TEXAS UNIVERSAL SERVICE POLICY

Perspectives for Reform Small Texas ILECs

By

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Introduction

About the Authors: The authors of this White Paper are financial professionals who have more than 40 years of experience providing advice to investors and companies focused on rural telephony across the United States. The authors have been invited to provide briefings concerning rural telephony to the White House, the U.S. Congress, the Federal Communications Commission (FCC), the Department of Agriculture, the Universal Service Administrative Company and a variety of other groups with federal responsibility. They have testified on rural telephony in proceedings in Alabama, Alaska, California, Iowa, Maine, Nebraska, New Hampshire, South Carolina, Texas, and Vermont. The authors also have presented at conferences of the National Association of Regulatory Utility Commissioners (NARUC), state telecommunications associations, and national telecommunications associations.

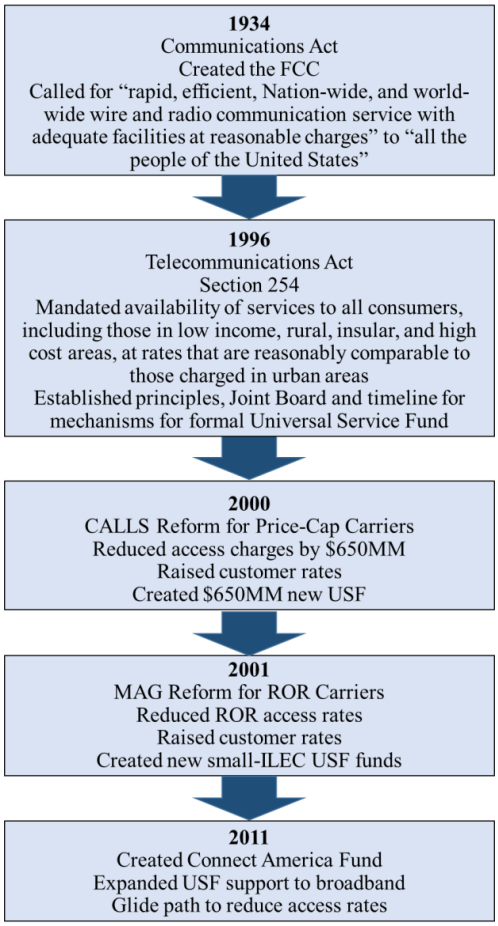
Authors' Note: The White Paper's purpose is to provide a starting point to enable informed discussion regarding universal service funding (USF) in Texas (TUSF). While this White Paper does not recommend a specific comprehensive solution to upcoming TUSF challenges, it does provide background and high level concepts for the Texas Legislature that is expected to consider the expiration of certain state TUSF mechanisms. *The Paper's focus is on the forty-five small Texas carriers that each serve less than 31,000 access lines in the State.* The carriers are important providers of infrastructure and services to vast rural parts of the State that are crucial to the Texas economy. Given the high-cost nature of their service areas, the carriers are significantly reliant on the support of TUSF. TUSF includes, among eleven different programs, four funds that provide network-related support to those small carriers. *Small carrier network support was less than 27% of the total TUSF in 2015.*

The White Paper's purpose is to provide background for the Texas Legislature which will be assessing the expiration of certain state universal service fund (USF) mechanisms. The focus is on the forty-five small Texas carriers that each serve less than 31,000 access lines in the State.

The White Paper also provides information relevant to a charge issued in the fall of 2015 by the Texas Lieutenant Governor to the Texas Senate Education Committee and charges issued by the Texas House Speaker concerning the need to review TUSF and the importance of assuring deployment of broadband services. To support the Legislature's upcoming evaluation of TUSF reform prior to the conclusion of the 2017 legislative session, this Paper has focused on the following goals.

- Frame universal service concepts and history in a way that the policy goals and challenges are defined clearly;
- Supply financial data to demonstrate the reason that universal service has been and will continue to be important for the State, especially considering the importance of rural areas to the overall economy of Texas;
- Survey the seven largest other state universal service programs to understand those systems, as they may provide guidance for Texas policy; and
- Highlight key elements from other state and FCC universal service programs so that Texas policymakers can consider various alternatives to improve its approach to the TUSF.

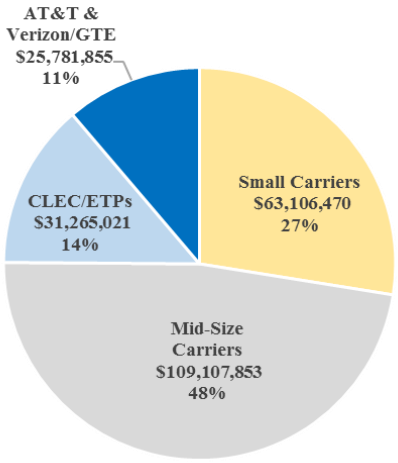
Executive Summary



- **Universal telecommunications service is a state and national policy**. Based on the Communications Act of 1934 and the Telecommunications Act of 1996, national policy is that there should be a nationwide network over which customers have access to defined communications services. Network costs in uneconomic-to-serve regions are paid by requiring all customers to contribute toward a nationwide communications network that benefits the entire country.
- **Texas and federal USF provide essential support to rural customers. Without TUSF, the Texas network would be concentrated in urban or other high-density areas, as rural rates would rise to levels that would jeopardize services in many or most lower-density regions.** As in most states, TUSF currently assures that *all* Texas customers pay for certain high costs supporting wireline communications services in rural areas of the state. Communications services are needed so that rural areas can compete. Without sufficient access, rural businesses can lose competitive advantages or the ability to attract human capital, and rural residents will lose education opportunities and social and health benefits.
- **Texas' rural areas and population are significant.** 84% of Texas' land mass is rural (142 million acres, which is about 40% larger than the state of California). Approximately 12% of Texas' population live in rural areas—the largest rural population of any U.S. state. In fact, Texas' rural population is larger than the entire population of 22 individual U.S. states.
- **Without a vibrant rural economy, Texas as a whole suffers.** Traditionally rural economic activities produce a substantial portion of the State's GDP (over $233 billion, or 14% of the total in 2014). Rural areas play a vital role in energy production (68% of Texas oil and gas wells and 73% of Texas wind farms are found in rural counties), tourism (Big Bend National Park attracts up to 350,000 visitors annually), job creation (1 in 7 working Texans has an agriculture-related job, and rural telecommunications supported over 6,300 jobs in Texas in 2015), and border security (at least half of the Texas/Mexico border is served by a rural telephone provider). A 2016 study found that of the approximately $2.5 billion economic impact of rural telecommunications, at least two-thirds of the dollars ultimately benefit urban areas. *No matter where he or she lives, every Texan needs the State's rural communities to thrive.*
- **TUSF funding for the smallest carriers is modest.** Funded currently through a 3.3% assessment on customer bills, TUSF together with federal USF ensures that the statewide telecommunications network supports the creation of broad economic value. Compared with other state USF programs, Texas' rate and support system appears reasonable, especially considering that Texas has far more small and rural carriers serving a greater number of rural people over a larger geographic area than any other state. In 2015, the 45 small carriers in Texas accounted for only approximately 27% of the network-related funding in the state.

- **Texas is responsibly managing its fund, shrinking the overall fund size and focusing TUSF on the most vulnerable regions.** Over time, Texas is reducing the TUSF funding of larger carriers that have diversified operations. Illustrating this, the Texas network-related support for large and mid-sized carriers shrank from $169.7 million in 2014 to $134.9 million in 2015, and will reduce by at least $25.8 million more by 2017. Because of the costly nature of the small rural carriers' service regions, their portion of the TUSF program has remained more stable; the 45 smallest carriers serving very rural areas were funded with $62.8 million and $63.1 million in 2014 and 2015, respectively.

Texas FY 2015 Network USF Support



Source: Solix Quarterly Reports.

- **There is near-term concern over a provision in Senate Bill (SB) 583 triggering reduced small-carrier funding in 2017, precipitating economic hardship for rural service areas.** Without new legislative action, Texas SB 583 will trigger a change in September 2017 that is likely to result in rural underinvestment in the most remote and high-cost areas, thereby creating a "rural ghetto," as described by one economist. This will harm the ability of the people and businesses in rural areas to compete and to continue to positively impact the overall economy of Texas.

Our research leads us to the following conclusions:

- We agree with the Texas Department of Agriculture's observation that telecommunications is an example "of critical infrastructure that must be in place to support businesses and families in rural Texas." We have also observed that, given the size and impact of Texas' rural regions, the entire state benefits from successful rural economies.
- Without legislative action to preserve fixed levels of TUSF funding, basic telecommunications service in high-cost rural regions is likely to fail because investment costs per-line are about three times higher in rural regions compared with those in urban areas, and operating costs are approximately twice the level of costs in urban areas.
- The Texas USF assessment rate of 3.3% is relatively low compared with the seven other large state USF programs surveyed in this White Paper—especially considering that TUSF supports far more small companies serving a higher rural population across a much larger geographic area than other state—and the TUSF assessment rate is expected to decrease as larger-carrier support funding continues to shrink over the next several years.

Our recommendation to the State Legislature:

- Ensure that, consistent with national policy, "specific, predictable and sufficient" funding is available to support the provision of communications services to rural Texans at rates comparable to those in urban areas, notably for small carriers serving high-cost areas.
- Adopt an efficient review mechanism to ensure such support for small carriers. Considering the number (45) and size of the small carriers providing service in Texas, the Legislature should consider a streamlined administrative review process to limit the regulatory burden and the costs associated with any reviews of their support. Texas law already acknowledges the differences between small and large ILECs and accordingly encourages policies to allow for flexible rate-setting. Since small carriers file *Earnings Reports for Telephone Utilities* annually, one possible

mechanism would be to use these reports as a check that support is reasonable. If it is determined that individual carriers are over-earning or under-earning, the Legislature might instruct the Public Utility Commission of Texas (PUCT) to examine support with the purpose of keeping rates of return within an appropriate range.

Small Texas ILECs		
Alenco Communications, Inc.	E N M R Telephone Cooperative	Peoples Telephone Cooperative
Big Bend Telephone Company, Inc.	Eastex Telephone Cooperative Inc	Poka-Lambro Telephone Cooperative Inc.
Blossom Telephone Company Inc.	Electra Telephone Company Inc	Riviera Telephone Company
Border To Border Communications	Etex Telephone Cooperative	Santa Rosa Telephone Cooperative Inc.
Brazoria Telephone Company	Five Area Telephone Coop.	South Plains Telephone Cooperative Inc.
Brazos Telecommunications, Inc.	Ganado Telephone Company Inc.	Southwest Arkansas Telephone Cooperative
Brazos Telephone Cooperative Inc.	Hill Country Telephone Cooperative	Southwest Texas Telephone Company
Cameron Telephone Company - Texas	Industry Telephone Company	Tatum Telephone Company
Cap Rock Telephone Cooperative Inc.	La Ward Telephone Exchange, Inc.	Taylor Telephone Cooperative Inc
Central Texas Telephone Co-op	Lake Livingston Telephone	Totelcom Communications, LLC
Coleman County Tel Co-op	Lipan Telephone Company Inc	Valley Telephone Cooperative, Inc.
Colorado Valley Tel Coop.	Livingston Telephone Company	West Plains Telecommunications Inc.
Community Telephone Company Inc.	Mid-Plains Rural Telephone Cooperative	West Texas Rural Telephone Cooperative
Cumby Telephone Cooperative	Muenster Telephone Corporation of Texas	Wes-Texas Telephone Cooperative Inc.
Dell Telephone Cooperative Inc	North Texas Telephone Company	XIT Rural Telephone Cooperative Inc.

