



National Regulatory
Research Institute

State High Cost Funds: Purposes, Design, and Evaluation

**Peter Bluhm
Consultant
Rolka, Loube, Saltzer Associates**

**Phyllis Bernt, PhD
Professor
Ohio University**

**Jing Liu
Regulatory Analyst
Washington Utilities and Transportation Commission**

January 19, 2010

10-04

Acknowledgments

The authors would like to recognize that this report builds on earlier NRRI reports, including reports by former NRRI employees Lilia Perez-Chavolla and Ed Rosenberg. Ed's passing in 2008 saddened his many friends at NRRI and in the larger community of telecommunications regulators. We also want to thank Elizabeth Barnes, Chair of the State Universal Service Fund Administrator's group at NARUC, for helping us set up the state survey instruments, and Joel Shifman for sharing his many insights into the subject of universal service.

We appreciate the work done by the many staffers at state utility commissions who took the time to answer our written survey. We also conducted telephonic interviews with state staff members from many states, most of which operate high cost funds, and we want to offer our particular gratitude to those many staffers: Lori Kenyon in Alaska; Will Shand in Arizona; Bill Dennis, Cindy Ireland, and Art Stuenkel in Arkansas; Charles Christianson, Robert Haga, Larry Hirsch, Roxanne Scott, and Donna Wong in California; Larry Herold and Susan Travis in Colorado; Grace Seaman in Idaho; Jefferey Hoagg and Jim Zolnierek in Illinois; Sally Getz in Indiana; Sandy Reams in Kansas; Rich Kania and Joel Shifman in Maine; Sue Vanicek in Nebraska; Charlie Bolle in Nevada; Greg Pattenaude in New York; Ken Smith in New Mexico; Bennett Abbott in Oklahoma; John Tatum and Roger White in Oregon; Elizabeth Barnes in Pennsylvania; Doug Pratt in South Carolina; Jay Stone in Texas; Bill Duncan and Casey Coleman in Utah; Peter Jahn in Wisconsin; and Art Schmidt in Wyoming. Finally we want to thank David Rolka of Rolka, Loubé, Saltzer Associates for helping us better understand the operations of the Arkansas high cost fund.

Online Access

This paper can be found online at www.nrri.org/pubs/telecommunications/NRRI_state_high_cost_funds_jan10-04.pdf.

Executive Summary

Universal service remains a concern of state legislatures and commissions as policy makers seek to maintain ubiquitous and affordable basic telephone service. One strategy is to establish a high cost fund to provide support for carriers serving high-cost areas. This report focuses on these state funds, analyzing the steps involved in establishing and maintaining them. The report, which is intended for state commissions and state legislatures that are considering adopting a fund, explains why these funds typically have been created and discusses how those varying purposes are reflected in support mechanisms. The report is also intended for states that already have such funds but are considering changes to improve their function or effect. States also use other universal service programs such as Lifeline and school and library programs, but those programs are not the subject of this report.

The authors base their findings on the experiences of the twenty-one states that currently operate high cost funds, as well as on insights provided by states that do not. Information for the report was gathered from a survey of commissions in all 50 states, the District of Columbia, and the Virgin Islands; from interviews with commission staff at the twenty-one states now operating high cost funds; and from independent analysis of state statutes, rules, and decisions. Overviews of each of the twenty-one high cost funds are provided in Appendix B of the report.

Several factors influence the need for a state high cost fund:

- The status of competition in the state. Wireless and VoIP providers are winning subscribers from Incumbent Local Exchange Carriers (ILECs). These are often subscribers in competitive low-cost areas or high-volume business users. Losing such customers increases the ILEC's average cost of serving its remaining customers. Support from a high cost fund can help ensure affordable rates for customers in the high-cost areas in which there is no robust competition.
- Continued importance of ILECs. While a network without ILECs can be imagined, for the foreseeable future ILECs will continue to play a unique role, often functioning as a carrier of last resort and providing essential carrier-to-carrier services. ILEC failure would create hardships for subscribers and other carriers.
- Erosion of traditional revenues. ILECs have three main revenue streams: subscriber revenues, intercarrier revenue, and federal universal service support. Each of these revenue streams faces risk. Subscriber revenues are declining because of competition. Intercarrier revenue is decreasing because of declining volume and regulatory decisions that lower rates. Possible reductions in federal universal service present a business risk to ILECs that serve high-cost areas. Some states have established high cost funds to replace some of these lost revenues.
- Erosion of implicit support. Local rates, especially rural local rates, have traditionally been kept low through implicit support mechanisms like urban-to-rural support flows, toll-to-local support flows, and business-to-residential support flows. Competition has put pressure on all of these support flows. A high cost fund can replace some of these support flows.

- The distribution of costs across the state. Small wire centers, which are often rural, incur higher costs than large wire centers. While a state with a homogeneous distribution of costs across its wire centers would not be likely to need a high cost fund, a state with a combination of high-cost and low-cost areas could benefit from a fund that would provide support to the high-cost areas.

Once a state decides to establish a fund, a fundamental issue is which carriers will be eligible for support. Some states define eligibility by classifying carriers. Several states, for example, have limited support to rural ILECs. Other states, following the federal model for designating Eligible Telecommunications Carriers (ETCs), determine eligibility through a designation process, using a list of supported services and often asking carriers to demonstrate or attest to their ability to fulfill specific functions.

Competitive carriers are not always eligible to apply for high cost support. Some states specifically exclude them. In several states, competitive carriers have chosen not to apply for designation. If a state decides to make competitive carriers eligible to receive support, an important consideration is how that support will be calculated. A few states base a competitive carrier's support on the carrier's own costs; other states follow the identical support rule and base support on ILEC costs. Following the identical support rule can lead to a much larger fund size.

The twenty-one states that currently have high cost funds use (or have considered using) four modes to distribute state support:

- Hold-harmless mode: This mode seeks to minimize the financial impact of regulatory change on a carrier, or category of carriers. States have created high cost funds to replace revenues lost as a result of access charge reductions or changes in regulatory rules. Some states limit the amount of support provided by establishing benchmark rates for local service. The amount of support is decreased by the amount of revenue a carrier can realize by raising local rates to the benchmark.
- Cost-based mode: This mode provides support to help defray the cost of providing service in high-cost areas. Support is calculated using either embedded costs or forward-looking costs. Some states use an embedded-cost approach for rural carriers and a forward-looking cost approach for larger, non-rural carriers. As with the hold-harmless approach, many states limit support through the use of benchmarks for local rates. A major issue is whether to include costs related to broadband infrastructure.
- Bill credit mode: Carriers provide explicit bill credits for customers who would otherwise pay retail rates above a specified benchmark. The high cost fund then reimburses the carriers for the bill credits.
- Auctions: Support is determined through competitive bidding. No state has as yet formally adopted this approach.

Contributions to high cost funds are collected through *ad valorem* surcharges on retail telecommunications services, with virtually all states with high cost funds levying those surcharges on intrastate services only. (Appendix D discusses the issue of applying surcharges

to total revenues.) About half of the states with high cost funds levy the surcharge on carriers' retail revenues, or gross receipts, while the other half apply the surcharge on customers' retail charges. Typically, ILECs, wireline competitive carriers, and interexchange carriers are contributors to high cost funds. Wireless providers and fixed VoIP providers are required to contribute in some states. The issue of whether nomadic VoIP providers should contribute is unresolved.

A few states administer their high cost funds internally, giving that task to the regulatory commission or a combination of state agencies. Most states turn to an external agency (either an industry coalition or a third-party administrator) to be the fund administrator and custodian.

States considering whether to establish a high cost fund should consider the following questions:

- Is a fund needed?
- Is there legal authority for a fund?
- What are the fund's goals?
- What services, providers, and facilities should be supported?
- What distribution mechanism is best?
- Are controls needed over fund size?
- How will funds be collected?
- Who will administer the fund?
- How will the fund be evaluated and made accountable for results?

Competition, technological advances, and shifts in consumer preferences have all weakened some of the tools that states have traditionally used to maintain ubiquitous and affordable local telephone service. The authors hope this report will provide insights for policymakers and practitioners seeking to find new mechanisms to address their universal service goals.

Table of Contents

I.	Introduction and Background.....	1
A.	Purpose and scope.....	1
B.	The survey and interviews	1
II.	Overview of State High Cost Funds.....	2
A.	States with funds.....	2
B.	States without funds.....	3
C.	Recent changes to high cost funds.....	4
III.	Factors Influencing the Need for a State High Cost Fund	6
A.	Competition and the importance of ILECs.....	6
B.	ILEC revenues	9
1.	Subscriber revenues	9
2.	Intercarrier revenue.....	10
3.	Federal universal service funds.....	13
C.	The distribution of cost	16
1.	Costs at the wire center level	16
2.	Small area cost differences	19
D.	Implicit subsidies	20
1.	“Subsidies” and “support”	20
2.	The “big three” support flows.....	21
3.	Urban-to-rural support flows	22
IV.	Eligible Recipients	25
A.	Qualifying by classification	25
B.	Qualifying by designation.....	25
1.	The federal list of supported services	25
2.	Three uses for supported service lists	27
3.	The 2005 federal designation requirements.....	29
4.	State-ETC designations and additional requirements.....	31
5.	Designation of non-ILECs	33

V.	Fund Distribution	35
A.	Hold-harmless mode	35
1.	The hold-harmless calculation	35
2.	Examples of hold-harmless state funds.....	36
B.	Cost-based mode.....	37
1.	Cost.....	38
2.	Revenue.....	47
3.	Unregulated operations	48
4.	Examples of cost-based funds.....	49
C.	Bill credit mode.....	51
1.	Examples of bill credit funds	52
D.	Auctions	53
E.	Amount of support to competitive carriers	56
VI.	Collecting State High Cost Funds	60
A.	State practices	60
B.	The revenue base.....	61
C.	Contributing services, exemptions.....	62
D.	Carrier and customer surcharges.....	64
1.	Buyer surcharges.....	65
2.	Gross revenue surcharges	66
3.	Net revenue surcharges.....	66
VII.	Administration and Evaluation.....	68
A.	Administration	68
B.	Program accountability and evaluation.....	69
VIII.	Steps in Establishing a High Cost Fund	70
A.	Is a fund needed?	70
1.	Environmental factors.....	70
2.	Alternative mechanisms.....	72
3.	Risks of explicit funds	74
B.	Legislative authority	75

C.	Setting goals.....	76
D.	Defining supported services, providers, and facilities	77
E.	The distribution mechanisms	78
1.	Support for ILECs.....	78
2.	Support for competitors	81
3.	Controls over fund size	81
F.	The collection mechanism	82
1.	Contributors to the fund.....	82
2.	Surcharging customers or carriers	83
3.	Intrastate and interstate	83
4.	Collections enforcement	84
G.	Administration	85
H.	Accountability and evaluation	86
1.	Program accountability.....	86
2.	Carrier accountability.....	86
IX.	Conclusion	88
	Appendix A – Summary of Steps to Establish a High Cost Fund.....	89
	Appendix B –Overview of State High Cost Funds.....	90
	Appendix C – Illustration of Effects of Identical Support Rule.....	143
	Appendix D – Surcharges On All Retail Telecommunications	
	Services	144
1.	State taxes and the Commerce Clause	145
2.	Universal service surcharges and TA96	147
3.	Conclusion	150

State High Cost Funds: Their Purposes, Design, and Evaluation

I. Introduction and Background

A. Purpose and scope

“Universal service” is a broad concept with many meanings. This paper covers only the principal definition: state-supervised mechanisms for collecting and distributing funds with the aim of supporting telecommunications services in high-cost areas. Common goals are to ensure that basic telephone service is ubiquitous and adequate in rural areas and that rates for basic service are affordable. Many states maintain funds that provide support for other kinds of universal service programs, including Lifeline programs for low income customers and support for schools and libraries. Those non-high-cost programs are beyond the scope of this paper.

This report is intended for state commissions and state legislatures that are considering adopting a state universal service fund to support telecommunications services in high-cost areas. The report explains why state high cost funds typically have been created and how those varying purposes are reflected in high cost support mechanisms. The report also discusses the means of obtaining revenues for such funds, as well as how funds can be best administered and evaluated.

The report is also intended for states that already have such funds but are considering changes to improve their function or effect. Even where a state is not actively considering establishing a new program or changing an existing program, this report aims to provide information about when and how such programs might become necessary.

B. The survey and interviews

During the first four months of 2009, the authors distributed a survey to the commissions in the fifty states, the District of Columbia, and the Virgin Islands. We used two survey instruments, a detailed form for states with high cost funds and a briefer form for other states. We asked about how the programs operate, whether the states have concerns with their current programs, and whether they operate other universal service programs.

Of the 52 commissions contacted, 46 states, the District of Columbia, and the Virgin Islands responded to the surveys.¹ We conducted interviews with responsible staff in all the states with state high cost funds. The findings below are based on these survey responses and interviews as well as on independent research into state statutes, rules, and decisions.

¹ Delaware, Hawaii, Louisiana, and Texas did not participate in the survey. Texas has a high cost fund, and the authors conducted a lengthy interview with staff of the Public Utility Commission of Texas.

II. Overview of State High Cost Funds

A. States with funds

High cost funds consist of mechanisms for collecting money under authority of law and other mechanisms to distribute those funds to support ubiquitous, adequate, and affordable voice service in high-cost areas. Collection mechanisms include surcharges of varying types on telecommunications services, including retail surcharges on end users, surcharges on the revenues of providers, per-line charges on Local Exchange Carriers (LECs), and per-minute charges imposed on Interexchange Carriers (IXCs).²

The following pages cite illustrative experiences of selected states. Appendix B contains detailed descriptions of the procedures and policies followed by the twenty-one states that operate high cost funds. The states with high cost funds are listed in Table 1.

Table 1. States with High Cost Funds

State	Year established
Alaska	1999
Arizona	1989
Arkansas	1997
California	1988 (A Fund); 1996 (B Fund)
Colorado	1990
Idaho	1988
Illinois	2001
Indiana	2007
Kansas	1997
Maine	2002
Nebraska	1999
Nevada	1995
New Mexico	2006 (earlier fund in 1987)
Oklahoma	1996
Oregon	2000
Pennsylvania	2000

² High cost funds differ from pooling arrangements. In pooling arrangements a rate for a specific service (or for specific services), such as toll or access charges, is based on the total relevant costs of all the carriers who provide the service and are members of the pool. The carriers all bill the established rate and report the resulting revenue to the pool. Each carrier's share of the resulting revenue is then distributed based on the carrier's costs. In a high cost fund, designated categories of service providers pay into a fund from which only those carriers that meet specific eligibility requirements can receive support.

State	Year established
South Carolina	2003
Texas ³	1987
Utah	1997
Wisconsin	1996
Wyoming	1997

Most of the funds were set up after the passage of the federal Telecommunications Act of 1996 (TA96). California's "A Fund" and funds in Arizona, Colorado, Idaho, Nevada, and Texas were created before 1996.⁴ About half of the funds were created between 1996 and 1999. Seven states created funds in 2000 or thereafter. Indiana created the newest fund in 2007.

Twelve state funds were created directly by statute or by the commission acting under a statutory mandate (three states and the California B Fund). The California A Fund and the Alaska, Arizona, Indiana, and Pennsylvania funds were established by state commission initiative.

B. States without funds

Twenty-nine states, the District of Columbia, and the Virgin Islands do not have state high cost funds. Twenty of those states, the District of Columbia, and the Virgin Islands reported that they had considered, but had not established, such a fund. The most commonly reported reason for rejecting a fund was the absence of a perceived need.

- The Michigan Telecommunications Law specified that the state commission should establish a high cost fund only if it could be demonstrated that the long-run economic cost of providing service would exceed the affordable rates for a supported service. None of the carriers in the state subsequently claimed that this condition was satisfied.
- In North Carolina, the state commission in 1998 initiated a proceeding regarding universal service. At the request of two incumbent local exchange carriers (ILECs), the commission suspended that proceeding. No one has subsequently asked that the matter be reconsidered.

³ Information about the Texas high cost fund was collected through a lengthy interview with commission staff.

⁴ New Mexico established a state fund in 1987 that never distributed support. New Mexico established its current fund in 2006.

Some states that do not have high cost funds have established other mechanisms to achieve some of the objectives of a high cost fund.⁵ These mechanisms continue to rely on intrastate access charges imposed on IXCs⁶ as a means of providing implicit support to high-cost local telephone companies.⁷ In some states these access charge revenues are pooled and a common rate is charged, while in other states the LECs charge company-specific rates. Kentucky and Washington use intrastate access surcharges rather than explicit payments to support high-cost areas.

As another example, the New York commission created an interim mechanism in 2003 to help carriers transition away from an intrastate access settlement pool.⁸ The New York Transition Fund provides cost-based support to three small ILECs.⁹ At this writing, New York no longer collects funds for this program, although the fund balance will not be depleted until 2011. The New York commission has opened a proceeding to consider establishing a statewide high cost fund.¹⁰

C. Recent changes to high cost funds

Our survey asked states with high cost funds whether they had made substantive changes to their funds during the last three years. Only a few reported making such changes.

- Arkansas reported that it had shifted its distribution calculation from a hold-harmless approach to a cost-based approach.¹¹
- California, Kansas, Nebraska, and Pennsylvania reported changing the surcharge amounts levied on fund contributors. California lowered the surcharge amount

⁵ These state commissions do not consider these mechanisms to be high cost funds. We agree with that characterization because no charge is imposed on retail lines or retail customers.

⁶ “Access charge” in telecommunications means a per-minute charge imposed by a LEC on an IXC to originate or terminate a toll call on the LEC’s network and for which the IXC has the right to bill the customer.

⁷ See section III.B.2 for a discussion of access charges as a source of implicit support.

⁸ This pool allowed ILECs to pool revenues and costs associated with providing intrastate toll services.

⁹ Other petitions are pending.

¹⁰ Case No. 09-M-0527. New York also has a Targeted Accessibility Fund to provide support for state Lifeline, E911, public interest pay phones, and telecommunications relay services.

¹¹ See section IV for an explanation of the hold-harmless and cost-based approaches.

for its B Fund and greatly reduced support to its larger “non-rate-of-return” carriers.¹² Nebraska decreased its surcharge temporarily.

- Colorado simplified its process for determining the support provided to smaller “rate-of-return” carriers, replacing a process requiring general rate cases with a streamlined data collection process.

In 2009, several other states were considering changes to their funds. Some states are contemplating changing the size or focus of the fund, with some states considering fund expansions, while others are considering measures to limit fund size.

- Alaska is considering whether to use its fund to help cover common line costs for carriers of last resort.
- California is considering ways to make its B Fund (which provides support to the larger, non-rural carriers) more competitively neutral, including the use of reverse auctions.
- Colorado has been holding workshops as a precursor to issuing an NPRM that could decrease the size of that fund.
- Pennsylvania is considering fund expansion to keep rural rates affordable and is also considering requiring contributions from wireless and VoIP providers.

¹² California’s B Fund rate in 2005 was 2.60%. The most recent rate is 0.38%.

III. Factors Influencing the Need for a State High Cost Fund

Federal laws and policies affect virtually every aspect of state universal service programs. Section 254 of TA96 is a keystone. It recognizes the states' authority to craft and implement their own universal service plans. Indeed, Section 254 states that there "should be" both state and federal support mechanisms to preserve and advance universal service.¹³ The courts have also recognized the need for a partnership between state and federal universal service programs.¹⁴

TA96 also imposes limits. State mechanisms cannot "rely on" or "burden" federal universal service support mechanisms.¹⁵ In addition, state mechanisms to collect funds for universal service must be "equitable and nondiscriminatory."¹⁶

A. Competition and the importance of ILECs

The primary goal of universal service has been to keep quality local telephone services available to all customers at reasonable rates. Historically, state commissions achieved this goal using a variety of mechanisms that allowed ILECs to reduce the monthly local exchange rates they charged to residential customers. Increasingly over time, support from the FCC became an important mechanism to support universal service as well.

Local exchange competition has dramatically changed the traditional ILEC landscape.

- Wireline local exchange competition began in the 1990s and became national policy with the passage of the Telecommunications Act of 1996. The new competitive local exchange carriers (CLECs) focused on local markets that included high volume subscribers and customers who could be served at low cost. CLECs have been most successful in limited geographic areas where costs are low and business customers are concentrated.
- Cable television systems, beginning in the early 1970s, built cable transmission and distribution facilities in the more densely populated portions of ILEC territories. By the mid-2000s, many cable companies had upgraded their networks to provide higher digital capacities. This made it possible for cable companies to offer Voice over Internet Protocol (VoIP) service, giving many customers a landline alternative to the ILEC for voice service. The new VoIP

¹³ 47 U.S.C. § 254(b)(5).

¹⁴ *Qwest Corp. v. FCC*, 258 F.3d 1191, 1203 (2001).

¹⁵ 47 U.S.C. §254(f).

¹⁶ *Id.*

service was offered, however, only in areas where the cable companies already had networks, generally the more densely populated areas.

- Wireless services have been successful competitors for local exchange service, far beyond what Congress anticipated in 1996. Although many American homes now have wireline and wireless devices, an increasing proportion are wireless-only households. Nevertheless, the wireless choices for many rural customers are limited and the wireless service quality is not always reliable.

With competition, some of the traditional mechanisms for managing local rates lost their effectiveness. Some mechanisms began to appear positively harmful. These competitive changes prompted more than a dozen states to replace traditional universal service mechanisms with new high cost funds aimed at the same universal service goals.

Even with competition, ILECs have retained a unique role in universal service. Many states make ILECs exclusively eligible to receive support from their high cost funds. This reflects an understanding, sometimes implicit, that ILECs continue to be different from competitive providers.

One can imagine a competitive market in which ILECs no longer play a unique role. Consider a case in which a state has found that each of the state's citizens has facilities-based telecommunications service available from multiple providers. All of those services are reliable and adequate. All prices are affordable. Suppose further that the state has found that each provider's network operates independently and without any essential dependencies on any other network or "linchpin" provider. Under these circumstances, a state might seriously consider abandoning all concerns for the survival of a single competitor. If an ILEC were to fail, that failure would create only a minor disturbance in an otherwise smoothly functioning system of interconnected telecommunication networks. Under these facts, to give special consideration to ILECs or any other competitor would be unnecessary, possibly even harmful.

Today's telecommunications network differs in two ways from that hypothetical case.¹⁷

1. Competitive carriers do not serve ubiquitously. In most states, facilities-based wireline competition is limited to enclaves with higher population densities, concentrations of business customers, or both.¹⁸ Wireless service is more widespread than wireline, but even it is usually unavailable or unreliable in remote and mountainous areas. In contrast, most state commissions consider

¹⁷ See Bluhm and Bernt, *Carriers of Last Resort: Updating a Traditional Doctrine*, NRRI Report 09-10 (2009).

¹⁸ In many states competitive carriers do offer local exchange service through resale of ILEC service or purchase of unbundled network elements from ILECs. That, however, does not make the competitive carrier independent of the ILEC's network.

ILECs to be bound by Carrier of Last Resort (COLR) duties. ILECs must provide retail service to all who request it, even in areas that are spurned by competitors.¹⁹ Moreover, ILECs have unique duties to retail customers such as to offer specific rate designs, discounts to certain customers, and service quality guarantees.

2. Telecommunications networks do not function independently. ILECs still have unique carrier-to-carrier duties that are essential upstream inputs (linchpin services) to other carriers, including special access (point-to-point) services, central office collocation, interoffice transport, tandem switching, and operations support systems.²⁰

For these reasons, a business and operational failure by almost any ILEC today would be likely to eliminate the sole voice service available to a substantial number of retail customers. An ILEC failure would also likely cause secondary disruptions in retail services provided by other carriers.

Competition is thus a two-edged sword for universal service. On the one hand, the existence of competitors makes ILECs seem to be no more than one of several varieties of local exchange service provider. From this perspective, it is inappropriate to focus universal service policy solely on ILECs, and it is even less appropriate to provide subsidies to ILECs that cause competitive harm to other providers. On the other hand, even with competition, the law continues to impose important specialized duties on ILECs. From the latter perspective, a state commission may legitimately concern itself with the rates charged by ILECs and may properly take steps to ensure that ILECs survive economically.

Our survey shows that states have generally taken the second choice. Even as local exchange markets have become more competitive, states continue to make ILEC rates and ILEC survival a central goal of their universal service programs. Some states simply declare that only ILECs (and in some cases only small rural ILECs) are eligible to receive that support. A few states nominally authorize support to competitors, but they often establish qualifying standards that have the effect of limiting support to these competitive carriers.

In sum, states considering high cost programs will want to evaluate the geographic extent of competition. The findings can help the state commission to differentiate zones in which competition is robust and where no governmental action is needed from “needy zones” where government intervention is needed to ensure that quality local telephone services remain

¹⁹ There may be exceptions. In some states, ILECs have limited line extension obligations. Customers who are located far away from the ILECs’ facility may need to share a portion of the construction costs.

²⁰ Operations support systems are ordering, provisioning, and billing systems that allow competitors to purchase services from the ILEC using computerized interfaces.

available to all customers at reasonable rates. Where a government program is needed, the role of the ILEC remains a key issue.

B. ILEC revenues

A state legislature or commission evaluating that state's need for a high cost fund should evaluate the business risk to ILECs. ILECs generally have three major sources of revenue. Each source affects ILECs differently. Each generates different kinds of risk.

1. Subscriber revenues

Subscriber payments are usually the largest source of ILEC revenue. A major share of subscriber revenue comes from monthly charges for basic telephone service. Yet competition and shifting consumer preferences have eroded those revenues. From December of 1999 to December of 2007, ILEC end user switched access lines decreased from 181.2 million to 129.7 million.²¹ This amounts to a compound annual loss of 4.1 percent each year in the number of subscribers who can pay fixed monthly charges.

State commissions generally do not require new entrants to serve as COLRs. Instead, new entrants are often allowed to decide where and to whom they will offer service. This increases the opportunity for a new entrant to serve only customers who currently make the largest contribution to the ILEC's common cost, a practice sometimes called "cream skimming." New entrants that are not required to serve high-cost areas find such high-contribution customers attractive because the new entrant can offer a lower price than the COLR, earn a higher profit than the COLR, or both.

While increased competition has caused ILECs to lose subscribers, the losses have not been geographically uniform. CLECs have generally concentrated on business customers and those in high-density urban areas. Cable voice competitors have generally offered their services only in areas where they already provide cable service.

When competitors succeed in attracting high-contribution customers, the ILEC loses the customers who can be served at lowest cost. The ILEC's average cost increases and the ILEC becomes less competitive. At that point the ILEC is more likely to claim a need for support from a state high cost fund.

Regulatory changes can also create risks to subscriber revenue. A few states have "rebalanced" or "de-averaged" local service rates, thereby raising rural rates. States have sometimes taken this step to increase the chances for competitive entry in rural areas, although it can also improve the ILEC's competitive position in urban areas. In Wyoming, the resulting

²¹ FCC, Industry Analysis & Technology Division, Wireline Competition Bureau, *Local Telephone Competition: Status as of June 30, 2007* (September 2008), Table 1.

high rural rates suggested the need for a state high cost fund.²² Retail rate redesign also played at least a minor role in the creation of high cost funds in some other states.²³

Other regulatory changes can also create risks to subscriber revenue. A state that expands the size of its local calling areas can also reduce an ILEC's subscriber revenue from toll usage. Idaho and Maine both established their high cost funds in part due to decisions to expand local calling areas.²⁴

Jurisdictional reclassifications can also affect subscriber revenues. The FCC has declared a wide range of services to be either interstate telecommunications services or interstate information services. While these reclassifications do not generally affect a carrier's total revenue, they can reduce intrastate revenue and lead to basic rate increases.

2. Intercarrier revenue

Intercarrier payments are the second major source of ILEC revenue. By one estimate, small rural carriers across the nation typically receive about 29% of their total net telephone company operating revenue from intercarrier payments. For some companies, this percentage is as high as 49% of total net operating revenue.²⁵

A large component of ILEC intercarrier revenue comes from IXCs that use the ILEC networks. Before the breakup of AT&T in the mid-1980s, toll revenue came solely from AT&T, since it was the sole nationwide toll carrier. Using a procedure known as "division of revenues," AT&T allocated some of its toll revenues to the ILECs. The revenue from toll services covered a large share of ILEC fixed costs, thereby allowing the ILECs to reduce rates for basic service.

²² The Wyoming state legislature passed a statute in 1995 directing the state commission to ensure that no telecommunications rates were below cost. This led the commission to de-average local rates. Wyoming created a state high cost fund shortly thereafter that limits the highest rates to 130% of the statewide average rate.

²³ In our survey, the Illinois, Kansas, Maine, Nebraska, and New Mexico commissions reported that retail rate design changes had played a role in their decisions to create high cost funds.

²⁴ A decision to expand local calling areas generally decreases subscriber-paid toll revenues. It also decreases intercarrier revenues from access payments.

²⁵ Raymond Henagan, Statement on Behalf of the National Telecommunications Cooperative Association, before the U.S. Senate Committee on Commerce, Science, and Transportation, April 23, 2008.

After the 1984 breakup of AT&T, the FCC replaced the division of revenues system with the “access charge” system.²⁶ The FCC has rate jurisdiction over access for interstate calls. State commissions have similar jurisdiction over access for intrastate calls. When the access charge system was first established, the FCC and the states continued the former practice of requiring IXCs to make a large contribution to the fixed costs of the LECs. This practice led to high per-minute access rates.

The FCC has also established a mechanism for participating carriers to share some of their interstate intercarrier revenues. The National Exchange Carrier Association (NECA) operates a pool for interstate access revenues. NECA files monthly tariffs on behalf of participating small telephone companies that establish uniform access rates. This simplifies the administrative burdens on these carriers. Participating carriers pool all their interstate access revenues. They receive revenue from the pool based on their interstate revenue requirement. The NECA pool provides a significant share of the operating revenue of some smaller ILECs.

Access revenues have been eroding for many years.²⁷ One obvious reason has been a change in usage patterns. Many states have expanded local calling areas, converting many toll calls to local and eliminating access revenues. Increasing use of cell phones is another factor, as well as the wider local calling areas available from mobile phones.²⁸ Some customers have substituted Internet-based services for traditional switched toll calling.

A general decrease in rates has also caused access revenue erosion. Toll rates are now a fraction of what they were in the 1980s. On the interstate side, the FCC has dramatically revised the access charge structure, greatly reducing the rates and the implicit support generated from toll service. One round of access reductions in the 1980s led to the creation of the “Subscriber Line Charge,” which subsequently increased to balance further access charge reductions.²⁹ In 2000 and 2001, the FCC adopted the “CALLS” and “MAG” plans, each of which further

²⁶ “Access charge” in telecommunications means a per-minute charge imposed by a LEC on an IXC to originate or terminate a toll call on the LEC’s network and for which the IXC has the right to bill the customer.

²⁷ The FCC has reported that access revenues for the telecommunications industry declined from \$21.4 billion in 1997 to \$11.8 billion in 2005. FCC, *Statistics of Communications Common Carriers, 2005/2006 Edition*, Table 6.19.

²⁸ The FCC has created special interconnection rules for mobile carrier calls that originate and terminate in a single “Metropolitan Trading Area” (MTA). The mobile carrier pays only reciprocal compensation, not access charges. MTA areas are generally larger than local calling areas for landline phones.

²⁹ This fixed customer charge today can be as high as \$6.50 per line per month for residential customers.

reduced interstate access charges for different groups of LECs.³⁰ On these two later occasions, the FCC replaced lost access revenues with revenue from new universal service support programs.³¹

Industry groups supporting the “Missoula Plan” have asked the FCC to mandate further reductions to interstate access rates. The proposal also asked the FCC to assert jurisdiction over *intrastate* access rates, mandating a reduction from the comparatively high rates still authorized in many states.³² During our survey, several states expressed concern about the possibility that the FCC might adopt this proposal.³³

Many state commissions have reduced intrastate access charges. Some states have made minor reductions, as a part of routine rate cases. Other states have enacted more dramatic changes, sometimes by legislation, and sometimes requiring that intrastate rates “mirror” (be equal to) interstate rates.

A third reason behind the erosion of access revenue has been what is often called “phantom” traffic, the increase in calls that lack sufficient information for billing purposes. This problem takes several forms. Some voice calls have insufficient information to identify the jurisdiction of the call or the carrier financially responsible. Some calls are identified as local even though they originated outside the local calling area. In some cases IXCs have simply not paid access bills to ILECs.

States today have at least two reasons to consider further reductions to intrastate access rates. Anticipating that access revenues will decline less if rates are lower, some ILEC groups now advocate for access rate reductions matched with hold-harmless support. A second reason is “traffic pumping,” in which LECs increase their access minutes by unusual mechanisms such

³⁰ After CALLS and MAG, all common line costs were recovered from a combination of SLC charges (customer-paid fixed monthly charges), universal service support payments, and, in the case of NECA carriers, revenues from the NECA common line pool.

³¹ The “Interstate Access Support” program provides support for the interstate cost of “price cap” carriers. The “Interstate Common Line Support” program provides support for the interstate cost of other non-price cap carriers.

³² See generally, Liu, *Intercarrier Compensation Reform at Debate: Major Issues of the Missoula Plan*, National Regulatory Research Institute, Report No. 07-05.

³³ Our survey asked whether states had analyzed the potential effects of federal intercarrier compensation reform. California and Washington evaluated the likely impact of federal ICC reform. Several other states are monitoring the issue and filed comments with the FCC. They were particularly concerned that the FCC might not create an adequate revenue replacement mechanism and would thereby harm carriers and customers and increase the financial pressure on state universal service programs. One state said that adoption of the Missoula Plan could lead it to establish a high cost fund for the first time.

as free conference lines. Traffic pumping can greatly increase terminating access volumes and ILEC profits. For these and other reasons, several states reported that they are considering making further reductions to intrastate access rates.

In several states, episodes of access rate reduction have been the proximate cause of a new state high cost fund. As states lowered access rates, they offset some or all of the ILEC financial losses with support from new high cost funds.³⁴ Alaska, Arkansas, Colorado, Illinois, Indiana, Kansas, Pennsylvania, and Wisconsin³⁵ each reported that reductions to access charge rates had influenced their decisions to create high cost funds. This history is not surprising given the strong financial relationship between access charges and local rates. Even today, many carriers derive a major share of revenue from intrastate access and toll.

In sum, the volume and trends in intercarrier revenues are relevant to whether a state needs a high cost fund. If the commission plans to mandate reductions of intrastate access charges, it should evaluate the need for adopting a high cost fund to replace lost revenues.

3. Federal universal service funds

The third major source of ILEC revenue is federal universal service payments. Limiting consideration to programs aimed at supporting high-cost areas, the FCC operates five separate support programs for ILECs.³⁶ Support is administered for the FCC by the Universal Service Administrative Company (USAC).

³⁴ Some states also adjusted retail rates at the same time, often upward to a “benchmark” or acceptable level.

³⁵ Wisconsin reported that access reform was the original impetus for its fund, although the basis for support distributions later changed.

³⁶ The FCC also operates two relatively minor programs called the “Safety Net” program (for carriers with large recent investments) and the “Safety Valve” program (for carriers with large investments in acquired exchanges).

Table 2 identifies the five major federal high cost programs.

Table 2. Federal High Cost Programs

Program	Year	Eligible ILECs³⁷
High Cost Loop	1984 ³⁸	Rural
Local Switching Support	1988 ³⁹	Rural
High Cost Model Support ⁴⁰	1999 ⁴¹	Non-rural
Interstate Access Support	2000 ⁴²	“Price Cap” under FCC rules
Interstate Common Line Support	2001 ⁴³	“Rate of Return” under FCC rules

Federal support can be a major revenue source for the smaller rural ILECs, enough to reduce or even eliminate the need for a state high cost program. The “High Cost Loop” (HCL) program provides support to 1,100 of the nation’s 1,353 ILEC rural carriers, roughly 80%. The average payment is \$4.69 per line per month. For a minority of rural companies, HCL support is substantial: 230 carriers receive HCL support of at least \$30.00 per line per month; and 39 carriers receive support of at least \$100.00 per line per month.⁴⁴

³⁷ All five support programs generate indirect support for competitive ETCs through the Identical Support Rule.

³⁸ See FCC, *Amendment of Part 67 of the Commission’s Rules and Establishment of a Joint Board*, CC Docket No. 80-286, Decision and Order, 96 FCC 2d 781 at ¶ 29 (1984).

³⁹ 47 C.F.R. § 36.125. See FCC, *MTS and WATS Market Structure, Amendment of Part 67 (New Part 36) of the Commission’s Rules and Establishment of a Joint Board*, CC Docket Nos. 78-72, 80-286 and 86-297, Order on Reconsideration and Supplemental Notice of Proposed Rulemaking, 3 FCC Rcd. 5518 (1988). Effective 01/01/89

⁴⁰ The FCC sometimes calls this program “Forward Looking Support.”

⁴¹ FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Ninth Report and Order, 14 FCC Rcd. 20432 (1999) (subsequent history omitted).

⁴² See FCC, *Access Charge Reform*, CC Docket No. 96-262, Sixth Report and Order, 15 FCC Rcd. 12,962 (2000) (*CALLS order*).

⁴³ FCC, *Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers*, Second Report and Order and Further Notice of Proposed Rulemaking, 16 FCC Rcd. 19613, 19667-68 (2001) (*MAG Order*).

⁴⁴ Source: USAC reports for the fourth quarter of 2009.

Federal support is less generous for so-called “non-rural” carriers such as AT&T, Verizon, or Qwest. Federal high cost support to non-rural carriers is provided under the “High Cost Model Support” program. This program provides support to carriers in only 10 states. In those ten states, the average support payment is \$2.58 per line per month.⁴⁵ The courts have repeatedly found that the FCC has failed to demonstrate the sufficiency of this support.⁴⁶

For some ILECs, federal support creates a strong financial incentive for further investment. Approximately 80% of rural ILECs have loop costs sufficiently high to receive HCL support. When a supported ILEC makes an additional investment in loop plant, 65% of the additional carrying cost is recovered as HCL support.⁴⁷ Moreover, 25% of the additional carrying cost is assigned to the interstate jurisdiction by separations.⁴⁸ In sum, when a rural ILEC already eligible for HCL support makes an additional loop investment that increases its carrying cost by \$1.00, it recovers an additional \$0.90 from federal sources.⁴⁹ Most rural carriers can therefore invest in high-quality loop facilities at a small additional monthly cost to their own local subscribers.

