 | Interior Telephone Company                 |
| Gakona             | \$11.38 | Copper Valley Telephone Cooperative, Inc.  |
| Galena             | \$19.99 | Interior Telephone Company                 |
| Gambell            | \$19.37 | United Utilities, Inc.                     |
| Girdwood           | \$9.77  | Anchorage Telephone Utility                |
| Glennallen         | \$11.38 | Copper Valley Telephone Cooperative, Inc.  |
| Golovin            | \$14.30 | Mukluk Telephone Company, Inc.             |
| Goodnews Bay       | \$19.37 | United Utilities, Inc.                     |



|                |         |                                            |
|----------------|---------|--------------------------------------------|
| Grayling       | \$21.65 | Bush-Tell, Incorporated                    |
| Gulkana        | \$11.38 | Copper Valley Telephone Cooperative, Inc.  |
| Gustavus       | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Haines         | \$6.55  | GTE Alaska Incorporated                    |
| Haines Highway | \$9.97  | GTE Alaska Incorporated                    |
| Halibut Cove   | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Healy          | \$8.96  | Matanuska Telephone Association, Inc.      |
| Hobart Bay     | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Hollis         | \$17.62 | Alaska Telephone Company                   |
| Holy Cross     | \$21.65 | Bush-Tell, Incorporated                    |
| Homer          | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Hoonah         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Hooper Bay     | \$19.37 | United Utilities, Inc.                     |
| Hope           | \$9.77  | Anchorage Telephone Utility                |
| Houston        | \$8.96  | Matanuska Telephone Association, Inc.      |
| Hughes         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Huslia         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Hydaburg       | \$8.66  | Alaska Telephone Company                   |
| Hyder          | \$2.92  | GTE Alaska Incorporated                    |
| Igiugig        | \$17.07 | Bristol Bay Telephone Cooperative, Inc.    |
| Iliamna        | \$19.99 | Interior Telephone Company                 |
| Indian         | \$9.77  | Anchorage Telephone Utility                |
| Ivanof Bay     | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Juneau         | \$9.49  | Telephone Utilities of Alaska, Inc.        |
| Kachemak       | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Kaguyak        | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Kake           | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Kalifornsky    | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Kalskag, Lower | \$21.65 | Bush-Tell, Incorporated                    |
| Kalskag, Upper | \$21.65 | Bush-Tell, Incorporated                    |
| Kaltag         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Karluk         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Kasaan         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Kasigluk       | \$19.37 | United Utilities, Inc.                     |
| Kasilof        | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Kazakof Bay    | \$32.28 | Telephone Utilities of the Northland, Inc. |
| Kenai          | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Kenny Lake     | \$11.38 | Copper Valley Telephone Cooperative, Inc.  |
| Kiana          | \$15.95 | OTZ Telephone Cooperative, Inc.            |
| King Cove      | \$19.99 | Interior Telephone Company                 |
| King Salmon    | \$18.68 | Bristol Bay Telephone Cooperative, Inc.    |
| Kipnuk         | \$19.37 | United Utilities, Inc.                     |
| Kivalina       | \$15.95 | OTZ Telephone Cooperative, Inc.            |
| Klawock        | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Klukwan        | \$6.55  | GTE Alaska Incorporated                    |
| Knik           | \$8.96  | Matanuska Telephone Association, Inc.      |
| Kobuk          | \$16.06 | OTZ Telephone Cooperative, Inc.            |
| Kodiak         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Kokhanok       | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Koliganek      | \$17.07 | Bristol Bay Telephone Cooperative, Inc.    |
| Kongiganak     | \$19.37 | United Utilities, Inc.                     |
| Kotlik         | \$19.37 | United Utilities, Inc.                     |
| Kotzebue       | \$15.95 | OTZ Telephone Cooperative, Inc.            |
| Koyuk          | \$14.30 | Mukluk Telephone Company, Inc.             |

|                    |         |                                            |
|--------------------|---------|--------------------------------------------|
| Koyukuk            | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Kwethluk           | \$19.37 | United Utilities, Inc.                     |
| Kwigillingok       | \$19.37 | United Utilities, Inc.                     |
| Lake Minchumina    | \$19.37 | United Utilities, Inc.                     |
| Larsen Bay         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Levelock           | \$17.07 | Bristol Bay Telephone Cooperative, Inc.    |
| Lime Village       | \$19.37 | United Utilities, Inc.                     |
| Little Diomedea    | \$14.30 | Mukluk Telephone Company, Inc.             |
| Livengood          | \$19.37 | United Utilities, Inc.                     |
| Long Island        | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Manley Hot Springs | \$19.37 | United Utilities, Inc.                     |
| Manokotak          | \$21.40 | Nushagak Telephone Cooperative, Inc.       |
| Marshall           | \$19.37 | United Utilities, Inc.                     |
| McCarthy           | \$14.10 | Copper Valley Telephone Cooperative, Inc.  |
| McGrath            | \$10.88 | GTE Alaska Incorporated                    |
| McKinley Park      | \$8.96  | Matanuska Telephone Association, Inc.      |
| Mekoryuk           | \$19.37 | United Utilities, Inc.                     |
| Mentasta           | \$14.10 | Copper Valley Telephone Cooperative, Inc.  |
| Meshik             | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Metlakatla         | \$7.40  | GTE Alaska Incorporated                    |
| Meyers Chuck       | \$17.62 | Alaska Telephone Company                   |
| Minto              | \$19.37 | United Utilities, Inc.                     |
| Moose Pass         | \$9.11  | GTE Alaska Incorporated                    |
| Mount Edgecumbe    | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Mountain Village   | \$19.37 | United Utilities, Inc.                     |
| Naknek             | \$18.68 | Bristol Bay Telephone Cooperative, Inc.    |
| Naknek, South      | \$18.68 | Bristol Bay Telephone Cooperative, Inc.    |
| Napakiaak          | \$19.37 | United Utilities, Inc.                     |
| Napaskiak          | \$19.37 | United Utilities, Inc.                     |
| Naukati            | \$17.62 | Alaska Telephone Company                   |
| Nelchina           | \$11.38 | Copper Valley Telephone Cooperative, Inc.  |
| Nelson Lagoon      | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Nenana             | \$16.42 | Telephone Utilities of the Northland, Inc. |
| New Chenega Bay    | \$19.37 | United Utilities, Inc.                     |
| New Stuyahok       | \$17.07 | Bristol Bay Telephone Cooperative, Inc.    |
| Newhalen           | \$19.99 | Interior Telephone Company                 |
| Newtok             | \$19.37 | United Utilities, Inc.                     |
| Nightmute          | \$19.37 | United Utilities, Inc.                     |
| Nikiski            | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Nikolaevski        | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Nikolai            | \$19.37 | United Utilities, Inc.                     |
| Nikolski           | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Ninilchik          | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Noatak             | \$15.95 | OTZ Telephone Cooperative, Inc.            |
| Nome               | \$7.40  | GTE Alaska Incorporated                    |
| Nondalton          | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Noorvik            | \$15.95 | OTZ Telephone Cooperative, Inc.            |
| North Pole         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Northway           | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Nulato             | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Nunapitchuk        | \$19.37 | United Utilities, Inc.                     |
| Old Harbor         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Oscarville         | \$19.37 | United Utilities, Inc.                     |
| Ouzinkie           | \$16.42 | Telephone Utilities of the Northland, Inc. |



|                 |         |                                            |
|-----------------|---------|--------------------------------------------|
| Palmer          | \$8.96  | Matanuska Telephone Association, Inc.      |
| Paxson          | \$11.38 | Copper Valley Telephone Cooperative, Inc.  |
| Pedro Bay       | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Pelican         | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Perryville      | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Peters Creek    | \$13.90 | Matanuska Telephone Association, Inc.      |
| Petersburg      | \$9.11  | GTE Alaska Incorporated                    |
| Petersville     | \$8.96  | Matanuska Telephone Association, Inc.      |
| Pilot Point     | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Pilot Station   | \$19.37 | United Utilities, Inc.                     |
| Pitkas Point    | \$19.37 | United Utilities, Inc.                     |
| Platinum        | \$19.37 | United Utilities, Inc.                     |
| Point Baker     | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Point MacKenzie | \$8.96  | Matanuska Telephone Association, Inc.      |
| Port Alexander  | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Port Alsworth   | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Port Graham     | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Port Lions      | \$19.99 | Interior Telephone Company                 |
| Port Moller     | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Port Protection | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Portage Creek   | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Quinhagak       | \$19.37 | United Utilities, Inc.                     |
| Rampart         | \$19.37 | United Utilities, Inc.                     |
| Red Devil       | \$21.65 | Bush-Tell, Incorporated                    |
| Ruby            | \$17.12 | Yukon Telephone Company, Inc.              |
| Russion Mission | \$19.37 | United Utilities, Inc.                     |
| Saint George    | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Saint Marys     | \$19.37 | United Utilities, Inc.                     |
| Saint Michael   | \$14.30 | Mukluk Telephone Company, Inc.             |
| Saint Paul      | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Salamatof       | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Sand Point      | \$19.99 | Interior Telephone Company                 |
| Savoonga        | \$19.37 | United Utilities, Inc.                     |
| Scammon Bay     | \$19.37 | United Utilities, Inc.                     |
| Selawik         | \$15.95 | OTZ Telephone Cooperative, Inc.            |
| Seldovia        | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Seward          | \$9.11  | GTE Alaska Incorporated                    |
| Shageluk        | \$21.65 | Bush-Tell, Incorporated                    |
| Shaktolik       | \$14.30 | Mukluk Telephone Company, Inc.             |
| Sheldon Point   | \$19.37 | United Utilities, Inc.                     |
| Shishmaref      | \$14.30 | Mukluk Telephone Company, Inc.             |
| Shungnak        | \$15.95 | OTZ Telephone Cooperative, Inc.            |
| Sitka           | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Skagway         | \$5.59  | Alaska Telephone Company                   |
| Slana**         | \$11.38 | Copper Valley Telephone Cooperative, Inc.  |
| Sleetmute       | \$21.65 | Bush-Tell, Incorporated                    |
| Soldotna        | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Stebbins        | \$14.30 | Mukluk Telephone Company, Inc.             |
| Sterling        | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Stevens Village | \$19.37 | United Utilities, Inc.                     |
| Stony River     | \$21.65 | Bush-Tell, Incorporated                    |
| Sutton          | \$8.96  | Matanuska Telephone Association, Inc.      |
| Takotna         | \$19.37 | United Utilities, Inc.                     |
| Talkeetna       | \$8.96  | Matanuska Telephone Association, Inc.      |

|                 |         |                                            |
|-----------------|---------|--------------------------------------------|
| Tanana          | \$17.12 | Yukon Telephone Company, Inc.              |
| Tatitlek        | \$14.10 | Copper Valley Telephone Cooperative, Inc.  |
| Telida          | \$19.37 | United Utilities, Inc.                     |
| Teller          | \$14.30 | Mukluk Telephone Company, Inc.             |
| Tenakee Springs | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Tetlin          | \$11.03 | Alaska Telephone Company                   |
| Thorne Bay      | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Togiak          | \$19.37 | United Utilities, Inc.                     |
| Tok             | \$11.03 | Alaska Telephone Company                   |
| Toksook Bay     | \$19.37 | United Utilities, Inc.                     |
| Tuluksak        | \$19.37 | United Utilities, Inc.                     |
| Tuntutuliak     | \$19.37 | United Utilities, Inc.                     |
| Tununak         | \$19.37 | United Utilities, Inc.                     |
| Twin Hills      | \$19.37 | United Utilities, Inc.                     |
| Tyonek          | \$8.96  | Matanuska Telephone Association, Inc.      |
| Unalakleet      | \$10.88 | GTE Alaska Incorporated                    |
| Unalaska        | \$19.99 | Interior Telephone Company                 |
| Usibelli        | \$8.96  | Matanuska Telephone Association, Inc.      |
| Valdez          | \$9.32  | Copper Valley Telephone Cooperative, Inc.  |
| Venetie         | \$19.37 | United Utilities, Inc.                     |
| Wales           | \$14.30 | Mukluk Telephone Company, Inc.             |
| Wasilla         | \$8.96  | Matanuska Telephone Association, Inc.      |
| Whale Pass      | \$17.62 | Alaska Telephone Company                   |
| White Mountain  | \$14.30 | Mukluk Telephone Company, Inc.             |
| Whittier        | \$17.12 | Yukon Telephone Company, Inc.              |
| Willow          | \$8.96  | Matanuska Telephone Association, Inc.      |
| Wiseman         | \$20.14 | Summit Telephone Company                   |
| Women's Bay     | \$16.42 | Telephone Utilities of the Northland, Inc. |
| Wrangell        | \$9.11  | GTE Alaska Incorporated                    |
| Yakutat         | \$16.42 | Telephone Utilities of the Northland, Inc. |

\*This rate includes the Regulatory Cost Charge of .712% where applicable.

\*\*Customers served by radio service paid an additional monthly charge of \$26.65.

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# Financial Information for Fully Regulated Utilities

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1993-1996 Prepared by Parker Nation

| NET PLANT                                                           | 1993                   | 1994                   | 1995                   | 1996                   |
|---------------------------------------------------------------------|------------------------|------------------------|------------------------|------------------------|
| Electric                                                            | \$1,055,965,815        | \$1,185,404,791        | \$1,088,964,914        | \$1,241,813,627        |
| Gas                                                                 | 181,003,208            | 178,765,752            | 176,701,859            | 167,551,986            |
| Refuse                                                              | 5,908,739              | 5,688,489              | 8,273,960              | 9,376,672              |
| Sewer                                                               | 72,031,761             | 70,907,688             | 742,100,233            | 80,780,311             |
| Telephone*                                                          | 796,897,913            | 653,711,730            | 80,236,556             | 1,045,897,056          |
| Water                                                               | 99,315,614             | 96,684,429             | 113,948,425            | 112,430,180            |
| <b>TOTAL</b>                                                        | <b>\$2,211,123,050</b> | <b>\$2,191,162,879</b> | <b>\$2,210,225,947</b> | <b>\$2,657,849,832</b> |
| <b>TOTAL REVENUE</b>                                                |                        |                        |                        |                        |
| Electric                                                            | \$443,414,387          | \$461,804,705          | \$468,541,454          | \$489,229,828          |
| Gas                                                                 | 111,732,587            | 110,405,070            | 103,235,041            | 99,606,093             |
| Refuse                                                              | 23,127,945             | 23,939,549             | 26,379,115             | 25,492,105             |
| Sewer                                                               | 23,582,287             | 24,112,695             | 665,980,008            | 24,969,771             |
| Telephone*                                                          | 679,457,405            | 596,908,329            | 24,222,602             | 706,224,262            |
| Water                                                               | 28,761,211             | 28,939,059             | 30,072,824             | 29,566,927             |
| <b>TOTAL</b>                                                        | <b>\$1,310,075,822</b> | <b>\$1,246,109,407</b> | <b>\$1,318,431,044</b> | <b>\$1,375,088,986</b> |
| <b>NET INCOME</b>                                                   |                        |                        |                        |                        |
| Electric                                                            | \$32,579,812           | \$43,345,392           | \$53,014,526           | \$41,391,624           |
| Gas                                                                 | 8,183,035              | 11,250,565             | 13,852,565             | 13,246,267             |
| Refuse                                                              | 629,820                | 1,259,866              | 642,751                | (1,062,177)            |
| Sewer                                                               | 2,059,886              | 2,022,917              | 96,344,806             | 3,113,533              |
| Telephone*                                                          | 70,876,947             | 90,282,134             | 2,637,764              | 62,248,350             |
| Water                                                               | 1,819,066              | 1,653,414              | 3,052,188              | 3,704,882              |
| <b>TOTAL</b>                                                        | <b>\$116,148,566</b>   | <b>\$149,814,288</b>   | <b>\$169,544,600</b>   | <b>\$122,642,479</b>   |
| <b>CUSTOMERS</b>                                                    |                        |                        |                        |                        |
| Electric                                                            | 203,160                | 207,008                | 208,442                | 214,087                |
| Gas                                                                 | 87,153                 | 89,056                 | 89,004                 | 94,000                 |
| Refuse                                                              | 43,830                 | 45,278                 | 48,438                 | 47,407                 |
| Sewer                                                               | 45,605                 | 48,395                 | 335,163                | 46,212                 |
| Telephone*                                                          | 293,292                | 315,709                | 47,704                 | 390,438                |
| Water                                                               | 48,007                 | 50,165                 | 50,142                 | 50,373                 |
| <b>TOTAL</b>                                                        | <b>721,047</b>         | <b>755,661</b>         | <b>778,893</b>         | <b>842,517</b>         |
| * Excludes wholesale customers of intrastate interexchange carriers |                        |                        |                        |                        |



in order to prevent  
double-counting.

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| AREA SERVED      | ELECTRIC        | GAS    | REFUSE                                | SEWER             | TELECOMMUNICATIONS            |                       |
|------------------|-----------------|--------|---------------------------------------|-------------------|-------------------------------|-----------------------|
|                  |                 |        |                                       |                   | CABLE<br>TELEVISION<br>(CATV) | TELEPHONE             |
| Akhiok           | Akhiok          |        |                                       |                   |                               | TUNI                  |
| Akiachak         | ANCEC           |        |                                       |                   |                               | UII                   |
| Akiak            |                 |        |                                       |                   |                               | UII                   |
| Akutan           | Akutan          |        |                                       |                   |                               | TUNI                  |
| Alakanuk         | AVEC            |        |                                       |                   |                               | UII                   |
| Aleknagik        | NECI            |        |                                       |                   |                               | NTCI                  |
| Allakaket/Alatna | ACES            |        |                                       |                   |                               | TUNI                  |
| Ambler           | AVEC            |        |                                       |                   |                               | OTZ                   |
| Anaktuvuk Pass   | NSPL            |        | NSB                                   | NSB               |                               | ASTAC                 |
| Anchor Point     | HEA             |        | PSC                                   |                   |                               | TUNI                  |
| Anchorage        | Chugach<br>ML&P | ENSTAR | ARI<br>MOA<br>CRI<br>PSI              | AWWU<br>Rangeview | GCICI                         | ATU<br>Alascom<br>GCI |
|                  |                 |        |                                       |                   |                               | PC                    |
| Anderson         | GVEA            |        | Lausen's                              |                   |                               | MTA                   |
| Andreafsky       | AVEC            |        |                                       |                   |                               |                       |
| Angoon           | T-HREA          |        |                                       |                   |                               | TUNI                  |
| Aniak            | ALPC            |        | ADS                                   |                   | Cable Co.                     | Bush-Tell             |
| Anvik            | AVEC            |        |                                       |                   |                               | Bush-Tell             |
| Arctic Village   |                 |        |                                       |                   |                               | UII                   |
| Atka             | AEC             |        |                                       |                   |                               | TUNI                  |
| Atkasuk          | NSPL            |        | NSB                                   | NSB               |                               | ASTAC                 |
| Atmautluak       | AJU             |        |                                       |                   |                               | UII                   |
| Barrow           | BUECI           | BUECI  | NSB                                   | BUECI             | ASRC                          | GTE                   |
| Bartlett Cove    |                 |        |                                       |                   |                               | TUNI                  |
| Beaver           | Beaver          |        |                                       |                   |                               | UII                   |
| Bethel           | BUCI            |        |                                       |                   | GCICI                         | GTE                   |
| Bettles          | BL&P            |        |                                       |                   |                               | BTI                   |
| Big Lake         | MEA             | ENSTAR | AAE<br>MacKenzie<br>VRI<br>WRI<br>DNT |                   |                               | MTA                   |
| Birch Creek      |                 |        |                                       |                   |                               | UII                   |
| Birch Lake       |                 |        |                                       |                   |                               | TUNI                  |
| Border City      |                 |        |                                       |                   |                               | TUNI                  |
| Brevig Mission   | AVEC            |        |                                       |                   |                               | Mukluk                |
| Buckland         | Buckland        |        |                                       |                   |                               | OTZ                   |

|                       |           |          |            |            |         |           |   |
|-----------------------|-----------|----------|------------|------------|---------|-----------|---|
| Candle                |           |          |            |            |         | OTZ       |   |
| Cantwell              | GVEA      |          | Lausen's   |            |         | MTA       |   |
| Central               | FNUI      |          |            |            |         | UII       |   |
| Chalkyitsik           |           |          |            |            |         | UII       |   |
| Chatanika             | GVEA      |          |            |            |         | Summit    |   |
| Chatham               |           |          |            |            |         | TUNI      |   |
| Chefornak             | Naterkaq  |          |            |            |         | UII       |   |
| Chena Hot Springs     |           |          | Interior   |            |         | Summit    |   |
| Chevak                | AVEC      |          |            |            |         | UII       |   |
| Chickaloon            | MEA       |          | VRI        |            |         | MTA       |   |
| Chignik               | Chignik   |          |            |            |         | TUNI      |   |
| Chignik Lagoon        |           |          |            |            |         | TUNI      |   |
| Chignik Lake          | CLEU      |          |            |            |         | TUNI      |   |
| Chilkat Valley        | T-HREA    |          |            |            |         | GTE       |   |
| Chiniak               |           |          |            |            |         | TUNI      |   |
| Chisana               |           |          |            |            |         | ATC       |   |
| Chistochina           | APC       |          |            |            |         | CVTC      |   |
| Chitina               | CEI       |          |            |            |         | CVTC      |   |
| Chuathbaluk           | MKEC      |          |            |            |         | UII       |   |
| Chugiak/Eagle River   | MEA       | ENSTAR   | ERRI       | AWWU       | GCICI   | MTA       |   |
| Circle                | Circle    |          |            |            |         |           |   |
| Circle Hot Springs    |           |          |            |            |         | UII       |   |
| Clam Gulch            | HEA       |          | PSC        |            |         | TUNI      |   |
| Clarks Point          |           |          |            |            |         | NTCI      |   |
| Clear                 | GVEA      |          | Lausen's   |            |         | MTA       |   |
| Cleary Summit         | GVEA      |          |            |            |         | Summit    |   |
| Clover Pass           | Ketchikan |          |            |            | KSCI    | Ketchikan |   |
| Coffman Cove          | CCUA      |          |            |            | Coffman | TUNI      |   |
| Cold Bay              | G&K       |          |            |            |         | ITC       |   |
| College               | GVEA      |          | Far North  | CUC        | GCICF   | FMUS      |   |
| Cooper Landing        | Chugach   |          | PSC        |            |         | ITC       |   |
| Copper Center         | CVEA      |          | CVCC       |            |         | CVTC      |   |
| Cordova               | CECI      |          | Cordova    | Cordova    | GCICI   | CTCI      |   |
| Council               |           |          |            |            |         | Mukluk    |   |
| Craig                 | APC       |          |            | Craig      |         | ATC       |   |
| Crooked Creek         | MKEC      |          |            |            |         | Bush-Tell |   |
| Cube Cove             |           |          |            |            |         | TUNI      |   |
| Deadhorse/Prudhoe Bay | AUI       | Norgasco | CES<br>NSB | NSB        |         | ASTAC     |   |
| Deering               | IEC       |          |            |            |         | OTZ       |   |
| Delta Junction        | GVEA      |          | Delta      |            | HCI     | TUNI      |   |
| Dillingham            | NECI      |          | DRI        | Dillingham | NTCI    | NTCI      | D |
| Diomedes (Little)     | Diomedes  |          |            |            |         | Mukluk    |   |
| Dot Lake              | APC       |          |            |            |         | ATC       |   |
| Douglas               | AEL&P     |          | Arrow      | Juneau     | GCICI   | TUA       |   |
| Dutch Harbor          | Unalaska  |          | WSI        | Unalaska   | Eyecom  | ITC       |   |
| Eagle/Eagle Village   | EPCI      |          |            |            |         | NCTC      |   |

|                 |              |        |                                            |             |                   |        |
|-----------------|--------------|--------|--------------------------------------------|-------------|-------------------|--------|
| Edna Bay        |              |        |                                            |             |                   | ATC    |
| Eek             | AVEC         |        |                                            |             |                   | UUI    |
| Egegik          | EL&P         |        |                                            | EGEGIK      |                   | TUNI   |
| Eielson AFB     |              |        |                                            |             | GCICI             | TUA    |
| Eklutna         | MEA          | ENSTAR |                                            |             |                   | MTA    |
| Ekuk            |              |        |                                            |             |                   | NTCI   |
| Ekwok           |              |        |                                            |             |                   | BBTC   |
| Elfin Cove      |              |        |                                            |             |                   | TUNI   |
| Elim            | AVEC         |        |                                            |             |                   | Mukluk |
| Emmonak         | AVEC         |        |                                            |             |                   | UUI    |
| English Bay     | HEA          |        |                                            |             |                   | TUNI   |
| Etolin Island   |              |        |                                            |             |                   | GTE    |
| Evansville      | BL&P         |        |                                            |             |                   | BTI    |
| Fairbanks       | FMUS<br>GVEA |        | Fairbanks<br>Far North<br>Interior<br>Star | CUC<br>FMUS | GCIFI<br>Gerstein | FMUS   |
| False Pass      | False Pass   |        |                                            |             |                   | TUNI   |
| Fort Greely     | GVEA         |        |                                            |             | GCICI             | TUNI   |
| Fort Wainwright | GVEA         |        |                                            |             | GCICI             | TUA    |
| Fort Yukon      | GZUC         |        |                                            |             |                   | ITC    |
| Fox             | GVEA         |        |                                            |             |                   | FMUS   |

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V | W | X

| AREA SERVED    | ELECTRIC | GAS    | REFUSE     | SEWER  | TELECOMMUNICATIONS            |                       | WATER  |
|----------------|----------|--------|------------|--------|-------------------------------|-----------------------|--------|
|                |          |        |            |        | CABLE<br>TELEVISION<br>(CATV) | TELEPHONE             |        |
| Gakona         | CVEA     |        |            |        |                               | CVTC                  |        |
| Galena         | Galena   |        |            | Galena | Eyecom                        | ITC                   | Galen  |
| Gambell        | AVEC     |        |            |        | FCI                           | UUI                   |        |
| Girdwood       | Chugach  | ENSTAR | PSC        | AWWU   | ACC                           | ATU                   | AWW    |
| Glennallen     | CVEA     |        | CVCC       | CVCC   |                               | CVTC                  | CVCC   |
| Golovin        | Golovin  |        |            |        |                               | Mukluk                |        |
| Goodnews Bay   | AVEC     |        |            |        |                               | UUI                   |        |
| Grayling       | AVEC     |        |            |        |                               | Bush-Tell             |        |
| Gulkana        | CVEA     |        |            |        |                               | CVTC                  |        |
| Gustavus       | Gustavus |        |            |        |                               | TUNI                  |        |
| Haines         | HL&P     |        | HSI        | Haines | EDDI                          | GTE                   | Haine  |
| Halibut Cove   | HEA      |        |            |        |                               | TUNI                  |        |
| Healy          | GVEA     |        | Lausen's   |        | Gerstein                      | MTA                   |        |
| Healy Lake     | APC      |        |            |        |                               | ATC                   |        |
| Hobart Bay     |          |        |            |        |                               | TUNI                  |        |
| Hollis         | APC      |        |            |        |                               | ATC                   |        |
| Holy Cross     | AVEC     |        |            |        |                               | Bush-Tell             |        |
| Homer          | HEA      |        | PSC        | Homer  | GCICI                         | TUNI                  | Home   |
| Hoonah         | T-HREA   |        |            | Hoonah | HTHCC                         | TUNI                  | Hoona  |
| Hooper Bay     | AVEC     |        |            |        | FCI                           | UUI                   |        |
| Hope           | Chugach  |        | PSC        |        |                               | ATU<br>Alascom<br>GCI |        |
| Houston        | MEA      | ENSTAR | VRI        |        |                               | MTA                   |        |
| Hughes         | HPLC     |        |            |        |                               | TUNI                  |        |
| Huslia         | AVEC     |        |            |        |                               | TUNI                  |        |
| Hydaburg       | APC      |        |            |        |                               | ATC                   | Hydabu |
| Hyder          |          |        |            |        |                               | GTE                   |        |
| Igiugig        |          |        |            |        |                               | BBTC                  |        |
| Iliamna        | I-N-N    |        |            |        |                               | ITC                   |        |
| Indian/Bird    | Chugach  |        | PSC        |        |                               | ATU                   |        |
| Ivanof Bay     |          |        |            |        |                               | TUNI                  |        |
| Juneau         | AEL&P    |        | Arrow      | Juneau | GCIJC                         | TUA                   | Junea  |
| Kachemak       | HEA      |        | PSC        | Homer  | GCICI                         | TUNI                  |        |
| Kaguyak        |          |        |            |        |                               | TUNI                  |        |
| Kake           | T-HREA   |        |            | Kake   |                               | TUNI                  | Kake   |
| Kaktovik       | NSPL     |        | NSB        | NSB    |                               | ASTAC                 | NSB    |
| Kalifornsky    | HEA      |        | C&S<br>PSC |        |                               | TUNI                  |        |
| Kalskag, Lower | AVEC     |        |            |        |                               | Bush-Tell             |        |

|                  |            |                 |                          |                  |        |           |                         |
|------------------|------------|-----------------|--------------------------|------------------|--------|-----------|-------------------------|
| Kalskag, Upper   | AVEC       |                 |                          |                  |        | Bush-Tell |                         |
| Kaltag           | AVEC       |                 |                          |                  |        | TUNI      |                         |
| Kantishna        |            |                 |                          |                  |        | MTA       |                         |
| Karluk           |            |                 |                          |                  |        | TUNI      |                         |
| Kasaan           | T-HREA     |                 |                          |                  |        | TUNI      |                         |
| Kasigluk/Akolmut | AVEC       |                 |                          |                  |        | UII       |                         |
| Kasilof          | HEA        |                 | C&S<br>PSC               |                  |        | TUNI      |                         |
| Kazakof Bay      |            |                 |                          |                  |        | TUNI      |                         |
| Kenai            | HEA        | ENSTAR<br>Kenai | C&S<br>PSC               | Kenai            | GCICI  | TUNI      | Kenai                   |
| Kenny Lake       | CVEA       |                 |                          |                  |        | CVTC      |                         |
| Ketchikan        | Ketchikan  |                 | Ketchikan<br>Tongass     | Ketchikan<br>KGB | KSCI   | Ketchikan | Ketchik<br>MPSA<br>SSSA |
| Keyes Point      |            |                 |                          |                  |        | TUNI      |                         |
| Kiana            | AVEC       |                 |                          |                  |        | OTZ       |                         |
| King Cove        | King Cove  |                 |                          | King<br>Cove     | KCC    | ITC       | King<br>Cove            |
| King Salmon      | NEA        |                 |                          |                  | BCI    | BBTC      |                         |
| Kipnuk           | Kipnuk     |                 |                          |                  | FCI    | UII       |                         |
| Kivalina         | AVEC       |                 |                          |                  |        | OTZ       |                         |
| Klawock          | T-HREA     |                 |                          |                  |        | TUNI      | Klawoc                  |
| Klawock Airport  | APC        |                 |                          |                  |        | TUNI      |                         |
| Klukwan          |            |                 |                          |                  |        | GTE       |                         |
| Knik             | MEA        | ENSTAR          | AAE<br>VRI<br>WRI<br>DNT |                  |        | MTA       |                         |
| Kobuk            | Kobuk      |                 |                          |                  |        | OTZ       |                         |
| Kodiak           | KEA        |                 | KIB                      | Kodiak           | GCICI  | TUNI      | Kodia                   |
| Kokhanok         |            |                 |                          |                  |        | TUNI      |                         |
| Koliganek        |            |                 |                          |                  |        | BBTC      |                         |
| Kongiganak       | PPC        |                 |                          |                  |        | UII       |                         |
| Kotlik           | Kotlik     |                 |                          |                  | Kotlik | UII       |                         |
| Kotzebue         | Kotzebue   |                 |                          | KMU              | GCICI  | OTZ       | KMU                     |
| Koyuk            | AVEC       |                 |                          |                  |        | Mukluk    |                         |
| Koyukuk          |            |                 |                          |                  |        | TUNI      |                         |
| Kupreanof        |            |                 |                          |                  |        |           |                         |
| Kwethluk         | KK         |                 |                          |                  |        | UII       |                         |
| Kwigillingok     | KWIG       |                 |                          |                  |        | UII       |                         |
| Lake Louise      |            |                 | AAE<br>CVCC<br>WRI       |                  |        |           |                         |
| Lake Minchumina  | Semloh     |                 |                          |                  |        | UII       |                         |
| Larsen Bay       | Larsen Bay |                 |                          |                  |        | TUNI      |                         |
| Levelock         | LECI       |                 |                          |                  |        | BBTC      |                         |
| Lime Village     |            |                 |                          |                  |        | UII       |                         |
| Livengood        |            |                 |                          |                  |        | UII       |                         |
| Long Island      |            |                 |                          |                  |        | TUNI      |                         |

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V | W | Y

| AREA<br>SERVED     | ELECTRIC  | GAS    | REFUSE    | SEWER  | TELECOMMUNICATIONS            |           | WATER   |
|--------------------|-----------|--------|-----------|--------|-------------------------------|-----------|---------|
|                    |           |        |           |        | CABLE<br>TELEVISION<br>(CATV) | TELEPHONE |         |
| Manley Hot Springs | Manley    |        |           |        |                               | UUI       |         |
| Manokotak          | MPC       |        |           |        |                               | NTCI      |         |
| Marshall           | AVEC      |        |           |        |                               | UUI       |         |
| McCarthy           |           |        |           |        |                               | CVTC      |         |
| McGrath            | MLPC      |        | MTR       |        | MBC                           | GTE       | McGrath |
| McKinley Park      | GVEA      |        | Irwin's   |        |                               | MTA       |         |
| Merkoryuk          | AVEC      |        |           |        |                               | UUI       |         |
| Mentasta           | APC       |        |           |        |                               | CVTC      |         |
| Meshik             |           |        |           |        |                               | TUNI      |         |
| Metlakatla         |           |        |           |        |                               | GTE       |         |
| Meyers Chuck       |           |        |           |        |                               | ATC       |         |
| Minto              | AVEC      |        |           |        |                               | UUI       |         |
| Moose Pass         | Chugach   |        | PSC       |        |                               | GTE       |         |
| Mount Edgumbe      | Sitka     |        | Sitka     | Sitka  | KSCI                          | TUNI      | Sitka   |
| Mountain Village   | AVEC      |        |           |        | VCC                           | UUI       |         |
| Naknek             | NEA       |        | Patterson |        | BCI                           | BBTC      |         |
| Napakiaak          | NIPC      |        |           |        |                               | UUI       |         |
| Napaskiak          |           |        |           |        |                               | UUI       |         |
| Naukati            |           |        |           |        |                               | ATC       |         |
| Nelchina           | CVEA      |        |           |        |                               | CVTC      |         |
| Nelson Lagoon      | NLECI     |        |           |        |                               | TUNI      |         |
| Nenana             | GVEA      |        | Irwin's   | Nenana | HYTEK                         | TUNI      | Nenana  |
| New Chenega Bay    |           |        |           |        |                               | UUI       |         |
| New Stuyahok       | AVEC      |        |           |        |                               | BBTC      |         |
| Newhalen           | I-N-N     |        |           |        |                               | ITC       |         |
| Newtok             | UPC       |        |           |        |                               | UUI       |         |
| Nightmute          | Nightmute |        |           |        |                               | UUI       |         |
| Nikiski            | HEA       | ENSTAR | PSC       |        | GCICI                         | TUNI      | McGahan |
| Nikolaevski        |           |        |           |        |                               | TUNI      |         |
| Nikolai            | NLP       |        |           |        |                               | UUI       |         |
| Nikolski           | Umnak     |        |           |        |                               | TUNI      |         |



|                    |             |        |                         |            |             |           |                 |
|--------------------|-------------|--------|-------------------------|------------|-------------|-----------|-----------------|
| Ninilchik          | HEA         |        | PSC                     |            |             | TUNI      |                 |
| Noatak             | AVEC        |        |                         |            |             | OTZ       |                 |
| Nome               | Nome        |        | Andersen                | Nome       | GCICI       | GTE       | Nome            |
| Nondalton          | I-N-N       |        |                         |            |             | TUNI      |                 |
| Noorvik            | AVEC        |        |                         |            |             | OTZ       |                 |
| North Pole         | GVEA        |        | Drake's                 | North Pole |             | TUNI      | North Pole      |
| Northway           | NPLI        |        | NNL                     |            |             | TUNI      |                 |
| Nuiqsut            | NSPL        |        | NSB                     | NSB        |             | ASTAC     | NSB             |
| Nulato             | AVEC        |        |                         |            |             | TUNI      |                 |
| Nunapitchuk        | AVEC        |        |                         |            |             | UII       |                 |
| Old Harbor         | AVEC        |        |                         |            |             | TUNI      |                 |
| Oscarville         | BUCI        |        |                         |            |             | UII       |                 |
| Ouzinkie           | Ouzinkie    |        |                         |            | ICTV        | TUNI      |                 |
| Palmer             | MEA         | ENSTAR | MAT-SU<br>Palmer<br>WRI | Palmer     | RCAI        | MTA       | Eagle<br>Palmer |
| Paxson             | Paxson      |        |                         |            |             | CVTC      |                 |
| Pedro Bay          |             |        |                         |            |             | TUNI      |                 |
| Pelican            | PUI         |        |                         |            |             | TUNI      | PUI             |
| Perryville         |             |        |                         |            |             | TUNI      |                 |
| Peters Creek       | MEA         | ENSTAR | ERRI                    |            | GCICI       | MTA       |                 |
| Petersburg         | Petersburg  |        | Petersburg              | Petersburg | GCICI       | GTE       | Petersburg      |
| Petersville        |             |        |                         |            |             | MTA       |                 |
| Pilot Point        | PILOT       |        |                         |            |             | TUNI      |                 |
| Pilot Station      | AVEC        |        |                         |            |             | UII       |                 |
| Pitkas Point       | AVEC        |        |                         |            |             | UII       |                 |
| Platinum           |             |        |                         |            |             | UII       |                 |
| Point Baker        |             |        |                         |            |             | TUNI      |                 |
| Point Hope         | NSPL        |        | NSB                     | NSB        |             | ASTAC     | NSB             |
| Point Lay          | NSPL        |        | NSB                     | NSB        |             | ASTAC     | NSB             |
| Point<br>MacKenzie |             |        | MacKenzie               |            |             | MTA       |                 |
| Port<br>Alexander  |             |        |                         |            |             | TUNI      |                 |
| Port<br>Alsworth   | TECI        |        |                         |            |             | TUNI      |                 |
| Port Graham        | HEA         |        |                         |            |             | TUNI      |                 |
| Port Heiden        | Port Heiden |        |                         |            |             |           |                 |
| Port Lions         | KEA         |        |                         |            | Eyecon      | ITC       |                 |
| Port Moller        | KEA         |        |                         |            |             | TUNI      |                 |
| Port<br>Protection |             |        |                         |            |             | TUNI      |                 |
| Portage<br>Creek   |             |        |                         |            |             | TUNI      |                 |
| Quinhagak          | AVEC        |        |                         |            | FCI         | UII       |                 |
| Rampart            | Weisner     |        |                         |            |             | UII       |                 |
| Red Devil          | MKEC        |        |                         |            |             | Bush-Tell |                 |
| Ruby               | RUBY        |        |                         |            | Supervision | YTC       |                 |
| Russian<br>Mission | AVEC        |        |                         |            |             | UII       |                 |

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V | W | Y ]

| AREA<br>SERVED  | ELECTRIC      | GAS    | REFUSE     | SEWER    | TELECOMMUNICATIONS            |           | WATER    |
|-----------------|---------------|--------|------------|----------|-------------------------------|-----------|----------|
|                 |               |        |            |          | CABLE<br>TELEVISION<br>(CATV) | TELEPHONE |          |
| Saint George    | St. George    |        |            |          |                               | TUNI      |          |
| Saint Marys     | AVEC          |        |            |          | FCI                           | UUI       |          |
| Saint Michael   | AVEC          |        |            |          |                               | Mukluk    |          |
| Saint Paul      | St. Paul      |        |            |          |                               | TUNI      | St. Paul |
| Salamatof       | HEA           |        | C&S<br>PSC |          | GCICI                         | TUNI      |          |
| Sand Point      | SPEI          |        |            |          |                               | ITC       |          |
| Savoonga        | AVEC          |        |            |          | FCI                           | UUI       |          |
| Saxman          | Ketchikan     |        |            | Saxman   | KSCI                          | Ketchikan | Saxman   |
| Scammon Bay     | AVEC          |        |            |          |                               | UUI       |          |
| Selawik         | AVEC          |        |            |          |                               | OTZ       |          |
| Seldovia        | HEA           |        |            | Seldovia |                               | TUNI      | Seldovia |
| Seward          | Seward        |        | JE         | Seward   | GCICI                         | GTE       | Seward   |
| Shageluk        | AVEC          |        |            |          |                               | Bush-Tell |          |
| Shaktoolik      | AVEC          |        |            |          |                               | Mukluk    |          |
| Sheldon Point   | Sheldon Point |        |            |          |                               | UUI       |          |
| Shishmaref      | AVEC          |        |            |          | SNC                           | Mukluk    |          |
| Shungnak        | AVEC          |        |            |          |                               | OTZ       |          |
| Sitka           | Sitka         |        | Sitka      | Sitka    | KSCI                          | TUNI      | Sitka    |
| Skagway         | APC           |        | Skagway    | Skagway  | EDDI                          | ATC       | Skagway  |
| Slana           |               |        |            |          |                               | CVTC      |          |
| Sleetmute       | MKEC          |        |            |          |                               | Bush-Tell |          |
| Soldotna        | HEA           | ENSTAR | C&S<br>PSC | Soldotna | GCICI                         | TUNI      | Soldotna |
| Squaw Harbor    |               |        |            |          |                               | ITC       |          |
| Stebbins        | AVEC          |        |            |          |                               | Mukluk    |          |
| Sterling        | HEA           | ENSTAR | C&S<br>PSC |          | GCICI                         | TUNI      |          |
| Stevens Village |               |        |            |          |                               | UUI       |          |
| Stony River     | MKEC          |        |            |          |                               | Bush-Tell |          |
| Sutton          | MEA           |        | AAE<br>VRI |          |                               | MTA       |          |

|                    |                   |        |                                        |                     |             |           |                                                                     |
|--------------------|-------------------|--------|----------------------------------------|---------------------|-------------|-----------|---------------------------------------------------------------------|
|                    |                   |        | WRI                                    |                     |             |           |                                                                     |
| Takotna            | Takotna           |        |                                        |                     |             | UUI       |                                                                     |
| Talkeetna          | MEA               |        | AAE<br>WRI<br>TALKEETNA                | MAT-SU              |             | MTA       | MAT-SU                                                              |
| Tanacross          | APC               |        |                                        |                     |             | ATC       |                                                                     |
| Tanana             | TPC               |        |                                        |                     | Supervision | YTC       |                                                                     |
| Tatitlek           |                   |        |                                        |                     |             | CVTC      |                                                                     |
| Telida             |                   |        |                                        |                     |             | UUI       |                                                                     |
| Teller             | Teller            |        |                                        |                     |             | Mukluk    |                                                                     |
| Tenakee<br>Springs |                   |        |                                        |                     |             | TUNI      |                                                                     |
| Tetlin             | APC               |        |                                        |                     |             | ATC       |                                                                     |
| Thorne Bay         | Thorne Bay        |        | Thorne Bay                             | Thorne<br>Bay       | TBTV        | TUNI      | Thorne<br>Bay                                                       |
| Togiak             | AVEC              |        |                                        |                     | FCI         | UUI       |                                                                     |
| Tok                | APC               |        | J.D. Refuse                            |                     |             | ATC       |                                                                     |
| Toksook<br>Bay     | AVEC              |        |                                        |                     | FCI         | UUI       |                                                                     |
| Tuluksak           |                   |        |                                        |                     |             | UUI       |                                                                     |
| Tuntutuliak        | TCSA              |        |                                        |                     |             | UUI       |                                                                     |
| Tununak            | AVEC              |        |                                        |                     | FCI         | UUI       |                                                                     |
| Twin Hills         |                   |        |                                        |                     |             | UUI       |                                                                     |
| Tyonek             | Chugach           |        | BESI                                   |                     |             | MTA       |                                                                     |
| Umnak<br>Island    |                   |        |                                        |                     |             |           |                                                                     |
| Unalakleet         | MEA               |        |                                        |                     | FCI         | GTE       |                                                                     |
| Unalaska           | Unalaska          |        | WSI                                    | Unalaska            | Eyecon      | ITC       | Unalaska                                                            |
| Usibelli           | GVEA              |        | Irwin's                                |                     |             | MTA       |                                                                     |
| Valdez             | CVEA              |        | VATI                                   | Valdez              | ACVI        | CVTC      | Valdez                                                              |
| Venetie            |                   |        |                                        |                     |             | UUI       |                                                                     |
| Wainwright         | NSPL              |        | NSB                                    | NSB                 |             | ASTAC     | NSB                                                                 |
| Wales              | AVEC              |        |                                        |                     |             | Mukluk    |                                                                     |
| Ward Cove          | Ketchikan         |        |                                        |                     | KSCI        | Ketchikan |                                                                     |
| Wasilla            | MEA               | ENSTAR | ALMA<br>MacKenzie<br>VRI<br>WRI<br>DNT | Trillium<br>Wasilla | RCAI        | MTA       | MUC<br>N.L.T.<br>Snowshoe<br>Swiss<br>Castle<br>Trillium<br>Wasilla |
| Whale Pass         |                   |        |                                        |                     |             | ATC       |                                                                     |
| White<br>Mountain  | White<br>Mountain |        |                                        |                     |             | Mukluk    |                                                                     |
| Whittier           | Chugach           | ENSTAR |                                        | Whittier            | Supervision | YTC       | Whittier                                                            |
| Willow             | MEA               |        | WRI                                    |                     |             | MTA       |                                                                     |
| Women's<br>Bay     | KEA               |        |                                        |                     | ICTV        | TUNI      |                                                                     |
| Wrangell           | Wrangell          |        |                                        | Wrangell            | ACVI        | GTE       | Wrangell                                                            |
| Yakutat            | Yakutat           |        | BOB'S                                  |                     |             | TUNI      | Yakutat                                                             |

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**THE ADOPTION OF PROXY COST MODELS BY  
TELECOMMUNICATIONS REGULATORS AS THE MEANS TO  
CALCULATE UNIVERSAL SERVICE SUPPORT:**

**WHAT IS AT STAKE FOR RURAL AMERICA?**

**A RUPRI Briefing Paper**

by

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## **The Adoption of Proxy Cost Models by Telecommunications Regulators as the Means to Calculate Universal Service Support: What is at Stake for Rural America?**

### **● High Level Historical Overview**

- The price of basic service is set below cost to promote universal service.
- Historically, this was accomplished through implicit and explicit subsidies.
  - Rates for urban, business and access services were raised above cost to generate funds that flowed to local residential services.
  - Three explicit federal support funds were established that will provide about \$1.7 billion in 1999 to subsidize basic local service:<sup>1</sup>
    - The high cost fund, established in 1986, was designed to offset the cost of the physical loop between the central office switch and the customer's location. In 1999, its fund size is projected to be \$864.2 million.
    - Long Term Support, established in 1989, was designed to keep interstate loop access rates uniform in urban and rural areas. In 1999, its fund size is projected to be \$469.6 million.
    - Local Switching Support, established in 1998, was designed to help keep interstate switching access rates uniform in urban and rural areas. In 1999, its fund size is projected to be \$390.8 million.
  - About eighty percent of the \$1.7 billion total goes to local exchange carriers with fewer than 100,000 lines.
- As a result of the Telecommunications Act of 1996, federal and state regulators are replacing these implicit and explicit mechanisms with new explicit funds.<sup>2</sup>
- According to Reed Hundt, the size of this new fund could be between \$4 and \$20 billion.<sup>3</sup>
- The FCC and state regulators are leaning toward using proxy models to identify customer locations eligible for support.
  - A proxy model is a simulation model that estimates the cost of providing basic local service to every customer location in the United States

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<sup>1</sup> Proposed First Quarter 1999 Universal Service Contribution Factors and Proposed Actions, CC Docket No. 96-45 *Public Notice*, FCC 98-318 (rel. Dec. 4, 1998).