I. Concept of Universal Service

Universal service policy relies on the conviction that *all* users of the communications system benefit economically and socially from a robust and integrated nationwide network.[1] As a result, Universal Service funding supports investment in a national communications network with the specific goal of assuring social and economic benefit to the country.[2] Today, universal service network-related funding supports the provision of telecommunication services to otherwise uneconomic-to-serve regions across at least 84% of the landmass of the United States.[3] Even with universal service policies in place, there remains an urban/rural gap or divide with regard to available communications services, especially as relates to high-speed Internet access.[4]

Fundamental framework of the Telecom Act

The concept of universal service has evolved, but is based on an economic concept described as "network externality."[5] "Network externality" means that the value of a service or product rises as more parties use the particular service. In this case, the more homes and businesses connected to the communication network, the more valuable the network is to each user. Thus, it is not simply rural areas that derive benefit

> It is not simply rural areas that derive benefit from universal service, but all those who participate in a larger and more robust network infrastructure.

[1] Strictly speaking, universal service is paid, according to law, by telecommunications carriers, including wireline and wireless companies, and interconnected Voice over Internet Protocol providers, including cable companies that provide voice service, based on an assessment of interstate and international end-user voice-related revenues. This assessment is based on a "contribution factor" set each quarter. The FCC does not require carriers to pass through universal service obligations to customers, but the carriers almost always do pass along the network obligation, consistent with FCC rules regarding how the charge must be calculated and reported to customers (see 47 CFR Section 54.712).

[2] See, e.g., Steve Parsons and James Bixby, *Universal Service in the United States: A Focus on Mobile Communications*, 2010; available at http://www.law.indiana.edu/fclj/pubs/v62/no1/10-PARSONS_FINAL.pdf. The authors note the long-standing logic of universal service based on the value of the integrated network; see pp. 134-135: "It is well known in telecommunications economics and the economics of networks, that the demand for telecommunications services is different from the demand for traditional products and services, like groceries, automobiles, or dry cleaning. A telecommunications customer's demand will depend, in part, on factors that are external to the customer's decision to purchase. Generally, there are two types of telecommunications positive externalities (also called, or closely related to, direct network effects or bandwagon effects). These externalities are (1) network externalities where the value of network subscription increases with the number of subscribers on a network or a set of interconnected networks and (2) call or use externalities, which recognize that, for most calls, one party obtains value from the call but generally does not pay for the call. It is also useful to recognize that the value of subscription is derived from the value customers expect to obtain from the calls they will make."

[3] *Universal Service Monitoring Report*, Docket Nos. 96-45, 02-6, 02-60, 06-122, 10-90, 11-42, 13-184, 14-58, Federal Communications Commission (Data Received Through September 2014), Table 6.2 (https://apps.fcc.gov/edocs_public/attachmatch/DOC-330829A1.pdf), 2014.

[4] The FCC has observed the "urban-rural digital divide" not only in the U.S. but also in many other parts of the world. *Fifth Report*, Docket No. 15-191, Federal Communications Commission, January 28, 2016 (observing at p. 6 "According to data from both 2013 and 2014, the broadband coverage gap between rural and non-rural areas remains large across Europe and the United States.")

[5] The concept of "demand-side economies of scale" is generally attributed to the economist Robert Metcalfe. See Carl Shapiro and Hal R. Varian (1999). Information Rules. Harvard Business School Press.

from universal service, but all those who participate in a larger and more robust network infrastructure.

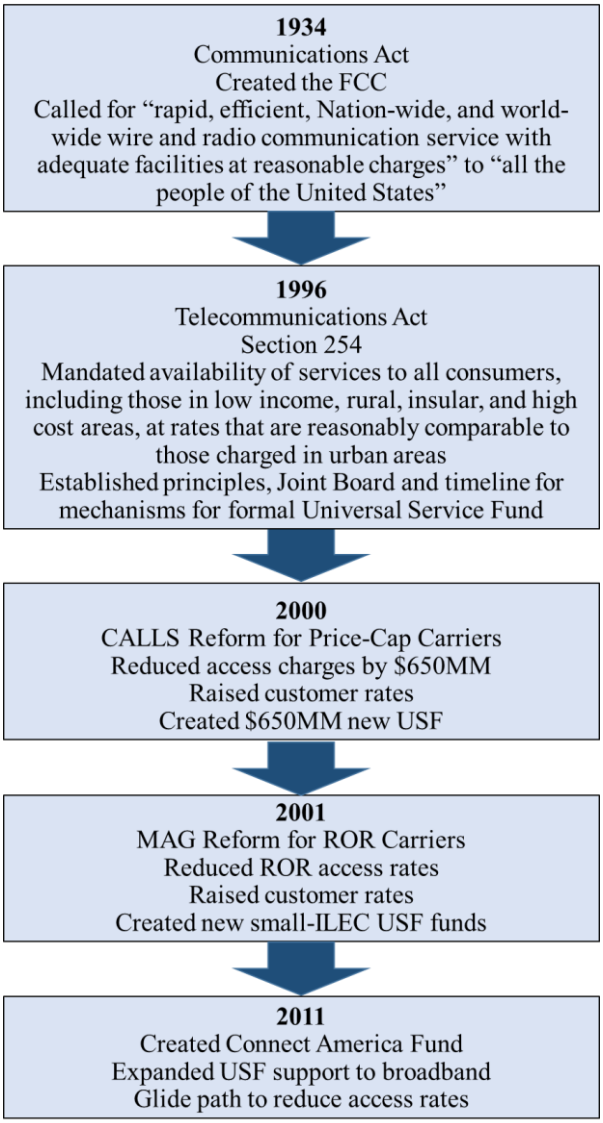
Texas' Utilities Code (Code) requires "a statewide uniform charge payable by each telecommunications provider that has access to the customer base."[6] Effectively, the Code affirms that all users of the Texas network are paying for the real costs of the entire Texas network, not simply the network in lower-cost areas such as Austin, Houston, Dallas or San Antonio.

Universal service in Texas and across the U.S. relies on a system in which private telecommunications companies and cooperatives make major investments in the communications network. Even if there are exceptionally high costs in certain service regions, the U.S. policy is to require that an incumbent local exchange carrier (ILEC) still provides quality services to all its customers. To offset designated high costs, the system spreads those costs across a state or across the country so that other participants on the network pay their "fair share." In this way, policymakers assure that comparable services are provided at reasonable rates in all service areas and that all users bear the costs of the nationwide or statewide network from which they derive value.

Two concepts are important.

- First, as implemented, Universal Service is an investment in ubiquitous network and services. It is not a subsidization of individual customers or companies, but is a commitment to a cost-effective network which assures that all parties enjoy competitive rates and services.
- Second, Universal Service is not intended to be a windfall to specific companies, but is an offset for high costs that might otherwise result in inferior or no services in uneconomic-to-serve regions.

FIGURE 1: ADOPTION OF THE FEDERAL USF



UNIVERSAL SERVICE PRINCIPLES IN THE TELECOM ACT

The earliest formulation of the national USF policy was in the Communications Act of 1934, which created the FCC and assigned that agency with the charge "to make available, so far as possible, to all the people of the United States a rapid, efficient, nationwide, and worldwide wire and radio communication service with adequate facilities at reasonable charges . . ."[7] The most explicit national legislation related to Universal Service, however, is found in the Telecommunications Act of 1996 (Telecom Act). In the

[6] PURA § 56.022.

[7] Public Law No. 416, June 19, 1934, 73d Congress. *An Act to provide for the regulation of interstate and foreign communication by wire or radio, and for other purposes.*

Telecom Act's Section 254, Congress spelled out Universal Service principles and obligations that provide the framework for both national and state programs. The statute mandates that customers on the broader network should be required to pay for costs that assure . . .

- Reasonably comparable telecommunications services in urban and rural areas;
- Reasonably comparable rates for similar services in urban and rural areas;
- Access to advanced services for consumers in all regions of the country;
- Universal service support funding that is specific, predictable and sufficient; and
- Support mechanisms that rely on federal and state collaboration.[8]

Throughout the last century, legislators and regulators have long held that network costs should be recovered through averaged rates, set by the FCC or by the state regulatory commissions. At the time of the Telecom Act, with the introduction of competition to local telecommunications markets, Congress recognized that new competitors might target only lower-cost and higher-profit regions. Congress was concerned that customers in regions where costs were very high—or even uneconomic—were put at risk if there were not a system such as Universal Service to ensure sharing some of the broader network costs. In adopting the Universal Services provisions of the Telecom Act, therefore, Congress required that traditional rate structures were to be modified to remove so-called "implicit" support and make those implicit costs or rates "explicit" in USF which would be distributed to high-cost areas.[9]

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At the time of the Telecom Act, implicit support of higher cost areas was still embedded notably in intercarrier compensation (ICC) payments or so-called access charges paid by interexchange carriers (*i.e.*, long distance carriers) to ILECs. Those access charges were, therefore, a primary focus in the regulatory reforms after 1996.

An example might help. In the 1990s when Southwestern Bell completed a call from one of its customers in Austin, Texas to a customer in Brazoria, Texas, Southwestern Bell serving Austin was required to pay for completion of the call in another carrier's service region (Brazoria). Brazoria's per-minute rates to complete a call in its service territory were generally higher than the rates charged for a similar service in larger urban areas because policymakers realized that smaller and rural carriers incurred higher network

[8] 47 U.S.C. 254(f): "f) State Authority - A State may adopt regulations not inconsistent with the Commission's rules to preserve and advance universal service. Every telecommunications carrier that provides intrastate telecommunications services shall contribute, on an equitable and nondiscriminatory basis, in a manner determined by the State to the preservation and advancement of universal service in that State. A State may adopt regulations to provide for additional definitions and standards to preserve and advance universal service within that State only to the extent that such regulations adopt additional specific, predictable, and sufficient mechanisms to support such definitions or standards that do not rely on or burden Federal universal service support mechanisms."

[9] 47 U.S.C. 254(e).

costs. The ICC payments included at that time implicit "support" funding that supplemented the explicit USF supporting provision of service in high-cost rural areas. In the reforms after the Telecom Act, the goal was to shift previously "implicit" access support payments from ICC to the "explicit" USF system. Explicit USF, therefore, assured continuity of comparable quality services over a nationwide network and avoided any anti-competitive implications of implicit support embedded in rates of competitive services.