The incentives for non-rural ILECs are quite different. For these carriers, Model Based Support, if any, is based on costs that are produced by the FCC’s proxy model. The model, however, is uninterested in the carrier’s actual investment. An incremental investment in loop plant by a non-rural carrier has no effect on its support. This difference in incentive structures helps explain why several state commissions reported that the rural carriers in their states have deployed more broadband Internet facilities than have their non-rural carriers.

⁴⁵ *Id.*

⁴⁶ The Tenth Circuit Court of Appeals has twice remanded the High Cost Model Support program back to the FCC for further consideration. In the second decision issued in 2005, the court remanded because those rules “ensured that significant variance between rural and urban rates will continue unabated.” *Qwest Communications International Inc. v. FCC*, 398 F.3d 1222, 1237 (10th Cir. 2005). At the end of 2009, the FCC had not taken a substantive action on that order. On December 15, 2009, the FCC issued a *Further Notice of Proposed Rulemaking (FCC 09-112)* and stated that it will not be feasible for it to take actions on universal service reform before April 16, 2010.

⁴⁷ Under 47 C.F.R. § 36.631(c)(1), for small rural carriers with fewer than 200,000 lines, 65% of loop investment carrying cost above a fixed benchmark is transferred to the interstate jurisdiction. The benchmark is nominally 115% of the national average cost, although the actual benchmark has been raised because of an overall spending cap in the HCL program.

⁴⁸ *See* 47 C.F.R. § 36.154(c) (25% of investment in common lines assigned to interstate).

⁴⁹ For a carrier with fewer than 200,000 lines and costs above the second benchmark, the expense transfer is 75% or cost rather than 65%. Therefore the total interstate allocation of incremental cost is 100%. 47 C.F.R. § 36.631(c)(2).

Gradual erosion of federal support creates a business risk for ILECs serving high-cost areas. For example, the HCL program operates under a fund size cap. That cap effectively moves support from one carrier to another over the course of time. Even an ILEC that has constant costs can find that its HCL support decreases over time if other ILECs receiving HCL support have increasing costs.

Policy revision is a second risk. Federal universal service programs have proven quite durable, but they are under frequent criticism. The FCC or Congress might make dramatic revisions to these programs that could generate a need for a state high cost fund.

In sum, a state considering establishing a high cost program should evaluate the sufficiency of federal high cost support. In some states, rural areas are served by small rural carriers and federal support obviates the need for a state high cost program. In other states the high-cost regions are served by a non-rural carrier and federal support is likely to be minimal or nonexistent. State commissions should also remain aware of trends in ILEC support, if only to anticipate a future demand that state funds should replace losses in federal support.

C. The distribution of cost

How costs fall within a state must be a principal consideration in whether that state needs a high cost fund. On a per-customer basis, urban costs are usually lower than rural costs. The typical urban customer is served by a relatively short “loop” of telephone wire and by large central offices with low average cost. Conversely, a typical rural customer may be served by a long loop and a small switch that is located scores of miles from the main toll network. The cost per line can be many times higher in a rural area.

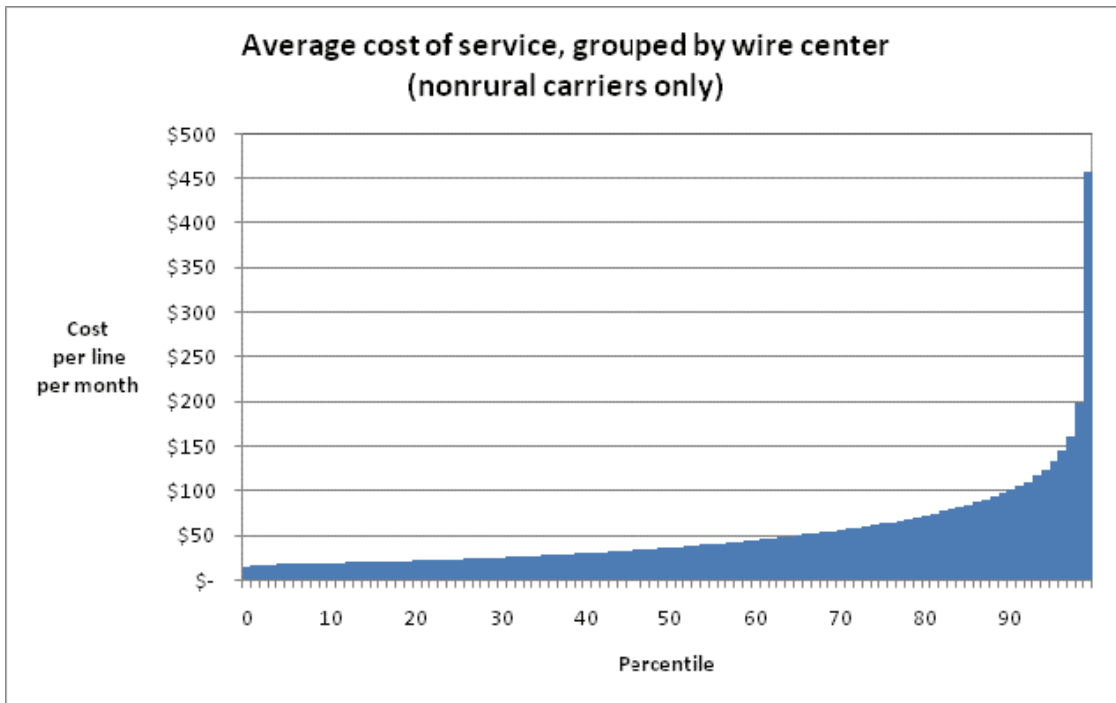
1. Costs at the wire center level

While most regulators intuitively understand that costs are higher in rural areas, it is more difficult to appreciate the scale of those differences. Fortunately, computerized cost models can help. During the 1990s, the FCC developed a computerized model to estimate the cost of constructing a new telephone network. The FCC often calls this its “proxy” cost model because the program virtually constructs a network as a proxy for the real network.⁵⁰ The proxy model

⁵⁰ The FCC has explained that proxy models typically are designed to answer the following question: “If a single carrier were to build an efficient network today to serve all customer locations within a particular geographic area, taking as given only the locations of existing [ILEC central offices], how much would it cost to construct and maintain the network?” FCC, *Review of the Commission’s Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers*, WC Docket No. 03-173, FCC 03-224 (*UNE Pricing NOPR*) π 49.

estimated the monthly costs per line for each of the 12,499 wire center areas⁵¹ operated by large “non-rural” carriers throughout the United States. Chart 1 displays that cost distribution.

Chart 1. Forward-looking Cost, Averaged by Wire Center Area, by Percentile (Non-rural Carriers Only)



Source: FCC proxy model outputs for 2000, authors' calculations.

Chart 1 illustrates why cost is so important in evaluating the need for a state fund.

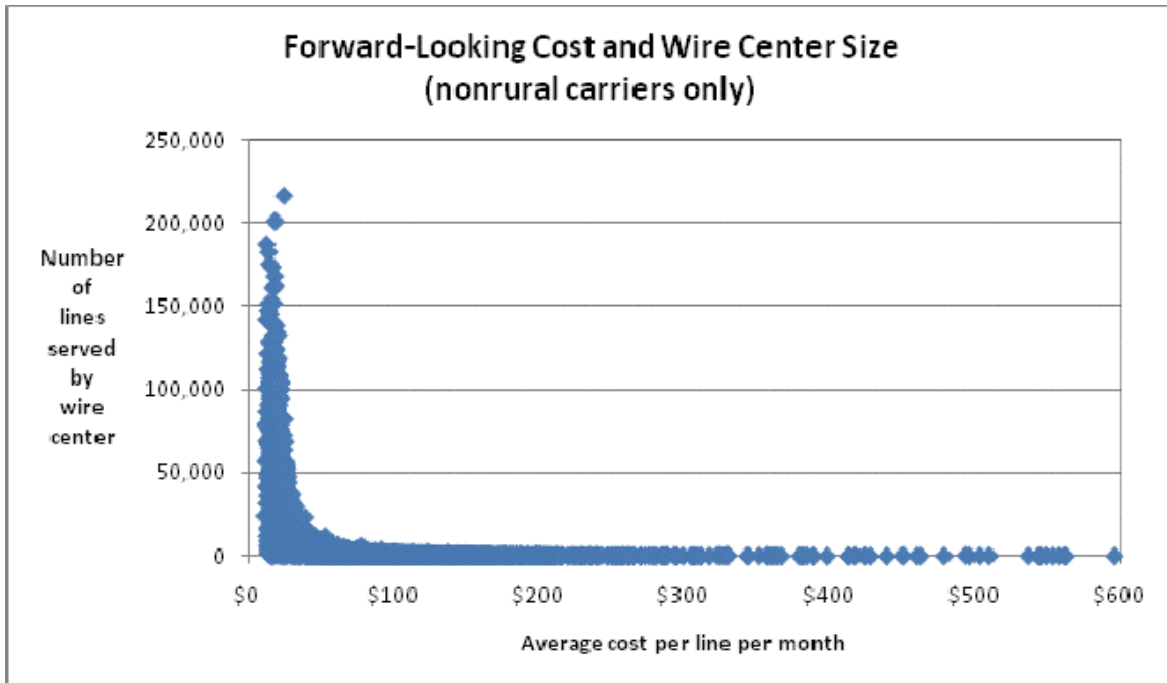
1. Most wire centers have above-average costs. The national average cost of \$23.36 occurs in the 25th percentile of wire centers. This means that for every wire center with below-average cost, there are approximately three with above-average cost.
2. Many wire centers have high costs. The \$50 cost barrier is crossed at the 65th percentile. The \$100 cost barrier is crossed at the 90th percentile. Revenues to cover such costs usually require local rates at a level that most states would consider unaffordable.

⁵¹ “Wire center area” here describes the area served from a single ILEC “central office.” The area is also sometimes called an “exchange” area or a “central office” area.

3. A few wire center areas have extraordinarily high costs. The 99th percentile group has an average cost of over \$457 per line per month. This is far in excess of the revenues available to an ILEC charging affordable local rates.

The FCC proxy model results also show that population density is a strong predictor of cost. Chart 2 shows the relationship between wire center size and cost for all 12,499 wire center areas.

Chart 2. Relationship of Wire Center Area Size and Cost



Source: FCC proxy model outputs for 2000, authors' calculations.

Chart 2 shows that nearly all large wire center areas have relatively low costs. Conversely, nearly all wire center areas with high costs serve few customers. The most costly 1,000 wire center areas have an average size of 416 lines, a size characteristic of very rural areas or very small towns.

Wire center size is itself a good proxy for population density. Most small wire centers typically are found in rural areas. Conversely, most large wire centers are found in urban areas. Chart 2 therefore argues that low-density areas generally have high costs, in many cases very high costs.⁵²

The distribution of costs among customers is quite unlike wire centers. If three quarters of *wire centers* have above-average cost, it is equally true that three quarters of *customers* have below-average costs. The average cost in the FCC national data set was \$23.35 per line per month. 74% of the lines had a cost below that average. 95% of the lines had costs below \$40 per month.⁵³

2. Small area cost differences

The FCC proxy cost data treat costs as though they were uniform within each wire center. In actuality, costs often vary a great deal within a single wire center. This phenomenon has been described metaphorically as the “donut” and “hole” problem. The donut is the area at the periphery where loops are long and costs are high. The hole is the area adjacent to the wire center building where loops are short and costs are low. If these intra-wire center cost variations are considered, the cost differences among customers becomes even wider than is suggested by the proxy models.

Today, these small-scale cost differences are more economically relevant to universal service policy than they were in 1999 when the FCC designed its proxy model. Competitors today seldom serve an entire wire center area. Instead, they often avoid building facilities in the high-cost “donut” at the periphery.⁵⁴ When an ILEC’s customer in the “hole” switches to such a competitor, the ILEC’s average cost increases to serve its remaining customers. This can force the ILEC to raise its rates, possibly to unaffordable levels. Even where an ILEC does not raise its local rates, it may present a claim for high cost support in return for complying with COLR obligations in the high-cost donut at the periphery.

In sum, the cost profile within a state is an important factor in deciding whether the state needs a program. Three cases illustrate the problem.

⁵² The FCC agrees. FCC, *Matter of Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Tenth Report and Order, FCC 99-304, π 26 (1999). Although not illustrated here, costs are also influenced by geographic factors such as topography, soils, and climate.

⁵³ This apparently paradoxical result occurs because high-cost wire centers tend to serve few customers.

⁵⁴ For example, a CLEC might overbuild a few blocks of a downtown area, or a cable company might serve the more densely populated portion of an exchange area. A wireless ETC might serve a downtown area with its signal, using wireline resale for the mountainous edge of a service area.

1. A state with homogeneously low costs is unlikely to need a high cost program. In that state, customers are likely to have uniformly low rates, and service is likely to be ubiquitous without any government fiscal intervention.

2. A state with homogeneously high costs is unlikely to benefit from a high cost fund. In that state, any fund would accomplish little because all customers would have to pay a high rate to provide a meaningful benefit, and nearly all customers would receive benefits. While the amount of money raised and spent might be large, the net effect would be small.

3. A state that has some high-cost areas and some low-cost areas is most likely to need and to benefit from a high cost fund. In that state, high-cost areas can benefit from support, and the added universal service surcharge is unlikely to make monthly bills unaffordable.

D. Implicit subsidies

State commissions historically have supported low residential local rates using a variety of mechanisms. It has been common in the telecommunications industry to call these arrangements “implicit subsidies.” For example, urban customers are often said to “subsidize” rural customers.

1. “Subsidies” and “support”

Economists define the term “subsidy” narrowly. An economic subsidy occurs only when one customer receives service at a rate that is below the carrier’s “marginal cost.” Marginal cost is defined as the additional cost of providing one additional unit of output. In telecommunications, marginal cost usually means the additional cost to an ILEC from adding a single customer to its network.⁵⁵

Within the telecommunications industry, most costs are fixed. To operate a network, an ILEC must make a large investment in poles, wires, and switches. Once that investment has been made, the marginal cost of serving an additional customer is small.⁵⁶ For this reason, true subsidies in telecommunications are rare.

⁵⁵ Marginal cost can also mean the additional cost of providing one more minute of usage, particularly toll usage.

⁵⁶ In the extreme case, a new customer has telephone wires already serving his or her location and can often be served simply by issuing a software command at the central office switch.

Assertions about “subsidies” in telecommunications often are best understood as statements about differences in *average* cost between areas or customer groups.⁵⁷ If urban customers do indeed impose lower average costs than rural customers, then state and federal regulators can legitimately consider that fact in setting rates. However, it is not generally accurate to describe this arrangement as a “subsidy.” It would be accurate to say that the urban customer makes a larger contribution to fixed costs than the rural customer. Or, one might say that the urban customer provides “implicit support” to rural customers.

2. The “big three” support flows

The FCC used the term “subsidy” in the less precise way in 1997, soon after TA96 was enacted. The FCC defined subsidy as an occasion where “a single company is expected to obtain revenues from sources at levels above cost (i.e., above competitive price levels) and to price other services allegedly below cost.”⁵⁸ The FCC found that universal service had been achieved largely through three kinds of subsidy.⁵⁹

- 1, The urban-to-rural subsidy. ILECs that serve rural areas tend to have high average costs because their rural customers require longer wires and more utility poles. In addition, rural switches tend to be smaller and cost more per customer served. Despite these widespread cost differences, rates have not matched costs. Local exchange rates in rural areas generally are the same as urban rates. In some areas, “value of service” pricing produced lower rural rates.⁶⁰
2. The toll-to-local subsidy. ILECs often also impose high access charge rates when the ILECs provide origination or termination services to IXCs. The marginal cost to the ILEC of providing this service is often far lower than the access rate.

⁵⁷ In economics, the “average cost” of a business enterprise is the sum of all its fixed and variable costs divided by its total output.

⁵⁸ FCC, *Federal-State Board on Universal Service*, CC Docket No. 96-45, Report and Order, 12 FCC Rcd. 8776, π 10, note 15 (1997) (*First USF Order*) (internal quotations omitted).

⁵⁹ *Id.*, π 10. The FCC also briefly mentioned higher rates for “vertical features” as a mechanism that keeps local rates low. *Id.* π 14.

⁶⁰ The value-of-service principle adjusts rates based on the number of telephone numbers that a subscriber can reach without incurring toll charges. In an urban area, customers pay higher rates because they can make local calls to hundreds of thousands of lines, or even millions. In a sparsely populated rural area, rates are lower because local calls can reach only a small number of lines. The rural value-of-service was lower because a call to reach community services such as schools and doctors was often likely to be an expensive toll call.

3. The business-to-residential subsidy. ILEC business rates are almost universally higher than residential rates, yet the underlying cost of providing service to these customers is approximately equal.

The FCC went on to announce a goal for its own universal service programs, as well as state programs. The goal was to replace these implicit subsidies with explicit subsidies paid through state and federal high cost programs.⁶¹

At least initially, the courts seemed to approve of the FCC's statutory interpretation of state duties.⁶² Later courts, however, clarified that federal law does not require states to eliminate all existing implicit subsidies. Congress did not "expressly foreclose the possibility of the continued existence of state implicit support mechanisms that function effectively to preserve and advance universal service."⁶³

Even if federal law does not mandate that states eliminate implicit subsidies, many states have chosen to do so, for economic and policy reasons of their own. Many existing state high cost funds were created incidental to actions that reduced the toll-to-local "subsidy" (or in a few cases the urban-to-rural "subsidy"). Several state commissions today are considering whether to take similar steps.

3. Urban-to-rural support flows

Of the three kinds of implicit support identified by the FCC, the urban-to-rural transfer presents the greatest challenge to state commissions. One reason is the declining size of the other two support flows. The toll-to-local support flow has decreased as the FCC (and many states) lowered access and toll rates in the years following 1996. The FCC enacted notable reductions in interstate access rates in 2000 and 2001. The business-to-residential support flow has also decreased as larger business customers have increasingly shifted their

⁶¹ *First USF Order*, ¶ 14 ("States, acting pursuant to sections 254(f) and 253 of the Communications Act, must in the first instance be responsible for identifying intrastate implicit universal service support. We further believe that, as competition develops, the marketplace itself will identify intrastate implicit universal service support, and that states will be compelled by those marketplace forces to move that support to explicit, sustainable mechanisms consistent with section 254(f).") One federal court went so far as to state that TA96 "does not permit the FCC to maintain *any* implicit subsidies for universal service support."

⁶² *Texas Of'c of Public Utility Counsel v. FCC*, 183 F.3d 393, 425 (5th Cir. 1999) (plain language of statute "does not permit the FCC to maintain *any* implicit subsidies for universal service support") (emphasis in original); *Texas Of'c of Public Utility Counsel v. FCC*, 265 F.3d 313, 318 (5th Cir. 2001) ("The 1996 Act thus required that the implicit subsidy system of rate manipulation be replaced with explicit subsidies for universal service.")

⁶³ *Qwest Communications Int'l. Inc. v. FCC*, 398 F.3d 1222, 1233 (10th Circuit 2005).

telecommunications to “Centrex” and unswitched services and as ILECs developed competitive new bundles of services for business customers.

The urban-to-rural support flow challenges state commissions because different industry groups have such divergent views.

- To ILECs, the problem lies in urban areas. The urban-to-rural implicit support flow raises the ILEC’s rates in urban areas. This creates an advantage for competitors who have no comparable burden to support rural areas. Some ILECs advocate making this support flow explicit because an explicit fund can spread the financial burden equally to all local exchange competitors. ILECs have nevertheless been cautious in recommending high cost programs. In some states, the ILECs have advocated for explicit funds only after they suffered substantial line losses.
- To competitors, the universal service problem, if any, lies in rural areas. Where ILECs receive support for rural customers, a facilities-based competitor can find it economically impossible to match the incumbent’s subsidized price. Even where a new entrant has a less costly technology, the universal service subsidy can offset that advantage. For these reasons, competitors are generally reluctant to support high cost programs under any circumstances. Where such programs do exist, competitors often focus their advocacy on gaining the right to receive support payments in amounts equal to the ILEC.

Federal universal service support also complicates the analysis of the urban-to-rural support flow. Federal support varies greatly from one geographic area to another, even where costs are similar. Federal support to rural ILECs has been generous, allowing some rural ILECs to set low local rates. Where local rates are low, the urban-to-rural support flow is small and competitive effects are proportionally weaker. By contrast, many equally costly areas served by larger companies receive no federal support for intrastate costs. It is a complex task for state commissions to sort out how these support differences affect competition, universal service goals, and the need for a state high cost fund.

The main barrier to making the urban-to-rural support flow explicit is insufficient financial resources. Depending on how the task is defined, the implicit support flow can be larger than the funding levels practically available to a state high cost fund. The size of the task depends critically on the scale at which the state chooses to look at costs.

Historically, cost data have always been averaged at some scale. All cost-based support mechanisms therefore reflect a scale decision. Federal programs created before 1996 operate at the “study area” level, which equates roughly to each carrier’s service area in each state. The advent of proxy models made it possible to estimate costs at the wire center level, and even below that level. The FCC’s program for non-rural ILECs, the Model Based Support program, uses proxy model cost data generated at the wire center level, but those costs are subsequently averaged at the state level.

When costs are averaged across a large area, low costs in one area frequently offset high costs in another area. This averaging effect drives the results toward the mean, thereby reducing the cost dispersion as well as the apparent need for support. Therefore, averaging cost over a large area reduces the apparent size of the implicit support flows. We illustrate this effect using the FCC’s proxy model. For this exercise, we applied a generic cost-based support mechanism to that cost data.⁶⁴ Table 3 illustrates how changing the scale of cost averaging alters the support demand.⁶⁵

*Table 3. Effect of Cost Averaging Scale on Support Demand
(U.S. non-rural company areas)*

Cost Averaging Scale	Total Cost of Service (billions)	Switched Lines (millions)	Support Parameters	Supported Lines (millions)	Fund Size (millions)
State	\$45.5	162.6	\$30.00 / 100%	7.6	\$416
Study area	\$45.5	162.6	\$30.00 / 100%	15.4	\$1,300
Wire center	\$45.5	162.6	\$30.00 / 100%	19.5	\$3,686

The last two columns of Table 3 show that, assuming constant support parameters, at finer scales of cost averaging, the number of supported lines and the fund size both increase. In this illustration, averaging cost at the wire center level costs almost ten times as much as calculating costs at the state level.⁶⁶

Cost patterns within individual states vary from this illustration. Also, a state might replace only a portion of the implicit urban-to-rural support flow or it might use a higher benchmark for support eligibility. Nevertheless, the example illustrates why it is financially difficult to replace all implicit support with explicit support. If one seeks to make all of the urban-to-rural support flow explicit, one must measure cost at a fine scale, and the resulting financial demand can be dauntingly large.

⁶⁴ We set the cost “benchmark” (threshold for support) at \$30.00 per line per month, which is 128% of average cost in that data set. Support is calculated as equal to 100% of any excess of cost over that benchmark. The benchmark used here is approximately equal to the benchmark currently used by the FCC’s High Cost Model Support program (\$28.13).

⁶⁵ Source: FCC public cost data for 2000, (available at <http://www.fcc.gov/wcb/tapd/hcpm/welcome.html> - “wirecenter support spreadsheet”), author’s calculations.

⁶⁶ The FCC’s proxy cost data did not permit us to take the last step, measuring cost differences below the wire center level. This additional step is necessary to eliminate implicit support flows from “holes” to “donuts.”

IV. Eligible Recipients

A threshold task for any high cost program is to define which carriers will receive or benefit from support, and what will be required of them. Some states answer this question using carrier classifications. Other states use a designation process that measures the individual characteristics or capabilities of the carriers.

A. Qualifying by classification

Some states provide support for some carriers and deny it to others, based upon classifications of those carriers, either by function or by technology. Often these classifications are made by statute. Among states that qualify by class, the overall pattern is to provide most or all support to ILECs, often solely to rural ILECS.

- Idaho and Illinois law limits support to rural ILECs.
- Nevada provides support only to carriers of last resort.
- Oklahoma's OUSF and HCF payments are available only to rural ILECs.⁶⁷
- Pennsylvania limits support solely to ILECs, but excludes Verizon Pennsylvania and Verizon North.⁶⁸
- South Carolina provides support only to ILECs that are COLRs.

Some states exclude one or more classes of carriers from eligibility. California, Wisconsin, and Oregon make wireless carriers ineligible.

B. Qualifying by designation

Some states provide support only to carriers that have individually been found qualified. Following terminology and practice from federal law, these states often "designate" the carriers eligible for state support by issuing an order based on findings about the carriers' capabilities, policies, and practices.

1. The federal list of supported services

Federal law has been a template for many state designation decisions.⁶⁹

⁶⁷ Oklahoma makes support for Internet connections and schools and libraries available more broadly.

⁶⁸ Pa. Code tit. 52 § 63.162.

⁶⁹ Alaska, California, Illinois, Pennsylvania, South Carolina, and Wyoming determine eligibility for state support on some basis other than federal ETC designation.

- Colorado, Indiana, Nevada, Oklahoma, Oregon, and Wisconsin use federal ETC designation as the sole qualification for state support.
- Arkansas, Idaho, Kansas, Nebraska, New Mexico, and Utah require federal ETC designation, but that alone is not sufficient to establish eligibility for state support.

Under federal law, a carrier must be designated as an Eligible Telecommunications Carrier (ETC) before it becomes eligible for federal high cost support.⁷⁰ States are authorized under federal law to conduct these federal designation proceedings. Most states accept this delegation of federal authority, holding these hearings whenever a carrier seeks a federal designation.⁷¹

To qualify as a federal ETC, a carrier must show that it offers a list of “services” throughout its service areas and advertises the availability of those services.⁷² The FCC has defined a list of “supported services” that contains nine elements:⁷³

1. Voice-grade access to the public switched network, with the ability to place and receive calls;
2. Local usage;
3. Dual-tone multi-frequency signaling or its functional equivalent;
4. Single-party service;
5. Access to emergency services, including, in some instances, access to 911 and enhanced 911 services;
6. Access to operator services;
7. Access to interexchange services;
8. Access to directory assistance; and
9. Toll limitation services for qualifying low-income consumers.

This list has been widely used by the states, but it has some limitations. First, the list does not describe “services” in the usual sense of a benefit that can be purchased separately, like dry cleaning and a haircut. Rather, the federal list describes the benefits that can be purchased only as a component of basic local exchange service.

Some of the federal elements are already required by law, at least from ILECs. For example, all ILECs must provide access to emergency services, even to customers who, for whatever reason, might not want to pay for them. Similarly, many states have eliminated “party

⁷⁰ 47 U.S.C. § 214 (e)(2). Following federal practice, many states also call the carriers eligible for state high cost support “Eligible Telecommunications Carriers.”

⁷¹ Virginia is one state that does not hold designation hearings. A few states decline to hold hearings for wireless carriers.

⁷² *See generally*, 47 U.S.C. § 214(e).

⁷³ 47 C.F.R. § 54.101(a).

line” service⁷⁴, thereby effectively making single-party service a mandatory feature of local service.⁷⁵

One element in the federal list has never been defined. In 1997 the FCC promised to prescribe by the end of that year how many minutes of flat-rated local usage service would be required to be included within local usage.⁷⁶ The FCC has never made that decision. When two wireless carriers sought designation at the FCC in 2004, the commission sidestepped the requirement, accepting assertions that the carriers would in the future comply if the FCC should ever define the requirement.⁷⁷ Therefore, the federal local usage requirement can be meaningless, at least in relation to mobile service providers.

2. Three uses for supported service lists

Many states have adopted a version of the federal list of nine services to qualify carriers for eligibility. In practice, such lists have produced effects of other kinds.

For the most part, high cost funding is not used directly to provide retail services. Rather, it is used to construct and maintain network facilities and to support company functions such as customer service. A high cost program administrator therefore must translate any list of services into operational decisions about facilities. One decision category is how the list should affect the measurement of cost and the calculation of support. Another decision category is how the list should constrain the carrier’s use of support. A list of supported services therefore can answer three different questions, as shown in Table 4.

⁷⁴ Party line service used a single loop for multiple customers, each of whom had a distinctive ring.

⁷⁵ Even if the federal list describes components of basic exchange service, one such component is optional, at least in some states. Touch-tone dialing is an optional feature in some areas and generates a separate monthly charge.

⁷⁶ *USF First Report and Order*, π 67.

⁷⁷ FCC, *Federal-State Joint Board on Universal Service; Highland Cellular, Inc. Petition for Designation as an Eligible Telecommunications Carrier for the Commonwealth of Virginia*, CC Docket No. 96-45, Memorandum Opinion and Order, π 15, 19 FCC Rcd. 6422 (2004) (“*Highland Cellular*”); FCC, *Virginia Cellular, LLC Petition for Designation as an Eligible Telecommunications Carrier for the Commonwealth of Virginia*, CC Docket No. 96-45, Memorandum Opinion and Order, π 14, 19 FCC Rcd. 1563 (2004) (“*Virginia Cellular*”).

Table 4. Three Applications for a Supported Services List

No.	Application	Question
1.	Designation	What services or facilities must a carrier provide to qualify for universal service support?
2.	Support amount	When the state calculates support for the carrier, what service or facility costs should be included?
3.	Use of funds	When a carrier receives state support, to which services or facilities must it apply that support?

A single list that provides the same answer to all three questions can create unexpected problems with new services. Those problems can be illustrated using broadband facilities.

- A state with an embedded cost support mechanism might want to allow carriers to report costs for some expenditures that support broadband facilities and to receive support on those costs (#2). At the same time, the state might not want to disqualify all carriers that do not yet provide ubiquitous broadband service (#1).
- A state might want to allow a carrier to use support to construct facilities that support voice and broadband services in common, such as high-capacity feeder networks (#3). At the same time, the state might use a proxy cost model for support but not want to redesign that model to assume that broadband facilities have been built (#2).

Federal support programs have historically experienced some of these same kinds of problems.

- The federal list does not yet include broadband. Nevertheless, many rural carriers today receive federal support for broadband-supporting facilities (#2),⁷⁸ and they have been allowed to use federal support to construct such facilities (#3).⁷⁹

⁷⁸ Rural carriers receive federal High Cost Loop (HCL) support based on their net loop investment per line. Whether a particular investment qualifies as loop investment is determined by the FCC's accounting and separations rules. *See* 47 C.F.R. §§ 36.621, 36.631. The rules do not identify the carrier's motive for a loop investment. Therefore, a rural carrier receiving High Cost Loop Support can increase its loop investment in ways that enhance broadband service, it can report that investment for HCL support purposes, and HCL support will increase in subsequent years.

⁷⁹ Carriers can use HCL support to make broadband investments so long as the state commission annually certifies that the carrier is properly using federal support. Subsection

- In 2003, the FCC considered adding broadband to the federal list in order to promote broadband spending by carriers (#3). The FCC rejected this proposal, in part because adding broadband would increase the demand for support (#2).⁸⁰ Also, the FCC found that adding broadband to the list would disqualify carriers that were not then providing broadband ubiquitously to all their customers (# 1).⁸¹

It should be noted that not all states impose limitations on carriers' use of high cost funds. While some state policies limit support uses to a specific list of services, other states simply support the carrier's total operations. This tends to be the case for states that qualify support recipients by classification. For example, a state that has designed its high cost fund to maintain rural ILEC rates of return at a specified level would take the less restrictive approach regarding the use of funds. Oregon's high cost fund, for example, takes this approach.

In sum, a state that adopts a supported services list should anticipate the ways in which that list will be applied. Recognizing that such a list has varying applicability in different applications can increase the state's future ability to suitably respond to emerging services.

3. The 2005 federal designation requirements

In 2005 the FCC issued a Report and Order that expanded the recommended list of requirements for federal ETC designation and also expanded requirements for the annual certifications required of designated carriers.⁸² Most states report they have followed the FCC's suggestions, whether or not they have their own high cost funds.⁸³

- The FCC suggests that states require the applicant to commit to provide service throughout the proposed designated service area to all customers making a

254(e) of federal law requires that federal high cost support be used “*only* for the provision, maintenance, and upgrading of facilities and services for which the support is intended.” 47 U.S.C. § 254(e) (emphasis added). To implement this statute, the FCC requires state commissions annually to certify that ETCs in their states meet this standard. 47 C.F.R. §§ 54.313, 54.314.

⁸⁰ FCC *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Order and Order on Reconsideration, FCC 03-170, 18 FCC Rcd. 15,090 (2003) (*Supported Services Order*) π 11.

⁸¹ *Supported Services Order*, π 12. See also, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Recommended Decision, released July 10, 2002, Separate Statement by Commissioner Bob Rowe.

⁸² FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, FCC 05-46, 20 FCC Rcd. 6371 (2005).

⁸³ States that do not have their own funds generally apply these standards as conditions of federal ETC status.

reasonable request for service. Many states require the wireless ETC applicants to provide coverage maps in addition to a description of the proposed service areas.⁸⁴

- The FCC suggests that states ask each carrier for a five-year plan for network improvements.
 - Most of the states with high cost funds reported that they do require a network improvement plan. Arkansas and Utah do not.
 - Seven of the states without a high cost fund reported that they do not ask for a network improvement plan (Alabama, Kentucky, Maryland, Mississippi, North Carolina, New Hampshire, and Tennessee).
 - Several states ask for a plan covering fewer than five years. Wyoming asks for a three-year plan. Colorado, Idaho, Kansas, Maine, and South Carolina ask for a two-year plan. Washington asks for a one-year plan.
- The FCC suggests that states require ETCs to verify that they can remain functional in an emergency. Virtually all of the states, with or without a high cost fund, ask carriers to certify emergency readiness.⁸⁵
- The FCC suggests that states require ETCs to affirm that they can satisfy customer protection and state service quality rules. Virtually all states, with or without a high cost fund, require ETCs to meet service quality and consumer protection requirements.⁸⁶
- The FCC suggests that states require ETCs to provide a local usage plan comparable to that of an ILEC. Most of the states require a local usage plan.⁸⁷ Alaska requires that plan to provide at least 500 free minutes of usage per month.
- The FCC suggests that states require ETCs to provide customers with equal access to long distance carriers.⁸⁸ Most states require applicants to demonstrate a commitment to fulfill equal access requirements.⁸⁹

⁸⁴ For example, in Washington, a wireless ETC applicant is required to file the network coverage map in the initial petition and every three years thereafter.

⁸⁵ Maryland and New Hampshire are exceptions.

⁸⁶ New Hampshire was the sole exception among states without high cost funds.

⁸⁷ Tennessee and the Virgin Islands are exceptions.

4. State-ETC designations and additional requirements

States do not always differentiate clearly among requirements that are imposed on carriers of last resort (a traditional common law category),⁹⁰ on federal ETCs designated by the state commission (carriers eligible for federal support), and on state ETCs (carriers eligible or state support). A few states do make such an explicit distinction, at least as between federal ETCs and state ETCs.

- Texas has defined the category of “Eligible Telecommunications Provider.” Only Texas ETPs receive state support.
- Idaho has also clearly established state ETCs as a distinct category.

Regardless of terminology, states often establish additional requirements for carriers that are eligible for state support.⁹¹ Some of these requirements elaborate on similar FCC standards.

- Nebraska requires supported carriers to provide the customer with a white pages or alphabetical directory listing.
- Texas requires competitive ETCs to offer flat-rated unlimited local calling services at a rate no higher than 150 percent of the ILECs’ state average rate.
- Washington (which does not have a high cost fund) requires wireless federal ETCs to submit network maps every three years.
- Missouri (which does not have a high cost fund) requires each federal ETC to make a commitment to extend its network to serve new customers upon a reasonable request and requires wireless providers to provide the commission with an informational filing describing all the carrier’s service offerings.

In other cases, the supplemental state requirements have no current federal analogue.

- Texas requires data transmission at 14.4 kbps, a rate that is not usually considered “broadband” speed and that can be achieved using analog modems on standard switched circuits.⁹²

⁸⁸ “Equal access” is the industry term for direct dialing a toll call with a “1” prefix that connects the caller to an interexchange network.

⁸⁹ Alaska, Kansas, Idaho, and Washington do not require equal access.

⁹⁰ See also, Bluhm and Bernt, *Carriers of Last Resort: Updating a Traditional Doctrine* NRRI Report 09-10 (2009) at 5-7 (common duties assigned to carriers of last resort).

⁹¹ As noted above, Arkansas, Idaho, Kansas, Nebraska, New Mexico, and Utah reported that they require ETC designation as a prerequisite to state support, but that such a designation is not sufficient.

- Wisconsin and a few other states require supported carriers to provide Public Interest Pay Telephones.⁹³
- New Mexico requires carriers to provide an 800 number for customer complaints.
- Alaska and Washington (which do not have high cost funds) require wireless ETCs to meet power backup standards.

At least one state has eliminated an element in the FCC’s list: Wyoming does not require single-party service or toll limitation to qualify for state support.

Historically, state high cost programs have sought to support only voice telephone service. Nevertheless, many states have taken other kinds of measures to promote broadband. Many states leave carriers free to use state high cost funding for any corporate purpose, including constructing broadband facilities. Also, many states use merger approval proceedings and alternative forms of rate regulation proceedings as opportunities to impose broadband build-out requirements. Some states also provide broadband construction subsidies to institutional users such as schools, libraries, and rural health care facilities.

More recently, some states have begun to establish separate universal service-like programs for broadband service. Recent congressional bills⁹⁴ and FCC deliberations⁹⁵ have also increased state interest in promoting broadband. Nine states reported to us that they have a state program to support advanced telecommunications services or broadband, although not all broadband programs are administered by the state utilities commission.

At least one state has established broadband capability as a prerequisite to eligibility for state high cost funds.

- In 2009, the Wisconsin commission established a new requirement that supported carriers must provide data transmission at a minimum rate of 250 kbps upstream and 750 kbps downstream.⁹⁶ This is a common speed for “ADSL” service on telephone networks.

⁹² Tex. Admin. Code, tit. 16, part 2, § 26.54(b).

⁹³ Wis. Admin. Code, PSC 160

⁹⁴ *See, e.g.*, “Discussion Draft” legislation released by Congressman Boucher and Congressman Terry on November 6, 2009.

⁹⁵ The FCC is required by federal law to issue a National Broadband Plan in February of 2010.

⁹⁶ Wis. Admin. Code, PSC 160.031 (2009).