<sup>2</sup> 47 U.S.C. § 254(e).

<sup>3</sup> Statement of Reed Hundt, Former Chair of the FCC on "Implementation of the Telecom Act of 1996" before the Subcommittee on Telecommunications and Finance, Committee on Commerce, US House of Representatives at 7 (July 18, 1996).



- It assumes one provider of basic service within a serving area.
- It employs the latest engineering practices to design the network.
- o The FCC plans to use a proxy model to calculate support for non-rural carriers beginning July 1, 1999.
- o The recent Joint Board Recommendation continues to endorse forward looking cost models to calculate support, but recommends defining the service area eligible for support to be the study area and believes that the current support mechanism should continue if a reliable forward looking cost model is not available in time for the July 1, 1999 target implementation date.<sup>4</sup> Both decisions suggest that the Board is wary of adopting a proxy model for non-rural carrier support. In the same document, the Joint Board says that it does not intend that FCC rulings on forward looking cost models should be a precedent for "any potential revisions to support mechanisms for rural carriers."<sup>5</sup>
- o While it is focusing on using a proxy model for non-rural carriers, the FCC has organized a Rural Task Force (RTF) to determine whether a proxy model is appropriate for calculating support for rural carriers. If the RTF and Joint Board recommends and the FCC approves a model, one could be used to calculate rural LEC support beginning July, 1, 2001 at the earliest.

● **Key Policy Questions:**

It is clear from this high level overview, that if you don't know what a proxy model is and how it works, and what are its flaws, you should. In a few years, regulators may use proxy models to calculate basic local service support for rural customers.

This study is designed to help you ask the right questions about proxy models so that you can decide whether or not they are the right tool for overhauling the existing support mechanisms that keep basic local service affordable.

Toward this end, this study gives background information needed to answer the following questions:

- o What is basic local service?
- o How will it evolve?
- o Why proxy models?

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<sup>4</sup> Federal-State Joint Board on Universal Service, CC Docket No. 96-45, *Second Recommended Decision*, FCC 98J-7 at 14-16 (Nov. 25, 1998)(*Second Recommended Decision*).

<sup>5</sup> *Id.* at 15.

- Are they reliable enough to target support dollars to high cost customer locations?
- Do they calculate enough support to replace all existing implicit and explicit supports for basic service?
- Are they flexible enough to include other services that may become part of basic service?
- Are they flexible enough to incorporate new technology or more than one provider in a service area?
- What is the status of using proxy models for non-rural and rural carrier support?
- What is the status of the RTF's review of proxy models for rural carriers?

The report is divided into the following sections:

- The regulatory path leading to proxy models
  - Definition of basic local service
  - Rationale for using a proxy model
  - Requirements for an acceptable proxy model
- Common features of Competing Proxy Models
- Comparison of results from HAI and BCPM as a benchmark for evaluating future models.
- Status of proxy models for non-rural carriers
  - Adoption of a proxy model platform by the FCC
  - Recent complaints about the FCC's new platform
  - The Joint Board's Recommendations
- The "Rural Spillover"
- Status report on the RTF and State activities

## Subject Area Reviews

### ● The Regulatory Path Leading to Proxy Models

Since AT&T's divestiture in 1984, the FCC and state regulators have increasingly relied on competition to stimulate innovation in the telephone industry. Congress put its stamp of approval on this deregulatory trend when it passed the Telecommunications Act of 1996. The Act removes barriers that have kept potential competitors out of the market. Yet, the Act also recognizes that competition does not solve all problems. People who live in remote areas, for example, may not be able to afford the going rate for service.

Section 254 of the Act states that the FCC has the duty to preserve and enhance universal telecommunications service in a manner consistent with the procompetitive purposes of the Act. To accomplish this goal, the Act directed the FCC to establish a new federal fund that would replace the existing support funding arrangements for basic local service. All implicit subsidies built into basic local service from other services had to be made explicit and portable among competing telecommunication carriers.<sup>6</sup> States were also encouraged to establish a similar type of fund to promote universal service.

To gauge the size of the fund, Section 254(c)(1) required the FCC to define telecom services eligible for support. In its Universal Service Order, the FCC concluded that basic service has the following characteristics:<sup>7</sup>

- Voice access to the public switched network
- Local usage
- Touch tone capability
- Single party service or its equivalent
- Access to emergency services and TRS
- Access to interexchange services
- Access to directory assistance
- Toll limitation for qualifying low-income assistance

Carriers eligible for support must offer and advertise all the services supported by the federal fund throughout their service area using their own facilities or a combination of their own facilities and resale of another carrier's facilities.

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<sup>6</sup> Portability means that the support payments go to the carrier who wins a customer eligible for support.

<sup>7</sup> See 47 C.F.R. § 54.101.

Following the Joint Board's recommendation, the FCC decided to calculate the amount of universal service support required for each rural and high cost area based on forward-looking economic cost (FLEC) of providing basic telephone services reduced by a nationwide revenue benchmark calculated on the basis of an average revenue per line.<sup>8</sup> The definition of forward looking cost is the cost of constructing and operating the network facilities and functions needed to provide basic local service using the latest engineering and purchasing practices adopted as industry standards.

The Joint Board and the Commission cited several advantages of FLEC studies over those based on a company's embedded costs. First, the FLEC study could be designed to target support more accurately by calculating costs over a smaller geographic area than the cost accounting systems that the ILECs currently use, which are designed for the entire study area. Second, setting support based on embedded cost provides the wrong signals to potential entrants and exiting carriers. Companies may have the incentive to gold plate their networks to increase support. Third, the Joint Board also found that a FLEC model would not be based on any individual company's costs; therefore, it is a competitively neutral estimate of the cost of providing supported services.

The particular FLEC model that the FCC is in the process of adopting for non-rural carriers is a proxy model. This is a national simulation model that calculates the forward looking cost of basic local service to all potential subscribers in the United States and insular regions such as Puerto Rico. It is intended to approximate the cost of providing basic local service employing the least cost, most efficient technology that is currently available using incumbent LECs' existing wire centers.

The Joint Board recommended the use of a proxy model because it produces cost estimates that are independent of a company's actual cost of providing service.<sup>9</sup> According to the Joint Board, proxy model cost estimates should be based on a careful analysis of network design, engineering practices, available technologies, and current technology costs

The general requirements for an acceptable proxy model are as follows:

- It must calculate forward looking costs for physical parts of the network, called network elements, such as loop, local switching, tandem switching, interoffice transport, operator services, and public telephones.
- Every network element must have a cost
- The model should estimate the cost of providing services to all businesses and households within a geographic area so that it fully reflects the economies of scale of providing basic local service.
- The model should have a reasonable allocation of joint and common costs to network elements.
- All underlying data, formulae, computations, and software should be available to all interested parties.

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<sup>8</sup> Federal-State Joint Board on Universal Service, CC Docket No. 96-45, *Report and Order*, 12 FCC Rcd 8776 (1997) at ¶ 223.

<sup>9</sup> Federal-State Joint Board on Universal Service, CC Docket No. 96-45, *Recommended Decision*, 12 FCC Rcd 87 (1997) at ¶ 277.



- The model must be flexible enough to incorporate new technologies
- It must be flexible enough to include the functionalities needed for an evolving set of supported services

### ● Common Features of Competing Proxy Models

Based on these general requirements, three proxy models were developed. The latest versions of them are the Benchmark Cost Proxy Model, Version 3, sponsored by BellSouth, Sprint, and U.S. West, the HAI model, Version 5.0a sponsored by AT&T and MCI, and the Hybrid Cost Proxy Model (HCPM) developed by FCC staff.

These proxy models have many similar characteristics. They are all capable of using geocoded locations of individual customers to build their national networks. The service areas that they model are far smaller than a wire center's geographic boundary. This granularity gives them the flexibility to calculate costs for service areas of virtually any size.

The models use four basic variables that affect the design of service area networks:

- Distance of customers from the switch
- Customer density
- Terrain (soil type, slope, water depth, depth of bedrock)
- Technology

Though the type of equipment used to build the network in a particular service area will differ between a rural and an urban service area, the network diagram for these service areas will look remarkably similar. They will include the following:

- Feeder which extends from the switch to clusters of customers
- Distribution plant to each cluster of customers
- Drop wire and network interface devices to particular customers
- Switches, including remotes
- Interoffice transport of traffic
- A Signaling system.

In sparsely populated areas, digital loop carriers are used concentrate traffic. Figure 1 shows a network diagram that is representative of the BCPM and HAI models. The HCPM is available only for the loop and switching portions of the network.

Besides these major investment items, the models all have the same basic cost drivers.

- Fill factors -- the network capacity normally in use.
- Shared facilities -- network equipment such as telephone poles used by Telcos, electrical utility companies, and cable companies
- Depreciation rates
- Cost of capital
- Joint costs such as maintenance equipment used for more than one network
- Common costs such as corporate expense and other overheads.
- Repairs

- Directory assistance
- Taxes

### ● **Comparison of results for HAI and BCPM -- the two basic models**

While the three competing proxy models look very similar, they produce very different cost estimates for basic local service. Table A illustrates the cost per loop difference calculated by HAI and BCPM. Large differences persist despite a series of rulings by the FCC to standardize model inputs such as setting the rate of return at the FCC's authorized rate and requiring model builders to use the FCC's depreciation rate guidelines.

These large cost differences produce large differences in universal service support as shown in Table B. Assuming that support begins when the cost of residential service is above \$31 and the cost of business service is above \$51, the support level range calculated by BCPM is between \$13.7 billion to \$17.2 billion. In contrast, the support range for HAI is between \$3.4 billion to \$7.6 billion.

The support ranges for the two models show that the definition of service area is an important policy tool. Continuing the \$31/\$51 benchmark example, the lowest support level in both models is for the study area, the largest service area defined by the Act. At the study area as opposed to a cluster, which is the smallest serving area defined by the models, there is much more opportunity for pockets of high cost customers to get averaged in with low cost customers. This averaging reduces the amount of support needed at the study area level as opposed to the cluster level to keep basic service affordable. In effect, the support level shrinks as the geographic definition of a service area expands.

Despite the marked differences in costs and support generated by the two models, they both identify very similar regions and study areas as relatively high cost. Maps 1 and 2 illustrate the point for states. In both models, the Midwestern states need the highest subsidy per loop to keep basic service affordable. These states have the lowest population densities and longest distances between customers in the United States. Density and distance are the key cost drivers in all proxy models. Table C shows that the smaller study areas, as measured by line size, have the highest cost per loop in both models.

### ● **Status of Proxy Models for Non-Rural Carriers**

On October 28, 1998, the FCC released an order describing its two-stage plan to adopt a proxy model for non-rural carriers. The first stage, defines the model platform composed of the fixed elements of the model such as network design and engineering. The second stage selects the inputs for the model such as the cost of cables and switches.<sup>10</sup> The FCC's goal is to have a final model ready by May 1, 1999 for July 1, 1999. This is when the proxy model will be used to calculate support for non-rural carriers.

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<sup>10</sup> Federal-State Joint Board on Universal Service and Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, CC Docket Nos. 96-45 and 97-160, *Fifth Report and Order*, FCC 98-270 (rel. Oct. 28, 1998).

The FCC continued to give the states the option to develop their own FLEC mechanism as a means for estimating federal high cost support.<sup>11</sup> At the time of the Order's release, twelve states had chosen to adopt a proxy model as the means for calculating their own fund requirements. Indiana and North Carolina selected versions of BCPM to estimate their state fund sizes. Nevada and Texas chose versions of Hatfield for their funds.

In the same Order, the FCC adopted the final model platform by selecting what it considers to be the best elements from the BCPM, HAI, and HCPM. According to the FCC, its adopted platform has the flexibility "to reflect any evolution in the definition of supported services, and . . . that the model . . . will not impede rural Americans' ability to use the Internet and other advanced telecommunications and information services."<sup>12</sup>

Petitions for Reconsideration attacked the FCC's platform decisions for being too hasty. Commenters said they were not given enough time to analyze this "best of" model because its features kept changing and the underlying dataset supplied by PNR Associates was only available at very high cost and was masked to prevent users from testing PNR's algorithms for assigning customers that were not geocoded to service areas. GTE, for example, said that the FCC did not follow its own rules for testing models. The FCC released its platform without review. In the past, commenters had several months to evaluate BCPM and HAI.<sup>13</sup>

Based on its limited review of the FCC's platform, GTE produced a wide-ranging critique that covered not only the geocoding and engineering decisions, but also the reliability of proxy models as a regulatory tool. In the past, a key difficulty with proxy models was that they did not identify customer locations accurately. To test the FCC's adopted platform, GTE purchased data from PNR, the key provider of data for the proxy models, for its Pennsylvania study areas to test the reliability of PNR's geocoding of customer locations. GTE found serious problems with PNR's dataset. It was especially poor at identifying special access and single business line customers.<sup>14</sup>

GTE did not agree with the FCC that selecting the "best" features of separate models produces the best model. Each model has not only its own set of assumptions but also has modules that interact in different ways. Cobbling together modules from separate models can produce unexpectedly odd results as GTE has shown. For, example, HAI and HCPM have different structure-sharing algorithms. They define density differently. They apply annual charge factors differently. As a result, changes in one module of the FCC's model either don't flow through to another as in the case of the cost factors or lead to double counting of cost savings as occurs with structure sharing.<sup>15</sup>

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<sup>11</sup> *Universal Service Order* at ¶ 248.

<sup>12</sup> *Id.* at 3.

<sup>13</sup> See *GTE Petition for Reconsideration of Commission's Fifth Report and Order* at 7-10 (fil. Dec. 18, 1998)(*GTE Petition*).

<sup>14</sup> See *GTE Petition* at 33 (Aff. of Michael Dippon).

<sup>15</sup> See *GTE Petition* at 5-6 and 12 (Aff. of Jason Zhang).



Instead of using a piecemeal approach to model building, GTE recommended that the FCC use a holistic approach. The FCC should abandon its two stage approach to building its final proxy model and evaluate the platform and inputs together. The FCC should also take steps to integrate the desirable features of the models it has abstracted.<sup>16</sup> Only a series of full-scale tests on an operational model will tell whether the FCC's proxy model is adequate for the job of calculating support.

GTE believes that even when the modules are integrated, the FCC's model will need a lot of fixing. It needs to treat company size as a variable. Instead, the model assumes one set of cost factors for companies of all sizes.<sup>17</sup> The model also does not recognize that companies have very different peak loads, which can affect the amount of spare capacity they need.<sup>18</sup>

In the much more addressable category are a series of flawed relationships identified by GTE. The FCC's model should serve all housing units, instead off occupied dwellings because it would impose lengthy delays on new customers or those in the process of relocating. Taxes are not based on all costs, but they should, because revenue should equal total costs.<sup>19</sup> Nor do the expense modules allow for taxes based on investment or permit any input for marketing expense. Several states require advertising of supported services.<sup>20</sup> GTE also wants the switching module revised. The FCC's model uses 24:1 line to trunk ratio when the industry standard is 6:1.<sup>21</sup> The switching cost equation which relates switching costs linearly to lines is too simplistic.

The FCC's model must also calculate a cost for every network function, which it fails to do now. It does not include investment for Operation Support Systems (OSS) and testing facilities. Nor does it include capitalized labor costs for trunk installation associated with certain SS7 signaling links.

To help commenters test the model, the FCC should explain clearly how its model works. At the moment, the coding and algorithms are very hard to decipher. The interactions among the modules are unclear. Since the model is being updated, it would be useful to have a log of revisions to the model, and each update released to the public should have a "version" label.

More broadly, GTE is very concerned that the proxy model being developed does not approximate the workings of a competitive telecommunications company.<sup>22</sup> A proxy model may be too technologically static to capture the cost of a real network. For example, the model uses outdated network assumptions such as T-1 DLC loop technology. This technology is not practical to use if the telephone company wants to deploy Asynchronous Digital Subscriber Loop

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<sup>16</sup> See *GTE Petition* at 9 (Aff. of Michael Dippon).

<sup>17</sup> See *GTE Petition* at 30 (Aff. of Michael Dippon).

<sup>18</sup> See *GTE Petition* at 37 (Aff. of Francis J. Murphy).

<sup>19</sup> See *GTE Petition* at 3 (Aff. of Subhendu Roy).

<sup>20</sup> *Id.* at 10.

<sup>21</sup> See *GTE Petition* at 36 (Aff. of Francis J. Murphy).

<sup>22</sup> See also Dissent of Commissioner Harold Furchtgott-Roth to *Second Recommended Decision*.



(ADSL). This is a very promising loop technology for accessing the Internet.<sup>23</sup>

The model assumes one monopoly provider of basic service. This is an unrealistic assumption in areas where competitive LECs (CLECs) are vying for customers.<sup>24</sup> Dividing the customer base among competing carriers will lower the opportunities for economies of scale. It can also lead to stranded investment.

As with the other proxy models, the FCC's does not minimize service cost.<sup>25</sup> It mainly uses a set of rules of thumb to build the network. GTE would like to see the model minimize net present value of investments and operating expenses.<sup>26</sup> Even where an optimization technique is used, GTE questions its value. The FCC's loop module minimizes the number of customer clusters for loop placement. Minimizing clusters assumes that fixed costs are more important than variable costs in rural areas. Whether this is a correct assumption or not has not been verified.<sup>27</sup>

A key stumbling block for testing a proxy model is that there is no accepted standard for verification. GTE believes that the FCC ought to use actual costs to judge how the model approximates the costs of an efficient firm. At a minimum, Bell Atlantic says, that the FCC should compare proxy model to actual study area line counts and average loop length.<sup>28</sup> GTE suggests that the FCC should look at customer behavior to set its network assumptions. For example, IXCs want to have much larger trunking capacity than their market shares. This should affect the model's fill factors.<sup>29</sup> There is also concern about the availability and quality of data underlying the model. PNR fees are high, and its algorithms for assigning customers not geocoded is masked. As mentioned before, GTE's test of PNR's Pennsylvania data suggests that PNR's customer assignments are imprecise.<sup>30</sup> If the FCC finally adopts a model, it should satisfy all of its own criteria.<sup>31</sup>

Operationally, the sheer size of a proxy model is a barrier to assessing its reliability. It is designed to calculate the cost of providing basic local service to virtually every customer location in the United States. As a result, it produces huge amounts of output. Using default settings alone to run HAI or BCPM for the nation requires almost a week of run time and more than 50 gigabytes of storage space. Then if one wants to test one of these models by varying the default settings, there are hundreds of variables to choose from.

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<sup>23</sup> See *GTE Petition* at 29 (Aff. of Francis J. Murphy).

<sup>24</sup> See *Bell Atlantic Companies Petition for Reconsideration of the Commission's Fifth Report and Order* at 12 (fil. Dec. 18, 1998) (*Bell Atlantic Petition*).

<sup>25</sup> See *GTE Petition* at 16 (Aff. of Michael Dippon).

<sup>26</sup> See *GTE Petition* at 19 (Aff. of Michael Dippon).

<sup>27</sup> See *GTE Petition* at 24 (Aff. of Michael Dippon).

<sup>28</sup> See *Bell Atlantic Petition* at 10.

<sup>29</sup> See *GTE Petition* at 39 (Aff. of Francis J. Murphy).

<sup>30</sup> See *GTE Petition* at 29 (Aff. of Michael Dippon).

<sup>31</sup> See *GTE Petition* at 16.

Besides the problem of sheer size, each competing model is programmed differently. They use different programming languages, different program modules, and different coding styles. Because the FCC's model is an amalgam of these prior models, it will take great effort to truly understand the assumptions made at each level of calculation.

On November 23, 1998, one month before GTE's comments on the FCC platform, the Joint Board of State and Federal continued to endorse the FCC's modeling efforts. However, the Board expressed concern about testing the model using data that is being treated as proprietary by its supplier, PNR. In the event that the model is not completed in time for use as of July 1, 1999, the Joint Board recommends using the present method for an interim period. The Joint Board also wants the FCC to reconsider allowing states to use their own cost studies in place of the federal model for nonrural companies. As to the size of the serving area, the Joint Board initially wants to use the study area as the service area. Given the extent of local competition, the Joint Board believes that support at this geographic serving area properly measures support responsibility. To limit the financial risk of using a forward looking cost model to subsidize basic service, the Joint Board supported the FCC's commitment to states that none will receive less federal support than it does now. With respect to rural carriers, the Joint Board emphasized that using a forward looking cost model for nonrural carriers does not set a precedent for any potential revisions for rural carriers.<sup>32</sup>

The tenor of these recommendations show that the Joint Board wants the FCC to act very cautiously before adopting proxy models as the basis for calculating nonrural carrier support. In particular, use of the study area as the service area, virtually negates one of the basic reasons for adopting proxy models. They were going to be the vehicles for shrinking the service area from the study area to something smaller. By doing so, competitors would be able to qualify as eligible carriers without having to provide service throughout a study area.

#### ● The Rural Spillover Effect

Although most of the FCC's efforts thus far have been on adopting a proxy model for nonrural carriers that will meet the Joint Board's criteria, work is now beginning on analyzing a forward looking cost model for rural carriers. The recently selected Rural Task Force (RTF),<sup>33</sup> will consider "whether a forward looking economic cost (FLEC) mechanism for rural carriers should have platform design features or input values that are different from those that are appropriate for non-rural carriers." Translated, the RTF will consider whether the proxy model designed for non-rural carriers is appropriate for rural carriers. If the RTF recommends the use of a proxy model, it may be used as soon as July 1, 2001 to calculate support for rural carriers.

Use of proxy models may not be confined to calculating the size of the new universal service fund in rural carrier territories. For example, the Washington State Commission, whose commissioner heads the RTF, has petitioned the FCC for permission to use a proxy model in conjunction with shrinking the geographic size of a service area eligible for receiving universal service support from the current study area to an exchange. The Commission believes that this

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<sup>32</sup> See *Second Recommended Decision* at 10, 13-16, and 19-20.

<sup>33</sup> See *Federal-State Joint Board on Universal Services Announces Rural Task Force Members*, CC Docket No. 96-45, *Public Notice*, FCC 98J-1 (rel. July 1, 1998).

new definition will encourage competition because several of its rural study areas include multiple exchanges that are not contiguous. This geographical separation makes it very costly for a potential new entrant to become an eligible carrier.

#### ● **Status of RTF's Activities<sup>34</sup>**

The Rural Task Force is planning to deliver a draft recommendation to the Joint Board by December 1999. That will leave at least the first quarter of the year 2000 for public review and development of final recommendations. At its December 10-11, 1998 meeting, the Task Force adopted a mission statement, objectives, and a set of principles to guide their work over the next 15 months (see Appendix A). These principles largely draw from the Telecommunications Act of 1996, but also recognize that the ultimate system of support should not only be theoretically correct and provide a predictable and sufficient fund, but also must pass the practical test of being economically and administratively workable. Toward that end, the RTF intends a broad-based review including systems of support based on forward looking cost models and those which may continue or adapt the existing system of support.

Responding directly to the FCC Public Notice which established this Rural Task Force, the RTF plans to undertake a rigorous and systematic review of cost model platform and input options. It is entirely possible that the final report may recommend to the Joint Board a specific forward looking cost model platform and input recommendations which the RTF believe will ensure a system of support providing predictable and sufficient funding necessary to achieve the universal service goals outlined by the '96 Act as it applies to rural companies. However, the RTF will not prejudge this outcome and recognizes that it is also possible that it may not be able to responsibly make such a recommendation to the Joint Board. Consequently, the RTF plans to begin identifying and evaluating alternatives to forward looking proxy cost models which might otherwise provide predictable and sufficient funding necessary to achieve the goals outlined by the '96 Act as applied to rural companies. The RTF does not want to be in the untenable position of simply criticizing without offering a specific and workable alternative to the Joint Board.

The Rural Task Force will meet at least four times in 1999. In addition, the members plan numerous conference calls. Working groups composed of the Rural Task Force members will organize, as appropriate, around specific tasks such as identifying input and platform issues. The plan is to have an open process inviting broad-based public involvement. In this way, the RTF hopes to deliver a product to the Joint Board which not only reflects intellectual rigor and policy relevance, but also enjoys wide support. However, the group recognizes that its universal service recommendation to the Joint Board must also be a mechanism consistent with extending the benefits of a competitive telecommunications market to rural or insular areas and with the Act's principle of competitive neutrality.

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<sup>34</sup> See letter dated December 22, 1998 from W. Gillis, Chair of the RTF to the Joint Board.



## **Appendix A**

### **Mission Statement.**

The mission of the Rural Task Force (RTF) is to review and evaluate alternative universal service support mechanisms which affect consumers in rural or insular areas served by rural telephone companies and to make recommendations to the CC 96-45 Joint Board and the Federal Communications Commission on appropriate universal service support mechanisms, methods and policies to faithfully implement the universal service provisions of the Telecommunications Act of 1996 (the Act) for these rural or insular areas.

### **Objectives**

1. The RTF should review a broad range of options including the continuation or adaptation of the current system of support, a system of support based on forward-looking cost models and any other mechanism consistent with the universal service support and pro-competitive provisions of the Act.
2. The RTF should identify issues which are unique to carriers which serve rural or insular areas and recommend means to address those unique characteristics.
3. Where necessary, the RTF should recommend transitional mechanisms, hold harmless provisions, or modifications to minimize adverse impacts to rural or insular consumers and to facilitate investment in modern telecommunications infrastructure by service providers serving rural or insular areas.

### **Principles for Developing Recommendations**

1. Any recommendation from the RTF must conform to the requirements of the Act. Requirements of the Act relating to universal service in rural and insular areas include:
  - a) quality services at just, reasonable and affordable rates;
  - b) access to advanced telecommunications and information services in all regions of the nation;
  - c) services and rates which are reasonably comparable to those provided in urban areas;
  - d) equitable and nondiscriminatory contributions from all service providers to preserve and advance universal service;
  - e) specific, predictable and sufficient federal and state mechanisms to preserve and advance universal service;

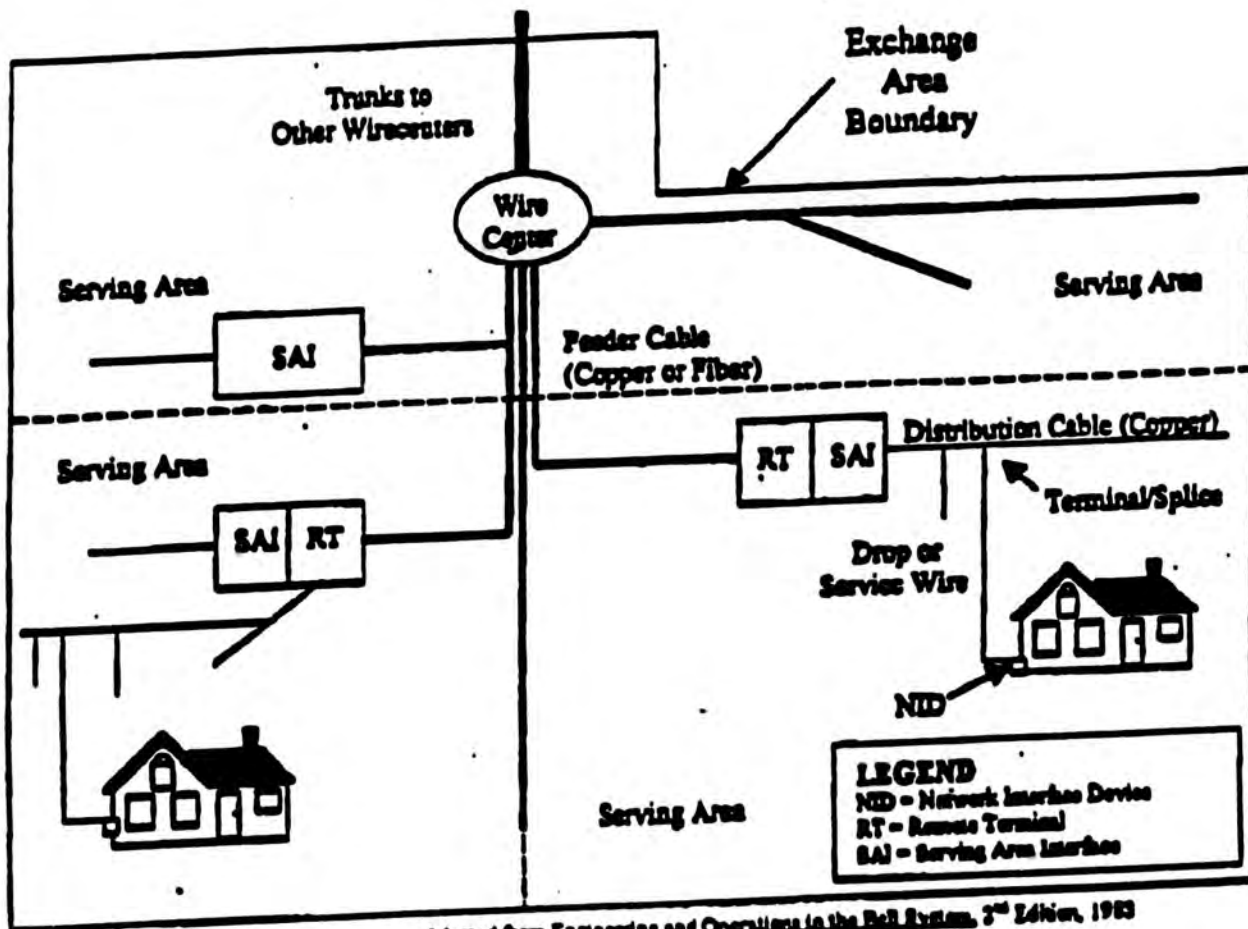


- f) access to advanced services for schools, libraries and rural health care providers;**
- g) interexchange and interstate rates which are no higher for rural subscribers than urban subscribers;**
- h) that except as provided for discounted services to schools, libraries and rural health care providers, support be payable only to eligible telecommunications carriers;**
- I) support be used only for the provision, maintenance and upgrading of facilities and service for which the support is intended;**
- j) the deployment of advanced telecommunications capability be encouraged on a reasonably timely basis;**
- k) carriers not to use services which are non-competitive to subsidize services that are subject to competition;**
- l) services which are included in the definition of universal service bear no more than a reasonable share of joint and common costs of facilities used to provide those services.**

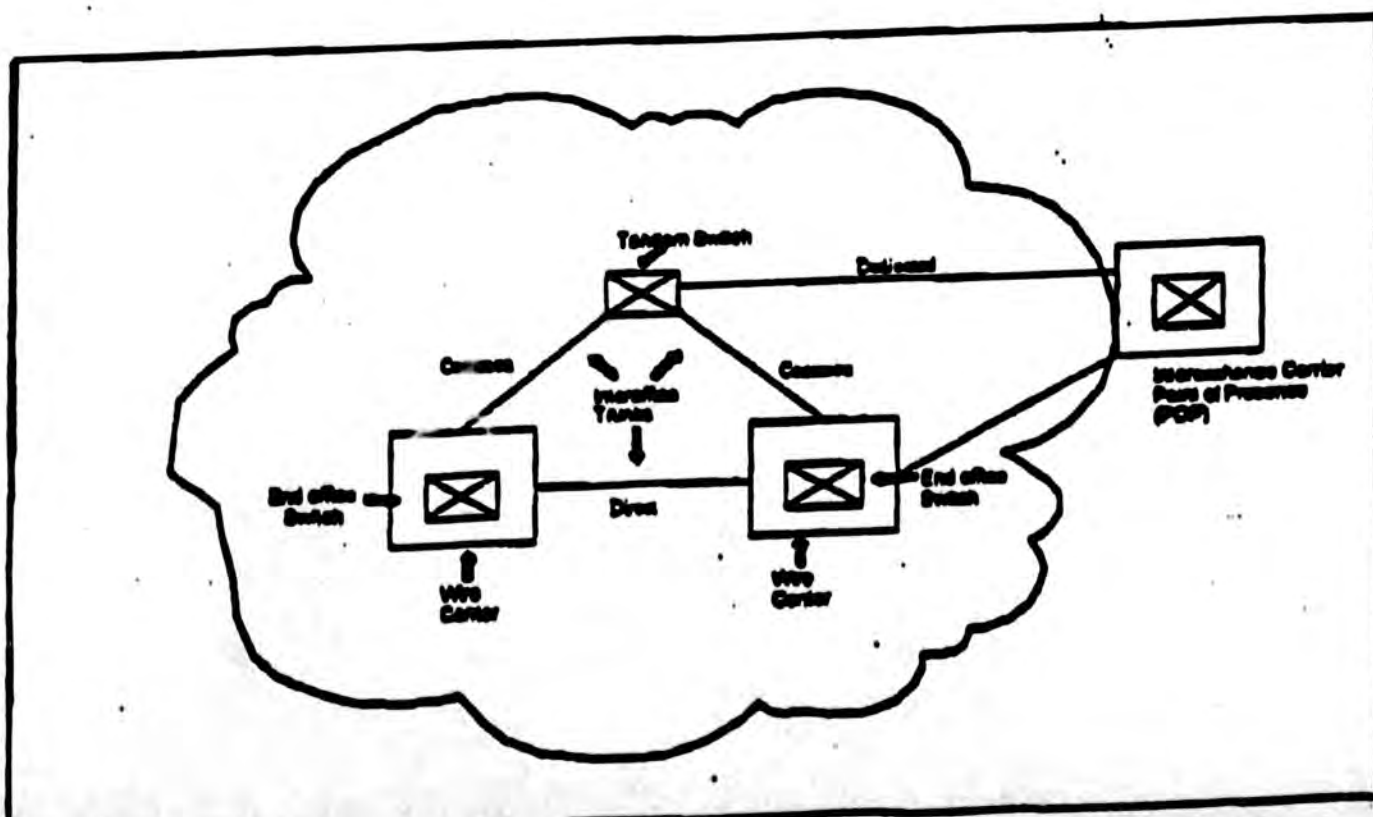
**2. Any support mechanism recommended by the RTF should be economically and administratively workable.**

**3. Any support mechanisms recommended by the RTF should be consistent with extending the benefits of a competitive telecommunications market to rural or insular areas and with the Act's principle of competitive neutrality.**

Figure 1



Adapted from *Essentials and Operations in the Bell System*, 2nd Edition, 1983



**Table A**

**Proxy Model  
Cost Per Loop  
Per Month**

|                            | <u>BCPM 3.0</u> | <u>HAI 5.0A - FCC Defaults</u> |
|----------------------------|-----------------|--------------------------------|
| Ameritech                  | \$29.41         | \$21.70                        |
| Bell Atlantic              | \$28.19         | \$22.41                        |
| Bell South                 | \$35.55         | \$25.47                        |
| NYNEX                      | \$27.28         | \$21.83                        |
| Pacific Telesis            | \$26.79         | \$20.03                        |
| Southwestern Bell          | \$35.60         | \$24.44                        |
| US West                    | \$36.57         | \$24.94                        |
| GTE Corporation            | \$42.45         | \$28.20                        |
| Sprint - United            | \$45.37         | \$31.70                        |
| All RBOCs                  | \$31.20         | \$23.99                        |
| Other Non-RBOC / Non-Rural | \$35.40         | \$27.29                        |
| <u>Total Non-Rurals</u>    | <u>\$31.98</u>  | <u>\$23.46</u>                 |
| <u>Rural Telcos</u>        | <u>\$65.69</u>  | <u>\$44.28</u>                 |
| National Average           | \$36.10         | \$25.71                        |

**Table B**

**Basic Local Service Support Funding**  
(Billions)

**BCPM 3.0**

| Benchmark: (Residence - Business) | Revenue Benchmarks |               |               | 115% of<br>Nat'l Avg.<br>Cost per Loop<br>@ \$41.52 | 150% of<br>Nat'l Avg.<br>Cost per Loop<br>@ \$4.16 |
|-----------------------------------|--------------------|---------------|---------------|-----------------------------------------------------|----------------------------------------------------|
|                                   | @ \$21 - \$41      | @ \$31 - \$51 | @ \$41 - \$61 |                                                     |                                                    |
| Cluster                           | \$26.7             | \$17.2        | \$13.5        | N/A                                                 | N/A                                                |
| Density Zone                      | \$26.5             | \$16.6        | \$12.9        | \$13.5                                              | \$10.3                                             |
| Wire Center                       | \$26.2             | \$15.9        | \$11.5        | N/A                                                 | N/A                                                |
| Study Area                        | \$25.7             | \$13.7        | \$8.1         | N/A                                                 | N/A                                                |

**HAI 5.0A - FCC Defaults**

| Benchmark: (Residence - Business) | Revenue Benchmarks |               |               | @ 115% of<br>Nat'l Avg.<br>Cost per Loop<br>@ \$ 29.57 | @ 150% of<br>Nat'l Avg.<br>Cost per Loop<br>@ \$ 38.57 |
|-----------------------------------|--------------------|---------------|---------------|--------------------------------------------------------|--------------------------------------------------------|
|                                   | @ \$21 - \$41      | @ \$31 - \$51 | @ \$41 - \$61 |                                                        |                                                        |
| Cluster                           | \$12.0             | \$7.6         | \$5.5         | N/A                                                    | N/A                                                    |
| CBG                               | \$11.8             | \$7.4         | \$5.3         | N/A                                                    | N/A                                                    |
| Density Zone                      | \$10.4             | \$6.6         | \$4.3         | \$7.6                                                  | \$5.2                                                  |
| Wire Center                       | \$10.0             | \$5.9         | \$4.0         | N/A                                                    | N/A                                                    |
| Study Area                        | \$7.7              | \$3.4         | \$2.1         | N/A                                                    | N/A                                                    |

Note 1: The Benchmarks of \$31 - \$51 were the proposed level referred to in the May 8, 1997 USF Order, paragraph 267.  
The 115% and 150% Benchmarks are suggested in the November 25, 1998 Joint Board Recommendation, paragraph 43.