The FCC began its reform of the nationwide ICC system by reducing the interstate ICC rates, first for larger price-cap carriers in May 2000 (the so-called CALLS Order), and, then, for smaller rate-of-return carriers in October 2001 (the Multi-Association Group or MAG Order).[10] Similar to the Texas reforms which will be described below, the FCC in 2000 and 2001 created higher levels of USF to offset revenues "lost" by ILECs from intercarrier rate reductions. The increased USF was not new revenue for the carrier. Rather, it is the formerly implicit access rate revenue shifted to a new explicit support revenue category. The ongoing investment and provision of services to customers in rural high-cost regions, therefore, was supported through a "revenue neutral" reform process.

Similar to the Texas reforms which will be described below, the FCC in 2000 and 2001 created higher levels of USF to offset revenues "lost" by ILECs from intercarrier rate reductions.

FCC 2011 REFORMS THAT "MODERNIZED" USF

Ten years later, on November 18, 2011, the FCC released a Report and Order generally referred to as the USF/ICC Transformation Order (Transformation Order), which enlarged the definition of Universal Service.[11] The Transformation Order's first three paragraphs summarize the rationale for the expansion of universal service to include broadband.

> 1. Today the [FCC] comprehensively reforms and *modernizes the universal service and intercarrier compensation systems to ensure that robust, affordable voice and broadband service*, both fixed and mobile, are available to Americans throughout the nation . . . .
>
> 2. One of the Commission's central missions is to make "available … to all the people of the United States … a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges." . . . . *Networks that provide only voice service, however, are no longer adequate for the country's communication needs*.
>
> 3. *Fixed and mobile broadband have become crucial to our nation's economic growth, global competitiveness, and civic life*. Businesses need broadband to attract customers and employees,

[10] *See In re Access Charge Reform*, Sixth Report and Order in CC Docket Nos. 96-262 and 94-1, Report and Order in CC Docket No. 99-249, Eleventh Report and Order in CC Docket No. 96-45, 15 FCCR 12962 (CALLS Order) and *Multi-Association Group (MAG) Plan for Regulation of Interstate Service of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers*, CC Docket No. 00-256, Second Report and Order, Federal-State Joint Board on Universal Service, CC Docket No. 96-45, Fifteenth Report and Order, Access Charge Reform for Incumbent Local Exchange Carriers Subject to Rate-of-Return Regulation, CC Docket No. 98-77, Report and Order, Prescribing the Authorized Rate of Return for Interstate Service of Local Exchange Carriers, CC Docket No. 98-166, Report and Order, 16 FCCR 19613 (2001) (MAG Order).

[11] *See Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and Reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support; Developing a Unified Intercarrier Compensation Regime; Federal-State Joint Board on Universal Service; Lifeline and Link-Up; Universal Service Reform—Mobility Fund*; WC Docket Nos. 10-90, 07-135, 05-337, 03-109, CC Docket Nos. 01-92, 96-45, GN Docket No. 09-51, WT Docket No. 10-208, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC 17663 (2011) (USF/ICC Transformation Order).

job-seekers need broadband to find jobs and training, and children need broadband to get a world-class education. Broadband also helps lower the costs and improve the quality of health care, and enables people with disabilities and Americans of all income levels to participate more fully in society. (Emphasis added.)

"Today the [FCC] comprehensively reforms and *modernizes the universal service and intercarrier compensation systems to ensure that robust, affordable voice and broadband service*, both fixed and mobile, are available to Americans throughout the nation." (FCC, October 2011; emphasis added).

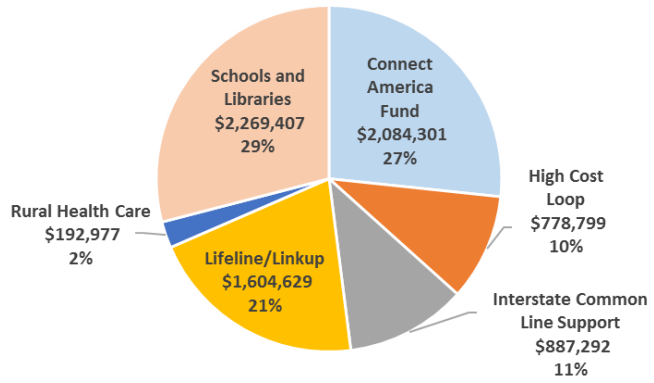
In the Transformation Order, the FCC also created the Connect America Fund (CAF), which is expected to ultimately replace all previous high-cost support mechanisms, and assure that broadband is made "available to homes, businesses, and community anchor institutions in areas that do not, or would not otherwise, have broadband."[12]

Federal disbursements in 2014

While there are several programs included in the federal USF program, the core funding commitment assures telecommunications *networks* in high-cost regions. Network-related USF offsets a carrier's costs through three major federal mechanisms: the new CAF, High Cost Loop support, and ICC replacement funding (Interstate Common Line Support or ICLS). The other USF mechanisms are specialized non-network-focused programs: Schools and Libraries Fund, Lifeline/Linkup, and Rural Health Care.

The Universal Service Administrative Company (USAC) administers the federal USF. Created by the FCC in 1997, USAC is today an independent, not-for-profit corporation. Figure 2 illustrates the actual disbursements of 2014 universal service funding. The right side of the pie chart depicts the $3.75 billion in national network-related support provided to ILECs, which accounted for approximately 48% of total 2014 federal USF.

FIGURE 2: 2014 TOTAL FEDERAL USF DISBURSEMENTS



Source: Universal Service Administrative Company.

Contrary to the claims of some critics, federal universal service funding *for network support* has not been growing, but has remained at approximately $3.8 billion for the last ten years. Funding for network investment to provide services in high-cost areas paid out to ILECs in 2005 was $3.82 billion, shrinking slightly in 2014 to $3.75 billion. Growth in the *total* USF has occurred because of expanded commitments to other policy programs, including Schools and Libraries and Lifeline/Linkup. The total

[12] USF/ICC Transformation Order, ¶20.

2014 funding, including the other programs for schools and libraries, rural healthcare, and Lifeline/Linkup was $7.8 billion, up from approximately $2.7 billion in 2005.

Opponents of USF policy also sometimes argue that the number of switched access lines is declining, apparently assuming that funding levels should decline in concert. The argument overlooks two important points. First, growing wireline broadband demand requires incremental capital commitments, which are not captured in the voice access line statistics. Second, a carrier's network costs incurred for plant investment are *not* expensed in a single year, but are amortized over as many as twenty years, with the result that network costs do not disappear when a voice customer is lost. A carrier is required by provider of last resort (POLR, or carrier of last resort, COLR) obligations to provide network and services, and must amortize most of the cost of those policy-based obligations over the life of the asset. The loss of a customer who previously used a voice line does not result in the loss of significant investment-related costs.

To provide perspective on federal USF funds paid to Texas and other states, Table 1 details state-by-state federal disbursement of network-related funding in support of carrier services (CAF, High Cost Loop, and ICLS) and then other funding elements. Texas receives approximately 6.8% of all the federal USF funding, and approximately 6.0% of the total federal network-related funding, or about $1,098 per working loop (a telephone line to a home or business).[13] Based on these data, it appears that nineteen other states receive more funding per working loop than Texas.[14]

To fulfill the federal (interstate) obligation related to USF, Texas receives approximately 6.8% of all the federal USF funding, and approximately 6.0% of the total federal network-related funding, or about $1,098 per working loop.

[13] The "working loops" are derived from the USAC reports for carriers that are receiving High Cost Loop support.
[14] The calculation relies on the accuracy of the "working loops" reported by USAC, and the computation is assumed to be somewhat crude.

TABLE 1: FEDERAL USF SUPPORT BY STATE

(in $000s)	High Cos Fund (CAF, HCL, ICLS)	Lifeline	Rural Health Care	Schools and Libraries	Total	Percent of Total FUSF	HCF as % of Total HCF	2014 HCF per Working Loop
Alabama	$ 91,833	$ 23,313	$ 1,119	$ 47,347	$ 163,612	2.1%	2.4%	$ 1,137
Alaska	185,428	13,014	62,286	52,387	313,115	4.0%	4.9%	$ 2,348
Arizona	66,242	60,256	2,816	64,611	193,925	2.5%	1.8%	$ 2,291
Arkansas	84,604	14,372	4,087	25,323	128,386	1.6%	2.3%	$ 1,362
California	92,204	136,393	14,316	340,582	583,495	7.5%	2.5%	$ 1,522
Colorado	68,019	11,253	2,845	21,731	103,848	1.3%	1.8%	$ 2,556
Connecticut	464	13,112	22	18,611	32,209	0.4%	0.0%	NA
Delaware	228	3,660	-	5,430	9,318	0.1%	0.0%	NA
District of Columbia	-	4,936	-	8,387	13,323	0.2%	0.0%	NA
Florida	63,408	104,706	185	81,541	249,840	3.2%	1.7%	$ 2,407
Georgia	107,393	57,805	4,879	96,278	266,355	3.4%	2.9%	$ 707
Guam	10,351	203	122	589	11,265	0.1%	0.3%	$ 240
Hawaii	23,500	5,725	264	5,614	35,103	0.4%	0.6%	$ 7,117
Idaho	42,862	2,189	463	7,537	53,051	0.7%	1.1%	$ 1,465
Illinois	71,991	66,625	5,193	118,537	262,346	3.4%	1.9%	$ 1,086
Indiana	80,775	26,066	2,722	47,715	157,278	2.0%	2.2%	$ 789
Iow	129,025	6,726	1,063	17,639	154,453	2.0%	3.4%	$ 780
Kansas	150,702	8,976	734	19,576	179,988	2.3%	4.0%	$ 1,580
Kentucky	121,082	27,510	2,351	36,560	187,503	2.4%	3.2%	$ 896
Louisiana	84,581	32,622	821	50,403	168,427	2.2%	2.3%	$ 1,500
Maine	23,783	6,441	6,720	8,305	45,249	0.6%	0.6%	$ 440
Maryland	3,573	25,974	26	24,657	54,230	0.7%	0.1%	$ 684
Massachusetts	2,212	32,562	135	32,689	67,598	0.9%	0.1%	$ 913
Michigan	33,114	72,780	8,402	47,635	161,931	2.1%	0.9%	$ 523
Minnesota	104,332	12,326	4,700	28,543	149,901	1.9%	2.8%	$ 433
Mississippi	189,673	15,087	3,371	29,993	238,124	3.0%	5.1%	$ 5,220
Missouri	101,477	22,457	1,891	30,470	156,295	2.0%	2.7%	$ 1,152
Montana	91,035	1,849	5,129	5,425	103,438	1.3%	2.4%	$ 1,057
Nebraska	74,258	1,211	1,496	10,937	87,902	1.1%	2.0%	$ 959
Nevada	23,424	19,659	324	9,475	52,882	0.7%	0.6%	$ 915
New Hampshire	9,287	2,160	62	3,499	15,008	0.2%	0.2%	$ 257
New Jersey	942	27,902	-	64,758	93,602	1.2%	0.0%	$ 223
New Mexico	72,301	16,815	3,102	26,058	118,276	1.5%	1.9%	$ 2,187
New York	41,259	123,763	3,207	103,462	271,691	3.5%	1.1%	$ 519
North Carolina	85,152	42,051	3,971	81,973	213,147	2.7%	2.3%	$ 378
North Dakota	94,206	2,367	1,404	3,648	101,625	1.3%	2.5%	$ 746
Ohio	40,952	71,100	1,189	71,353	184,594	2.4%	1.1%	$ 659
Oklahoma	128,992	127,225	6,377	60,066	322,660	4.1%	3.4%	$ 886
Oregon	72,032	9,084	4,009	14,107	99,232	1.3%	1.9%	$ 1,251
Pennsylvania	77,465	63,263	1,090	68,894	210,712	2.7%	2.1%	$ 1,699
Rhode Island	30	6,384	-	7,200	13,614	0.2%	0.0%	NA
South Carolina	101,207	33,171	1,461	39,291	175,130	2.2%	2.7%	$ 318
South Dakota	74,633	868	1,097	6,906	83,504	1.1%	2.0%	$ 641
Tennessee	68,310	40,191	1,510	38,671	148,682	1.9%	1.8%	$ 286
Texas	**225,143**	**78,711**	**8,474**	**218,274**	530,602	6.8%	6.0%	$ 1,098
Utah	24,231	5,263	1,447	18,837	49,778	0.6%	0.6%	$ 749
Vermont	19,381	1,584	77	3,103	24,145	0.3%	0.5%	$ 420
Virginia	80,039	21,725	2,419	35,788	139,971	1.8%	2.1%	$ 957
Washington	69,165	23,898	334	35,715	129,112	1.7%	1.8%	$ 1,828
West Virginia	44,128	8,498	1,736	21,930	76,292	1.0%	1.2%	$ 2,978
Wisconsin	121,871	22,557	10,603	28,551	183,582	2.3%	3.2%	$ 526
Wyoming	42,347	123	553	3,529	46,552	0.6%	1.1%	$ 1,476
Total	**3,750,393**	**1,604,625**	**192,978**	**2,269,406**	7,817,402	100.0%	100.0%	$ 921