5. Designation of non-ILECs

Several states reported that they are willing to provide state support to non-ILECs.

- Colorado, Kansas, Utah, and Wyoming report that support is available to all ILECs, landline CLECs, and wireless carriers.
- California reports that it provides support to CLECs, but only if they are also carriers of last resort (COLRs).
- Kansas and Wyoming report that they are willing to provide support to fixed VoIP carriers such as cable voice providers.

Several states allow designation of non-ILECs, but in most of these states some other requirement or understanding tends to deter applications. The net effect often is to limit support entirely or mostly to ILECs.

- Arkansas allows any carrier to apply for funding, but only ILECs have been declared eligible.
- Indiana supports rural ILECs, but it allows any ETC to file a petition to receive support. No such petitions have been filed.
- Maine has a cost-based support program. Any new entrant seeking support from the Maine high cost fund would have to undergo a rate case using traditional rate-of-return methods. No CLEC has elected to do so.
- Nebraska's policy is to provide support to only one network in a given area. No Nebraska wireless carriers have applied for that support. If a wireless provider were to apply, it would be required to demonstrate an ability to replace the entire wireline network for that area. As a result, most Nebraska high cost fund support goes to the ILECs who provide service in high-cost areas.
- New Mexico has a hold-harmless type fund. A competitive carrier could petition for support, but none has petitioned to date. Since support is based on 2004 data, it could be difficult for a competitive carrier to apply for support.

A final question regarding support for competitive carriers is whether they should be required to have facilities. Competitors in general have fewer facilities than incumbents, and some have none at all. One approach to these differences is to use eligibility rules to require at least a minimum quantity of facilities. Federal law takes this approach and nominally disqualifies carriers with no facilities.⁹⁷ Nevertheless, the FCC has interpreted the statutory phrase "own facilities" to include facilities rented from other carriers as unbundled network

⁹⁷ To become a federal ETC, a carrier must own at least some facilities, although it can also use facilities or a combination of its own facilities and resale of another carrier's services. 47 U.S.C. § 214(e); 47 C.F.R. § 54.202(d)(1).

elements (UNEs).⁹⁸ Therefore, a carrier that relies entirely on other carrier's facilities, obtained through UNEs and resale, can indeed qualify as a federal ETC.

Any state that designates a state ETC and that requires the ETC to provide service through a combination of its own facilities and UNE or resale arrangements should consider imposing specific requirements on the designee. For example, the state might require that the ETC provide an investment plan and might also require that the ETC demonstrate that it is using the high cost support for its intended purpose, especially if that purpose is a facilities-based network expansion.

⁹⁸ 47 C.F.R. § 54.202(f).

V. Fund Distribution

The twenty-one states with high cost funds tend to distribute support using one of four modes.⁹⁹ Each mode serves different purposes and presents different challenges. This section describes and evaluates those four modes, citing examples from selected states.

A. Hold-harmless mode

The hold-harmless mode is normally adopted in conjunction with a regulatory change that reduces carrier revenue. Hold-harmless support focuses on minimizing the effects of regulatory change, often leaving the carrier in the same or nearly the same revenue position after the change.

Two types of regulatory changes affecting ILEC revenue have triggered the creation of hold-harmless state funds. Most commonly, the state decided to lower the rates for intrastate access charges paid by IXCs. Occasionally, a hold-harmless fund has been created because regulators made a rule change that reduced a rate-regulated carrier's revenue requirement.¹⁰⁰

1. The hold-harmless calculation

Computing hold-harmless support involves a calculation of the following form:

$$\textit{Support} = \textit{Past Revenue} - \textit{Future Revenue} + \textit{Adjustments}$$

The first term, *Past Revenue*, is the carrier's base or pre-change revenue that the high cost fund seeks to protect. The second term is *Future Revenue*, which is what the carrier expects to receive after the regulatory change has taken effect.

⁹⁹ At least one state has a program that falls outside these four categories. For example, Alaska's DEM weighting program, while aimed at goals similar to those of the cost-based mode, has a unique mechanism unlike that of any other state.

¹⁰⁰ The federal Local Switching Support program originated in a revenue requirement change. In 1987 the FCC adopted new separations rules that adopted a new allocator for switching and consolidated several categories of Central Office Equipment. Because the Federal-State Joint Board on Separations had been concerned about the revenue effects on small carriers, the FCC adopted the Joint Board's recommendation and created the "DEM Weighting" program, which reduced the losses of many smaller carriers. Today that program has transformed into the Local Switching Support program. See 47 C.F.R. § 54.301; *MTS and WATS Market Structure, Amendments of Part 67 (New Part 36) of the Commission's Rules and Establishment of a Federal-State Joint Board*, CC Docket Nos. 78-72, 80-286 and 86-297, Report and Order, 2 FCC Rcd. 2639 (1987).

The third term, *Adjustments*, can be put to a variety of uses. One common adjustment involves allowing a local rate increase. Several states have used an adjustment to avoid paying support to carriers that maintain very low local rates. This adjustment requires the state to establish a rate benchmark that it considers affordable. For example, if a carrier's local rate is \$10 per month and the state considers \$25 affordable, the *Adjustments* factor would be minus \$15 per line, thereby reducing the carrier's support by that amount. In a few states, the commission actually mandates corresponding local rate increases. In most states, the commission simply deems the additional revenue to have been received, regardless of whether the carrier actually raises rates to the benchmark.

2. Examples of hold-harmless state funds

Hold-harmless calculations are used in several states.

- Oklahoma has two funds, the Oklahoma High Cost Fund (OHCF) and the Oklahoma Universal Service Fund (OUSF). Each fund has a hold-harmless component.¹⁰¹
- New Mexico lowered intrastate access rates in 2006. Each carrier's support is equal to the per-minute reduction from that 2006 intrastate access reduction, multiplied by the carrier's 2004 intrastate access minutes.¹⁰² New Mexico thus declines to replace access revenues lost due to post-2004 losses of access minutes. New Mexico also uses a local rate benchmark, which was set at Qwest's local rate plus the amount of Qwest's state Subscriber Line Charge (SLC), to reduce the amount of support by the amount of revenue the carrier could realize by raising its local rates to the benchmark.
- Pennsylvania also calculates high cost fund support using a hold-harmless mechanism with a minimum local rate feature. Rural ILECs receive support limited by the revenue lost during one episode of access rate reductions. Support is also reduced by any revenue gain that would occur by raising local residential rates to a statewide affordability benchmark. The benchmark was initially \$16.00 per month but was later raised to \$18.00.

¹⁰¹ The OHCF provides support to rural ILECs in amounts equal to those previously received from a state operated intraLATA toll pool. The OUSF has a unique provision in its "Primary Universal Service" program that allows rural ILECs to recover any future revenue loss caused by state or federal regulatory actions.

¹⁰² Qwest is a special case in New Mexico and does not receive support from the New Mexico high cost fund. Instead, Qwest makes up the access charge shortfall through a state Subscriber Line Charge.

Once a state establishes a hold-harmless support amount, it must also decide whether that support amount will be adjusted to reflect future changes in costs, revenues, or regulatory policy. One choice is to leave initial support amounts unchanged. The alternative is to adjust support to reflect changes in market behavior.

- Oklahoma’s OHCF replaced revenues lost to carriers when a toll pool was dissolved. Oklahoma calculated initial support amounts when the fund was created, and has not changed them thereafter.
- South Carolina’s Interim LEC Fund replaced carrier revenues lost during a revision of non-basic local service rates. Support from the fund increases if access minutes increase. Support remains constant if access minutes decrease.

B. Cost-based mode

The cost-based mode focuses on supporting the costs of providing the supported service. States typically adopt the cost-based mode when they perceive a risk of business failure by ILECs or when they perceive a risk that local rates will be driven above affordable levels. The goal is to provide support that will allow the carrier to continue operating by charging reasonable rates to consumers, but without over-earning. States sometimes distribute support using a hybrid of hold-harmless and cost-based mechanisms.

Cost-based mode support is calculated using the following basic equation:

$$\textit{Support} = \textit{Cost} - \textit{Revenue}$$

Cost-based support is based on a comprehensive picture of the carrier’s operations, including all associated costs and revenues. Cost-based support therefore adapts automatically over time to a wide range of circumstances, including changes in the carrier’s number of switched access lines, changes to federal universal service support, and changes to its access revenues. Cost-based support tends to increase as the carrier’s revenues decrease, especially if its costs do not decrease proportionately. This is in contrast to the hold-harmless mode, where the primary focus is usually on a single episode of regulatory action and where other events, such as loss of access lines or revenue, are not reflected.

“Separations” presents a threshold question for any cost-based support program.¹⁰³ A state can define *Cost* and *Revenue* to include all of a carrier’s costs and revenues. This is sometimes called a “total company” approach. Costs in this case are sometimes called

¹⁰³ “Separations” is the process under which the costs and revenues of ILECs are divided into an interstate portion and an intrastate portion. “Interstate costs” are those costs that separations assigns to the interstate jurisdiction and upon which the FCC can calculate an interstate revenue requirement. “Intrastate costs” are those assigned to the intrastate jurisdiction and upon which state commissions can calculate an interstate revenue requirement.

“unseparated” costs. The alternative is to define *Cost* and *Revenue* to include only the carrier’s intrastate costs and revenues.¹⁰⁴ As discussed below, the choice has consequences affecting how costs are measured and which revenues are counted.

1. Cost

The first term in the support equation is *Cost*. The meaning in this context is similar to the traditional regulatory concept of “revenue requirement” or “cost of service.” Many states have curtailed “rate-of-return” regulation of retail rates. Yet the same concerns that once underlay the principles of rate-of-return regulation still apply to cost-based support mechanisms. In universal service, the state wants to subsidize only carrier costs that are just and reasonable.

Cost implicitly includes a component for return on investment and a component for expenses. The investment term requires the commission to establish a rate of return for purposes of universal service support. In several of its programs, the FCC uses 11.25% for the prescribed return on capital cost.¹⁰⁵

a. Embedded costs and forward-looking costs

A threshold question for a cost-based support program is whether to estimate *Cost* using embedded methods or using a computer proxy model. Proxy models are generally described as producing “forward-looking” costs because the models virtually construct facilities that use current technology. Several states use both methods, applying embedded cost methods for rural carriers and a proxy model for non-rural ILECs.¹⁰⁶

(1) Embedded costs

Embedded cost methods begin with expenditures recorded on the carrier’s books. *Cost* here translates roughly as “revenue requirement” in a traditional rate case. It includes one component to reimburse the carrier’s operating expenses and a second component to give the carrier an opportunity to earn a prescribed rate of return on its net plant investment.

¹⁰⁴ A state should make the same jurisdictional choice for both *Cost* and *Revenue*. Inconsistent treatment can allow a company to attain a double recovery of some of its costs, or it can leave the company with no way to recover some of its costs.

¹⁰⁵ See, e.g. FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, First Report and Order, 12 FCC Rcd. 8776, 8915, (1997) (*USF First Report and Order*) (subsequent history omitted), π 250; FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, FCC 05-46, March 17, 2005.

¹⁰⁶ The FCC also follows this dichotomy. Its High Cost Loop program for rural carriers is based on embedded cost. The Model Based Support program for non-rural carriers uses proxy model cost, which the FCC refers to as “forward-looking” cost.

Embedded cost systems are widely criticized for creating a perverse incentive for ILECs to spend money unnecessarily. Some states address this problem by limiting certain categories of cost. A state might decide, for example, to support only the costs associated with a subset of network facilities or services, such as loop facilities. The Arkansas fund for rural carriers limits costs in this manner. A second approach is to apply a formula-based cap on certain categories of cost. For example, the federal High Cost Loop support program has a cap on corporate operations expense that is based on industry averages.

ILECs usually keep their books at the “study area” level, which often can be the carrier’s entire service area within a state.¹⁰⁷ Carriers generally do not record more finely grained data about the location of their investments and expenses. Therefore, a cost-based mechanism based on embedded cost cannot by itself generate cost outputs or support calculations below the study area level.

Embedded methods generally can provide both unseparated cost and intrastate cost data, including intrastate-only investments and expenses. Therefore a state that uses embedded cost data can approach the support problem on an intrastate-only or a total-company basis.

Although support calculations require many of the same decisions as a traditional rate case, rate cases are burdensome. Several states have found less costly ways to periodically recalculate support.

- Some states have developed simplified methods to review whether support amounts appropriately match current conditions. Colorado and Maine use simplified filing methods to calculate cost.
- Some states provide the same amount of support to carriers every year, until the amount is changed. In Utah, for example, high cost support changes are ordered only if the carrier requests a proceeding to consider increased support or if the Utah Division of Public Utilities, which administers the Utah fund, requests a proceeding on the ground that the carrier is over-earning.

California created a novel mechanism to give carriers an incentive to periodically update its support calculation. California’s “A Fund” support is adjusted only after a general rate case that uses embedded costs. The carrier can initiate such a case when it wishes. However, the fund has a “waterfall” provision. After a rate case, the amount of the carrier’s subsidy is fixed for three years. Thereafter, support is stepped down to zero gradually over a six-year period. This provision gives the carrier an incentive to periodically update its cost data and reestablish the proper support level.

¹⁰⁷ Some carriers have multiple study areas within a state.

(2) Forward-looking cost

The alternative to embedded costs is to use a computer-based proxy model to estimate cost. Proxy models generally produce “unseparated” cost outputs that disregard jurisdiction. Where a state commission uses such cost outputs, it should take additional steps to avoid double recovery of costs.¹⁰⁸ One option is to exclude interstate costs. This can be done by calculating an interstate cost allocation factor for each supported carrier¹⁰⁹ or by using an industry-wide rule of thumb.¹¹⁰ The alternative is to adopt an equally broad definition of *Revenues* in the support formula to reflect all the interstate revenues generated by the network.

The FCC uses a proxy model in one of its support programs, the “Forward-Looking Support” program for non-rural carriers. The FCC originally announced that it would eventually apply that model to all universal service support. That never happened. Indeed, the FCC later indicated that it had serious reservations about using proxy models. Although the story takes several pages to recount, it is instructive of the strengths and weaknesses of proxy models.

In 1997, the FCC equated proxy model outputs with “forward-looking” cost or, more simply, “economic cost.” Forward-looking cost, the FCC explained, is the “least-cost,

¹⁰⁸ The first recovery would be through normal FCC-supervised mechanisms such as the federal Subscriber Line Charge, interstate access payments, and federal universal service support aimed at interstate costs, such as the Interstate Access Support program. The second recovery would be through state universal service funds.

¹⁰⁹ The state might, for example, multiply each category of proxy model investment by the actual separations factor for that kind of investment and then sum all the interstate investments. A similar procedure might be used for expenses. Alternatively, the company’s overall separations factor might be multiplied by the proxy model’s overall cost of service. States using this method should be cautious about adopting federally imposed separations factors. The FCC froze separations in 2001. Large carriers are still using separations categories and factors based on their 2000 operations. During the freeze, the interstate revenues of many carriers have grown, even as cost allocations have remained nearly constant.

¹¹⁰ For example, the FCC’s High Cost Model Support program uniformly excludes 24% of cost calculated by the proxy model. 47 C.F.R. § 54.309(a)(4). The purpose is to exclude costs that already have been separated to the interstate jurisdiction. The FCC chose 76% as an overall network blend comprised of several components: 75% allocation of loop costs (in accordance with 47 C.F.R. § 36.154(a)), 85% allocation of port costs, 0% of LNP cost and 100% of all other model-based costs. FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Ninth Report & Order and Eighteenth Order on Reconsideration, FCC 99-306, 14 FCC Rcd. 20,432 (1999) π 63.

most-efficient [sic], and reasonable technology for providing the supported services that is currently being deployed.”¹¹¹

The FCC in 1997 saw two main advantages in using proxy model costs. First, the FCC said that forward-looking cost “best approximates the costs that would be incurred by an efficient carrier in the market,” and therefore sends “the correct signals for entry, investment, and innovation.”¹¹² In short, using the proxy model for universal service was supposed to have promoted competitive entry. As it turned out, that prediction was almost entirely wrong. The proxy model did not promote competitive entry to any significant degree, at least by facilities-based carriers.

The 1999 model turned out to be largely irrelevant to the technologies that are actually offering competitive local service. The proxy model estimates the cost of overbuilding an entire exchange using switches, remote fiber-fed platforms, and “twisted pair” copper distribution facilities. The FCC said this kind of network best approximated the cost of a new entrant. In the ensuing years only a small minority of telephone exchanges have been overbuilt using that wireline technology. The leading voice competitors today are cable VoIP providers and wireless providers, each of which uses fundamentally different technologies and incurs costs in quite different ways. Cable competitors generally face lower economic costs in areas where they already have distribution facilities and higher costs in areas without those facilities.¹¹³ Wireless companies have lower costs than wireline in many low density areas.¹¹⁴

In December of 2009 the FCC admitted that its existing model, which was developed in 1999, has become obsolete.

Not only are the model inputs out-of-date, but also the technology assumed by the model no longer reflects the least-cost, most-efficient, and reasonable technology for providing the supported services that is currently being deployed. The

¹¹¹ *USF First Report and Order*, π 250.

¹¹² *USF First Report and Order*, π 224.

¹¹³ Cable providers generally use their existing cable runs to provide telephone service in common with their television offerings. Cost therefore depends on how much network upgrading is needed to make the network capable of supporting voice as an incremental service. On the other hand, unserved areas are presumably more expensive to serve because coaxial cables are more expensive to deploy and power than traditional twisted pair networks. Of course, a different proxy model could predict these costs more accurately.

¹¹⁴ If the proxy model hasn’t promoted competitive entry in rural areas, another feature of federal support has promoted entry in some areas. The Identical Support Rule provides support to CETCs in an amount per line equal to the ILEC serving the same area. In some states where federal support payments per line are high, commissions have received multiple petitions from wireless carriers seeking designation as ETCs.

Commission's cost model essentially estimates the costs of a narrowband, circuit-switched network that provides plain old telephone service (POTS), whereas today's most efficient providers are constructing fixed or mobile networks that are capable of providing broadband as well as voice services.¹¹⁵

This admission undercuts the older claim that using the cost model to calculate high cost support promotes efficient competitive entry.

The FCC in 1997 also claimed that using proxy model costs would promote ILEC efficiency.¹¹⁶ The FCC said that basing support on model-based costs would create incentives for ILECs to cut costs.¹¹⁷ While the FCC never explained fully, the claim seems to have had three elements: 1) proxy models produce lower costs than embedded costs; 2) a support mechanism that produces lower costs generates less support; and 3) reduced support promotes efficiency. We consider these propositions in reverse order.

The third proposition is arguably true. A carrier that receives less support undoubtedly will seek to cut its costs, but that may not always be desirable. Cutting unnecessary costs is desirable and can fairly be said to improve efficiency. Costs can be cut in other, more controversial ways, however, such as deferring maintenance or eliminating customer service employees. Cost cutting can also mean postponing the construction of broadband Internet facilities.¹¹⁸

The FCC's second assumption was that a model that identifies lower costs will require less support. This proposition is often true because of the structure of the support formula for cost-based support mechanisms. In general, anything that reduces the *Cost* term in that formula will reduce support. The exception is where the same change that reduces *Cost* also reduces the *Revenue* term. As it happens, that is exactly how the FCC's Model Based Support program

¹¹⁵ FCC *High Cost Universal Service Support*, WC Docket No. 05-337, Further Notice of Proposed Rulemaking, FCC 09-112, π 23 (released Dec. 15, 2009) (internal quotation omitted).

¹¹⁶ *USF First Report and Order*, π 225.

¹¹⁷ *USF First Report and Order*, π 226.

¹¹⁸ That the FCC uses a proxy model to calculate support for non-rural carriers partly explains why several state commissions reported to us that their rural carriers (that receive federal support based on embedded cost) have deployed more broadband Internet facilities than their non-rural carriers (that receive federal support based on forward-looking cost).

works, the sole program for which the FCC uses the proxy model.¹¹⁹ Under those circumstances, a change to the system of measuring costs might decrease or increase support.

The first assumption was that proxy models can produce a lower overall cost than embedded methods. Several good reasons lie behind the FCC's conclusion.

- Proxy models avoid recognizing any investment costs that an ILEC might create by “gold plating” its network with unnecessary equipment or by incurring wasteful expenses.
- Proxy models deploy modern technologies that often are less costly than older technologies.¹²⁰
- Proxy models use optimum routing methods to locate feeder and distribution facilities.
- Proxy models are less dependent upon ILEC accounting records, thereby reducing an information asymmetry that favors the ILECs.

On the other hand, other features of models increase proxy costs above embedded costs.

- Proxy models assume recent construction and therefore assume a low or zero depreciation reserve. This overstates current cost for depreciation expense. It also overstates net investment and therefore the return needed on that investment. In real networks, carriers do not instantaneously replace all of their facilities with every improvement in technology. Much of their plant is partly depreciated. Some equipment is fully depreciated but still in service.

¹¹⁹ Under the FCC's the High Cost Model Support program, the *Revenue* term is replaced by a cost “benchmark.” That benchmark is set at a cost that falls two standard deviations above the mean cost. Therefore a shift in cost methodology that reduces *Cost* is very likely to reduce *Revenue* as well.

¹²⁰ For example, modern computerized switches are cheaper than older switches, thereby reducing the perceived cost of central offices. Also, modern optical transmission technologies are cheaper than electric transmission using copper wires, thereby reducing the perceived costs of constructing interoffice transport.

- Proxy models assume current labor and materials costs, but current costs can be higher than those actually incurred in constructing legacy plant. For example, the cost of copper has increased dramatically since 1999 when the FCC last estimated that cost.¹²¹

The FCC explored the broader problems inherent in proxy models in a 2003 notice of proposed rulemaking (NOPR).¹²² The NOPR was issued outside the context of universal service, but the FCC recognized some implications for universal service as well. The NOPR stated the broad objective of making forward-looking costs “more firmly rooted in the real-world attributes of the existing network, rather than the speculative attributes of a purely hypothetical network.”¹²³ Based on that 2003 NOPR and other sources, proxy models can have the following problems, some of which tend to increase cost and others of which tend to decrease cost:

- Proxy models assume a market inhabited by a ubiquitous carrier with a very large market share.¹²⁴ The cost for such a carrier may be lower than that typical of even an extremely competitive market.
- Proxy models assume that the latest technology is deployed throughout the hypothetical network. In the real world, however, even in extremely competitive markets, firms do not instantaneously replace all of their facilities with every improvement in technology. Even the most efficient carrier’s network will reflect a mix of new and older technology at any given time.¹²⁵
- Proxy models can be insensitive to the costs imposed by geography. Early proxy models (including the FCC’s Synthesis Model) used simplified layouts for their

¹²¹ From the fall of 1999 to the summer of 2008, copper costs rose from about \$0.75 per pound to more than \$3.00, an increase of 300%. See http://futures.tradingcharts.com/hist_CP.html, consulted September 15, 2009.

¹²² FCC, *Review of the Commission’s Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers*, WC Docket No. 03-173, FCC 03-224 (*UNE Pricing NOPR*). The context of the 2003 order was the rates charged for unbundled network elements (UNEs). Soon after TA96 was enacted, the FCC had required states to use a Total Element Long Run Incremental Cost (TELRIC) pricing methodology for setting UNE Rates and the FCC encouraged states to use proxy models for that purpose

¹²³ *UNE Pricing NOPR*, π 4, 193.

¹²⁴ *Id.* π 51.

¹²⁵ *Id.* π 50.

virtual feeder and distribution networks.¹²⁶ No account was taken of constraints imposed by mountains, roads, manmade barriers or bodies of water. The model therefore tended to understate costs in mountainous areas with winding roads and rights-of-way.

- Some proxy models use unrealistically high “fill factors.” A fill factor is the percentage of the capacity of a particular facility or piece of equipment that is used on average over its life. A high fill factor reduces costs by reducing the amount of spare capacity carried by the system. Real networks are built with a fill factor that anticipates future growth. In its own proxy model, the FCC declined to consider future network demand,¹²⁷ thereby increasing the fill factor and lowering cost.
- Proxy models can simplify “structure sharing” arrangements with other public utilities. The cost of installing poles, digging trenches, and placing conduit is usually shared by the incumbent LEC with other entities, such as power companies, cable operators, or other telecommunications carriers. The more sharing that a proxy model assumes, the lower the cost to the incumbent LEC of providing the element. Proxy models generally take a simplified view of these important cost variables.
- Proxy models can simplify the financial effects of common services within the network, including special access.¹²⁸ The FCC’s cost model does properly reduce average costs when special access circuits increase within an exchange. The FCC’s model is limited, however, because it is capable only of modeling the cost of DS-1 circuits. The FCC’s model does not include any procedure for calculating the cost of higher capacity DS-3 circuits¹²⁹ which are increasingly

¹²⁶ Some more modern proxy models have corrected this problem.

¹²⁷ *Federal-State Joint Board on Universal Service*, CC Docket Nos. 96-45, 97-160, Tenth Report and Order, 14 FCC Rcd. 20156, 20301-02, 20304, paras. 341, 346 (1999) (*USF Inputs Order*), *aff’d sub nom. Qwest Corp. v. FCC*, 258 F.3d 1191 (10th Cir. 2001). *USF Inputs Order*, 14 FCC Rcd. at 20243-44, para. 199 (“[T]he fact that the industry may build distribution plant sufficient to meet demand for ten or twenty years does not necessarily suggest that these costs should be supported by the federal universal service support mechanism.”).

¹²⁸ Special access circuits are point-to-point circuits operated on the switched network.

¹²⁹ *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, CC Docket No. 97-160, Tenth Report and Order, FCC Rcd. 20156, note 242 (1999) (Tenth Report and Order) (subsequent history omitted).

important elements in special access sales.¹³⁰ Proxy models generally do not differentiate between networks that support DSL and those that do not.

- Proxy models can use unrealistically low return rates on investment. Competition increases an incumbent's risk, but proxy models are often run at return levels established before competition was widespread.¹³¹

Maintaining proxy models has proven a difficult task for state commissions. The models rely on dozens of cost parameters and costly geographic databases. Proper maintenance requires the commission periodically to collect new input data. It may also be necessary to modify the model itself to keep up with technical advances. No state appears to have accomplished the task of keeping a proxy model up-to-date.¹³² Over time, model results become increasingly unreliable as prices of materials and labor change, as subscribership changes, and as populations move about.

b. Cost of broadband infrastructure

Underlying every *Cost* calculation is an assumption about the extent and quality of the facilities needed to provide the required services. Broadband service often requires more costly facilities, since it generally requires higher capacity feeder and distribution facilities, replacement of some existing copper lines with fiber, and the placement of more remote terminals. A broadband-capable network will generally have a higher *Cost* than a network designed only to support voice services.¹³³

A state that operates a cost-based system must decide whether broadband costs should be included in the support mechanism. At one extreme, a state might exclude all broadband-related facilities and costs, limiting *Cost* only to network costs necessary to provide voice service. One

¹³⁰ See P. Bluhm and R. Loube, *Competitive Issues in Special Access Markets*, NRRI Report 09-02.

¹³¹ *UNE Pricing NOPR*, π 83.

¹³² The FCC has not updated its own model. The FCC does require carriers frequently to update their switched line counts, but these line counts are not used to recalculate costs under the model, which the FCC has not run since 2004.

¹³³ A large portion of a broadband-capable network consists of facilities that are used in common with the voice network. Where a state uses a proxy model for cost, the state commission often decides explicitly whether the model should design a proxy network that is capable of supporting broadband services. Where a state bases support on embedded costs, unless the commission directs otherwise, carriers are likely to include broadband investment in their cost reports for cable and wire facilities and possibly for some central office equipment.

difficulty with this approach is that it can be very difficult to find a fair method to exclude broadband costs from a dual-purpose network that uses many common facilities.

At the other extreme, a state might increase the *Cost* term in any area where the supported carrier has deployed broadband-ready facilities. This policy would create a financial incentive for carriers to upgrade their networks enough to offer broadband.¹³⁴

2. Revenue

Revenue is the second term in the cost-based mechanism equation. It reflects revenue the carrier can reasonably expect in the same year of operations in which the costs are incurred.

Customer-paid revenue is the most obvious form of *Revenue*. The simplest approach is to use the carrier's actual projected revenue. Some states, including Maine and Nebraska, place a virtual "floor" under customer-paid revenues designed to prevent carriers from using high cost funding to maintain very low local rates.¹³⁵ These states set customer-paid revenue equal to the number of subscribers multiplied by a "benchmark" local rate that the state believes is affordable to customers. To the extent that the carrier charges rates lower than that floor or benchmark, high cost support does not subsidize that choice.

Revenue can also include other forms of subscriber-paid revenue such as state subscriber line charges.¹³⁶ A state can also add an amount representing the carrier's average revenue from vertical services.

Revenue can also include non-subscriber revenues such as net intercarrier revenue. If these non-subscriber revenues are not deducted from support, the carrier might recover some of its cost twice.

Revenue can also include federal universal service fund receipts. Determining whether all such support should be included requires some knowledge of separations as well as the history and purpose of these support programs. To be consistent, a state should either take an unseparated or "total company" approach to *Cost* and *Revenue*, or it should consider only intrastate *Cost* and intrastate *Revenue*. Three of the five major FCC high cost support programs

¹³⁴ The federal High-Cost Loop program for rural carriers has essentially done this by including all loop costs in the program, even when those loops are capable of providing high capacity services.

¹³⁵ Some states call this virtual rate floor a "benchmark local rate."

¹³⁶ Some states have established these fixed charges as a way of compensating ILECs for the use of loop facilities by interexchange carriers.

should be counted as *Revenue* in either case.¹³⁷ Table 5 explains the effects of those five major federal high cost programs on intrastate revenue requirements.

Table 5. Effect of Federal High Cost Programs on Intrastate Revenue Requirements

Program	Effect on Intrastate Revenue Requirement (IaRR)?
High Cost Loop	Yes. Federal support creates an “expense adjustment” that reduces IaRR and increases interstate revenue requirement. ¹³⁸
Local Switching Support	Yes. Support reduces IaRR by assigning more switching costs to interstate. ¹³⁹
High Cost Model Support	Yes. Support is aimed at enabling reasonable comparability of intrastate rates and therefore should be booked as intrastate revenue. ¹⁴⁰
Interstate Access Support	No. Support is interstate revenue.
Interstate Common Line Support	No. Support is interstate revenue.

3. Unregulated operations

Modern telecommunications networks provide multiple services, only some of which are regulated in the traditional sense. States should consider whether to include revenue from unregulated operations in the *Revenue* term of any cost-based support mechanism.

Digital Subscriber Line service (DSL) provides a prime example. In 1998 the FCC held that DSL service was an interstate telecommunications service.¹⁴¹ In 2007, the FCC went further and decided that DSL is an interstate “information service.”¹⁴² As a result of these decisions, an

¹³⁷ The IAS and ICLS programs produce only interstate *Revenue*. These programs were created incidental to FCC reductions to interstate access rates. Support from these two programs should be considered only if the state also uses unseparated *Cost* data.

¹³⁸ 47 C.F.R. § 36.631.

¹³⁹ 47 C.F.R. § 54.301.

¹⁴⁰ FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Ninth Report and Order, 14 FCC Rcd. 20432 (1999) (subsequent history omitted), π 62.

¹⁴¹ FCC, *GTE Telephone Operating Cos. GTOC Tariff No. 1, GTOC Transmittal No. 1148*, 13 FCC Rcd. 22466, ¶ 1 (1998), *recon.*, 17 FCC Rcd. 27409 (1999).

¹⁴² FCC, *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, CC Docket No. 02-33, Report and Order and Notice of Proposed Rulemaking, FCC

ILEC can invest in plant facilities, increasing its regulated plant account, can use that plant in common with unregulated DSL services, and can exclude much or all of the additional revenue from intrastate regulated accounts.

While state commissions cannot consider DSL revenues when they set the intrastate rates for telecommunications services, nothing in federal law prevents them from doing so when determining high cost support. Indeed, failing to account for such revenue could force the state's high cost fund to inadvertently support those DSL facilities,¹⁴³ a result that not all states would welcome. States can avoid that result by including DSL revenue in their support calculation, either on a wholesale basis¹⁴⁴ or a retail basis.¹⁴⁵

Similar concerns apply to revenue generated by video services provided over common facilities. As with DSL, federal preemption may make these revenues inadmissible in any state proceeding to set a carrier's rates, but calculating state high cost support is a different case. Where supported network facilities are used to provide unregulated services and the costs appear in the *Cost* term of the support calculation, a state may legitimately consider those activities in the *Revenue* term as well.

4. Examples of cost-based funds

Many states provide cost-based support. Some use different methods to estimate the costs of large companies (including RBOCs) and smaller companies. As is true for several hold-harmless mode states, states with cost-based funds often make adjustments for very low local rates.

- Arkansas organizes its carriers into four categories, roughly based on size. It uses two different cost-based methods for these categories:

05-150, 20 FCC Rcd. 14,853, ¶ 5 (2005). The FCC's order was upheld on appeal. *Time Warner Telecom, Inc. v. FCC*, 507 F.3d 205 (3rd Cir. Oct 16, 2007).

In prescribing the methods for categorizing DSL costs, the FCC allowed ILECs to sell DSL access to affiliates on a wholesale basis which it called "broadband Internet access transmission arrangements." For these "BIAT" services, ILECs may decide to offer the service "on a common carrier basis" or a "non-common carrier basis."

¹⁴³ This could occur for example, where: (1) the carrier has upgraded its loop facilities to support DSL; (2) the carrier offers BIAT service on a common carrier basis, including the DSL/BIAT investment in rate base; and (3) the state provides cost-based support to the carrier.

¹⁴⁴ Wholesale BIAT revenue would be equal to the revenue to the ILEC from DSL providers using its network, whether affiliated or not.

¹⁴⁵ Retail BIAT revenue would be equal to the retail revenue to the ILEC's DSL affiliate, adjusted, if necessary, for DSL services provided by unaffiliated companies.

- Arkansas uses a proxy model to estimate cost for its sole Category I carrier, AT&T. Estimated revenues are set equal to the FCC’s published benchmark for its High Cost Model Support program.¹⁴⁶
- For its other three categories of carriers, Arkansas uses embedded cost methods, but it considers only loop costs.¹⁴⁷ Estimated revenues are set equal to the sum of its customer revenues plus any federal high cost support received. Customer revenues are deemed equal to \$28.70 per month (\$344.40 per year), which is roughly equal to the NECA-calculated national average cost per loop in 2005. The Arkansas fund pays support equal to all of the net revenue deficiency, within limits of the funding caps set for each category.
- California has two cost-based funds, one for large and one for small carriers.
 - California’s “A Fund” supports rate-of-return carriers and provides support based on actual costs, as determined by a general rate case. The amount of the resulting subsidy is fixed for three years and is then stepped down over a six-year period. As discussed earlier, this “waterfall” provision gives the carrier an incentive to periodically undergo a rate case to re-establish the proper support level.
 - California’s “B Fund” is also a cost based fund, applicable in this case to the four large ILECs in the state (AT&T, Verizon, Frontier, and SureWest). B-Fund costs are estimated using a cost proxy model run at the census block group level. Support from the fund is the difference between the results of the cost proxy model and a benchmark of \$36.00 per line per month.

¹⁴⁶ To set this benchmark the FCC prepares a list of statewide average cost of non-rural carriers, by state. The mean and standard deviation of this table of state data is calculated. The benchmark is set at the point two standard deviations above the mean. In 2009, the mean cost was \$21.43; the standard deviation was \$3.35. The benchmark was \$28.13. See <http://www.universalservice.org/about/governance/fcc-filings/2009/quarter-4.aspx> (report HC16 - High Cost Model Support Projected by State).

¹⁴⁷ Arkansas obtains each carrier’s unseparated loop cost data from the carrier’s filings with the National Exchange Carriers Association. Each carrier’s revenues are set equal to the sum of its customer revenues plus any federal high cost support received. Customer revenues are deemed equal to \$28.70 per month (\$344.40 per year), which is roughly equal to the NECA-calculated national average cost per loop in 2005. The Arkansas fund pays support equal to all of the net revenue deficiency, within limits of the applicable category caps. Because categories 2 through 4 can have multiple carriers, Arkansas pro-rates support within categories if necessary to comply with the category caps.

- Colorado determines support for non-rural carriers using a cost proxy model. The carrier's modeled cost is then compared to the carrier's intrastate revenues. If modeled cost exceeds revenues, the carrier receives support from the state high cost fund. For rural carriers, Colorado uses the carrier's actual cost to determine the support level, although it has adopted a simplified method of estimating those costs. The Colorado commission reviews a one-page summary of each carrier's revenue requirement, as well as a summary of its intrastate revenues.
- After an initial three-year transition period, Kansas adopted a cost-based methodology. Support for rural carriers is based on embedded cost. For non-rural carriers, Kansas uses a cost proxy model that produces cost estimates at the wire center level and then disaggregates cost further between base rate areas within city limits and outlying areas. Non-rural carriers receive per-line support for wire center areas where modeled costs are above 135% of the state average.
- Maine's fund operates using embedded cost and rate-of-return principles. A Maine carrier's support is equal to the difference between its intrastate revenue requirement and its intrastate revenues. The revenue requirement is calculated through a simplified rate case. Revenues are estimated by multiplying the carrier's billing units for intrastate services (residential line, access charge minutes of use, etc.) by the carrier's rates. Maine adjusts support for low local rates by using a fixed benchmark rate for local service.
- Since 2005, Nebraska has operated a cost-based fund that uses a single-cost proxy model to estimate the costs of all its ILECs, both rural and non-rural. Nebraska establishes revenue per line as equal to the sum of the carrier's customer revenues (including SLC revenues), its average intrastate access charge revenues, and its federal USF support. Nebraska imputes local exchange customer revenues based on announced benchmark rates (\$17.95 for urban and \$19.95 for rural areas). Any carrier that has actual rates below this benchmark may increase its local rates to the benchmark but is not required to do so.

C. Bill credit mode

The third distribution mode for high-cost support is to mandate that telecommunications carriers provide explicit customer bill credits for customers who otherwise would pay high retail rates. The carrier is then reimbursed from the fund for credits actually granted.

Bill credit mode support is calculated using the following basic equation:

$$\textit{Support per Line} = \textit{Local Service Rate} - \textit{Benchmark Rate}$$

The first term, *Local Service Rate*, is the rate for a basic package of voice services. It can include all fixed charges, including any state subscriber line charge. It can also include an

allowance for usage in local and extended local calling areas and even a limited amount of toll usage.