Note 2: BCPM contains 613,532 Clusters, 20,671 Wirecenters, and 9 Density Zones.

Note 3: Hatfield contains 217,674 Clusters, 149,404 CBGs and 20,437 Wirecenters, and 9 Density Zones.



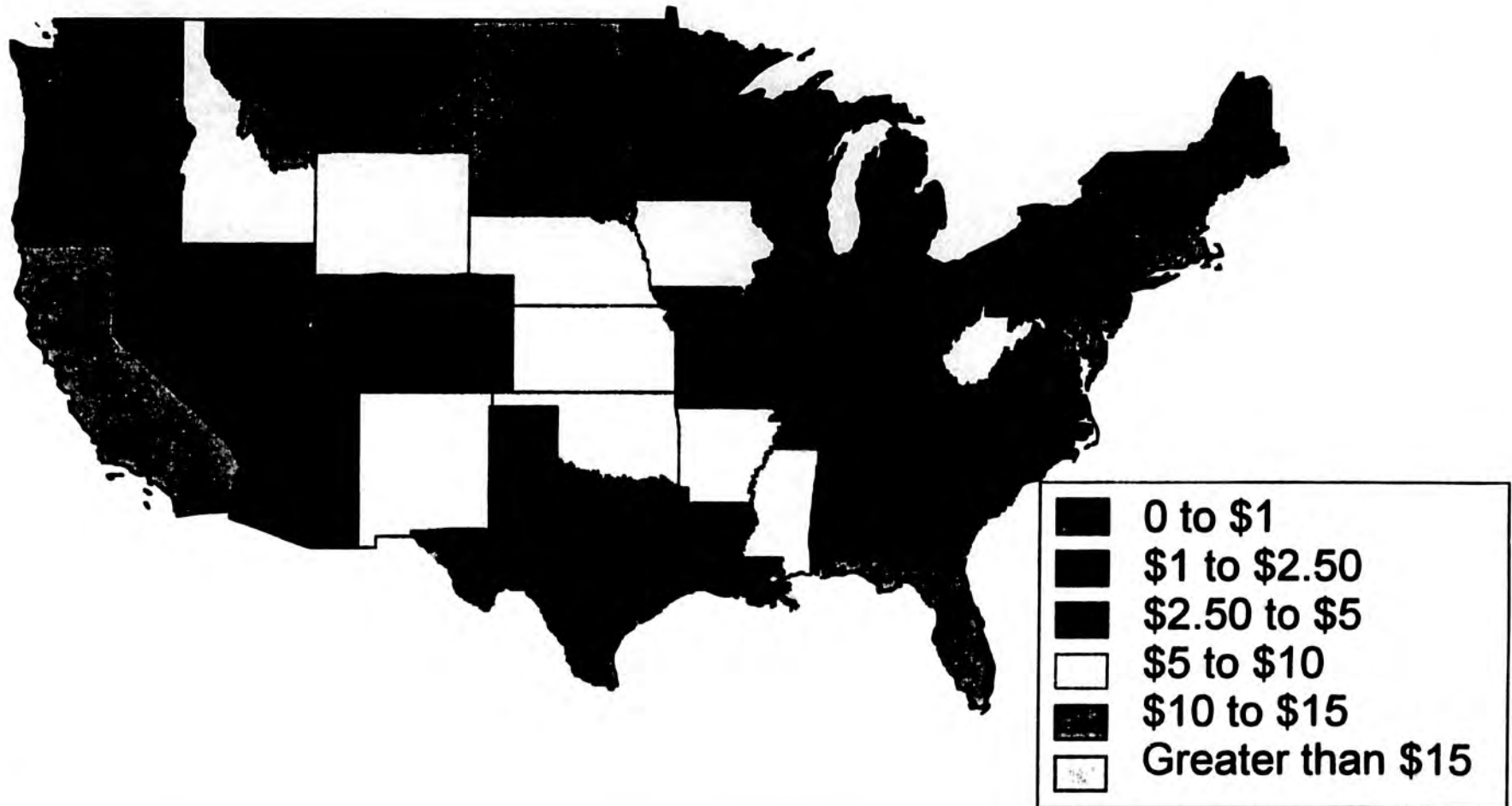
**Table C**

**Proxy Model  
Cost Per Loop  
Per Month  
By Line Size**

| <u>Line Size</u>        | <u>BCPM 3.0</u> | <u>HAI 5.0A - FCC Defaults</u> |
|-------------------------|-----------------|--------------------------------|
| 0 - 1,000 Lines         | \$165.71        | \$116.30                       |
| 1,000 - 2,500 Lines     | \$132.96        | \$100.39                       |
| 2,500 - 5,000 Lines     | \$127.33        | \$88.49                        |
| 5,000 - 10,000 Lines    | \$96.09         | \$65.54                        |
| 10,000 - 25,000 Lines   | \$87.51         | \$65.15                        |
| 25,000 - 50,000 Lines   | \$64.96         | \$50.71                        |
| 50,000 - 100,000 Lines  | \$64.05         | \$31.22                        |
| 100,000 or More Lines   | \$32.99         | \$24.69                        |
| <b>National Average</b> | <b>\$36.10</b>  | <b>\$25.71</b>                 |

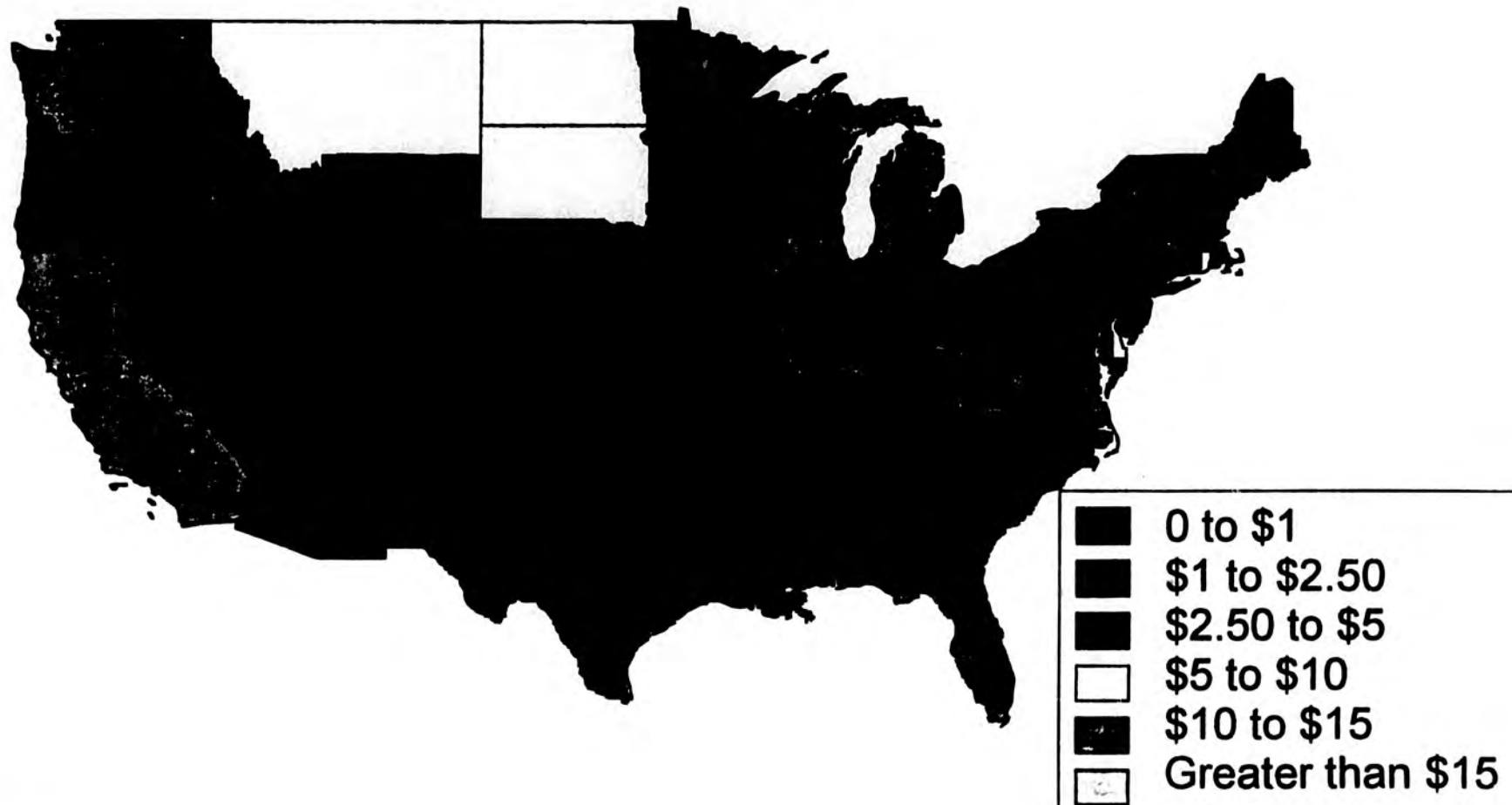
## MAP 1

### BCPM Monthly Support per Line @ 115% of National Average



## MAP 2

### HAI Monthly Support per Line @ 115% of National Average



### MAP 3

## BCM Support at \$31 / \$51 vs. Current Support





### **Understanding Support Implications Using the Proxy Model Exhibits**

- The exhibits describe in much greater detail the comparison results shown in the "What is at Stake for Rural America" report.
- Many of the tables focus on the fund size and fund distribution issues.
- Alternative fund sizes are presented in the tables and maps which show Proxy Model support:
  - assuming various Residence/Business cost per line benchmarks for different size serving areas (study area, wire center, density zone, or cluster). National summaries are in Section II, Table B, Maps 3 and 4. The detailed company analyses are contained in Section V, Parts A and B.
  - assuming cost per line benchmarks equal to 115% and 150% of the national average. Data at the national level are displayed in Section II, Maps 5 and 6 and Section III, Tables XI and XII. The state summaries are contained in Section IV, Tables IX and X. The detailed company analyses are displayed in Section V, Tables V through VIII.
- Distribution of comparisons are displayed in the tables and maps which show model support and cost per loop:
  - by state (Section II, Maps 1 through 6, and Section IV).
  - by holding company (Section II, Table A and Section V, Parts G and H).
  - by study area (Section V, Parts C through F).
  - by line size (Section II, Tables C, D and E, and Section III).
- The Tables using \$31 Residence-Support/\$51 Business-Support contain historic as well as model generated support. These support figures are displayed in:
  - Section III, Table IV (National)
  - Section IV, Table III (State)
  - Section V, Table II (Study Area).
- A few key observations:
  - HAI produces a much smaller fund than BCPM. Please refer to Section II, Tables B, D and E and Maps 3 through 6.
  - With either model, the size of the USF fund shrinks when either one of the following changes are made to the program:
    1. The support benchmarks per line levels are raised or
    2. The geographic size of the service area is increased .  
(i.e. moving from the wire center to the study area)
- Please refer to Section II, Table B.
- In general, rural states and study areas receive the highest support per loop. Please refer to Section II, Maps 1 and 2.

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- (BCPM Model Values) - (115% of National Average)

##### **Table XII - USF Line Counts and Support Payments**

- (BCPM Model Values) - (150% of National Average)

#### **Part B. HAI (Hatfield) Proxy Model Results**

##### **Table IV - USF Line counts and Support Payments**

- (HAI Model Values) - (\$31 Res-Sup/\$51 Bus-Sup)

##### **Table XI - USF Line Counts and Support Payments**

- (HAI Model Values) - (115% of National Average)

##### **Table XII - USF Line Counts and Support Payments**

- (HAI Model Values) - (150% of National Average)

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- (BCPM Model Values) - (Three Support Price Scenarios)

- Study Area Calculation Level

- Wire Center Calculation Level

- Density Zone Calculation Level

- Cluster (Grid) Calculation Level

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#### **Table I - Monthly Loop Costs and Annual USF Support**

- (HAI Model Values) - (Three Support Price Scenarios)

- Study Area (SARCOD) Calculation Level

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- CBG (CBG) Calculation Level

- Cluster (CLUSTR) Calculation Level

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- (HAI Model Values) - (\$31 Res-Sup/\$51 Bus-Sup)

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- (BCPM Model Values) - (115% of National Average)

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- (BCPM Model values) - (150% of National Average)

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- (Support Shares at 5%, 15% and 25%)

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- HAI Model Values) - (150% of National Average)
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#### **Table XIII - Operating Co. Loop Costs and Support**

- (BCPM Model Values) - (\$31 Res-Sup/\$51 Bus-Sup)

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#### **Table XIII - Operating Co. Loop Costs and Support**

- (HAI Model Values) - (\$31 Res-Sup/\$51 Bus-Sup)



## SUMMARY

1999

| STATE                | USF SUPPORT |             |             |
|----------------------|-------------|-------------|-------------|
|                      | NON RURAL   | RURAL       | TOTAL       |
| ALABAMA              | 11,458,836  | 25,201,956  | 36,660,792  |
| ALASKA               | 0           | 68,684,436  | 68,684,436  |
| ARIZONA              | 2,417,928   | 29,227,056  | 31,644,984  |
| ARKANSAS             | 4,340,688   | 69,614,544  | 73,955,232  |
| C.N.M.I.             | 0           | 6,871,872   | 6,871,872   |
| CALIFORNIA           | 17,632,632  | 33,387,696  | 51,020,328  |
| COLORADO             | 2,777,832   | 42,370,332  | 45,148,164  |
| CONNECTICUT          | 0           | 195,612     | 195,612     |
| DELAWARE             | 0           | 0           | 0           |
| DISTRICT OF COLUMBIA | 0           | 0           | 0           |
| FLORIDA              | 1,453,320   | 18,464,640  | 19,917,960  |
| GEORGIA              | 2,980,956   | 62,477,880  | 65,458,836  |
| GUAM                 | 0           | 1,349,784   | 1,349,784   |
| HAWAII               | 0           | 1,149,660   | 1,149,660   |
| IDAHO                | 1,320,024   | 27,816,624  | 29,136,648  |
| ILLINOIS             | 650,208     | 41,045,568  | 41,695,776  |
| INDIANA              | 0           | 14,297,064  | 14,297,064  |
| IOWA                 | 1,352,592   | 29,656,512  | 31,009,104  |
| KANSAS               | 1,836,072   | 59,687,844  | 61,523,916  |
| KENTUCKY             | 1,531,656   | 14,869,776  | 16,401,432  |
| LOUISIANA            | 0           | 64,654,500  | 64,654,500  |
| MAINE                | 0           | 16,716,960  | 16,716,960  |
| MARYLAND             | 0           | 114,588     | 114,588     |
| MASSACHUSETTS        | 0           | 435,756     | 435,756     |
| MICHIGAN             | 772,320     | 31,865,352  | 32,637,672  |
| MINNESOTA            | 543,036     | 44,772,924  | 45,315,960  |
| MISSISSIPPI          | 7,550,040   | 17,579,448  | 25,129,488  |
| MISSOURI             | 8,968,776   | 46,183,524  | 55,152,300  |
| MONTANA              | 1,762,620   | 42,448,680  | 44,211,300  |
| NEBRASKA             | 0           | 22,591,812  | 22,591,812  |
| NEVADA               | 298,956     | 10,210,116  | 10,509,072  |
| NEW HAMPSHIRE        | 0           | 8,145,264   | 8,145,264   |
| NEW JERSEY           | 0           | 1,364,556   | 1,364,556   |
| NEW MEXICO           | 6,266,904   | 29,339,904  | 35,606,808  |
| NEW YORK             | 0           | 36,848,112  | 36,848,112  |
| NORTH CAROLINA       | 8,726,508   | 26,257,260  | 34,983,768  |
| NORTH DAKOTA         | 377,592     | 23,211,204  | 23,588,796  |
| OHIO                 | 0           | 13,644,084  | 13,644,084  |
| OKLAHOMA             | 282,636     | 57,824,172  | 58,106,808  |
| OREGON               | 17,076      | 37,436,208  | 37,453,284  |
| PENNSYLVANIA         | 236,088     | 21,540,864  | 21,776,952  |
| PUERTO RICO          | 136,979,904 | 0           | 136,979,904 |
| RHODE ISLAND         | 0           | 0           | 0           |
| SOUTH CAROLINA       | 5,578,296   | 39,374,268  | 44,952,564  |
| SOUTH DAKOTA         | 0           | 18,327,900  | 18,327,900  |
| TENNESSEE            | 697,356     | 25,915,644  | 26,613,000  |
| TEXAS                | 7,812,108   | 114,722,340 | 122,534,448 |

# SUMMARY

| STATE         | USF SUPPORT |               |               |
|---------------|-------------|---------------|---------------|
|               | NON RURAL   | RURAL         | TOTAL         |
| UTAH          | 0           | 11,689,584    | 11,689,584    |
| VERMONT       | 1,454,568   | 11,098,188    | 12,552,756    |
| VIRGIN ISLAND | 0           | 20,552,484    | 20,552,484    |
| VIRGINIA      | 1,263,000   | 9,756,192     | 11,019,192    |
| WASHINGTON    | 483,312     | 42,258,852    | 42,742,164    |
| WEST VIRGINIA | 1,673,112   | 18,714,720    | 20,387,832    |
| WISCONSIN     | 543,000     | 46,847,232    | 47,390,232    |
| WYOMING       | 4,445,856   | 19,527,528    | 23,973,384    |
| TOTAL         | 246,485,808 | 1,478,339,076 | 1,724,824,884 |

UNIVERSAL SERVICE FUNDING  
High Cost Fund Support by Study Area  
First Quarter 1999

| State                | SAC    | Study Area Name      | Rural/Non-Rural | Type | High Cost Loop Fund |            | Long Term Support |           | Local Switching Support |           | Total High Cost Fund Support |           |         |             |             |              |
|----------------------|--------|----------------------|-----------------|------|---------------------|------------|-------------------|-----------|-------------------------|-----------|------------------------------|-----------|---------|-------------|-------------|--------------|
|                      |        |                      |                 |      | USF                 | Loops      | Monthly           | LTS       | Monthly                 | LSS       | Monthly                      | ETC       | Monthly | Quarterly   | Annual      |              |
| CALIFORNIA           | 542311 | CALIF-OREGON TEL CO  | Rural           | C    |                     | 2,649      |                   | \$43,902  | Y                       | \$26,891  | Y                            | \$43,940  | Y       | \$114,733   | \$344,199   | \$1,376,796  |
| CALIFORNIA           | 542313 | DUCOR TELEPHONE CO   | Rural           | C    |                     | 924        |                   | \$35,114  | Y                       | \$18,891  | Y                            | \$24,444  | Y       | \$78,449    | \$235,347   | \$941,388    |
| CALIFORNIA           | 542315 | EVANS TEL CO         | Rural           | C    |                     | 10,622     |                   | \$72,680  | Y                       | \$57,065  | Y                            | \$32,514  | Y       | \$162,259   | \$486,777   | \$1,947,108  |
| CALIFORNIA           | 542318 | FORESTHILL TEL CO    | Rural           | C    |                     | 2,747      |                   | \$38,906  | Y                       | \$15,526  | Y                            | \$26,286  | Y       | \$80,718    | \$242,154   | \$965,616    |
| CALIFORNIA           | 542319 | GTC OF CALIFORNIA    | Rural           | C    |                     | 3,959,946  |                   | \$0       | N                       | \$0       | N                            | \$0       | Y       | \$0         | \$0         | \$0          |
| CALIFORNIA           | 542321 | HAPPY VALLEY TEL CO  | Rural           | C    |                     | 3,072      |                   | \$94,994  | Y                       | \$39,305  | Y                            | \$15,762  | Y       | \$150,081   | \$450,183   | \$1,800,732  |
| CALIFORNIA           | 542322 | HORNITOS TEL CO      | Rural           | C    |                     | 591        |                   | \$31,810  | Y                       | \$11,106  | Y                            | \$4,121   | Y       | \$47,037    | \$141,111   | \$564,444    |
| CALIFORNIA           | 542323 | WINTERHAVEN TEL CO   | Rural           | C    |                     | 1,770      |                   | \$33,798  | Y                       | \$18,785  | X                            | \$5,429   | Y       | \$58,012    | \$174,036   | \$696,144    |
| CALIFORNIA           | 542324 | KERMAN TELEPHONE CO  | Rural           | C    |                     | 5,604      |                   | \$34,499  | Y                       | \$18,336  | X                            | \$13,730  | Y       | \$64,565    | \$193,695   | \$774,760    |
| CALIFORNIA           | 542332 | THE PONDEROSA TEL CO | Rural           | C    |                     | 8,518      |                   | \$258,978 | Y                       | \$130,142 | Y                            | \$82,600  | Y       | \$471,720   | \$1,415,160 | \$5,660,640  |
| CALIFORNIA           | 542334 | ROSEVILLE TEL CO     | Non-Rural       | C    |                     | 111,074    |                   | \$89,101  | Y                       | \$427,273 | N                            | \$0       | Y       | \$516,374   | \$1,549,122 | \$6,196,488  |
| CALIFORNIA           | 542338 | SIERRA TELEPHONE CO  | Rural           | C    |                     | 20,413     |                   | \$259,945 | Y                       | \$137,919 | X                            | \$63,417  | Y       | \$461,281   | \$1,383,843 | \$5,535,372  |
| CALIFORNIA           | 542339 | THE SISKIYOU TEL CO  | Rural           | C    |                     | 4,613      |                   | \$131,409 | Y                       | \$81,713  | Y                            | \$40,351  | Y       | \$253,473   | \$760,419   | \$3,041,676  |
| CALIFORNIA           | 542343 | THE VOLCANO TEL CO   | Rural           | C    |                     | 9,827      |                   | \$130,809 | Y                       | \$67,087  | Y                            | \$79,596  | Y       | \$277,492   | \$832,476   | \$3,329,904  |
| CALIFORNIA           | 542344 | WEST COAST TEL OF CA | Non-Rural       | C    |                     | 13,268     |                   | \$112,627 | N                       | \$0       | X                            | \$62,039  | Y       | \$174,666   | \$523,998   | \$2,095,992  |
| CALIFORNIA           | 542346 | PINNACLES TEL CO     | Rural           | C    |                     | 243        |                   | \$14,019  | Y                       | \$5,871   | Y                            | \$7,580   | Y       | \$27,470    | \$82,410    | \$329,640    |
| CALIFORNIA           | 543402 | CITIZENS GOLDN STATE | Rural           | C    |                     | 14,990     |                   | \$162,162 | N                       | \$0       | X                            | \$59,510  | Y       | \$221,672   | \$665,016   | \$2,660,064  |
| CALIFORNIA           | 544342 | CITIZENS TUOLUMNE    | Rural           | C    |                     | 5,808      |                   | \$179,608 | N                       | \$0       | X                            | \$22,463  | Y       | \$202,071   | \$606,213   | \$2,424,852  |
| CALIFORNIA           | 545170 | PACIFIC BELL         | Non-Rural       | C    |                     | 16,838,970 |                   | \$0       | N                       | \$0       | N                            | \$0       | Y       | \$0         | \$0         | \$0          |
| NEVADA               | 552220 | FILER MUTUAL TEL -NV | Rural           | C    |                     | 740        |                   | \$0       | Y                       | \$0       | Y                            | \$2,891   | Y       | \$2,891     | \$8,673     | \$34,692     |
| NEVADA               | 552223 | GEM STATE UTIL-NV    | Rural           | C    |                     | 448        |                   | \$3,352   | Y                       | \$1,640   | X                            | \$722     | Y       | \$5,714     | \$17,142    | \$68,568     |
| NEVADA               | 552233 | RURAL TEL CO - NV    | Rural           | C    |                     | 746        |                   | \$25,789  | Y                       | \$9,148   | Y                            | \$9,397   | Y       | \$44,334    | \$133,002   | \$532,008    |
| NEVADA               | 552284 | BEEHIVE TEL CO - NV  | Rural           | C    |                     | 82         |                   | \$361     | Y                       | \$1,334   | X                            | \$2,643   | Y       | \$4,338     | \$13,014    | \$52,056     |
| NEVADA               | 552302 | CONTEL OF CALIF-NV   | Rural           | C    |                     | 32,905     |                   | \$0       | N                       | \$0       | X                            | \$156,039 | Y       | \$156,039   | \$468,117   | \$1,872,468  |
| NEVADA               | 552348 | CENTEL OF NV         | Non-Rural       | C    |                     | 790,515    |                   | \$0       | N                       | \$0       | N                            | \$0       | Y       | \$0         | \$0         | \$0          |
| NEVADA               | 552349 | CHURCHILL COUNTY TEL | Rural           | C    |                     | 12,866     |                   | \$95,609  | Y                       | \$51,712  | Y                            | \$104,491 | Y       | \$251,812   | \$755,436   | \$3,021,744  |
| NEVADA               | 552351 | LINCOLN CTY TEL SYS  | Rural           | C    |                     | 2,231      |                   | \$2,459   | Y                       | \$9,545   | Y                            | \$14,191  | Y       | \$26,195    | \$78,585    | \$314,340    |
| NEVADA               | 552353 | MOAPA VALLEY TEL CO  | Rural           | C    |                     | 3,560      |                   | \$0       | Y                       | \$0       | Y                            | \$32,337  | Y       | \$32,337    | \$97,011    | \$388,044    |
| NEVADA               | 552356 | RIO VIRGIN TEL CO    | Rural           | C    |                     | 5,707      |                   | \$0       | Y                       | \$0       | Y                            | \$26,527  | Y       | \$26,527    | \$79,581    | \$318,324    |
| NEVADA               | 553304 | HUMBOLDT TEL CO      | Rural           | C    |                     | 748        |                   | \$31,814  | Y                       | \$18,789  | Y                            | \$17,368  | Y       | \$67,971    | \$203,913   | \$815,852    |
| NEVADA               | 554431 | CITIZENS-NV-NORTH    | Rural           | C    |                     | 23,144     |                   | \$127,188 | N                       | \$0       | X                            | \$105,497 | Y       | \$232,685   | \$696,055   | \$2,792,220  |
| NEVADA               | 554432 | CITIZENS-NV-SOUTH    | Non-Rural       | C    |                     | 2,667      |                   | \$708     | N                       | \$0       | X                            | \$24,205  | Y       | \$24,913    | \$74,739    | \$298,956    |
| NEVADA               | 555173 | NEVADA BELL          | Non-Rural       | C    |                     | 330,523    |                   | \$0       | N                       | \$0       | N                            | \$0       | N       | \$0         | \$0         | \$0          |
| DELAWARE             | 565010 | DIAMOND STATE TEL    | Non-Rural       | C    |                     | 532,170    |                   | \$0       | N                       | \$0       | N                            | \$0       | Y       | \$0         | \$0         | \$0          |
| DISTRICT OF COLUMBIA | 575020 | C & P TEL CO OF WASH | Non-Rural       | C    |                     | 919,999    |                   | \$0       | N                       | \$0       | N                            | \$0       | N       | \$0         | \$0         | \$0          |
| RHODE ISLAND         | 585114 | NEW ENGLAND TEL - RI | Non-Rural       | C    |                     | 653,123    |                   | \$0       | N                       | \$0       | N                            | \$0       | Y       | \$0         | \$0         | \$0          |
| ALASKA               | 613000 | ANCHORAGE TEL UTIL   | Non-Rural       | C    |                     | 163,729    |                   | \$0       | Y                       | \$0       | N                            | \$0       | Y       | \$0         | \$0         | \$0          |
| ALASKA               | 613001 | ARCTIC SLOPE TEL     | Rural           | C    |                     | 2,276      |                   | \$37,133  | Y                       | \$24,229  | Y                            | \$84,960  | Y       | \$146,342   | \$439,026   | \$1,756,104  |
| ALASKA               | 613002 | BETTLES TEL CO INC   | Rural           | C    |                     | 162        |                   | \$5,080   | Y                       | \$1,402   | Y                            | \$518     | Y       | \$7,000     | \$21,000    | \$84,000     |
| ALASKA               | 613003 | BRISTOL BAY TEL COOP | Rural           | C    |                     | 1,852      |                   | \$28,045  | Y                       | \$18,173  | Y                            | \$37,898  | Y       | \$84,116    | \$252,348   | \$1,009,392  |
| ALASKA               | 613004 | BUSH-TELL INC.       | Rural           | C    |                     | 831        |                   | \$18,875  | Y                       | \$20,836  | Y                            | \$27,043  | Y       | \$68,754    | \$200,262   | \$801,048    |
| ALASKA               | 613005 | CIRCLE UTILITIES     | Rural           | A    |                     | 34         |                   | \$765     | Y                       | \$570     | Y                            | \$4,932   | Y       | \$6,267     | \$18,801    | \$75,204     |
| ALASKA               | 613006 | COPPER VALLEY TEL    | Rural           | C    |                     | 5,183      |                   | \$201,709 | Y                       | \$105,436 | Y                            | \$89,147  | Y       | \$396,294   | \$1,188,882 | \$4,755,528  |
| ALASKA               | 613007 | CORDOVA TEL COOP     | Rural           | C    |                     | 1,847      |                   | \$19,688  | Y                       | \$11,273  | Y                            | \$29,559  | Y       | \$60,520    | \$181,560   | \$726,240    |
| ALASKA               | 613008 | PTI COMM.-ALASKA     | Rural           | C    |                     | 34,790     |                   | \$124,354 | Y                       | \$98,794  | X                            | \$121,004 | Y       | \$344,152   | \$1,032,456 | \$4,129,824  |
| ALASKA               | 613009 | GTE ALASKA INC.      | Rural           | C    |                     | 20,455     |                   | \$0       | N                       | \$0       | X                            | \$61,523  | Y       | \$61,523    | \$184,569   | \$738,276    |
| ALASKA               | 613010 | GLACIER STATE TEL CO | Rural           | C    |                     | 46,205     |                   | \$915,431 | Y                       | \$329,433 | X                            | \$103,985 | Y       | \$1,348,849 | \$4,046,547 | \$16,186,168 |
| ALASKA               | 613011 | INTERIOR TEL CO INC  | Rural           | C    |                     | 4,437      |                   | \$136,529 | Y                       | \$66,020  | Y                            | \$85,068  | Y       | \$287,617   | \$862,851   | \$3,451,404  |
| ALASKA               | 613012 | JUNEAU & DOUGLAS TEL | Rural           | C    |                     | 23,646     |                   | \$0       | Y                       | \$0       | X                            | \$90,969  | Y       | \$90,969    | \$272,907   | \$1,091,628  |

UNIVERSAL SERVICE FUNDING  
High Cost Fund Support by Study Area  
First Quarter 1999

| State          | SAC    | Study Area Name      | Rural/Non-Rural | Type | High Cost Loop Fund |           | Long Term Support |     | Local Switching Support |     |           | Total High Cost Fund Support |             |              |               |
|----------------|--------|----------------------|-----------------|------|---------------------|-----------|-------------------|-----|-------------------------|-----|-----------|------------------------------|-------------|--------------|---------------|
|                |        |                      |                 |      | USF                 | Loops     | Monthly           | LTS | Monthly                 | LSS | Monthly   | ETC                          | Monthly     | Quarterly    | Annual        |
| ALASKA         | 613013 | KETCHIKAN PUBLIC UT  | Rural           | C    |                     | 10,579    | \$29,121          | Y   | \$23,622                | Y   | \$69,119  | Y                            | \$121,862   | \$365,586    | \$1,462,344   |
| ALASKA         | 613015 | MATANUSKA TEL ASSOC  | Rural           | C    |                     | 45,508    | \$1,038,573       | Y   | \$478,939               | Y   | \$130,273 | Y                            | \$1,647,785 | \$4,943,355  | \$19,773,420  |
| ALASKA         | 613016 | MUKLUK TEL CO INC    | Rural           | C    |                     | 1,140     | \$43,683          | Y   | \$22,405                | Y   | \$29,357  | Y                            | \$95,445    | \$286,335    | \$1,145,340   |
| ALASKA         | 613017 | ALASKA TEL CO        | Rural           | A    |                     | 4,275     | \$15,531          | Y   | \$14,557                | Y   | \$20,937  | Y                            | \$51,025    | \$153,075    | \$612,300     |
| ALASKA         | 613018 | NUSHAGAK TEL COOP    | Rural           | C    |                     | 2,435     | \$30,364          | Y   | \$17,491                | Y   | \$22,204  | Y                            | \$70,059    | \$210,177    | \$840,708     |
| ALASKA         | 613019 | OTZ TEL COOPERATIVE  | Rural           | C    |                     | 2,979     | \$51,548          | Y   | \$29,097                | Y   | \$63,980  | Y                            | \$144,625   | \$433,875    | \$1,735,500   |
| ALASKA         | 613020 | SITKA TELEPHONE CO   | Rural           | C    |                     | 13,187    | \$119,580         | Y   | \$49,666                | X   | \$121,845 | Y                            | \$291,091   | \$873,273    | \$3,493,092   |
| ALASKA         | 613022 | TEL UTIL OF ALASKA   | Rural           | C    |                     | 5,520     | \$0               | Y   | \$0                     | X   | \$30,863  | Y                            | \$30,863    | \$92,589     | \$370,356     |
| ALASKA         | 613023 | UNITED UTILITIES INC | Rural           | C    |                     | 5,678     | \$137,964         | Y   | \$77,785                | Y   | \$51,519  | Y                            | \$267,268   | \$801,804    | \$3,207,216   |
| ALASKA         | 613025 | YUKON TEL CO INC     | Rural           | C    |                     | 464       | \$10,272          | Y   | \$7,432                 | Y   | \$22,355  | Y                            | \$40,059    | \$120,177    | \$480,708     |
| ALASKA         | 613026 | NORTH COUNTRY TEL CO | Rural           | A    |                     | 178       | \$1,395           | Y   | \$1,161                 | Y   | \$36,204  | Y                            | \$38,760    | \$116,280    | \$465,120     |
| ALASKA         | 613028 | SUMMIT TEL & TEL -AK | Rural           | C    |                     | 146       | \$14,185          | Y   | \$6,743                 | Y   | \$3,530   | Y                            | \$24,458    | \$73,374     | \$293,496     |
| HAWAII         | 623021 | SANDWICH ISLES COMM  | Rural           | C    |                     | 346       | \$20,938          | Y   | \$13,091                | Y   | \$33,360  | N                            | \$67,389    | \$202,167    | \$808,668     |
| HAWAII         | 623100 | GTE HAWAIIAN TEL CO  | Non-Rual        | C    |                     | 707,649   | \$0               | N   | \$0                     | N   | \$0       | Y                            | \$0         | \$0          | \$0           |
| HAWAII         | 623205 | TELHAWAII            | Rural           | C    |                     | 0         | \$0               | Y   | \$8,008                 | Y   | \$20,408  | N                            | \$28,416    | \$85,248     | \$340,992     |
| PUERTO RICO    | 633200 | P R T C - CENTRAL    | Non-Rual        | C    |                     | 153,132   | \$1,839,386       | Y   | \$871,413               | N   | \$0       | Y                            | \$2,710,799 | \$8,132,397  | \$32,529,588  |
| PUERTO RICO    | 633201 | PUERTO RICO TEL CO   | Non-Rual        | C    |                     | 1,103,514 | \$1,986,284       | Y   | \$6,670,848             | N   | \$0       | Y                            | \$8,657,132 | \$25,971,396 | \$103,885,584 |
| PUERTO RICO    |        | CENTENNIAL PCS OPER  | Non-Rual        |      |                     | 4,873     | \$8,771           |     | \$29,482                |     | \$0       | Y                            | \$38,253    | \$114,759    | \$459,036     |
| PUERTO RICO    |        | LAMBDA OPERATIONS    | Non-Rual        |      |                     | 1,122     | \$2,020           |     | \$6,788                 |     | \$0       | Y                            | \$8,808     | \$26,424     | \$105,696     |
| VIRGIN ISLANDS | 643300 | VIRGIN ISLANDS TEL   | Rural           | C    |                     | 60,902    | \$1,300,479       | Y   | \$412,228               | N   | \$0       | Y                            | \$1,712,707 | \$5,138,121  | \$20,552,484  |
| C.N.M.I.       | 653700 | MICRONESIAN TELECOMM | Rural           | C    |                     | 20,639    | \$398,898         | N   | \$0                     | X   | \$173,758 | Y                            | \$572,656   | \$1,717,968  | \$6,871,872   |
| GUAM           | 663800 | GUAM TEL AUTH        | Rural           | C    |                     | 73,185    | \$29,214          | Y   | \$83,268                | N   | \$0       | Y                            | \$112,482   | \$337,448    | \$1,349,784   |

1438 ILEC STUDY AREAS  
5 CLEC SERVING AREAS

|                 |           |              |              |              |               |               |                 |
|-----------------|-----------|--------------|--------------|--------------|---------------|---------------|-----------------|
| NATIONAL TOTALS | MONTHLY   | \$72,019,032 | \$39,135,913 | \$32,580,462 | \$143,735,407 | N/A           | N/A             |
|                 | QUARTERLY | N/A          | N/A          | N/A          | N/A           | \$431,206,221 | N/A             |
|                 | ANNUAL    | N/A          | N/A          | N/A          | N/A           | N/A           | \$1,724,824,884 |