Source: The Universal Service Administrative Company.

State Universal Service Funding

In addition to federal funding, twenty-eight states provide state-sponsored universal service funding in support of network services, generally relying on telecommunications revenue generated within the state (intrastate telecommunications).[15] The state support is consistent with the Telecom Act at Section 254(f):

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

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. (Telecom Act, Section 254(f).)

NARUC helps to assure best practices among the state commissioners with responsibility for utilities, including by providing valuable data through its research arm, the National Regulatory Research Institute (NRRI). Table 2 relies on NRRI's 2014 survey of state USF, focusing on the state-generated high-cost network support.[16] The table presents Texas data for Small and Rural Incumbent Local Exchange Companies (SRILECs) only, eliminating large-carrier funding that will not or may not be paid in future years, and analyzes the per-loop calculations of the SRILECs versus the per-loop funding in other states.[17]

Similar to the presentation of the federal information, Table 2 focuses on network-related support which is central to this White Paper. That is, the table presents network support for each state defined as high-cost funding, intrastate access replacement funding and broadband support. California provides the highest absolute network-related support, which in 2014 was approximately $114 million, and that level of funding appears relatively stable, even as California reviews the funding for individual carriers approximately every three years. Texas' SRILEC network-related support was second at $99.0 million,

[15] Network support is defined here as CAF funding, Interstate Common Line Support, and Interstate Access replacement.

[16] Sherry Lichtenberg, Ph.D., "State Universal Service Funds 2014," National Regulatory Research Institute, Report No. 12-10, July 2015, Silver Spring, MD, (hereafter NRRI SUSF), available at http://nrri.org/?wpdmdl=237. NRRI is the research arm of the National Association of Regulatory Utility Commissioners (NARUC). The Texas data are drawn from the Solix reports, and exclude the support of larger companies such as AT&T and Verizon, as that funding is being phased out. Twenty-six states provide high-cost funding in support of networks (AZ, AR, CA, CO, GA, ID, IL, IN, KS, LA, ME, NE, NV, NY, OK, OR, PA, SC, TX, UT, WA, WV, WY), three states without high-cost funding provide access replacement funds (AK, MI, NM), and two states without any other network support provide broadband funding (DE and WV).

[17] Because the NRRI survey only reports the aggregate (network and non-network) Texas funding, including funds that are about to "roll off" the fund (because of stipulations by the largest carriers), the authors of this White Paper have adjusted the NRRI table to show the data from Texas that are judged to be more comparable with those of the other states.

although that funding included support of certain carriers that will be "needs-tested" over the next several years.[18]

Both California and Texas are geographically large states (although Texas has more rural expanse) and, therefore, have large absolute USF programs. To "normalize" the analysis, the table presents an approximate calculation of state USF per-high-cost line. The table relies on USAC reports of working loops—voice access lines—which are reported for every carrier receiving High Cost Loop Support (virtually all the funding for smaller carriers).[19] Based on this metric, eight states provide higher per-loop network-related state USF compared with the funding in Texas.[20] Texas small-carrier support is approximately $306 per line annually.

Eight states provide higher per-loop network-related state USF compared with the funding in Texas.

Certain other states have no funding or relatively low levels of funding.[21] The explanation in many cases is that a single carrier covers virtually the entire state or there are comparatively few urban areas to fund lower-density regions, and there is no demonstrable need for a fund that redistributes funding.

We draw several summary insights from Table 2.

- First, the federal mandate that states should provide universal service funding is generally being implemented—in twenty-eight states.
- Second, the states with few rural carriers appear to have judged that there is no need to implement a state universal service fund, which includes the eight referenced in footnote 21.
- Third, the average funding per working loop is $405 where state network funding is available, which is close to the current Texas funding levels, further confirming that the TUSF support appears reasonable.

[18] 2014 SRILEC network funding included $62.8 million for small carriers, $32.5 million for mid-size carriers, and $3.7 million for CLEC/ETPs. In 2014, Texas also provided $135 million to larger carriers, including $44.4 million for AT&T and Verizon, and $90.8 million (non-SRILEC) for mid-size carriers. However, AT&T and Verizon have stipulated that they will not accept Texas High Cost funding from 2017, and the remainder of the carriers in that fund will be required to demonstrate their need for funding or, if the recipient is a competitive local exchange carrier (CLEC), the CLEC will receive funding based on the funding of the ILEC in the region where they provide service. It is not possible at this time to calculate how much TUSF will be eliminated as the large carriers no longer receive support funding or as other ILECs in the fund fail to demonstrate the need for support.

[19] In certain states, some carriers may be receiving high-cost funds and may not be receiving High Cost Loop Support, but this statistic provides a reasonable approximation of USF per line.

[20] To the best of our knowledge, the data are approximately correct, assuming that the working loops (drawn from USAC sources) apply to the carriers being supported by the state programs.

[21] There is an explanation for the fact that some other states do not have state USF programs, at least in many cases. If a state has few large ILECs, the collection and distribution of state USF appears to be unproductive. For example, in six states without significant universal service funding—Maryland, Delaware, Rhode Island, Massachusetts, Connecticut, and Hawaii—and the District of Columbia, more than 98% of the incumbent lines are served by one ILEC, and in one state, New Jersey, the largest carrier covers more than 96% of the incumbent lines. The need for universal service funding is therefore reduced in such a scenario, as the collection would simply result in distribution from and to the same carrier. With the exception of Hawaii, the other highly-concentrated states are served primarily by Verizon or AT&T which are net payers into the Federal universal service funds, and presumably would not want to pay into a state universal service fund. In most of the other states, the explanation might be that there are relatively few dense service regions and the state commissions may believe that there is little need for collecting state USF and distributing that support to carriers that have relatively the same need for support. Examples include Mississippi, Vermont, Nevada, and South Dakota.

TABLE 2: STATE USF FUNDING IN 2014

State	Number of Study Areas	Working Loops	High Cost Fund	Intrastate Access (IAS)	Broadband Fund	Per Working Loop (HCF + Access + Broadband)	Per Working Loop Broadband State USF
Alabama	20	80,756	-	-	-		$ -
Alaska	19	78,959	$ 25,714,744	$ 25,714,744	$ -	$ 326	$ -
Arizona	12	28,908	$ 1,011,220	$ -	$ -	$ 35	$ -
Arkansas	19	62,109	$ -	$ -	$ -	$ 628	$ -
California	13	60,575	$ 92,000,000	$ -	$ 22,000,000	$ 1,882	$ 363
Colorado	21	26,612	$ -	$ -	$ 3,000,000	$ 1,992	$ 113
Connecticut	-	-	$ -	$ -	$ -		
Delaware	-	-	$ -	$ -	$ 2,000,000		
District of Columbia	-	-	$ -	$ -	$ -		
Florida	4	26,345	$ -	$ -	$ -		$ -
Georgia	26	151,976	$ 15,000,000	$ 18,600,000	$ -	$ 221	$ -
Hawaii	1	3,302	$ -	$ -	$ -		$ -
Idaho	14	29,257	$ 1,950,000	$ -	$ -	$ 67	$ -
Illinois	38	66,306	$ -	$ -	$ -	$ 286	$ -
Indiana	33	102,378	$ 10,828,419	$ -	$ -	$ 106	$ -
Iowa	145	165,419	$ -	$ -	$ -		$ -
Kansas	34	95,399	$ 48,000,000	$ 1,300,000	$ -	$ 517	$ -
Kentucky	14	135,186	$ -	$ -	$ -	$ -	$ -
Louisiana	10	56,374	$ 45,300,000	$ -	$ -	$ 804	$ -
Maine	15	54,022	$ -	$ -	$ 1,248,324	$ 160	$ 23
Maryland	1	5,222	$ -	$ -	$ -		$ -
Massachusetts	2	2,422	$ -	$ -	$ -		$ -
Michigan	33	63,293	$ -	$ 12,000,000	$ -	$ 190	$ -
Minnesota	78	240,696	$ -	$ -	$ -		$ -
Mississippi	15	36,333	$ -	$ -	$ -		$ -
Missouri	35	88,057	$ -	$ -	$ -		$ -
Montana	15	86,086	$ -	$ -	$ -		$ -
Nebraska	36	77,393	$ -	$ -	$ 8,050,000	$ 630	$ 104
Nevada	8	25,611	$ 1,136,879	$ -	$ -	$ 44	$ -
New Hampshire	9	36,069	$ -	$ -	$ -		$ -
New Jersey	1	4,218	$ -	$ -	$ -		$ -
New Mexico	12	33,066	$ 24,000,000	$ 24,000,000	$ -	$ 726	$ -
New York	28	79,501	$ 1,150,000	$ -	$ -	$ 14	$ -
North Carolina	16	225,053	$ -	$ -	$ -		$ -
North Dakota	21	126,276	$ -	$ -	$ -		$ -
Ohio	31	62,134	$ -	$ -	$ -		$ -
Oklahoma	34	145,575	$ 37,000,000	$ -	$ -	$ 254	$ -
Oregon	27	57,579	$ -	$ -	$ -	$ 695	$ -
Pennsylvania	18	45,590	$ 31,321,636	$ -	$ -	$ 687	$ -
Rhode Island	-	-	$ -	$ -	$ -		
South Carolina	21	318,511	$ 27,800,000	$ 13,200,000	$ -	$ 129	$ -
South Dakota	30	116,407	$ -	$ -	$ -		$ -
Tennessee	18	238,513	$ -	$ -	$ -		$ -
Texas*	**44**	**205,096**	**$ 62,821,557**	**$ 1,245,611**	**$ -**	**$ 306**	**$ -**
Utah	11	32,348	$ 11,100,000	$ -	$ -	$ 343	$ -
Vermont	8	46,160	$ -	$ -	$ -		$ -
Virginia	15	83,604	$ -	$ -	$ -		$ -
Washington	17	37,827	$ -	$ -	$ -	$ 132	$ -
West Virginia	6	14,820	$ -	$ -	$ 895,000	$ 60	$ 60
Wisconsin	63	231,527	$ -	$ -	$ -	$ 0	$ -
Wyoming	7	28,693	$ 2,080,000	$ -	$ -	$ 72	$ -
Total	**1,098**	**4,017,563**	**$ 862,793,785**	**$ 94,814,744**	**$ 37,193,324**		

* Small carriers only (SRILEC and IntraLATA Support); other network-related funding, including mid-sized, CLECs/ETPs and large carriers, was $199.3 million in FY 2014; large-carrier funding will be phased out or needs tested.