The second term, *Benchmark Rate*, is set at a level at which the state deems service affordable by most customers. Commissions can consider the average income of the state or community and the average local exchange service rate throughout the state generally.

The state's chief tasks in using the bill credit method are to define what parts of a customer's bill should be included in the *Local Service Rate* calculation and to set a standard for the *Benchmark Rate*. While these are not simple tasks, they allow the commission to avoid issues that bedevil the cost-based mode, such as how to measure the carrier's *Cost*, whether to use proxy models and how to estimate the carrier's *Revenue*. In essence, the bill credit mode decouples the process of ratemaking from the process of calculating support. Whether rates are regulated or unregulated, the support system responds to the consumer's actual cost.

Similarly, the bill credit mode avoids issues that arise in hold-harmless mode, such as whether a carrier's current revenues should be adjusted before using them as a base for future support and whether very low local rates should cause a downward adjustment to support. Very low local rates in the bill credit mode automatically generate no support.

The disadvantage of bill credit mode is that by reducing the customer's net cost, it could encourage rate increases. For such a support plan to work properly there must be some external constraint on the size of monthly bills. Without that constraint, carriers would have perverse incentives to raise rates so that credits and support would increase.

That constraint could come from regulation or from market forces. A third option is to support only a portion of the difference between the *Local Service Rate* and the *Benchmark Rate*. Supporting only a portion of that difference in support requires the remainder to be recovered from customers, a feature that could detract from universal service objectives but that creates a constraint on customer bills.

1. Examples of bill credit funds

Two state funds currently use the bill credit mechanism.

- Wyoming calculates a separate *Benchmark Rate* for residential service and for business service. Each *Benchmark Rate* is equal to the average state rate for that service, multiplied by 130%. Subscribers whose rates are above the Benchmark receive a credit on their bill; the carrier is reimbursed for the credit from the high cost fund.
- Wisconsin sets the *Benchmark Rate* at a level sufficient to purchase a standard service package of essential services. The package includes local service, the federal Subscriber Line Charge, access to 911, an allowance for long-distance

usage, and an allowance for calls within the local calling area.¹⁴⁸ The Wisconsin *Benchmark Rate* also varies by county, based on median income. If a customer's rate for the package of essential services does not exceed 1.5% of the county median household income, the customer will not receive any High Rate Assistance Credit. For example, if a county has a median household income of \$30,000, the benchmark rate would be \$37.50 (= [$\$30,000 / 12 \text{ months}$] x 1.5%). If the package of essential services is priced at \$37.50 or less, the customer would receive no credit. If the package is priced above the benchmark, in this case \$37.50, the customer receives a credit for a portion of the difference. The greater the difference from the benchmark, the greater the support percentage.¹⁴⁹

D. Auctions

Many economists advocate the use of “competitive bidding” or “reverse auctions” as a mechanism to allocate universal service funding. In such an auction the winner would be the bidder that is willing to provide Carrier of Last Resort (COLR) service while demanding the smallest public subsidy. Proponents maintain that this market-like mechanism could reduce the amount of existing subsidies to ILECs, while still maintaining universal service. Proponents also argue that auctions can identify the most efficient technology to serve an area¹⁵⁰ and can accurately identify the total stream of non-subsidy revenues that is available to each bidder.¹⁵¹

Both federal and state regulators have expressed interest in using auctions as a way of distributing universal service funding. The FCC said in 1997 that competitive bidding and auctions have many potential advantages and that it would “continue to review” competitive

¹⁴⁸ The local calling allowance in each area is related to the size of the local calling area.

¹⁴⁹ The actual calculation of credits is as follows:

Portion of Rate $\geq 1.5\%$ but $< 2\%$ of county median household income	50% credit
Portion of Rate $\geq 2\%$ but $< 2.5\%$ of county median household income	75% credit
Portion of Rate $\geq 2.5\%$ but $< 3\%$ of county median household income	85% credit
Portion of Rate $\geq 3\%$ of county median household income	95% credit

¹⁵⁰ For example, if wireless technology can meet the minimal service requirements set forth in the request for bids, a wireless bidder might be able to submit a lower bid than any wireline bidder.

¹⁵¹ In cost-based support, regulators must estimate carrier revenues in order to calculate support. This process can be controversial, since carriers have an incentive to try to exclude categories of revenue based on regulatory classifications and to make low estimates of future revenue. Auction advocates maintain that competitive bidding shifts changes these incentives. Since each bidder is likely to assume that other bidders are efficient, each bidder is likely to make realistic estimates of all future revenues, regardless of regulatory category.

bidding systems.¹⁵² The California Commission also has a longstanding interest in competitive bidding and auctions. In 1996 the commission indicated its interest in competitive bidding.¹⁵³ In 2007, the California commission stated that it did not regard the distribution method for its “B Fund” to be competitively neutral. It announced plans to replace the current method with a reverse auction mechanism.¹⁵⁴ The Wisconsin commission has said that if a local exchange carrier should seek to relinquish its status as an ETC, and if no other carrier is interested, the commission might conduct an auction.¹⁵⁵

Universal service auctions have drawn interest for decades. It does not appear, however, that there has been a single case, in the United States or elsewhere, of a successful reverse auction that allocated universal service subsidies in an area with an established wireline telecommunication network.

One problem is the added complexity of holding an auction for an area already served by an ILEC.¹⁵⁶ A theoretical benefit of auctions is that they reduce the amount of support needed to maintain universal service. In practice, however, auctions create risk for bidders that can actually increase the required subsidy unless the state forecloses that possibility in advance.

¹⁵² *USF First Report and Order*, π 207 (“[T]here are many potential advantages to defining universal service support levels for rural, insular, and high cost areas through the use of a competitive bidding mechanism. We recognize, as did the Joint Board, that competitive bidding could supplement another forward-looking economic cost methodology in determining the universal service support levels because a properly structured bidding system requires competitors to reveal expected revenue opportunities. Accordingly, we will continue to review competitive bidding systems to determine whether competitive bidding could be used to determine universal service support through market-based mechanisms.”)

¹⁵³ See California Public Utilities Commission, *Rulemaking on the Commission's Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643*, Order 96-10-066 (Cal. PUC Oct. 25, 1996) at 215-16, 260.

¹⁵⁴ See California Public Utilities Commission, Rulemaking 06-06-028, Decision 07-09-202, issued in Sept. 13, 2007, at 116. According to the response to a NARUC 2007 survey, California allows any COLR in a multi-COLR area to file a letter opting out of its COLR obligations within a geographic study area. However, the last COLR remaining may withdraw only upon approval of an application by the commission or a new COLR has been designated as a result of an auction.

¹⁵⁵ Wis. Admin. Code PSC 160.13(5)(c).

¹⁵⁶ Federal law may impose additional legal barriers to reverse auctions in the United States. If an ILEC loses an auction, a state commission may not be able to relieve the ILEC of obligations imposed by federal law. See 47 U.S.C. § 251(c) (additional obligations of incumbent local exchange carriers).

One way to limit fund expansion is to set a “reserve price” equal to the current high cost subsidy. Such an auction, however, could produce only one bidder, the ILEC. When Australia conducted a reverse auction, its only bidder was Telstra, the incumbent provider.

It is useful to assess the risks facing a potential bidder in any auction. Bidder A may intend to build its own facilities. For several reasons, the costs of those new facilities can be higher than the ILEC’s current net plant account, possibly even higher than the ILEC’s original cost. Labor costs have risen over the years. Some materials prices have also increased. Copper wire and poles, for example, are more costly than they were in the 1990s. In addition, any new facilities would also be likely to create a higher depreciation expense than that of most incumbents’ existing networks. Therefore, Bidder A planning to construct its own facilities might well submit a bid higher than the ILEC.

Bidder B may intend to acquire existing facilities from others (including the ILEC), such as poles and wires. This introduces a different set of risks. A state commission that sponsors an auction might even provide a procedure to transfer those assets after the auction, or it might leave the bidder to its own devices. In either case, the bidder is unlikely to know in advance the final acquisition cost. Facing that uncertainty, Bidder B would increase its bid price.

Bidder C may plan to rely on purchased services. ILECs are required to provide carrier-to-carrier services, including UNEs, resale and collocation,¹⁵⁷ and ILEC services are often less costly than new construction. Yet the auction itself creates risk for Bidder C. If C submits the low bid and wins the auction, the ILEC would lose its existing universal service support. That could drive the ILEC into a business failure, depriving Bidder C of the services it needs to perform its contract.¹⁵⁸ Facing that risk, Bidder C would increase its bid price.

Auctions have been successful in developing nations such as India, Nepal and some South American countries. India also used reverse auctions to assign the right to build new mobile networks. Yet all these successful overseas auctions had an important difference: all anticipated the “greenfield” construction of new networks or facilities in currently unserved areas.

¹⁵⁷ In the U.S., the availability of UNEs has been cited as a complicating factor for reverse auctions. See V. Sorana, “Auctions for Universal Service Subsidies,” *Journal of Regulatory Economics*, 18(1) (2000) at 57; Dennis Weller, “Auctions for Universal Service Obligations,” *Telecommunications Policy*, 23 (1999), 645-674. A CLEC bidder might rely on resale or UNE loops for some or all areas. A cable company bidder would typically have facilities in some but not all areas and might also plan to rely on UNE loops or resale. A wireless carrier might rely on cell towers for the last mile, but would typically rely on special access circuits for backhaul.

¹⁵⁸ Valter Sorana notes that proponents of auctions “should consider implicitly the effects of incumbency.” See V. Sorana, “Auctions for Universal Service Subsidies,” *Journal of Regulatory Economics*, 18(1) (2000) p. 57.

Two members of Congress have proposed that auctions be used to reduce federal high cost support payments to wireless carriers.¹⁵⁹ Their draft bill would require the FCC to select up to two winning bidders in any area with at least three wireless providers that can participate in competitive bidding. In areas served by fewer carriers, the draft bill would require the FCC to continue providing high cost support at current levels. The legislation has not advanced at this writing.

International experiences suggest that auctions might have a role in promoting the deployment of broadband in the United States, because many areas are currently unserved by terrestrial facilities. Similarly, auctions might be useful to slightly reduce federal support to wireless carriers. The fundamental claim for auctions, however, is that they can allocate support for wireline voice services in the United States. Auctions appear far less promising in that context. It is perhaps no accident that no other country has turned to reverse auctions for universal service in developed areas.¹⁶⁰

E. Amount of support to competitive carriers

As noted in part IV, several states provide high cost support to competitive carriers. An essential step in providing support to such competitive carriers is to determine how the amount of that support should be calculated.

One option is to require the competitive carrier to demonstrate its own cost. No state commission has awarded support to a competitive carrier based on its own costs. Maine has said that it would do so if asked, but no competitive carrier in Maine has sought that support.

The second option is the Identical Support Rule. Under this rule, a competitive carrier receives per-line support equal to that provided to the ILEC serving a customer in the same location. For example, Kansas provides support to competitive ETCs based on the per-line support amount of the rural ILEC serving the same area.

Since 1999, the FCC has also used the Identical Support Rule to distribute federal support to competitive carriers.¹⁶¹ The federal rule has been controversial, and in 2007 the Federal-State Joint Board on Universal Service recommended that it be repealed.¹⁶²

¹⁵⁹ See, e.g., “Discussion Draft” legislation released by Congressman Boucher and Congressman Terry on November 6, 2009.

¹⁶⁰ S. Wallsten, *Reverse Auctions and Universal Telecommunications Service: Lessons from Global Experience*. Washington, D.C., Technology Policy Institute (April 2008).

¹⁶¹ 47 C.F.R. § 54.307(a).

Proponents of the Identical Support Rule consider it to be competitively neutral. For example, when the FCC adopted the Identical Support Rule for federal support, it said that “[u]nequal federal funding could discourage competitive entry in high-cost areas and stifle a competitor's ability to provide service at rates competitive to those of the incumbent.”¹⁶³

The Identical Support Rule has several disadvantages. First, it breaks the connection between cost and the subsidy, allowing some carriers to receive support well in excess of their actual costs. A competitive ETC (including wireless carriers) receives support based on the costs incurred by the ILEC, which quite likely has a different cost structure. That ILEC is by definition a high-cost carrier or it would not be receiving support. This result can be inappropriate if the competitive carrier has not been required to build facilities or if, using a different technology, the competitive carrier has lower costs than the incumbent.

Second, the Identical Support Rule assumes that service is provided at the customer's billing address. Yet mobile services are, by definition, accessible throughout the network, not merely at the subscriber's billing address. The customer location problem is particularly awkward when the wireless customer cannot get service at his or her billing address but nevertheless subscribes to the mobile service for travel.

Third, the Identical Support Rule subsidizes multiple networks and therefore can induce uneconomic entry. At the federal level, the Identical Support Rule has created an incentive for wireless carriers to become designated ETCs in states with high ILEC per-line support amounts. Several state commissions in such states have been faced with many ETC petitions, particularly from mobile carriers. This feature can also greatly increase the fund size.

Fourth, the Identical Support Rule inaccurately assumes that one access line won by a competitor means one line lost by an ILEC. The FCC's original premise for the federal rule was that a competitor “captures” a line from the ILEC. In reality, the overall number of lines increased as many customers added wireless phones. This feature can also cause unforeseen increases in fund size.

The FCC, in response to the rapid growth in the federal high cost fund caused by the rapid proliferation of competitive ETCs (most of them wireless providers), implemented a cap on the total annual amount of high cost support expended for competitive ETCs. The cap, an interim step until the FCC undertakes federal USF reform, freezes support for competitive ETCs at March 2008 levels. (FCC 08-122). Finally, the Identical Support Rule behaves in surprising ways as competitive carriers' market shares changes. In Appendix C we explain a plausible but

¹⁶² Federal-State Joint Board on Universal Service, *Matter of High-Cost Universal Service Support*, WC Docket No. 05-337, Recommended Decision, FCC 07J-4, 22 FCC Rcd. 20477 (*Three Funds RD*) π 35.

¹⁶³ FCC, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Ninth Report and Order, 14 FCC Rcd. 20432, π 90 (1999) (subsequent history omitted).

simplified scenario with a facilities-based competitor, a cost-based ILEC support mechanism and the competitor's support calculated under the Identical Support Rule. The simulation results are tabulated in Appendix C and summarized in Chart 3 below.

Chart 3. Support and Costs for ILECs and Competitors with Identical Support Rule

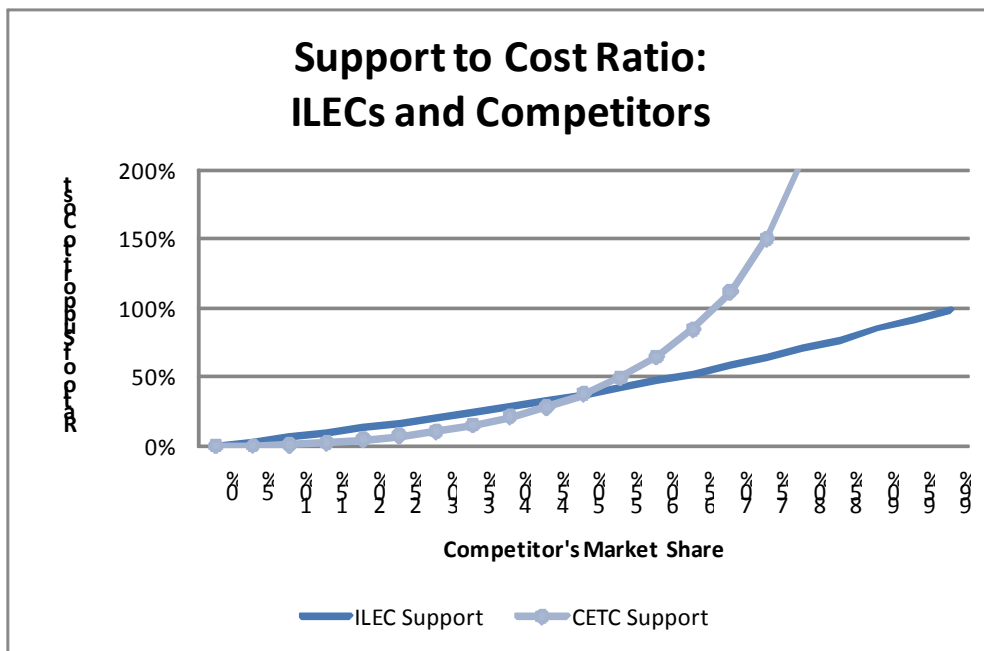


Chart 3 shows that the Identical Support Rule is disappointing in two ways:

1. When the competitor's market share is small, support is only a small share of its fixed costs. Therefore, when a competitor contemplating entry into a local exchange market anticipates a small market share, support is unlikely to affect that entry decision.¹⁶⁴
2. As the competitor's market share increases, CETC support increases exponentially and can far exceed total cost. This occurs because, as the CETC's market share increases, the ILEC's cost per line increases, as does its support. At the same time, the CETC's per-line support amount increases as its per-line cost decreases. In this illustration, when the CETC market share reaches 90%, its support exceeds 500% of its cost.¹⁶⁵

¹⁶⁴ The exception is where the competitor has little or no fixed cost. In that case, the Identical Support Rule can provide support greater than cost even at a small market share.

¹⁶⁵ We recognize that this extreme hypothetical result would be unlikely to occur in practice. Long before a CETC received that support equal to 500% of cost, the state commission would be likely to intervene.

This behavior seems counter-intuitive to many policy makers. One would hope that a support system that incorporates the Identical Support Rule would treat ILECs and competitors the same. Yet the reality is that the Identical Support Rule treats ILECs and competitors quite differently and can produce unforeseen interactions with other support rules. A state that offers support to competitive carriers should carefully analyze the interactions among all its support rules. The analysis should consider a range of conditions, including circumstances where the ILEC is no longer dominant. The analysis should evaluate the incentives created by state support, and how those incentives are likely to affect overall fund size.

On the other hand, the results would be even more extreme if less conservative assumptions are used. Those would be that more than 60% of costs are fixed, that competitors often gain lines more rapidly than ILECs lose lines, and that a competitor's costs are often lower than the ILEC's costs.

VI. Collecting State High Cost Funds

A. State practices

States are collecting significant sums of money for their universal service activities. Table 6 summarizes the overall fund revenues of states that have high cost funds. As Table 6 shows, the state fund ranges from a high of \$665 million in California to a low of \$3.26 million in Wyoming. These amounts include all universal service revenues, not merely those expended as high cost support.

Table 6. Overall Fund Revenues for States Providing High Cost Support ¹⁶⁶

State	Revenue (\$MM)	Fiscal Year (2007-08 unless indicated otherwise)
Alaska	4.2	2008
Arizona	0.8	
Arkansas	13.2	2007
California	665.	
Colorado	64.2	
Idaho	2.0	
Illinois	9.9	
Indiana	15.8	
Maine	8.0	
Nebraska	51.	
Nevada	0.0	
New Mexico	23.	
Oklahoma OUSF	5.3	
Oklahoma HCF	37.	
Oregon	49.	
Pennsylvania	33.8	
South Carolina	54.6	2007
Texas	649.	FY 2006
Utah	6.6	
Wisconsin	6.0	
Wyoming	3.3	

¹⁶⁶ Information for Texas was provided through interview rather than through our survey.

B. The revenue base

Nearly all states raise these funds through *ad valorem* surcharges on telecommunications services. Idaho and Arizona are the exceptions, with each state imposing both a monthly surcharge on lines and a second surcharge on toll usage.¹⁶⁷ Although states have shown interest in FCC proposals to impose a surcharge on telephone numbers or connections, no state has adopted such a plan.¹⁶⁸

All states with *ad valorem* surcharges exempt wholesale charges between carriers. Because of this exemption, a niche competitor (like a reseller) that provides only a retail service can compete with a vertically integrated provider that also provides its own facilities. Therefore, this exemption maintains competitive neutrality as between vertically integrated providers and providers who purchase upstream component services.

Among states that levy *ad valorem* surcharges, nearly all impose their surcharges only on intrastate services. South Carolina was the only state with a high cost fund that assesses both intrastate and interstate revenues.¹⁶⁹ Vermont imposes a surcharge on both intrastate and interstate revenues for other universal service purposes.¹⁷⁰

Several states expressed concern in our survey about the declining base of intrastate revenue. Some states suggested that wireless and VoIP providers should be required to contribute to state universal service programs. Oregon noted the difficulty in keeping its surcharge rate at a reasonable level while the revenue base declines.

¹⁶⁷ In Idaho, the line charge is \$0.10 per residential line and \$0.17 per business line and the toll surcharge is \$0.003 per minute. Arizona has a two-category system. Category One imposes a line charge on providers of basic local exchange service, wireless service, paging service and other Commercial Mobile Radio Service providers that interconnect with the public switched network. In 2009 these providers pay a monthly rate of \$0.006471 per access line and \$0.064714 per interconnecting trunk line. Category Two providers are intrastate toll service providers, who pay a monthly surcharge of 0.2485% of intrastate toll revenues.

¹⁶⁸ Colorado, New Mexico, and Pennsylvania reported that they have evaluated the possible impact of the FCC plan. All three expressed concerns, citing a shift in costs to the residential ratepayer.

¹⁶⁹ Vermont operates a universal service fund based on a surcharge on intrastate and interstate bills, but it does not use the proceeds for high-cost support.

¹⁷⁰ Vermont's universal service program supports the state's enhanced 911 program, Lifeline and benefits for the hearing impaired. 30 Vt. Stat. Ann. § 7511.

C. Contributing services, exemptions

All states require contributions from retail switched wireline carriers. Every responding state with an *ad valorem* surcharge for universal service told us they require contributions from ILECs, CLECs and IXC's, or from their customers.

States do not agree about requiring contributions from wireless carriers. A majority of states reported that they require wireless providers to contribute.¹⁷¹ South Carolina wireless providers only contribute if they have obtained federal ETC status in that state.

Contribution from VoIP providers is an evolving area of law. The Eighth Circuit Court of Appeals decided in 2009 that Nebraska could not impose a universal service surcharge on the revenues of a nomadic VoIP provider.¹⁷² Later in 2009, the Nebraska and Kansas commissions asked the FCC to explicitly permit such surcharges, but the FCC had not acted on the petition at this writing.¹⁷³

Fixed VoIP providers present different issues than nomadic VoIP providers. In many states, fixed VoIP providers have obtained state certificates to operate as telecommunications carriers.¹⁷⁴ In addition, fixed VoIP has more capabilities to identify the location of the end points of switched calls. The impossibility of identifying these locations was a key factual finding that supported the special treatment afforded to nomadic VoIP.

¹⁷¹ Based on survey responses, wireless carriers contribute in Alaska, Arizona, Arkansas, California, Colorado, Indiana, Kansas, Maine, New Mexico, Oklahoma, and Utah. They do not contribute to state funds in Idaho, Illinois, Nebraska, Nevada, Oregon, Pennsylvania, Wisconsin, or Wyoming.

¹⁷² *Vonage Holdings Corp v. Nebraska Public Service Comm'n.*, Case No. 08-1764, 564 F.3d 900 (8th Cir. 2009). "Nomadic" means that the service can be used at any Internet port with sufficient bandwidth, regardless of location. Fixed VoIP services are provided over fixed facilities, such as cable TV distribution lines.

¹⁷³ See, FCC, *Petition for Declaratory Ruling of the Nebraska Public Service Commission and the Kansas Corporation Commission for Declaratory Ruling or, in the Alternative, Adoption of Rule Declaring that State Universal Service Funds May Assess Nomadic VoIP Intrastate Revenue*, FCC WC Docket No. 06-122, petition filed July 16, 2009.

¹⁷⁴ In many cases large fixed carriers see other benefits from their status as certificated carriers, including interconnection benefits, arbitration of agreements, and availability of telephone numbers.

Several states reported that they require some VoIP providers to contribute to state high cost funds.¹⁷⁵ Other states reported receiving contributions only from fixed VoIP services or only from carriers with certificates to operate as intrastate telecommunications carriers.¹⁷⁶ Several states reported that the status of VoIP contributions is unsettled. These states are proceeding cautiously in light of the difficulties that Nebraska experienced.¹⁷⁷

Modern telecommunications include new kinds of services other than the traditional telephone subscriptions with monthly bills. These newer products include prepaid cards and prepaid wireless phones. The retail outlets that sell these cards and phones have no traditional relationship to the state utility commission or its third party collection agent. It would be inefficient to collect surcharges from all these retail locations, which can number in the thousands. Where a state imposes a universal service surcharge on such sales, the underlying carrier typically reports the revenue, either upon consignment of the merchandise to the retail outlet or upon receiving a report that the merchandise has been sold.¹⁷⁸ The carrier often applies a “safe harbor” percentage to exclude interstate services from its reported revenues or sales.

A few states have adopted *de minimis* exemptions to contribution requirements.

- One approach is to exempt carriers with little revenue. Maine exempts carriers with less than \$12,500 intrastate revenue per quarter. Wisconsin exempts carriers with less than \$200,000 of intrastate revenues.
- Another approach is to exempt carriers that owe small payments. This approach is used in Alaska (\$100 per year), Colorado (\$10,000 per year), Illinois (\$2,400 per year), and Pennsylvania (\$120 per year).

Administration of contributions has become more difficult due to regulatory changes, particularly regarding wireless and VoIP providers. At one time, there existed a one-to-one

¹⁷⁵ Kansas, Maine, Nevada, New Mexico, Oklahoma, and Wyoming reported, without further elaboration, that VoIP providers are contributing to their funds.

¹⁷⁶ Illinois and Nebraska reported that fixed VoIP providers but not nomadic VoIP providers are required to contribute. Indiana, Pennsylvania, and South Carolina reported that only certificated VoIP providers are required to contribute. Oregon reported that VoIP providers are not required to contribute, but the largest VoIP provider in Oregon elected to be certificated and does pay into the state fund.

¹⁷⁷ For example, New Mexico recently dismissed a pending case against VoIP providers in its state. Some nomadic VoIP providers in Kansas are refusing to contribute to the Kansas fund.

¹⁷⁸ See FCC, *Regulation of Prepaid Calling Card Services*, WC Docket No. 05-68, Declaratory Ruling and Report and Order, FCC 06-79 (rel. June 30, 2006) (requiring prepaid calling cards to contribute to federal universal service funds based on interstate revenues).

mapping: all certificated carriers made contributions, and all contributions came from certificated providers. Today, this relationship is no longer valid, but most states still use certification as a source of information to track service providers and assess contributions. Some states require VoIP providers to be certificated,¹⁷⁹ while others do not.¹⁸⁰

Some states obtain information from other sources to track contributors. These include annual reports, specialized databases and registries, FCC databases, and the USAC website. Nebraska reports that it expends substantial resources on tracking carriers. The Nebraska staff has created a contact database (which all carriers are expected to update on an annual basis) as well as a communication provider registry. In addition, the Nebraska staff obtains information from the Secretary of State’s website, newspapers advertisements and the yellow pages. Some states rely on their third-party fund administrator to track contributors.

D. Carrier and customer surcharges

Where a state imposes a surcharge on telecommunications services, it must decide whether to impose the surcharge on carriers (seller’s retail revenues) or on customers (buyer’s retail charges). The differences can affect what customers must pay, how the charge is explained to customers, and whether high cost funds collected by carriers are protected from that carrier’s creditors.

Table 7 lists the surcharges reported by the survey respondents that operate high cost funds and that impose percentage surcharges. The surcharges range from fractions of a percent to 7.12% in Oregon. About half of the states levy the surcharge on the customer’s retail bill and the other half impose the surcharge on the carrier’s retail revenues.

Table 7. State Surcharge Rates

State	Surcharge rate	Base
Alaska	1.05%	Seller’s retail revenues
Arkansas	1.49%	Buyer’s retail cost
California A fund	0.13%	Buyer’s retail cost
California B fund	0.25%	Buyer’s retail cost
Colorado	2.20%	Seller’s retail revenues
Illinois	0.36%	Seller’s retail revenues
Indiana	5.38%	Buyer’s retail cost
Maine	1.21%	Buyer’s retail cost
Nebraska	6.95%	Buyer’s retail cost

¹⁷⁹ Indiana, Nevada, South Carolina, and Wisconsin reported that VoIP providers are required to be certificated.

¹⁸⁰ Maine, Nebraska, New Mexico, Pennsylvania, and Utah reported that VoIP providers are not required to be certificated.

State	Surcharge rate	Base
Nevada	0.00% ¹⁸¹	Seller's retail revenues
New Mexico	2.15%	Seller's retail revenues
Oklahoma	0.60%	Seller's retail revenues
Oregon	7.12%	Buyer's retail cost
Pennsylvania	1.11%	Seller's retail revenues
South Carolina	3.57%	Seller's retail revenues
Texas	3.4%	Seller's retail revenues
Utah	0.25% ¹⁸²	Buyer's retail cost
Wyoming	1.00%	Seller's retail revenues

Some states reset their surcharge rates frequently. Kansas sets a new rate annually.¹⁸³

1. Buyer surcharges

Approximately half the states with surcharges impose those surcharges on buyers. These surcharges can operate in the same manner as a state sales tax. The tax or surcharge falls on the customer who normally must pay it at the time of sale. Since the surcharge falls on the customer, the customer must be able to prove that the charge was paid. Accordingly, all such charges require that the charge be shown on the customer's monthly bill or invoice of sale.¹⁸⁴ The surcharge is described by the following formula:

$$\text{USF Charge on Customer} = \text{Rate} \times \text{Retail Bill}$$

With this kind of surcharge, as with sales taxes, the seller acts as the collection agent of the state for the USF surcharge. The proceeds are held in trust for the state fund. This method can help insulate surcharge funds from the carrier's creditors if a carrier or service provider cannot meet its debts.

The buyer surcharge method also avoids any controversy about the proper rate to show on the customer's bill. As seen below, this is sometimes an issue with gross revenue surcharges.

¹⁸¹ Nevada had no high cost distributions in 2008 and 2009 and covered administrative costs with an accrued fund balance.

¹⁸² Utah recently reduced its rate from 0.45% to 0.25%.

¹⁸³ Vermont, which does not have a high cost fund, sets a universal service rate annually for other public benefit programs.

¹⁸⁴ Similarly, state sales tax laws usually obligate sellers to list the tax amount on any receipt produced for the sales transaction. If a buyer is audited and cannot produce a sales tax receipt showing that he or she has paid the sales tax due on a purchase, the buyer may have to pay the tax again to the state tax department.

2. Gross revenue surcharges

Approximately half the states with surcharges impose those surcharges on sellers. These surcharges can operate in the same manner as a state or local gross revenue tax, such as those commonly imposed to support utility commissions. Some state statutes may limit universal service surcharges solely to surcharges on carriers.¹⁸⁵ The surcharge is described by the following formula:

$$\text{USF Charge on Carrier} = \text{Rate} \times \text{Gross Revenue}$$

States differ in whether they allow the cost of gross revenue surcharges to be passed through to consumers as explicit line items. Pennsylvania statute prohibits separate line items for recovery of state universal service surcharges.¹⁸⁶ Most states permit or require these line items.

When a gross revenue surcharge is passed through as a separate line item on a retail bill, the rate can properly be slightly higher than the rate that the carrier itself pays. For example, Oregon imposes a gross revenue surcharge of 6.65% on carriers and allows carriers to add retail line items on customers' bills at 7.12%. The dollar amount of surcharge is the same in both cases. In states with smaller surcharge rates, this difference can be small enough to be ignored.

Kansas allows some carriers to place a fixed monthly charge on customer bills, while it allows other carriers to impose a percentage surcharge. The Kansas commission approves three separate fixed surcharges for AT&T, Embarq, and all rural ILECs. Other carriers, such as IXC and CLECs, may impose a percentage surcharge.

3. Net revenue surcharges

Gross revenue surcharge systems are sometimes criticized on the grounds that the surcharge rate shown on the customer's bill exceeds the surcharge rate on the carrier's revenues. While this rate difference is mathematically proper,¹⁸⁷ it still frequently generates an adverse reaction. Some people see gross revenue surcharges that are passed through to consumers at a higher rate as a "tax on a tax."

A third option exists that neither imposes a surcharge directly on the customer nor allows the customer's line item rate to exceed the carrier's surcharge. This third option is a "net revenue surcharge." The FCC uses this method for its own universal service surcharge. It is described by the following formula:

¹⁸⁵ For example, 47 U.S.C. § 254(d) requires that the FCC's programs be funded by a surcharge on carriers.

¹⁸⁶ 52 Pa. Code § 63.170.

¹⁸⁷ See section VI.D.2.

$$\text{USF Charge on Carrier} = \text{Rate} \times (\text{Gross Revenue} - \text{Prior Period Payment})$$

Like a collect-and-remit sales tax, the rate stated on the customer's retail bill can properly be equal to the rate imposed on the carrier.

VII. Administration and Evaluation

A. Administration

States use one of three methods to administer their universal service funds. The first method is for the state to administer the program itself, either through the regulatory commission or a combination of agencies. Nebraska and Wyoming use their commissions as both the fund administrator and fund custodian.

In several states the state commission manages the funds, but other agencies serve as fund custodians. California funds are held by the California State Controller. In South Carolina the state treasurer retains custody of the fund, but the commission administers it. In Utah, the Public Service Commission established the fund and sets policy for its operation. The Utah Division of Public Utilities (DPU) serves as the fund administrator and custodian. Wisconsin keeps funds custody in the hands of the State Treasurer, but it contracts accounting, billing, and reimbursement work to an accounting firm.

The second method is to assign administration to an ILEC or an industry coalition.

- Colorado uses an ILEC, Century Telephone Company, as the custodian of the state USF.
- The Illinois Commerce Commission appointed Illinois Small Exchange Carrier Association based on the organization's expertise dealing with small ILECs.

The third method is to select or create a third party administrator.

- Most states use one of several companies that specialize in such work, selecting the administrator through competitive bidding. These include Arkansas, Arizona, Indiana, Kansas, Maine, Nevada, New Mexico, Oklahoma, and Pennsylvania.
- Oregon keeps custody of its own funds, but it uses a third party administrator for accounting and delinquency work.
- Alaska and New York (which does not have a high cost fund) each have formed single purpose corporations to administer some universal service functions.¹⁸⁸

The cost of administration varies greatly depending on the complexity of the fund. States that contracted with a third party reported a wide range of costs, from a high of almost \$3 million for the administration of California's A and B Funds, to lows of \$25,500 and \$30,000 for the

¹⁸⁸ Alaska formed the Alaska Universal Service Administrative Company (AUSAC), the members of which include all companies that provide intrastate telecommunications services in Alaska.

Idaho and Maine funds. Among states using industry-based and third-party administrators, most reported costs in the \$100,000 to \$300,000 range. Nebraska self-administers and reported annual administrative costs of \$620,000, while Wyoming's fund, which is much simpler than Nebraska's, reported annual administrative costs of \$72,000.

B. Program accountability and evaluation

Our survey showed that state commissions have clear ideas about the purposes of their universal service programs. Most commissions cited broad objectives that often paralleled federal law.¹⁸⁹

- Colorado has established a goal of making basic service available and affordable for all its citizens.
- Idaho and New Mexico seek to maintain local rates at reasonable levels and toll rates at reasonably comparable prices to the rest of the United States.
- Kansas seeks to ensure that every citizen has access to a first-rate telecommunications infrastructure providing excellent services at affordable rates.
- Pennsylvania seeks to encourage “the accelerated deployment of a universally available state-of-the-art, interactive, public switched broadband telecommunications network in rural, suburban and urban areas.”¹⁹⁰

A few states have established quantified goals.

- Nebraska set a 96% penetration rate as a goal of its universal service program.
- California reports having established the goal of 95% voice penetration.
- New Hampshire does not have a high cost fund, but its statutes require the state commission annually to assess the statewide penetration rate and ensure it does not fall below the national average.
- Wyoming has decided that no rates for basic service should be higher than 130% of the statewide average.

All the state commissions we interviewed well understand the general directions of their programs. Nevertheless, a state with quantified goals stands a better chance of conducting a meaningful evaluation of its program's success.

¹⁸⁹ See 47 U.S.C. § 254(b).

¹⁹⁰ 52 Pa. Consol. Stat. Ann. § 63.161(1).

VIII. Steps in Establishing a High Cost Fund

The preceding sections have been largely descriptive. This section offers a structured guide to decision-making. It aims to assist state commissions and state legislatures in deciding whether they need a state fund and, if so, how best to establish one. On many questions, the economic and political circumstances vary from state to state. We do not offer a single recommendation. Rather, we offer observations about advantages and disadvantages of particular choices.

A. Is a fund needed?

The most basic question facing a state commission or legislature is whether a high cost fund is needed. To answer this question, the state will first want to assess environmental factors in the state, notably the economics of the incumbent local exchange industry.¹⁹¹

1. Environmental factors

A state high cost fund is an intervention in the economic conditions of the state's telecommunications industry. Before establishing such a fund, therefore, a state commission should first understand market conditions. As discussed above,¹⁹² the commission should survey the extent of competition in the state and consider whether competition, in some or all parts of the state, has advanced so far that universal service goals can be met without governmental intervention.

A state commission should also examine the economics of the ILEC business in the state. We discussed above the main ILEC revenue streams and the factors affecting those revenues.¹⁹³ A state evaluating the need for a high cost fund should evaluate the foreseeable trends of those revenue streams. This survey should include the ILECs' line counts, subscriber revenues, access traffic, net intercarrier revenues, and average total revenue per unit (ARPU). The state commission might also want to estimate future trends for three to five years, taking account of any probable market-changing events, such as the introduction of cable voice service in ILEC service areas.

The revenue survey should include revenue from federal universal service support. Particularly for smaller "rural" carriers, federal support can provide a large share of an ILEC's total revenues. Even without regulatory changes, the amount of federal support shifts over time.

¹⁹¹ The considerations for this topic were covered in section III above.

¹⁹² See section III.A.

¹⁹³ See section III.B.

High Cost Loop support in particular can change dramatically over a period of years.¹⁹⁴ In some cases, recent or anticipated losses or gains in federal support could affect a state's decision about whether and where high cost funding might be needed.

Revenue can also be affected by any state plans to make substantial revisions to intrastate rates. Historically, mandated changes to retail rates and access charge rates have often been the proximate cause of new state high cost funds. Conversely, if a state has decided to establish a high cost fund, it should also consider whether rate reforms should be imposed simultaneously.