## PER USE PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State          | SAC    | Study Area Name      | Rural/Non-Rural | Type | High Cost Loop Fund |             | Long Term Support | Local Switching Support |     | ETC       | Monthly | Total High Cost Fund Support |              |               |              |
|----------------|--------|----------------------|-----------------|------|---------------------|-------------|-------------------|-------------------------|-----|-----------|---------|------------------------------|--------------|---------------|--------------|
|                |        |                      |                 |      | USF Loops           | Monthly     |                   | Monthly                 | LSS |           |         | Monthly                      | Quarterly    | Annual        | Per USF Loop |
| PUERTO RICO    | 833201 | PUERTO RICO TEL CO   | Non-Rural       | C    | 1,103,514           | \$1,986,284 | Y                 | \$6,670,848             | N   | \$0       | Y       | \$8,657,132                  | \$25,971,398 | \$103,885,584 | 94.14        |
| PUERTO RICO    | 833200 | P R T C - CENTRAL    | Non-Rural       | C    | 153,132             | \$1,839,386 | Y                 | \$871,413               | N   | \$0       | Y       | \$2,710,799                  | \$8,132,397  | \$32,529,588  | 212.43       |
| COLORADO       | 462185 | EAGLE TELECOMMUN INC | Rural           | C    | 74,088              | \$1,542,252 | Y                 | \$774,534               | N   | \$0       | Y       | \$2,316,788                  | \$8,950,358  | \$27,801,432  | 375.35       |
| WASHINGTON     | 522408 | TEL UTIL OF WA INC   | Rural           | C    | 164,871             | \$1,212,274 | Y                 | \$631,900               | N   | \$0       | Y       | \$1,844,174                  | \$5,532,522  | \$22,130,088  | 134.23       |
| VIRGIN ISLANDS | 643300 | VIRGIN ISLANDS TEL   | Rural           | C    | 60,902              | \$1,300,479 | Y                 | \$412,228               | N   | \$0       | Y       | \$1,712,707                  | \$5,138,121  | \$20,552,484  | 337.47       |
| ALASKA         | 613015 | MATANUSKA TEL ASSOC  | Rural           | C    | 45,508              | \$1,038,573 | Y                 | \$478,939               | Y   | \$130,273 | Y       | \$1,647,785                  | \$4,943,355  | \$19,773,420  | 434.50       |
| TEXAS          | 442084 | UTC OF TEXAS INC     | Rural           | C    | 148,438             | \$1,594,301 | N                 | \$0                     | N   | \$0       | Y       | \$1,594,301                  | \$4,782,903  | \$19,131,612  | 128.89       |
| LOUISIANA      | 270434 | CENTURY-EVANGELINE   | Rural           | C    | 34,223              | \$957,905   | Y                 | \$312,798               | Y   | \$94,290  | Y       | \$1,364,991                  | \$4,094,973  | \$16,379,892  | 478.66       |
| OREGON         | 532361 | TEL UTIL OF OREGON   | Rural           | C    | 72,485              | \$908,734   | Y                 | \$444,898               | N   | \$0       | Y       | \$1,351,632                  | \$4,054,898  | \$16,219,584  | 223.78       |
| ALASKA         | 813010 | GLACIER STATE TEL CO | Rural           | C    | 46,205              | \$915,431   | Y                 | \$329,433               | X   | \$103,985 | Y       | \$1,348,849                  | \$4,046,547  | \$16,186,188  | 350.31       |
| ARKANSAS       | 401691 | ALLTEL ARKANSAS INC  | Rural           | C    | 99,889              | \$791,637   | Y                 | \$490,690               | N   | \$0       | Y       | \$1,282,327                  | \$3,846,981  | \$15,387,924  | 154.39       |
| ILLINOIS       | 340985 | CENTEL OF ILLINOIS   | Rural           | C    | 77,749              | \$1,218,758 | N                 | \$0                     | N   | \$0       | Y       | \$1,218,758                  | \$3,656,268  | \$14,625,072  | 188.11       |
| KANSAS         | 411317 | UNITED OF EASTERN KS | Rural           | C    | 55,978              | \$881,018   | N                 | \$0                     | N   | \$0       | Y       | \$881,018                    | \$2,643,054  | \$10,572,216  | 188.86       |
| GEORGIA        | 220386 | STANDARD TEL CO      | Rural           | C    | 87,889              | \$557,022   | Y                 | \$278,148               | N   | \$0       | Y       | \$835,170                    | \$2,505,510  | \$10,022,040  | 147.62       |
| ARKANSAS       | 402080 | GTE SOUTHWEST INC-AR | Rural           | C    | 83,107              | \$781,041   | N                 | \$0                     | N   | \$0       | Y       | \$781,041                    | \$2,343,123  | \$9,372,492   | 112.78       |
| CALIFORNIA     | 542308 | CITIZENS UTIL OF CA  | Non-Rural       | C    | 103,807             | \$778,348   | N                 | \$0                     | N   | \$0       | Y       | \$778,348                    | \$2,335,038  | \$9,340,152   | 89.98        |
| ARKANSAS       | 401705 | CENTURY OF ARKANSAS  | Rural           | C    | 17,731              | \$507,005   | Y                 | \$184,884               | Y   | \$78,891  | Y       | \$770,780                    | \$2,312,340  | \$9,249,360   | 521.65       |
| OKLAHOMA       | 432018 | PIONEER TEL COOP INC | Rural           | C    | 48,926              | \$305,656   | Y                 | \$298,032               | Y   | \$158,332 | Y       | \$762,020                    | \$2,286,080  | \$9,144,240   | 186.90       |
| MISSOURI       | 421885 | ALLTEL MISSOURI      | Rural           | C    | 55,876              | \$503,188   | Y                 | \$249,390               | N   | \$0       | Y       | \$752,578                    | \$2,257,734  | \$9,030,938   | 181.62       |
| TEXAS          | 442109 | LUFKIN-CONROE TEL EX | Rural           | C    | 101,217             | \$412,123   | Y                 | \$314,445               | N   | \$0       | Y       | \$726,568                    | \$2,179,704  | \$8,718,616   | 86.14        |
| IDAHO          | 472416 | GTE NORTHWEST INC-ID | Rural           | C    | 128,088             | \$701,718   | N                 | \$0                     | N   | \$0       | Y       | \$701,718                    | \$2,105,154  | \$8,420,616   | 85.75        |
| KANSAS         | 411842 | UTC OF KANSAS        | Rural           | C    | 74,450              | \$688,925   | N                 | \$0                     | N   | \$0       | Y       | \$688,925                    | \$2,068,775  | \$8,027,100   | 107.82       |
| ARKANSAS       | 401730 | CONTEL AR DBA GTE AR | Rural           | C    | 101,853             | \$860,060   | N                 | \$0                     | N   | \$0       | Y       | \$860,060                    | \$1,980,180  | \$7,920,720   | 77.77        |
| GEORGIA        | 220357 | ALLTEL GEORGIA INC   | Rural           | C    | 58,703              | \$454,355   | Y                 | \$198,012               | N   | \$0       | Y       | \$652,367                    | \$1,957,101  | \$7,828,404   | 133.36       |
| OKLAHOMA       | 431965 | ALLTEL OKLAHOMA INC  | Rural           | C    | 14,837              | \$417,391   | Y                 | \$157,063               | X   | \$59,999  | Y       | \$634,453                    | \$1,903,359  | \$7,613,438   | 513.14       |
| LOUISIANA      | 270423 | CENTURY-CENTRAL LA   | Rural           | C    | 17,855              | \$425,739   | Y                 | \$153,965               | Y   | \$45,419  | Y       | \$625,123                    | \$1,875,369  | \$7,501,478   | 420.13       |
| MISSISSIPPI    | 285184 | SO CENTRAL BELL-MS   | Non-Rural       | C    | 1,236,080           | \$611,648   | N                 | \$0                     | N   | \$0       | Y       | \$611,648                    | \$1,834,944  | \$7,339,776   | 5.94         |
| TEXAS          | 442088 | EASTEX TEL COOP INC  | Rural           | C    | 27,250              | \$324,800   | Y                 | \$215,228               | Y   | \$57,516  | Y       | \$597,544                    | \$1,792,632  | \$7,170,528   | 263.14       |
| NEW MEXICO     | 492282 | ENMR TEL COOP INC-NM | Rural           | C    | 11,661              | \$272,898   | Y                 | \$137,580               | Y   | \$187,086 | Y       | \$597,364                    | \$1,792,092  | \$7,168,368   | 614.73       |
| OHIO           | 300597 | THE CHILICOTHE TEL   | Rural           | C    | 34,141              | \$318,276   | Y                 | \$202,139               | X   | \$71,909  | Y       | \$592,324                    | \$1,778,972  | \$7,107,888   | 206.19       |
| WISCONSIN      | 330950 | CENTURY TEL-NW WI    | Rural           | C    | 16,488              | \$346,309   | Y                 | \$124,711               | Y   | \$120,962 | Y       | \$591,982                    | \$1,775,948  | \$7,103,784   | 430.85       |
| ALABAMA        | 250293 | GTE SOUTH INC - AL   | Non-Rural       | C    | 158,996             | \$591,616   | N                 | \$0                     | N   | \$0       | Y       | \$591,616                    | \$1,774,848  | \$7,099,392   | 45.22        |
| ARIZONA        | 454426 | CITIZENS-ARIZONA     | Rural           | C    | 35,582              | \$381,702   | N                 | \$0                     | X   | \$206,203 | Y       | \$587,905                    | \$1,763,715  | \$7,054,880   | 198.27       |
| KENTUCKY       | 280410 | CONTEL KY DBA GTE KY | Rural           | C    | 92,589              | \$583,869   | N                 | \$0                     | N   | \$0       | Y       | \$583,869                    | \$1,751,607  | \$7,008,428   | 75.89        |
| WYOMING        | 512251 | RANGE TEL COOP - WY  | Rural           | C    | 17,031              | \$338,106   | Y                 | \$129,237               | Y   | \$113,395 | Y       | \$580,738                    | \$1,742,214  | \$6,968,856   | 409.19       |
| C N M I        | 653700 | MICRONESIAN TELECOMM | Rural           | C    | 20,839              | \$398,898   | N                 | \$0                     | X   | \$173,758 | Y       | \$572,656                    | \$1,717,988  | \$6,871,872   | 332.98       |
| PENNSYLVANIA   | 170161 | COMMONWEALTH TEL ENT | Rural           | A    | 256,674             | \$0         | Y                 | \$589,579               | N   | \$0       | Y       | \$589,579                    | \$1,708,737  | \$6,834,948   | 26.63        |
| TEXAS          | 442039 | BIG BEND TEL CO INC  | Rural           | C    | 4,745               | \$330,234   | Y                 | \$140,717               | Y   | \$82,689  | Y       | \$553,640                    | \$1,660,920  | \$6,643,680   | 1,400.14     |
| MISSOURI       | 421186 | GTE NORTH INC - MO   | Non-Rural       | C    | 124,607             | \$538,813   | N                 | \$0                     | N   | \$0       | Y       | \$538,813                    | \$1,616,439  | \$6,465,756   | 51.89        |
| MONTANA        | 482255 | 3-RIVERS TEL COOP    | Rural           | C    | 16,421              | \$301,354   | Y                 | \$134,784               | Y   | \$87,736  | Y       | \$523,674                    | \$1,571,622  | \$6,286,488   | 382.83       |
| WEST VIRGINIA  | 200271 | CITIZENS-MT STATE    | Rural           | C    | 23,697              | \$417,168   | N                 | \$0                     | X   | \$104,658 | Y       | \$521,826                    | \$1,565,478  | \$6,261,912   | 264.25       |
| CALIFORNIA     | 542334 | ROSEVILLE TEL CO     | Non-Rural       | C    | 111,074             | \$89,101    | Y                 | \$427,273               | N   | \$0       | Y       | \$516,374                    | \$1,549,122  | \$6,196,468   | 55.79        |
| SOUTH CAROLINA | 240520 | FARMERS TEL COOP     | Rural           | C    | 52,017              | \$285,015   | Y                 | \$230,326               | N   | \$0       | Y       | \$515,341                    | \$1,546,023  | \$6,184,092   | 118.89       |
| IDAHO          | 474427 | CITIZENS TELECOMM-ID | Rural           | C    | 19,980              | \$393,572   | N                 | \$0                     | X   | \$111,874 | Y       | \$505,446                    | \$1,516,338  | \$6,065,352   | 303.88       |
| KANSAS         | 411826 | RURAL TEL SERVICE CO | Rural           | C    | 8,988               | \$254,539   | Y                 | \$178,207               | Y   | \$72,498  | Y       | \$505,244                    | \$1,515,732  | \$6,062,928   | 676.06       |
| WISCONSIN      | 330956 | CENTURY-NORTHERN WI  | Rural           | C    | 12,369              | \$304,145   | Y                 | \$121,824               | Y   | \$75,463  | Y       | \$501,432                    | \$1,504,296  | \$6,017,184   | 486.47       |
| MICHIGAN       | 310702 | CENTURY OF MICHIGAN  | Rural           | C    | 55,636              | \$328,626   | Y                 | \$167,781               | N   | \$0       | Y       | \$496,407                    | \$1,489,221  | \$5,956,884   | 107.07       |
| MICHIGAN       | 310671 | CENTURY TEL MIDWEST  | Rural           | C    | 28,595              | \$308,941   | Y                 | \$127,226               | X   | \$52,920  | Y       | \$489,087                    | \$1,467,261  | \$5,869,044   | 205.25       |
| NORTH CAROLINA | 230483 | LEXINGTON TEL CO     | Rural           | C    | 31,909              | \$305,366   | Y                 | \$139,156               | X   | \$35,219  | Y       | \$479,741                    | \$1,439,223  | \$5,756,892   | 180.42       |
| MONTANA        | 482246 | MID-RIVERS TEL COOP  | Rural           | C    | 10,397              | \$286,055   | Y                 | \$119,439               | Y   | \$67,331  | Y       | \$472,825                    | \$1,418,475  | \$5,673,900   | 545.72       |
| CALIFORNIA     | 542332 | THE PONDEROSA TEL CO | Rural           | C    | 8,518               | \$258,978   | Y                 | \$130,142               | Y   | \$82,600  | Y       | \$471,720                    | \$1,415,160  | \$5,660,640   | 664.55       |
| SOUTH CAROLINA | 245194 | SOUTHERN BELL-SC     | Non-Rural       | C    | 1,405,838           | \$464,658   | N                 | \$0                     | N   | \$0       | Y       | \$464,658                    | \$1,394,574  | \$5,578,298   | 3.97         |
| CALIFORNIA     | 542338 | SIERRA TELEPHONE CO  | Rural           | C    | 20,413              | \$259,945   | Y                 | \$137,919               | X   | \$63,417  | Y       | \$461,281                    | \$1,383,843  | \$5,535,372   | 271.17       |
| MONTANA        | 482247 | NEMONT TEL COOP-MT   | Rural           | C    | 13,748              | \$180,561   | Y                 | \$116,285               | Y   | \$163,851 | Y       | \$460,697                    | \$1,382,091  | \$5,528,364   | 402.18       |

## PER USE PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State          | SAC    | Study Area Name      | Rural/Non-Rural | Type | High Cost Loop Fund |           | Long Term Support | Local Switching Support |     | ETC       | Monthly | Total High Cost Fund Support |           |             |              |
|----------------|--------|----------------------|-----------------|------|---------------------|-----------|-------------------|-------------------------|-----|-----------|---------|------------------------------|-----------|-------------|--------------|
|                |        |                      |                 |      | USF                 | Monthly   | LTS               | Monthly                 | LSS |           |         | Monthly                      | Quarterly | Annual      | Per USF Loop |
| VERMONT        | 147332 | VERMONT TEL CO-VT    | Rural           | C    | 19,827              | \$87,130  | Y                 | \$108,378               | Y   | \$88,598  | Y       | \$284,104                    | \$852,312 | \$3,408,248 | 171.95       |
| MONTANA        | 483310 | CENTRAL MONTANA      | Rural           | C    | 7,731               | \$178,948 | Y                 | \$68,038                | Y   | \$34,957  | Y       | \$281,941                    | \$845,823 | \$3,383,292 | 437.63       |
| TEXAS          | 442088 | HILL COUNTRY CO-OP   | Rural           | C    | 13,510              | \$130,480 | Y                 | \$82,099                | Y   | \$66,158  | Y       | \$278,737                    | \$836,211 | \$3,344,844 | 247.58       |
| CALIFORNIA     | 542343 | THE VOLCANO TEL CO   | Rural           | C    | 9,827               | \$130,809 | Y                 | \$87,087                | Y   | \$79,598  | Y       | \$277,492                    | \$832,478 | \$3,329,804 | 338.85       |
| MINNESOTA      | 361456 | UTC OF MINNESOTA     | Rural           | C    | 146,142             | \$274,781 | N                 | \$0                     | N   | \$0       | Y       | \$274,781                    | \$824,283 | \$3,297,132 | 22.58        |
| ALASKA         | 813023 | UNITED UTILITIES INC | Rural           | C    | 5,678               | \$137,884 | Y                 | \$77,785                | Y   | \$51,519  | Y       | \$267,288                    | \$801,804 | \$3,207,218 | 584.85       |
| FLORIDA        | 210339 | GTC INC              | Rural           | C    | 30,335              | \$145,718 | Y                 | \$98,083                | X   | \$23,277  | Y       | \$285,078                    | \$795,234 | \$3,180,838 | 104.88       |
| COLORADO       | 482208 | CTE COLORADO         | Rural           | C    | 7,888               | \$168,700 | Y                 | \$82,278                | Y   | \$32,942  | Y       | \$283,918                    | \$791,754 | \$3,187,016 | 402.82       |
| OKLAHOMA       | 431980 | CHICKASAW TEL CO     | Rural           | C    | 8,254               | \$101,993 | Y                 | \$61,822                | Y   | \$98,431  | Y       | \$282,248                    | \$788,738 | \$3,148,952 | 381.26       |
| MAINE          | 103313 | NORTHLAND TEL CO-ME  | Rural           | C    | 22,278              | \$141,004 | Y                 | \$76,575                | Y   | \$44,108  | Y       | \$281,687                    | \$785,081 | \$3,140,244 | 140.98       |
| NORTH DAKOTA   | 381637 | W RIVER TELECOM      | Rural           | C    | 15,704              | \$122,224 | Y                 | \$82,083                | X   | \$58,348  | Y       | \$280,835                    | \$781,905 | \$3,127,820 | 199.18       |
| NEW MEXICO     | 492270 | PENASCO VALLEY TEL   | Rural           | C    | 2,998               | \$157,818 | Y                 | \$73,325                | Y   | \$28,438  | Y       | \$259,381                    | \$778,143 | \$3,112,572 | 1,038.22     |
| SOUTH CAROLINA | 240542 | ROCK HILL TEL CO     | Rural           | C    | 47,353              | \$118,988 | Y                 | \$58,170                | X   | \$85,113  | Y       | \$258,269                    | \$774,807 | \$3,099,228 | 85.45        |
| WYOMING        | 512297 | UNION TELEPHONE CO   | Rural           | C    | 8,425               | \$98,013  | Y                 | \$34,577                | X   | \$125,238 | Y       | \$257,828                    | \$773,478 | \$3,093,912 | 481.54       |
| GEORGIA        | 223037 | ALLTEL GEORGIA COMM  | Rural           | C    | 288,525             | \$254,141 | N                 | \$0                     | N   | \$0       | Y       | \$254,141                    | \$762,423 | \$3,049,892 | 10.57        |
| CALIFORNIA     | 542339 | THE SISKIYOU TEL CO  | Rural           | C    | 4,813               | \$131,409 | Y                 | \$81,713                | Y   | \$40,351  | Y       | \$253,473                    | \$760,419 | \$3,041,878 | 859.37       |
| NEVADA         | 552349 | CHURCHILL COUNTY TEL | Rural           | C    | 12,888              | \$95,809  | Y                 | \$51,712                | Y   | \$104,491 | Y       | \$251,812                    | \$755,438 | \$3,021,744 | 234.88       |
| GEORGIA        | 220360 | ELLIJAY TEL CO       | Rural           | C    | 11,147              | \$158,551 | Y                 | \$78,128                | Y   | \$18,194  | Y       | \$250,873                    | \$752,819 | \$3,010,478 | 270.07       |
| GEORGIA        | 225192 | SOUTHERN BELL-GA     | Non-Rural       | C    | 3,998,188           | \$248,413 | N                 | \$0                     | N   | \$0       | Y       | \$248,413                    | \$745,238 | \$2,980,858 | 0.75         |
| MONTANA        | 482235 | BLACKFOOT TEL COOP   | Rural           | C    | 7,689               | \$119,193 | Y                 | \$74,510                | Y   | \$53,584  | Y       | \$247,287                    | \$741,801 | \$2,987,204 | 385.90       |
| ALABAMA        | 250314 | PEOPLES TEL CO       | Rural           | C    | 14,891              | \$148,148 | Y                 | \$78,805                | Y   | \$24,227  | Y       | \$248,978                    | \$740,934 | \$2,963,736 | 201.74       |
| OKLAHOMA       | 431988 | DOBSON TEL CO        | Rural           | C    | 4,320               | \$118,511 | Y                 | \$64,084                | Y   | \$63,438  | Y       | \$248,013                    | \$738,039 | \$2,952,158 | 883.37       |
| OKLAHOMA       | 431984 | OKLAHOMA COMM SYSTEM | Rural           | C    | 18,888              | \$120,230 | Y                 | \$102,118               | Y   | \$20,890  | Y       | \$243,238                    | \$729,714 | \$2,918,858 | 158.37       |
| SOUTH CAROLINA | 240508 | UTC OF THE CAROLINAS | Rural           | C    | 98,389              | \$242,421 | N                 | \$0                     | N   | \$0       | Y       | \$242,421                    | \$727,283 | \$2,908,052 | 29.57        |
| MISSOURI       | 421888 | GRAND RIVER MUT-MO   | Rural           | C    | 14,254              | \$99,759  | Y                 | \$84,934                | Y   | \$52,443  | Y       | \$237,138                    | \$711,408 | \$2,845,632 | 199.84       |
| KANSAS         | 411827 | S & T TEL COOP ASSN  | Rural           | C    | 2,852               | \$133,537 | Y                 | \$55,593                | Y   | \$45,930  | Y       | \$235,080                    | \$705,180 | \$2,820,720 | 989.03       |
| ARIZONA        | 452178 | VALLEY TEL COOP-AZ   | Rural           | C    | 7,218               | \$83,997  | Y                 | \$64,268                | Y   | \$84,987  | Y       | \$233,252                    | \$699,758 | \$2,798,024 | 387.78       |
| NEVADA         | 554431 | CITIZENS-NV-NORTH    | Rural           | C    | 23,144              | \$127,188 | N                 | \$0                     | X   | \$105,497 | Y       | \$232,885                    | \$698,055 | \$2,792,220 | 120.85       |
| NEBRASKA       | 371577 | GREAT PLAINS COMMUN  | Rural           | C    | 33,078              | \$102,092 | N                 | \$0                     | X   | \$128,485 | Y       | \$230,577                    | \$691,731 | \$2,786,924 | 83.85        |
| NORTH CAROLINA | 230510 | WILKES MEMBERSHIP    | Rural           | C    | 9,707               | \$132,754 | Y                 | \$79,343                | Y   | \$17,008  | Y       | \$229,105                    | \$687,315 | \$2,749,280 | 283.22       |
| OREGON         | 532393 | PIONEER TEL COOP     | Rural           | C    | 14,924              | \$91,594  | Y                 | \$80,450                | Y   | \$58,819  | Y       | \$228,883                    | \$688,589 | \$2,748,358 | 184.02       |
| TEXAS          | 442040 | BRAZORIA TEL CO      | Rural           | C    | 8,279               | \$141,408 | Y                 | \$55,550                | Y   | \$30,002  | Y       | \$228,958                    | \$680,874 | \$2,723,498 | 433.75       |
| SOUTH DAKOTA   | 391859 | GOLDEN WEST TELECOMM | Rural           | C    | 14,889              | \$109,787 | Y                 | \$53,793                | Y   | \$83,072  | Y       | \$228,852                    | \$679,958 | \$2,718,824 | 182.92       |
| ILLINOIS       | 341026 | HARRISONVILLE TEL CO | Rural           | C    | 17,877              | \$103,888 | Y                 | \$38,784                | X   | \$83,888  | Y       | \$228,559                    | \$679,877 | \$2,718,708 | 152.08       |
| NORTH DAKOTA   | 381607 | CONSOLIDATED COOP    | Rural           | C    | 8,734               | \$75,025  | Y                 | \$67,458                | Y   | \$83,280  | Y       | \$225,783                    | \$677,289 | \$2,708,158 | 310.19       |
| MONTANA        | 482250 | PROJECT TEL CO       | Rural           | C    | 4,982               | \$103,311 | Y                 | \$42,089                | Y   | \$78,808  | Y       | \$224,018                    | \$672,054 | \$2,688,218 | 511.78       |
| TEXAS          | 442059 | COLORADO VALLEY TEL  | Rural           | C    | 6,249               | \$111,220 | Y                 | \$71,480                | Y   | \$39,128  | Y       | \$221,838                    | \$665,514 | \$2,682,058 | 428.08       |
| CALIFORNIA     | 543402 | CITIZENS GOLDN STATE | Rural           | C    | 14,990              | \$182,182 | N                 | \$0                     | X   | \$59,510  | Y       | \$221,872                    | \$665,016 | \$2,680,084 | 177.48       |
| VIRGINIA       | 190479 | GTE SOUTH INC -VA    | Rural           | C    | 35,140              | \$142,774 | N                 | \$0                     | X   | \$75,879  | Y       | \$218,453                    | \$655,359 | \$2,621,438 | 74.80        |
| TENNESSEE      | 290579 | TWIN LAKES TEL COOP  | Rural           | C    | 33,708              | \$80,249  | Y                 | \$94,348                | Y   | \$83,880  | Y       | \$218,255                    | \$654,785 | \$2,618,080 | 77.70        |
| MAINE          | 100024 | SOMERSET TEL CO      | Rural           | C    | 11,598              | \$87,172  | Y                 | \$70,588                | Y   | \$53,738  | Y       | \$211,484                    | \$634,482 | \$2,537,828 | 218.88       |
| COLORADO       | 485102 | U S WEST, INC - CO   | Non-Rural       | C    | 2,528,000           | \$208,805 | N                 | \$0                     | N   | \$0       | Y       | \$208,805                    | \$628,415 | \$2,505,880 | 0.99         |
| MISSOURI       | 421922 | CONTEL MO DBA GTE MO | Non-Rural       | C    | 237,589             | \$208,585 | N                 | \$0                     | N   | \$0       | Y       | \$208,585                    | \$625,755 | \$2,503,020 | 10.54        |
| GEORGIA        | 220379 | PLANT TEL CO         | Rural           | C    | 9,493               | \$90,230  | Y                 | \$78,514                | Y   | \$39,455  | Y       | \$208,199                    | \$618,587 | \$2,474,388 | 280.85       |
| NORTH CAROLINA | 230491 | NORTH STATE TEL CO   | Non-Rural       | A    | 118,098             | \$0       | Y                 | \$205,811               | N   | \$0       | Y       | \$205,811                    | \$617,433 | \$2,469,732 | 20.81        |
| ARKANSAS       | 401724 | SW ARKANSAS TEL COOP | Rural           | C    | 5,708               | \$121,751 | Y                 | \$50,289                | Y   | \$32,724  | Y       | \$204,784                    | \$614,292 | \$2,457,188 | 430.83       |
| TENNESSEE      | 290552 | CENTURY-ADAMSVILLE   | Rural           | C    | 7,810               | \$128,922 | Y                 | \$48,313                | Y   | \$29,132  | Y       | \$204,387                    | \$613,101 | \$2,452,404 | 314.01       |
| CALIFORNIA     | 544342 | CITIZENS TUOLUMNE    | Rural           | C    | 5,806               | \$179,808 | N                 | \$0                     | X   | \$22,483  | Y       | \$202,071                    | \$608,213 | \$2,424,852 | 417.50       |
| MISSISSIPPI    | 280446 | BAY SPRINGS TEL CO   | Rural           | C    | 11,975              | \$135,039 | Y                 | \$47,203                | X   | \$19,335  | Y       | \$201,577                    | \$604,731 | \$2,418,924 | 202.00       |
| ARIZONA        | 455101 | U S WEST, INC - AZ   | Non-Rural       | C    | 2,558,783           | \$201,494 | N                 | \$0                     | N   | \$0       | Y       | \$201,494                    | \$604,482 | \$2,417,928 | 0.94         |
| KANSAS         | 411833 | SOUTHERN KANSAS TEL  | Rural           | C    | 4,718               | \$107,495 | Y                 | \$28,448                | X   | \$68,465  | Y       | \$200,409                    | \$601,227 | \$2,404,908 | 509.73       |
| TEXAS          | 442101 | CENTURY-LAKE DALLAS  | Rural           | C    | 8,283               | \$104,805 | Y                 | \$37,845                | Y   | \$55,151  | Y       | \$197,801                    | \$583,403 | \$2,373,812 | 288.58       |
| SOUTH CAROLINA | 240539 | POND BRANCH TEL CO   | Rural           | C    | 14,572              | \$97,540  | Y                 | \$64,310                | Y   | \$35,000  | Y       | \$198,850                    | \$580,550 | \$2,382,200 | 182.11       |
| IDAHO          | 472225 | CENTURY TEL OF IDAHO | Rural           | C    | 3,923               | \$123,903 | Y                 | \$35,448                | Y   | \$38,483  | Y       | \$195,832                    | \$587,498 | \$2,348,984 | 599.03       |

## PER USE PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State          | SAC    | Study Area Name      | Rural/Non Rural | Type | High Cost Loop Fund |           | Long Term Support | Local Switching Support |     | ETC       | Monthly | Total High Cost Fund Support |           |           |              |             |          |
|----------------|--------|----------------------|-----------------|------|---------------------|-----------|-------------------|-------------------------|-----|-----------|---------|------------------------------|-----------|-----------|--------------|-------------|----------|
|                |        |                      |                 |      | USF                 | Loops     |                   | Monthly                 | LSS |           |         | Monthly                      | Quarterly | Annual    | Per USF Loop |             |          |
| KANSAS         | 411841 | UNITED TEL ASSN      | Rural           | C    |                     | 5,710     |                   | \$84,593                | Y   | \$29,819  | Y       | \$42,611                     | Y         | \$157,023 | \$471,089    | \$1,884,278 | 330.00   |
| NEVADA         | 552302 | CONTEL OF CALIF. NV  | Rural           | C    |                     | 32,905    |                   | \$0                     | N   | \$0       | X       | \$158,039                    | Y         | \$158,039 | \$488,117    | \$1,872,488 | 58.91    |
| MONTANA        | 484322 | CITIZENS-MONTANA     | Rural           | C    |                     | 8,191     |                   | \$119,521               | N   | \$0       | X       | \$36,359                     | Y         | \$155,880 | \$487,640    | \$1,870,580 | 228.37   |
| MISSOURI       | 421957 | UTC OF MISSOURI      | Rural           | C    |                     | 235,259   |                   | \$155,427               | N   | \$0       | N       | \$0                          | Y         | \$155,427 | \$486,281    | \$1,865,124 | 7.93     |
| IDAHO          | 72213  | ALBION TEL CO INC    | Rural           | C    |                     | 4,868     |                   | \$59,496                | Y   | \$34,685  | Y       | \$80,845                     | Y         | \$155,026 | \$485,078    | \$1,860,312 | 382.15   |
| NORTH DAKOTA   | 81604  | BEK COMM COOP        | Rural           | C    |                     | 7,454     |                   | \$33,981                | Y   | \$49,383  | Y       | \$71,880                     | Y         | \$154,984 | \$484,952    | \$1,859,808 | 249.50   |
| LOUISIANA      | 270430 | ELIZABETH TEL CO     | Rural           | C    |                     | 3,057     |                   | \$97,424                | Y   | \$34,531  | Y       | \$22,087                     | Y         | \$154,022 | \$482,086    | \$1,848,284 | 604.80   |
| NEW MEXICO     | 494449 | NAVAJO COMMUN-NM     | Rural           | C    |                     | 4,936     |                   | \$124,143               | N   | \$0       | X       | \$28,419                     | Y         | \$153,582 | \$480,886    | \$1,842,744 | 373.33   |
| TEXAS          | 442118 | MUENSTER TEL CORP-TX | Rural           | C    |                     | 3,297     |                   | \$82,587                | Y   | \$39,536  | Y       | \$30,981                     | Y         | \$153,084 | \$459,252    | \$1,837,008 | 557.18   |
| IDAHO          | 472222 | FREMONT TELCON       | Rural           | C    |                     | 6,078     |                   | \$74,234                | Y   | \$32,759  | Y       | \$45,788                     | Y         | \$152,779 | \$458,337    | \$1,833,348 | 301.74   |
| NEW HAMPSHIRE  | 123321 | MCTA, INC            | Rural           | C    |                     | 11,755    |                   | \$49,219                | Y   | \$22,400  | X       | \$79,530                     | Y         | \$151,149 | \$453,447    | \$1,813,788 | 154.30   |
| MINNESOTA      | 361451 | PAUL BUNYAN RURAL    | Rural           | C    |                     | 9,341     |                   | \$48,847                | Y   | \$65,729  | Y       | \$38,288                     | Y         | \$150,864 | \$452,592    | \$1,810,388 | 193.81   |
| GEORGIA        | 220377 | PINELAND TEL COOP    | Rural           | C    |                     | 11,711    |                   | \$79,383                | Y   | \$48,711  | X       | \$21,990                     | Y         | \$150,084 | \$450,192    | \$1,800,768 | 153.77   |
| CALIFORNIA     | 542321 | HAPPY VALLEY TEL CO  | Rural           | C    |                     | 3,072     |                   | \$94,994                | Y   | \$39,305  | Y       | \$15,782                     | Y         | \$150,081 | \$450,183    | \$1,800,732 | 588.18   |
| VERMONT        | 143331 | NORTHLAND TEL CO-VT  | Rural           | C    |                     | 5,842     |                   | \$45,650                | Y   | \$38,989  | Y       | \$85,252                     | Y         | \$148,871 | \$449,813    | \$1,798,452 | 318.78   |
| NORTH CAROLINA | 235193 | SOUTHERN BELL-NC     | Non-Rural       | C    |                     | 2,337,945 |                   | \$148,839               | N   | \$0       | N       | \$0                          | Y         | \$148,839 | \$448,839    | \$1,788,088 | 0.78     |
| GEORGIA        | 220358 | DARIEN TEL CO        | Rural           | C    |                     | 5,730     |                   | \$58,718                | Y   | \$47,711  | Y       | \$41,813                     | Y         | \$148,242 | \$444,726    | \$1,778,904 | 310.45   |
| KANSAS         | 411785 | J B N TEL CO INC     | Rural           | C    |                     | 2,877     |                   | \$98,682                | Y   | \$33,569  | Y       | \$15,452                     | Y         | \$147,703 | \$443,109    | \$1,772,438 | 616.07   |
| MISSISSIPPI    | 283301 | SOUTHEAST MS TEL CO  | Rural           | C    |                     | 3,511     |                   | \$99,783                | Y   | \$39,188  | Y       | \$8,397                      | Y         | \$147,378 | \$442,134    | \$1,768,536 | 503.71   |
| MONTANA        | 485104 | U S WEST INC - MT    | Non-Rural       | C    |                     | 350,983   |                   | \$148,885               | N   | \$0       | N       | \$0                          | Y         | \$148,885 | \$440,655    | \$1,762,820 | 5.02     |
| ALASKA         | 613001 | ARCTIC SLOPE TEL     | Rural           | C    |                     | 2,278     |                   | \$37,133                | Y   | \$24,229  | Y       | \$84,980                     | Y         | \$148,342 | \$439,026    | \$1,758,104 | 771.57   |
| ALASKA         | 613019 | OTZ TEL COOPERATIVE  | Rural           | C    |                     | 2,979     |                   | \$51,548                | Y   | \$29,097  | Y       | \$83,980                     | Y         | \$144,825 | \$433,875    | \$1,735,500 | 582.58   |
| MISSOURI       | 421882 | FIDELITY TEL CO      | Rural           | C    |                     | 13,220    |                   | \$55,854                | Y   | \$51,885  | X       | \$35,855                     | Y         | \$143,404 | \$430,212    | \$1,720,848 | 130.17   |
| ILLINOIS       | 341037 | IL CONSOLIDATED TEL  | Rural           | C    |                     | 74,919    |                   | \$10,103                | Y   | \$132,344 | N       | \$0                          | Y         | \$142,447 | \$427,341    | \$1,709,384 | 22.82    |
| TENNESSEE      | 290280 | ARDMORE TEL CO       | Rural           | C    |                     | 9,327     |                   | \$40,245                | Y   | \$34,225  | Y       | \$67,747                     | Y         | \$142,217 | \$426,651    | \$1,708,604 | 182.97   |
| NORTH DAKOTA   | 381447 | NORTH DAKOTA TEL CO  | Rural           | C    |                     | 18,987    |                   | \$25,322                | Y   | \$18,112  | Y       | \$99,242                     | Y         | \$140,876 | \$422,028    | \$1,688,112 | 89.00    |
| VIRGINIA       | 190249 | ROANOKE & BOTETOURT  | Rural           | C    |                     | 9,729     |                   | \$87,390                | Y   | \$38,856  | Y       | \$13,378                     | Y         | \$139,822 | \$418,686    | \$1,675,484 | 172.21   |
| WEST VIRGINIA  | 205050 | C & P TEL CO OF WV   | Non-Rural       | C    |                     | 800,553   |                   | \$139,426               | N   | \$0       | N       | \$0                          | Y         | \$139,426 | \$418,278    | \$1,673,112 | 2.09     |
| SOUTH CAROLINA | 240517 | ALLTEL SO CAROLINA   | Rural           | C    |                     | 51,515    |                   | \$80,293                | Y   | \$59,054  | N       | \$0                          | Y         | \$139,347 | \$418,041    | \$1,672,164 | 32.48    |
| WISCONSIN      | 330841 | CENCOM WI DBA PTI    | Rural           | C    |                     | 28,159    |                   | \$4,382                 | Y   | \$83,401  | X       | \$49,408                     | Y         | \$137,171 | \$411,513    | \$1,648,052 | 58.48    |
| GEORGIA        | 220368 | HART TEL CO          | Rural           | C    |                     | 9,429     |                   | \$20,317                | Y   | \$45,454  | Y       | \$70,439                     | Y         | \$136,210 | \$408,630    | \$1,634,520 | 173.35   |
| VIRGINIA       | 190226 | CLIFTON FORGE WAYNES | Rural           | A    |                     | 35,933    |                   | \$0                     | Y   | \$81,104  | X       | \$75,031                     | Y         | \$136,135 | \$408,405    | \$1,633,820 | 45.48    |
| GEORGIA        | 220351 | CAMDEN TEL & TEL CO  | Rural           | C    |                     | 20,777    |                   | \$17,835                | Y   | \$22,256  | Y       | \$98,094                     | Y         | \$135,985 | \$407,955    | \$1,631,820 | 78.54    |
| GEORGIA        | 220344 | ALMA TEL CO          | Rural           | C    |                     | 6,780     |                   | \$77,859                | Y   | \$38,647  | Y       | \$19,557                     | Y         | \$135,863 | \$407,589    | \$1,630,358 | 241.18   |
| NORTH DAKOTA   | 381834 | SOURIS RIVER TELECOM | Rural           | C    |                     | 11,757    |                   | \$12,888                | Y   | \$14,428  | Y       | \$108,411                    | Y         | \$135,505 | \$406,515    | \$1,628,080 | 138.31   |
| GEORGIA        | 220348 | BULLOCH COUNTY RURAL | Rural           | C    |                     | 9,248     |                   | \$53,198                | Y   | \$58,728  | Y       | \$23,543                     | Y         | \$135,469 | \$406,407    | \$1,625,828 | 175.82   |
| MICHIGAN       | 310713 | HIAWATHA TEL CO      | Rural           | C    |                     | 5,714     |                   | \$89,707                | Y   | \$32,829  | Y       | \$32,901                     | Y         | \$135,297 | \$405,891    | \$1,623,584 | 284.14   |
| MISSOURI       | 421931 | NE MISSOURI RURAL    | Rural           | C    |                     | 8,078     |                   | \$43,373                | Y   | \$18,093  | Y       | \$74,734                     | Y         | \$134,200 | \$402,600    | \$1,610,400 | 199.38   |
| GEORGIA        | 220378 | PLANTERS RURAL COOP  | Rural           | C    |                     | 8,211     |                   | \$65,903                | Y   | \$51,564  | Y       | \$14,811                     | Y         | \$132,278 | \$398,834    | \$1,587,336 | 193.32   |
| MISSISSIPPI    | 280452 | DELTA TEL CO         | Rural           | C    |                     | 4,134     |                   | \$81,354                | Y   | \$32,263  | Y       | \$18,287                     | Y         | \$131,884 | \$395,652    | \$1,582,808 | 382.83   |
| KANSAS         | 411807 | MOKAN DIAL INC-KS    | Rural           | C    |                     | 3,036     |                   | \$72,888                | Y   | \$15,541  | X       | \$41,470                     | Y         | \$129,899 | \$389,697    | \$1,558,788 | 513.43   |
| WASHINGTON     | 522451 | WESTERN WAHIAKUM     | Rural           | C    |                     | 1,103     |                   | \$81,113                | Y   | \$35,257  | Y       | \$13,401                     | Y         | \$129,771 | \$389,313    | \$1,557,252 | 1,411.83 |
| MINNESOTA      | 361350 | ARVIG TEL CO         | Rural           | C    |                     | 12,080    |                   | \$812                   | Y   | \$52,075  | Y       | \$78,654                     | Y         | \$129,541 | \$388,823    | \$1,554,492 | 128.68   |
| MINNESOTA      | 361427 | MANKATO CITIZENS TEL | Rural           | A    |                     | 38,818    |                   | \$0                     | Y   | \$47,374  | X       | \$80,622                     | Y         | \$127,998 | \$383,988    | \$1,535,952 | 41.95    |
| NEBRASKA       | 371591 | SE NEBRASKA TEL CO   | Rural           | C    |                     | 4,252     |                   | \$67,630                | Y   | \$37,982  | Y       | \$22,088                     | Y         | \$127,880 | \$383,040    | \$1,532,180 | 360.34   |
| WISCONSIN      | 330859 | CENTRAL STATE TEL CO | Rural           | C    |                     | 10,342    |                   | \$65,645                | Y   | \$48,199  | Y       | \$13,486                     | Y         | \$127,330 | \$381,990    | \$1,527,880 | 147.74   |
| INDIANA        | 320800 | NORTHWESTERN INDIANA | Rural           | C    |                     | 12,451    |                   | \$5,516                 | Y   | \$34,018  | Y       | \$87,190                     | Y         | \$126,722 | \$380,186    | \$1,520,864 | 122.13   |
| OKLAHOMA       | 432008 | MICLOUD TEL CO       | Rural           | C    |                     | 8,186     |                   | \$47,298                | Y   | \$44,881  | Y       | \$34,359                     | Y         | \$126,536 | \$379,808    | \$1,518,432 | 185.95   |
| ARIZONA        | 452171 | ARIZONA TELEPHONE CO | Rural           | C    |                     | 3,355     |                   | \$55,554                | Y   | \$31,548  | Y       | \$39,258                     | Y         | \$126,358 | \$379,074    | \$1,516,296 | 451.95   |
| WASHINGTON     | 522453 | YELM TELEPHONE CO    | Rural           | C    |                     | 11,139    |                   | \$45,493                | Y   | \$44,984  | X       | \$35,844                     | Y         | \$126,301 | \$378,903    | \$1,515,612 | 138.08   |
| NORTH CAROLINA | 230511 | YADKIN VALLEY TEL    | Rural           | A    |                     | 27,084    |                   | \$0                     | Y   | \$72,919  | Y       | \$52,515                     | Y         | \$125,434 | \$376,302    | \$1,505,208 | 55.58    |
| WYOMING        | 511585 | UTC OF THE WEST-WY   | Rural           | C    |                     | 7,399     |                   | \$58,128                | N   | \$0       | X       | \$88,735                     | Y         | \$124,881 | \$374,583    | \$1,498,332 | 202.50   |
| ALABAMA        | 250300 | HOPPER TEL CO INC    | Rural           | C    |                     | 3,515     |                   | \$79,979                | Y   | \$29,788  | Y       | \$13,378                     | Y         | \$123,143 | \$369,429    | \$1,477,718 | 420.40   |
| MINNESOTA      | 361385 | EAST OTTER TAIL TEL  | Rural           | C    |                     | 17,469    |                   | \$9,329                 | Y   | \$40,449  | Y       | \$72,625                     | Y         | \$122,403 | \$367,209    | \$1,468,836 | 84.08    |