Source: USAC for loops; Solix quarterly reports.

II. Texas Universal Service Support

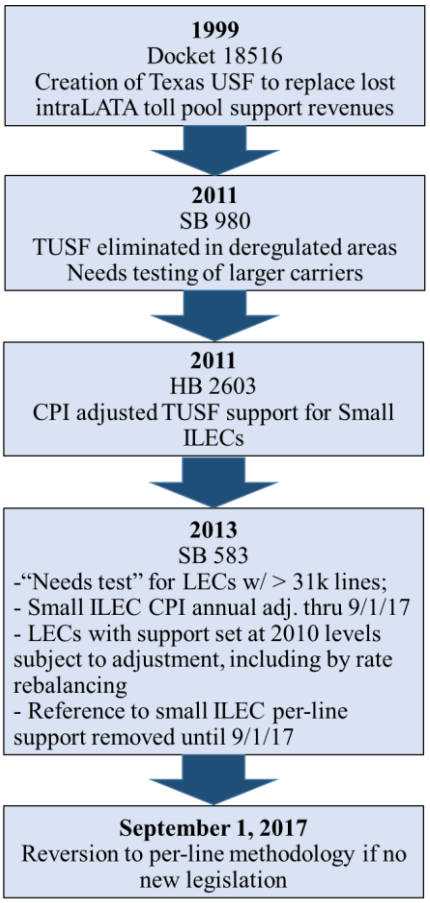
After the passage of the federal Telecom Act in 1996, Texas legislators declared that it was the statutory policy of Texas to "maintain a wide availability of high quality, interoperable, standards-based telecommunications services at affordable rates."[22]

Brief history of Texas USF

Texas universal service dates back to 1987, when the Texas Legislature first created a fund. In 1997, Texas amended the Public Utilities Regulatory Act (PURA) to include a clear provision whereby the PUCT was charged with establishing a universal service fund "to assist telecommunications providers in offering basic local telecommunications service at reasonable rates in high-cost areas."[23] By statute, the Texas Legislature declared that:

> . . . customers in all regions of this state, including low-income customers and customers in rural and high-cost areas, [shall] have access to telecommunications and information services, including interexchange services, cable services, wireless services, and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at prices that are reasonably comparable to prices charged for similar services in urban areas.[24]

FIGURE 3: TEXAS USF



The current rules concerning the State universal service mechanism are found in PURA (Title II, Texas Utilities Code), Chapter 56. Section 56.022 requires "a statewide uniform charge payable by each telecommunications provider that has access to the customer base." The concept is the same as the federal policy explained above, as users of the network pay for the costs of the broader network that serves the State. The Texas Legislature also emphasized that all Texans should have access to telecommunications so that economic development might occur throughout the State.[25] In particular, rural economic development is an important component of the statewide economy: a recent Texas Agricultural Commission report observed that "Texas is a global economic powerhouse blessed with productive agricultural lands, abundant energy reserves, a skilled workforce and a competitive business climate. . . . Rural Texas is a fully engaged, vibrant participant in today's dynamic world."[26] At the same time, the Report noted:

[22] PURA § 51.001(b)(3).
[23] PURA § 56.021.
[24] PURA § 51.001(g)
[25] PURA § 51.001(d)(2).
[26] Commissioner Todd Staples, *Texas Rural Impact Report 2013*, Texas Department of Agriculture, April 18, 2013, available at

> No community can grow without access to infrastructure. Water, transportation, housing, energy and telecommunications are examples of critical infrastructure that must be in place to support businesses and families in rural Texas…. Although communities can supplement local resources with state and federal programs, ultimately infrastructure needs must be met with a local, self-sustaining strategy.[27]

The challenge of serving rural communities is particularly important in Texas, which has the largest rural population of any U.S. state.[28]

In 1999, in Dockets 18516 and 18515, the PUCT created two high-cost support funds—the SRILEC Universal Service Plan and the Texas High-Cost Universal Service Plan (THCUSP) to replace lost intraLATA toll pool support revenues.[29] The new funds were established in conjunction with lowered state ICC (access) rates and offset the reductions of implicit support with explicit Texas Universal Service support. Figure 3 tracks the various legislative reforms of TUSF, with a focus on the SRILECs, beginning with the PUCT's initial 1999 docket.

In 2011, the Texas Senate passed SB 980 which required the PUCT to evaluate the State USF programs and to eliminate USF in deregulated areas. The bill allowed larger carriers that served markets with a population under 30,000 to receive TUSF if that larger provider could make a demonstration that support was required. Also, in 2011, the Texas House passed Bill 2603, which, among other changes, increased the funding for all non-Chapter 58/59 SRILEC carriers using the consumer price index applied to the funding that was determined to be appropriate in 1999 in PUCT Docket No. 18516.[30] As a result of SB 980, the PUCT opened various "Projects" to evaluate the THCUSP (Project 39939), which concerned needs-testing the THCUSP carriers (Project 40342), and the SRILEC Universal Service Plan (Project 39938).

Eleven TUSF programs

There are eleven TUSF programs. To focus on the investment issues addressed in this White Paper, the authors have focused on "network-related support" which are the items described in programs one through four below.

Programs for network-related support are:

1. Texas High Cost Universal Service Plan (THCUSP) supporting services provided notably by the four largest carriers in Texas (AT&T, Verizon (now Frontier), CenturyLink and Windstream) as well as carriers providing competitive services in the regions where the four largest carriers offer service (PURA §56.021(1))
2. Small and Rural ILEC Universal Service Plan (SRILEC USP) supporting services provided by small companies in high cost areas, including about 44 small rate-of-return carriers (PURA §56.021(1))

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https://texasagriculture.gov/Portals/0/Publications/RED/Rural%20Advisory%20Council/TDA%20Rural%20Report%20Final%20%202013.pdf.

[27] *Id.*

[28] Susan Combs, *Texas in Focus: A Statewide View of Opportunities*, Texas Comptroller of Public Accounts, (Jan. 17, 2008); *see* Demographics, Exhibit 6, available at http://comptroller.texas.gov/specialrpt/tif/03_Demographics.pdf.

[29] "IntraLATA" refers to telephone calls that originate and terminate within a geographic area known as a Local Access and Transport Area; "interLATA" are calls that originate in one LATA and are terminated in another, thereby making those calls "long distance." The relevant sections of Docket 18516 are available in Appendix 1 to provide the reader with a ready reference.

[30] Chapter 58/59 provides rules and regulations about ILECs that elect incentive regulation rather than rate-of-return regulation. The relevant sections of House Bill 2603 are available in Appendix 3 to provide the reader with a ready reference.

3. High Cost Uncertificated Areas
4. IntraLATA (Schools & Libraries for non-58/59 companies) (PURA §56.028)

Other high-cost assistance programs include:

5. PURA Support
6. PURA §56.025 – FUSF Loss Recovery

Programs in direct support of customers with low-incomes or requiring disability assistance are:

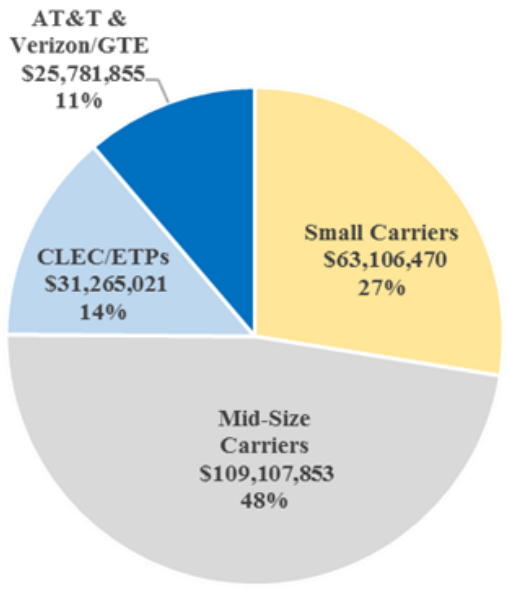
7. Lifeline (PURA §56.021(5-6))
8. Tele-Assistance Support
9. Texas Telecommunications Relay Service (PURA §56.021(2))
10. Specialized Telecommunications Assistance Program (STAP) (PURA §56.021(3))
11. Audio Newspaper Program (ANP) (PURA §56.021(9))

Support levels today

As illustrated in Figure 4, TUSF network-related funding in fiscal year 2015 (ending August 2015) can be divided into four groups: (i) the THCUSP funding of AT&T and Verizon/GTE (now Frontier) that is in the process of being phased out entirely, (ii) the THCUSP funding and SRILEC funding of mid-size carriers which are required to demonstrate need for funding (excluding AT&T and Verizon, the other carriers serving more than 31,000 access lines), (iii) the CLECs and eligible telecommunications providers (ETPs) which receive funding according to a formula that provides support based on per-line funding of the ILEC in their region, and (iv) the non-Chapter 58/59 SRILEC funding which supports 45 small rate-of-return carriers. For perspective, the non-Chapter 58/59, rate-of-return carriers represent only 27% of the total $229 million in 2015 network-related TUSF, as the SRILEC funding levels have declined from approximately $98 million in fiscal year 2005.[31] As suggested above, the $25.8 million of THCUSP funding currently provided to AT&T and Verizon will be eliminated by no later than January 1, 2017, according to the stipulation of those carriers.

Currently, the TUSF supports a variety of programs such as the Relay Texas and Specialized Telecommunications Assistance Programs; the Tel-Assistance, Lifeline and Linkup programs; the Small Local Exchange Carriers Universal Service Fund; and the Texas High-Cost Universal Service Plan.

FIGURE 4: FY 2015 TUSF NETWORK-RELATED FUNDING



Source: Solix Quarterly Reports.

[31] Public Utility Commission of Texas, *Report to the 83rd Texas Legislature: Review and Evaluation of the Texas Universal Service Fund Pursuant to Senate Bill 980, 82nd Legislature, Regular Session*, November 1, 2012, available at http://www.puc.texas.gov/industry/communications/reports/TUSF/TUSF_Report_83rdLeg.pdf, p. 12.