A state considering establishing a high cost fund should also evaluate the distribution of ILEC costs among study areas and wire centers. We explained above how costs vary among wire centers nationally.¹⁹⁵ But states are not all alike, and each state's need for a high cost fund will depend on its own cost distribution. State A may be a rural state with some mountainous areas. State A would find its own cost distribution skewed toward the high-cost end of the spectrum, with many wire center areas having monthly costs above \$50. State B may have a relatively homogeneous population density pattern and few areas of challenging terrain. State B's costs for nearly all exchanges may lie in the safe zone with costs below about \$30.00. State A would need a high cost program more than state B.

In evaluating cost, a state should consider whether differences within individual wire center areas matter economically. As explained above,¹⁹⁶ cost differences within wire centers are economically relevant when the local exchange market is competitive in some portions of existing wire centers. Success by a competitor who serves only the "hole" surrounding a wire center building can drive up the ILEC's average costs, erode traditional implicit support flows and increase the need for explicit support.

We discussed above the FCC's opinion in 1997 that the proper task for a state universal service fund is to make subsidies explicit.¹⁹⁷ Potentially the largest of the three implicit transfers is that between urban and rural areas. Before undertaking to make this transfer explicit, the state should assess the likely size of that transfer, an amount that is a function of both the state's cost structures and its rate designs. Some state commissions will find that making explicit all of the currently implicit urban-to-rural support flow requires a fund that is dauntingly large.

¹⁹⁴ The High Cost Loop program allocates a capped amount of support over the highest cost loops in the nation. A carrier that five years ago had costly loops may today have only moderately expensive loops, in part because its own investment has depreciated and in part because other carriers have installed even more costly networks.

¹⁹⁵ See section III.C.1. and Charts 1 and 2.

¹⁹⁶ See section III.C.2.

¹⁹⁷ See section III.D.

Table 7 summarizes environmental factors that may affect a state’s need for a high cost fund.

Table 7. Factors Affecting the Need for High Cost Funds

Environmental factor	More need for a state fund	Less need for a state fund
Competition	Facilities-based competitors avoid higher cost areas.	Facilities-based competition is ubiquitous or widespread.
	Competitive networks depend on ILEC for linchpin services.	Competitive networks are independent.
Subscriber revenue	ILECs are losing low-cost or high-profit subscribers.	ILEC local rates are currently low or ILECs have other revenue sources.
	Commission mandates de-averaging of local rates.	De-averaged rates are affordable.
	ILEC revenues are limited to regulated services.	ILECs produce unregulated Internet or video revenue from using common network assets.
Intercarrier revenue	ILEC access revenue is eroding.	ILECs have low access rates or are not dependent on access revenues.
	Commission mandates access rate reductions.	Commission allows local rates to increase following access rate reductions.
	FCC mandates lower intrastate access rates.	FCC creates new federal mechanisms to compensate intrastate access rate reduction.
Federal universal service funds	Insufficient federal USF	Sufficient federal USF
	Rural areas are served by large “non-rural” ILECs.	Rural areas are served by “rural” ILECs.
	Federal support is decreasing.	Federal support is increasing.
Cost	State has heterogeneous costs, large areas with high per-customer cost and high average local exchange rates.	State has homogeneous costs, usually due to uniform population densities and uniform topography. State has low average local exchange rates.

2. Alternative mechanisms

A state high cost fund is not the only tool available to support universal service. States have used a variety of regulatory tools to maintain affordable local rates in high-cost areas. Whether these tools are still viable is an important question in considering whether a state needs a new high cost fund.

a. Traditional rate designs

Traditional rate designs can be a useful tool to defer or avoid creating an explicit high cost fund. As discussed above,¹⁹⁸ the FCC and others have criticized geographic rate averaging in the wireline business. The perceived harms include subsidizing ILEC inefficiencies and deterring entry by new wireline competitors in subsidized areas. Despite the criticisms, rate averaging has been a durable mechanism, at least for large carriers. If a state commission concludes that geographic rate averaging remains a viable universal service strategy, one effect of that decision is a reduced need for an explicit high cost fund.

On the other hand, implicit support mechanisms can actually increase the ultimate demand for high cost support. Sometimes those implicit mechanisms can make it harder for essential carriers to compete. The burden of these transfers typically falls most heavily on urban business customers of ILECs who are the prime targets of competitors. To the extent that competitors win these customers, the ILEC's implicit support flow declines and the ILEC becomes more likely to seek explicit support. Therefore, reducing or eliminating implicit support flows can be a sensible precaution against future demands.¹⁹⁹

Value-of-service rate structures are another customary mechanism for achieving universal service.²⁰⁰ In addition, many states historically set high rates for long distance calling and for advanced features, using the additional revenues to reduce local rates. These mechanisms have become increasingly precarious in recent years. Many states have abandoned value-of-service retail pricing. Toll rates have fallen to a fraction of the rates charged in the 1980s, and most states have reduced intrastate access rates. Today, local exchange competitors routinely offer advanced features as an integral part of their service bundle.

b. Revenue pools

Some states have maintained “toll or access charge pools.” These financial arrangements typically offer small carriers the opportunity to share toll or access revenues and costs with other pool participants. Participating ILECs can receive pool revenues on the basis of their cost and their volume of traffic. These pools can increase ILEC revenue in rural areas and could reduce pressure to establish an explicit high cost fund. Toll or access pools do not function well in a competitive environment, however, because net contributors seek to leave the pool. These pools in many states have been eliminated. Some states replaced the pooling arrangement with an explicit state support mechanism.

¹⁹⁸ See section III.D.3.

¹⁹⁹ If eliminating implicit support leads to high rural rates, that could increase the need for a high cost fund rather than reduce it. For example, Wyoming introduced its high cost fund in response to retail rate de-averaging.

²⁰⁰ See section III.D.3.

Some states continue to rely on their Access Charge regimes as a way to avoid a high cost fund. Kentucky and Washington allow carriers to charge an additional intrastate access charge; revenues from these charges help to cover local carrier costs and so help avoid local rate increases. The uncertain future of access charges suggests that this approach will be short-lived. If the FCC does sharply reduce interstate and intrastate access charges, pressure will increase for states to establish or expand high cost funds.

c. Line extension policies

While states generally assign ILECs carrier of last resort duties, those duties are often limited by line extension policies. Many states allow ILECs to impose line extension charges for lines constructed to new locations. These construction charges can increase ILEC revenue in rural areas and can marginally reduce the pressure to establish an explicit high cost fund.

In sum, some of the traditional mechanisms supporting universal service have not proven durable in the age of competition. Mechanisms such as value-of-service pricing, toll pools, and additional access charges no longer function well in the competitive environment and have actually become targets for reform. On the other hand, some rate mechanisms such as local rate averaging and line extension charges could marginally reduce the need for a state high cost fund.

3. Risks of explicit funds

We discussed above some of the advantages and difficulties of converting implicit support flows (or “implicit subsidies” as the FCC called them) into explicit support payments.²⁰¹ Making a subsidy flow explicit creates some additional risks.

One new risk is that even where an explicit support program replaces a longstanding implicit flow, the public may object. Explicit support programs typically generate more opposition than implicit support mechanisms. For example, an urban customer may for years contentedly pay a local rate that supports rural customers, but then object to a new explicit universal service program that replaces the implicit mechanism.

Explicit programs also can generate increased opposition from particular regional or industry groups. With an explicit fund, it is usually a simple matter to develop a plausible list of “winners” and “losers,” either by region or by industry sector. In universal service, groups that contribute more than they benefit often candidly state that their opposition arises chiefly from self-interest.

Explicit funds can blur the traditional boundary between public and private funds and make universal service monies subject to legislative appropriation. For most implicit support mechanisms (such as those between urban and rural customers), it is usually understood that all of the money involved is utility revenue. State legislatures may impose a tax on these funds, but the funds are considered private property and they are not subject to appropriation. A legislature

²⁰¹ See section III.D.

would not normally pass a law, for example, requiring a utility to pay for a public school or pave a public highway.²⁰² When support is made explicit, this separation between utility funds and governmental funds becomes less distinct and legislative appropriation becomes possible.

Some states have taken measures to minimize the risk that universal service funds will be redirected to other government programs. One measure is to express in statute that although high cost funds are held under the direction of government officials, they are not governmental funds and are not subject to appropriation. While a future legislature could repeal such a law, such a statute creates at least a moral obligation to maintain the distinction between ratepayer-generated funds and tax-generated funds. A second common measure is to place the funds in the custody of an independent third party or “fiscal agent” that manages the fund’s banking functions, including collecting revenues and writing checks for funded programs.

For financial reporting purposes, states cannot fully control the boundary between public and private funds. The Governmental Accounting Standards Board (GASB) defines how states must report their financial transactions, as well as which activities and programs comprise part of the state “financial reporting entity.” GASB has required one state to include its universal service fund in the state’s consolidated financial reports.²⁰³ When universal service funds and tax funds are reported together and are both held in the custody of an agent of the state, legislatures are more likely to view the universal service funds as subject to appropriation for any purpose.²⁰⁴

B. Legislative authority

If a state commission decides to establish a high cost fund, a key issue is whether to seek explicit legislative authorization. Most states with high cost funds have relied on legislation to establish the basic structure of their funds.

State legislation can also help address some thorny legal issues that might otherwise limit a state fund’s scope or operation. A law can address more definitively the issues of fund custody, audits and accountability. A law in most cases will be essential to mandate contribution from unregulated service providers, which in many states include wireless and VoIP providers, as well as prepaid service providers.

²⁰² There are certainly cases where legislatures have required utilities to act in support of public schools or to take actions that reduce the public cost of maintaining highways. Nevertheless, these legislative enactments are usually expressed as impositions of duty on the utility rather than as an appropriation of utility funds.

²⁰³ See generally, Government Accounting Standards Board, *Statement No. 14: The Financial Reporting Entity* (issued 1991). Vermont received such an opinion in 1996.

²⁰⁴ For example, the Vermont legislature in later years appropriated a portion of that state’s universal service fund balance for other governmental purposes.

A statute can also be useful if the state decides to impose a surcharge on interstate service, a subject discussed more fully in Appendix D. If the collection mechanism is challenged under federal law, a state fund that is based on state statute has additional defenses available.

C. Setting goals

Once a state has decided to establish a high cost program, the first step should be to define the program's goals. Historically, the goals of state programs have been non-quantitative. They are sometimes defined by long multi-point lists with complex syntax. Non-quantitative goals are useful in describing what a high cost fund wishes to achieve, but it can be difficult to determine later whether these goals are actually being met and whether the benefits of the program justify the cost.

Quantifiable goals have several uses. During the design phase, quantifiable goals can help identify the most appropriate distribution mode. They can also help the state select the most appropriate sources of revenue. Once the program is in operation, clear goals are essential for program evaluation. A state preparing to establish a high cost fund should consider adopting goals in one or more of the following dimensions.

1. **Availability.** A goal might state that "service is available to all customers within ten miles of every central office." Another choice is that "service is available to 98% of all households in the state." An availability goal would also be useful to a state that wants to promote broadband deployment.
2. **Penetration.** While availability determines whether services are physically accessible to subscribers, penetration rates measure whether subscribers are actually taking advantage of those services. Penetration rates are also indicative of the availability and affordability of service. A goal might state that "95% of households subscribe to basic telecommunication service." Penetration is commonly measured by the ratio of households with either wireline or wireless service.
3. **Affordable Rates.** A goal might be "that no local exchange rates are more than 130% of the statewide average rate."
4. **Revenue Protection.** A goal might be that existing carriers not suffer revenue loss from an episode of rate revision. An example of a quantifiable goal is "to ensure that no carrier suffers a revenue loss of more than \$1.00 per line as a result of access rate revisions ordered in 2010."
5. **COLR survival.** No state has expressed the continued survival of ILECs as a statutory goal. Some states might even perceive such an express goal as a violation of the principle of competitive neutrality. Nevertheless, we have

found that the survival of ILECs—or in some states COLRs²⁰⁵—has often been a central goal of state high cost funds. Many states limit support eligibility solely or principally to ILECs,²⁰⁶ and many states calculate support amounts based on the costs and revenues of ILECs.²⁰⁷

6. **Fund Efficiency.** Like any public program, a high cost program should not generate and distribute funds unnecessarily. The principle of efficiency has led some states to adopt floors for local rates.²⁰⁸ Another possible mechanism based on efficiency would be to limit investment or expenditures by category.²⁰⁹

D. Defining supported services, providers, and facilities

A state with a high cost fund must determine which carriers will receive (or benefit from) high cost support. If the state is primarily concerned with maintaining the viability of the ILECs in that state, or only rural ILECs, it may decide explicitly to support only those carriers.

The alternative is to establish a list of prerequisites for qualifying carriers and a designation procedure to establish eligibility. As discussed above,²¹⁰ several states have made federal ETC designation a prerequisite to receiving state high cost support. Many states have added their own eligibility requirements, sometimes explicitly defining the concept of a “state ETC” in a way that expands on the requirements for federal designation.

A state with a designation procedure needs a list of criteria. This can include a list of “supported services,” possibly comprising a variation of the nine services listed by the FCC. Some states call this list a “basic services” list. Whatever the title, it usually describes the minimal features and components of local exchange service.

²⁰⁵ Nebraska provides high cost support to only one facilities-based network in a given support area. This Nebraska formulation ensures continued service from one carrier, while not specifically targeting benefits solely to the legacy ILEC.

²⁰⁶ In many states high cost support is available only for some or all ILECs.

²⁰⁷ In nearly all states, the distribution calculation is based primarily on either holding ILECs harmless or using a cost-based method that provides them with enough revenue to operate.

²⁰⁸ If a state decided that affordable residential service costs \$20.00 per month, then a goal would be “to support carriers as though they received subscriber revenues of at least \$20 per month for local service.”

²⁰⁹ For example, the HCL program limits corporate operations expense.

²¹⁰ See section IV.D.

The state should also consider whether to include broadband in any list. In the future, customers in areas served by broadband are likely to purchase voice services as mere add-ons to their broadband services. In that future, a voice-only high cost program would be anachronistic and could have unintended harmful effects.

Before adopting a list of basic or supported services, the state should consider whether that list will be used in other applications. In particular, as described in Table 4 above, the state should decide whether the list will define eligible carrier costs when support is being calculated and whether it will define the allowed or required uses to which carriers may apply support.

E. The distribution mechanisms

1. Support for ILECs

The state's universal service goals and the current legal and financial environment will drive its selection of the most appropriate distribution mechanism. Many states have created a high cost fund at the same time that they revised ILEC rates (most commonly access rates). In these circumstances, a hold-harmless mechanism is appealing. A state establishing a hold-harmless mechanism should decide in advance whether it anticipates adjusting support amounts over time as market behavior changes the supported carriers' subscriber counts and access minute counts.

If the state is primarily concerned with maintaining the long-term viability of the COLRs, a cost-based mechanism could be the best fit. Even if a state is anticipating an episode of access rate revision, it might still want to establish a cost-based mechanism. Several states have initially established hold-harmless programs and then shifted to cost-based systems in later years.

Hold-harmless and cost-based mechanisms can respond differently to market changes. Cost-based mechanisms tend to offset revenue changes with support. This can make ILEC survival more likely over the long term, particularly in a declining revenue environment. For the same reason, a cost-based system can lead to a larger fund size, particularly if ILECs are losing subscribers. By contrast, a hold-harmless mechanism may be insensitive to future events that might demand support increases (such as increased risk of ILEC business failure) or support decreases (such as improved technology or greater depreciation of investments). A hold-harmless mechanism is more likely to maintain a constant fund size over time.

A state that selects a cost-based mechanism faces several threshold decisions in defining the *Cost* and *Revenue* terms of the support equation. One is whether to approach the problem on an unseparated or "total company" basis or solely on an intrastate basis. A second question is whether to use embedded and/or forward-looking cost methods. A related question is the scale at which costs will be measured, whether study area, wire center area, or even smaller. Third, the state should decide how to treat broadband costs, including common facilities. A state with a cost-based mechanism should also anticipate the methods and frequency with which support amounts will be recalculated. If the state decides to use a cost model, it should anticipate

whether it will periodically update that model and its inputs, such as population locations and the cost of labor and materials.

In a cost-based mechanism, the revenue term requires decisions about what kinds of revenue should be considered. A state should decide whether to consider revenue from unregulated operations that use common facilities, including Internet-related revenues from affiliated DSL providers and video providers.

Table 8 summarizes the principal considerations in designing a cost-based mechanism.²¹¹

Table 8. Adjustments to Cost-based Support

Adjustment class	Adjustment	Reason	Used in
<i>Cost</i>			
	Return on Investment	Avoids subsidizing profits above prescribed levels.	Most states
	Broadband	Create or avoid ILEC incentive to upgrade facilities to broadband quality	
<i>Revenue</i>			
	Floors for residential and business monthly rates	Avoid subsidizing very low local rates	Arkansas, Maine, Nebraska
	State subscriber line charge	Comprehensively measure all subscriber-paid revenues	
	Intrastate special access revenues	Avoid double recovery of special access revenues generated by the supported network.	
	Intercarrier net revenues	Avoid double recovery of intrastate access and reciprocal compensation revenues generated by the supported network.	Nebraska
	Federal universal service revenues for intrastate costs (HCL, LSS, High Cost Model Support)	Avoid double recovery of intrastate costs already supported by federal programs	Arkansas (small carriers), Nebraska
	DSL revenues	Avoid double recovery of costs for network facilities shared with Internet services	
	Nonregulated ISP and video revenues	Avoid double recovery of costs for network facilities shared with nonregulated activities	

²¹¹ See section V.B.

Adjustment class	Adjustment	Reason	Used in
Additional adjustments if <i>Cost</i> includes unseparated interstate cost			
First alternative – decrease <i>Cost</i>	Allocate a portion of unseparated costs to interstate	Avoid double recovery of interstate-separated costs.	Oregon
Second alternative – increase <i>Revenue</i>	Federal subscriber line charge		Nebraska
	Interstate special access revenues		
	Intercarrier net interstate revenues		
	Federal universal service revenues for interstate costs (IAS, ICLS)		

If the state is primarily interested in managing retail customer rates, a bill credit mechanism may be most useful. This method largely ignores many of the complex questions raised by cost-based mechanisms. In bill credit mode, the only question is the rate itself. It does not matter how those rates were established. For this reason bill credit mode can be particularly useful where a state has reduced or eliminated regulation of ILEC intrastate rates. Moreover, it insulates customers if a state’s deregulation decision produces unforeseen rate increases. Even if competition does not discipline rates, affordability is still protected.

Bill credit mode can be attractive to new local exchange competitors. First, it seems competitively neutral, since the same rules can be applied equally to ILECs and to competitors. Second, it can entitle a new entrant to support while avoiding an intrusive cost review.²¹² Third, it provides support to ILECs only when those ILECs actually have high rates. ILEC’s with low rates therefore cannot use universal service subsidies to block competitive entry.

The disadvantage of bill credit mode is that by reducing the customer’s net cost, it could encourage rate increases. Bill credit mode only works if rates are restrained by some external force, either rate regulation or market discipline. If external discipline is in doubt, the state might support only a percentage of the amount by which the consumer’s bill exceeds the state’s target or benchmark rate.

²¹² To avoid possible abuse of the program by competitors that are not subject to rate regulation, the state might authorize a marginal credit at less than 100% of the marginal rate. In Wisconsin, for example, as rates increase above the rate threshold, the marginal credit first covers 50%, then 75%, then 85%, then 95% of the incremental rate.

A state might consider developing a reverse auction mechanism if it is concerned about promoting competition and eliminating possibly excessive subsidies to ILECs. The FCC and two state commissions have expressed interest in using auctions, but no universal service auctions have yet occurred, even on a trial basis.

2. Support for competitors

Where a state offers hold-harmless or cost-based support to ILECs and also offers support to competitive carriers, it needs a method to calculate support to the competitor. As discussed above,²¹³ there are two principal options:

1. Support can be based on the competitive carrier's own cost. This requires a method to estimate those costs and may involve recordkeeping and procedures similar to those used for incumbent carriers. Maine has adopted this plan, but no competitive carrier in Maine has applied for support.
2. The Identical Support Rule. This rule provides the same level of support (per line) to competitive carriers as is provided to incumbent carriers serving the same location. Disadvantages with this method were discussed above.²¹⁴

3. Controls over fund size

High cost programs have earned a reputation for growing beyond their creators' expectations. Today, several state commissions that operate high cost funds are seeking ways to limit the growth of their fund or to reduce its size. A state contemplating a new fund should consider whether to establish any limits on future fund size.

A spending cap is one approach to limiting fund size. This can be defined as a limitation on fund expenditures or it can be achieved by limiting the surcharge rate.

A second approach is to schedule periodic reviews of the high cost program. A more aggressive variant is to establish a "sunset" date at which a high cost fund would lapse unless positively reenacted. An impending sunset deadline can prompt a future commission to conduct a comprehensive program evaluation. It also allows the commission to create a fund while limiting expectations that it will operate indefinitely without serious review.

²¹³ See section V.E.

²¹⁴ See section V.E.

F. The collection mechanism

The task of raising high cost funds presents an array of complex issues.

1. Contributors to the fund

A threshold question is which categories of service providers should be required to contribute to the fund. In general, states will be likely to require ILECs, wireline CLECs and IXCs to contribute.

States with *ad valorem* surcharges should exempt wholesale payments between carriers from high cost surcharges. This exemption maintains competitive neutrality as between vertically integrated providers and providers who purchase upstream component services. One way to exempt wholesale transactions is to apply the surcharge only to “end-user retail telecommunications service” sales or revenues.²¹⁵

States should decide whether wireless carriers, fixed VoIP, and nomadic VoIP providers will be required to contribute. It can be helpful to simultaneously decide what kinds of registrations or certifications the state can require of these carriers.

States should decide how to treat prepaid services sold at retail by entities that are not telecommunications service providers, such as discount stores and convenience stores. If the state surcharge is applied to customer purchases, the state should consider defining the relevant sale as occurring between the telecommunications service provider and the retail outlet. If the state surcharge is applied to the revenue of the service provider, the state should consider defining that provider as the underlying telecommunications service provider. If the state applies a surcharge only to intrastate telecommunications services, it should consider prescribing a safe harbor percentage that carriers can use to eliminate interstate usage.

Some states have experienced difficulty in having prepaid wireless providers collect and remit state universal service fund surcharges because they do not send a monthly bill to their customers. States should consider alternative collections mechanisms that a prepaid telecommunications service provider can use to collect and remit surcharges on applicable telecommunications services.

States should consider whether to adopt other traditional exemptions. These can include: (1) coin-sent paid telephone calls (coin-in-box); (2) usage charges for coin-operated pay telephones; (3) paging and dispatch services; and (4) institutional providers such as hotels, hospitals, and universities while serving their own customers.²¹⁶

²¹⁵ See, e.g., 52 Pa. Code § 63.165(a).

²¹⁶ Texas collects surcharges from approximately 700 hotels and motels in that state, but is considering creating an exemption for these providers.

States should also decide whether to adopt a *de minimis* exception that exempts either small sellers with little revenue or those with small surcharge collections.

Finally, states should consider how they will administer their collection duties, including what data sources they will use to identify contributors.

2. Surcharging customers or carriers

Where a state adopts an *ad valorem* surcharge, it must decide whether to impose the surcharge on carrier revenues or customer bills. As noted above,²¹⁷ the states are currently divided on this question. One approach imposes the surcharge on customer retail bills, in the same manner as sales taxes. The alternative approach imposes the surcharge on the carrier's or provider's revenue.

Where a state imposes a surcharge on the carrier, it should also decide whether carriers will be allowed to, required to, or prohibited from passing through the surcharge as line items on retail bills. If line items are allowed or required, the state should prescribe how the line item amount will be calculated and described. The commission should also consider establishing a procedure to review the accuracy of these line-item calculations.

The FCC uses a net revenue surcharge. As explained above,²¹⁸ this option allows the rate shown in a retail line item surcharge to be the same as the rate imposed on carrier revenues.

Although many states allow line-item pass-through, customers seldom see a corresponding benefit from high cost programs. In most states support is paid to the carrier and used as general revenue. The support probably reduces rates, but the effect is indirect and does not appear explicitly on customer bills. This imbalance between the apparent cost and the apparent benefit of a high cost program can bias the public against high cost programs. One approach to rectifying this imbalance is to allow the surcharge to appear on customer bills and to require explicit credits that reflect support received. The alternative is to make both transactions implicit by prohibiting the pass-through of a gross revenue surcharge and allowing the carrier to use high cost support invisibly to reduce its own rates.

3. Intrastate and interstate

A state that imposes an *ad valorem* surcharge should decide whether to impose that surcharge on all telecommunications services or only on intrastate telecommunications services.

²¹⁷ See section V.D.

²¹⁸ See section V.D.3.

As noted above,²¹⁹ most states derive fund revenue solely from intrastate services. The advantages and disadvantages of each approach are discussed in more detail in Appendix D.

Surcharging interstate services creates some legal risk. The practice has been declared invalid in two states and upheld in one state. A broad surcharge on all telecommunications services can simplify administration, enlarge the revenue base, reduce the rate of erosion of that base, and align universal service surcharges with any state sales taxes on telecommunications.

Where a state decides to apply a surcharge only to intrastate telecommunications services, it should consider adopting “safe harbor” percentages for these services. In general, the intrastate safe harbor percentage, when added to the interstate safe harbor percentage, should equal 100%. For example, the FCC’s approved safe harbor interstate percentage for wireless is 37.1%. The complementary percentage that would apply to intrastate services is 62.9%.²²⁰ Such safe-harbor calculations avoid jurisdictional conflicts and simplify administration for carriers.

States should anticipate how frequently they will adjust contribution rates. Some states perform this calculation annually or as needed to meet spending obligations.

4. Collections enforcement

When state high cost funds first came into existence, collecting revenue was a relatively simple matter. Fund revenues came from certificated carriers that had long-term relationships with state commissions. The commissions knew which carriers should be making payments. The commissions could audit the books of any of those carriers.

Today the situation has changed dramatically. Many more providers make payments into universal service funds. Many of these providers have little or no continuing relationship with the state commission. The task of collecting universal service payments has become much more like the task of collecting sales taxes. The collection agency needs suitable tools to deal with a wide variety of contributors.

State tax agencies have evolved specialized tools that increase the efficiency of their collection efforts. State legislatures should consider offering similar powers to any state commission that it authorizes to operate a universal service fund. These include:

- Authority to make an administrative determination of liability and the ability to assert that determination in court as presumably correct.
- Authority to hear appeals on liability determinations in an administrative setting.

²¹⁹ See section VI.B.

²²⁰ See <http://www.fcc.gov/Forms/Form499-A/499a-2008.pdf> at 14.

- Authority to impose penalties for late payments or nonpayment, including financial penalties and revocation of authority to operate in the state as a telecommunications service provider.
- Authority to impose and record liens on the property of delinquent taxpayers.
- Authority to bring civil suits to collect delinquencies and collect funds.

G. Administration

States should decide who will administer the collections and disbursements for any high cost program. As discussed above,²²¹ there are three basic choices: self-administration, industry administration, and third-party administration.

Self-administration means that a state administers its own program, using one or more agencies. This method can generate synergies with other regulatory activities. For example, where a commission staff member has become familiar with a particular carrier during a rate case, that knowledge could be valuable in determining the proper amount of universal service support.

Self-administration also can improve physical control of the funds. A state should consider giving custody of funds to the state treasurer or another official who handles the state's other funds. This minimizes the risk of program disruption and fund loss that could arise if there were a bankruptcy or bank failure.

Self-administration probably makes it more likely that universal service funds will be treated by the state legislature as public funds. It becomes harder to maintain the distinction between universal service funds and state funds generated by taxes when the funds are held by the State Treasurer or another agency.

The second method is industry administration. In this method, the state assigns administration to an ILEC or an industry coalition organization. This method allows maximum input and control by the carriers and providers most immediately affected by a high cost program.

Industry administration can be difficult because no existing industry group is likely to be seen as impartial. Most existing groups serve one industry sector. Allowing ILECs to administer programs, for example, can make IXCs and CLECs uncomfortable.

The third method is to select or create a third-party administrator. This method allows the state to obtain independent checks on its own work and improve internal controls over accounting matters. Also, much of the work of a fund administration is to collect revenues for the fund. Third parties are likely to have more expertise than state staff on such tasks, including

²²¹ See section VII.A.

identifying delinquent carriers and applying collection methods, which have become much more complex in the last two decades.

A variation on the third method is to form a single-purpose corporation to serve as administrator. This method permits close frequent collaboration between agency staff, the administrator, and an advisory board that includes industry participants. Such a high level of interaction can raise the overhead cost, however.

It is possible to adopt one method of administration for some functions and a different method for other functions. For example, a state commission might itself calculate support amounts to be paid to carriers, but delegate to a third party the routine tasks of collecting fund contributions and writing disbursement checks.

Among states that use a third-party administrator as fund custodian, a few require a bond. A bond should be sufficient to protect the state against misappropriation of funds. The amount should be at least as large as the largest likely fund balance, possibly as large as the fund's cash flow during a particular period.

States that use a third-party administrator should also specify procedures to ensure a smooth transition whenever the administrator changes. The outgoing administrator should have a clearly defined contractual duty to cooperate with the incoming administrator, including providing copies of all written policies and procedures, as well as providing all data files in a common format.

Finally, third party administrators should be audited. Some states include high cost funds in their consolidated financial reporting. In those states, the audit should be performed according to government audit standards.

H. Accountability and evaluation

1. Program accountability

High cost funds are often large programs. As noted above,²²² states can help ensure that these programs are useful by establishing specific, measurable goals. States should conduct periodic evaluations to determine how well fund goals are being met. If a specific penetration rate is established as a goal for a high cost fund, regular monitoring of the attained penetration rate can signal how well the fund is meeting its goals.

2. Carrier accountability

States should establish clear expectations about how carriers should behave. Fund collection is one important area of accountability. Carriers should be required to collect and remit universal service payments in accord with law. Some states will also want to prescribe the

²²² See section VIII.C.

form of any line items on customer bills. A state with a universal service fund should establish a system of periodic selective audits to ensure carrier compliance with fund collection duties.

A second area of accountability is to ensure that supported carriers continuously offer satisfactory telecommunications services. Before distributing funds, a state should define those continuing service expectations, and it should establish a process for either periodic review (or audits) of compliance. It should also establish a process for handling complaints from customers who contend their service is inadequate.

A state might also want to limit the allowed uses of support. While conceptually appealing, this step presents two difficulties. First, it requires the state to differentiate between allowed and disallowed expenditures. This can be a complex and even arbitrary task because most network investments are for facilities that are used in common by supported and unsupported services. A list of disallowed expenditures can also have unintended effects that delay the construction of advanced facilities. Second, the state must require carriers to trace their support dollars from their initial deposit into the carrier's bank account through the budgeting process and to ultimate expenditure. Dollar tracing is a difficult process at best, and many view it as meaningless. With these cautions in mind, before it distributes any high cost support, a state should decide whether it expects carriers to use support in particular ways, and if so, how carriers will demonstrate compliance.²²³

²²³ Federal law imposes a use limitation on federal support. Subsection 254(e) of federal law requires that federal high cost support be used “*only* for the provision, maintenance, and upgrading of facilities and services for which the support is intended.” 47 U.S.C. § 254(e) (emphasis added). To implement this statute, the FCC requires state commissions annually to certify that ETCs in their states meet this standard. 47 C.F.R. §§ 54.313, 54.314. The FCC offers states little guidance on how to view investments in common facilities or to perform dollar tracing. At the same time, states have a strong incentive to grant certifications because a failure to certify would stop the flow of federal support. Therefore, while this annual certification process creates a formal record of compliance with subsection 254(e), it remains unclear whether and how it actually constrains how supported carriers use federal support funds.

IX. Conclusion

State commissions have long sought to provide their states' consumers with ubiquitous service, high penetration rates, and reasonable monthly bills. They have used a variety of techniques for this purpose. Competition has weakened some of those tools, particularly those involving implicit support drawn from groups subject to competition. More than 20 states have addressed this problem by creating high cost funds to provide explicit support, mostly supported by surcharges on intrastate telecommunications services.

The high cost funding issue has been sharpened by a variety of new developments. Traditional implicit support flows that weakened in the 1990s are now eroding rapidly. Although competition for local exchange service has been the law of the land for 14 years, recent technological advances and shifts in consumer behavior have sharpened the issue of how service will be financed in high-cost areas. Millions of customers have now abandoned landline service altogether, and competitors are now gaining substantial market shares in areas overbuilt for cable television or other broadband facilities.

These forces have increased the demand for state high cost funding. At the same time, Congress, the FCC, and the federal courts have constrained the states' ability to raise funds for universal service and have imposed limitations on how support can be expended. The problem facing state commissions is more urgent and complex than ever before. The authors hope that this report serves to guide state commissions and legislatures toward sound decisions about whether to establish a high cost fund and how best to design and operate such a high cost support mechanism.

Appendix A – Summary of Steps to Establish a High Cost Fund

Major Question	Considerations
Is a fund needed?	Environmental factors including competition, cost structures, revenue trends. Is it important to make the urban-to-rural support flow explicit? At what scale? Are alternatives adequate? Does an explicit fund create new risks?
Is there legal authority for a fund?	
What are the fund's goals?	
What services, providers and facilities should be supported?	ILECs only? Rural ILECs only? Facilities-based carriers? Carriers with COLR-like obligations? How will eligible carriers be identified? Through a designation proceeding? How does federal ETC designation affect eligibility?
What distribution mechanism is best?	What is the best mechanism for ILECs: Hold-harmless, cost-based, bill credit, or auction? What is the best mechanism for competitors: cost-based or Identical Support Rule?
Are controls needed over fund size?	Is there a need for a cap? A sunset review?
How will funds be collected?	<i>Ad valorem</i> surcharge? Per-line surcharge? Will an <i>ad valorem</i> surcharge be on all retail revenue or just intrastate? On the buyer's purchase or the seller's gross revenue? Should wireless, VoIP, prepaid phones and cards contribute? What services or sellers should be exempt? Are special collection mechanism needed for some services? What enforcement
Who will administer the fund?	State employees or third-party administrator? One for some functions and the other for other functions?
How will the fund be evaluated and made accountable for results?	Should there be a schedule for evaluations? Auditing of contributors and recipients?

Appendix B –Overview of State High Cost Funds

Alaska

Alaska's universal service fund (AUSF) was established in 1999. It has three components: (1) public interest payphone support; (2) intrastate local switching support, also known as dial equipment minutes (DEM) weighting support; and (3) state Lifeline support. In Fiscal Year 2007-2008, the total size of the AUSF was about \$4.2 million, including about \$100,000 for payphone support, \$1.63 million for intrastate local switching, and \$2.4 million for state Lifeline. The AUSF is administered by a third party: the Alaska Universal Service Administrative Company.

To support AUSF, all registered or certified carriers that provide intrastate telecommunications services must pay a surcharge on their annual intrastate gross end user revenues (see 3 AAC 53.340 for applicable services for AUSF contribution). The latest surcharge of 1.05% was effective January 10, 2009. Any company that has an annual contribution payment less than \$100 is exempt from the payment. Companies may recover the state USF surcharge as a line item on customers' bills, but are not required to do so.

The Regulatory Commission of Alaska (RCA) designates ETCs for the purpose of receiving federal USF as well as state Lifeline support. The state just passed requirements on ETC designation and annual certification on June 8, 2009 (3 AAC §§ 53.400 – 499). To date, state support for payphone and local switching has only been received by ILEC ETCs.

The AUSF provides intrastate DEM support and has done so for nearly two decades. DEM support had been an implicit subsidy, but is now an explicit support amount that is determined during state access charge proceedings. The AUSF mirrors the federal DEM weighting rules that were in effect in 1988 and replicates the federal procedure for determining federal support for local switching, with a minor exception allowing for additional support for companies with small exchanges. At the federal level, the interstate portion of dial equipment minutes (DEM) is more heavily weighted for smaller ILECs. As a result, a greater proportion of local switching costs are recovered from the interstate jurisdiction for these smaller companies. The AUSF mirrors this process, but instead of separating costs between state and interstate, the state process separates costs between local and intrastate toll. As a result, Alaska ILECs go through two separations "divisions." The first separations division separates costs between state and interstate under 47 CFR Part 36, and the second process separates the intrastate costs between local and intrastate toll. For the ILEC's switching investment (Category 3 investment), the interstate portion is recovered through interstate access charges (i.e., federal switching charges) and federal local switching support.

The ILEC's intrastate switching costs are recovered through local and intrastate access revenues, and, for some small ILECs, through state DEM support. The AUSF DEM support is designed to lessen the amount of local switching investment that is allocated to local rates. In other words, state DEM support reduces the local portion of intrastate switching costs.

To determine the state DEM support level, a weighting factor is applied to the intrastate toll percentage to increase its share of the total intrastate costs. The weighting factors are assigned as follows:

Study area with 0-10,000 lines	3.0
Study area with 10,001-20,000 lines	2.5
Study area with 20,001 lines or above	1.0

The separations process for the intrastate costs is in concept run twice: once using the DEM weighting factors as noted above and then without the DEM weighting. The DEM support is the difference between these two separations calculations.

ILECs can recover their Category 3 investment through a combination of interstate access charges, federal local switching support, intrastate access charges and state DEM support up to a capped percentage. At the federal level, federal access charge and local switching support is capped at 85%. The AUSF applies this same cap, limiting the total local switching support that most ILECs can get from all sources—federal, state and AUSF—to 85%. For ILECs with exchanges that provide toll free calling to fewer than 100 access lines, the cap may rise to 90% depending upon the percentage of small exchanges. ILECs that are at the 85% to 90% cap recover the remaining switching costs (10-15%) from local rates.

Currently, AUSF support for intrastate DEM is relatively small. Only three small ILECs qualify for support. This is in part due to the large number of ILECs that qualify for federal local switching support at the 85% cap level.

Alaska is unique in telecommunications regulation due to the high-cost nature of its infrastructure. Only ACS of Anchorage, Inc. is considered a non-rural ILEC. Alaska intrastate access charge rates are relatively high, around .065 cents per minute per originating or terminating end on average. The intrastate access revenue is between \$40-60 million per year. ILECs assess a high carrier common line charge (CCLC) on intrastate access minutes. CLECs are allowed to charge access rates up to the ILECs' level. An ILEC's CCLC revenue is evaluated every other year, if it remains in the state access charge pool. If the ILEC faces no competition, it continues to participate in the state access pool. Once the ILEC faces competition, it exits the pool and bills stand alone access charges. When the ILEC faces competition, it effectively splits the access revenues with its competitors, based on their relative market shares.