## PER USF PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State          | SAC    | Study Area Name       | Rural/Non Rural | Type | High Cost Loop Fund |          | Long Term Support | Local Switching Support |         | ETC      | Monthly | Total High Cost Fund Support |           |             | Per USF Loop |
|----------------|--------|-----------------------|-----------------|------|---------------------|----------|-------------------|-------------------------|---------|----------|---------|------------------------------|-----------|-------------|--------------|
|                |        |                       |                 |      | USF Loops           | Monthly  |                   | LTS                     | Monthly |          |         | LSS                          | Monthly   | Quarterly   |              |
| WASHINGTON     | 522447 | TOLEDO TELEPHONE CO   | Rural           | C    | 1,974               | \$48,891 | Y                 | \$26,581                | Y       | \$26,649 | Y       | \$102,121                    | \$306,363 | \$1,225,452 | 620.80       |
| NEW YORK       | 150118 | PORT BYRON TEL CO     | Rural           | C    | 3,395               | \$63,959 | Y                 | \$33,452                | Y       | \$4,591  | Y       | \$102,002                    | \$306,006 | \$1,224,024 | 360.54       |
| TEXAS          | 442071 | FIVE AREA TEL CO OP   | Rural           | C    | 6,947               | \$33,458 | Y                 | \$26,063                | Y       | \$42,456 | Y       | \$101,979                    | \$305,937 | \$1,223,748 | 176.15       |
| GEORGIA        | 220394 | WILKES TEL & ELC CO   | Rural           | C    | 11,450              | \$40,115 | Y                 | \$29,872                | Y       | \$32,101 | Y       | \$101,888                    | \$305,664 | \$1,222,056 | 106.78       |
| OKLAHOMA       | 451989 | BIXBY TEL CO          | Rural           | C    | 8,653               | \$57,022 | Y                 | \$27,888                | X       | \$16,646 | Y       | \$101,556                    | \$304,668 | \$1,218,672 | 140.84       |
| TEXAS          | 442151 | TAYLOR TEL CO-OP INC  | Rural           | C    | 6,858               | \$24,881 | Y                 | \$41,594                | Y       | \$33,861 | Y       | \$100,336                    | \$301,008 | \$1,204,032 | 175.57       |
| MISSOURI       | 421865 | CITIZENS TEL CO - MO  | Rural           | C    | 4,042               | \$49,484 | Y                 | \$21,173                | X       | \$28,823 | Y       | \$99,460                     | \$296,360 | \$1,193,520 | 295.28       |
| ILLINOIS       | 341049 | MADISON TEL CO        | Rural           | C    | 1,480               | \$44,841 | Y                 | \$16,588                | X       | \$37,811 | Y       | \$99,240                     | \$297,720 | \$1,190,880 | 804.65       |
| NORTH DAKOTA   | 381932 | RESERVATION TEL COOP  | Rural           | C    | 7,326               | \$30,973 | Y                 | \$25,265                | Y       | \$42,807 | Y       | \$99,045                     | \$297,135 | \$1,188,540 | 162.24       |
| NEW HAMPSHIRE  | 120045 | KEARSARGE TEL CO      | Rural           | C    | 6,835               | \$24,712 | Y                 | \$14,203                | Y       | \$60,055 | Y       | \$98,670                     | \$296,910 | \$1,187,640 | 173.76       |
| CALIFORNIA     | 542301 | CALAVERAS TEL CO      | Rural           | C    | 3,104               | \$48,719 | Y                 | \$40,759                | Y       | \$8,972  | Y       | \$98,450                     | \$295,350 | \$1,181,400 | 380.61       |
| NEW YORK       | 150089 | DEPOSIT TEL CO        | Rural           | C    | 8,426               | \$32,645 | Y                 | \$31,902                | Y       | \$33,597 | Y       | \$98,144                     | \$294,432 | \$1,177,728 | 139.77       |
| OKLAHOMA       | 431981 | CHOUTEAU TEL CO       | Rural           | C    | 3,444               | \$38,131 | Y                 | \$22,901                | Y       | \$36,872 | Y       | \$97,904                     | \$293,712 | \$1,174,848 | 341.13       |
| MINNESOTA      | 381445 | NORTHLAND DBA PTI     | Rural           | C    | 28,967              | \$0      | Y                 | \$22,181                | X       | \$75,587 | Y       | \$97,768                     | \$293,304 | \$1,173,216 | 40.46        |
| NEW YORK       | 150109 | ALLTEL NY-JAMESTOWN   | Rural           | C    | 48,095              | \$0      | Y                 | \$0                     | X       | \$97,661 | Y       | \$97,661                     | \$292,983 | \$1,171,932 | 24.37        |
| WISCONSIN      | 330916 | MOUNT MOREB TEL CO    | Rural           | C    | 4,287               | \$59,825 | Y                 | \$19,808                | X       | \$18,016 | Y       | \$97,649                     | \$292,947 | \$1,171,768 | 273.34       |
| OKLAHOMA       | 432020 | POTTAWATOMIE TEL CO   | Rural           | C    | 2,220               | \$45,993 | Y                 | \$26,556                | Y       | \$24,450 | Y       | \$96,999                     | \$290,997 | \$1,163,968 | 524.32       |
| ARKANSAS       | 401733 | YELCOT TEL CO INC     | Rural           | C    | 3,612               | \$32,984 | Y                 | \$26,176                | Y       | \$37,437 | Y       | \$96,577                     | \$289,731 | \$1,158,924 | 320.85       |
| WASHINGTON     | 522431 | MASHELL TELECOM INC   | Rural           | C    | 3,307               | \$57,955 | Y                 | \$28,405                | Y       | \$10,176 | Y       | \$96,536                     | \$289,606 | \$1,158,432 | 350.30       |
| OKLAHOMA       | 432030 | TOTAH TELEPHONE CO    | Rural           | C    | 2,125               | \$35,165 | Y                 | \$20,025                | Y       | \$41,334 | Y       | \$96,524                     | \$289,572 | \$1,158,288 | 545.06       |
| ARIZONA        | 453334 | TABLE TOP TEL CO      | Rural           | C    | 4,488               | \$18,274 | Y                 | \$27,987                | X       | \$50,056 | Y       | \$96,319                     | \$288,957 | \$1,155,828 | 257.54       |
| PENNSYLVANIA   | 170192 | NORTH PENN TEL CO     | Rural           | C    | 4,875               | \$33,344 | Y                 | \$19,824                | Y       | \$42,877 | Y       | \$95,845                     | \$287,535 | \$1,150,140 | 235.93       |
| TEXAS          | 442097 | KERRVILLE TEL CO      | Rural           | C    | 22,072              | \$0      | Y                 | \$37,229                | Y       | \$58,389 | Y       | \$95,616                     | \$286,854 | \$1,147,416 | 51.99        |
| WASHINGTON     | 522412 | ELLENSBURG TEL CO     | Rural           | C    | 24,079              | \$0      | Y                 | \$15,206                | Y       | \$80,406 | Y       | \$95,614                     | \$286,842 | \$1,147,366 | 47.65        |
| MINNESOTA      | 381348 | ACE TEL ASSN-MN       | Rural           | C    | 11,313              | \$0      | Y                 | \$10,684                | Y       | \$84,790 | Y       | \$95,474                     | \$286,422 | \$1,145,688 | 101.27       |
| ALASKA         | 613018 | MUKLUK TEL CO INC     | Rural           | C    | 1,140               | \$43,683 | Y                 | \$22,405                | Y       | \$29,357 | Y       | \$95,445                     | \$286,335 | \$1,145,340 | 1,004.68     |
| WASHINGTON     | 522418 | PEND OREILLE TEL      | Rural           | C    | 2,281               | \$64,819 | Y                 | \$12,948                | X       | \$17,024 | Y       | \$94,791                     | \$284,373 | \$1,137,492 | 503.09       |
| ILLINOIS       | 341003 | EGYPTIAN COOP ASSN    | Rural           | C    | 3,085               | \$43,159 | Y                 | \$12,246                | X       | \$39,340 | Y       | \$94,745                     | \$284,235 | \$1,136,940 | 366.54       |
| KANSAS         | 411808 | MOONDRIDGE TEL CO     | Rural           | C    | 2,775               | \$50,631 | Y                 | \$18,001                | Y       | \$28,052 | Y       | \$94,684                     | \$284,052 | \$1,136,208 | 409.44       |
| ARKANSAS       | 401727 | CENTURY TEL-SOUTH AR  | Rural           | C    | 1,271               | \$66,340 | Y                 | \$18,166                | Y       | \$9,899  | Y       | \$94,407                     | \$283,221 | \$1,132,884 | 891.33       |
| MINNESOTA      | 381410 | JOHNSON TEL CO        | Rural           | C    | 1,744               | \$46,664 | Y                 | \$29,676                | Y       | \$16,049 | Y       | \$94,389                     | \$283,167 | \$1,132,698 | 649.47       |
| NEW MEXICO     | 492272 | ROOSEVELT CNTY RURAL  | Rural           | C    | 1,744               | \$46,664 | Y                 | \$29,676                | Y       | \$16,049 | Y       | \$94,389                     | \$283,167 | \$1,132,698 | 649.47       |
| MICHIGAN       | 310689 | PTI COMM-MICHIGAN     | Rural           | C    | 1,744               | \$46,664 | Y                 | \$29,676                | Y       | \$16,049 | Y       | \$94,389                     | \$283,167 | \$1,132,698 | 649.47       |
| MONTANA        | 482249 | NW TEL SYSTEMS, INC   | Rural           | C    | 2,257               | \$40,744 | Y                 | \$24,467                | Y       | \$28,905 | Y       | \$94,116                     | \$282,348 | \$1,129,392 | 500.40       |
| NORTH CAROLINA | 230501 | SKYLINE MEMBERSHIP    | Rural           | C    | 12,043              | \$0      | Y                 | \$29,804                | Y       | \$84,176 | Y       | \$93,980                     | \$281,940 | \$1,127,760 | 93.64        |
| NEW YORK       | 150111 | ONEIDA COUNTY RURAL   | Rural           | C    | 56,729              | \$78,079 | Y                 | \$15,783                | N       | \$0      | Y       | \$93,862                     | \$281,586 | \$1,126,344 | 19.85        |
| NORTH DAKOTA   | 381610 | DAKOTA CENTRAL COOP   | Rural           | C    | 31,585              | \$0      | Y                 | \$73,116                | Y       | \$19,795 | Y       | \$92,911                     | \$278,733 | \$1,114,932 | 35.30        |
| COLORADO       | 462199 | PLAINS COOP TEL ASSN  | Rural           | C    | 230501              | \$48,041 | Y                 | \$34,268                | Y       | \$10,383 | Y       | \$92,692                     | \$278,076 | \$1,112,304 | 306.69       |
| TEXAS          | 442134 | RIVIERA TEL CO INC    | Rural           | C    | 150111              | \$26,007 | Y                 | \$29,851                | Y       | \$36,763 | Y       | \$92,421                     | \$277,263 | \$1,109,052 | 214.77       |
| MINNESOTA      | 381348 | WILDERNESS VALLEY TEL | Rural           | C    | 381610              | \$60,862 | Y                 | \$21,648                | Y       | \$9,630  | Y       | \$92,140                     | \$276,420 | \$1,105,680 | 746.58       |
| NORTH DAKOTA   | 383303 | SRT COMMUNICATIONS    | Rural           | C    | 462199              | \$35,268 | Y                 | \$19,129                | Y       | \$37,313 | Y       | \$91,710                     | \$275,130 | \$1,100,520 | 943.84       |
| TENNESSEE      | 260571 | MILLINGTON TEL CO     | Rural           | C    | 442134              | \$80,086 | Y                 | \$146                   | Y       | \$11,205 | Y       | \$91,417                     | \$274,251 | \$1,097,004 | #DIV/0!      |
| ALASKA         | 613012 | JUNEAU & DOUGLAS TEL  | Rural           | A    | 381348              | \$0      | Y                 | \$45,260                | Y       | \$46,054 | Y       | \$91,314                     | \$273,942 | \$1,095,788 | 34.23        |
| FLORIDA        | 210329 | GTC, INC.             | Rural           | A    | 383303              | \$0      | Y                 | \$32,144                | X       | \$59,156 | Y       | \$91,300                     | \$273,900 | \$1,095,600 | 45.74        |
| OREGON         | 532359 | BEAVER CREEK COOP     | Rural           | C    | 260571              | \$0      | Y                 | \$0                     | X       | \$90,969 | Y       | \$90,969                     | \$272,907 | \$1,091,628 | 46.17        |
| ALABAMA        | 250284 | BUTLER TEL CO         | Rural           | C    | 613012              | \$0      | Y                 | \$28,539                | X       | \$13,246 | Y       | \$90,600                     | \$271,800 | \$1,087,200 | 119.26       |
| PENNSYLVANIA   | 170201 | QUAKER STATE TEL CO   | Rural           | C    | 210329              | \$48,815 | Y                 | \$28,539                | X       | \$13,246 | Y       | \$90,600                     | \$271,800 | \$1,087,200 | 119.26       |
| OREGON         | 532458 | MALHEUR HOME TEL CO   | Rural           | C    | 532359              | \$41,665 | Y                 | \$34,808                | X       | \$13,862 | Y       | \$90,333                     | \$270,999 | \$1,083,996 | 244.36       |
| TEXAS          | 442093 | INDUSTRY TEL CO       | Rural           | C    | 250284              | \$53,626 | Y                 | \$27,628                | Y       | \$9,027  | Y       | \$90,281                     | \$270,843 | \$1,083,372 | 224.83       |
| MAINE          | 100029 | UNITY TEL CO, INC.    | Rural           | C    | 170201              | \$0      | N                 | \$0                     | X       | \$90,004 | Y       | \$90,004                     | \$270,012 | \$1,080,048 | 25.33        |
| GEORGIA        | 220371 | INTERSTATE TEL CO     | Rural           | C    | 532458              | \$42,632 | Y                 | \$0                     | X       | \$90,004 | Y       | \$90,004                     | \$270,012 | \$1,080,048 | 25.33        |
| COLORADO       | 462203 | RYE TELEPHONE CO      | Rural           | C    | 170201              | \$39,370 | N                 | \$0                     | X       | \$50,139 | Y       | \$89,509                     | \$268,527 | \$1,074,108 | 77.88        |
| WASHINGTON     | 522446 | TENINO TELEPHONE CO   | Rural           | C    | 532458              | \$39,370 | N                 | \$0                     | X       | \$50,139 | Y       | \$89,509                     | \$268,527 | \$1,074,108 | 77.88        |
| WISCONSIN      | 330870 | CRANDON TEL CO        | Rural           | C    | 442093              | \$39,364 | Y                 | \$27,426                | Y       | \$22,506 | Y       | \$89,296                     | \$267,894 | \$1,071,576 | 535.79       |
|                |        |                       | Rural           | C    | 100029              | \$26,634 | Y                 | \$28,443                | Y       | \$34,183 | Y       | \$89,260                     | \$267,780 | \$1,071,120 | 232.65       |
|                |        |                       | Rural           | C    | 220371              | \$0      | Y                 | \$0                     | Y       | \$88,318 | Y       | \$88,318                     | \$264,954 | \$1,059,816 | 71.51        |
|                |        |                       | Rural           | C    | 220371              | \$43,761 | Y                 | \$16,333                | Y       | \$26,106 | Y       | \$88,202                     | \$264,606 | \$1,058,424 | 567.82       |
|                |        |                       | Rural           | C    | 462203              | \$34,059 | Y                 | \$23,002                | Y       | \$30,920 | Y       | \$87,961                     | \$263,943 | \$1,055,772 | 336.71       |
|                |        |                       | Rural           | C    | 522446              | \$46,152 | Y                 | \$25,273                | Y       | \$16,126 | Y       | \$87,551                     | \$262,653 | \$1,050,612 | 291.92       |



## PER USF PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State          | SAC    | Study Area Name      | Rural/Non-Rural | Type | High Cost Loop Fund |          | LTS | Long Term Support |     | Local Switching Support |         | ETC      | Total High Cost Fund Support |           |        | Per USF Loop |
|----------------|--------|----------------------|-----------------|------|---------------------|----------|-----|-------------------|-----|-------------------------|---------|----------|------------------------------|-----------|--------|--------------|
|                |        |                      |                 |      | USF                 | Monthly  |     | Monthly           | LSS | Monthly                 | Monthly |          | Monthly                      | Quarterly | Annual |              |
| TEXAS          | 442141 | SANTA ROSA TEL COOP  | Rural           | C    | 2,240               | \$38,242 | Y   | \$17,228          | Y   | \$18,034                | Y       | \$73,504 | \$220,512                    | \$882,048 |        | 393.77       |
| KANSAS         | 411781 | CUNNINGHAM TEL CO    | Rural           | C    | 1,521               | \$48,943 | Y   | \$10,121          | Y   | \$16,320                | Y       | \$73,384 | \$220,152                    | \$880,808 |        | 578.97       |
| OREGON         | 532392 | PINE TEL SYSTEM INC  | Rural           | C    | 778                 | \$31,947 | Y   | \$18,534          | Y   | \$24,726                | Y       | \$73,207 | \$219,621                    | \$878,484 |        | 1,129.18     |
| ALABAMA        | 250315 | PINE BELT TEL CO     | Rural           | C    | 2,448               | \$38,311 | Y   | \$22,008          | Y   | \$12,781                | Y       | \$73,078 | \$219,234                    | \$876,838 |        | 358.23       |
| SOUTH CAROLINA | 240526 | CONTEL-SC DBA GTE SC | Rural           | C    | 22,810              | \$0      | N   | \$0               | X   | \$72,812                | Y       | \$72,812 | \$218,438                    | \$873,744 |        | 38.84        |
| WISCONSIN      | 330940 | RHINELANDER TEL CO   | Rural           | C    | 14,247              | \$0      | Y   | \$4,265           | Y   | \$88,425                | Y       | \$72,890 | \$218,070                    | \$872,280 |        | 81.23        |
| KENTUCKY       | 265182 | SO CENTRAL BELL-KY   | Non-Rural       | C    | 1,173,820           | \$72,271 | N   | \$0               | N   | \$0                     | Y       | \$72,271 | \$218,813                    | \$867,252 |        | 0.74         |
| WISCONSIN      | 330913 | CENTURY-MONROE CNTY  | Rural           | C    | 10,855              | \$14,980 | Y   | \$18,037          | Y   | \$41,141                | Y       | \$72,158 | \$218,474                    | \$865,868 |        | 79.77        |
| ARIZONA        | 452302 | CONTEL CALIF - AZ    | Rural           | C    | 8,037               | \$8,001  | N   | \$0               | X   | \$84,043                | Y       | \$72,044 | \$218,132                    | \$864,528 |        | 107.57       |
| NEBRASKA       | 371595 | UTC OF THE WEST-NE   | Rural           | C    | 27,852              | \$0      | N   | \$0               | X   | \$71,818                | Y       | \$71,818 | \$215,448                    | \$861,792 |        | 30.94        |
| KENTUCKY       | 260421 | WEST KENTUCKY RURAL  | Rural           | A    | 16,909              | \$26,387 | Y   | \$43,290          | Y   | \$2,105                 | Y       | \$71,782 | \$215,348                    | \$861,384 |        | 50.94        |
| KENTUCKY       | 260418 | SOUTH CENTRAL RURAL  | Rural           | A    | 25,821              | \$0      | Y   | \$70,275          | Y   | \$1,370                 | Y       | \$71,645 | \$214,835                    | \$859,740 |        | 33.58        |
| NEW YORK       | 150131 | TRUMANSBURG HOME TEL | Rural           | C    | 8,511               | \$15,151 | Y   | \$17,102          | Y   | \$39,319                | Y       | \$71,572 | \$214,718                    | \$858,884 |        | 131.91       |
| MICHIGAN       | 310726 | SHIWAASSEE TEL CO    | Rural           | C    | 5,760               | \$38,879 | Y   | \$15,259          | Y   | \$19,321                | Y       | \$71,459 | \$214,377                    | \$857,508 |        | 148.38       |
| WISCONSIN      | 330974 | WOOD COUNTY TEL CO   | Rural           | C    | 28,585              | \$0      | Y   | \$0               | Y   | \$71,358                | Y       | \$71,358 | \$214,088                    | \$856,272 |        | 29.98        |
| MAINE          | 100022 | SACO RIVER TEL & TEL | Rural           | A    | 8,758               | \$0      | Y   | \$19,421          | Y   | \$51,919                | Y       | \$71,340 | \$214,020                    | \$856,080 |        | 97.75        |
| PENNSYLVANIA   | 170191 | NORTH EASTERN PA TEL | Rural           | A    | 11,483              | \$0      | Y   | \$25,713          | Y   | \$45,587                | Y       | \$71,280 | \$213,840                    | \$855,360 |        | 74.82        |
| IOWA           | 351348 | ACE TEL ASSN-IA      | Non Rural       | C    | 4,358               | \$9,820  | Y   | \$17,830          | Y   | \$43,559                | Y       | \$71,209 | \$213,827                    | \$854,508 |        | 198.08       |
| NEW YORK       | 150078 | CHAUTAUQUA & ERIE    | Rural           | C    | 11,383              | \$0      | Y   | \$0               | Y   | \$71,101                | Y       | \$71,101 | \$213,303                    | \$853,212 |        | 74.95        |
| OKLAHOMA       | 431995 | HINTON TEL CO        | Rural           | C    | 3,388               | \$29,130 | Y   | \$30,084          | Y   | \$11,779                | Y       | \$70,993 | \$212,979                    | \$851,918 |        | 251.80       |
| WEST VIRGINIA  | 200267 | ARMSTRONG TEL CO     | Rural           | C    | 4,484               | \$28,710 | Y   | \$22,115          | Y   | \$22,181                | Y       | \$70,988 | \$212,958                    | \$851,832 |        | 189.97       |
| NEBRASKA       | 371542 | EASTERN NEBRASKA TEL | Rural           | C    | 2,908               | \$21,729 | Y   | \$13,448          | Y   | \$35,751                | Y       | \$70,928 | \$212,778                    | \$851,112 |        | 292.88       |
| IOWA           | 351888 | GRAND RIVER MUT-IA   | Rural           | C    | 6,595               | \$0      | Y   | \$11,820          | Y   | \$59,058                | Y       | \$70,878 | \$212,634                    | \$850,538 |        | 98.98        |
| PENNSYLVANIA   | 170185 | MARIANNA - SCENERY   | Rural           | A    | 2,714               | \$0      | Y   | \$8,983           | Y   | \$63,707                | Y       | \$70,870 | \$212,010                    | \$848,040 |        | 312.47       |
| NEW YORK       | 150071 | ARMSTRONG TEL CO-NY  | Rural           | C    | 3,353               | \$24,759 | Y   | \$19,855          | Y   | \$25,497                | Y       | \$70,111 | \$210,333                    | \$841,332 |        | 250.92       |
| ALASKA         | 813018 | NUSHAGAK TEL COOP    | Rural           | C    | 2,435               | \$30,384 | Y   | \$17,491          | Y   | \$22,204                | Y       | \$70,059 | \$210,177                    | \$840,708 |        | 345.28       |
| IDAHO          | 472232 | DIRECT COMM-ROCKLAND | Rural           | C    | 1,292               | \$34,787 | Y   | \$11,211          | Y   | \$24,049                | Y       | \$70,047 | \$210,141                    | \$840,584 |        | 850.59       |
| TEXAS          | 442076 | GANADO TELEPHONE CO  | Rural           | C    | 2,881               | \$45,425 | Y   | \$18,774          | Y   | \$7,736                 | Y       | \$69,935 | \$208,805                    | \$839,220 |        | 293.33       |
| MICHIGAN       | 310879 | BLOOMINGDALE TEL CO  | Rural           | C    | 2,104               | \$42,829 | Y   | \$19,147          | Y   | \$7,898                 | Y       | \$69,874 | \$208,022                    | \$838,088 |        | 397.38       |
| NEBRASKA       | 371524 | BLAIR TEL CO         | Rural           | C    | 8,372               | \$0      | Y   | \$4,072           | Y   | \$85,442                | Y       | \$69,514 | \$208,542                    | \$834,188 |        | 99.84        |
| NEW MEXICO     | 492263 | LA JICARITA RURAL    | Rural           | C    | 1,908               | \$35,148 | Y   | \$20,373          | Y   | \$13,790                | Y       | \$69,311 | \$207,933                    | \$831,732 |        | 435.92       |
| IDAHO          | 472226 | MIDVALE TEL EXCH INC | Rural           | C    | 1,088               | \$29,197 | Y   | \$15,907          | Y   | \$24,107                | Y       | \$69,211 | \$207,633                    | \$830,532 |        | 777.85       |
| SOUTH CAROLINA | 240533 | MCCLELLANVILLE TEL   | Rural           | C    | 1,685               | \$44,980 | Y   | \$15,850          | Y   | \$8,172                 | Y       | \$68,982 | \$208,948                    | \$827,784 |        | 491.27       |
| OREGON         | 532371 | CASCADE UTIL INC     | Rural           | C    | 9,435               | \$3,153  | Y   | \$23,985          | Y   | \$41,558                | Y       | \$68,878 | \$208,028                    | \$824,112 |        | 87.35        |
| SOUTH DAKOTA   | 391686 | VIVIAN TELEPHONE CO  | Rural           | A    | 18,148              | \$25,830 | Y   | \$38,392          | Y   | \$8,433                 | Y       | \$68,655 | \$205,985                    | \$823,880 |        | 45.40        |
| PENNSYLVANIA   | 170178 | ALLTEL PENNSYLVANIA  | Rural           | C    | 225,421             | \$0      | Y   | \$68,544          | N   | \$0                     | Y       | \$68,544 | \$205,632                    | \$822,528 |        | 3.85         |
| NEVADA         | 553304 | HUMBOLDT TEL CO      | Rural           | C    | 748                 | \$31,814 | Y   | \$18,789          | Y   | \$17,368                | Y       | \$67,971 | \$203,913                    | \$815,652 |        | 1,090.44     |
| SOUTH CAROLINA | 240536 | PALMETTO RURAL COOP  | Rural           | A    | 12,004              | \$0      | Y   | \$23,555          | Y   | \$43,904                | Y       | \$67,459 | \$202,377                    | \$809,508 |        | 87.44        |
| INDIANA        | 320753 | CLAY CTY RURAL COOP  | Rural           | C    | 11,345              | \$19,947 | Y   | \$19,137          | Y   | \$28,352                | Y       | \$67,436 | \$202,308                    | \$809,232 |        | 71.33        |
| HAWAII         | 823021 | SANDWICH ISLES COMM  | Rural           | C    | 348                 | \$20,938 | Y   | \$13,091          | Y   | \$33,380                | N       | \$67,389 | \$202,187                    | \$808,688 |        | 2,337.19     |
| NEW YORK       | 150092 | EDWARDS TEL CO       | Rural           | C    | 2,135               | \$40,538 | Y   | \$19,842          | Y   | \$8,817                 | Y       | \$66,997 | \$200,991                    | \$803,984 |        | 378.56       |
| NEW YORK       | 150105 | MIDDLEBURGH TEL CO   | Rural           | C    | 8,400               | \$18,557 | Y   | \$18,704          | Y   | \$31,682                | Y       | \$66,943 | \$200,829                    | \$803,318 |        | 125.52       |
| ALASKA         | 613004 | BUSH-TELL INC        | Rural           | C    | 831                 | \$18,875 | Y   | \$20,838          | Y   | \$27,043                | Y       | \$66,754 | \$200,282                    | \$801,048 |        | 983.98       |
| COLORADO       | 482204 | COLUMBINE ACQ CORP   | Rural           | C    | 1,187               | \$43,175 | Y   | \$14,739          | Y   | \$8,808                 | Y       | \$66,722 | \$200,188                    | \$800,884 |        | 686.09       |
| MINNESOTA      | 381414 | LAKEDALE TEL CO      | Rural           | C    | 11,636              | \$0      | Y   | \$27,188          | Y   | \$39,514                | Y       | \$66,702 | \$200,108                    | \$800,424 |        | 88.79        |
| NORTH CAROLINA | 230474 | CONCORD TEL CO       | Rural           | C    | 103,380             | \$0      | Y   | \$88,245          | N   | \$0                     | Y       | \$66,245 | \$198,735                    | \$794,840 |        | 7.89         |
| IOWA           | 351260 | NORTHWEST IOWA TEL   | Rural           | A    | 4,511               | \$0      | Y   | \$8,824           | X   | \$58,819                | Y       | \$66,243 | \$198,729                    | \$794,818 |        | 178.22       |
| PENNSYLVANIA   | 170188 | FRONTIER-PA          | Rural           | C    | 28,842              | \$0      | N   | \$0               | X   | \$68,081                | Y       | \$66,081 | \$198,243                    | \$792,972 |        | 27.89        |
| NEW MEXICO     | 492259 | BACA VALLEY TEL CO   | Rural           | C    | 824                 | \$32,491 | Y   | \$15,950          | Y   | \$17,077                | Y       | \$65,518 | \$198,554                    | \$788,218 |        | 954.15       |
| SOUTH CAROLINA | 240541 | RIDGEWAY TEL CO      | Rural           | A    | 1,899               | \$0      | Y   | \$4,893           | Y   | \$80,814                | Y       | \$65,507 | \$198,521                    | \$788,084 |        | 413.95       |
| NEW HAMPSHIRE  | 120049 | UNION TEL CO         | Rural           | C    | 7,021               | \$0      | Y   | \$5,532           | Y   | \$59,813                | Y       | \$65,445 | \$198,335                    | \$785,340 |        | 111.88       |
| IOWA           | 351086 | AMANA COLONIES TEL   | Rural           | A    | 14,509              | \$8,232  | Y   | \$25,778          | X   | \$33,283                | Y       | \$65,293 | \$195,879                    | \$783,518 |        | 54.00        |
| MAINE          | 100003 | LINCOLNVILLE TEL CO  | Rural           | C    | 11,880              | \$1,094  | Y   | \$30,375          | Y   | \$33,755                | Y       | \$65,224 | \$195,872                    | \$782,688 |        | 87.01        |
| ARKANSAS       | 401892 | ARKANSAS TEL CO      | Rural           | C    | 7,802               | \$24,898 | Y   | \$9,948           | X   | \$30,093                | Y       | \$64,935 | \$194,805                    | \$779,220 |        | 99.87        |

## PER USF PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State          | SAC    | Study Area Name      | Rural/Non Rural | Type | High Cost Loop Fund |          | Long Term Support |          | Local Switching Support |          | ETC | Total High Cost Fund Support |           |           | Per USF Loop |
|----------------|--------|----------------------|-----------------|------|---------------------|----------|-------------------|----------|-------------------------|----------|-----|------------------------------|-----------|-----------|--------------|
|                |        |                      |                 |      | USF                 | Monthly  | LTS               | Monthly  | LSS                     | Monthly  |     | Monthly                      | Quarterly | Annual    |              |
| LOUISIANA      | 270439 | CENTURY TEL RINGGOLD | Rural           | C    | 1,858               | \$28,139 | Y                 | \$13,385 | Y                       | \$14,880 | Y   | \$56,384                     | \$169,152 | \$676,608 | 364.18       |
| WISCONSIN      | 330922 | NORTH WEST DBA PTI   | Rural           | C    | 80,181              | \$0      | Y                 | \$56,244 | N                       | \$0      | Y   | \$56,244                     | \$168,732 | \$674,928 | 8.42         |
| IDAHO          | 472223 | GEM STATE UTIL ID    | Rural           | C    | 1,517               | \$30,269 | Y                 | \$11,212 | X                       | \$14,735 | Y   | \$56,218                     | \$168,648 | \$674,592 | 444.69       |
| NEW YORK       | 150129 | TOWNSHIP TEL CO      | Rural           | C    | 4,598               | \$5,898  | Y                 | \$14,088 | Y                       | \$35,536 | Y   | \$55,522                     | \$166,566 | \$666,264 | 144.97       |
| MICHIGAN       | 310672 | COMM CORP OF MI      | Rural           | C    | 4,717               | \$24,136 | Y                 | \$11,092 | Y                       | \$20,218 | Y   | \$55,446                     | \$166,338 | \$665,352 | 141.05       |
| KENTUCKY       | 260407 | GTE SOUTH INC - KY   | Non-Rural       | C    | 431,728             | \$55,387 | N                 | \$0      | N                       | \$0      | Y   | \$55,387                     | \$166,101 | \$664,404 | 1.54         |
| NEBRASKA       | 371516 | ARAPAHOE TEL CO      | Rural           | C    | 2,594               | \$12,960 | Y                 | \$8,518  | Y                       | \$33,879 | Y   | \$55,357                     | \$166,071 | \$664,284 | 256.08       |
| ALABAMA        | 250297 | GROVE HILL TEL CORP  | Rural           | C    | 2,472               | \$34,414 | Y                 | \$13,318 | Y                       | \$7,512  | Y   | \$55,244                     | \$165,732 | \$662,928 | 268.17       |
| NORTH CAROLINA | 230496 | RANDOLPH MEMBERSHIP  | Rural           | A    | 9,448               | \$36     | Y                 | \$30,261 | Y                       | \$24,819 | Y   | \$55,116                     | \$165,348 | \$661,392 | 70.02        |
| NEW YORK       | 150107 | NEWPORT TEL CO       | Rural           | C    | 3,485               | \$24,127 | Y                 | \$22,851 | Y                       | \$8,093  | Y   | \$55,071                     | \$165,213 | \$660,852 | 189.63       |
| ARKANSAS       | 401709 | MADISON CCJNTY TEL   | Rural           | C    | 3,457               | \$23,317 | Y                 | \$12,305 | Y                       | \$18,910 | Y   | \$54,532                     | \$163,596 | \$654,384 | 189.29       |
| NEW YORK       | 150110 | OGDEN TEL CO         | Rural           | C    | 22,407              | \$0      | N                 | \$0      | X                       | \$54,506 | Y   | \$54,506                     | \$163,518 | \$654,072 | 29.19        |
| ILLINOIS       | 341047 | MCDONOUGH TEL COOP   | Rural           | A    | 4,519               | \$15,274 | Y                 | \$15,287 | Y                       | \$23,777 | Y   | \$54,318                     | \$162,954 | \$651,816 | 144.24       |
| OKLAHOMA       | 431979 | CHEROKEE TEL CO      | Rural           | C    | 4,982               | \$0      | Y                 | \$937    | Y                       | \$53,080 | Y   | \$54,027                     | \$162,081 | \$648,324 | 130.66       |
| TEXAS          | 442103 | LA WARD TEL EXCHANGE | Rural           | C    | 1,137               | \$27,439 | Y                 | \$8,436  | Y                       | \$17,751 | Y   | \$53,626                     | \$160,878 | \$643,512 | 565.97       |
| TENNESSEE      | 294336 | CLC DBA CITIZENS-TN  | Rural           | C    | 73,062              | \$53,227 | N                 | \$0      | N                       | \$0      | Y   | \$53,227                     | \$159,681 | \$638,724 | 8.74         |
| PENNSYLVANIA   | 170196 | PALMERTON TEL CO     | Rural           | A    | 11,898              | \$0      | Y                 | \$22,603 | X                       | \$30,812 | Y   | \$53,215                     | \$159,645 | \$638,580 | 53.66        |
| KANSAS         | 411840 | TWIN VALLEY TEL INC  | Rural           | C    | 2,475               | \$14,754 | Y                 | \$7,597  | Y                       | \$30,656 | Y   | \$53,007                     | \$159,021 | \$636,084 | 257.00       |
| KANSAS         | 411784 | ELKHART TEL CO INC   | Rural           | C    | 1,640               | \$5,844  | Y                 | \$6,470  | X                       | \$40,654 | Y   | \$52,988                     | \$158,904 | \$635,616 | 387.57       |
| NEBRASKA       | 371536 | CURTIS TEL CO        | Rural           | C    | 848                 | \$29,688 | Y                 | \$14,031 | Y                       | \$9,116  | Y   | \$52,835                     | \$158,505 | \$634,020 | 747.67       |
| ILLINOIS       | 340976 | ADAMS TEL COOP       | Rural           | A    | 4,447               | \$15,575 | Y                 | \$15,301 | Y                       | \$21,833 | Y   | \$52,709                     | \$158,127 | \$632,508 | 142.23       |
| MAINE          | 100002 | BRYANT POND TEL CO   | Rural           | C    | 6,473               | \$8,141  | Y                 | \$16,406 | Y                       | \$28,038 | Y   | \$52,585                     | \$157,755 | \$631,020 | 97.48        |
| NORTH DAKOTA   | 381631 | RED RIVER RURAL TEL  | Rural           | A    | 3,681               | \$7,026  | Y                 | \$10,102 | Y                       | \$35,409 | Y   | \$52,537                     | \$157,611 | \$630,444 | 171.27       |
| VIRGINIA       | 193029 | NEW CASTLE TEL CO    | Rural           | C    | 2,223               | \$31,600 | Y                 | \$16,313 | Y                       | \$4,486  | Y   | \$52,399                     | \$157,197 | \$628,788 | 282.86       |
| WISCONSIN      | 330931 | CTE OF SO WISCONSIN  | Rural           | C    | 6,801               | \$7,883  | Y                 | \$17,092 | Y                       | \$27,414 | Y   | \$52,389                     | \$157,167 | \$628,668 | 92.44        |
| LOUISIANA      | 270438 | RESERVE TEL CO       | Rural           | C    | 5,119               | \$0      | Y                 | \$10,285 | Y                       | \$41,630 | Y   | \$51,895                     | \$155,685 | \$622,740 | 121.65       |
| OKLAHOMA       | 431986 | ATLAS TEL CO         | Rural           | C    | 2,041               | \$12,006 | Y                 | \$7,452  | Y                       | \$32,390 | Y   | \$51,848                     | \$155,544 | \$622,178 | 304.84       |
| ILLINOIS       | 341043 | LA HARPE TEL CO      | Rural           | C    | 1,095               | \$29,663 | Y                 | \$13,194 | X                       | \$8,812  | Y   | \$51,689                     | \$155,007 | \$620,028 | 566.24       |
| MINNESOTA      | 361475 | RUNESTONE TEL ASSN   | Rural           | A    | 4,209               | \$12,868 | Y                 | \$13,670 | Y                       | \$25,060 | Y   | \$51,596                     | \$154,794 | \$619,176 | 147.11       |
| TEXAS          | 442168 | WES-TEX TEL CO-OP    | Rural           | C    | 3,220               | \$17,420 | Y                 | \$11,885 | Y                       | \$22,010 | Y   | \$51,315                     | \$153,945 | \$615,780 | 191.24       |
| WISCONSIN      | 330964 | FRONTIER-WISCONSIN   | Rural           | C    | 25,807              | \$0      | N                 | \$0      | X                       | \$51,243 | Y   | \$51,243                     | \$153,729 | \$614,916 | 23.83        |
| ILLINOIS       | 341025 | SHAWNEE TELEPHONE CO | Rural           | C    | 4,828               | \$6,642  | Y                 | \$14,351 | X                       | \$30,158 | Y   | \$51,149                     | \$153,447 | \$613,788 | 127.13       |
| KANSAS         | 411839 | TRI-COUNTY TEL ASSN  | Rural           | A    | 3,420               | \$13,101 | Y                 | \$17,194 | Y                       | \$20,777 | Y   | \$51,072                     | \$153,216 | \$612,864 | 179.20       |
| ALASKA         | 613017 | ALASKA TEL CO        | Rural           | A    | 4,275               | \$15,531 | Y                 | \$14,557 | Y                       | \$20,937 | Y   | \$51,025                     | \$153,075 | \$612,300 | 143.23       |
| NEBRASKA       | 371555 | HAMILTON TEL CO      | Rural           | A    | 6,304               | \$14,072 | Y                 | \$11,629 | Y                       | \$25,323 | Y   | \$51,024                     | \$153,072 | \$612,268 | 97.13        |
| TEXAS          | 442143 | SOUTH PLAINS TEL     | Rural           | C    | 4,657               | \$11,359 | Y                 | \$15,584 | Y                       | \$23,824 | Y   | \$50,767                     | \$152,301 | \$609,204 | 130.81       |
| KENTUCKY       | 260402 | ALLTEL KENTUCKY      | Rural           | C    | 23,306              | \$0      | Y                 | \$25,521 | X                       | \$25,203 | Y   | \$50,724                     | \$152,172 | \$608,688 | 26.12        |
| FLORIDA        | 210291 | GTC, INC             | Rural           | C    | 4,598               | \$28,472 | Y                 | \$12,334 | X                       | \$9,911  | Y   | \$50,717                     | \$152,151 | \$608,604 | 132.42       |
| ARKANSAS       | 401720 | CENTURY OF REDFIELD  | Rural           | C    | 1,845               | \$23,957 | Y                 | \$10,010 | Y                       | \$16,674 | Y   | \$50,641                     | \$151,923 | \$607,892 | 329.37       |
| SOUTH CAROLINA | 240532 | LOCKHART TEL CO INC  | Rural           | A    | 875                 | \$1,568  | Y                 | \$2,055  | Y                       | \$48,956 | Y   | \$50,579                     | \$151,737 | \$606,948 | 899.18       |
| ARIZONA        | 452173 | TOHONO O'ODHAM UTIL  | Rural           | C    | 3,518               | \$16,187 | Y                 | \$23,923 | Y                       | \$10,442 | Y   | \$50,532                     | \$151,596 | \$606,384 | 172.46       |
| MINNESOTA      | 381430 | MELROSE TEL CO       | Rural           | C    | 9,749               | \$3,855  | Y                 | \$30,445 | Y                       | \$16,086 | Y   | \$50,388                     | \$151,164 | \$604,656 | 62.02        |
| TEXAS          | 442091 | ETS TEL CO, INC      | Rural           | C    | 355                 | \$26,744 | Y                 | \$20,889 | Y                       | \$751    | Y   | \$50,364                     | \$151,092 | \$604,368 | 1,702.45     |
| TEXAS          | 442073 | BORDER TO BORDER     | Rural           | C    | 92                  | \$32,910 | Y                 | \$12,235 | Y                       | \$5,128  | Y   | \$50,273                     | \$150,819 | \$603,276 | 6,567.35     |
| NEW YORK       | 150072 | FRONTIER-AUSABLE VAL | Rural           | C    | 6,173               | \$14,855 | N                 | \$0      | X                       | \$35,374 | Y   | \$50,029                     | \$150,087 | \$600,348 | 97.25        |
| MICHIGAN       | 310677 | ISLAND TEL CO        | Rural           | C    | 1,050               | \$25,115 | Y                 | \$12,715 | Y                       | \$11,535 | Y   | \$49,365                     | \$148,095 | \$592,380 | 564.17       |
| ILLINOIS       | 341085 | ODIN TEL EXCH INC    | Rural           | C    | 1,198               | \$24,295 | Y                 | \$13,879 | X                       | \$11,140 | Y   | \$49,314                     | \$147,942 | \$591,788 | 493.96       |
| MINNESOTA      | 381479 | SCOTT RICE TEL CO    | Rural           | A    | 14,427              | \$0      | Y                 | \$29,455 | Y                       | \$19,793 | Y   | \$49,248                     | \$147,744 | \$590,976 | 40.96        |
| MISSISSIPPI    | 260481 | NOXAPATER TEL CO     | Rural           | C    | 1,045               | \$20,712 | Y                 | \$14,971 | Y                       | \$13,363 | Y   | \$49,046                     | \$147,138 | \$588,552 | 563.21       |
| MISSISSIPPI    | 260456 | GEORGETOWN TEL CO    | Rural           | C    | 317                 | \$26,090 | Y                 | \$11,685 | Y                       | \$11,220 | Y   | \$48,985                     | \$146,955 | \$587,820 | 1,854.32     |
| NEW YORK       | 150122 | FRONTIER-SENECA GORH | Rural           | C    | 9,890               | \$0      | N                 | \$0      | X                       | \$48,912 | Y   | \$48,912                     | \$146,736 | \$586,844 | 59.35        |
| OREGON         | 532364 | COLTON TEL CO        | Rural           | C    | 1,218               | \$26,293 | Y                 | \$12,724 | Y                       | \$7,764  | Y   | \$48,781                     | \$146,343 | \$585,372 | 480.80       |
| MINNESOTA      | 381401 | HALSTAD TEL CO       | Rural           | A    | 1,431               | \$13,411 | Y                 | \$9,359  | Y                       | \$25,976 | Y   | \$48,746                     | \$146,238 | \$584,952 | 408.77       |
| IOWA           | 351328 | WEBSTER-CALHOUN COOP | Rural           | A    | 5,051               | \$18,164 | Y                 | \$23,411 | Y                       | \$8,727  | Y   | \$48,302                     | \$144,906 | \$579,624 | 114.75       |