The total 2015 TUSF, including network-related and other funds, was $252.9 million, which means that support for network investment was 91% of the total.

The PUCT's Project 39937 evaluated the THUCSP, pursuant to Senate Bill 980, and adopted a plan to reduce TUSF funding for eligible telecommunication providers, including the four largest carriers in Texas, over a four-year period from 2013 through 2017.[32] The THCUSP is scheduled to contract further, beginning in 2017 or 2018, pursuant to Senate Bill 583.

TABLE 3: TUSF ANNUAL DISBURSEMENTS

	FY 2013	FY 2014	FY 2015
Network-related support			
Small companies			
SRILEC	**$ 60,204,130**	**$ 61,575,946**	$ 62,553,444
IntraLATA	**1,070,422**	**1,245,611**	553,026
Total Small companies	**61,274,552**	**62,821,557**	**63,106,470**
Mid-size companies			
SRILEC	33,941,628	32,504,642	29,170,380
HC	104,818,310	90,752,748	79,772,947
IntraLATA	46,388	46,703	164,527
Total Mid-size companies	**138,806,326**	**123,304,093**	**109,107,853**
Large companies			
HC	62,361,739	44,372,166	25,781,749
Uncertificated	252	138	107
Total Large companies	**62,361,991**	**44,372,304**	**25,781,855**
CLEC/ETPs			
SRILEC	3,661,294	3,699,075	3,669,036
HC	26,929,063	27,769,898	27,429,295
Uncertificated	166,957	176,872	166,690
Total CLECs/ETPs	**30,757,314**	**31,645,846**	**31,265,021**
Total network-related	**293,200,183**	**262,143,800**	**229,261,200**
Other Support			
Audio Newspaper Program	416,067	398,200	476,292
FUSF	2,203,273	6,337,443	1,929,033
Lifeline Support	25,354,403	15,437,763	9,804,461
PURA	4,747,877	3,334,924	1,949,455
Specialized Telecom Assistance Program	7,511,317	5,624,574	6,386,703
Specialized Telecom Assistance Program Refunds	(38,657)	(635)	(76,275)
Tel-Assistance Support	7,496	6,452	4,783
Texas Telecommunications Relay Service	4,676,258	3,320,035	3,162,660
Total other support funding	**$ 44,878,034**	**$ 34,458,756**	**$ 23,637,112**
Total FY funding	**$ 338,078,217**	**$ 296,602,556**	**$ 252,898,312**

SRILEC Universal Service Plan

Small and rural incumbent local exchange telephone companies as well as some mid-sized carriers are eligible to receive TUSF support under the SRILEC plan.[33] The support is available today only for the provision of

[32] Adopted on June 13, 2012, the PUCT ordered a "reduction in support for local exchange carriers from the THCUSP based on the difference between current rates for basic local exchange service and a reasonable rate to be determined by the commission. The rule also provides an option whereby an incumbent local exchange carrier may choose to reduce its support to zero over a five-year period."

[33] The SRILEC plan was largely implemented by Texas PUC Docket No. 18516. "Small local exchange company" means any incumbent certificated telecommunications utility as of September 1, 1995, that has fewer than 31,000 access lines in service in this state, including the access lines of all affiliated incumbent local exchange companies

basic telecommunications services.[34] The support is set at a frozen level of monthly funding, determined using audited data from the recipient's 1997 test year, adjusted by the consumer price index.[35] SB 583 assured a fixed level of funding for SRILEC carriers, but set the expiration of the frozen payment mechanism on September 1, 2017, which means that the SRILECs will revert to per-line funding at that time if no Texas legislative action occurs.

Table 4 provides data on the small SRILECs (excluding carriers with more than 31,000 lines such as CenturyLink, Consolidated, and Windstream/Valor), using working loops drawn from the 2014 reports of the federal USAC program, the Solix quarterly reports regarding certain network-related TUSF funding, and a geo-coded database used by the FCC in its Quantile Regression Analysis regarding customer density. Like all regulatory data reports, the specific figures are often not precisely the same as those that the companies report—because of timing differences or other factors. In spite of the imprecision, there are several helpful insights.

First, the "working loops" provide an approximate estimation of the difference in size between the carriers, although the carriers may have other services (e.g., more business services or more video products) that make them relatively larger. Second, the carriers receive relatively more or less of their funding from TUSF compared with federal USF, in part because the federal programs provide recovery through several programs that can result in larger or smaller receipts of USF. Third, the figures "per loop per month" are approximate, depending on the accuracy of the regulatory reports. However, the relative per-loop funding differences from one carrier to the next serve to highlight the differences in costs to serve various regions where customer densities and terrain result in sharply higher or lower costs. Fourth, the square miles of service territory and density factors in the table are drawn from FCC data used in the now-defunct Quantile Regression Analysis. The FCC's 2014 data are not precisely correct because they rely on assumptions applied to third-party

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within the state, or a telephone cooperative organized pursuant to the Telephone Cooperative Act, Texas Utilities Code Annotated, Chapter 162. 16 TAC §26.5(198). "Small incumbent local exchange company" means an incumbent local exchange company that is a cooperative corporation or has, together with all affiliated incumbent local exchange companies, fewer than 31,000 access lines in service in Texas. 16 TAC § 26.5(199). Rural incumbent local exchange company means ILEC that qualifies as a "rural telephone company" as defined in 47 United States Code § 3(37) and/or 47 United States Code § 251(f)(2). 16 TAC §26.5(187).

[34] *See infra at* p. 50.

[35] PURA § 56.032: "Adjustments: Small and Rural Incumbent Local Exchange Company Universal Service Plan.
(a) For purposes of this section, "consumer price index" means the Consumer Price Index for All Urban Consumers, as published by the federal Bureau of Labor Statistics of the United States Department of Labor.
(b) Except as provided by Subsections (d) and (e), the commission may revise the monthly support amounts to be made available from the Small and Rural Incumbent Local Exchange Company Universal Service Plan by any mechanism, including support reductions resulting from rate rebalancing approved by the commission, after notice and an opportunity for hearing. In determining appropriate monthly support amounts, the commission shall consider the adequacy of basic rates to support universal service.
(c) A company that receives frozen monthly support amounts as prescribed by a final order issued by the commission in the commission's Docket No. 39643 is entitled to continue to receive that monthly support until the support is revised under Subsection (b).
(d) For each small or rural incumbent local exchange company that is not receiving frozen support amounts as described by Subsection (c) and is not an electing company under Chapter 58 or 59, the commission annually shall set the company's monthly support amounts for the following 12 months by dividing by 12 the annualized support amount calculated under this subsection. The commission shall calculate the annualized amount:
(1) for the initial 12-month period for which a company makes an election under this subsection, by determining the annualized support amount received by the company as of January 1, 2013; and
(2) for subsequent 12-month periods, by adjusting the most recent annualized support amount calculated by the commission by a factor equal to the percentage change in the consumer price index for the most recent 12-month period."

databases. The reader should understand, therefore, that the final two columns are approximate.[36] The FCC's estimations provide the reader a general sense of the square miles and the density of each carrier's service region.

TABLE 4: 2014 FEDERAL AND STATE FUNDING FOR THE SMALL SRILECS

Company	Working Loops	2014 SRILEC Network Funding				Per Loop Per Month			Density	
		TUSF	FUSF	Total USF	State % of Total	State	Federal	Total	Coverage (Miles)	Lines Per Mile
Alenco Communications, Inc.	1,844	1,989,265	3,614,794	5,604,059	35.5%	89.90	163.36	253.26	1,878.3	1.0
Big Bend Telephone Company, Inc.	5,428	3,553,676	15,052,209	18,605,885	19.1%	54.56	231.09	285.65	16,935.3	0.3
Blossom Telephone Company Inc.	863	78,654	1,360,800	1,439,454	5.5%	7.60	131.40	139.00	43.3	20.1
Border To Border Communications	89	298,350	453,360	751,710	39.7%	279.35	424.49	703.85	266.6	0.3
Brazoria Telephone Company	4,136	2,864,007	3,392,779	6,256,786	45.8%	57.70	68.36	126.06	147.9	28.2
Brazos Telecommunications, Inc.	3,964	761,263	1,823,824	2,585,087	29.4%	16.00	38.34	54.35	1,234.8	3.3
Brazos Telephone Cooperative Inc.	-	715,847	-	715,847	100.0%				NA	NA
Cameron Telephone Company - Texas	549	532,938	334,300	867,238	61.5%	80.90	50.74	131.64	126.5	4.4
Cap Rock Telephone Cooperative Inc.	3,908	1,324,014	2,676,005	4,000,019	33.1%	28.23	57.06	85.30	4,644.6	0.9
Central Texas Telephone Co-op	6,003	2,441,008	4,474,943	6,915,951	35.3%	33.89	62.12	96.01	2,968.9	2.1
Coleman County Tel Co-op	1,720	629,826	2,260,515	2,890,341	21.8%	30.51	109.52	140.04	747.8	2.4
Colorado Valley Tel Coop.	5,953	1,772,984	2,977,560	4,750,544	37.3%	24.82	41.68	66.50	645.1	9.2
Community Telephone Company Inc.	1,345	771,280	1,549,886	2,321,166	33.2%	47.79	96.03	143.81	659.4	2.1
Cumby Telephone Cooperative-ILEC	694	300,818	225,049	525,867	57.2%	36.12	27.02	63.14	49.9	14.3
Dell Telephone Cooperative Inc	746	424,372	2,576,375	3,000,747	14.1%	47.41	287.80	335.20	5,970.9	0.1
E N M R Telephone Cooperative	572	251,854	221,980	473,834	53.2%	36.69	32.34	69.03	390.3	1.5
Eastex Telephone Cooperative Inc	21,602	5,877,382	8,093,179	13,970,561	42.1%	22.67	31.22	53.89	1,485.9	14.6
Electra Telephone Company Inc	1,067	730,441	650,907	1,381,348	52.9%	57.05	50.84	107.88	119.6	9.0
Etex Telephone Cooperative	11,946	3,355,986	6,702,045	10,058,031	33.4%	23.41	46.75	70.16	580.4	20.7
Five Area Telephone Coop.	4,684	885,331	4,638,983	5,524,314	16.0%	15.75	82.53	98.28	1,818.8	2.6
Ganado Telephone Company Inc.	2,515	925,912	2,235,576	3,161,488	29.3%	30.68	74.07	104.75	355.1	7.1
Hill Country Telephone Cooperative	14,204	3,857,059	9,835,931	13,692,990	28.2%	22.63	57.71	80.34	2,791.5	5.1
Industry Telephone Company	2,185	1,068,612	2,353,866	3,422,478	31.2%	40.76	89.77	130.53	181.7	12.2
La Ward Telephone Exchange, Inc.	782	502,702	1,259,658	1,762,360	28.5%	53.57	134.23	187.80	109.8	7.4
Lake Livingston Telephone	727	765,128	1,740,914	2,506,042	30.5%	87.70	199.55	287.26	9.7	74.9
Lipan Telephone Company Inc	1,307	764,262	2,228,041	2,992,303	25.5%	48.73	142.06	190.79	197.1	6.9
Livingston Telephone Company	6,053	585,163	1,151,838	1,737,001	33.7%	8.06	15.86	23.91	NA	NA
Mid-Plains Rural Telephone Cooperative	2,648	734,037	4,254,741	4,988,778	14.7%	23.10	133.90	157.00	2,603.0	1.0
Muenster Telephone Corporation of Texas	3,551	1,793,994	2,842,969	4,636,963	38.7%	42.10	66.72	108.82	454.7	8.0
North Texas Telephone Company	515	269,226	208,001	477,227	56.4%	43.56	33.66	77.22	NA	NA
Peoples Telephone Cooperative	10,413	1,949,916	4,981,198	6,931,114	28.1%	15.60	39.86	55.47	653.5	16.3
Poka-Lambro Telephone Cooperative Inc.	2,162	2,331,644	1,558,325	3,889,969	59.9%	89.87	60.06	149.94	2,721.6	0.8
Riviera Telephone Company	1,135	1,072,537	2,881,357	3,953,894	27.1%	78.75	211.55	290.30	1,878.1	0.6
Santa Rosa Telephone Cooperative Inc.	1,691	558,887	3,032,702	3,591,589	15.6%	27.54	149.45	177.00	1,907.0	0.9
South Plains Telephone Cooperative Inc.	3,844	1,207,380	3,036,514	4,243,894	28.4%	26.17	65.83	92.00	1,411.0	2.8
Southwest Arkansas Telephone Cooperative		38,614	-	38,614	100.0%				NA	NA
Southwest Texas Telephone Company	4,006	2,280,987	4,672,818	6,953,805	32.8%	47.45	97.20	144.65	2,691.0	1.5
Tatum Telephone Company	847	582,302	227,498	809,800	71.9%	57.29	22.38	79.67	32.1	26.8
Taylor Telephone Cooperative Inc	5,515	1,216,396	4,157,758	5,374,154	22.6%	18.38	62.82	81.21	1,563.0	3.7
Totelcom Communications, LLC	3,834	905,896	909,315	1,815,211	49.9%	19.69	19.76	39.45	656.1	5.9
Valley Telephone Cooperative, Inc.	5,442	6,168,852	11,266,542	17,435,394	35.4%	94.46	172.52	266.99	6,434.2	0.9
West Plains Telecommunications Inc.		1,020,345	-	1,020,345	100.0%				NA	NA
West Texas Rural Telephone Cooperative	1,762	1,277,092	1,299,014	2,576,106	49.6%	60.40	61.44	121.84	1,988.8	0.9
Wes-Texas Telephone Cooperative Inc.	2,088	685,950	2,029,998	2,715,948	25.3%	27.38	81.02	108.40	2,554.2	0.8
XIT Rural Telephone Cooperative Inc.	1,151	699,370	3,599,979	4,299,349	16.3%	50.63	260.64	311.28	3,450.6	0.3