In the past, the Alaska commission opened a docket on local rate affordability. However, it was difficult to determine affordability standards given various intervening factors. The commission did not conclude that current rates were unaffordable and that additional state funding was necessary to reduce local rates. By state regulation, an ILEC may propose to deaverage its local rates at the exchange level. Only a few ILECs have petitioned to do so. Recently, two ILECs petitioned to deaverage their local rates, and implemented different sets of rates for its competitive and non-competitive markets. Copper Valley Telephone Company successfully obtained deregulatory election through customer ballots. It no longer files local tariffs with the commission.

The RCA has an ongoing proceeding that addresses future access charge and state USF reform. The commission is considering reductions in the state CCLC with associated support for loop costs to be covered by the AUSF. Commission staff estimates that if the CCLC were to be eliminated, local rates in some areas would increase to very high levels, as much as \$90, without additional state subsidy; on the other hand, to provide a subsidy to offset the potential local rate increases, the size of the AUSF would need to be substantially expanded.

References:

3 AAC §§ 48.430. Jurisdictional Separations.

3 AAC §§ 53.300-399, Universal Service Fund.

Regulatory Commission of Alaska. 2009. Order Inviting Comments on Proposed Regulations, Docket R-08-003(2), dated February 27, 2009.

Arizona

The Arizona fund (which is called the Arizona Universal Service Fund) has been functioning since 1989. The fund was established in response to the ending of the state toll settlements process, and was created by the Arizona Corporation Commission under the authority of the Arizona Administrative Code.

Support from the fund is determined by subtracting the benchmark rates for basic local exchange telephone service from the cost of providing that service, and adjusting for any federal universal service support:

Support = Cost *less* revenue from benchmark local rates *less* federal universal service

For companies that are designated as small (fewer than 20,000 access lines) and intermediate (greater than 20,000 and fewer than 200,000 lines), cost is determined through an embedded cost study. For large local exchange carriers, cost would be determined using Total Service Long Run Incremental Cost principles. Specific benchmark local rates are determined by the Commission for each carrier. In the case of the one carrier currently receiving support, the Commission required the carrier to increase its local rate from \$10.00 to its benchmark rate of \$15.00 per month.

All providers of basic local exchange telephone service are eligible to apply for support from the fund by making a formal request, filing rate case information, and providing a statement of need to the Commission. The commission then performs a rate evaluation, including the determination of the appropriate benchmark rate, to determine whether any support is needed. However, since the establishment of the fund, only one ILEC has applied and received support. The support level for that carrier (approximately \$770,000 per year) was established in 1989 and has not been changed. To date, one carrier has also asked for assistance in extending service to an un-served area; the Commission authorized the carrier to recover some of its costs from the fund.

The Arizona fund follows the identical support rule. CLECs providing service in an area in which the ILEC is receiving support are eligible to receive the same level of support per customer as the ILEC receives. The ILEC's level of support would be decreased accordingly. To date, no CLEC has come forward to request support.

All telecommunications service providers, including wireless service providers, contribute to the Arizona fund. VoIP providers do not contribute. Half of the contributions to the fund are made by local telephone companies, wireless providers, and other providers that connect to the PSTN; these providers are called Category 1 contributors. Payments from Category 1 providers are on a per-line or per-trunk basis, with one trunk equivalent calculated at 10 access lines. The other half of the contributions to the fund are made by intrastate toll providers. These providers are called Category 2 providers and their contributions are assessed as a percentage of intrastate toll revenue. Carriers who provide both local telephone service and toll (Qwest for example) pay contributions as both Category 1 and Category 2 providers. In

2009, the per-line rate for Category 1 providers was raised from \$0.003808 (\$0.038085 per trunk connection) to \$0.006471 per-line and \$0.064714 per trunk. The surcharge for Category 2 providers was raised from 0.1781 percent to 0.2485 percent. Category 1 and Category 2 contributors are allowed to recover their contributions through a line item on their customers' bills.

The future of the Arizona fund is now under consideration by the Arizona Corporation Commission. The Commission has opened a docket to consider possible comprehensive revisions to the fund and has linked the issue with access charge reform by combining the docket with an existing access charge docket.

References

Arizona Universal Service Fund Rules, A.A.C. R14-2-1201—R14-2-1217

Docket No. RT-00000H-97-0137, Decision 70659

Combined Docket: RT-00000H-97-0137 & T-00000D-00-0672

Arkansas

Arkansas's high cost fund (HCF) evolved from the original Arkansas universal service fund (AUSF). The AUSF was created by statute in 1997 and served as a revenue replacement mechanism, Rural ILECs could recover revenue shortfalls due to a variety of causes including intrastate access charge reductions, educational projects, court-related activities, and decreases in federal universal service fund support. The AUSF grew rapidly in size. AT&T, which was not eligible for support, filed a formal complaint against the AUSF. The complaint resulted in a settlement in which each carrier agreed to a prescribed level of support on an interim basis until a new fund could be created. That new fund, the Arkansas High Cost Fund (AHCF), was created in 2007 by Arkansas Act 385. All categories of ILECs are eligible to apply for support from the AHCF.

The 2007 Act created a fund of \$3 million to help carriers serving fewer than 15,000 lines through the transition to the new AHCF. The transitional fund provides for a 60-month phase-in. During this period small carriers receive a declining proportion of the difference between the higher support levels from the old AUSF and the lower support levels from the new AHCF.

The total AHCF is capped at \$22 million annually, including administrative costs. Both wireline and wireless carriers are required to contribute to the fund via an intrastate revenue surcharge. Wireless carriers are allowed to use the complement of the federal safe harbor percentage to determine their intrastate revenue. VoIP providers do not directly contribute to the fund; however the Arkansas Public Service Commission is considering whether to require them to become contributors. Some VoIP providers have CLEC affiliates who do contribute to the fund. CLECs and wireless carriers are not eligible for funding from the AHCF, although they are eligible to apply for federal ETC status, which would entitle them to receive federal high cost support.

Contributions to the fund are made through surcharges on retail receipts. The fund administrator adjusts the surcharge rate on an as-needed basis. The surcharge began at 0.70% in 2007. The rate was increased to 1.65% in June of 2009 largely in response to the FCC's decision to increase the interstate safe harbor percentage for wireless carriers. That federal change reduced the intrastate contribution base and produced a 30% drop in reported revenues. The rate will increase to 1.75% for 2010 because of the continuing decline in revenues reported by the fund contributors. The administrator may levy a late payment penalty if a carrier fails to contribute to the AHCF. Continued nonpayment could result in a carrier's loss of certification.

The AHCF provides support to four categories of carriers. It is rare for any individual carrier to move across categories (with the exception of merger or divestiture events):

Category I: AT&T is the only carrier in this category. Total disbursements for this category are made based on the FCC's synthesis model and are capped at 13.5% of the total AHCF.

Category II: The CenturyTel properties in the state are the only carriers in this category. Total disbursements are capped at 13.5% of the total AHCF.

Category III: Windstream is the only carrier in this category. Total disbursements are capped at 2% of the total AHCF.

Category IV: ILECs with fewer than 15,000 access lines. Total disbursements are capped at 71% of the total AHCF.

Funding for AT&T is based on cost outputs from the federal high cost model. Support is provided only for AT&T wire centers that serve fewer than 3,000 lines. The per-line state support equals AT&T's average monthly per-line cost less the FCC cost model benchmark. The AHCF administrator has access to the FCC's high cost proxy model outputs for Arkansas and monitors that data for any changes that might influence AT&T's state support. As long as AT&T's calculated cost-based support exceeds or equals the capped amount of its AHCF (13.5% of \$22 Million) AT&T receives the capped amount. As of June 2009, AT&T was receiving capped AHCF.

The other three categories of carriers (state ETCs with fewer than 500,000 access lines) are considered rural carriers. Their AHCF support has two components: high cost loop support and local switching support. Each is calculated by using study-area-level data that ILECs submit to NECA and that are used by USAC to calculate federal high cost fund support.

Each carrier's state loop support (its "loop support element") is equal to the carrier's annual unseparated unlimited local loop revenue requirement as reported to NECA, minus any per-loop federal high cost support received by the carrier, minus \$344.40.

The \$344.40 figure is a statutory benchmark that corresponds to the national average annual cost per loop calculated by NECA in 2005. The Arkansas legislature determined that \$344.40, or \$28.70 per line per month, is the amount that the carriers should be able to recover from local rates and other associated revenues. The carrier's uncapped state local loop support is determined by multiplying the local support element by the carrier's year-end total number of loops.

The AHCF also provides Local Switching Support (LSS) for the non traffic sensitive portion of local switching costs. Support is calculated at 15% of the carrier's total local switching revenue requirement, as reported to USAC.

After summing the uncapped support amounts for Category II, III, and IV carriers, the fund administrator then applies the caps. Where a cap applies, each carrier within that category has its support reduced proportionately. As noted above, carriers with fewer than 15,000 lines also receive transitional support during a 60-month period. The difference between the 2007 settlement amount and the calculated AHCF support is calculated, and eligible carriers receive a declining portion of the difference.

The state fund administrator was selected through a competitive bidding process. Previously NECA administered the AUSF. Rolka Loube Saltzer Associates took over the administration contract at the beginning of 2004 and continues to administer the new AHCF. If authorized by the Commission, the administrator can conduct AHCF-related audits on specific companies. The Commission can overrule the administrator's recommendation regarding audits. The administrator's decisions regarding the level of assessment and the levels of high cost support can be appealed to the Commission.

Arkansas still maintains other mechanisms to support universal service. The Arkansas Intrastate Carrier Common Line Pool (AICCLP) still exists, and pool participants are the rural ILECs. Their pooled access rate is 1.65 cents per intrastate access minute. The AICCLP provides about \$500,000 to a fund for extension of telecommunication facilities. Although not a member of the AICCLP, AT&T occasionally receives grants from the fund to extend its facilities.

Arkansas statute explicitly promotes the use of the AHCF for broadband services. It provides that "[t]he AHCF shall be used to accelerate and promote the incremental extension and expansion of broadband services and other advanced services in rural or high-cost areas of the state beyond what would normally occur..." This statutory goal has been achieved through (1) basing AHCF support on the carriers' unseparated loop cost, without any limitation, and (2) making line extension support available for new fiber facilities that enable broadband services.

Reference:

Arkansas Administrative Code §23-17-404

<http://www.r-l-s-a.com/Arkansas/index.htm>

California

California imposes six separate mandatory surcharge rates on end-user charges for intrastate telecommunications services. These six programs are what the California Public Utilities Commission (CPUC) calls “public purpose” programs. The surcharge rates vary by program and are adjusted periodically based on the forecasted demand of the programs. In fiscal 2008, these programs collected \$665 million in funding. Four of the programs are described below, including two high cost programs for voice service.²²⁴

The older high cost program is the “A Fund” (CHCF-A). Since 1988 it has been providing support to smaller “rate of return” (ROR) carriers. Fourteen “small” carriers and three “mid-sized” carriers are eligible.²²⁵ The A Fund uses a cost-based methodology based on embedded costs. Currently, return on investment is set uniformly at 10%. Estimated carrier revenue is subtracted from cost, including both actual federal universal service support and estimated customer revenues. Carriers receive support only if their Residential Local Basic Exchange rate is at least equal to 150% of AT&T’s. Some eligible carriers decline to receive A Fund support because they prefer not to undergo rate case reviews or because they prefer not to have support calculated using the uniform ROI rate of 10%. Under a “waterfall” provision, three years after the last rate review, the CPUC reduces CHCF-A support over a term of six years to zero. This provision generally reduces or eliminates support to carriers that have not gone through a recent rate case review. The CPUC reduced the surcharge rate for the A Fund in 2008 to 0.13%.²²⁶ The A Fund budget for 2010-11 is \$57.6 million.

The newer high cost program is the “B Fund” (CHCF-B), which has operated since 1996. It provides support to the larger, non-rural carriers.²²⁷ B Fund distributions are also cost-based.

²²⁴ The remaining two programs are the Universal Lifeline Telephone Service (ULTS) program, and the “DDTP” program which supports the California Relay Service and Communications Devices Fund. As of June 1, 2008, the ULTS surcharge rate was 1.150%, and the DDTP surcharge rate was 0.20%.

²²⁵ 10 of 17 small LECs received A Fund support in 2009.

²²⁶ Before 2008, the A Fund surcharge reached 0.21%.

²²⁷ All of these carriers are now subject to the CPUC’s “Uniform Regulatory Framework” (URF) which has granted pricing flexibility for basic service rates to all of California’s larger ILECs, including AT&T, Verizon, Frontier, and SureWest. No carrier concurrently receives support from both the A and B funds. Some Frontier exchanges have moved over time from rate of return regulation to URF.

Cost is estimated by a proxy model²²⁸ that produces an estimated cost figure for each Census Block Group (CBG).²²⁹ The support mechanism calculates support for each customer based on the average cost in that customer's CBG, minus expected revenue. Expected revenue is the greater of: 1) \$36.00 per line, or 2) the sum of the carrier's fixed customer rates²³⁰ and its federal universal service revenues. The result is that any customer located in a CBG with costs above \$36 per line can generate support for that customer's carrier, except where the sum of the carrier's fixed charges and its federal support are greater than cost. Support to the carrier is the aggregate of these customer-based support amounts.

At one time, the B fund was much larger than the A Fund, generating a surcharge rate of 2.43% just for the B Fund. In 2007, the CPUC decided to revise the distribution parameters and reduced the surcharge rate to 0.25%.²³¹ In 2010-11 the B Fund budget is \$50.9 million, slightly less than the A Fund.²³²

CHCF-A and CHCF-B support is intended for carriers of last resort (COLRs).²³³ Part B funding is also available to competitive carriers that accept COLR obligations.²³⁴ In the event of an ILEC failure, therefore, a competitive carrier receiving Part B support might be required to provide service to all customers within its service territory, including areas where its service overlaps with the ILEC.

²²⁸ The cost model was the Cost Proxy Model. The model is no longer available or supported by its developer. As data used in the original model runs have aged, the CPUC has become more concerned that the model's original outputs do not reflect current settlement patterns or costs. If new proxy costs are to be developed, the HAI version 5.3 model will be used.

²²⁹ The block group is the lowest-level geographic entity for which the Census Bureau tabulates sample data from the decennial census.

²³⁰ Fixed customer charges equal the sum of the monthly service rate plus the federal End User Common Line Charge (EUCL).

²³¹ The B Fund revenue benchmark was \$20.30 in 2007 and was increased in four steps to a final level of \$36.00, which took effect on July 1, 2009.

²³² The B Fund distributed \$386 million in calendar 2007. The budget was \$419 million in FY 08-09, but because of program changes less was expended. The budget for FY 2010-11 is \$52.5 million.

²³³ CHCF-A recipients currently have exclusive landline franchises under California law, although those companies in some cases are competing with wireless carriers and cable-voice providers.

²³⁴ Cox Cablevision is the only competitive carrier currently receiving that support.

CPUC also operates a California Advanced Services Fund (CASF) program to provide matching funds for the deployment of broadband infrastructure in unserved and underserved areas in California.²³⁵ The CASF budget for 2010-11 is \$25 million. State legislation caps the lifetime revenue generated by this surcharge at \$100 million, after which the program is expected to end. The California legislature has extended this program to January 1, 2013.

The CPUC has announced that it intends to replace the B Fund's cost-based distribution mechanism with a new mechanism based on a "reverse auction" process using a "market-based" approach to distribution.²³⁶ CPUC anticipates several possible advantages from auctions, including: 1) avoiding the need to repeatedly evaluate and update competing cost proxy models and their underlying cost studies, 2) technological neutrality and avoiding the need for the CPUC to determine the technology that can offer service at the lowest cost, and 3) avoiding the need for the CPUC to estimate carrier revenues from all sources, not just basic service revenues.²³⁷

The CPUC also has recognized that auctions could present potential difficulties. These include: 1) the auction might not produce any interested bidders for less desirable service areas, 2) the overall effect might be to "ratchet up" the level of subsidy in areas with the least competition,²³⁸ 3) the CPUC may not be legally able to restrict subsidy to the winning bidder, 4) following the auction, the CPUC may not be able to relieve incumbent LECs of their interconnection obligations, and 5) the CPUC might not be able to require an exiting COLR to sell facilities according to a specific pricing method. Although the CPUC first expressed interest in reverse auctions in 1996,²³⁹ it has not yet conducted any auctions, even on a pilot basis.²⁴⁰

CPUC also operates a California Teleconnect Fund (CTF) that provides a 50% discount on telecommunications services to schools, libraries, health care organizations, community

²³⁵ The CASF surcharge rate was 0.25% as of June 1, 2008.

²³⁶ CPUC, *Order Instituting Rulemaking into the Review of the California High Cost Fund B Program*, rulemaking docket 06-06-028, Decision 07-09-020 at 10, 109, at 72. In June of 2009 the CPUC opened a new rulemaking on the same topic. CPUC *Order Instituting Rulemaking into the Review of the California High Cost Fund B Program*, rulemaking docket 09-06-019, Decision of 6/23/09.

²³⁷ CPUC, *Order Instituting Rulemaking into the Review of the California High Cost Fund B Program*, rulemaking 06-06-028, Decision 07-09-020 at 10, 109, 116-17.

²³⁸ *Id.* at 114-15.

²³⁹ *See id.*, at 114.

²⁴⁰ CPUC staff determined that conditions were unsuitable in 1999. *Id.*

colleges, and community based organizations.²⁴¹ As of the end of 2008, CTF was providing subsidies to 3,330 organizations. The surcharge rate for CTF is 0.079%, and the budget for 2010-11 is \$70 million.

The CPUC sees its principal challenges as adapting existing programs to new technologies, carrier of last resort issues, and how best to keep support moderate in high-cost areas. For the A Fund, the CPUC is seeking a funding mechanism that can provide sufficient funding to allow small carriers to provide telephone service to rural communities at a reasonable price, while not overburdening ratepayers. For the B Fund, the CPUC is looking to define a technologically neutral definition of basic service as it applies to the Carrier of Last Resort.

²⁴¹ The CTF surcharge rate was 0.079% as of June 1, 2008. The program has a budget of \$46.5 million for FY 2008-09 and \$60.340 million for FY 2009-10.

Colorado

(The following discussion is based on an interview with Commission staff members; but it has not undergone a final staff review.)

The Colorado Public Utilities Commission (CPUC) has operated a state universal service fund since 1990. The current high cost program, known as the Colorado High Cost Support Mechanism (CHCSM), aims to ensure that basic telephone service is available and affordable to all citizens of the state.²⁴²

Distributions. CHCSM is provided to each “Eligible Provider” (EP). A carrier is an EP if it is designated as an Eligible Telecommunications Carrier (ETC) for federal purposes and if it demonstrates to the commission that its revenues do not exceed its cost.

Colorado statute requires that CHCSM distributions be no larger than the difference between the cost of providing local exchange service, minus “all funds” received from any source.²⁴³ CHCSM currently calculates support using three methods. One method applies to Qwest. A second method applies to smaller rural ILECs. The third applies to competitive carriers.

Qwest is Colorado’s sole “non-rural” ILEC. In recent years, Qwest received 95% of all CHCSM funding distributions. The support is substantial, amounting to \$10.92 per line per month in 2008. The CPUC believes this allocation of most funds to Qwest coordinates well with federal support policies. Rural carriers receive far more federal USF support per line, and the CHCSM therefore directs the majority of its funds to Qwest. Qwest’s per-line support is equal to its total unseparated cost minus a “Revenue Benchmark” and minus federal USF support.

- The CPUC uses a cost model to estimate Qwest’s per-line cost at the wire center scale. The model we originally run in 1995,²⁴⁴ and it relies on some data from the early 1990s, including census data. CPUC also uses some more recent data, including line counts and carrier revenues for optional features and directory assistance.
- The function of the revenue benchmark is to avoid subsidizing any local rates that may be below the benchmark. The CPUC adjusts the revenue benchmark annually. For residential lines, the 2009 revenue benchmark was \$18.99 per line per month, an amount equal to 166% of the statewide average rate. For business

²⁴² Colo. Rev. Stats. § 40-15-5-2(3).

²⁴³ Colo. Rev. Stats. § 40-15-208(2)(a).

²⁴⁴ The model currently in use is the HAI 5.2 model, with some staff adjustments.

lines, the 2009 benchmark was \$34.79 per line per month, or 217% of the average local rate in the state.

- The CPUC also subtracts federal USF support from cost. All federal support programs are included, including those aimed at replacing lost interstate access revenues.

CHCSM also provides support to nine of approximately 28 rural carriers. Support can cover loop, switching and exchange trunk costs. The amount of support is determined at the study area level and is based on the carrier's revenue requirement, net of customer revenues.

- Using embedded cost methods, the CPUC calculates an intrastate "local service revenue requirement." In 2007, in response to legislation, the CPUC adopted "streamlined" data and analysis requirements for calculating support to rural carriers.²⁴⁵ Today, rural ILECs file a one-page annual financial filing that lists intrastate investments, revenues, and expenses.²⁴⁶
- Customer revenues are set equal to a statewide benchmark equal to 130% of the state average local service revenue requirement for non-rural carriers. This calculation generates support to high cost rural carriers while eliminating any possibility of a subsidy of low local exchange rates.
- As with the calculation for Qwest, federal support is deducted from the revenue requirement of rural carriers.

CHCSM support amounts are changed by explicit commission decision on a carrier-by-carrier basis. Both the commission and the carrier are free to seek adjustments, but adjustments have been infrequent. Most carriers have requested at least one upward adjustment. Carriers annually complete a simple single page form based on available information so that the staff can evaluate whether to seek a downward adjustment. CPUC staff has never requested a downward adjustment.

CHCSM for competitive carriers is based on the Identical Support Rule. Support is provided on a per-customer basis. The support is equal to the per-line support that would be granted to a wireline ILEC (rural or non-rural) for that same customer at the same location. In

²⁴⁵ Before 2006, the commission had conducted periodic rate cases for each carrier. The CPUC had encouraged periodic reviews by using a "phase-down" mechanism that reduced CHCSM support over a period of 7 years following a rate case.

²⁴⁶ The intrastate totals are divided among local exchange services, intrastate toll and access, and non-rate-regulated services.

areas served by rural ILECs, the rural ILEC may elect to disaggregate support. Where the rural ILEC has done so, the CHCSM support to the competitive carrier is disaggregated below the study area level.

The identical support rule is controversial. In one case, the consumer counsel challenged the funding for wireless carriers, but the CPUC's Administrative Law Judge deferred the issue to a future rulemaking. Colorado has four wireless ETCs receiving federal support. CHCSM is provided to only one of these, a carrier that provides service primarily in rural areas.

The CPUC is considering changes to the CHCSM. It issued a notice in 2008 asking such basic questions as whether CHCSM has met its goals and is still necessary. The NPRM also asked how the structure should be improved, and whether the CPUC should consider other related issues such as rate rebalancing, broadband funding, and federal funding programs.²⁴⁷

Colorado also operates other universal service programs. These include participation in the federal Lifeline Assistance and Link Up America programs and telecommunications relay services.

Collections. In 2008, CHCSM raised \$62.6 million. The contribution rate was 2.2% on intrastate revenues.²⁴⁸ Four wireless carriers currently contribute to the CHCSM, basing their contribution on 52.9% of their total retail revenues, a percentage that is the complement of the interstate safe harbor ratio published by the FCC for wireless carriers. Wireless carriers contributed 63% of all CHCSM revenues in 2008. One VoIP provider also contributes to the CHCSM. That VoIP provider contributes at 35.1% of total retail revenues, a number that is the complement of the interstate safe harbor ratio published by the FCC for VoIP. The CPUC is considering whether to require contributions from other VoIP providers.

Administration. The CPUC administers the CHCSM. This includes billing, collections and disbursements as well as collecting information on contributing entities and their revenues, projecting demand, determining revenue benchmarks used. It also includes taking enforcement action against delinquent service providers. The CHCSM funds are actually held by CenturyTel, Inc., pursuant to the terms of a Memorandum of Understanding with the CPUC.²⁴⁹ CenturyTel receives \$275,000 per year as administrative cost. The CPUC is considering appointing a third-party financial administrator.

²⁴⁷ CPUC, *Proposed Rules Relating to the Colorado High Cost Support Mechanism*, Docket No. 08R-476T, Notice of Proposed Rulemaking, Decision No. C08-1129, π 15.

²⁴⁸ The CHCSM rate has been 2.2% since July 1, 2008. In early 2006, the rate was 2.9%.

²⁴⁹ Until approximately 2000, Qwest held the funds.

Idaho

The Idaho Universal Service Fund (ID USF) was established pursuant to the Idaho Telecommunications Act of 1988. The 1988 Act authorizes the Idaho Public Utilities Commission to establish and maintain a universal service fund for the purpose of sustaining the universal availability of local exchange service at reasonable rates and promoting the availability of intrastate toll services at reasonably comparable prices throughout the state.

To receive ID USF support, a carrier must first be a state Eligible Telecommunications Carrier (ETC). To qualify, the carrier's local exchange service rates must be at or above a rate benchmark that is set at 125% of the weighted statewide average line rate. The 2009 125% statewide average threshold rate is \$ 25.76 for single-party residential service and \$40.54 for business service. In addition, a qualifying carrier's intrastate access rates must be at least 100% of the statewide average.

After the first year of eligibility, if a carrier's average rate for residential, business or intrastate access service falls below the threshold, the carrier loses support if it does not increase rates to the current threshold. Minor rate differences are disregarded if the carrier's rates are less than 3% below the benchmark or the deficiency equals less than \$6,000 of revenue per year.

The ID USF is a cost-based fund in which support covers the difference between the carrier's intrastate revenue requirement and its intrastate revenue. Eligible carriers received support equal to 75% to 100% of their residual revenue requirement, after consideration of subscriber and access revenues. Current ID USF support levels were in large part determined through a 1992-1993 proceedings that involved reconfiguration of several Extended Area Service (EAS). In those proceedings, the Idaho commission enlarged local calling areas, thereby reducing intrastate long distance and access revenues. The ID USF program was modified to compensate for some of the lost revenue. The ID USF originally provided support for eight rural ILECs, and those same carriers continue to receive support today. Annual support levels have been stable since 1993.

Two non-rural ILECs (Qwest and Verizon) have recently increased their rates. Because they are large carriers, this caused an increase in statewide average rates. As a result, supported carriers in Idaho will be required to raise their local rates to the new higher statewide average benchmark or lose ID USF support under the current disbursement mechanism.

In theory, a competitive provider can be designated as a state ETC and may submit an application to receive support. However, it would have to justify the need for support through a cost study. No competitive providers have applied for funding.

ILECs, CLECs and IXC contribute to the fund. The Idaho USF surcharge has two parts: (1) a uniform per-line surcharge on local exchange service (currently \$0.10 per month for residential lines; \$0.17 per month for business lines); and (2) a per-minute surcharge on intrastate toll minutes (currently \$0.003 per minute, including both message telephone service and wide

area telephone service). LECs and IXCs may collect these contributions either explicitly or implicitly from the end-user bills. The companies that provide local telephone service report their residential and business line counts and remit surcharges on a monthly basis unless otherwise provided by order, Commission Staff or from the Administrator. All LECs and providers of intrastate telephone services submit annual reports to the fund administrator. The contribution rates are reviewed annually and revised as necessary to meet the fund requirements. A LEC may request an exemption from monthly reporting and remittances if it serves a very small number of local service lines and so would generate a very small monthly surcharge. An intrastate service provider may request an exemption from monthly reporting and remittances if it is exclusively a reseller of intrastate services and its underlying provider is already remitting the contribution for the reseller's minutes.

Wireless providers and VoIP providers currently do not contribute to the state USF. If the FCC decides to adopt a telephone number-based contribution mechanism, the Idaho commission may consider following suit.

The ID USF collected about \$2 million in Fiscal Year 2008-2009. The fund covers both support disbursements as well as the administrative expenses of the fund. The Idaho commission appointed a third-party contractor, Ms. Alyson Anderson, to administer the fund.

References:

Idaho Administrative Code §31.46.01 Universal Service Fund Rules.

Idaho Statutes §62.610 Universal Service Fund.

Description of Idaho Universal Service Fund available at
<http://www.puc.state.id.us/telecom/usf.pdf>

Universal Service Fund Annual Report 2008, available at
[http://www.puc.idaho.gov/internet/cases/tele/GNR/GNRT0803/ordnotc/20080909FINAL_ORDE
R_NO_30635.PDF](http://www.puc.idaho.gov/internet/cases/tele/GNR/GNRT0803/ordnotc/20080909FINAL_ORDE
R_NO_30635.PDF)

Illinois

The Illinois Commerce Commission was granted statutory authority in 1999 to create a high cost fund (the Universal Service Support Fund). The resulting fund has been operational since October 1, 2001.

The current statutory fund replaces an earlier fund established by the Commission in 1986. The 1986 fund aimed to mitigate the impact of a state access charge reform episode on small, rural ILECs. At the time, those ILECs faced a revenue shortfall when they reduced intrastate carrier common line charges. To avoid local rate increases higher than those of larger ILECs, the 1986 program provided small ILECs with support for high cost loops and support for non-traffic sensitive switching costs.

The 1999 statute authorized the Commission to establish a new high cost fund that would continue to provide support to these high cost carriers. To receive support from the new fund, these carriers were required to demonstrate that their economic cost of providing basic local service exceeded an affordable benchmark rate determined by the Commission.²⁵⁰ The statute gives the Commission authority to establish a separate fund to provide support to additional carriers; however, support from this fund is limited to the small high-cost ILECs receiving support from the earlier fund.²⁵¹ Thirty-nine small ILECs are currently eligible for the fund.

The commission set initial support amounts for carriers in 2001, based on cost. At that time, the Commission used both forward-looking and embedded methods to determine support. Carriers first had to demonstrate a need for support through use of the HAI cost proxy model. Then the commission used an embedded cost Rate-of-Return Analysis as a cap on the results of the HAI model and as the basis for support calculations. Support was calculated by subtracting total company revenues including federal universal service support from the carrier's intrastate revenue requirement. Intrastate revenues were set equal to an affordable benchmark local rate, rather than the actual local rate.

The Verizon rate of \$20.39 was selected as the affordable benchmark rate for residential and single line business service. Carriers were allowed during a phase-in period to raise their local rates to the benchmark level. Support payments were decreased as local rates increased to the benchmark level. Since the completion of the phase-in period, support amounts have been disbursed at a fixed amount each year.

Contributions to the fund are collected through a surcharge on intrastate retail receipts. All certificated local exchange and interexchange carriers pay the surcharge. Certificated VoIP providers, and some of the larger non-certificated fixed VoIP providers, also contribute.

²⁵⁰ 220 ILCS 5 §13-301(d)

²⁵¹ 220ILCS 5 §13-301(e)

Nomadic VoIP providers do not. Wireless providers are exempt by statute from the Funding Carrier responsibilities.

The fund collected \$9.9 million during 2007, at which time the surcharge was 0.03461%. The rate has since been increased to 0.3638%. This increase reflects a declining intrastate revenue base. The fund is administered by the Illinois Small Company Exchange Carrier Association, which was selected by the Illinois Commerce Commission because of its expertise.

Support payments from the fund have not changed since 2001, except for the local service phase-in to the benchmark rate described above.

References:

Twenty-Seventh Interim Order, Commission Docket 83-0142, October 16, 1986

Illinois Public Utilities Act, §13-301(a) – (e) [220 ILCS 5/13-301]

Second Interim Order, Commission Docket 00-0233 & 0335, September 18, 2001

Order, Commission Docket 00-0233 & 00-0335, September 29, 2009, Second Interim Order on Rehearing, Commission Docket 00-0233 & 00-0335, March 13, 2002

Illinois Small Company Exchange Carrier Association website:

<http://www.isceca.org/index-2.html>.

Indiana

Indiana's Universal Service Fund (IUSF) has been operating since 2007. It replaced two prior funds: a Transitional Weighted DEM Fund and the Indiana High Cost Fund. Both of those funds had been available only to rural ILECs. The IUSF was created by the Indiana Utility Regulatory Commission (IURC) in response to rural ILECs' concerns regarding revenue shortfalls resulting from the MAG plan. Because Indiana mirrors interstate access charges, the MAG plan resulted in a decrease in both interstate and intrastate access charges. The Indiana Exchange Carriers Association, AT&T, SBC Indiana and Sprint, reached a Settlement Agreement in response to the rural ILEC's concerns. The IURC found the settlement agreement, with certain modifications, was in the public interest by creating the IUSF to provide a more transparent and explicit support method than had been the case with the prior two funds. The IURC also found that the fund would be competitively neutral and promote just, reasonable and affordable rates for telecommunications services.

The Commission order establishing the IUSF was passed in 2004 and the fund was to go into operation in 2005. However, unsuccessful appeals by some telecommunications carriers who contested the IURC's authority to create the fund and also claimed that the fund was not competitively neutral, delayed the establishment of the fund until 2007.

In establishing the IUSF, the IURC sought to deal with the revenue shortfalls caused by reductions in intrastate access charges without subsidizing lower rates for the customers of rural ILECs than the rates paid by customers of contributing carriers. Rural ILECs were required to raise their local service rates to prescribed benchmark levels in order to receive support from the IUSF and to pass a qualification test to show that they did indeed need support. The qualification test involved several steps:

Three years of a rural ILEC's intrastate net income was averaged.

The averaged income was adjusted to reflect benchmark rates of \$17.15 for residential service and \$23.60 for single line business service rather than the rural ILEC's actual local service rates. (A transition period was provided for rural ILECs who would have to increase their rates by \$6.00 or more in order to attain the benchmark rates.)

Federal support payments were subtracted from the adjusted averaged net income.

An 11.50% rate of return was applied to the rural ILEC's rate base (averaged over the three year period), resulting in a revenue requirement figure.

Adjusted averaged net income (less federal support payments) was compared to the calculated revenue requirement. If the net income was less than the calculated revenue requirement, the rural ILEC passed the qualifying test and was eligible to receive support from

the IUSF in an amount equal to the difference between averaged net income and revenue requirement. If the net income exceeded revenue requirement, the rural ILEC was ineligible for aid.

Support is recalculated every three years; recalculation will be done in 2010. Rural ILECs whose calculated revenue requirement exceeds their average adjusted net income will lose their eligibility for IUSF support. Qualifying rural ILECs receive support in monthly lump sum payments.

Although CETCs are technically eligible to apply for support from the IUSF, none has done so as yet. It is not clear how CETC support payments would be calculated, since the rural ILEC with whom they compete receive support in a monthly lump sum amount. The IURC requires service maps from supported carriers, including carriers who are federal ETCs.

As of July 1, 2009, VoIP providers in Indiana are required to be certificated. Large fixed VoIP providers, like the cable companies, have become certificated because they seek the benefits of being a telecommunication service provider (i.e., interconnection agreements, ability to get telephone numbers, etc.). Smaller fixed providers and nomadic providers have not all voluntarily become certificated. Although Indiana's 2006 deregulation law defines all providers as "communication service providers," there are still distinctions among subclasses of providers. For example, it is not yet clear whether VoIP providers are required to pay into the IUSF.

The IUSF is funded by a surcharge on retail bills and is administered by a third party, who levies penalties for late payments. Non-payment of the surcharge can result in a court case handled through the State Attorney General's office.

References

<http://www.in.gov/iurc>

State of Indiana, Indiana Utility Regulatory Commission, Cause No. 42144, March 17, 2004.

State of Indiana, Indiana Utility Regulatory Commission, Final Order, Cause No. 41052-ETC-47, June 8, 2005.

Kansas

The Kansas Universal Service Fund (KUSF) was first established in 1997 to provide two kinds of support: 1) a hold harmless provision to replace revenues lost by carriers as they reduced their intrastate access charges; and 2) annual support in the amount of \$36.88 for each qualifying access line. Initially, only ILECs received monies from the KUSF. In 2000, the fund changed to a cost-based approach under which rural carriers receive support based on their revenue requirements, and non-rural carriers receive support based on costs determined by a proxy model.

Support for rural carriers is based on intrastate revenue requirement. The revenue requirement is then adjusted for subscriber revenues, which are assumed to be no less than a floor level which is called “targeted affordable rates.” As of March 2009, the targeted affordable rates for rural ILECs were \$15.75 for residential service and \$18.75 for single-line business service. When a company elects to maintain its rates below those targeted levels, KUSF support is reduced by the amount of revenue the carrier would have received by increasing actual rates to the targeted level. Revenue requirement is also adjusted for changes in intrastate access charges. Under a statutory mandate, every two years the commission adjusts the amounts of the targeted affordable rates and of allowable intrastate access rates.

For non-rural ILECs, KUSF support is also cost-based, but costs are derived from a cost proxy model. The Kansas Commission adopted the FCC’s cost proxy model, with several adjustments to reflect Kansas specific inputs, such as taxes. The model produces costs at the wire center level, and the results are then disaggregated into two zones. One zone is a base rate area, generally the area within city limits. The second zone is outside the base rate area or city limits. KUSF support is provided to any zone with costs above 135% of the state average. Annually, this support is adjusted based on current line counts, but without recalculating costs.

Competitive ETCs (CETCs) receive support for lines they provide service to within the ILEC’s service area, at the same per-line amount as is provided to the ILEC. As with ILECs, support for CETCs is adjusted annually to reflect changes to line counts.

In 2000, the commission adopted the practice of adjusting support to all carriers annually based on current line counts. After a court decision, this practice has now been modified for rural carriers. In 2005 a Kansas court held that the commission can increase or decrease a rural company’s support only after conducting a revenue requirement analysis that evaluates the carrier’s embedded investments and expenses.²⁵² As a result, rural ILEC support amounts now

²⁵² *Bluestem Tel. Co. v. Kansas Corp. Comm’n.*, 33 Kan. App. 2d 817 (Kan. Court of Appeals, 2005); review den, *Bluestem Tel. Co. v. Kan. Corp. Comm’n.*, 2005 Kan. LEXIS 597 (Kan., 2005).

remain fixed until recalculated by the Commission. CETC support, however, is still adjusted annually based on CETC line counts. The net effect is that an increase in competition can increase the amount of support paid out by the KUSF.