## PER USF PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State          | SAC    | Study Area Name       | Rural/Non-Rural | Type | High Cost Loop Fund |          | Long Term Support |          | Local Switching Support |          | ETC | Total High Cost Fund Support |           |           |              |
|----------------|--------|-----------------------|-----------------|------|---------------------|----------|-------------------|----------|-------------------------|----------|-----|------------------------------|-----------|-----------|--------------|
|                |        |                       |                 |      | USF Loops           | Monthly  | LTS               | Monthly  | LSS                     | Monthly  |     | Monthly                      | Quarterly | Annual    | Per USF Loop |
| SOUTH DAKOTA   | 391640 | ARMOUR INDEPENDENT    | Rural           | A    | 1,841               | \$0      | Y                 | \$3,874  | Y                       | \$38,104 | Y   | \$41,778                     | \$125,334 | \$501,338 | 305.51       |
| IOWA           | 351115 | BUTLER BREMER MUTUAL  | Non-Rural       | A    | 2,981               | \$8,181  | Y                 | \$9,275  | Y                       | \$26,051 | Y   | \$41,507                     | \$124,521 | \$498,084 | 167.09       |
| INDIANA        | 320797 | NEW PARIS TEL INC     | Rural           | C    | 1,989               | \$15,042 | Y                 | \$6,879  | Y                       | \$19,574 | Y   | \$41,485                     | \$124,485 | \$497,940 | 250.35       |
| NEW YORK       | 150128 | FRONTIER-SYLVAN LAKE  | Rural           | C    | 17,085              | \$1,758  | N                 | \$0      | X                       | \$39,607 | Y   | \$41,383                     | \$124,089 | \$496,358 | 29.09        |
| ILLINOIS       | 341024 | HAMILTON COUNTY COOP  | Rural           | A    | 2,374               | \$8,339  | Y                 | \$9,527  | Y                       | \$23,458 | Y   | \$41,324                     | \$123,972 | \$495,888 | 208.88       |
| MINNESOTA      | 361442 | NEW ULM TELECOM, INC  | Rural           | C    | 11,750              | \$0      | Y                 | \$5,890  | Y                       | \$35,425 | Y   | \$41,315                     | \$123,945 | \$495,780 | 42.19        |
| TEXAS          | 442154 | CONTEL TX DBA GTE TX  | Non-Rural       | C    | 220,148             | \$41,314 | N                 | \$0      | N                       | \$0      | Y   | \$41,314                     | \$123,942 | \$495,768 | 2.25         |
| WISCONSIN      | 330898 | CENTURY-LARSEN-RDFLD  | Rural           | C    | 2,442               | \$18,688 | Y                 | \$9,574  | Y                       | \$13,025 | Y   | \$41,285                     | \$123,855 | \$495,420 | 202.87       |
| IOWA           | 351108 | BARNES CITY COOP      | Rural           | A    | 172                 | \$1,348  | Y                 | \$1,241  | Y                       | \$38,603 | Y   | \$41,192                     | \$123,578 | \$494,304 | 2,873.86     |
| MINNESOTA      | 361510 | WOODSTOCK TEL CO      | Rural           | A    | 1,308               | \$5,414  | Y                 | \$8,933  | Y                       | \$28,832 | Y   | \$41,179                     | \$123,537 | \$494,148 | 377.79       |
| OREGON         | 532385 | MONROE TELEPHONE CO   | Rural           | C    | 1,012               | \$11,188 | Y                 | \$6,480  | Y                       | \$23,382 | Y   | \$41,048                     | \$123,144 | \$492,578 | 486.74       |
| NORTH DAKOTA   | 381638 | MIDSTATE COMM         | Rural           | A    | 1,150               | \$0      | Y                 | \$2,977  | Y                       | \$38,008 | Y   | \$40,985                     | \$122,955 | \$491,820 | 427.67       |
| MINNESOTA      | 361482 | SHERBURNE CTY RURAL   | Rural           | A    | 10,648              | \$0      | Y                 | \$23,219 | Y                       | \$17,680 | Y   | \$40,899                     | \$122,697 | \$490,788 | 48.09        |
| NORTH CAROLINA | 230500 | SERVICE TEL CO        | Rural           | A    | 1,224               | \$481    | Y                 | \$2,085  | Y                       | \$38,335 | Y   | \$40,861                     | \$122,583 | \$490,332 | 400.80       |
| NORTH CAROLINA | 230469 | BARNARDSVILLE TEL CO  | Rural           | C    | 1,338               | \$25,109 | Y                 | \$12,509 | Y                       | \$3,208  | Y   | \$40,826                     | \$122,478 | \$489,812 | 388.15       |
| KENTUCKY       | 260408 | FOOTHILLS RURAL COOP  | Rural           | A    | 13,897              | \$0      | Y                 | \$37,281 | Y                       | \$3,532  | Y   | \$40,813                     | \$122,439 | \$489,758 | 35.78        |
| NORTH DAKOTA   | 381636 | UNITED TEL MUTUAL     | Rural           | A    | 7,375               | \$0      | Y                 | \$15,223 | Y                       | \$25,553 | Y   | \$40,778                     | \$122,328 | \$489,312 | 86.35        |
| NORTH DAKOTA   | 381623 | NOONAN FARMERS TEL    | Rural           | A    | 252                 | \$1,492  | Y                 | \$1,114  | Y                       | \$38,180 | Y   | \$40,766                     | \$122,298 | \$489,192 | 1,941.24     |
| PENNSYLVANIA   | 170183 | MAHANNOY & MAHANTONGO | Rural           | C    | 4,019               | \$15,180 | Y                 | \$18,075 | Y                       | \$7,289  | Y   | \$40,504                     | \$121,512 | \$488,048 | 120.94       |
| ILLINOIS       | 340984 | CASS COUNTY TEL CO    | Rural           | C    | 3,124               | \$12,557 | Y                 | \$5,541  | X                       | \$22,322 | Y   | \$40,420                     | \$121,280 | \$485,040 | 155.26       |
| WASHINGTON     | 522404 | ASOTIN TEL - WA       | Non-Rural       | C    | 1,216               | \$24,105 | Y                 | \$7,842  | Y                       | \$8,329  | Y   | \$40,278                     | \$120,828 | \$483,312 | 397.48       |
| ALABAMA        | 250316 | RAGLAND TEL CO        | Rural           | C    | 1,348               | \$24,858 | Y                 | \$13,368 | Y                       | \$1,892  | Y   | \$40,118                     | \$120,354 | \$481,416 | 357.13       |
| KANSAS         | 411781 | H & B COMMUNICATIONS  | Rural           | C    | 1,064               | \$14,427 | Y                 | \$12,188 | Y                       | \$13,489 | Y   | \$40,082                     | \$120,188 | \$480,744 | 451.83       |
| ALASKA         | 813025 | YUKON TEL CO INC      | Rural           | C    | 464                 | \$10,272 | Y                 | \$7,432  | Y                       | \$22,355 | Y   | \$40,059                     | \$120,177 | \$480,708 | 1,038.01     |
| WISCONSIN      | 330934 | PLATTEVILLE DBA PTI   | Rural           | C    | 9,070               | \$0      | Y                 | \$0      | X                       | \$39,935 | Y   | \$39,935                     | \$119,805 | \$479,220 | 52.84        |
| IOWA           | 351112 | BREDA TEL COOP        | Rural           | A    | 1,125               | \$3,809  | Y                 | \$2,788  | Y                       | \$33,338 | Y   | \$39,915                     | \$119,745 | \$478,880 | 425.78       |
| SOUTH DAKOTA   | 391642 | BALTIC TELECOM COOP   | Rural           | A    | 2,720               | \$8,269  | Y                 | \$4,982  | Y                       | \$28,643 | Y   | \$39,874                     | \$119,622 | \$478,488 | 175.81       |
| ILLINOIS       | 341016 | GENESEO TEL CO        | Rural           | A    | 7,872               | \$0      | Y                 | \$12,384 | Y                       | \$27,282 | Y   | \$39,828                     | \$118,878 | \$475,512 | 80.41        |
| MINNESOTA      | 361501 | WEST CENTRAL TEL      | Rural           | A    | 3,732               | \$7,722  | Y                 | \$11,213 | Y                       | \$20,875 | Y   | \$39,810                     | \$118,830 | \$474,338 | 127.24       |
| WISCONSIN      | 330987 | FRONTIER OF VIROQUA   | Rural           | A    | 3,728               | \$0      | Y                 | \$8,381  | Y                       | \$31,147 | Y   | \$39,528                     | \$118,584 | \$474,338 | 127.24       |
| WEST VIRGINIA  | 200277 | WEST SIDE TEL-WV      | Rural           | A    | 2,667               | \$4,171  | Y                 | \$6,617  | Y                       | \$28,715 | Y   | \$39,503                     | \$118,509 | \$474,036 | 177.74       |
| MINNESOTA      | 361409 | HUTCHINSON TEL CO     | Rural           | A    | 11,968              | \$0      | Y                 | \$20,751 | Y                       | \$18,525 | Y   | \$39,276                     | \$117,828 | \$471,312 | 39.39        |
| NORTH DAKOTA   | 381815 | GRIGGS COUNTY TEL CO  | Rural           | A    | 2,210               | \$0      | Y                 | \$5,344  | Y                       | \$33,873 | Y   | \$39,217                     | \$117,651 | \$470,604 | 212.94       |
| ILLINOIS       | 341021 | GRANDVIEW MUTUAL TEL  | Rural           | A    | 95                  | \$1,223  | Y                 | \$889    | Y                       | \$37,084 | Y   | \$39,178                     | \$117,528 | \$470,112 | 4,948.55     |
| MINNESOTA      | 361483 | SLEEPY EYE TEL CO     | Rural           | C    | 5,997               | \$572    | Y                 | \$14,504 | Y                       | \$23,936 | Y   | \$39,012                     | \$117,036 | \$468,144 | 78.08        |
| INDIANA        | 320801 | CTE OODN              | Rural           | C    | 1,832               | \$20,555 | Y                 | \$10,804 | Y                       | \$7,500  | Y   | \$38,959                     | \$116,877 | \$467,508 | 288.48       |
| TEXAS          | 440425 | CAMERON TEL CO TEXAS  | Rural           | C    | 1,230               | \$15,989 | Y                 | \$7,188  | Y                       | \$15,892 | Y   | \$38,829                     | \$116,487 | \$465,948 | 378.82       |
| NEW YORK       | 150073 | BERKSHIRE TEL CORP    | Rural           | C    | 8,299               | \$0      | Y                 | \$1,037  | Y                       | \$37,745 | Y   | \$38,782                     | \$116,348 | \$465,384 | 73.88        |
| ALASKA         | 813028 | NORTH COUNTRY TEL CO  | Rural           | A    | 178                 | \$1,395  | Y                 | \$1,181  | Y                       | \$36,204 | Y   | \$38,760                     | \$116,280 | \$465,120 | 2,813.03     |
| ARKANSAS       | 401722 | E RITTER TEL CO       | Rural           | A    | 4,571               | \$12,295 | Y                 | \$13,244 | Y                       | \$13,162 | Y   | \$38,701                     | \$116,103 | \$464,412 | 101.80       |
| MAINE          | 100015 | COMMUNITY SERVICE     | Rural           | A    | 11,075              | \$0      | Y                 | \$31,175 | Y                       | \$7,402  | Y   | \$38,577                     | \$115,731 | \$462,924 | 41.80        |
| NEBRASKA       | 371592 | STANTON TEL CO, INC   | Rural           | C    | 1,183               | \$19,018 | Y                 | \$5,349  | Y                       | \$13,918 | Y   | \$38,283                     | \$114,849 | \$459,398 | 388.33       |
| WISCONSIN      | 330920 | NIAGARA TEL CO        | Rural           | C    | 4,075               | \$1,940  | Y                 | \$1,759  | Y                       | \$34,573 | Y   | \$38,272                     | \$114,816 | \$459,284 | 112.70       |
| IOWA           | 351101 | ATKINS TEL CO, INC    | Rural           | A    | 877                 | \$1,568  | Y                 | \$2,054  | Y                       | \$34,645 | Y   | \$38,267                     | \$114,801 | \$459,204 | 678.29       |
| PUERTO RICO    |        | CENTENNIAL PCS OPER   | Non-Rural       | A    | 4,873               | \$8,771  |                   | \$29,482 |                         | \$0      | Y   | \$38,253                     | \$114,759 | \$459,036 | 94.20        |
| NEBRASKA       | 371530 | CONSOLIDATED TELCO    | Rural           | A    | 1,593               | \$5,712  | Y                 | \$6,141  | Y                       | \$28,347 | Y   | \$38,200                     | \$114,600 | \$458,400 | 287.76       |
| ARKANSAS       | 401712 | MOUNTAIN VIEW TEL CO  | Rural           | A    | 8,191               | \$12,210 | Y                 | \$14,734 | Y                       | \$10,887 | Y   | \$37,811                     | \$113,433 | \$453,732 | 73.29        |
| IOWA           | 351107 | BALDWIN-NASHVILLE     | Rural           | A    | 318                 | \$1,141  | Y                 | \$1,523  | Y                       | \$35,045 | Y   | \$37,709                     | \$113,127 | \$452,508 | 1,422.98     |
| MISSOURI       | 421942 | ROCK PORT TEL CO      | Rural           | A    | 1,886               | \$2,911  | Y                 | \$2,325  | Y                       | \$32,308 | Y   | \$37,542                     | \$112,626 | \$450,504 | 287.20       |
| MINNESOTA      | 361356 | BENTON COOP TEL CO    | Rural           | A    | 3,819               | \$3,924  | Y                 | \$12,871 | Y                       | \$20,698 | Y   | \$37,491                     | \$112,473 | \$449,892 | 117.80       |
| NORTH DAKOTA   | 381622 | MOORE & LIBERTY TEL   | Rural           | A    | 988                 | \$248    | Y                 | \$2,882  | Y                       | \$34,539 | Y   | \$37,449                     | \$112,347 | \$449,388 | 450.29       |
| SOUTH CAROLINA | 240524 | HEATH SPRINGS TEL CO  | Rural           | A    | 1,257               | \$326    | Y                 | \$2,930  | Y                       | \$34,171 | Y   | \$37,427                     | \$112,281 | \$449,124 | 357.30       |
| MINNESOTA      | 361484 | UPSALA COOP TEL ASSN  | Rural           | A    | 977                 | \$1,223  | Y                 | \$3,387  | Y                       | \$32,812 | Y   | \$37,422                     | \$112,266 | \$449,084 | 459.84       |
| MICHIGAN       | 310711 | MIDWAY TEL CO         | Rural           | C    | 878                 | \$20,570 | Y                 | \$8,988  | Y                       | \$9,803  | Y   | \$37,359                     | \$112,077 | \$448,308 | 511.77       |



## PER USE PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State          | SAC    | Study Area Name      | Rural/Non Rural | Type | High Cost Loop Fund |          | Long Term Support |          | Local Switching Support |          | ETC | Monthly  | Total High Cost Fund Support |           |           | Per USF Loop |
|----------------|--------|----------------------|-----------------|------|---------------------|----------|-------------------|----------|-------------------------|----------|-----|----------|------------------------------|-----------|-----------|--------------|
|                |        |                      |                 |      | USF                 | Loops    | Monthly           | LTS      | Monthly                 | LSS      |     |          | Monthly                      | Quarterly | Annual    |              |
| MAINE          | 100034 | WEST PENOBSCOT TEL   | Rural           | C    | 2,342               | \$5,539  | Y                 | \$11,991 | Y                       | \$15,008 | Y   | \$32,538 | \$97,614                     | \$390,456 | 166.72    |              |
| MISSOURI       | 421807 | MOKAN DIAL INC-MO    | Rural           | C    | 744                 | \$21,522 | Y                 | \$7,717  | X                       | \$3,298  | Y   | \$32,535 | \$97,605                     | \$390,420 | 524.76    |              |
| NEVADA         | 552353 | MOAPA VALLEY TEL CO  | Rural           | C    | 3,560               | \$0      | Y                 | \$0      | Y                       | \$32,337 | Y   | \$32,337 | \$97,011                     | \$388,044 | 109.00    |              |
| OREGON         | 532373 | GERVAIS TELEPHONE CO | Rural           | A    | 1,107               | \$878    | Y                 | \$2,239  | Y                       | \$29,125 | Y   | \$32,240 | \$96,720                     | \$386,880 | 349.49    |              |
| WISCONSIN      | 330891 | HEADWATERS TEL CO    | Rural           | C    | 5,201               | \$0      | Y                 | \$13,097 | Y                       | \$19,121 | Y   | \$32,218 | \$96,654                     | \$386,616 | 74.33     |              |
| NORTH CAROLINA | 230497 | PIEDMONT MEMBERSHIP  | Rural           | A    | 3,102               | \$0      | Y                 | \$8,676  | Y                       | \$23,454 | Y   | \$32,130 | \$96,390                     | \$385,580 | 124.29    |              |
| MINNESOTA      | 361485 | SPRING GROVE COOP    | Rural           | A    | 1,238               | \$3,121  | Y                 | \$2,988  | Y                       | \$25,983 | Y   | \$32,072 | \$96,218                     | \$384,864 | 311.38    |              |
| ARIZONA        | 452109 | SAN CARLOS APACHE    | Rural           | C    | 712                 | \$18,362 | Y                 | \$10,374 | Y                       | \$5,308  | Y   | \$32,044 | \$96,132                     | \$384,528 | 540.07    |              |
| ILLINOIS       | 341087 | VIOLA HOME TEL CO    | Rural           | A    | 793                 | \$1,510  | Y                 | \$1,995  | Y                       | \$28,350 | Y   | \$31,855 | \$95,565                     | \$382,280 | 482.04    |              |
| KENTUCKY       | 260401 | DUO COUNTY TEL COOP  | Rural           | A    | 11,390              | \$0      | Y                 | \$29,553 | Y                       | \$2,294  | Y   | \$31,847 | \$95,541                     | \$382,184 | 33.55     |              |
| INDIANA        | 320815 | ROCHESTER TEL CO     | Rural           | A    | 7,647               | \$0      | Y                 | \$13,681 | X                       | \$18,143 | Y   | \$31,824 | \$95,472                     | \$381,888 | 49.94     |              |
| IOWA           | 351334 | WESTERN IOWA ASSN    | Rural           | A    | 3,481               | \$11,044 | Y                 | \$10,857 | Y                       | \$9,739  | Y   | \$31,840 | \$94,920                     | \$379,680 | 109.07    |              |
| NEBRASKA       | 371581 | PIERCE TEL CO        | Rural           | A    | 1,875               | \$2,610  | Y                 | \$4,933  | Y                       | \$23,993 | Y   | \$31,536 | \$94,608                     | \$378,432 | 201.83    |              |
| MINNESOTA      | 361399 | GARDONVILLE COOP TEL | Rural           | A    | 3,049               | \$8,139  | Y                 | \$10,585 | Y                       | \$14,782 | Y   | \$31,506 | \$94,518                     | \$378,072 | 124.00    |              |
| MINNESOTA      | 361500 | NORTHERN TEL CO - MN | Rural           | A    | 36                  | \$810    | Y                 | \$614    | Y                       | \$30,068 | Y   | \$31,490 | \$94,470                     | \$377,880 | 10,498.67 |              |
| NORTH DAKOTA   | 382247 | NEMONT TEL COOP - ND | Non-Rural       | A    | 251                 | \$3,583  | Y                 | \$2,218  | Y                       | \$25,685 | Y   | \$31,466 | \$94,398                     | \$377,592 | 1,504.35  |              |
| MISSOURI       | 421927 | NEW FLORENCE TEL CO  | Rural           | A    | 488                 | \$1,430  | Y                 | \$1,275  | Y                       | \$28,751 | Y   | \$31,456 | \$94,368                     | \$377,472 | 806.56    |              |
| MINNESOTA      | 361372 | CLEMENTS TEL CO      | Rural           | A    | 192                 | \$14,518 | Y                 | \$1,188  | Y                       | \$15,646 | Y   | \$31,352 | \$94,058                     | \$376,224 | 1,959.50  |              |
| OHIO           | 300594 | THE CHAMPAIGN TEL CO | Rural           | A    | 11,445              | \$0      | Y                 | \$27,916 | Y                       | \$3,433  | Y   | \$31,349 | \$94,047                     | \$376,188 | 32.87     |              |
| IOWA           | 351298 | SOUTH SLOPE COOP TEL | Rural           | A    | 9,445               | \$0      | Y                 | \$20,838 | Y                       | \$10,447 | Y   | \$31,283 | \$93,849                     | \$375,396 | 39.75     |              |
| MISSOURI       | 421945 | SENECA TEL CO        | Rural           | A    | 2,946               | \$0      | Y                 | \$6,202  | Y                       | \$25,086 | Y   | \$31,288 | \$93,804                     | \$375,216 | 127.36    |              |
| UTAH           | 502277 | CENTRAL UTAH TEL INC | Rural           | C    | 1,380               | \$12,751 | Y                 | \$7,297  | Y                       | \$11,218 | Y   | \$31,266 | \$93,798                     | \$375,192 | 269.92    |              |
| MINNESOTA      | 361515 | ZUMBROTA TEL CO      | Rural           | A    | 2,161               | \$0      | Y                 | \$4,888  | Y                       | \$28,392 | Y   | \$31,280 | \$93,780                     | \$375,120 | 173.59    |              |
| OKLAHOMA       | 432032 | VALLIANT TEL CO      | Rural           | C    | 2,218               | \$2,315  | Y                 | \$3,389  | Y                       | \$25,503 | Y   | \$31,207 | \$93,621                     | \$374,484 | 168.84    |              |
| GEORGIA        | 220387 | FRONTIER OF GEORGIA  | Rural           | A    | 23,956              | \$0      | Y                 | \$23,703 | Y                       | \$7,459  | Y   | \$31,162 | \$93,486                     | \$373,944 | 15.61     |              |
| IDAHO          | 472423 | INLAND TEL-ID        | Non-Rural       | C    | 336                 | \$17,460 | Y                 | \$7,222  | Y                       | \$8,456  | Y   | \$31,138 | \$93,414                     | \$373,656 | 1,112.07  |              |
| ALASKA         | 613022 | TEL UTIL OF ALASKA   | Rural           | C    | 5,520               | \$0      | Y                 | \$0      | X                       | \$30,863 | Y   | \$30,863 | \$92,589                     | \$370,356 | 67.09     |              |
| ILLINOIS       | 341075 | REYNOLDS TEL CO. INC | Rural           | A    | 571                 | \$1,537  | Y                 | \$1,328  | Y                       | \$27,998 | Y   | \$30,691 | \$92,583                     | \$370,332 | 648.57    |              |
| NEW YORK       | 150125 | STATE TEL CO         | Rural           | A    | 8,142               | \$0      | Y                 | \$20,493 | Y                       | \$10,350 | Y   | \$30,843 | \$92,529                     | \$370,116 | 45.48     |              |
| WISCONSIN      | 330918 | NELSON TEL COOP      | Rural           | A    | 3,911               | \$4,887  | Y                 | \$9,718  | Y                       | \$16,181 | Y   | \$30,786 | \$92,358                     | \$369,432 | 94.48     |              |
| FLORIDA        | 210318 | FRONTIER COMM-SOUTH  | Rural           | C    | 4,146               | \$13,135 | N                 | \$0      | X                       | \$17,589 | Y   | \$30,724 | \$92,172                     | \$368,688 | 88.93     |              |
| GEORGIA        | 220380 | PROGRESSIVE RURAL    | Rural           | A    | 4,822               | \$9,001  | Y                 | \$14,527 | Y                       | \$7,182  | Y   | \$30,710 | \$92,130                     | \$368,520 | 76.42     |              |
| MISSISSIPPI    | 280486 | SLEDGE TEL CO        | Rural           | C    | 540                 | \$18,605 | Y                 | \$7,347  | Y                       | \$4,531  | Y   | \$30,483 | \$91,449                     | \$365,796 | 677.40    |              |
| ILLINOIS       | 341061 | FRONTIER-MT. PULASKI | Rural           | C    | 2,299               | \$0      | N                 | \$0      | X                       | \$30,357 | Y   | \$30,357 | \$91,071                     | \$364,284 | 158.45    |              |
| MISSOURI       | 421886 | GOODMAN TEL CO       | Rural           | C    | 1,788               | \$12,502 | Y                 | \$3,131  | Y                       | \$14,719 | Y   | \$30,352 | \$91,056                     | \$364,224 | 203.70    |              |
| NEBRASKA       | 371525 | THREE RIVER TELCO    | Rural           | C    | 1,343               | \$10,239 | Y                 | \$7,016  | Y                       | \$12,905 | Y   | \$30,180 | \$90,480                     | \$361,920 | 269.49    |              |
| MINNESOTA      | 361454 | PINE ISLAND TEL CO   | Rural           | C    | 2,899               | \$10,212 | Y                 | \$10,568 | Y                       | \$9,308  | Y   | \$30,088 | \$90,264                     | \$361,056 | 124.55    |              |
| NEBRASKA       | 371562 | HOME TEL CO OF NE    | Rural           | A    | 845                 | \$2,719  | Y                 | \$2,308  | Y                       | \$24,930 | Y   | \$29,957 | \$89,871                     | \$359,484 | 425.42    |              |
| NEBRASKA       | 371557 | HARTMAN TEL EXCH INC | Rural           | C    | 451                 | \$10,735 | Y                 | \$4,781  | Y                       | \$14,295 | Y   | \$29,611 | \$89,433                     | \$357,732 | 793.20    |              |
| MONTANA        | 482241 | HOT SPRINGS TEL CO   | Rural           | C    | 690                 | \$18,140 | Y                 | \$5,411  | Y                       | \$8,224  | Y   | \$29,775 | \$89,325                     | \$357,300 | 517.83    |              |
| SOUTH DAKOTA   | 391653 | CITY OF FAITH MUNIC  | Rural           | A    | 370                 | \$1,259  | Y                 | \$1,102  | Y                       | \$27,342 | Y   | \$29,703 | \$89,109                     | \$356,436 | 983.34    |              |
| IOWA           | 351098 | ARCADIA TEL CO       | Rural           | A    | 333                 | \$1,177  | Y                 | \$1,433  | Y                       | \$27,057 | Y   | \$29,667 | \$89,001                     | \$356,004 | 1,069.08  |              |
| MINNESOTA      | 361404 | HARMONY TEL CO       | Rural           | A    | 951                 | \$2,881  | Y                 | \$2,510  | Y                       | \$24,268 | Y   | \$29,659 | \$88,977                     | \$355,908 | 374.25    |              |
| ARKANSAS       | 401790 | CONTEL KS DBA GTE AR | Non-Rural       | C    | 21,291              | \$0      | N                 | \$0      | X                       | \$29,647 | Y   | \$29,647 | \$88,941                     | \$355,784 | 16.71     |              |
| NEBRASKA       | 371556 | HARTINGTON TEL CO    | Rural           | A    | 1,614               | \$0      | Y                 | \$0      | Y                       | \$29,640 | Y   | \$29,640 | \$88,920                     | \$355,680 | 220.37    |              |
| ILLINOIS       | 341020 | GRAFTON TEL CO       | Rural           | C    | 823                 | \$13,982 | Y                 | \$5,136  | X                       | \$10,263 | Y   | \$29,381 | \$88,143                     | \$352,572 | 428.40    |              |
| OREGON         | 532384 | MONITOR COOP TEL     | Rural           | C    | 728                 | \$10,298 | Y                 | \$7,621  | Y                       | \$11,246 | Y   | \$29,365 | \$88,095                     | \$352,380 | 484.04    |              |
| ILLINOIS       | 341050 | MARSEILLES TEL CO    | Rural           | A    | 3,906               | \$0      | Y                 | \$5,379  | Y                       | \$23,971 | Y   | \$29,350 | \$88,050                     | \$352,200 | 80.17     |              |
| MINNESOTA      | 361387 | EMILY COOP TEL CO    | Rural           | C    | 1,410               | \$8,589  | Y                 | \$7,620  | Y                       | \$13,047 | Y   | \$29,256 | \$87,768                     | \$351,072 | 248.99    |              |
| MAINE          | 100031 | WARREN TEL CO        | Rural           | C    | 1,701               | \$7,835  | Y                 | \$8,658  | Y                       | \$12,562 | Y   | \$29,255 | \$87,765                     | \$351,060 | 208.38    |              |
| MINNESOTA      | 361426 | MANCHESTER-HARTLAND  | Rural           | A    | 643                 | \$2,299  | Y                 | \$2,542  | Y                       | \$24,269 | Y   | \$29,110 | \$87,330                     | \$349,320 | 543.27    |              |
| INDIANA        | 320775 | HANCOCK RURAL CORP   | Rural           | A    | 6,646               | \$0      | Y                 | \$14,802 | Y                       | \$14,216 | Y   | \$29,020 | \$87,080                     | \$348,240 | 52.40     |              |
| GEORGIA        | 220346 | BLUE RIDGE TEL CO    | Rural           | A    | 10,205              | \$0      | Y                 | \$21,438 | Y                       | \$7,517  | Y   | \$28,953 | \$86,859                     | \$347,436 | 34.05     |              |
| MISSOURI       | 421912 | MCDONALD COUNTY TEL  | Rural           | A    | 3,159               | \$3,104  | Y                 | \$5,127  | Y                       | \$20,859 | Y   | \$28,890 | \$86,670                     | \$346,680 | 109.74    |              |



High Cost Fund Support by Study Area  
First Quarter 1999

| State          | SAC    | Study Area Name      | Rural/Non-Rural | Type | High Cost Loop Fund |          | LTS | Long Term Support |     | Local Switching Support |           | ETC      | Monthly  | Total High Cost Fund Support |              |  |
|----------------|--------|----------------------|-----------------|------|---------------------|----------|-----|-------------------|-----|-------------------------|-----------|----------|----------|------------------------------|--------------|--|
|                |        |                      |                 |      | USF Loops           | Monthly  |     | Monthly           | LSS | Monthly                 | Quarterly |          |          | Annual                       | Per USF Loop |  |
| ARIZONA        | 452228 | MIDVALE-AZ           | Rural           | C    | 530                 | \$10,225 | Y   | \$7,368           | Y   | \$8,881                 | Y         | \$26,454 | \$70,362 | \$317,448                    | 598.96       |  |
| PENNSYLVANIA   | 170158 | CITIZENS - KECKSBURG | Rural           | A    | 5,364               | \$0      | Y   | \$13,810          | X   | \$12,572                | Y         | \$26,382 | \$70,148 | \$316,584                    | 59.02        |  |
| MINNESOTA      | 361382 | BRIDGEWATER TEL CO   | Rural           | A    | 7,050               | \$1,012  | Y   | \$14,402          | Y   | \$10,930                | Y         | \$26,344 | \$70,032 | \$316,128                    | 44.84        |  |
| VIRGINIA       | 190248 | SCOTT COUNTY COOP    | Rural           | A    | 5,925               | \$7,198  | Y   | \$15,810          | Y   | \$3,296                 | Y         | \$26,304 | \$70,912 | \$315,648                    | 53.27        |  |
| MICHIGAN       | 310875 | BARAGA TEL CO        | Rural           | A    | 5,153               | \$767    | Y   | \$13,202          | X   | \$12,280                | Y         | \$26,249 | \$70,747 | \$314,988                    | 61.13        |  |
| IOWA           | 351319 | VAN BUREN TEL CO     | Rural           | A    | 2,734               | \$8,475  | Y   | \$8,745           | Y   | \$9,007                 | Y         | \$26,227 | \$70,681 | \$314,724                    | 115.11       |  |
| WASHINGTON     | 522410 | COWICHE TELEPHONE CO | Rural           | C    | 2,068               | \$7,177  | Y   | \$7,858           | X   | \$11,377                | Y         | \$26,212 | \$70,636 | \$314,544                    | 152.10       |  |
| NEVADA         | 552351 | LINCOLN CTY TEL SYS  | Rural           | C    | 2,231               | \$2,459  | Y   | \$9,545           | Y   | \$14,191                | Y         | \$26,195 | \$70,585 | \$314,340                    | 140.80       |  |
| TENNESSEE      | 290554 | BLEDSE TEL COOP      | Rural           | A    | 10,074              | \$0      | Y   | \$24,044          | Y   | \$2,151                 | Y         | \$26,195 | \$70,585 | \$314,340                    | 31.20        |  |
| WISCONSIN      | 330908 | MARQUETTE-ADAMS COOP | Rural           | C    | 3,530               | \$0      | Y   | \$2,708           | Y   | \$23,424                | Y         | \$26,132 | \$70,398 | \$313,584                    | 88.83        |  |
| SOUTH CAROLINA | 240550 | WEST CAROLINA RURAL  | Rural           | A    | 11,379              | \$0      | Y   | \$25,099          | Y   | \$978                   | Y         | \$26,075 | \$70,225 | \$312,900                    | 27.50        |  |
| NEBRASKA       | 371517 | ARLINGTON TEL CO     | Rural           | C    | 1,085               | \$9,318  | Y   | \$8,680           | Y   | \$8,044                 | Y         | \$26,020 | \$70,080 | \$312,240                    | 287.78       |  |
| ILLINOIS       | 340998 | FRONTIER-DEPUE       | Rural           | A    | 805                 | \$1,499  | Y   | \$2,155           | Y   | \$22,320                | Y         | \$25,974 | \$77,922 | \$311,688                    | 387.19       |  |
| MINNESOTA      | 361439 | MINNESOTA VALLEY TEL | Rural           | A    | 1,040               | \$3,826  | Y   | \$4,322           | Y   | \$17,982                | Y         | \$25,910 | \$77,730 | \$310,920                    | 298.96       |  |
| MINNESOTA      | 361495 | VALLEY TEL CO - MN   | Rural           | A    | 806                 | \$2,649  | Y   | \$0               | Y   | \$23,188                | Y         | \$25,817 | \$77,451 | \$309,804                    | 384.37       |  |
| SOUTH DAKOTA   | 391681 | HANSON COUNTY TEL CO | Rural           | A    | 1,497               | \$0      | Y   | \$3,156           | Y   | \$22,648                | Y         | \$25,804 | \$77,412 | \$309,648                    | 208.85       |  |
| WISCONSIN      | 330917 | MT VERNON TEL CO     | Rural           | C    | 9,346               | \$0      | Y   | \$8,114           | Y   | \$19,690                | Y         | \$25,804 | \$77,412 | \$309,648                    | 33.13        |  |
| MINNESOTA      | 361854 | INTERSTATE TELECOMM  | Rural           | A    | 1,628               | \$4,545  | Y   | \$4,897           | Y   | \$16,270                | Y         | \$25,712 | \$77,138 | \$308,544                    | 189.52       |  |
| MISSOURI       | 421900 | KLM TEL CO           | Rural           | A    | 1,496               | \$5,070  | Y   | \$5,201           | Y   | \$15,262                | Y         | \$25,533 | \$76,599 | \$308,396                    | 204.81       |  |
| OREGON         | 532387 | HEHALEM TEL & TEL    | Rural           | C    | 2,852               | \$0      | Y   | \$1,524           | Y   | \$24,003                | Y         | \$25,527 | \$76,581 | \$308,324                    | 107.41       |  |
| UTAH           | 502284 | BEEHIVE TEL CO - UT  | Rural           | C    | 795                 | \$4,517  | Y   | \$5,293           | X   | \$15,670                | Y         | \$25,480 | \$76,440 | \$305,780                    | 384.80       |  |
| MINNESOTA      | 361408 | HOME TEL CO - MN     | Rural           | A    | 1,854               | \$4,681  | Y   | \$5,561           | Y   | \$15,165                | Y         | \$25,407 | \$76,221 | \$304,684                    | 184.45       |  |
| MISSOURI       | 421928 | NEW LONDON TEL CO    | Rural           | C    | 948                 | \$12,586 | Y   | \$7,081           | Y   | \$5,670                 | Y         | \$25,337 | \$76,011 | \$304,044                    | 320.72       |  |
| OHIO           | 300598 | MCCLURE TEL CO       | Rural           | C    | 751                 | \$8,787  | Y   | \$3,629           | X   | \$12,886                | Y         | \$25,302 | \$75,908 | \$303,624                    | 404.29       |  |
| MINNESOTA      | 361370 | CLARA CITY TEL EXCH  | Rural           | C    | 1,583               | \$1,308  | Y   | \$6,025           | Y   | \$17,875                | Y         | \$25,208 | \$75,618 | \$302,472                    | 191.08       |  |
| WISCONSIN      | 330982 | UNION TEL CO         | Rural           | A    | 4,409               | \$3,563  | Y   | \$11,710          | Y   | \$9,930                 | Y         | \$25,203 | \$75,609 | \$302,436                    | 88.60        |  |
| NORTH CAROLINA | 230495 | RANDOLPH TEL CO      | Rural           | A    | 4,344               | \$0      | Y   | \$9,471           | Y   | \$15,695                | Y         | \$25,168 | \$75,498 | \$301,992                    | 69.52        |  |
| INDIANA        | 320825 | SUNMAN TEL CO        | Rural           | A    | 4,315               | \$0      | Y   | \$9,485           | Y   | \$15,696                | Y         | \$25,161 | \$75,483 | \$301,932                    | 69.97        |  |
| NEBRASKA       | 371583 | HOOPER TEL CO        | Rural           | A    | 1,285               | \$3,132  | Y   | \$4,001           | Y   | \$18,022                | Y         | \$25,155 | \$75,465 | \$301,880                    | 234.91       |  |
| NORTH DAKOTA   | 381601 | ABSARAKA COOP TEL CO | Rural           | A    | 38                  | \$825    | Y   | \$578             | Y   | \$23,745                | Y         | \$25,148 | \$75,444 | \$301,776                    | 7,941.47     |  |
| MICHIGAN       | 310737 | WINN TEL CO          | Rural           | C    | 738                 | \$18,223 | Y   | \$5,718           | Y   | \$1,103                 | Y         | \$25,042 | \$75,126 | \$300,504                    | 407.19       |  |
| NEVADA         | 554432 | CITIZENS-NV-SOUTH    | Non-Rural       | C    | 2,687               | \$708    | N   | \$0               | X   | \$24,205                | Y         | \$24,913 | \$74,739 | \$298,956                    | 112.09       |  |
| IOWA           | 351114 | THE BURT TEL CO      | Rural           | A    | 455                 | \$1,411  | Y   | \$1,487           | Y   | \$22,005                | Y         | \$24,883 | \$74,649 | \$298,598                    | 658.25       |  |
| NEBRASKA       | 371545 | EUSTIS TEL EXCHANGE  | Rural           | A    | 489                 | \$1,458  | Y   | \$1,486           | Y   | \$21,914                | Y         | \$24,838 | \$74,514 | \$298,056                    | 609.52       |  |
| MICHIGAN       | 310676 | BARRY COUNTY TEL CO  | Rural           | A    | 8,022               | \$0      | Y   | \$22,028          | Y   | \$2,789                 | Y         | \$24,817 | \$74,451 | \$297,804                    | 37.12        |  |
| MINNESOTA      | 361507 | WINSTED TEL CO       | Rural           | A    | 1,610               | \$0      | Y   | \$3,787           | Y   | \$21,022                | Y         | \$24,809 | \$74,427 | \$297,708                    | 184.91       |  |
| IOWA           | 351405 | HILLS TEL CO, INC-IA | Rural           | A    | 1,978               | \$7,339  | Y   | \$7,123           | Y   | \$10,287                | Y         | \$24,749 | \$74,247 | \$296,988                    | 150.30       |  |
| ILLINOIS       | 341092 | STELLE TEL CO        | Rural           | A    | 86                  | \$1,189  | Y   | \$744             | Y   | \$22,801                | Y         | \$24,734 | \$74,202 | \$296,808                    | 3,451.26     |  |
| ILLINOIS       | 340993 | CROSSVILLE TEL CO    | Rural           | A    | 678                 | \$1,567  | Y   | \$1,562           | Y   | \$21,578                | Y         | \$24,705 | \$74,115 | \$296,480                    | 437.73       |  |
| NEBRASKA       | 371585 | K & M TEL CO, INC    | Rural           | A    | 882                 | \$2,345  | Y   | \$2,771           | Y   | \$19,584                | Y         | \$24,700 | \$74,100 | \$296,400                    | 447.73       |  |
| ALASKA         | 613028 | SUMMIT TEL & TEL -AK | Rural           | A    | 148                 | \$14,185 | Y   | \$8,743           | Y   | \$3,530                 | Y         | \$24,458 | \$73,374 | \$293,496                    | 2,010.25     |  |
| KENTUCKY       | 260419 | THACKER/GRIGSBY TEL  | Rural           | A    | 7,274               | \$3,042  | Y   | \$18,493          | Y   | \$2,840                 | Y         | \$24,375 | \$73,125 | \$292,500                    | 40.21        |  |
| COLORADO       | 482195 | SOUTH PARK TEL CO    | Rural           | C    | 81                  | \$23,282 | Y   | \$265             | Y   | \$676                   | Y         | \$24,223 | \$72,989 | \$290,676                    | 3,588.59     |  |
| WISCONSIN      | 330955 | STATE LONG DISTANCE  | Rural           | A    | 9,200               | \$0      | Y   | \$13,703          | Y   | \$10,514                | Y         | \$24,217 | \$72,651 | \$290,604                    | 31.59        |  |
| WISCONSIN      | 330954 | STOCKBRIDGE & SHERWD | Rural           | A    | 3,083               | \$3,306  | Y   | \$9,012           | Y   | \$11,876                | Y         | \$24,194 | \$72,582 | \$290,328                    | 94.17        |  |
| IDAHO          | 472220 | FILER MUTUAL TEL -ID | Rural           | C    | 2,282               | \$0      | Y   | \$1,265           | Y   | \$22,798                | Y         | \$24,081 | \$72,183 | \$288,732                    | 126.53       |  |
| ILLINOIS       | 341079 | FRONTIER-SCHUYLER    | Rural           | C    | 3,048               | \$4,722  | N   | \$0               | X   | \$19,264                | Y         | \$23,986 | \$71,958 | \$287,832                    | 94.43        |  |
| MISSOURI       | 421934 | ORCHARD FARM TEL CO  | Rural           | C    | 769                 | \$12,395 | Y   | \$9,228           | Y   | \$2,344                 | Y         | \$23,967 | \$71,901 | \$287,604                    | 374.00       |  |
| MISSOURI       | 421880 | ALMA TEL CO          | Rural           | A    | 360                 | \$1,238  | Y   | \$1,382           | Y   | \$21,259                | Y         | \$23,879 | \$71,837 | \$286,548                    | 795.97       |  |
| COLORADO       | 482202 | ROGGEN TEL COOP CO   | Rural           | C    | 270                 | \$12,350 | Y   | \$6,252           | Y   | \$5,212                 | Y         | \$23,814 | \$71,442 | \$285,788                    | 1,058.40     |  |
| MINNESOTA      | 361389 | FARMERS MUTUAL TEL   | Rural           | A    | 1,148               | \$4,240  | Y   | \$5,082           | Y   | \$14,437                | Y         | \$23,759 | \$71,277 | \$285,108                    | 248.79       |  |
| IOWA           | 351259 | NORTHERN IOWA TEL CO | Rural           | A    | 2,895               | \$9,029  | Y   | \$8,720           | Y   | \$5,908                 | Y         | \$23,657 | \$70,971 | \$283,884                    | 105.34       |  |
| KENTUCKY       | 260415 | PEOPLES RURAL COOP   | Rural           | A    | 7,197               | \$0      | Y   | \$19,779          | Y   | \$3,834                 | Y         | \$23,613 | \$70,839 | \$283,356                    | 39.37        |  |
| MISSOURI       | 421759 | CRAW-KAN TEL COOP-MO | Rural           | A    | 2,378               | \$7,871  | Y   | \$8,665           | Y   | \$9,053                 | Y         | \$23,589 | \$70,787 | \$283,088                    | 119.04       |  |