Effect of reversion to per-line SRILEC support

Senate Bill 583 mandates that, unless new legislation is adopted, the SRILEC TUSF payments will be modified on September 1, 2017, and will revert from fixed funding amounts to per-line calculations. The consequences

[36] For example, illustrating the imprecision, Big Bend Telephone Company reports that it serves a region that is approximately 17,600 square miles while the FCC's data for Big Bend Telephone estimates that the company serves about 16,936 square miles (larger than Maryland, Vermont, New Hampshire, Massachusetts, New Jersey, Hawaii, Connecticut, Delaware and Rhode Island). Eastex Telephone Cooperative reports that its density is less than 10 lines per square mile, while the FCC's approximate calculation is 14.6 lines per square mile.

could be very damaging to Universal Service in Texas because the support funding levels are likely to contract due to the ongoing loss of ILEC telephone access lines.

In a later section, this White Paper will summarize certain major studies of rural ILEC network costs. Those studies highlight the uneconomic characteristics of many regions where density is low and costs remain stubbornly high. The message is that service is likely to falter or entirely disappear without sufficient support.

A thoughtful, high-level perspective regarding the risks associated with potential underinvestment in rural America was provided by an economist, Dr. Karl Stauber, publishing for the Federal Reserve Bank of Kansas City. His opinion was that, if there is insufficient investment in low-density regions, there is a danger of losing a middle-class in rural America. His article highlights the risk that a rural ghetto will be created if educational, social, healthcare and other resources are sub-par.

Without the middle class, rural America will become the involuntary home of the poor . . . producing a rural ghetto.

> On our current trajectory, we are headed for significant portions of rural America that are largely populated by the poor and the rich, and the small middle class that serves both groups. A fundamental goal of rural development must be the survival of the middle class. Without the middle class, rural America will become the involuntary home of the poor and the chosen home of the pleasure seekers, producing a rural ghetto and a rural playground.[37]

The federal and state policies rely on the insight that access to advanced telecommunications is crucial to rural communities that seek to attract businesses, retain human resources, support economic development, and assure that local students can excel in education.[38] "Improved telecommunications … could help attract companies that previously might not have considered a rural locale."[39] "Internet connectivity can make a dramatic difference—particularly in residents' ability to learn about, invest in and shop for career opportunities, education, housing and financial products."[40]

To focus the challenge even more sharply, Texas has millions of people living in rural areas—more than any other state. Texas's rural population is in fact larger than the entire population of 22 individual U.S. states, and more than the population of the five least populated U.S. states *combined*.[41] According to the Texas Department of Agriculture, Texas's rural lands total 142 *million* acres—an area larger than the entire state of California. The state's enormous rural areas and large rural population will be harmed if

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[37] Karl N. Stauber, Ph.D., "Why Invest in Rural America—And How? A Critical Public Policy Question for the 21st Century." Economic Review, Second Quarter 201, Federal Reserve Bank of Kansas City.

[38] See, e.g., "Bridging the Digital Divide," *Texas Tribune* panel with State Rep. Gene Wu, Juanita Budd, Becky Garlick, and Will Reed, December 4, 2015, video available at http://www.texastribune.org/events/2015/12/04/bridging-the-digital-divide/.

[39] Ricky George, *Amarillo Globe-News*, "Committee hears rural concerns" (April 20, 2000) (citing economist Ray Perryman), available at http://amarillo.com/stories/2000/04/20/new_hears.shtml#.VwXb5fkrJdg.

[40] "Las Colonias in the 21st Century: Progress Along the Texas-Mexico Border," Jordana Barton, FEDERAL RESERVE BANK OF DALLAS, April 2015, available at https://www.dallasfed.org/assets/documents/cd/pubs/lascolonias.pdf.

[41] Based upon Texas Agriculture Department's statistic that 12% of the population of Texas lives in rural areas as well as 2013 US Census data compiled at http://www.enchantedlearning.com/usa/states/population.shtml, at least 3.2 million Texans live in rural areas. The U.S. Department of Agriculture put Texas's rural population at slightly over 3 million in 2014. http://ers.usda.gov/data-products/state-fact-sheets/state-data.aspx?StateFIPS=48&StateName=Texas

reduced TUSF results in lesser telecommunications infrastructure to support economic, education, and other opportunities.

Moreover, empowering rural areas benefits urban areas as well. A 2016 economic study by the Hudson Institute finds that two-thirds of the final national economic impact of dollars spent by rural telecom companies on certain services results in economic benefit to urban areas. In Texas, the study finds 80% of these dollars spent in the rural parts of the State directly or indirectly result in economic benefits to Texas urban areas.[42] The study also explains that economic activity created by these rural companies actually support a greater percentage of jobs in urban areas compared with the jobs supported in rural ones, as rural carriers use professional and support services outside rural communities.[43] For example, rural consumers who shop online are more likely to spend funds for goods and services in urban areas.[44] Put in other words, when urban populations support universal service to rural areas, the commitment spawns economic activity that benefits both the rural areas *and* the urban ones. The study also suggests that underinvestment in rural areas where advanced telecommunications services fall short of services comparable to urban areas results in *missed* economic benefits of at least $1 billion, nationally, and possibly as much as $4 billion, or levels that are 4% to 16% higher than the currently realized benefits.[45]

POTENTIAL ELIMINATION OF SUPPORT

It is unclear precisely how much support will be eliminated if SRILEC support were to be based on per-line calculations.[46] Senate Bill 583 is not specific, but it is clear that there is the potential for meaningful support reductions that will almost certainly be harmful to customers who rely upon the rate-of-return SRILECs. The loss of support revenues will predictably chill ILEC network investment, likely result in job losses, and put at risk the state's rural economies, which significantly contribute to the state's economy as a whole.

SB 583 is not specific, but it is clear that there is the risk of meaningful support reductions that will almost certainly be harmful to customers who rely upon the rate-of-return SRILECs.

First, because the loss of voice lines has been significant since 1997, the initial reduction in support could be dramatic, possibly cutting the state USF support levels to less than 50% of current levels, depending on the per-line calculation that is chosen.

Second, the financial effects may be larger than some policymakers understand. The reason is that a reduction in TUSF receipts will be accompanied by *no reduction in operating costs.* An illustration makes the simple point. A carrier that loses 10% of its entire support, assuming support was 50% of revenues, would clearly lose 5% of total revenues. However, with an operating cash flow margin of 40% and no change in operating costs—as is the case with USF—the carrier would lose 12.5% of its operating cash flow, and margins would slip from 40% to 35%. If the revenue reduction were 10% (20% loss of USF), the carrier would lose a quarter of its operating cash flow, as the margin sinks by 1,000 basis points (10%). The point is that the loss of support

[42] Kuttner, Hanns, *The Economic Impact of Rural Broadband*, Hudson Institute, April 2016 Briefing Paper at 13. See Table 2 at 15; Texas rural economic impact of dollars spent by rural broadband telecom carriers is $671.8 million, while urban impact is $2.762 billion, and total impact is $3,433 billion.
[43] *Id*. at 4, 19. The Hudson Institute study focuses on broadband services. Considering *total* telecommunications dollars, it can be assumed that urban areas continue to derive the majority of the benefits but with higher absolute dollar figures.
[44] *Id.*
[45] *Id.* at 27.
[46] SB 583 pertaining to Sec. 56.026 of the Utilities Code, Section 4(h): "Subsections (a), (c), (d), (e), and (f) and any monthly support amount approved under those subsections expire September 1, 2017."

revenues has a disproportionately high effect on operating cash flow and on cash flow margins, as the lost revenues have little to no current cash operating costs associated with them. These kinds of financial losses will necessarily change the investment outlook for small carriers.

Third, it appears financially unsound to revert to a system that ties universal service support with line losses. The reasons are straightforward. A POLR has the obligation to invest in network for its customers and is not permitted to expense that network investment in a single year (often amortizing the costs over twenty years). This means that the expenses of the network and the associated access lines continue even after the loss of a customer. Carriers understand the financial realities. If the Texas USF system ties support to the service over a certain number of lines (setting a per-line level of support), the carrier's owners will recognize that the company might lose support before the investment expense is recovered, and the rational ILEC will not make incremental investments in new or improved network infrastructure.