Funds for the KUSF are collected through a percentage surcharge on intrastate retail billed revenues. Carriers can recover the KUSF high cost surcharge through line items on customer bills. The Commission calculates a specific amount that ILECs can place on each customer's monthly bill. Specific dollar amounts are calculated for AT&T, for Embarq, and for all rural ILECs. CLECs, IXCs and other carriers can recover the surcharge as a percentage on their customers' bills.

All service providers, including satellite providers, wireless carriers, and VoIP providers are required to pay into the KUSF.²⁵³ However, the Vonage case in Nebraska has left the status of nomadic VoIP providers unclear. The KCC and the Nebraska PUC filed a Joint Petition at the FCC asking for a declaratory ruling. Time Warner and Cox are voluntarily contributing to the KUSF, as are a few other companies that have self-identified as VoIP providers. Vonage and other providers have challenged the KCC's authority for state USF assessments and are not contributing.

The Commission has been conducting revenue requirement audits of the rural ILECs. At this writing, 34 companies have been audited, resulting in a decrease in the KUSF of \$8.3 million. Three companies have not yet been audited.

References:

Kansas statutes K.S.A. 66-2002(h), K.S.A. 66-2008

Commission Dockets No. 94-GIMT-478-GIT, No. 06-GIMT-390-GIT, No. 08-GIMT-154-GIT.

²⁵³ Kansas statutes require that interconnected VoIP providers contribute, and the statutes do not make a distinction between fixed and nomadic providers.

Maine

The universal service fund in Maine, which was created by state statute, has been functional since 2002. A surcharge of 1.35% is assessed on intrastate services on customer retail bills, resulting in collections of about \$8 million annually. That percentage can be adjusted quarterly depending on the projected needs and revenue base. About \$7.4 million is used for the high cost fund; the remaining amount covers a public payphone program, a program to purchase equipment for the hearing impaired and a program to provide an alert system for the hearing impaired, and a telecommunications relay service program.

The Maine high cost fund is used exclusively as a credit against revenue requirement. The amount of support a carrier receives from the fund is determined by subtracting a carrier's intrastate revenues from its intrastate revenue requirement. A carrier's revenue requirement is calculated through a rate case using rate of return methods. Intrastate revenues are calculated by multiplying a carrier's billing units (access minute, residential lines, etc.) by the carrier's rates, except that for local service, benchmark rates are used. The benchmark rates for local service is the level of Verizon's local rates shortly before Verizon was sold to Fairpoint. The carrier's support from the high cost fund equals the amount that results when the carrier's intrastate revenues are subtracted from its revenue requirement. If the revenues exceed the revenue requirement, the carrier gets no support from the fund.

At this point, the only ETCs supported by the Maine fund are 12 rural ILECs. No CLEC has applied for state funding because, in order to receive money from the Maine high cost fund, a carrier has to undergo a rate-of-return rate case with the Maine Public Utilities Commission to determine support. No CLEC has wanted to do this as yet.

The Maine Public Utilities Commission (MPUC) established the universal service fund high cost fund at the same time it was reducing state access charges and expanding Basic Calling Service Areas (EAS areas). The Maine PUC did mini-rate cases for all the ILECs, except for Verizon, using the lower intrastate access charges, the revenues from expanded Basic Calling Service Areas and benchmark local rates. Intrastate access charges were lowered to mirror interstate rates at that time; access charges have not been lowered further, and the current intrastate access charges mirror NECA's interstate rates from several years ago, rather than current interstate access charges.

ILECs currently receive the amount of support that was calculated several years ago; neither the ILECs nor the Maine PUC have initiated action to recalculate the support amounts. Theoretically, the ILECs could benefit from a recalculation of support because the benchmark rates that were used in the calculation are \$4.00 higher than the local service rates Fairpoint currently charges in the service areas it purchased from Verizon. When the Fairpoint purchase was under negotiation, the Maine PUC found through a rate case that Verizon had been over-earning. Fairpoint agreed to lower local rates by about \$4.00 as a result. While it is possible that

lower benchmark rates could result in higher support payments from the fund, it is also possible that a recalculation could result in lower revenue requirements for the ILECs receiving support.

While no CLEC has come forward to apply for state ETC status, that has not been the case for federal ETC designations. One wireline and two wireless carriers have received federal ETC designation; the wireline carrier and one of the wireless carriers have since asked to have that designation rescinded.

VoIP providers are not certificated in Maine; however, one division of Time Warner Communications, though not the division that provides retail services, did ask for and receive certification. Time Warner, though now asking to be de-certificated, is contributing to the fund.

The fund is managed by a third-party, and the Maine PUC requires annual reports from state ETCs and ILECs whether or not they receive Maine support, and also from ETCs with federal designations.

References:

Maine Rev. Stat. Title 35-A, §7104

Commission Rules, 65-407, Chapter 288

Nebraska

Nebraska's high cost fund has been functioning for a decade. The Nebraska Public Service Commission (NPSC) is the custodian and administrator of the Nebraska Universal Service Fund (NUSF). Funds are collected through a surcharge (currently 6.95%) levied on intrastate retail revenues. The amount generated by the surcharge covers the high cost fund, a separate fund that provides grants to wireless providers to build facilities in un-served and underserved areas, a telehealth fund to provide support to the Nebraska Statewide Telehealth Network, and the state Lifeline fund. The surcharge is collected through a line item amount on retail customers' bills.

The NUSF was established by statute in 1997. It began as a transitional revenue replacement fund, and then in 2004, the Commission moved to a cost-based approach. Originally, carriers were asked to reduce their state CCLC to zero, restructure other in-state access rates, and transition local rates to rate benchmarks determined by the Commission. The remainder of the amounts necessary to achieve revenue neutrality was then recovered through funds distributed from the NUSF. If after all of these actions, a carrier's earnings exceeded a 12% rate-of-return, a corresponding amount of NUSF funding was forfeited.

Since 2004, support from the NUSF has been an allocation based on a comparison of total cost and total revenue generated per line. The Benchmark Cost Proxy Model was used to relate household density to average loop cost, the results of which were used to link measured density in each support area to expected loop cost and determine relative allocations.

To determine cost, the NPSC used the Benchmark Cost Proxy Model to model cost at the sub-wire center level and relate the resulting cost to household density using regression analysis; the result is a computed cost per line. Revenue is calculated beginning with a local benchmark rate for residential service, currently \$17.95. Once converted to total cost, other revenue amounts are added to the benchmark rate, specifically a carrier specific SLC, an imputed DSL revenue amount (the same for all carriers), an average per line amount by which a carrier's intrastate access rates exceed the state's minimum intrastate access rates, and finally converted to revenue per household. The resulting total revenue per household is compared to the total cost per household computed for that specific area. A support area is allocated support when the total cost per household is greater than the total revenue per household. Subsequent adjustments to allocated support are made: earnings exceeding a 12% rate-of-return; federal universal service support received; and a rural benchmark imputation, currently \$19.95.

Incumbent Local Exchange Carriers (ILECs), Competitive Local Exchange Carriers (CLECs), Interexchange Carriers (IXCs), wireless providers, and fixed Voice Over Internet Protocol (VoIP) providers all contribute to the NUSF. Vonage is contesting the NPSC's ability to assess the NUSF surcharge on nomadic VoIP service providers. Fixed VoIP are not required to be certificated, but they can voluntarily ask for certification. Both fixed VoIP and wireless providers can use the FCC's safe harbor percentages to determine the intrastate revenue base on which to assess the 6.95% surcharge. The NUSF declined by 17.8% in 2007 because the FCC

increased the federal portion of the safe harbor percentages. Because not all carriers are certificated, the NPSC has to use several venues to identify carriers who are subject to the surcharge. All broadband, VoIP, and wireless providers are required to register in the NPSC's communication provider registry. All carriers are required to update a contact database annually. In addition to the database and the registry, the NPSC also refers to the Secretary of State's website, newspaper ads and the yellow pages to identify carriers.

Theoretically any carrier is eligible to receive aid from the high cost fund. However, the Commission provides high cost support to one facilities-based network in a given support area. At this point, only the networks of current ILEC carriers have been designated as state ETCs (NETCs) for the purpose of receiving high cost support. Another carrier may petition the Commission to be designated as the eligible network provider within a given support area. Such carrier must; accept Carrier-of-Last-Resort (COLR) responsibilities; and comply with all interconnections requirements of the Telecommunications Act of 1996, all reporting requirements, and all existing ILEC Interconnection Agreements.

Carriers need only be certified as NETCs to receive NUSF funds; designation as a federal ETC is not required. The NPSC uses the FCC's recommended requirements to determine federal ETC designation: five-year network improvement plan, ability to remain functional in an emergency, ability to satisfy consumer protection and service quality rules, provision of a local usage plan, and ability to provide equal access. The NPSC uses the FCC's list of supported services and has no plans to expand that list.

In 2007, for areas served by Qwest, the NPSC adopted a form of identical support for CLECs, the NUSF porting methodology. Under the porting methodology, a CLEC receives support amounts equal to the minimum of the per line amount received by the ILEC or the difference in the UNE loop rate and the respective benchmark. However, Qwest has challenged an NPSC order which further deaveraged the UNE zones. The NPSC further disaggregated geographically cost-based UNE zones creating an in-town rate and an out-of-town rate for each of the three zones.

In addition, the NPSC implemented several accountability measures to ensure that NUSF funds are being used appropriately. Carriers receiving NUSF funds are audited annually by an independent third party auditor. Also, ETCs and NETCs are required to file annual reports that include information about network improvements (one historical year and one forecasted year), outages, unfilled requests for service, and customer complaints. Further, in 2008, for carriers receiving NUSF support, the NPSC adopted an expense cap model mechanism for review of expenses. This mechanism is an important objective tool for proper oversight of the appropriate use of NUSF support and further promotes public accountability to ratepayers.

References:

Neb. Rev. Stat. §86-316--§86-329

Commission Orders, NUSF-26 and NUSF-50

Nevada

The Nevada Universal Service Fund (NUSF) covers multiple programs, including high-cost support, supplemental aid to schools and libraries, supplemental aid to rural health care providers and the extension of basic service to previously un-served/underserved areas. The NUSF expects to expend approximately \$226,000 in 2010.

Nevada established a high-cost fund in 1995 known as the Fund to Maintain the Availability of Telephone Service (FUMATS). The fund is reserved only for providers of last resort (POLRs). At this time, only ILECs are designated as POLRs. In general, the FUMATS is targeted at small rural ILECs. A large ILEC or a competitive POLR may petition for high-cost support, but it would bear the burden of demonstrating that circumstances warranted for it to receive support to keep basic service rates at affordable levels. To date, no large ILEC or competitive provider has petitioned for support.

The high-cost support level is determined through reference to an applicant's intrastate revenue requirement using the authorized intrastate rate of return. To be eligible for support, the applicant's intrastate revenue requirement must exceed the sum of its intrastate revenues and federal universal service support. The carrier must also meet two additional conditions: (1) the company's interstate and intrastate switched access rates must be in parity, or the company must agree to carry out a plan to achieve the parity specified by the Commission; and (2) the company's local rates must fall between \$8-16 per month for residential lines and \$16-20 per month for business lines. An ILEC may petition to raise the rate above the upper threshold.

Requests for high-cost support must be submitted annually. An applicant for support must submit a request to the fund administrator 180 days before the beginning of the calendar year for which money is requested. The fund administrator conducts the preliminary review of the company's earnings, determines the appropriate amount of support and reports to the Commission for final approval. To date, only one rural ILEC has requested and has been receiving support from the fund. Because that carrier did not request support for 2008 and 2009, there were no high-cost fund disbursements, and collections for the high-cost fund were suspended. The carrier has requested aid for 2010; the Commission has determined that the existing fund balance is sufficient to provide the carrier with the requested support and also to cover the administrative costs of the fund's third party administrator.

The NUSF is funded by a percentage surcharge on intrastate retail receipts. The rate is currently zero because the state is spending down an existing fund balance; the last surcharge levied was 0.0025 percent. Both wireline and wireless providers contribute to the fund. Certificated VoIP providers also pay the assessment. Carriers can pass NUSF surcharges through as a line item on consumer bills. Solix is the current administrator, selected by the Commission through a competitive bidding process.

In participating in the federal Lifeline program, ILECs in Nevada provide additional support to obtain the federal Tier Three matching support. However, no ILECs have requested any reimbursement from the state USF. There is a rule change proposal to streamline requests for reimbursement.

There are 13 rural ILECs in Nevada, all of which are under rate-of-return regulation. The two non-rural ILECs, Embarq and AT&T, are classified as competitive suppliers and are subject to a deregulation plan under which their basic rates have been frozen until 2011. As is the case with commissions in many other states, if the FCC mandates future reductions in intrastate access rates, the Commission will face the possibility of expanding the state fund to offset rural ILECs' revenue losses.

References:

Nevada Utility Law. NRS 704.6873. Available at

<http://www.leg.state.nv.us/NRS/NRS-704.html#NRS704Sec6873>

Nevada Administrative Code NAC 704.68046, 68048 and 68056.

Available at <http://www.leg.state.nv.us/NAC/NAC-704.html>

Docket 09-09025. Solix, Inc. Filing (Oct 1, 2009)

Proposed Regulation of the Public Utilities Commission of Nevada.

File No. R087-09. Available at

<http://www.leg.state.nv.us/register/2009Register/R087-09P.pdf>

http://www.solixinc.com/internet/source/currentprograms.aspx?id=484&ekmense1=c580fa7b_28_244_btnlink

New Mexico

The New Mexico Rural Universal Service Fund (NMRUSF) was created in response to state statute requiring reductions in intrastate access charges, rebalancing rates and compensate eligible carriers primarily ILECs in a revenue-neutral manner for reducing their intrastate access rates to interstate levels while at the same time rebalancing their local rates. The fund began operation on April 1, 2006. There had been efforts to create a fund prior to the NMRUSF, but it was not possible to reach consensus about the fund. During these prior efforts, \$2 million had been collected, but no monies had been distributed and the \$2 million was rolled into the NMRUSF.

The NMRUSF is supported by a state USF surcharge rate paid by all entities that provide intrastate retail public telecommunication services and comparable retail alternative services in New Mexico, including local and intrastate toll service providers, access providers, CMRS providers, operator service providers and pay phone providers. Interconnected VoIP carriers and wireless carriers may use the inverse of the federal safe harbor for estimating intrastate revenues. The fund administrator and the commission staff keep track of VoIP providers through the certification process as well as by referring to service advertisements, the FCC 499 database and reports by the VoIP providers to the administrator. The commission has been in court with a VoIP provider who is not contributing to the fund. The fund is deemed by statute “not public funds” and is collected and support disbursed to carriers by a contract administrator, currently Solix Inc.

Support from the fund is determined by first calculating revenues lost from lowering intrastate access charges during a base year, and then adjusting for the revenues gained from increasing local rates to a benchmark level. The detailed formula is as follows:

$$\begin{aligned} \text{Support} &= \text{Access Revenue Loss} - \text{Local Revenue Increase} \\ &= ((\text{Historical Access Rate} - \text{Allowable Access Rate}) \times 2004 \text{ access minutes} \times \text{Historical Collection Factor} - \text{Imputed Benchmark Revenue}) \end{aligned}$$

The *Historical Access Rate* means the per-minute intrastate access charge in effect for a carrier as of July 1, 2005. The *Allowable Access Rate* is the specified cap for intrastate access rates during the three-year phase-in period²⁵⁴ and after January 1, 2008; they are identical to the carriers' interstate access rates. The *Historical Collection Factor* means the ratio, for calendar year 2004, of intrastate switched access charge revenue collected by a carrier to its gross charges for intrastate switched access, not to exceed 1. The *Imputed Benchmark Revenue* is the revenue gained from raising local rates to "affordability benchmark rates," which are set at the level of Qwest's local rates plus its intrastate SLC. For residential service that benchmark was set at a residential rate of (based on $13.50 + 1.78$ benchmark = \$15.28 and \$15.18 ($\$13.50 + \1.68); for business service at rate benchmark-up of up to 36.15.

A carrier must be designated as an ETC to receive support from the fund. Theoretically, any carrier could petition for ETC designation for state support, including a CLEC. However, only rural ILECs have been approved to receive support from the state fund. Qwest is the only non-rural ILEC in New Mexico; rather than recovering lost access revenues from the fund, Qwest was allowed to charge a state SLC of \$1.68 (the original 1.78 reduced to \$1.68 reflecting refunds to rate payers) to its customers. Qwest's local rates are used as affordability benchmark rates, as described above. Because of the historical nature of the support calculation, CLECs have found it difficult to determine how to calculate support from the fund. Several CLECs elected to file a state SLC and none are receiving support from the NMRUSF.

The revenue surcharge for the fund is reviewed annually, and the most recent rate was set at 2.450%, effective January 1, 2010. The rate is assessed on intrastate retail revenues. The projected fund size was set at \$24,237,580.

In fiscal year 2007-2008, the program collected \$23,164,951. The total expenditures were \$24,012,534 in calendar year 2007. Carriers may recover their contributions through a line item on their customers' bills. Native Americans residing on or near their tribal lands are generally exempt from the surcharges.

The state commission selected a third-party administrator to operate the fund through a bidding process. The current administrator is Solix, Inc. All Solix's documents and rules are subject to commission review. Based on NM Administrative Code 17.11.10.12, the fund

²⁵⁴ The *Allowable Access Rate* during the transitional years are as follows:

- Effective April 1, 2006, not to exceed the carrier's historical access rate, less 1/3 of the difference between its historical access rate and its January 1, 2006 interstate access rate.
- Effective January 1, 2007, not to exceed the carrier's historical access rate, less 2/3 of the difference between its historical access rate and its January 1, 2006 interstate access rate.
- Effective January 1, 2008, not to exceed the carrier's January 1, 2006 interstate access rate; and its intrastate access elements and structure shall conform to those of its interstate access tariff.

administrator must conduct reviews, not less than once every year, to ensure that each contributing company is making its required contributions to the fund and that support from the fund is used for the specified purpose. Solix reviews a selected sample of carriers including contributors and fund recipients.

In 2008, Solix reported to the legislature regarding the fund and its operation and did not recommend any changes in the current state high cost fund assessment rate. There is a rule making including a proposal supported by most ILECs to establish an additional state fund to pay for the state match for federal Lifeline and Link Up subsidies. Currently, some ILECs provide monies to augment the federal Lifeline payments to get additional federal matching funds.

Reference:

New Mexico Administrative Code 17.11.

Oklahoma

Oklahoma has two funds: the Oklahoma Universal Service Fund and the Oklahoma High Cost Fund. The Oklahoma Universal Service Fund (OUSF) serves three basic needs: 1) "Primary Universal Service" provides rural consumers with access to telephone services that are affordable and reasonably comparable to urban telephone services. 2) "Special Universal Service" provides funding for a) internet connections to public schools, libraries, and county seats; b) toll free 1-800 lines for public schools; and c) telemedicine. 3) "Lifeline" support provides economically disadvantaged consumers with low cost telephone service. The lifeline support is sometimes referred to as the Oklahoma Lifeline Fund (OLF). The OLF is not a separate fund but is a component of the OUSF.

The OUSF was created by state statute, 17 O.S. §139.101 et seq. The OUSF is funded by contributions from telecommunications providers as a percentage of the total retail-billed Oklahoma intrastate telecommunications revenues for both regulated and unregulated services. Contributions to the OUSF may be passed through to consumers. Local exchange carriers, long distance carriers, wireless carriers, operator service providers and payphone service providers contribute to the OUSF. VoIP providers do not contribute to OUSF. The Commission establishes a budget and adjusts the OUSF rate annually. The Commission also conducts regular audits of telephone companies that receive money from the OUSF.

Primary Universal Service supports rural carriers. A rural carrier is defined as an incumbent local exchange carrier (ILEC) serving fewer than 75,000 access lines. One notable component of Primary Universal Service in Oklahoma is the "make-whole" provision of Oklahoma law. The "make-whole" provision allows rural carriers to recover revenue lost as a result of any federal or state change in law, regulation or order. Funding requirements for Primary Universal Service programs have experienced modest growth over the last five years.

Special Universal Service schools and libraries programs supplement E-Rate funding. Accordingly, the state and federal programs work in concert to provide Internet access to schools and libraries. Special Universal Service also funds telemedicine and a toll-free telephone number to schools. In many instances, telemedicine and toll-free telephone numbers for public schools are paid exclusively through the OUSF. Also, OUSF pays for telemedicine projects to a broader array of healthcare facilities than those covered by the federal fund for rural health care facilities. While the Commission encourages carriers to seek federal funding sources for telemedicine, federal funding sources are not always available for telemedicine projects that are eligible for OUSF support. The OUSF supports both the initial build-out and the ongoing maintenance of all Special Universal Service programs with the exception of ISP connection costs. Funding requirements for Special Universal Service have experienced significant growth over the last five years, particularly in the area of telemedicine.

The OLF Lifeline programs supplement federal Lifeline programs. Accordingly, the state and federal programs work in concert to provide Lifeline services. Funding requirements for Lifeline programs have experienced modest growth over the last five years.

The Oklahoma High Cost Fund (OHCF) provides support to rural incumbent local exchange carriers (RLECs). The OHCF is a state fund that is separate and distinct from the OUSF. The OHCF was created by Commission order in 1996 and has not been modified or changed since that time. The OHCF is supported by contributions from intrastate toll providers (IXCs). Contributions to the OHCF may be passed through to consumers.

The OHCF replaced the intrastate toll pool in place prior to 1997. The OHCF distributes a fixed amount to rural carriers each year as stipulated in the 1996 settlement. The fixed amount is based on the amount each carrier received from the toll pool in 1994 with very limited opportunities for adjustment. The total size of the OHCF is fixed at approximately \$37 million annually. An IXC's contribution to the OHCF is calculated annually based on the IXC's proportional share of the total intrastate retail billed minutes of use.

The Oklahoma Corporation Commission is considering several reform proposals on the OUSF and OHCF, such as, changing the contribution methodology and distribution standards for the OUSF and/or eliminating or reforming the OHCF. However, no changes have been made at this time.

References:

- <http://solixinc.com/internet/source/currentprograms.aspx?id=492>
- Oklahoma Telecommunications Act of 1997 (17 O.S. §§139.101 – 139.110)

Oregon

The Oregon Universal Service Fund (OUSF) was created by the Oregon Public Utility Commission under legislative mandate. The legislature's impetus for mandating the creation of the fund was to stabilize rates as competition developed. The fund has been functioning since 2000 and in fiscal year 2009 collected \$49 million.

ILECs, CLECs, and IXC's all contribute to the fund. Wireless providers do not currently contribute to the OUSF and VoIP providers are not required to contribute. However, the state's largest VoIP provider (a cable company) has voluntarily asked for certification and is a fund contributor. Contributions to the fund are based on a surcharge that is applied to intrastate retail revenues. The current surcharge is 7.12%.

While the Oregon Commission has custody of the fund, a third party serves as fund administrator. Service providers submit their contributions to the Commission, which deposits the funds; at the same time a record of the payment is made to the third party administrator who maintains a database of fund transactions and also deals with delinquent payments. The third party administrator is audited each year by an independent auditor. The Commission is developing a web based system through which carriers will be able to input required data and also submit their payments to the fund.

The OUSF makes a distinction between rural and non-rural ILECs in calculating fund support. Support amounts from the OUSF vary from a low of \$0.22 to \$685.20 per line. For the large non-rural ILECs, a cost proxy model is used to determine cost per loop at the wire center level. The resulting per-line cost for each wire center is reduced by a \$21 benchmark rate. The resulting difference, if any, constitutes the support from the OUSF. The cost proxy model has not been updated since the inception of the fund, and so support amounts for the larger carriers have been set since then.

Embedded costs are used to calculate support for the small rural ILECs. This support is calculated every three years and it equals the carrier's costs reduced by federal support and the \$21 benchmark rate. The carrier's revenue requirement for loop and local traffic sensitive facilities is converted to a per-line amount by dividing the total revenue requirement by the carrier's number of lines; the resulting amount is then divided by 12 to arrive at a monthly per-line figure. The per-line amount is the same for all the carrier's wire centers, unlike the procedure for the larger ILECs. This amount (which is essentially revenue requirement per line) is then reduced by federal support. Specifically, 25% of the loop cost, or the sum of the calculated Subscriber Line Charge plus any interstate loop support (whichever is greater) is subtracted from the revenue requirement per line. Any federal local switching support is also subtracted. The resulting amount is further reduced by the \$21 benchmark. Any remaining amount constitutes the support from the OUSF.

When the triennial calculation of support was done in 2006, the Commission, in an effort to restrict the growth of the OUSF, froze support at 2003 levels plus 15%, resulting in the 7.12% surcharge. In its 2009 study, the Commission made no increases, leaving the 7.12% surcharge in place.

CLECs are eligible for support from the OUSF. They must be certificated, receive ETC status, and also pay into the OUSF for over a year. So far only one CLEC is receiving support from the OUSF. Support for Competitive ETCs (CETCs) is based on the support received by the ILEC for that wire center. If the CETC is providing service using its own facilities, it gets the same support as the ILEC. If the CETC is providing support through UNEs, it gets partial support. If the CETC is providing support through resale, it gets no OUSF support.

References:

ORS 759.015

Order Number 98-094

Pennsylvania

The Pennsylvania Public Utility Commission created the \$34 million PA-USF in 2000 in response to petitions from both local exchange carriers and IXC. The purpose of the PA-USF, as articulated in the Commission's Final Rulemaking Order, is to "reduce access and toll rates for the ultimate benefit of end-users and to encourage greater toll competition while enabling carriers to continue to preserve the affordability of local service rates."²⁵⁵

The PA-USF is a revenue replacement fund, with support limited to rural ILECs. At the initiation of the fund, intraLATA toll rates were reduced, the intrastate Carrier Common Line Charge was replaced with a flat rate Carrier Charge, and other intrastate access charges were reduced closer to interstate access charge levels. At the same time, ILECs were allowed to increase local residential rates up to a cap of \$16.00 per month. Support payments from the PA-USF were calculated by netting additional revenues from increased local rates against decreased revenues resulting from reductions in access charges and toll rates; if the additional revenues were not sufficient to make up for the decreases in revenues, the PA-USF made up the shortfall. The \$16.00 cap was later increased to \$18.00 in 2003 when intraLATA toll rates were further decreased and support amounts from the PA-USF were recalculated accordingly.

The size of the fund and the annual assessment rate is recalculated each year and approved by the Commission. The fund is increased to reflect access line growth for rural ILECs but is not reduced in the event of a decline in lines. All LECs and IXCs contribute on a pro rata basis to the PA-USF. Contributions are calculated by applying an assessment rate (1.1094904% in 2009) to intrastate end-user retail telecommunications revenue. The formula used for calculating contributions is as follows:

$$\frac{W + X + Y + Z}{A} \times \frac{B}{12} = C$$

W = Increase in funding requirement due to growth in access lines of recipient carriers. W equals access line growth percentage for each recipient carrier multiplied by each recipient carrier's prior year net support (prior year funding minus prior year payment).

X = Prior year's size of fund minus estimated any surplus from prior year or plus any shortfall from the prior year.

Y = Provision for uncollectable—set at 1%. {1% x (X+W)}

Z = Commission approved administrative and auditing expenses

²⁵⁵ Rulemaking Re Establishing Universal Service Fund Regulations at 52 Pa. Code §§63.161-63.172, Final Rulemaking Order, Docket No. L-00000148, (November 29, 2000).

A= Aggregate state-wide end-user intrastate retail revenue of all contributing telecommunications providers for the previous calendar year

B= Individual contributing telecommunication provider's end-user, intrastate retail revenues for the previous calendar year

C= individual contributing telecommunication provider's monthly contribution

The fund is administered by a third party. Contributors to the PA-USF are prohibited from recovering their contributions through line item surcharges on customer bills. Verizon Pennsylvania Inc. (Verizon PA) uses its 2003 Price Change Opportunity monies to fund its annual contribution to the PA-USF. (Verizon PA is under price cap regulation in Pennsylvania, but although it is an ILEC, it is not a rural ILEC recipient of the PA-USF). Most of the other ILECs are net receivers from the PA-USF rather than contributors. (As noted in the formula above, the rural ILECs' contributions are netted against their support payments when the fund size and assessment percentage are calculated.)

Currently, all certificated telephone carriers contribute to the PA-USF. CMRS providers do not contribute. Certificated VoIP providers would be required to contribute; however, no VoIP providers are currently certificated. The contribution base for the PA-USF has been declining by about 3% each year; this has encouraged the Commission to consider adding CMRS and VoIP providers as contributors to the fund.

The fund was originally envisioned as an interim measure to last four years; however, there is no sunset provision in the regulations at 52 Pa. Code §§ 63.161 – 63.171. An investigation is currently underway before the Office of Administrative Law Judges to consider various issues related to the fund, including questions about the size of the fund and whether to expand its purpose to include keeping rates affordable in rural ILEC territories during periods of revenue increases. As part of this investigation, needs test analyses are being conducted.

Pennsylvania is actively promoting broadband deployment by its telecommunications carriers. As part of alternative regulation proceedings, carriers made commitments for delivery of broadband in return for decreased regulatory oversight.

References:

Global Order, Re Nextlink Pennsylvania, Inc., Docket Nos, P-00991648, P-00991649, Order entered September 30, 1999, 196 PUR4th 172

Final Rulemaking Order at Docket No, L-00000148 on January 27, 2000.

52 PA. Code CH. 63

South Carolina

(The following discussion is based on an interview with Commission staff members; but it has not undergone a final staff review.)

South Carolina funds its universal service efforts through two funds. An Interim Local Exchange Carrier Fund (ILF) to which only interexchange carriers (IXCs) contribute, and a Universal Service Fund (SC USF). The establishment of state universal service mechanisms in South Carolina was in response to the federal Telecommunications Act of 1996 and the push from a state telecommunications industry coalition seeking to keep incumbent local exchange carriers (ILECs), especially rural local exchange carriers (LECs), competitive in the market. The rationale underlying the state funds is that rural LECs cannot be competitive so long as their local rates continue to be subsidized by access charges and other vertical features. The state high cost mechanisms are intended to keep incumbent LECs whole on a revenue neutral basis when they reduce the non-basic rates that previously provided implicit subsidies to local rates.

The ILF was established as part of intrastate access charge reform, a reform asked for by the state's IXCs who sought lower access charges. All rural LECs were required to reduce their intrastate access charges to the level of those of the largest ILEC in the state, BellSouth, now AT&T. IXCs, including BellSouth, pay into the ILF and in return benefit from rural LECs' lower intrastate access charges. The ILF replaces the revenue lost from access charge reductions, with the incumbent LECs receiving payments based on their number of intrastate access minutes in 1996. Adjustments are made for growth in minutes, but no adjustments are made for a decrease in minutes. The ILF is about \$40 million per year. Though there are plans to incorporate the ILF in the SC USF, this has not yet been done and the ILF continues as an independent fund.

The South Carolina Universal Service Fund (SC USF) was implemented in 2001 and started functioning in 2002. It includes High Cost Support, a Lifeline program and Telecommunications Relay Service. In Fiscal Year 2007-2008, the state fund collected about \$54.6 million.

All wireline carriers that offer intrastate telecommunications services, including incumbent and competitive LECs and IXCs, are required to contribute to the SC USF. The SC USF surcharge is not assessed on wireless carriers unless they are designed as Eligible Telecommunications Carriers for receiving federal USF, which indicates that they compete with ILECs. VoIP providers are required to contribute to the fund only if they seek state certification as a competitive LEC (e.g., Time Warner Cable and Comcast). Nomadic VoIP providers do not contribute to the fund.

The South Carolina Office of Regulatory Staff administers the High Cost Fund and periodically audits the books of the fund recipient. The State Treasurer has custody of the fund.

The SC USF is collected through a percentage revenue surcharge on contributing carriers' retail receipts. The current rate is 3.5707%. The SC USF is unique in using both interstate and intrastate receipts. The South Carolina Supreme Court affirmed that the state has the right to assess state USF on interstate revenue based on the rationale that the federal USF recovers only a fraction of the carriers' costs of providing intrastate services.

Only carriers of last resort, now only incumbent LECs, are eligible to withdraw from the High Cost Support. So far, no competitive LECs have applied for the fund; to qualify they would have to assume carrier of last resort duties. Support from the SC USF begins with a calculation of a carrier's revenue requirement, with embedded costs used for rural LECs, and proxy model costs used for the non-rural LEC, BellSouth. These revenue requirements serve as a cap on total support available from the SC USF, and are not changed unless a carrier comes in to request a change in the calculation. Once a revenue requirement is calculated, a total cost per line is determined. State High Cost support per line is equal to the total revenue requirement minus approved tariff revenue and other sources of subsidy such as federal high cost support and ILF. ILECs are compensated dollar for dollar for any revenue loss resulting from a rate reduction for non-basic services such as access charges and vertical services. Carriers cannot reduce rates for these services below economic cost. If an ILEC loses access lines, the state USF support per line will be adjusted upward to meet its revenue requirement. All ILECs file financial worksheets annually to true up their USF receipt.

When the SC USF was established, the legislature provided for a maximum of \$217 million in annual support, to include both the ILF and the USF. The maximum has never been reached. The \$217 million was to be attained in three phases. In the first phase, all carriers including BellSouth were required to reduce their intrastate access charges and to file the required cost studies to establish the SC USF. To trigger the second phase, carriers would be required to file new cost studies and to demonstrate that additional funding is needed. That has not happened and, as of now, no carriers have passed the first phase.

Currently, all rural LECs are under alternative rate regulation. Carriers are allowed to raise their local rates up to the state weighted average rate, currently \$14.35.

There are a couple of new challenges facing the state High Cost Support. There is a debate about whether the fund should support service bundles, which are currently not regulated. There is also a question regarding the interaction between deregulation and state USF. There is pending legislation in the state General Assembly that will require those ILECs who elect deregulation to phase out their state High Cost Support.

References:

The Public Service Commission of South Carolina. 1996. *Order In Re: The Interim Local Exchange Carrier Fund*. Docket No. 96-318-C – Order No. 96-882-C. Released December 30, 1996.

The Public Service Commission of South Carolina. 2001. Order Approving Final Documents and Vacating Order No. 2001-954 In Re: Proceeding to Establish Guidelines for an Intrastate Universal Service Fund. Docket No. 97-239-C – Order No. 2001-996. Released October 10, 2001.

South Carolina Legislative Audit Council. 2005. *A Review of the South Carolina Universal Service Fund (Summary)*. Available at http://www.lac.sc.gov/NR/rdonlyres/ADDEC770-E5DB-4F4C-AFDD-118F6AE8B845/0/USF_Summary.pdf.

Texas

The Texas Universal Services Fund (TUSF) was originally authorized by the Texas Public Utilities Regulatory Act in 1987. The TUSF was revised and expanded multiple times during the late 1990s and early 2000s. The total annual fund disbursement in recent years has been between \$500 and \$600 million, making the TUSF the second largest state USF in the nation. The TUSF includes eleven programs, of which six provide high cost assistance:

Programs for high cost assistance:

Texas High Cost Universal Service Plan (THCUSP) for large companies and eligible competitors serving their areas;

Small and Rural ILEC Universal Service Plan for small, rural companies and eligible competitors serving their areas;

Public Utilities Regulatory Act §56.025 Maintenance of Rates and Expansion of Fund for Certain Companies;

Uncertificated Areas;

Successor Utilities;

Additional Financial Assistance (AFA)

Programs for low-income or disability assistance:

Lifeline and Link Up for low-income households;

Telecommunications Relay Service (Relay Texas);

Specialized Telecommunications Assistance Program (STAP) for the deaf and the hearing impaired;

Audio Newspaper Assistance Program (ANP) for the blind and visually impaired persons: provide access to the text of newspapers with synthetic speech technology;

Programs for schools, libraries and health care facilities:

IntraLATA: ILECs that have not elected incentive regulation may request reimbursement for certain intraLATA, interexchange, high capacity (1.544 Mbps) private network services at reduced rates for qualified schools, libraries, non-profit telemedicine centers, public or non-profit hospitals, or legal consortium of such entities.

TUSF is supported by a surcharge (currently 3.4%) on intrastate telecommunications revenue receipts. Receipts from payphone services, interstate and international services and the TUSF surcharge revenue itself are exempt from the assessment. Telecommunications providers may recover the assessment through an explicit surcharge on customers' bills; Lifeline customers are exempt from the surcharge.

All telecommunications service providers who have a customer base and intrastate revenue pay into the TUSF. Contributors include LECs and IXC's, and also wireless providers. VoIP providers are not contributors. Unlike other states, the TUSF collects contributions from other types of companies offering telephone services. There are approximately 700 other companies such as hotels and motels that contribute to the fund. The commission is considering a rule change to exempt these contributors. Texas allows wireless providers to use the inverse to the FCC's interstate safe harbor percentage to calculate their intrastate revenue. The Texas Commission has no imminent concern about sustainability of the fund because population growth has held the revenue base stable in recent years.

To be eligible for state support, a carrier must be designated by the commission as an Eligible Telecommunications Provider (ETP). Under the competitive neutrality principle, a competitive provider at least partially using its own facilities can seek the ETP status. An ETP must first be designated as an ETC for receiving federal USF. ETP designation entails more stringent conditions beyond the ETC qualification. For example, a carrier must offer flat rate unlimited local calling services; the local service rate must be no higher than 150% of the ILECs' state average rate; the carrier must also comply with state quality of service rules.²⁵⁶

To qualify for state high cost support, an ETP must also provide basic local telecommunications service (BLTS).²⁵⁷ Texas commission reviews the definition of BLTS every three years. The following summarizes the six high-cost programs in Texas:

Texas High Cost Universal service Plan" (THCUSP)

THCUSP is the state high-cost fund for Texas's large carriers or eligible competitors serving the same areas. It is the biggest of the TUSF programs, expending over \$400 million annually (75-76% of the total fund). ILECs receive over 95% of THCUSP support. The program started around 1998-1999 as a result of restructuring of an older "Texas Universal Service Fund."

THCUSP per-line support level is determined by the following formula, at the wire center level:

Support = economic cost – revenue benchmark – federal USF – access/UNE adjustments

²⁵⁶ Texas Admin. Code § 26.52 - 26.54.

²⁵⁷ Texas Admin. Code § 26.403(d)(1).