## PER USF PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State          | SAC    | Study Area Name      | Rural/Non-Rural | Type | High Cost Loop Fund |          | Long Term Support |          | Local Switching Support |          | ETC | Monthly  | Total High Cost Fund Support |           | Per USF Loop |
|----------------|--------|----------------------|-----------------|------|---------------------|----------|-------------------|----------|-------------------------|----------|-----|----------|------------------------------|-----------|--------------|
|                |        |                      |                 |      | USF Loops           | Monthly  | LTS               | Monthly  | LSS                     | Monthly  |     |          | Quarterly                    | Annual    |              |
| MISSOURI       | 421878 | FARBER TEL CO        | Rural           | A    | 235                 | \$1,350  | Y                 | \$1,227  | Y                       | \$18,384 | Y   | \$20,961 | \$62,883                     | \$251,532 | 1,070.35     |
| WISCONSIN      | 330942 | RICHLAND-GRANT COOP  | Rural           | A    | 2,823               | \$7,490  | Y                 | \$8,241  | Y                       | \$5,193  | Y   | \$20,924 | \$62,772                     | \$251,088 | 95.73        |
| IOWA           | 351251 | MEDIAPOLIS TEL CO    | Rural           | A    | 2,129               | \$4,683  | Y                 | \$5,816  | Y                       | \$10,280 | Y   | \$20,779 | \$62,337                     | \$249,348 | 117.12       |
| WISCONSIN      | 330905 | MANAWA TEL CO        | Rural           | A    | 2,381               | \$1,179  | Y                 | \$6,852  | Y                       | \$12,739 | Y   | \$20,770 | \$62,310                     | \$249,240 | 104.68       |
| MICHIGAN       | 310734 | WALDRON TEL CO       | Rural           | C    | 623                 | \$7,707  | Y                 | \$1,115  | Y                       | \$11,892 | Y   | \$20,714 | \$62,142                     | \$248,568 | 386.99       |
| INDIANA        | 320830 | TRI-COUNTY TEL CO    | Rural           | A    | 3,388               | \$5,603  | Y                 | \$9,808  | Y                       | \$5,047  | Y   | \$20,658 | \$61,974                     | \$247,896 | 73.17        |
| INDIANA        | 320778 | HOME TEL CO INC      | Rural           | A    | 2,253               | \$0      | Y                 | \$6,534  | Y                       | \$14,079 | Y   | \$20,613 | \$61,839                     | \$247,356 | 109.79       |
| INDIANA        | 320783 | LIGONIER TEL CO      | Rural           | A    | 2,649               | \$0      | Y                 | \$3,114  | Y                       | \$17,492 | Y   | \$20,608 | \$61,816                     | \$247,272 | 93.35        |
| WISCONSIN      | 330843 | AMHERST TEL CO       | Rural           | A    | 4,627               | \$0      | Y                 | \$13,024 | Y                       | \$7,568  | Y   | \$20,592 | \$61,776                     | \$247,104 | 53.40        |
| NEBRASKA       | 371558 | HEMINGFORD COOP TEL  | Rural           | C    | 957                 | \$9,362  | Y                 | \$3,468  | Y                       | \$7,731  | Y   | \$20,581 | \$61,683                     | \$246,732 | 257.82       |
| INDIANA        | 320742 | BLOOMINGDALE HOME    | Rural           | C    | 601                 | \$9,928  | Y                 | \$4,698  | X                       | \$5,900  | Y   | \$20,527 | \$61,581                     | \$246,324 | 409.86       |
| IOWA           | 351205 | HUXLEY COOP TEL CO   | Rural           | A    | 1,739               | \$2,840  | Y                 | \$4,712  | Y                       | \$12,640 | Y   | \$20,392 | \$61,176                     | \$244,704 | 140.72       |
| ILLINOIS       | 341093 | YATES CITY TEL CO    | Rural           | C    | 542                 | \$8,566  | Y                 | \$2,424  | X                       | \$9,356  | Y   | \$20,346 | \$61,038                     | \$244,152 | 450.46       |
| WISCONSIN      | 330951 | SOMERSET TEL CO      | Rural           | A    | 2,182               | \$0      | Y                 | \$1,946  | Y                       | \$18,366 | Y   | \$20,312 | \$60,936                     | \$243,744 | 111.71       |
| TENNESSEE      | 290583 | WEST TENNESSEE TEL   | Rural           | A    | 4,583               | \$2,996  | Y                 | \$12,366 | Y                       | \$4,699  | Y   | \$20,261 | \$60,783                     | \$243,132 | 53.05        |
| MINNESOTA      | 361391 | FELTON TEL CO INC    | Rural           | C    | 692                 | \$8,165  | Y                 | \$5,285  | Y                       | \$8,792  | Y   | \$20,261 | \$60,783                     | \$243,132 | 351.02       |
| OREGON         | 532378 | TRANS-CASCADES TEL   | Rural           | C    | 159                 | \$13,403 | Y                 | \$4,714  | Y                       | \$2,104  | Y   | \$20,221 | \$60,663                     | \$242,852 | 1,526.11     |
| MICHIGAN       | 310703 | KALEVA TEL CO        | Rural           | A    | 2,468               | \$8,239  | Y                 | \$8,038  | Y                       | \$5,938  | Y   | \$20,215 | \$60,645                     | \$242,580 | 98.29        |
| MISSOURI       | 421887 | GRANBY TEL CO - MO   | Rural           | A    | 2,748               | \$0      | Y                 | \$6,527  | Y                       | \$13,673 | Y   | \$20,200 | \$60,600                     | \$242,400 | 88.27        |
| NEW YORK       | 150116 | PATTERSONVILLE TEL   | Rural           | C    | 1,368               | \$2,299  | Y                 | \$2,358  | Y                       | \$15,525 | Y   | \$20,180 | \$60,540                     | \$242,180 | 174.72       |
| VIRGINIA       | 190225 | CITIZEN'S TEL COOP   | Rural           | A    | 6,625               | \$355    | Y                 | \$18,248 | Y                       | \$3,510  | Y   | \$20,113 | \$60,339                     | \$241,358 | 36.43        |
| IOWA           | 351248 | MONTEZUMA MUTUAL TEL | Rural           | A    | 2,010               | \$0      | Y                 | \$5,031  | Y                       | \$14,746 | Y   | \$20,113 | \$60,339                     | \$241,358 | 118.07       |
| KANSAS         | 411845 | WAMEGO TEL CO INC    | Rural           | A    | 5,035               | \$0      | Y                 | \$10,674 | Y                       | \$8,693  | Y   | \$19,787 | \$59,301                     | \$237,204 | 47.11        |
| UTAH           | 503032 | BEAR LAKE COMM       | Rural           | C    | 667                 | \$9,458  | Y                 | \$4,337  | Y                       | \$5,914  | Y   | \$19,709 | \$59,127                     | \$236,506 | 354.58       |
| PENNSYLVANIA   | 170204 | SOUTH CANAAN TEL CO  | Non-Rural       | A    | 2,763               | \$0      | Y                 | \$5,357  | X                       | \$14,317 | Y   | \$19,674 | \$59,022                     | \$236,068 | 85.45        |
| MASSACHUSETTS  | 110037 | RICHLAND TEL CO      | Rural           | C    | 1,066               | \$4,137  | Y                 | \$2,977  | Y                       | \$12,526 | Y   | \$19,640 | \$58,920                     | \$235,680 | 221.09       |
| IDAHO          | 472227 | MUD LAKE TEL COOP    | Rural           | A    | 1,421               | \$5,269  | Y                 | \$4,101  | Y                       | \$10,234 | Y   | \$19,604 | \$58,812                     | \$235,248 | 185.55       |
| ARKANSAS       | 401699 | DECATUR TEL CO INC   | Rural           | C    | 1,319               | \$1,544  | Y                 | \$3,540  | Y                       | \$14,499 | Y   | \$19,583 | \$58,749                     | \$234,996 | 178.16       |
| WISCONSIN      | 330842 | AMERY TELCOM, INC    | Rural           | A    | 6,093               | \$0      | Y                 | \$11,478 | Y                       | \$8,079  | Y   | \$19,555 | \$58,665                     | \$234,680 | 38.51        |
| WISCONSIN      | 330855 | BRUCE TEL CO, INC    | Rural           | C    | 1,602               | \$5,559  | Y                 | \$9,764  | Y                       | \$4,151  | Y   | \$19,474 | \$58,422                     | \$233,688 | 145.87       |
| NEBRASKA       | 371540 | DILLER TEL CO        | Rural           | C    | 960                 | \$2,806  | Y                 | \$3,230  | Y                       | \$13,385 | Y   | \$19,421 | \$58,263                     | \$233,052 | 242.76       |
| IOWA           | 351281 | SCHALLER TEL CO      | Rural           | A    | 1,763               | \$5,559  | Y                 | \$3,591  | Y                       | \$10,171 | Y   | \$19,321 | \$57,963                     | \$231,852 | 131.51       |
| NORTH CAROLINA | 230478 | ELLERBE TEL CO       | Rural           | A    | 2,112               | \$0      | Y                 | \$4,801  | Y                       | \$14,416 | Y   | \$19,217 | \$57,651                     | \$230,804 | 109.19       |
| GEORGIA        | 220389 | TRENTON TEL CO       | Rural           | A    | 6,247               | \$0      | Y                 | \$11,314 | Y                       | \$7,896  | Y   | \$19,212 | \$57,636                     | \$230,544 | 36.90        |
| SOUTH DAKOTA   | 391870 | MIDSTATE TEL COMPANY | Rural           | A    | 4,585               | \$5,047  | Y                 | \$11,697 | Y                       | \$2,283  | Y   | \$19,027 | \$57,081                     | \$228,324 | 49.80        |
| MINNESOTA      | 361186 | GTE NORTH INC - MN   | Rural           | C    | 3,853               | \$0      | N                 | \$0      | X                       | \$18,975 | Y   | \$18,975 | \$56,925                     | \$227,700 | 59.10        |
| WISCONSIN      | 330602 | LUCK TEL CO          | Rural           | A    | 2,272               | \$1,564  | Y                 | \$5,522  | Y                       | \$11,661 | Y   | \$18,947 | \$56,841                     | \$227,384 | 100.07       |
| IOWA           | 351217 | KEYSTONE FRMS COOP   | Rural           | A    | 1,023               | \$3,587  | Y                 | \$4,267  | Y                       | \$11,043 | Y   | \$18,917 | \$56,751                     | \$227,004 | 221.90       |
| MISSOURI       | 421820 | MILLER TEL CO - MO   | Rural           | A    | 1,032               | \$1,091  | Y                 | \$2,620  | Y                       | \$15,088 | Y   | \$18,779 | \$56,337                     | \$225,348 | 218.36       |
| TEXAS          | 442065 | CUMBY TEL COOP INC   | Rural           | C    | 749                 | \$6,902  | Y                 | \$3,814  | Y                       | \$8,035  | Y   | \$18,751 | \$56,253                     | \$225,012 | 300.42       |
| MINNESOTA      | 361448 | OSAKIS TEL CO        | Non-Rural       | A    | 1,856               | \$0      | Y                 | \$5,568  | Y                       | \$13,058 | Y   | \$18,646 | \$55,938                     | \$223,752 | 120.56       |
| UTAH           | 504449 | NAVAJO COMMUN-UT     | Rural           | C    | 363                 | \$14,379 | N                 | \$0      | X                       | \$4,252  | Y   | \$18,631 | \$55,893                     | \$223,572 | 615.90       |
| WISCONSIN      | 330944 | FRONTIER-ST CROIX    | Rural           | A    | 8,559               | \$0      | Y                 | \$10,932 | Y                       | \$7,482  | Y   | \$18,414 | \$55,242                     | \$220,968 | 25.82        |
| WISCONSIN      | 330851 | BONDUEL TEL CO       | Rural           | A    | 1,788               | \$0      | Y                 | \$5,099  | Y                       | \$13,302 | Y   | \$18,401 | \$55,203                     | \$220,812 | 123.50       |
| IOWA           | 351277 | RADCLIFFE TEL CO     | Rural           | A    | 522                 | \$1,495  | Y                 | \$1,708  | Y                       | \$15,180 | Y   | \$18,361 | \$55,063                     | \$220,332 | 422.09       |
| WISCONSIN      | 330925 | BAYLAND TEL CO       | Rural           | A    | 1,888               | \$0      | Y                 | \$5,179  | Y                       | \$13,121 | Y   | \$18,300 | \$54,900                     | \$219,600 | 118.44       |
| PENNSYLVANIA   | 170206 | SUGAR VALLEY TEL CO  | Rural           | C    | 1,119               | \$5,736  | Y                 | \$6,242  | Y                       | \$8,199  | Y   | \$18,177 | \$54,531                     | \$218,124 | 194.93       |
| MONTANA        | 482252 | RONAN TEL CO         | Rural           | A    | 3,620               | \$0      | Y                 | \$8,556  | X                       | \$11,559 | Y   | \$18,115 | \$54,345                     | \$217,380 | 80.05        |
| ALABAMA        | 250312 | ONEONTA TEL CO       | Rural           | A    | 7,105               | \$0      | Y                 | \$15,420 | Y                       | \$2,588  | Y   | \$18,008 | \$54,024                     | \$216,096 | 30.41        |
| IOWA           | 351237 | MARNE & ELK HORN TEL | Rural           | A    | 1,452               | \$4,978  | Y                 | \$5,612  | Y                       | \$7,303  | Y   | \$17,893 | \$53,679                     | \$214,716 | 147.88       |
| IOWA           | 351301 | SOUTHWEST TEL EXCH   | Rural           | A    | 718                 | \$3,262  | Y                 | \$3,779  | Y                       | \$10,717 | Y   | \$17,758 | \$53,274                     | \$213,096 | 296.79       |
| IOWA           | 351285 | SAC COUNTY MUTUAL    | Rural           | A    | 1,092               | \$3,036  | Y                 | \$3,457  | Y                       | \$11,264 | Y   | \$17,757 | \$53,271                     | \$213,084 | 195.13       |
| INDIANA        | 320813 | PULASKI-WHITE RURAL  | Rural           | A    | 2,066               | \$2,177  | Y                 | \$5,586  | Y                       | \$9,928  | Y   | \$17,689 | \$53,067                     | \$212,268 | 102.74       |
| ALABAMA        | 250311 | OAKMAN TEL CO (TDS)  | Rural           | A    | 2,607               | \$6,270  | Y                 | \$8,491  | Y                       | \$2,695  | Y   | \$17,656 | \$52,968                     | \$211,672 | 81.27        |

## PER USF PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State         | SAC    | Study Area Name      | Rural/Non Rural | Type | High Cost Loop Fund |       | LTS | Long Term Support |         | Local Switching Support |         | ETC      | Monthly | Total High Cost Fund Support |          |              |        |
|---------------|--------|----------------------|-----------------|------|---------------------|-------|-----|-------------------|---------|-------------------------|---------|----------|---------|------------------------------|----------|--------------|--------|
|               |        |                      |                 |      | USF                 | Loops |     | Monthly           | Monthly | LSS                     | Monthly |          |         | Quarterly                    | Annual   | Per USF Loop |        |
| IDAHO         | 472221 | FARMERS MUTUAL TEL   | Rural           | A    |                     | 3,070 |     | \$0               | Y       | \$5,057                 | Y       | \$10,371 | Y       | \$15,428                     | \$46,284 | \$185,138    | 60.30  |
| IOWA          | 351306 | SULLY TEL ASSOC      | Rural           | A    |                     | 1,036 |     | \$2,983           | Y       | \$3,380                 | Y       | \$8,998  | Y       | \$15,341                     | \$46,023 | \$184,092    | 177.69 |
| WISCONSIN     | 330953 | SPRING VALLEY TEL CO | Rural           | A    |                     | 1,019 |     | \$1,124           | Y       | \$2,284                 | Y       | \$11,908 | Y       | \$15,316                     | \$45,948 | \$183,792    | 180.37 |
| IOWA          | 351156 | EAST BUCHANAN COOP   | Rural           | A    |                     | 1,554 |     | \$4,474           | Y       | \$5,487                 | Y       | \$5,312  | Y       | \$15,273                     | \$45,819 | \$183,276    | 117.94 |
| MICHIGAN      | 310705 | CENTURY-NORTH MICH   | Rural           | A    |                     | 3,027 |     | \$0               | Y       | \$8,998                 | Y       | \$8,177  | Y       | \$15,175                     | \$45,525 | \$182,100    | 60.16  |
| TEXAS         | 442107 | LIVINGSTON TEL CO    | Rural           | A    |                     | 6,743 |     | \$0               | Y       | \$15,150                | Y       | \$0      | Y       | \$15,150                     | \$45,450 | \$181,800    | 26.98  |
| WISCONSIN     | 330866 | COCHRANE COOP TEL CO | Rural           | A    |                     | 1,222 |     | \$3,115           | Y       | \$3,182                 | Y       | \$8,851  | Y       | \$15,148                     | \$45,444 | \$181,776    | 148.75 |
| INDIANA       | 320744 | CAMDEN TEL CO - IN   | Rural           | A    |                     | 1,782 |     | \$4,651           | Y       | \$6,144                 | Y       | \$4,308  | Y       | \$15,103                     | \$45,309 | \$181,236    | 101.70 |
| IOWA          | 351343 | WYOMING MUTUAL TEL   | Rural           | A    |                     | 719   |     | \$1,558           | Y       | \$2,587                 | Y       | \$10,919 | Y       | \$15,084                     | \$45,192 | \$180,768    | 251.42 |
| WISCONSIN     | 330896 | LAKEFIELD TEL CO     | Rural           | A    |                     | 1,667 |     | \$2,935           | Y       | \$5,081                 | Y       | \$7,037  | Y       | \$15,053                     | \$45,159 | \$180,636    | 108.36 |
| WEST VIRGINIA | 200256 | ARMSTRONG OF WV      | Rural           | A    |                     | 2,857 |     | \$0               | Y       | \$7,283                 | Y       | \$7,882  | Y       | \$14,965                     | \$44,895 | \$179,580    | 62.86  |
| PENNSYLVANIA  | 170194 | FRONTIER-OSWAYO RIVR | Rural           | C    |                     | 2,337 |     | \$1,276           | N       | \$0                     | X       | \$13,606 | Y       | \$14,882                     | \$44,646 | \$178,584    | 76.42  |
| TENNESSEE     | 290561 | CROCKETT TEL CO      | Rural           | A    |                     | 4,422 |     | \$0               | Y       | \$11,024                | Y       | \$3,873  | Y       | \$14,897                     | \$44,091 | \$178,364    | 39.88  |
| TENNESSEE     | 290584 | YORKVILLE TEL COOP   | Rural           | A    |                     | 1,973 |     | \$5,853           | Y       | \$6,440                 | Y       | \$2,392  | Y       | \$14,685                     | \$44,055 | \$178,220    | 89.32  |
| IOWA          | 351329 | WELLMAN COOP TEL     | Rural           | A    |                     | 1,372 |     | \$0               | Y       | \$4,074                 | Y       | \$10,508 | Y       | \$14,670                     | \$44,010 | \$178,040    | 128.31 |
| COLORADO      | 462198 | PINE DRIVE TEL CO    | Rural           | A    |                     | 742   |     | \$1,547           | Y       | \$1,892                 | Y       | \$11,206 | Y       | \$14,645                     | \$43,935 | \$175,740    | 236.85 |
| TENNESSEE     | 290576 | PEOPLES TEL CO       | Rural           | A    |                     | 4,607 |     | \$0               | Y       | \$10,291                | Y       | \$4,280  | Y       | \$14,551                     | \$43,653 | \$174,612    | 37.90  |
| MONTANA       | 482244 | LINCOLN TEL CO INC   | Rural           | C    |                     | 1,079 |     | \$973             | Y       | \$239                   | Y       | \$13,285 | Y       | \$14,497                     | \$43,491 | \$173,964    | 161.23 |
| VERMONT       | 140062 | PERKINSVILLE TEL CO  | Rural           | C    |                     | 877   |     | \$6,162           | Y       | \$3,606                 | Y       | \$4,694  | Y       | \$14,464                     | \$43,392 | \$173,568    | 197.91 |
| OREGON        | 532226 | MIDVALE TEL EXCH -OR | Rural           | C    |                     | 230   |     | \$8,402           | Y       | \$2,298                 | Y       | \$3,718  | Y       | \$14,418                     | \$43,254 | \$173,016    | 752.24 |
| IOWA          | 351263 | OGDEN TEL CO - IA    | Rural           | A    |                     | 1,854 |     | \$0               | Y       | \$4,800                 | Y       | \$9,580  | Y       | \$14,380                     | \$43,140 | \$172,580    | 93.07  |
| MISSISSIPPI   | 280448 | CALHOUN CITY TEL CO  | Rural           | A    |                     | 3,965 |     | \$240             | Y       | \$11,050                | Y       | \$2,995  | Y       | \$14,285                     | \$42,855 | \$171,420    | 43.23  |
| ALABAMA       | 250322 | UNION SPRINGS TEL CO | Rural           | A    |                     | 4,612 |     | \$2,898           | Y       | \$9,441                 | Y       | \$1,836  | Y       | \$14,277                     | \$42,831 | \$171,324    | 37.15  |
| IOWA          | 351110 | BERNARD TEL CO INC   | Rural           | C    |                     | 596   |     | \$9,512           | Y       | \$2,277                 | Y       | \$2,487  | Y       | \$14,276                     | \$42,828 | \$171,312    | 287.44 |
| IOWA          | 351294 | SCRANTON TEL CO      | Rural           | A    |                     | 539   |     | \$1,512           | Y       | \$1,696                 | Y       | \$11,087 | Y       | \$14,275                     | \$42,825 | \$171,300    | 317.81 |
| MINNESOTA     | 361380 | DELANEY TEL CO       | Rural           | A    |                     | 343   |     | \$1,200           | Y       | \$1,429                 | Y       | \$11,630 | Y       | \$14,259                     | \$42,777 | \$171,108    | 496.86 |
| IOWA          | 351139 | COOPERATIVE TEL CO   | Rural           | A    |                     | 1,463 |     | \$5,001           | Y       | \$4,886                 | Y       | \$4,363  | Y       | \$14,250                     | \$42,750 | \$171,000    | 116.88 |
| IOWA          | 351177 | FARMERS TEL CO -RICE | Rural           | A    |                     | 1,743 |     | \$5,526           | Y       | \$5,566                 | Y       | \$3,014  | Y       | \$14,106                     | \$42,316 | \$169,272    | 97.12  |
| KANSAS        | 411791 | LA HARPE TEL CO INC  | Rural           | A    |                     | 399   |     | \$1,317           | Y       | \$1,477                 | Y       | \$11,282 | Y       | \$14,076                     | \$42,228 | \$168,112    | 423.34 |
| IOWA          | 351344 | PRAIRIE TEL CO       | Rural           | A    |                     | 1,127 |     | \$3,613           | Y       | \$3,189                 | Y       | \$7,059  | Y       | \$14,081                     | \$42,183 | \$168,732    | 149.72 |
| WISCONSIN     | 330877 | CTE FAIRWATER-BRAND  | Rural           | C    |                     | 1,280 |     | \$3,071           | Y       | \$6,346                 | Y       | \$4,605  | Y       | \$14,022                     | \$42,066 | \$168,264    | 133.54 |
| WISCONSIN     | 330900 | LEMONWEIR VALLEY TEL | Rural           | A    |                     | 3,286 |     | \$0               | Y       | \$8,014                 | Y       | \$5,979  | Y       | \$13,993                     | \$41,979 | \$167,916    | 51.10  |
| IDAHO         | 472234 | TROY TELEPHONE CO    | Rural           | C    |                     | 927   |     | \$7,931           | Y       | \$3,931                 | Y       | \$2,125  | Y       | \$13,987                     | \$41,961 | \$167,844    | 181.06 |
| IOWA          | 351235 | MANILLA TEL CO       | Rural           | A    |                     | 590   |     | \$1,548           | Y       | \$1,879                 | Y       | \$10,514 | Y       | \$13,941                     | \$41,823 | \$167,292    | 283.55 |
| WISCONSIN     | 330910 | MILLTOWN MUTUAL TEL  | Rural           | C    |                     | 2,548 |     | \$0               | Y       | \$3,453                 | Y       | \$10,483 | Y       | \$13,936                     | \$41,808 | \$167,232    | 65.63  |
| KANSAS        | 411758 | COUNCIL GROVE TEL CO | Rural           | A    |                     | 2,117 |     | \$0               | Y       | \$4,429                 | Y       | \$9,410  | Y       | \$13,839                     | \$41,517 | \$166,088    | 78.44  |
| INDIANA       | 320828 | FRONTIER-THORNTOWN   | Rural           | C    |                     | 2,663 |     | \$0               | N       | \$0                     | X       | \$13,777 | Y       | \$13,777                     | \$41,331 | \$165,324    | 62.08  |
| IOWA          | 351292 | SEARSBORO TEL CO     | Rural           | A    |                     | 337   |     | \$2,840           | Y       | \$2,052                 | X       | \$8,841  | Y       | \$13,733                     | \$41,199 | \$164,796    | 489.01 |
| ILLINOIS      | 341058 | MONTROSE MUTUAL TEL  | Rural           | C    |                     | 1,649 |     | \$1,617           | Y       | \$3,316                 | X       | \$8,773  | Y       | \$13,706                     | \$41,116 | \$164,472    | 99.74  |
| OKLAHOMA      | 432025 | SW OKLAHOMA TEL CO   | Rural           | C    |                     | 962   |     | \$3,564           | Y       | \$2,152                 | Y       | \$7,972  | Y       | \$13,688                     | \$41,064 | \$164,256    | 170.74 |
| INDIANA       | 320751 | CITIZENS TEL CORP    | Rural           | A    |                     | 2,411 |     | \$1,066           | Y       | \$5,288                 | Y       | \$7,288  | Y       | \$13,642                     | \$40,926 | \$163,704    | 67.90  |
| KANSAS        | 411852 | ZENDA TEL COMPANY    | Rural           | C    |                     | 231   |     | \$3,254           | Y       | \$2,647                 | Y       | \$7,740  | Y       | \$13,641                     | \$40,923 | \$163,692    | 706.62 |
| MINNESOTA     | 361383 | EAGLE VALLEY TEL CO  | Rural           | A    |                     | 670   |     | \$1,568           | Y       | \$2,253                 | Y       | \$9,811  | Y       | \$13,632                     | \$40,896 | \$163,584    | 244.16 |
| OHIO          | 300618 | GERMANTOWN INDEPEND  | Rural           | A    |                     | 4,018 |     | \$0               | Y       | \$10,188                | Y       | \$3,404  | Y       | \$13,592                     | \$40,776 | \$163,104    | 40.59  |
| IOWA          | 351273 | PEOPLES TEL CO - IA  | Rural           | A    |                     | 880   |     | \$1,404           | Y       | \$2,506                 | Y       | \$9,607  | Y       | \$13,517                     | \$40,551 | \$162,204    | 184.32 |
| IOWA          | 351133 | C-M-L TEL COOP ASSN  | Rural           | A    |                     | 840   |     | \$5,258           | Y       | \$4,975                 | Y       | \$3,201  | Y       | \$13,434                     | \$40,302 | \$161,208    | 191.91 |
| WISCONSIN     | 330892 | HILLSBORO TEL CO     | Rural           | A    |                     | 1,638 |     | \$0               | Y       | \$4,195                 | Y       | \$9,222  | Y       | \$13,417                     | \$40,251 | \$161,004    | 98.29  |
| INDIANA       | 320827 | SWEETSER RURAL TEL   | Rural           | A    |                     | 1,774 |     | \$0               | Y       | \$3,911                 | Y       | \$9,475  | Y       | \$13,386                     | \$40,158 | \$160,632    | 90.55  |
| IOWA          | 351278 | READLYN TEL CO       | Rural           | A    |                     | 778   |     | \$1,523           | Y       | \$2,621                 | Y       | \$9,168  | Y       | \$13,332                     | \$39,996 | \$159,984    | 205.63 |
| IOWA          | 351275 | PRAIRIEBURG TEL CO   | Rural           | A    |                     | 218   |     | \$1,279           | Y       | \$1,329                 | Y       | \$10,626 | Y       | \$13,234                     | \$39,702 | \$158,808    | 735.22 |
| COLORADO      | 462196 | PEETZ COOP TEL CO    | Rural           | C    |                     | 219   |     | \$5,238           | Y       | \$2,043                 | Y       | \$5,040  | Y       | \$13,221                     | \$39,663 | \$158,652    | 724.44 |
| IOWA          | 351276 | PRESTON TEL CO       | Rural           | A    |                     | 1,200 |     | \$3,108           | Y       | \$3,882                 | Y       | \$6,215  | Y       | \$13,203                     | \$39,609 | \$158,436    | 132.03 |
| ILLINOIS      | 341048 | MCNABB TEL CO        | Rural           | C    |                     | 483   |     | \$3,186           | Y       | \$977                   | X       | \$9,023  | Y       | \$13,186                     | \$39,558 | \$158,232    | 327.60 |
| VIRGINIA      | 190236 | MT GROVE-WILLIAMSVIL | Rural           | A    |                     | 1,450 |     | \$5,348           | Y       | \$7,049                 | Y       | \$727    | Y       | \$13,122                     | \$39,366 | \$157,464    | 108.60 |



## PER USF PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State         | SAC    | Study Area Name      | Rural/Non Rural | Type | High Cost Loop Fund |         | Long Term Support |         | Local Switching Support |         | ETC | Total High Cost Fund Support |           |           |              |
|---------------|--------|----------------------|-----------------|------|---------------------|---------|-------------------|---------|-------------------------|---------|-----|------------------------------|-----------|-----------|--------------|
|               |        |                      |                 |      | USF Loops           | Monthly | LTS               | Monthly | LSS                     | Monthly |     | Monthly                      | Quarterly | Annual    | Per USF Loop |
| IOWA          | 351214 | KALONA COOP TEL CO   | Rural           | A    | 1,932               | \$0     | Y                 | \$4,501 | Y                       | \$8,585 | Y   | \$11,088                     | \$33,258  | \$133,032 | 68.88        |
| IOWA          | 351105 | AYRSHIRE FARMERS MUT | Rural           | C    | 375                 | \$1,708 | Y                 | \$2,441 | X                       | \$6,930 | Y   | \$11,077                     | \$33,231  | \$132,924 | 354.48       |
| IOWA          | 351180 | FARMERS & BUSINESSME | Rural           | A    | 1,118               | \$3,058 | Y                 | \$3,580 | Y                       | \$4,458 | Y   | \$11,072                     | \$33,218  | \$132,884 | 118.84       |
| ALABAMA       | 250295 | GRACEBA TOTAL COMM   | Rural           | A    | 4,335               | \$0     | Y                 | \$9,319 | Y                       | \$1,737 | Y   | \$11,058                     | \$33,188  | \$132,872 | 30.80        |
| IOWA          | 351182 | FARMERS COOP TEL CO  | Rural           | A    | 1,381               | \$3,130 | Y                 | \$4,410 | Y                       | \$3,512 | Y   | \$11,052                     | \$33,158  | \$132,824 | 95.34        |
| IOWA          | 351222 | LA MOTTE TEL CO      | Rural           | A    | 873                 | \$1,588 | Y                 | \$2,117 | Y                       | \$7,332 | Y   | \$11,017                     | \$33,051  | \$132,204 | 188.44       |
| IOWA          | 351309 | TERRIL TEL CO        | Rural           | A    | 495                 | \$1,488 | Y                 | \$0     | Y                       | \$9,515 | Y   | \$10,981                     | \$32,943  | \$131,772 | 288.21       |
| WISCONSIN     | 330865 | CLEAR LAKE TEL CO-WI | Rural           | A    | 1,407               | \$0     | Y                 | \$2,938 | Y                       | \$8,008 | Y   | \$10,948                     | \$32,838  | \$131,352 | 93.38        |
| NEW YORK      | 150078 | CASSADAGA TEL CORP   | Rural           | A    | 1,434               | \$0     | Y                 | \$3,421 | Y                       | \$7,511 | Y   | \$10,932                     | \$32,798  | \$131,184 | 91.48        |
| WISCONSIN     | 330849 | BLACK EARTH TEL CO   | Rural           | A    | 1,470               | \$0     | Y                 | \$4,171 | Y                       | \$8,737 | Y   | \$10,908                     | \$32,724  | \$130,898 | 89.04        |
| ALABAMA       | 250317 | ROANOKE TEL CO       | Rural           | A    | 5,118               | \$0     | Y                 | \$9,271 | Y                       | \$1,523 | Y   | \$10,794                     | \$32,382  | \$129,528 | 25.31        |
| IOWA          | 351243 | MILLER TEL CO - IA   | Rural           | A    | 104                 | \$1,245 | Y                 | \$925   | Y                       | \$8,500 | Y   | \$10,670                     | \$32,010  | \$128,040 | 1,231.15     |
| TENNESSEE     | 280574 | CENTURY-COLTEWAH-COL | Rural           | A    | 8,011               | \$0     | Y                 | \$7,938 | Y                       | \$2,725 | Y   | \$10,663                     | \$31,989  | \$127,958 | 15.97        |
| SOUTH DAKOTA  | 391888 | WESTERN TEL CO       | Rural           | A    | 1,108               | \$2,847 | Y                 | \$3,454 | Y                       | \$4,558 | Y   | \$10,650                     | \$31,977  | \$127,908 | 115.44       |
| MICHIGAN      | 310892 | DRENTH TEL CO        | Rural           | A    | 738                 | \$1,549 | Y                 | \$2,247 | Y                       | \$8,854 | Y   | \$10,650                     | \$31,950  | \$127,800 | 173.17       |
| KANSAS        | 411756 | COLUMBUS TELEPHONE   | Rural           | A    | 2,471               | \$0     | Y                 | \$3,973 | Y                       | \$8,530 | Y   | \$10,503                     | \$31,509  | \$126,038 | 51.01        |
| VIRGINIA      | 180243 | PEMBROKE TEL COOP    | Rural           | A    | 2,725               | \$0     | Y                 | \$6,988 | Y                       | \$3,507 | Y   | \$10,493                     | \$31,479  | \$125,918 | 48.21        |
| INDIANA       | 320798 | NEW LISBON TEL CO    | Rural           | A    | 840                 | \$1,480 | Y                 | \$1,879 | Y                       | \$7,337 | Y   | \$10,478                     | \$31,428  | \$125,712 | 149.88       |
| WISCONSIN     | 330847 | DELMONT TEL CO       | Rural           | A    | 827                 | \$1,475 | Y                 | \$2,150 | Y                       | \$8,792 | Y   | \$10,417                     | \$31,251  | \$125,004 | 151.15       |
| IOWA          | 351223 | LAUREL TEL CO INC    | Rural           | A    | 313                 | \$1,128 | Y                 | \$1,473 | Y                       | \$7,809 | Y   | \$10,410                     | \$31,230  | \$124,920 | 389.11       |
| IOWA          | 351188 | GOLDFIELD TEL CO     | Rural           | A    | 816                 | \$1,560 | Y                 | \$1,871 | Y                       | \$8,984 | Y   | \$10,395                     | \$31,185  | \$124,740 | 202.50       |
| IOWA          | 351295 | SHELL ROCK TEL CO    | Rural           | A    | 1,063               | \$1,007 | Y                 | \$3,143 | Y                       | \$8,227 | Y   | \$10,377                     | \$31,131  | \$124,524 | 117.14       |
| WISCONSIN     | 330858 | BURLINGTON B&W       | Rural           | A    | 3,700               | \$0     | Y                 | \$5,688 | Y                       | \$4,681 | Y   | \$10,349                     | \$31,047  | \$124,188 | 33.58        |
| IOWA          | 351174 | FARMERS MUTUAL TEL   | Rural           | A    | 1,131               | \$3,822 | Y                 | \$3,773 | Y                       | \$2,800 | Y   | \$10,195                     | \$30,585  | \$122,340 | 108.17       |
| MICHIGAN      | 310714 | OGDEN TEL CO         | Rural           | C    | 442                 | \$1,888 | Y                 | \$2,488 | Y                       | \$8,004 | Y   | \$10,180                     | \$30,480  | \$121,920 | 275.84       |
| OHIO          | 300850 | OTTOVILLE MUTUAL     | Rural           | A    | 1,323               | \$3,136 | Y                 | \$4,047 | Y                       | \$2,989 | Y   | \$10,152                     | \$30,458  | \$121,824 | 92.08        |
| WISCONSIN     | 330924 | KENDALL TEL, INC     | Rural           | A    | 573                 | \$1,538 | Y                 | \$2,013 | Y                       | \$8,544 | Y   | \$10,085                     | \$30,285  | \$121,140 | 211.41       |
| IOWA          | 351199 | HAWKEYE TEL CO       | Rural           | A    | 491                 | \$1,481 | Y                 | \$1,770 | Y                       | \$8,858 | Y   | \$10,088                     | \$30,287  | \$121,088 | 248.57       |
| IOWA          | 351208 | IAMO TEL CO - IA     | Rural           | A    | 423                 | \$2,488 | Y                 | \$2,434 | Y                       | \$5,083 | Y   | \$9,983                      | \$29,949  | \$119,798 | 283.21       |
| VIRGINIA      | 180237 | HIGHLAND TEL COOP    | Rural           | A    | 1,319               | \$4,184 | Y                 | \$4,484 | Y                       | \$1,271 | Y   | \$9,919                      | \$29,757  | \$119,028 | 90.24        |
| IOWA          | 351189 | RIVER VALLEY COOP    | Rural           | A    | 1,025               | \$2,971 | Y                 | \$3,145 | Y                       | \$3,753 | Y   | \$9,869                      | \$29,607  | \$118,428 | 115.54       |
| IOWA          | 351257 | NORTH ENGLISH COOP   | Rural           | A    | 835                 | \$1,488 | Y                 | \$2,873 | Y                       | \$5,590 | Y   | \$9,729                      | \$29,187  | \$118,428 | 139.82       |
| ILLINOIS      | 341086 | ONEIDA TEL EXCHANGE  | Rural           | C    | 588                 | \$0     | Y                 | \$1,038 | X                       | \$8,879 | Y   | \$9,715                      | \$29,145  | \$118,580 | 198.94       |
| IOWA          | 351242 | MILES COOP TEL ASSN  | Rural           | A    | 725                 | \$1,555 | Y                 | \$2,191 | Y                       | \$5,928 | Y   | \$9,674                      | \$29,022  | \$118,088 | 180.12       |
| WEST VIRGINIA | 200257 | SPRUCE KNOB SENECA   | Rural           | A    | 1,002               | \$1,188 | Y                 | \$2,479 | Y                       | \$8,029 | Y   | \$9,674                      | \$29,022  | \$118,088 | 115.88       |
| COLORADO      | 482197 | PHILLIPS COUNTY TEL  | Rural           | A    | 2,008               | \$0     | Y                 | \$3,701 | Y                       | \$5,930 | Y   | \$9,631                      | \$28,893  | \$115,572 | 57.58        |
| IOWA          | 351288 | OKAN MUTUAL TEL CO   | Rural           | A    | 282                 | \$1,035 | Y                 | \$1,447 | Y                       | \$7,148 | Y   | \$9,630                      | \$28,880  | \$115,580 | 441.07       |
| INDIANA       | 320780 | MONON TEL CO         | Rural           | A    | 1,987               | \$0     | Y                 | \$4,528 | Y                       | \$5,097 | Y   | \$9,625                      | \$28,875  | \$115,500 | 58.72        |
| IOWA          | 351202 | HOSPERS TEL EXCH INC | Rural           | A    | 728                 | \$1,555 | Y                 | \$1,902 | Y                       | \$8,150 | Y   | \$9,607                      | \$28,821  | \$115,284 | 158.79       |
| IOWA          | 351289 | PALO COOP TEL ASSN   | Rural           | A    | 470                 | \$1,433 | Y                 | \$1,122 | Y                       | \$7,028 | Y   | \$9,583                      | \$28,749  | \$114,988 | 244.87       |
| MISSISSIPPI   | 280447 | BRUCE TEL CO - MS    | Rural           | A    | 3,327               | \$0     | Y                 | \$8,825 | Y                       | \$2,731 | Y   | \$9,558                      | \$28,668  | \$114,872 | 34.47        |
| MARYLAND      | 180216 | ARMSTRONG TEL OF MD  | Rural           | A    | 8,453               | \$0     | Y                 | \$7,908 | Y                       | \$1,641 | Y   | \$9,549                      | \$28,647  | \$114,588 | 17.78        |
| IOWA          | 351213 | JORDAN SOLDIER VLY   | Rural           | A    | 340                 | \$1,193 | Y                 | \$0     | Y                       | \$8,332 | Y   | \$9,525                      | \$28,575  | \$114,300 | 338.18       |
| ARKANSAS      | 401704 | LAVACA TEL CO-AR     | Rural           | A    | 1,628               | \$0     | Y                 | \$4,288 | Y                       | \$5,218 | Y   | \$9,504                      | \$28,512  | \$114,048 | 70.05        |
| PENNSYLVANIA  | 170152 | FRONTIER-CANTON      | Rural           | C    | 4,135               | \$0     | N                 | \$0     | X                       | \$9,492 | Y   | \$9,492                      | \$28,478  | \$113,904 | 27.55        |
| IOWA          | 351171 | FARMERS MUTUAL JESUP | Rural           | A    | 1,907               | \$0     | Y                 | \$5,298 | Y                       | \$4,163 | Y   | \$9,459                      | \$28,377  | \$113,508 | 59.52        |
| MICHIGAN      | 310894 | FARMERS DBA CHAPIN   | Rural           | A    | 632                 | \$1,584 | Y                 | \$2,048 | Y                       | \$5,819 | Y   | \$9,429                      | \$28,287  | \$113,148 | 179.03       |
| IOWA          | 351157 | ELLSWORTH COOP ASSN  | Rural           | A    | 684                 | \$2,419 | Y                 | \$2,898 | Y                       | \$4,078 | Y   | \$9,395                      | \$28,185  | \$112,740 | 182.45       |
| OHIO          | 300589 | BASCOM MUTUAL TEL CO | Rural           | A    | 811                 | \$1,557 | Y                 | \$1,979 | Y                       | \$5,844 | Y   | \$9,380                      | \$28,140  | \$112,580 | 184.22       |
| WISCONSIN     | 330872 | CUBA CITY EXCHANGE   | Rural           | A    | 1,750               | \$0     | Y                 | \$3,518 | Y                       | \$5,845 | Y   | \$9,381                      | \$28,083  | \$112,332 | 84.19        |
| IOWA          | 351338 | WILTON TEL CO        | Rural           | A    | 1,945               | \$0     | Y                 | \$4,187 | Y                       | \$5,132 | Y   | \$9,299                      | \$27,887  | \$111,588 | 57.37        |
| IOWA          | 351320 | VAN HORNE COOP TEL   | Rural           | A    | 574                 | \$1,539 | Y                 | \$0     | Y                       | \$7,887 | Y   | \$9,208                      | \$27,618  | \$110,472 | 192.48       |
| MICHIGAN      | 310708 | LENNON TEL CO        | Rural           | A    | 1,888               | \$0     | Y                 | \$4,913 | Y                       | \$4,228 | Y   | \$9,141                      | \$27,423  | \$109,892 | 58.72        |
| SOUTH DAKOTA  | 391882 | TRI-COUNTY TELCOM    | Rural           | A    | 454                 | \$2,435 | Y                 | \$2,015 | Y                       | \$4,857 | Y   | \$9,107                      | \$27,321  | \$108,284 | 240.71       |