The commission uses a forward-looking economic cost model (Hatfield Model) to calculate monthly per-line cost of each wire center. The commission sets a uniform revenue benchmark across wire centers based on the statewide average per-line revenue. The benchmark is \$38 for residential lines and \$52 for business lines.

The access adjustment applies only to some carriers. Each of the ILECs receiving support from the THCUSP has elected incentive regulation. These ILECs agreed to reduce their switched access charges and intraLATA toll rates. If an ILEC has not in fact reduced its access rates, the access reduction further reduces its base support. That reduction amount is equal to the sum of the ILEC's carrier common line revenue, residual interconnection charge revenue and residual toll revenue. The calculated per-line support is portable to competitive ETPs.

The UNE adjustment also applies only to some carriers. If an ETP provides supported services solely or partially through the purchase of unbundled network elements (UNEs), its support is allocated between the ETP and its UNE provider.

THCUSP recipients must report line counts, rates and support calculation to the TUSF administrator on a monthly basis; report THCUSP receipts on a quarterly basis; and report its qualification for THCUSP on an annual basis.

The Texas commission has recently modified the THCUSP. Over a four year transition, it allowed large ILECs to raise local rates in regulated areas. This plan will raise the lowest local rate from \$7 per month to \$17 over the four years. Such change increased the revenue benchmark and therefore reduced the need for TUSF support. As a result, the assessment rate declined from 4.4% to 3.4%. The commission may also consider updating the cost model as the costs currently being used are based on 1997 data.

Small and Rural ILEC Universal Service Plan

This is the second-largest program of the TUSF. It disburses about \$100 million per year (17% of TUSF) to 20-30 rural telephone companies and competitive providers serving the same areas. The ILECs and CLECs receive about 98% and 2% of the fund, respectively. This program was initiated in 1998 and implemented in 2000. It replaces support previously generated by an intraLATA toll pool. Today the program provides support in exchange for reductions in intraLATA toll rates and switched access charges. The monthly per-line support level for each small, rural ILEC study area was determined in a one-time calculation using data from Fiscal Year 1997. Support per year to each carrier remains frozen as long as the carrier remains eligible.

The support consists of the sum of two hold-harmless calculations:

Toll pool revenue replacement. The intrastate toll pool was abolished in 1997. This support amount is the difference between the ILEC's toll pool revenue requirement during 1997 and its actual toll billed for 1997;

Access/toll rate reduction. If carriers reduced their carrier common line towards the interstate level, or if they reduced their “residual interconnection charge,” or if they reduced intraLATA toll rates no higher than a \$0.20 cap, the lost revenue is replaced with support. The carrier may recover the difference between the previous rates and the new rates, computed on the basis of minutes of use in 1997.

The support is portable to competitive ETPs on a per-line basis. Each fund recipient must report eligible line account to the fund administrator on a monthly basis, and it must report its eligibility on an annual basis.

PURA §56.025 Support

This program was first adopted in 1995 and revised in 2005. An ILEC serving fewer than 31,000 access lines and telephone cooperatives can seek appropriate support if it experiences a revenue shortfall due to certain regulatory actions, including those affecting the commission’s high cost fund, changes in federal USF, a change in the intraLATA access policy, or other governmental agency action.²⁵⁸ This program disburses \$4.5-4.7 million each year to 11 ILECs. No carrier has requested additional support since 1998.

Uncertificated Area

The commission can designate an ETP to provide voice services to permanent residential or business premises in areas where no carrier holds a certificate of convenience and necessity. ETPs can seek reimbursement for the actual cost of deploying new facilities as well as any recurring costs of providing service not recovered from customer revenue.²⁵⁹ The monthly per-line support is based on the average TUSF support received by adjacent ILECs.²⁶⁰ Since 2003, this program has disbursed a relatively small amount of support to four companies that serve about 229 lines in western Texas.

Successor Utilities

The 2003 revision to the PURA added this program for non-ILEC providers of last resort (POLR) to get support from TUSF. No ETP has requested support under this program.

²⁵⁸ Texas Admin. Code § 26.406.

²⁵⁹ Texas Admin. Code § 26.422.

²⁶⁰ Texas Admin. Code § 26.423.

Additional Financial Assistance

ILECs serving high-cost and rural areas in the state may request additional support if they can demonstrate a need.²⁶¹ This program ensures that ILECs facing competition continue to provide universal access to basic local telephones service at reasonable rates. No ETP has requested support under this program.

Solix, Inc. has been the contracted administrator of the TUSF since 1999 winning 2 separate bids (1999 and 2002). Solix processes fund collection and disbursement.

Although there are no statutory requirements for audits, the commission has initiated audits of the state Lifeline program at 25 companies. The audits did not lead to any findings of fraud. The commission plans to conduct audits of the high cost programs next.

References:

Texas Administrative Code. 26.401 through 26.424.

Public Utility Commission of Texas. 2007. Review and Evaluation of the Texas Universal Service Fund Pursuant to PURA Section 56.029. Available at http://www.puc.state.tx.us/telecomm/reports/TUSF/TUSF_Report_80thLeg.pdf

²⁶¹ Texas Admin. Code § 26.408.

Utah

The “Universal Public Telecommunications Service Support Fund” (the Utah USF) was established by statute in Utah in 1997. The fund, which in 2007 collected \$5.3 million, includes both high cost and Lifeline support, with high cost support comprising about \$4 million of the total fund. The Utah Public Service Commission established the fund and sets policy for its operation. The Utah Division of Public Utilities (DPU) serves as the fund administrator.

Telecommunication service providers, both wireline and wireless, pay into the fund; VoIP providers do not. Contributions are made through a percentage surcharge levied on intrastate retail sales revenue. Carriers recover the surcharge through a line item on customer bills. The surcharge has recently been lowered from 0.0045 percent to 0.0025 percent of billed intrastate retail rates. The smaller surcharge reflects an increased revenue base caused by growth in wireless service.

In order to qualify to receive USF support funds, a telecommunications corporation must be certified as both a federal eligible telecommunications carrier (ETC) and a state ETC. The public interest standard for state ETC designation is set high, especially for rural areas. At this time, the Utah Commission has not approved any competitive state ETC petitions for state high cost support.

A carrier seeking support from the fund must make a filing with the commission. The DPU then reviews the filing, which is much like a standard rate case; however the company’s total revenue requirement is examined, not just its intrastate activities. The DPU calculates the carrier’s total revenue requirement, applying the carrier’s authorized intrastate rate of return. The DPU subtracts from revenue requirement the carrier’s total revenues, both intrastate and interstate, as well as its federal universal service support. Support from the fund is equal to the difference. The rural ILECs in the state are proposing that support be calculated only in reference to intrastate revenue requirement and revenues, but no decision has been made.

To receive support from the Utah fund, carriers must charge at least a minimum rate for basic service, which currently is set at \$16.50 for residential and \$26.00 for business service. These affordable basic rates were established by the commission in 2005, after an examination of the national median rate and of regional averages. The commission can, by statute, establish different base rates for different study areas, but it has elected to set a single statewide base rate.

Once a carrier’s support is established, it remains at the established level until the carrier requests a change in support level, or the DPU, in examining the carrier’s annual reports, finds that the carrier has over-earned. Of the 15 rural local exchange carriers in the state, ten receive high cost support from the Utah USF. Qwest is under an alternative regulatory plan, and is the only ILEC under this plan at this time. Companies under this plan can request support from the fund. If they did apply, their requests would be evaluated through use of a cost proxy model rather than through an embedded cost study.

References:

Utah Code Annotated Title 54-8b-15

Public Service Commission Rules R746-360

Wisconsin

The Wisconsin state universal service fund (WUSF) provides support for a number of programs, including subsidies to low-income customers and to persons with disabilities, support for high-rate areas, subsidies for telemedicine equipment for hospitals and clinics, and support for public interest payphones. Wisconsin's high-rate assistance program provides support through customer credits. Rather than directly addressing carriers' costs, the high-rate assistance program focuses on keeping the rates actually charged to the subscribers at an affordable level.

Wisconsin's high rate assistance credit program was created on the state commission's initiative in 1990 and was later codified in the state Telecommunications Reform Act in 1993. The program – in its current form - began operation in 1996. Instead of subsidizing high loop costs directly, it provides subsidies for high-rate subscriber lines. The program compares the rate charged for a package of essential telephone services (including the federal subscriber line charge) to a benchmark rate and provides credits to buy down the rates of essential services that are above the benchmark rate. The package of essential telephone services includes a reasonably adequate number of calls within a reasonably adequate local calling area as defined by the commission. The adequate minutes determined depend on the size of the local calling area (See table in WI Administrative Code 160.09 (3)(c) for details). Currently the essential services package includes a maximum of 480 minutes of local calling minutes, access to 911, and a reasonable amount of long distance usage. DSL and advanced calling feature charges are excluded from the package. State statutes require that the Commission define a minimum data transmission speed, to be provided as part of essential services. The issue is now pending in the commission's Docket 1-AC-198. The Commission has determined that the new minimum data transmission speed will be 250kbps upstream and 750kbps downstream, but has not yet issued an order.

The benchmark above which the rates for an essential service are considered "high rates" is set at 1.5% of median household income by county. The credits increase as the telephone rates reach higher percentages of median household income. Credits are determined through the following table:

Portion of Rate -	Credit
< 1.5% of county median household income	0%
≥ 1.5% but < 2% of county median household income	50%
≥ 2% but < 2.5% of county median household income	75%
≥ 2.5% but < 3% of county median household income	85%
≥ 3% of county median household income	95%

Carriers that receive the state high rate assistance support must pass all the credits on to customers in their local bills.

The design of such a high-rate assistance program avoids resource-intensive and often times controversial cost studies. Instead of trying to get the cost calculation right, the commission staff focuses on making sure the subscriber rate is affordable. Its purpose is not to control rates but to ensure reasonable rate levels.

Intrastate wireline telecommunications providers pay into the WUSF, including ILECs, CLECs, IXCs and resellers. Wireless and CMRS providers also contribute. Fixed or interconnected VoIP providers are required to be certified in Wisconsin and they are required to contribute to the program, but nomadic VoIP providers are not.

The monthly assessment on gross intrastate revenue varies. The current rate, effective since October 2009, is 0.01570%. This assessment includes support to all PSCW programs funded through the WUSF. Providers can recover their contributions from subscribers through a line item on the customers' bills. Carriers with gross intrastate revenue below \$200,000 for the prior calendar year are exempt from contributing to the state fund.

The fund is administered by a third party, selected through a competitive bidding process. Currently the administrator is WIPFLI, LLP. State commission staff reviews the calculation of credits in light of changes in rates and county median income levels. The fund is audited by the Legislative Reference Bureau every year.

In the 2007-2008 fiscal year, \$6 million was collected for the state fund. Of that amount, \$87,496 was disbursed to eligible carriers through the high-rate assistance program, covering over 5,000 residential lines. The funding level is decreasing because the median household income in general is increasing while the telephone rates don't have a lot of upward increase. However, if inter-carrier compensation reform does occur, carriers may raise local rates, potentially triggering the benchmark for eligible support more often.

WUSF support is available to ILECs, CLECs and wireless providers. Carriers must be designated as ETCs to receive state funding (issues on ETC annual reporting requirements are now pending in commission docket 1-AC-198). Over the years, very few CLECs have withdrawn support from the fund because, in order to qualify for support, they have to price retail rates relatively high. This is not a likely scenario if they are in competition with ILECs.

Currently, several revisions to the state high rate assistance credit program are pending state commission action. The revisions include updates, clarifications and integration of new technologies.

Reference:

<http://psc.wi.gov/utilityinfo/tele/usf/usf-index.htm>

Wisconsin Administrative Code Chapter PSC 160

Wyoming

The Wyoming Public Service Commission has operated the Wyoming Universal Service Fund (WUSF) since 1997. The fund's primary support mechanism ensures that no Wyoming customer pays a rate for basic voice service greater than 130% of the weighted statewide average rate or "benchmark."

WUSF was authorized by a law enacted in 1995. That act set price floors that required each local exchange carrier to sell each service at a rate no lower than economic cost. The legislative purpose was to promote competition throughout the state, although wireline competition did not later develop extensively in Wyoming.

To implement the 1995 act, the commission required all companies to file cost studies. The studies estimated the costs of providing business service and residential service, as well as other LEC services, such as intraLATA toll and intrastate access. The studies were based on Total Service Long Run Incremental Cost (TSLRIC) principles. TSLRIC studies used proxy cost models. Qwest, which serves a large portion of the state, used its own cost model while other ILECs used commercially available models.

The new rates took effect in 1999 and 2000, with the overall effect being lower access rates²⁶² and higher local rates, particularly in rural areas. A few carriers adopted a unitary local rate for both business and residential customers. Qwest adopted three geographic rate zones, charging the highest local rate, \$69.35 per month, in its most rural areas. One rural LEC set a local rate at \$88.47 per month.

These high local rates provided the impetus for the WUSF to provide high cost support in the form of explicit credits on customer bills. WUSF credits eliminate 100% of any excess local rate above a fixed statewide benchmark. By statute, that benchmark is 130% of the weighted statewide average local rate. In 2009, the benchmark was \$32.57 per month for both residential and business customers. For example, a customer whose bill is \$32.00 per month would receive no credit. A customer with a bill of \$33 would get a credit of \$0.43. A customer with a bill of \$100 would get a credit of \$67.43. The WUSF reimburses carriers for all such credits granted to customers.

Customers who purchase bundled service packages also receive credits, but the credits are based on the rates paid by ILEC basic service customers. Similarly, the customers of a cable company or wireless company could receive credits if their rates were high enough to

²⁶² In 2007 the Wyoming legislature passed a new law that required further access reductions.

qualify.²⁶³ Currently, WUSF credits are provided and reimbursed only for the customers in ten ILECs. Approximately 17% of Wyoming's 238,000 lines receive WUSF support.

Wireless and competitive carriers (including cable voice customers) are theoretically eligible to receive support, but none actually does. In some cases these carriers have rates that are too low to generate credits. Others have decided not to participate in the WUSF program and have not filed the necessary annual reports. In several cases, a carrier reduced its actual rates to the benchmark and did not seek reimbursement. These carriers had so few lines exceeding the benchmark that the administrative cost of modifying customer bills would have exceeded the benefits.

The Wyoming statute requires the benchmark to be set at 130% of the state average rate for local service. The commission annually recalculates this benchmark.²⁶⁴ The calculations also include the cases of cable-voice customers, whose carriers do not sell basic service alone. The commission in these cases uses the ILEC rate in the same area to calculate the amount of the credit awarded to a cable-voice customer.

The WUSF operates on a fiscal year basis, using data reported after the end of the preceding calendar year. Supported carriers can ask for a mid-year adjustment of support. For example, if the FCC were to adopt a preemptive low rate for intrastate access, and if basic local rates were increased as a result, the commission could also increase the customer credit levels in mid-year. ILECs are generally losing lines in Wyoming, and this has generated some issues about lags in measuring line counts.

Wyoming carriers have an option to treat federal universal service support in either of two ways. In one option, federal support is shown as an explicit customer credit. In this option, the customer bill shows federal support as an explicit credit. The WUSF credit amount is based on the net amount, and the resulting WUSF credit becomes a second explicit credit on the bill. Qwest and one other carrier have chosen this option.

The second option is to treat federal USF payments as company revenue. In this option, the federal support implicitly reduces the local rate, and the WUSF credit is the only credit shown on the bill. Most Wyoming carriers use this option.

Most Wyoming carriers have not increased their rates since 2003. In 2007, the Wyoming legislature substantially changed the state's telecommunications law. The state commission lost all authority to set local rates based on rate-of-return principles. The legislation also required carriers to lower their intrastate access charges to \$0.03 or less, and allowed them to make up lost revenue by increasing rates for other charges, including basic local rates. As noted above,

²⁶³ The credit in that case would be based on the ILEC rate in the same area.

²⁶⁴ In calculating the statewide average rate, the commission includes data for customers who purchase voice service from cable providers. These customers are assumed to pay rates equal to the ILEC rates.

the chief ratemaking policy in Wyoming since 1995 has been that no rate may be below cost. In applying that rule, the state commission no longer uses TSLRIC principles to determine cost.

Wyoming rural companies offer broadband to a higher percentage of customers than Qwest. Rural LECs offer broadband to about 80 percent of their customers, and one rural LEC serves 100%. Qwest offers broadband to only about 60 percent of its customers.

WUSF funding is derived from a surcharge on intrastate telecommunications services. Cable-based VoIP providers also contribute to the fund, as do wireless providers. Wyoming statute prohibits requiring contributions from nomadic VoIP providers. The WUSF raised \$3.2 million in Fiscal Year 2008 with a surcharge rate of 1.0%. The WUSF surcharge is passed through and must be shown as a line item on customer bills.

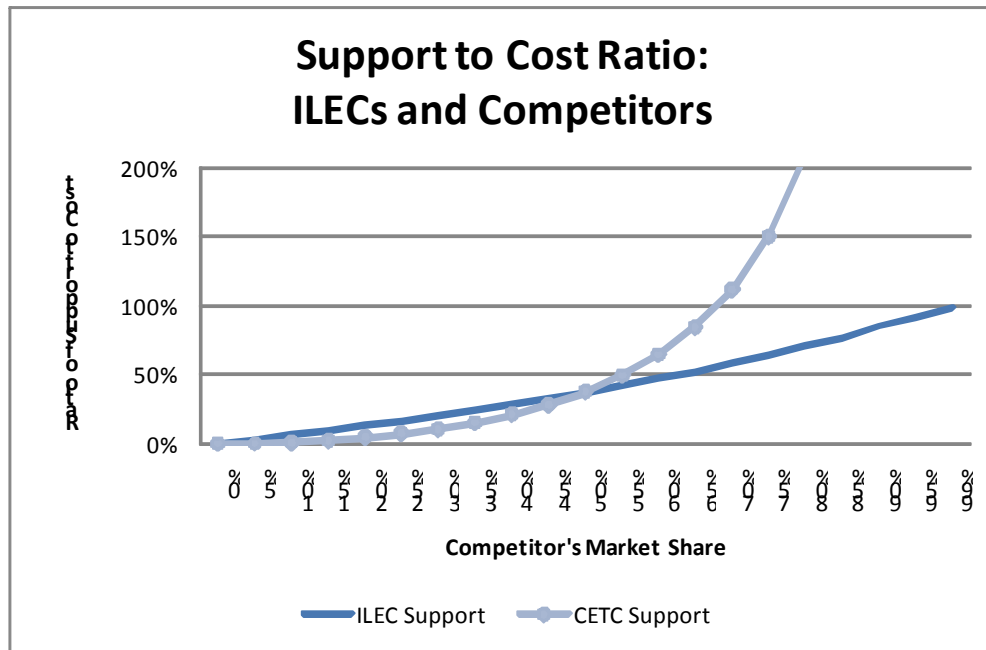
WUSF is scheduled for a legislative review in 2015. At that time, the state may address the continued need for regulation of essential services and for continuation of the fund.

Appendix C – Illustration of Effects of Identical Support Rule

Cost Assumptions:

1. ILEC cost for 10,000 customers is \$300,000 per month
2. ILEC costs are 60% fixed, 40% variable with subscribers.
3. CETC costs = 100% of ILEC cost.
4. Support = 100% x (Cost per line per month - \$30)

CETC Market Share	Lines	Monthly Cost	Cost per-line per month	USF Support per-line	USF Support	Net Cost per-line	Support / Cost
ILEC Business Case							
0%	10,000	300,000	30	-	\$ -	30	0%
10%	9,000	288,000	32	2	\$ 18,000	30	6%
50%	5,000	240,000	48	18	\$ 90,000	30	38%
70%	3,000	216,000	72	42	\$ 126,000	30	58%
90%	1,000	192,000	192	162	\$ 162,000	30	84%
CETC Business Case							
0%	-	180,000	N/A	-	\$ -	N/A	
10%	1,000	192,000	192	2	\$ 2,000	190	1%
50%	5,000	240,000	48	18	\$ 90,000	30	38%
70%	7,000	264,000	38	42	\$ 294,000	(4)	111%
90%	9,000	288,000	32	162	\$ 1,458,000	(130)	506%



Appendix D – Surcharges On All Retail Telecommunications Services

Most states that have high cost funds collect revenue by imposing surcharges on intrastate retail telecommunications services. This rule fits comfortably within the traditional scope of the rate supervision jurisdiction of state commissions. There are nevertheless several advantages to a broader surcharge on all retail telecommunications revenues.

- A broader base generates more revenue and may make some programs more effective. A narrow base requires a high rate for the same revenue. A state that limits itself to a surcharge solely on intrastate telecommunications services may not be able to generate sufficient revenue to address universal service issues comprehensively, including the urban-to-rural support flow.
- A broader base imposes fewer market distortions. If the state's surcharge rate is high and applies only to intrastate services, customers have an incentive to avoid consuming intrastate services. To the extent that customers have a choice of jurisdiction (such as when declaring the jurisdiction of special access circuits), they have an incentive to declare for the jurisdiction with lower surcharges.
- An intrastate-only surcharge perpetuates distinctions that are becoming antiquated in their original regulatory context. Traditionally the jurisdiction of a switched call was determined by the call's endpoints. Federal statute has now made those end points irrelevant for jurisdiction over wireless rates.²⁶⁵ Similarly, many voice calls now pass over the public Internet, which the FCC has declared an "interstate information service." Finally, the Supreme Court has declared that traditional regulatory distinctions do not apply to the pricing of unbundled network elements.²⁶⁶
- The intrastate revenue base is declining. Many states reported to us that their revenue bases are declining, in some cases by 5% per year.²⁶⁷ One cause is FCC preemption over some growing services such as DSL. In addition, the FCC has

²⁶⁵ States are wholly preempted from regulating rates for wireless calls, including intrastate calls. 47 U.S.C. § 332(c)(3)(A).

²⁶⁶ *AT&T Corp. v. Iowa Utilities Board*, 525 U.S. 366, 119 S.Ct. 721 (1999).

²⁶⁷ A few states reported no significant erosion of their intrastate revenue base, but these states tend to have expanding populations. Nevada is an example.

established a “safe harbor” percentage for VoIP services that allocates the majority of VoIP revenues to the interstate jurisdiction.²⁶⁸

- Similarity to taxes. State sales taxes on telecommunications services commonly are applied to both intrastate and interstate services. Aligning USF surcharges with state sales tax rules can simplify administration for carriers who collect the payments and for customers who are confused by complex retail bills.

Imposing a surcharge on interstate revenues creates legal risk. Several states that have imposed such a surcharge have lost in court. The following sections discuss the nature and extent of that legal risk.

1. State taxes and the Commerce Clause

As sovereign powers, the states have broad authority to impose taxes and fees to fund public programs. The Commerce Clause within the United States Constitution sets limits on state taxes imposed on interstate commerce.

State ability to tax interstate telecommunications services was upheld in the Supreme Court in the 1989 case of *Goldberg v. Sweet*.²⁶⁹ In 1984, Illinois enacted a 5% excise tax on the gross charge for interstate and intrastate telecommunications originated or terminated in that state.²⁷⁰ The tax applied only to calls that were charged to an Illinois service address, regardless of where the monthly bill was sent to or paid from. Taxpayers and a telecommunications carrier challenged the statute as violating the Commerce Clause.

Over the years, the Supreme Court had decided many cases involving the Commerce Clause and state taxes. The Court had noted a basic tension between the view that interstate commerce enjoys a "free trade" immunity from state taxation and the view that businesses engaged in interstate commerce may be required to pay their own way. The Court had developed a four-part test to evaluate such Commerce Clause challenges.²⁷¹ In the Illinois case, the Court concluded that the tax satisfied that four-part test.

The first prong of the constitutional test is whether the tax has a substantial nexus with the state. For a telecommunications tax, the Court stated that only two states could satisfy that test. The first was a State that taxed the origination or termination of an interstate telephone call

²⁶⁸ The interstate safe harbor for interconnected VoIP services is 64.9%. See <http://www.fcc.gov/Forms/Form499-A/499a-2008.pdf> at 14.

²⁶⁹ *Goldberg v. Sweet*, 488 U.S. 252 (1989).

²⁷⁰ See 35 Ill. Comp. Stat. § 630 (Telecommunications Excise Tax Act). The current rate is 7%.

²⁷¹ *Complete Auto Transit, Inc. v. Brady*, 430 U.S. 274, 278-79 (1977).

charged to a service address within that State. The second was a State that taxed the origination or termination of an interstate telephone call *billed to or paid from* within that State.²⁷² The nexus issue was not disputed in the Illinois case because the tax was of the first type.²⁷³

The second prong of the constitutional test is whether the tax is “fairly apportioned.” This requirement aims to ensure that each state’s tax applies to only a “fair share” of an interstate transaction. The court does not impose a single method of apportionment, a task that it considers more appropriate for a legislature than a court. Instead, the court examines whether the tax is internally and externally consistent.²⁷⁴

A tax is internally consistent if it is structured in such a way that no multiple taxation would occur even if every state were to impose an identical tax. The Illinois tax met this test because if every State taxed interstate phone calls charged to an in-state service address, only one State would tax each interstate telephone call, the state with the service address.

A tax is externally consistent if the State taxes only that portion of the revenues from the interstate activity which reasonably reflects the in-state component of the activity being taxed. The Illinois tax applied the full charge to interstate calls with an Illinois service address, even though such a call triggers simultaneous activity in several States. The Court upheld the Illinois tax on the ground that, like sales taxes, this telecommunications tax reasonably reflected the way that consumers purchased interstate telephone calls.²⁷⁵ The Court did note the possibility of double taxation if a customer had a service address in Illinois and a billing address in another state. However, it concluded that the Illinois statute was a “realistic legislative solution” to the difficulties of apportioning telephone mileage.²⁷⁶ Moreover, Illinois allowed such customers to seek a refund of taxes paid in other states and thus avoided any risk of “actual multiple taxation.” The Court held the Illinois tax was fairly apportioned because its economic effect was like that of a sales tax, the risk of multiple taxation was low and any multiple taxation problems could be solved by the statutory credit provision.²⁷⁷

The third prong of the constitutional test is whether the tax discriminates against interstate commerce. Such discrimination may be explicit or through its economic effect. For example, a flat per-truck tax on trucks passing through a state can discriminate against interstate

²⁷² *Id.* at 263.

²⁷³ *Id.* at 260.

²⁷⁴ *Id.* at 261.

²⁷⁵ *Id.* at 261-63. By contrast, a state through which a call passes but which has no other contacts with a call probably would not satisfy the nexus requirement and could not tax the call.

²⁷⁶ *Id.* at 265.

²⁷⁷ *Id.* at 264.

truckers who might travel relatively few miles in the state.²⁷⁸ The Court upheld the Illinois telecommunications tax, however, because the economic burden of the Illinois tax fell on Illinois telecommunications consumers, whom the Court thought were “able to complain about and change the tax through the Illinois political process.” In addition, the Court held that in a modern telecommunications network it is impossible to trace and record the exact path of the signals. A more precise approach was impossible.²⁷⁹

The fourth and final prong of the constitutional test is whether the tax is fairly related to services which the state provided to taxpayers. This test aims to ensure that a State's tax burden is not placed upon persons who do not benefit from services provided by the State. Nevertheless, the Court was willing to look at a wide range of benefits provided to taxpayer, not just the precise activity connected to interstate activity at issue. The Court concluded that the Illinois tax complied with this test because the revenues helped pay for benefits to Illinois subscribers who receive general government services, including fire and police protection.²⁸⁰

Overall, the *Goldberg v. Sweet* decision suggests that states have constitutional room to support their universal service programs from surcharges structured to operate in the same manner as the Illinois Excise Tax. To the extent that state considers this option, matching the details of that Illinois law would be advisable, a matter discussed in more detail below.

2. Universal service surcharges and TA96

When TA96 passed, several states already had universal service programs. For example, Vermont enacted a statute in 1994 that created a universal service fund based on a surcharge on both intrastate and interstate telecommunications services.

Section 254 of TA96 was the first codification of universal service in federal statutory law. It stated goals for universal service and authorized federal programs and fund collections. It also authorized state universal service programs. Subsection 254(f) is shown below. For better reference, numbers have been assigned to each sentence.

(f) State authority. (1) A State may adopt regulations not inconsistent with the Commission's rules to preserve and advance universal service. (2) Every telecommunications carrier that provides intrastate telecommunications services shall contribute, on an equitable and nondiscriminatory basis, in a manner determined by the State to the preservation and advancement of universal service in that State. (3) A State may adopt regulations to provide for additional definitions and standards to preserve and advance universal service within that State only to the extent that such regulations adopt additional specific,

²⁷⁸ *American Trucking Associations, Inc. v. Scheiner*, 483 U.S. 266 (1987).

²⁷⁹ *Goldberg v. Sweet*, 266.

²⁸⁰ *Id.* at 267.

predictable, and sufficient mechanisms to support such definitions or standards that do not rely on or burden Federal universal service support mechanisms.²⁸¹

This statute is extraordinary in several respects. The basic problem is that Congress never explained why subsection (f) was needed at all. If the purpose was to authorize state universal service programs, states already had clear authority in 1996 to tax their citizens for purposes of universal service. In 1989 the Supreme Court had even upheld the Illinois Telecommunications Sales Tax, which provided general revenue for that state's government. Perhaps Congress was misinformed about the extent of state authority and the need to create such authority. Perhaps Congress was really trying to limit such programs in the guise of enabling them.

Second, subsection 254(f) adopted vague restrictions on state funds that have been difficult to interpret. One portion of 254(f) is clear: the part that identifies *which* providers must contribute. Carriers may be made to contribute if they provide intrastate telecommunications services.²⁸² Yet the statute says nothing explicitly regarding *how much* these carriers can be required to contribute or the allowable bases upon which any surcharges may be imposed. Instead, the second sentence of (f) merely says that the contributions must be “equitable and nondiscriminatory.”

The third sentence of (f) has additional restrictions. It is confusing both in its terminology and its syntax. It states that any state “mechanism” must be “specific, predictable and sufficient.” It is not clear what Congress meant by a “mechanism,” particularly as to whether it means only fund distribution rules or also fund collection rules. Although the syntax is unclear, the final clause of 254(f) seems to say that a state's mechanism for universal service may not “rely on or burden” any federal mechanism. It does not explain what such a prohibited reliance or burden might look like. More specifically, it does not say whether states are prohibited from imposing surcharges on the same economic activities and services as federal universal service programs.

These ambiguities have led to litigation. The Fifth Circuit Court of Appeals has repeatedly interpreted subsections 254(d) and (f) in ways that constrain state universal service program fund collection rules. The first case involved federal programs. Soon after TA96 was enacted, the FCC issued a long interpretive order. The FCC claimed authority to calculate contribution requirements for some universal service programs based on the total amount of a carrier's telecommunications services revenues, rather than merely its interstate services. On appeal, the Fifth Circuit reversed, holding that contributions required under subsection 254(d) of

²⁸¹ 47 U.S.C. § 254(f) (sentence numbers added).

²⁸² This sentence complements parallel language in subsection 254(d) authorizing the FCC to collect contribution for its own universal service programs from “every telecommunications carrier that provides *interstate* telecommunications services.” 47 U.S.C. § 254(d) (emphasis added).

TA96 cannot include the carrier's intrastate revenues.²⁸³ The effect was to limit the FCC's revenue base for universal service to interstate telecommunications revenues.²⁸⁴

The relevant question for state commissions is the mirror question: is the revenue base for state universal service programs limited to intrastate services? There have been three relevant court decisions, two in federal courts and one in state court. The results conflict.

Texas established a 3.6% universal service surcharge that applied only to carriers providing intrastate services. Texas applied the surcharge to both intrastate and interstate revenues. AT&T challenged the statute, and the case reached the Fifth Circuit. The court's analysis hypothesized two carriers. If carrier A provided only interstate services in Texas, it would not pay a state surcharge, but it would pay the FCC's universal service surcharge of 7.28% (at that time) on its interstate revenues. By contrast, if carrier B provided both interstate and intrastate services in Texas, it would have to pay not only the federal 7.28% surcharge on interstate revenue but also Texas's 3.6% surcharge for a total surcharge of 11%. This higher rate, the court concluded, was "discriminatory and inequitable" and therefore a violation of the second sentence of subsection 254(f). In sum, the court held that since TA96 placed carrier A beyond the taxable reach of the state, any state surcharge on B could not be based on interstate revenues.²⁸⁵

In an earlier Oregon case, *AT&T v. Eachus*, a different federal court reached a similar result, but for completely different reasons. Oregon had imposed a surcharge on intrastate and interstate telecommunications services provided to an Oregon service address. The Oregon court found that this charge "relied on" federal mechanisms, in violation of the third sentence of 254(f).²⁸⁶ The court explained:

The ordinary meaning of "rely on" encompasses "depends on." Thus, where the Commission's regulations 'depend on' the same interstate revenues utilized by the federal universal service fund program, it improperly "relies on" federal universal service support mechanisms.²⁸⁷

²⁸³ *Texas Ofc. of Public Utility Counsel v. FCC*, 183 F.3d 393 (1999).

²⁸⁴ The FCC did not ask the Supreme Court to review this decision. The decision is binding on the FCC and other parties, probably binding on states within the Fifth Circuit and persuasive elsewhere.

²⁸⁵ *AT&T v. Public Utility Comm'n of Texas*, 373 F.3d 641 (2004). The court did not reach other possible objections to the Texas surcharge, such as whether it would be rely on or burden federal mechanisms, in violation of the third sentence of subsection 254(f).

²⁸⁶ *AT&T Commun. Inc. v. Eachus*, 174 F.Supp. 1119 (D. Oregon, 2001).

²⁸⁷ *Id.* at 1124.

The Oregon court also found that the Oregon surcharge improperly burdened the federal collection mechanism that assesses interstate revenue, also in violation of the third sentence of 254(f). The court explained that because the Oregon surcharge relied “on interstate revenues also assessed to contribute to the federal universal support fund, it burden[ed] federal universal support mechanisms.”²⁸⁸ Notably, the Oregon court also held that the Oregon surcharge was not inequitable or discriminatory, thereby disagreeing with the conclusion later reached by the Fifth Circuit.

A third court decision reached the opposite result and sustained a surcharge imposed by South Carolina on both interstate and intrastate telecommunications revenues. Competitive providers and cable providers challenged the enactment on the ground that it burdened federal universal service support mechanisms. The South Carolina Supreme Court upheld the surcharge.²⁸⁹ While the court did acknowledge that the state’s surcharge on interstate service did burden interstate carriers, the court drew a distinction between a burden on carriers and a burden on federal support mechanisms, finding that they were “not necessarily synonymous.”²⁹⁰ While the South Carolina surcharge did impose on interstate carriers, the court found no imposition on federal mechanisms.

3. Conclusion

The safer legal course is clear. If a state wants to impose universal service surcharges only on intrastate revenues with a nexus to that state, a legal challenge is unlikely.

On the other hand, a state has numerous substantive reasons to take some legal risk, particularly since the applicable law remains unclear. Of the three courts that have reviewed the matter, one sustained the state law and two invalidated the state law. There is no consensus about the relevant legal standards, but there are constitutional and statutory reasons to be optimistic, provided that the state takes suitable precautions.

A state that decides to impose a surcharge on interstate retail telecommunications revenues should take the following steps to minimize legal risk.

1. Enact the surcharge in state legislation. This legislation can articulate the state’s intention to exercise its sovereign power to impose taxes. The legislation can expressly disavow any intention of relying on authority delegated subsection 254(f) of the Communications Act. The legislation might also include findings regarding why the state deems a surcharge on interstate services necessary to generate sufficient universal service funding.

²⁸⁸ *Id.* at 1124-25.

²⁸⁹ *Office of Regulatory Staff v. Public Service Comm’n.*, 647 SE.2d 223 (S.C. 2007).

²⁹⁰ *Id.* at 231.

2. Consolidate the universal service surcharge with other state telecommunications surcharges, sales taxes or excise taxes. This measure also demonstrates that the state is exercising its sovereign taxing power and broadens the debate to cover more than merely universal service as contemplated in section 254 of TA96. To the extent that a state's surcharges aim to solve a range of telecommunications problems broader than those recognized in 254(f), a court would be less inclined to conclude that the vague restrictions in that subsection invalidate the state's programs. For example, if a state were to use a single fund to finance high cost funding, Lifeline, Relay and Enhanced 911, it would be more difficult for a challenger to prove that such a fund is limited by subsection 254(f). To further accentuate the distinction the state might avoid using the title "universal service fund" and use a broader title not associated merely with high cost programs, such as "communications access fund."
3. Exempt carriers that engage only in interstate telecommunications services in the state. This safeguard complies with the clear language of subsection 254(f), should it be held applicable.
4. Allow carriers that provide a *de minimis* amount of intrastate services to receive a waiver of the state surcharge or pay a reduced surcharge that is no larger than their intrastate revenues.²⁹¹
5. Apply the same surcharge rate for intrastate and interstate telecommunications services. This avoids problems under the Commerce Clause and at least nominally satisfies the equitable and nondiscriminatory requirement of 254(f).
6. Ensure that surcharges apply only to telecommunications services with a sufficient nexus to the state. One safe course would be to limit the surcharge to telecommunications services where:
 - a. At least one participant is in the state (originating or terminating party for a switched service or a channel termination for a point-to-point service); and

²⁹¹ In a 1999 decision, the Fifth Circuit found that a satellite company, COMSAT, derived such a small portion of its revenues from interstate service that its federal universal service payments would have exceeded its interstate revenues. The Fifth Circuit held that such an arrangement was not equitable because it imposed prohibitive costs on COMSAT. *See Texas Ofc. of Public Utility Counsel v. FCC*, 183 F.3d 393 (1999). If a state's law made provision reducing the risk that a very small amount of intrastate revenue could generate a large surcharge, that provision would reduce the risk that the state's surcharge might be held to violate subsection 254(f).

- b. The service is provided to a service address or billing address or place of primary use in the state. For mobile telecommunications services, this test should be stated as whether the customer's place of primary use is in the state.²⁹²
- 7. Allow taxpayers to claim refunds if they have paid similar universal service taxes or surcharges in another state.

²⁹² See Pub. L. 106-252, Sec. 3 (codified at 4 U.S.C. § 116-126). This 2000 federal law, called the "Mobile Telecommunications Sourcing Act," limits state authority impose taxes on mobile telecommunications. The act does not nominally apply if the sole purpose of the state's surcharge is universal service, *see* 4 U.S.C. § 116(b)(5), but it would apply if the state's enactment included other purposes.