## PER USF PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State         | SAC    | Study Area Name      | Rural/Non Rural | Type | High Cost Loop Fund |         | Long Term Support |         | Local Switching Support |         | ETC | Monthly | Total High Cost Fund Support |          | Per USF Loop |
|---------------|--------|----------------------|-----------------|------|---------------------|---------|-------------------|---------|-------------------------|---------|-----|---------|------------------------------|----------|--------------|
|               |        |                      |                 |      | USF Loops           | Monthly | LTS               | Monthly | LSS                     | Monthly |     |         | Quarterly                    | Annual   |              |
| ILLINOIS      | 341011 | FRONTIER OF LAKESIDE | Rural           | C    | 928                 | \$0     | N                 | \$0     | X                       | \$8,837 | Y   | \$8,837 | \$20,511                     | \$82,044 | 88.41        |
| MISSISSIPPI   | 287449 | MYRTLE TEL CO        | Rural           | A    | 909                 | \$1,357 | Y                 | \$2,678 | Y                       | \$2,801 | Y   | \$6,834 | \$20,502                     | \$82,008 | 90.22        |
| OHIO          | 300588 | THE ARTHUR MUTUAL    | Rural           | A    | 1,240               | \$398   | Y                 | \$3,299 | Y                       | \$3,116 | Y   | \$6,811 | \$20,433                     | \$81,732 | 85.91        |
| MICHIGAN      | 310725 | SAND CREEK TEL CO    | Rural           | A    | 1,168               | \$879   | Y                 | \$3,102 | Y                       | \$3,013 | Y   | \$6,794 | \$20,382                     | \$81,528 | 89.92        |
| IOWA          | 351148 | CUMBERLAND TEL CO    | Rural           | A    | 424                 | \$1,362 | Y                 | \$1,398 | Y                       | \$4,024 | Y   | \$6,782 | \$20,346                     | \$81,384 | 191.94       |
| OKLAHOMA      | 432141 | SANTA ROSA TEL COOP  | Rural           | A    | 686                 | \$3,537 | Y                 | \$3,200 | Y                       | \$0     | Y   | \$6,737 | \$20,211                     | \$80,844 | 117.85       |
| NEW HAMPSHIRE | 120048 | MERIDEN TEL CO       | Rural           | C    | 529                 | \$0     | Y                 | \$892   | Y                       | \$5,841 | Y   | \$6,733 | \$20,199                     | \$80,798 | 152.73       |
| LOUISIANA     | 270428 | DELCAMBRE TEL CO     | Rural           | A    | 1,418               | \$0     | Y                 | \$4,232 | Y                       | \$2,494 | Y   | \$6,726 | \$20,178                     | \$80,712 | 57.00        |
| IOWA          | 351169 | FARMERS MUTUAL COOP  | Rural           | A    | 533                 | \$1,508 | Y                 | \$1,699 | Y                       | \$3,492 | Y   | \$6,697 | \$20,091                     | \$80,364 | 150.78       |
| IOWA          | 351229 | LOST NATION-ELWOOD   | Rural           | C    | 682                 | \$3,168 | Y                 | \$0     | Y                       | \$3,529 | Y   | \$6,695 | \$20,085                     | \$80,340 | 117.80       |
| OHIO          | 300682 | VANLUE TEL CO        | Rural           | A    | 742                 | \$1,547 | Y                 | \$2,042 | Y                       | \$3,092 | Y   | \$6,681 | \$20,043                     | \$80,172 | 108.05       |
| KENTUCKY      | 280417 | SALEM TEL CO         | Rural           | A    | 2,018               | \$0     | Y                 | \$4,879 | Y                       | \$1,798 | Y   | \$6,675 | \$20,025                     | \$80,100 | 39.69        |
| IOWA          | 351130 | CLARENCE TEL CO      | Rural           | A    | 854                 | \$1,441 | Y                 | \$2,327 | Y                       | \$2,879 | Y   | \$6,647 | \$19,941                     | \$79,784 | 93.40        |
| IOWA          | 351283 | ROYAL TEL CO         | Rural           | A    | 480                 | \$1,447 | Y                 | \$0     | Y                       | \$5,168 | Y   | \$6,613 | \$19,839                     | \$79,358 | 185.33       |
| OHIO          | 300654 | RIDGEVILLE TEL CO    | Rural           | A    | 718                 | \$1,559 | Y                 | \$1,628 | Y                       | \$3,387 | Y   | \$6,574 | \$19,722                     | \$78,888 | 110.18       |
| OHIO          | 300639 | THE NEW KNOXVILLE    | Rural           | A    | 1,125               | \$818   | Y                 | \$2,074 | Y                       | \$3,641 | Y   | \$6,533 | \$19,599                     | \$78,398 | 69.69        |
| OHIO          | 300633 | MIDDLE POINT HOME    | Rural           | A    | 716                 | \$1,559 | Y                 | \$1,859 | Y                       | \$3,008 | Y   | \$6,426 | \$19,278                     | \$77,112 | 107.70       |
| ALASKA        | 613005 | CIRCLE UTILITIES     | Rural           | A    | 34                  | \$785   | Y                 | \$570   | Y                       | \$4,932 | Y   | \$6,267 | \$18,801                     | \$75,204 | 2,211.88     |
| IOWA          | 351191 | GRAND MOUND COOP TEL | Rural           | A    | 591                 | \$1,548 | Y                 | \$1,811 | Y                       | \$2,845 | Y   | \$6,204 | \$18,612                     | \$74,448 | 125.97       |
| MINNESOTA     | 361387 | FRONTIER-MINNESOTA   | Rural           | C    | 112,830             | \$8,178 | N                 | \$0     | N                       | \$0     | Y   | \$6,178 | \$18,534                     | \$74,136 | 0.66         |
| ALABAMA       | 250307 | MOUNDVILLE TEL CO    | Rural           | A    | 1,745               | \$0     | Y                 | \$4,985 | Y                       | \$1,174 | Y   | \$6,159 | \$18,477                     | \$73,908 | 42.35        |
| IOWA          | 351327 | WEBB-DICKENS TEL     | Rural           | C    | 445                 | \$0     | Y                 | \$690   | X                       | \$5,477 | Y   | \$6,137 | \$18,411                     | \$73,644 | 165.49       |
| VIRGINIA      | 190220 | BURKE'S GARDEN TEL   | Rural           | A    | 114                 | \$1,290 | Y                 | \$1,023 | Y                       | \$3,772 | Y   | \$6,085 | \$18,255                     | \$73,020 | 840.53       |
| IOWA          | 351148 | DEEP RIVER MUTUAL    | Rural           | A    | 297                 | \$1,088 | Y                 | \$1,529 | Y                       | \$3,456 | Y   | \$6,073 | \$18,219                     | \$72,878 | 245.37       |
| TEXAS         | 442043 | NORTH TEXAS TEL CO   | Rural           | A    | 898                 | \$2,802 | Y                 | \$3,218 | Y                       | \$0     | Y   | \$6,020 | \$18,080                     | \$72,240 | 80.63        |
| IOWA          | 351179 | FENTON CO-OP TEL CO  | Rural           | A    | 360                 | \$1,238 | Y                 | \$1,404 | Y                       | \$3,330 | Y   | \$5,972 | \$17,916                     | \$71,884 | 199.07       |
| IOWA          | 351341 | FRONTIER-SCHUYLER    | Rural           | C    | 990                 | \$0     | N                 | \$0     | X                       | \$5,917 | Y   | \$5,917 | \$17,751                     | \$71,004 | 71.72        |
| MISSISSIPPI   | 280451 | DECATUR TEL CO -MS   | Rural           | A    | 2,010               | \$0     | Y                 | \$5,041 | Y                       | \$852   | Y   | \$5,893 | \$17,679                     | \$70,718 | 35.18        |
| OHIO          | 300651 | PATTERSONVILLE TEL   | Rural           | A    | 393                 | \$1,308 | Y                 | \$1,584 | Y                       | \$2,981 | Y   | \$5,871 | \$17,613                     | \$70,452 | 179.27       |
| COLORADO      | 482178 | AGATE TEL CO         | Rural           | A    | 118                 | \$1,303 | Y                 | \$911   | Y                       | \$3,643 | Y   | \$5,857 | \$17,571                     | \$70,284 | 605.90       |
| NEW HAMPSHIRE | 120042 | DIXVILLE TEL CO      | Rural           | A    | 481                 | \$2,408 | Y                 | \$799   | Y                       | \$2,644 | Y   | \$5,849 | \$17,547                     | \$70,188 | 152.25       |
| GEORGIA       | 220354 | CHICKAMAUGA TEL CORP | Rural           | C    | 5,704               | \$0     | Y                 | \$5,775 | X                       | \$0     | Y   | \$5,775 | \$17,325                     | \$69,300 | 12.15        |
| MISSISSIPPI   | 280462 | MOUND BAYOU TEL & CO | Rural           | A    | 957                 | \$1,288 | Y                 | \$1,180 | Y                       | \$3,274 | Y   | \$5,720 | \$17,180                     | \$68,640 | 71.72        |
| NEW YORK      | 150114 | ORISKANY FALLS TEL   | Rural           | C    | 742                 | \$895   | Y                 | \$2,246 | Y                       | \$2,575 | Y   | \$5,716 | \$17,148                     | \$68,592 | 92.44        |
| NEVADA        | 552223 | GEM STATE UTIL-NV    | Rural           | C    | 448                 | \$3,352 | Y                 | \$1,640 | X                       | \$722   | Y   | \$5,714 | \$17,142                     | \$68,588 | 153.05       |
| WISCONSIN     | 330857 | CASCO TEL CO         | Rural           | C    | 1,239               | \$0     | Y                 | \$2,153 | X                       | \$3,544 | Y   | \$5,697 | \$17,091                     | \$68,384 | 55.18        |
| MAINE         | 100005 | COBBOSSEECONTEE TEL  | Rural           | A    | 732                 | \$1,552 | Y                 | \$2,688 | Y                       | \$1,415 | Y   | \$5,635 | \$16,905                     | \$67,620 | 92.38        |
| VIRGINIA      | 190238 | NORTH RIVER TEL COOP | Rural           | A    | 968                 | \$1,175 | Y                 | \$3,109 | Y                       | \$1,314 | Y   | \$5,598 | \$16,794                     | \$67,178 | 87.31        |
| IOWA          | 351121 | CENTER JUNCTION TEL  | Rural           | A    | 151                 | \$1,322 | Y                 | \$1,182 | Y                       | \$3,001 | Y   | \$5,505 | \$16,515                     | \$66,060 | 437.48       |
| WYOMING       | 512290 | ALL WEST COMM -WY    | Rural           | C    | 346                 | \$1,254 | Y                 | \$36    | Y                       | \$4,141 | Y   | \$5,431 | \$16,293                     | \$65,172 | 188.36       |
| COLORADO      | 482201 | RICO TEL CO          | Rural           | C    | 144                 | \$2,177 | Y                 | \$825   | Y                       | \$2,376 | Y   | \$5,378 | \$16,134                     | \$64,536 | 448.17       |
| IOWA          | 351128 | CENTURY-CHESTER      | Rural           | A    | 207                 | \$2,579 | Y                 | \$1,594 | Y                       | \$1,197 | Y   | \$5,370 | \$16,110                     | \$64,440 | 311.30       |
| PENNSYLVANIA  | 170197 | PENNSYLVANIA TEL CO  | Rural           | A    | 1,297               | \$152   | Y                 | \$4,004 | Y                       | \$1,023 | Y   | \$5,179 | \$15,537                     | \$62,148 | 47.82        |
| PENNSYLVANIA  | 170200 | PYMATUNING IND TEL   | Rural           | A    | 2,367               | \$0     | Y                 | \$3,870 | Y                       | \$1,120 | Y   | \$5,090 | \$15,270                     | \$61,080 | 25.80        |
| ALABAMA       | 250285 | CASTLEBERRY TEL CO   | Rural           | A    | 940                 | \$1,300 | Y                 | \$2,747 | Y                       | \$982   | Y   | \$5,029 | \$15,087                     | \$60,348 | 84.20        |
| IOWA          | 351119 | CASEY MUTUAL TEL CO  | Rural           | A    | 457                 | \$1,414 | Y                 | \$1,389 | Y                       | \$2,233 | Y   | \$5,016 | \$15,048                     | \$60,192 | 131.71       |
| SOUTH DAKOTA  | 391671 | MOBRIDGE TELECOMM    | Rural           | A    | 2,472               | \$0     | Y                 | \$2,980 | Y                       | \$1,992 | Y   | \$4,972 | \$14,916                     | \$59,664 | 24.14        |
| PENNSYLVANIA  | 170195 | ARMSTRONG TEL NORTH  | Rural           | A    | 511                 | \$1,484 | Y                 | \$1,508 | Y                       | \$1,946 | Y   | \$4,938 | \$14,814                     | \$59,256 | 115.88       |
| MICHIGAN      | 310688 | CLIMAX TEL CO        | Rural           | A    | 1,524               | \$0     | Y                 | \$1,690 | Y                       | \$2,999 | Y   | \$4,689 | \$14,087                     | \$56,288 | 38.92        |
| PENNSYLVANIA  | 170210 | VENUS TEL CORP       | Rural           | A    | 1,288               | \$193   | Y                 | \$3,045 | Y                       | \$1,449 | Y   | \$4,687 | \$14,061                     | \$56,244 | 43.67        |
| PENNSYLVANIA  | 170178 | FRONTIER-LAKEWOOD    | Rural           | C    | 1,529               | \$0     | N                 | \$0     | X                       | \$4,632 | Y   | \$4,632 | \$13,898                     | \$55,584 | 36.35        |
| TENNESSEE     | 290586 | HUMPHREYS COUNTY TEL | Rural           | A    | 1,675               | \$0     | Y                 | \$2,910 | Y                       | \$1,479 | Y   | \$4,389 | \$13,167                     | \$52,668 | 31.44        |
| NEVADA        | 552284 | BEEHIVE TEL CO - NV  | Rural           | C    | 82                  | \$361   | Y                 | \$1,334 | X                       | \$2,843 | Y   | \$4,338 | \$13,014                     | \$52,056 | 634.83       |
| TEXAS         | 442038 | BLOSSOM TEL CO       | Rural           | A    | 1,315               | \$98    | Y                 | \$4,198 | Y                       | \$0     | Y   | \$4,294 | \$12,882                     | \$51,528 | 39.18        |

## PER USF PAYMENT

High Cost Fund Support by Study Area  
First Quarter 1999

| State                | SAC    | Study Area Name      | Rural/Non Rural | Type | High Cost Loop Fund |         | Long Term Support |         | Local Switching Support |         | ETC | Monthly | Total High Cost Fund Support |        | Per USF Loop |
|----------------------|--------|----------------------|-----------------|------|---------------------|---------|-------------------|---------|-------------------------|---------|-----|---------|------------------------------|--------|--------------|
|                      |        |                      |                 |      | USF Loops           | Monthly | LTS               | Monthly | LSS                     | Monthly |     |         | Quarterly                    | Annual |              |
| MICHIGAN             | 315090 | MICHIGAN BELL TEL CO | Non-Rural       | C    | 5,312,788           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| INDIANA              | 320772 | GTE NORTH INC - IN   | Non-Rural       | C    | 734,704             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| INDIANA              | 320779 | CONTEL IN DBA GTE IN | Non-Rural       | C    | 179,777             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| INDIANA              | 320832 | UTC OF INDIANA       | Non-Rural       | C    | 233,235             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| INDIANA              | 325080 | INDIANA BELL TEL CO  | Non-Rural       | C    | 2,184,982           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| WISCONSIN            | 330886 | GTE NORTH INC - WI   | Non-Rural       | C    | 481,131             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| WISCONSIN            | 335220 | WISCONSIN BELL       | Non-Rural       | C    | 2,209,723           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| WISCONSIN            |        | CTC COMM             | Non-Rural       |      | 422                 | \$0     |                   | \$0     |                         | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| WISCONSIN            |        | SHARON TEL CO        | Non-Rural       |      | 67                  | \$0     |                   | \$0     |                         | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| ILLINOIS             | 341015 | GTE NORTH INC - IL   | Non-Rural       | C    | 658,398             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| ILLINOIS             | 341038 | CONTEL IL DBA GTE IL | Non-Rural       | C    | 188,488             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| ILLINOIS             | 345070 | ILLINOIS BELL TEL CO | Non-Rural       | C    | 8,830,127           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| IOWA                 | 355141 | U S WEST, INC - IA   | Non-Rural       | C    | 1,033,852           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| IOWA                 |        | LOST NATION-ELWOOD   | Non-Rural       |      | 380                 | \$0     |                   | \$0     |                         | \$0     | N   | \$0     | \$0                          | \$0    | 0.00         |
| MINNESOTA            | 361140 | CONTEL MN DBA GTE MN | Non-Rural       | C    | 120,581             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| MINNESOTA            | 365142 | U S WEST, INC - MN   | Non-Rural       | C    | 2,133,116           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| NEBRASKA             | 371568 | ALIAMT COMM CO       | Non-Rural       | C    | 279,581             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| NEBRASKA             | 375143 | U S WEST, INC - NE   | Non-Rural       | C    | 522,260             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| NORTH DAKOTA         | 385144 | U S WEST, INC - ND   | Non-Rural       | C    | 249,644             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| SOUTH DAKOTA         | 395145 | U S WEST, INC - SD   | Non-Rural       | C    | 268,185             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| KANSAS               | 415214 | SOUTHWESTERN BELL KS | Non-Rural       | C    | 1,331,425           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| MISSOURI             | 425213 | SOUTHWESTERN BELL MO | Non-Rural       | C    | 2,499,418           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| OKLAHOMA             | 432080 | GTE SOUTHWEST INC-OK | Non-Rural       | C    | 112,671             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| OKLAHOMA             | 435215 | SOUTHWESTERN BELL OK | Non-Rural       | C    | 1,815,640           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| TEXAS                | 442080 | GTE SOUTHWEST INC-TX | Non-Rural       | C    | 1,610,872           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| TEXAS                | 445216 | SOUTHWESTERN BELL TX | Non-Rural       | C    | 9,328,001           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| IDAHO                | 475103 | U S WEST, INC - ID   | Non-Rural       | C    | 458,955             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| UTAH                 | 505107 | U S WEST, INC - UT   | Non-Rural       | C    | 1,049,110           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| WASHINGTON           | 522416 | GTE NORTHWEST INC-WA | Non-Rural       | C    | 710,800             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| WASHINGTON           | 525181 | U S WEST, INC - WA   | Non-Rural       | C    | 2,380,323           | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| OREGON               | 532418 | GTE NORTHWEST INC-OR | Non-Rural       | C    | 455,293             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| CALIFORNIA           | 545170 | PACIFIC BELL         | Non-Rural       | C    | 18,838,970          | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| NEVADA               | 552348 | CENTEL OF NV         | Non-Rural       | C    | 790,515             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| NEVADA               | 555173 | NEVADA BELL          | Non-Rural       | C    | 330,523             | \$0     | N                 | \$0     | N                       | \$0     | N   | \$0     | \$0                          | \$0    | 0.00         |
| DELAWARE             | 585010 | DIAMOND STATE TEL    | Non-Rural       | C    | 532,170             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| DISTRICT OF COLUMBIA | 575020 | C & P TEL CO OF WASH | Non-Rural       | C    | 919,999             | \$0     | N                 | \$0     | N                       | \$0     | N   | \$0     | \$0                          | \$0    | 0.00         |
| RHODE ISLAND         | 585114 | NEW ENGLAND TEL - RI | Non-Rural       | C    | 853,123             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| ALASKA               | 613000 | ANCHORAGE TEL UTIL   | Non-Rural       | C    | 183,729             | \$0     | Y                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |
| HAWAII               | 623100 | GTE HAWAIIAN TEL CO  | Non-Rural       | C    | 707,649             | \$0     | N                 | \$0     | N                       | \$0     | Y   | \$0     | \$0                          | \$0    | 0.00         |

1438 ILEC STUDY AREAS  
5 CLEC SERVING AREAS

## NATIONAL TOTALS

|           |              |              |              |               |               |                 |
|-----------|--------------|--------------|--------------|---------------|---------------|-----------------|
| MONTHLY   | \$72,019,032 | \$38,135,813 | \$32,580,462 | \$143,735,407 | N/A           | N/A             |
| QUARTERLY | N/A          | N/A          | N/A          | N/A           | \$431,206,221 | N/A             |
| ANNUAL    | N/A          | N/A          | N/A          | N/A           | N/A           | \$1,724,824,884 |



National Conference of State Legislatures

## The Energy Project

# Restructuring and Small Electric Customers

State Legislative Report / Vol. 23, No. 15

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NCSL Home Page

## Introduction

Since the Energy Policy Act of 1992 and the Federal Energy Regulatory Commission's (FERC) rulings 888 and 889, federal, state and local policymakers are exploring new options to let retail customers choose their electricity provider. Because some degree of competition already exists in these markets, policymakers have one of two options: limited, wholesale competition as it is now developing under federal law and full-scale retail competition.

- The wholesale competition model would allow the electric industry's structure to evolve and let competitive forces emerge over time. With this course, the electric industry will change, but those changes will be in response to the Federal Energy Policy Act of 1992 and FERC rulings. These federal laws and rules are designed to encourage competition among utilities for the sale of electricity to one another—but not competition for the sale of electricity to retail customers. FERC's ruling tries to ensure that any power generator has an equal opportunity to send power over anyone else's transmission power lines. It does not address competition for retail customers' business.
- The full-scale retail competition model would restructure the industry more radically. Full-scale retail competition allows not only competition among generators of electricity for sales to one another, but also lets all electricity consumers—such as homes or businesses—choose their electricity provider.



To date, 13 states have enacted legislation to allow this type of retail competition and a small number of other states are attempting to bring retail competition to their electric markets under the authority of their state utility commissions. Most of the remaining states are studying the issue or are considering legislation. The federal government also is considering the merits of imposing a national restructuring requirement for retail competition on the electric industry.

Most states hope that retail competition will make the electric industry more efficient over the long term. Some advocates of full-scale retail competition point out that electric utilities have been effectively insulated from the competitive pressures that have forced other industries in this country to drastically improve their efficiency during the past decade. It may be, for instance, that competition will force power generators to run their power plants more efficiently than they have in the past. States that enact restructuring legislation hope that competition will force less efficient electricity providers or facilities out of the market, and that competition will produce lower prices, a new generation of customer services and improved technology.

Some also argue that a failure to allow full-scale retail competition could be detrimental to small electricity consumers. Under today's regulated system, most big power companies have the authority to negotiate special contracts with some customers—often offering them substantially discounted rates as an incentive to remain in the utility's service area. Those who advocate allowing retail competition soon suggest that the smaller customers now are at a disadvantage because they have no parallel access to negotiated special contract deals.

Competition brings the opportunity for many cost savings and improvements in the electric industry. With those opportunities come risks, however. And not all consumers will be exposed to those risks in equal measure. Electric costs and prices may not decline to the same extent for all customers or across all states in a restructured industry. They may decline at different rates or even increase for several reasons, including the following:

- Some cross subsidies may disappear
- Some customers' electricity use profile is more attractive than others'
- It is less expensive to serve one large customer than to serve many small customers

These factors are not so much reasons that a state should not introduce retail competition. Rather, they may point to accommodations or provisions that may be included in restructuring legislation.

#### *Some Cross Subsidies May Disappear*

In some states industrial customers' electric rates have subsidized residential customers' electric rates. These subsidies may disappear under competition. In many places those subsidies already are disappearing and, indeed, industrial customers in some states are being subsidized by residential customers through "special contracts," or contracts between a utility and a large customer at a particularly low electric rate.

#### *Some Customers' Electricity Use Profile is more Attractive than Others'*

The least expensive electric generating plants to run are those that operate all the time, while the most expensive plants are those that run only occasionally, usually during the times of peak electricity use. As a result, the least expensive electricity customers to serve are those that use a constant amount of electricity.



over the course of the day. In contrast, most customers use little electricity for much of the day and a great deal of power for a short period, making them more expensive to serve. Hospitals or factories that are open 24 hours are examples of the least expensive customers to serve; a typical home is an example of a more expensive customer.

*It Is less Expensive to Serve one Large Customer than to Serve many Small Customers*

The National Regulatory Research Institute estimates that, on average, it costs approximately \$57 each year to serve the basic billing, meter reading and other customer service needs of an electricity customer, whether large or small. Electricity suppliers would prefer to service one large customer account, so that this \$57 administrative cost appears small by comparison with the large customer's entire electricity bill. If there are a multitude of small accounts, that same administrative cost could be as high as 10 percent of each customer's annual electric bill.

The regulated electric system has aggregated these different customers on the basis of geography, so that the small and large customers share the electric system's fixed costs. The competitive market would allow the large customers to separate themselves from the smaller customers and possibly strike better deals than smaller customers. It is for this reason that states have crafted legal provisions to help residential or small commercial consumers benefit from competition. Because low-income residential customers may fare less well than typical residential consumers, several states have developed provisions specifically for low-income customers.



### **Policy Options for Wholesale or Retail Competition**

Policymakers have available to them a number of options that can give residential and small commercial electricity consumers a greater ability to participate in and benefit from both retail and wholesale competition. Some of these options are available even under today's market. Others have to do with managing the transition from retail price regulation to competition, and still others have to do with new rules for the fully competitive market. Policymakers have options available to them that may reduce costs and prices or change the incentives in the electric industry, even without a full-scale restructuring of the electric industry.

#### **Performance Based Ratemaking**

Performance based ratemaking (PBR) gives utilities an incentive to cut costs and earn a better return on their investments if they meet certain goals. PBR attempts to imitate the cost cutting or other incentives that might appear in a competitive market, while maintaining a price-regulated market. Some PBR systems encourage utilities to reduce their costs. Others hold prices steady and still others encourage utilities to invest in energy efficiency or other activities that state policymakers feel are desirable. A few states already have adopted this practice, and some, including Vermont, are examining the possibility of adopting more performance based ratemaking practices as an alternative to enacting full-scale restructuring legislation.

Some observers feel that PBR is a good substitute for competition because it involves fewer risks for residential and small commercial customers than full-scale competition; it maintains the regulators' control of the system, albeit a looser control. Others feel that even a PBR system is too regulated, and that the competitive market could better achieve the benefits of competition.

## Municipalization

Local governments that are part of a utility's service territory may decide that they can buy power more cheaply or under better terms if they break away from their investor-owned utility's service territory by taking away the utility's franchise. Through this option, a local government could take over the operations of all or part of the existing utility and operate it as a public entity, with an elected board of directors. The new public utility would continue to provide electric service to its citizens, but would do so with a greater degree of local control over the utility's operations. If the citizens did not approve of the utility's decisions or performance they could elect a new board of directors. This new utility also could participate in the competitive wholesale market. If it could buy power cheaply at wholesale, it could then pass its savings directly to its customers.

Few local governments have chosen this option recently, although after the 1992 Federal Energy Policy Act many observers expected a surge in municipalization. The lack of interest in municipalization stems from the complexity and political and legal difficulties involved in taking over the existing utility's functions, as well as the lack of an assured benefit for doing so. Municipalization succeeds in reducing electric prices if the municipal utility's management is better at buying or generating electricity or at managing other costs than an investor owned utility. Yet, there is little assurance that a government-operated utility will be a better run utility.



## Options for Managing the Transition from Price Regulation

If states decide to let all retail electricity customers choose their electricity provider, policymakers have at their disposal a number of options that will protect small customers during the transition from a regulated to a competitive marketplace. These options do not address long-term policies for enabling residential and small commercial consumers of electricity to participate in the competitive market, but they may ease the transition for these consumers.

### Stranded Cost Treatment

If policymakers allow all customers to choose their electricity supplier, some of the long-lived assets that electric utilities currently own may not be able to produce power at lower, market-determined prices. These uneconomic long-lived assets are known as stranded costs, or the investments that utilities made under regulation that may not be viable in a competitive marketplace. Policymakers can let utilities and their shareholders absorb these losses, have ratepayers pay for them, or even require the general public to pay for them through taxes. If the losses are large enough and the utility's shareholders are required to absorb them, an electric utility could go bankrupt. At the same time, customers' rates may decrease more slowly if they are required to bear the entire burden of these costs. Therefore, policymakers must balance the financial viability of electric utilities against rate decreases for electric customers. The choices about stranded cost recovery could place today's electric utilities in a strong or weak competitive position when they begin to compete for retail customers' business, and could affect the number and type of service options available to customers.

Securitization is one way to help pay for utility stranded costs while reducing consumer rates. This process refinances stranded utility assets through new securities. Consumers pay the interest and principal on these securities through a charge that is placed on their electric bill. Legislation in California, Illinois, Rhode Island,

Montana and Pennsylvania permits utilities to use securitization to manage their stranded or uneconomic asset charges. The new securities that take their place are authorized under state law and offered at the lower costs associated with a publicly assured debt instrument. The difference between the utility cost of capital and that of new security can be used to finance a rate reduction for small consumers, while allowing for utility stranded cost recovery.

Securitization is controversial for several reasons. Most importantly, it gives utilities an ironclad assurance that they will recover stranded costs, when no other method of paying for stranded costs allows for such an assurance. Some observers point out that securitization sets a definite and irrevocable dollar figure for stranded cost recovery, and does not allow for upward or downward revision of the amount that utilities could recover as circumstances change. The assurance of recovery of stranded costs is also a benefit of securitization, for it is that very assurance that allows new bonds to be issued at such a low interest rate. The savings from this lower interest rate can finance some rate reductions.

### **Rate Freezes and Reductions**

Rate reductions for small customers have become part of the transition process in many states that have passed restructuring legislation. California, Connecticut, Massachusetts, Rhode Island and Illinois all have mandated lower residential or industrial and commercial rates during the transition period to full competition. Pennsylvania and Montana instituted a rate freeze during the transition period. Many policymakers have viewed these special rate treatments as a means of ensuring that the interests of all consumers, not just those of large customers with substantial buying power, are protected in the move to greater competition.

Some view mandated rate reductions with more skepticism. In Rhode Island and Massachusetts the mandated rate reductions have brought down electric rates to the point that power marketers now are claiming that the profit margins for entering these states' markets will be too small. Those skeptics of mandated rate reductions also claim that the methods for utilities to recover their stranded costs also can make it difficult for competitors to participate in the marketplace. As a result, there has been little competition for new residential or small commercial customers' business. However, customers in those states have benefited from the rate reductions, even if they have not switched electricity providers.

In Pennsylvania, where the state's restructuring legislation did not mandate a particular rate reduction—and therefore customers did not see an immediate reduction in their electric rates—the competition for customers' business has been fiercer. However customers have no legislative assurance that their prices will be lower.



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### **Options for Managing Full-Scale Retail Competition**

Policymakers who allow retail customers to choose their electricity supplier can provide some options that are particularly suited to enhancing residential and small commercial customers' ability to benefit from a competitive retail market. These options may be best designed as long-term policies, rather than transitional mechanisms between a regulated and a competitive marketplace.

### **Consumer Information**

<http://www.ncsl.org/programs/esnr/mbslr.htm>

2/16/99



Large consumers of electricity are likely to have the personnel and financial resources to understand and analyze the service options offered to them. Smaller consumers may not have the time or resources to fully understand or research their options. When New Hampshire offered a retail choice pilot program to 17,000 electricity customers, for instance, more than half the participants in the program decided to remain with their original providers. Many said that they felt overwhelmed by the array of choices available to them. A well-designed consumer education program can help consumers understand their options in a competitive electricity industry and make educated choices among a variety of service offerings.

A companion to consumer education is reliable market information in the form of standardized billing terms and disclosure requirements that permit the customer to compare the price, environmental characteristics or quality of the products available in the marketplace.

### **Addressing Market Structures**

Many states have attempted to craft legislation that encourages competition for all consumers' business. Most attempt to make it easy for new electricity providers to sell power in the marketplace. These rules also may discourage utility companies that operate simultaneously in both competitive and regulated businesses from taking advantage of that fact. A company that owns power lines, for instance, might offer to transmit power from its sister generation company, while refusing to transmit power for another unrelated power generator. The rules also may try to prevent undue concentration of control of the power generation business. These state policies often specify codes of conduct for participants in the market, and also may require that utilities separate or even sell some portions of their business in order to promote competition.

### **Aggregation of Loads**

Some groups of consumers may be able to combine their electric loads so that, as a group, they may appear more attractive to electricity providers than they would as individual customers. Municipalities can aggregate customers to create a balanced and geographically concentrated load and negotiate for better terms of service. Churches, credit unions, neighborhood associations or other "affinity" groups also may consider aggregating their load. Municipal utilities, cooperatives, and buying clubs or newly formed entities created specifically for this purpose also can negotiate on behalf of a large group of customers. Aggregators may be able not only to negotiate for better electricity prices but also may provide customers with other commodities of value such as energy efficiency services or electricity supplies from environmentally benign resources.

Aggregation has a limited capacity to assist less economically attractive customers become more attractive. A hospital, for instance, could negotiate a good electricity price because it uses a great deal of electricity; with its usage spread fairly evenly throughout the day; the cost of serving the hospital is relatively low. The combination of the hospital's attractive load profile with a group of residential customers' unattractive load profiles will improve the appeal of the residential customers' load, but degrade the hospital's appeal. As a result, the hospital might have little incentive to join residential customers who are more expensive to serve.

Even if customers with similarly unattractive load profiles combine their accounts, they will simply become one large account with an unattractive load profile. Power providers prefer to serve one large group of customers because it is relatively inexpensive to market to, bill and provide other customer services to that one large group. But the single aggregated customer still is not as appealing as a customer with large usage spread evenly over the entire day and year. Aggregation helps residential customers, but will not enable them to strike deals that are as advantageous as those made by some other large electricity users.



Another way that small customers are aggregated is through the default provider. The default provider is the electricity marketer that serves those customers that do not choose a new supplier. The default provider can be the energy marketer affiliated with the pre-existing utility or it can be an entirely new entity. In recently proposed legislation in Ohio, the default providers would be newly created regional entities, several of which would be created within the state. The restructuring law in Massachusetts creates ways for municipal aggregation to provide default service. The ability of the default provider to access energy supplies at competitive rates may well determine the effects of electricity restructuring on a substantial portion—if not the majority—of the small customer base.

### **Consumer Protection**

In most states, the existing legal and regulatory framework provides consumer protection and complaint resolution mechanisms under the authority of the state regulatory commission. In a competitive market, policymakers may consider revising consumer protection mechanisms that will guarantee customers fair billing practices, reasonable credit and collection procedures, fair and accessible dispute resolution procedures, protection against service disconnections, protection against slamming (in which suppliers switch a customer's electricity provider without the customer's knowledge or permission), and basic standards for services and products.

Many of these consumer protections are part of the principle of universal service. This principle states that everyone should have access to the electricity system and a basic electricity supply. To ensure the continuation of universal service several states have proposed the creation of a provider of last resort. This provider, who may or may not also be the default provider, will provide electricity service to consumers who might be refused service or offered service under unduly restrictive terms by competitive suppliers. These might include new consumers, those who are perceived as bad credit risks and those who live in neighborhoods where competitive electricity suppliers do not market heavily.

### **Low-Income Protections**

There is some concern that, in a fully competitive retail electricity market, low-income consumers will fare worse than other customers. There is a real danger that they will have fewer competitive supply offerings and higher-cost supplies because of their perceived higher credit risks. To ensure that basic affordable electric service will be universally available, several states have created programs that are specifically tailored to this segment of the consumer market. Of the 13 states with restructuring laws, six—California, Connecticut, Maine, Massachusetts, Pennsylvania and Rhode Island—create or endorse the concept of discounted rates for low-income customers.

Six states—California, Connecticut, Illinois, Massachusetts, Montana and Pennsylvania—either continue or create new low-income energy efficiency programs. In New Hampshire and Illinois the regulations developed to implement the restructuring law provided funding to support a percentage of income payment plan—similar to that which already exists in Ohio—that would limit low-income electric bills to a reasonable proportion of household income. Some states—including Connecticut, Pennsylvania and Rhode Island—also endorse deferred-payment plans to help customers who are having trouble paying their electric bills.



## Conclusion

As the electric industry continues to evolve through its most fundamental change in a half-century, it is becoming evident that there is potential for all electric customers to benefit from full-scale retail competition. It is also becoming apparent that those benefits will be easier for some customers to attain than for others. Several states have enacted restructuring legislation that may make it easier for residential and small commercial customers to gain the benefits of competition. These measures and others described in this report may help all electricity consumers to have the information and the ability to benefit from the opportunities that competition offers.



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# Last Dance for the Regulated Disco?

The music's over for pipes and wires—long seen as a “natural monopoly”—according to California Commissioner Jessie Knight.

**B**ACK IN DECEMBER 1995, THE CALIFORNIA PUBLIC Utilities Commission launched a two-year pilot program to test the idea of letting builders and contractors design lateral distribution facilities for residential gas and electric service. Private firms would consult with utilities, who would credit contractors for costs saved by outsourcing. More than 250 subdivisions participated.

Late last year, the PUC declared the program an unqualified success. “Builders, design firm, and the utilities have proven that they can coordinate the necessary resources... saving builders as much as two months on an otherwise seven-month design process.” The commission then instructed the state’s six major investor-owned gas and electric utilities to file tariffs to set out a bidding process for the private design of electric and gas distribution lines. (*Decision 97-12-099, Dec. 16, 1997*).

Nevertheless, the PUC worried that, in helping private firms design lateral lines, utilities might end up giving away transformers, meters or other services or line facilities (TSM) to construction firms at below cost. To address the problem, the commission issued a second decision, limiting the size of any free dollar allowances for TSM to the revenue the utility might expect to receive from the load to be served by the new distribution facilities. (*Decision 97-12-098, Dec. 16, 1997*).

Does this new program mark the beginning of the end of distribution as a regulated monopoly?

Recently, the PUC has taken a somewhat ambiguous position, hinting that distribution is a monopoly—but only

until customers decide otherwise: “We view distribution as a natural monopoly with respect to serving those customers who do not opt for self-generation or construct transmission and distribution facilities to serve their consumption.” (See, e.g., *Decision 95-12-063, Dec. 20, 1995, modified Jan. 10, 1996, 166 PUR4th 1, 40.*)

Not one to mince words, California Commissioner Jessie J. Knight Jr. believes the end is near. He endorsed the new pilot program and cost-limiting rule, but gave it his own unique spin:

**C**OMPETITION IS COMING to the provision of distribution services... It may be that there is no reason why the local utility distribution companies should be the only ones to construct and own line extensions... **THIS IS PARTICULARLY POSSIBLE** for industrial and commercial customers... **IN MY MIND**, it is appropriate to allow a customer to build, own and maintain a distribution plant that is wholly on the customer’s property.

...

**THE DESIGN OF DISTRIBUTION SERVICES** is clearly not a natural monopoly. The pilot program proved that the design of distribution systems to serve residential customers can be performed by a wide variety of firms...

**IN MY OPINION**, the construction of distribution facilities does not exhibit any of the characteristics of a monopoly function... This commission will have to revisit the concept that the provision of distribution service is a natural monopoly. We have taken the first tentative steps toward allowing distribution competition... **THE INDUSTRY WAS SLOW** to see the advent of competition in generation and retail provision of electricity. Now it is starting to grasp the eventual reality that competition in transmission services is coming... Soon [it] will have to come to grips with competition within the bastion of distribution. It is only a matter of time...

**THE TIME OF THE NATURAL MONOPOLY** over distributions services will, in my estimation, be over much sooner than the conventional wisdom in this industry would have us believe.

Source: Excerpts from concurring opinions written by Commissioner Jessie J. Knight Jr., in Rulemaking 92-03-050, *Decision 97-12-098* and *Decision 97-12-099, Dec. 16, 1997 (Cal.P.U.C.)*.