To revert to a system that ties universal service support to line loss creates financially-distorted incentives and perverse outcomes. If the Texas USF system relies on per-line calculations, the rational carrier will not make incremental investments in new lines for fear that costs will not be recovered over the extended life of the assets.

Fourth, carriers are today challenged by major demands for broadband and wireless services, which require ongoing investment in a wired network that transports and provides final connections for most of those services, including wireless. Loss of voice lines, under a per-line TUSF system, would reduce the network support in spite of the new telecommunications demands on the network in the form of broadband and wireless services.

Fifth and finally, a reversion toward per-line funding for TUSF creates uncertainty in the financial community. Banks and equity investors will become even more cautious in such a high-risk environment, as is already occurring in the wake of the federal reforms. The result will be damaging to critical infrastructure investment because of insufficient support and the higher costs of capital to fund investment. Uncertainty will have an increasingly negative effect on access to capital.

Texas High-Cost Universal Service Plan

This White Paper is focused on the SRILEC program which is primarily composed of small carriers. The larger carriers in Texas have been supported through the THCUSP and, in some cases, through the SRILEC fund.[47] The receipts of funding for the various carriers are summarized in Table 3. Similar to the federal non-rural, high-cost model program, THCUSP support has been based on a carrier's forward-looking economic costs.[48] Carriers have been eligible to receive support to the extent that their forward-looking economic costs exceed a benchmark amount for the costs of providing local service in Texas.[49] The THCUSP utilized a model to calculate a carrier's forward-looking economic costs as the basis for that carrier's level of support. In theory, the model was designed to yield the most efficient costs so that carriers can recover portions of the required investment based on the lowest investment costs available.

In May 2013, the Texas Senate passed Senate Bill 583, which provided for specific reductions in funding for larger carriers—AT&T, Verizon, CenturyLink, Consolidated Communications, Windstream/Valor and

[47] The THCUSP plan was largely implemented through Texas PUC Docket No. 18515.
[48] 16 T.A.C. § 26.403(e).
[49] There are two benchmarks under the THCUSP—one for residential service and one for single-line business services. 16 T.A.C. §403(e)(1)(B).

Guadalupe Valley (some of which are also included in the SRILEC program), unless the incumbent carrier serving more than 31,000 access lines is able to demonstrate a need for such funding.[50] The THCUSP carriers that did not stipulate to reductions are to receive reduced funding levels beginning either on January 1, 2017 or on January 1, 2018, with reductions to occur 25% in the first year and then another 25% each year thereafter until no funding is due on January 1, 2020 or on January 1, 2021. If a THCUSP ILEC receives reduced support in its service region, a CLEC or ETP, which might be a wireless carrier, is to receive lower levels of support that reflect the THCUSP ILEC's per-line TUSF.[51]

The funding levels for THCUSP carriers are expected to be sharply lower over the next five years, freeing the Legislature of the obligation to distribute those funds to larger carriers and to CLECs, and permitting the Legislature to reallocate those monies to alternative USF purposes such as broadband funding (which is the approach taken, as described below, by the Colorado Public Utilities Commission).

At the time of writing, the first two needs test proceedings were still in the process of being settled, so the precise extent to which THCUSP mid-sized ILEC and CLEC support will be affected is not yet known. Nonetheless, the funding levels for THCUSP carriers are expected to be sharply lower over the next five years, freeing the Legislature of the obligation to distribute those funds to larger carriers and to CLECs, and permitting the Legislature to reallocate those monies to alternative USF purposes such as broadband funding (which is the approach taken, as described below, by the Colorado Public Utilities Commission).

Table 5 provides the 2015 levels of TUSF funding received by each of the Texas THCUSP carriers, including the two largest carriers, AT&T/Southwestern Bell and Verizon/GTE (now Frontier). In 2012, pursuant to Project 39939, Verizon and AT&T stipulated to forego receipt of all Texas universal service support by January 1, 2017.[52]

[50] Certain service regions of Windstream, Consolidated and CenturyLink are included in the SRILEC funding. The relevant sections of Senate Bill 583 are available in Appendix 4 to provide the reader with a ready reference.
[51] SB 583(p): "If an incumbent local exchange company or cooperative is ineligible for support under a plan established under Section 56.021(1) for services in an exchange, a plan established under Section 56.021(1) may not provide support to any other telecommunications providers for services in that exchange, except that an eligible telecommunications provider that is receiving support under Section 56.021(1)(A) in that exchange shall continue to receive such support for a 24-month period following the date the incumbent local exchange provider or cooperative ceases receiving support in that exchange. The support received by the eligible telecommunications provider during the 24-month period shall be at the same monthly per line support level in effect for that exchange as of the date the incumbent local exchange provider or cooperative ceases receiving funding in that exchange."
[52] Docket No. 40521.

TABLE 5: THCUSP FUNDING IN 2015

LEC/ETP	2015 THCUSP	% of total
AMA Communications dbaAMA TechTel Comm	9,113,294.75	6.9%
Central Telephone Co. of Texas, Inc.	11,173,078.92	8.4%
CGKC&H RCLP dba West Central Wireless	2,044,869.44	1.5%
Cumby Telephone Cooperative-CLEC	1,317,107.16	1.0%
DialTone Services, LP	4,903,913.16	3.7%
ETS Telephone dba En-Touch Systems	111,396.12	0.1%
GCEC Technologies	25,046.68	0.0%
Guadalupe Valley Comms Systems, L.P.	61,354.41	0.0%
Mid-Tex Cellular Limited	440,632.86	0.3%
Panhandle Telecommunication Systems, Inc	863,276.92	0.6%
Santa Rosa Telephone Cooperative - CLEC	3,185,057.26	2.4%
Texas RSA 15B2 Limited Partnership	334,059.33	0.3%
United Telephone Co of Texas	13,365,439.28	10.1%
Valor Telecom of TX, dba Windstream SW	55,234,428.74	41.5%
WT Services, Inc.	18,610.82	0.0%
XIT Telecommunications & Technology Inc.	716,901.17	0.5%
Large ILECs		
AT&T/Southwestern Bell Telephone Company	152,240.55	0.1%
Verizon Southwest fka GTE Southwest	25,629,508.10	19.3%
Total	**132,983,990.87**	100.0%

Source: Solix quarterly reports.

Legislative reevaluation of Texas USF

Because of the changing telecommunications marketplace and because the Senate Bill 583 rules are to expire in 2017, Texas legislators are assessing Texas USF.

Several legislative charges were issued in late 2015. In October 2015, Texas Lieutenant Governor and President of the Senate, Dan Patrick, issued his interim charges to the Senate Education Committee, including one on broadband access.

> Broadband Access: Evaluate digital learning opportunities in classrooms and examine existing barriers to schools' ability to provide a digital learning environment. In particular, study the availability of affordable broadband access to school districts across Texas. Examine different options for improving access to broadband service in all areas of the state, for districts and student homes. Make recommendations on a statewide plan for building the necessary infrastructure to provide a competitive, free-market environment in broadband service.[53]

In November 2015, the Texas House of Representatives issued two charges that could relate to TUSF. The first was for the House Committee on State Affairs and concerned a study of the SRILEC funding. The second was for the House Committee on Public Education.

> Study support mechanisms for the Small and Rural Incumbent Local Exchange Carrier Universal Service Fund. Consider alternative funding mechanisms as well as necessary statutory changes to

[53] Dan Patrick, *Interim Charges*, October 12, 2015, available at https://www.ltgov.state.tx.us/wp-content/uploads/docs/Senate_Interim_Charges_84_pt3.pdf.

> ensure reasonable cost of basic local phone service in high cost, rural areas without expanding the size of the Texas Universal Service Fund.[54]
>
> Examine the accessibility to broadband services for schools, libraries, and institutions of higher education. Study the feasibility and affordability of providing scalable broadband . . . .[55]

The charges from the Texas House and Senate arise significantly because of the challenges facing students in Texas' rural regions. Texas policymakers are increasingly concerned about the potential for disadvantaging rural students—similar to the prospect of a "rural ghetto" as described by Dr. Stauber.

> Texas has the largest population of rural K-12 students in the United States . . . . Almost one million school-age children in Texas do not have access to broadband at home . . . . Texas policymakers are increasingly concerned about the potential for disadvantaging rural students who may not be provided equal educational opportunities as a result of limited access to broadband.

The fear is that rural students will not be provided equal educational opportunities as a result of limited access to broadband.[56] Texas has the largest population of rural K-12 students in the United States and the number continues to grow[57]—but those rural students do not all have resources comparable to those in urban areas. Personal access to broadband has been identified as a factor holding back students in rural communities in achieving educational excellence.[58] "According to Connected Texas, a public-private initiative working to ensure that the entire state has broadband access, broadband service is less available to school districts and communities in parts of East Texas, Central Texas, West Texas, the Panhandle, and the Rio Grande Valley than to those in other parts of the state, making use of online programs more difficult for certain smaller districts."[59] Almost one million "school-age children in Texas do not have access to broadband at home" in spite of a growing concern that high-speed communications is critical in supporting the

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[54] Speaker Joe Straus, *Interim Committee Charges*, Texas House of Representatives, 84th Legislature, November 2015, available at http://www.house.state.tx.us/_media/pdf/interim-charges-84th.pdf, p. 55, no. 5.
[55] *Id.*, p. 49, no. 3.
[56] *Postsecondary Completion in Rural Texas* at 22, 28-29 ("The rural Texas experience is characterized by long travel distances to a higher education institution, lack of personal access to broadband, and expectations held for students by parents. . . . most rural universities and community colleges are wired for and offer wireless broadband access to students on and around campus. The schools are equipped, but when the students are at home, many only have access to the internet through slower means, if they have access at all.").
[57] THE BUSH SCHOOL OF GOVERNMENT & PUBLIC SERVICE, TEXAS A&M UNIVERSITY, *Postsecondary Completion in Rural Texas: A Statewide Overview* (2014) at 3, http://bush.tamu.edu/research/capstones/mpsa/projects/2014/Postsecondary%20Completion%20in%20Rural%20Texas.pdf (stating that Texas has the largest population of rural students in the country); Jerry Johnson, Daniel Showalter, Robert Klein & Christine Lester, *Why Rural Matters 2013-2014: The Condition of Rural Education in the 50 States*, THE RURAL SCHOOL AND COMMUNITY TRUST (May 2014), http://www.ruraledu.org/user_uploads/file/2013-14-Why-Rural-Matters.pdf (noting that rural education in the United States continues to grow).
[58] *Postsecondary Completion in Rural Texas* at 22, 28-29 ("The rural Texas experience is characterized by long travel distances to a higher education institution, lack of personal access to broadband, and expectations held for students by parents. . . . most rural universities and community colleges are wired for and offer wireless broadband access to students on and around campus. The schools are equipped, but when the students are at home, many only have access to the internet through slower means, if they have access at all.").
[59] House Research Organization, Texas House of Representatives, *Online learning: Trends in K-12 Education in Texas* (2014) at 5, available at http://www.hro.house.state.tx.us/pdf/focus/virtual83-10.pdf.

student's educational advancement.[60] In fact, even while some students have a comparative lack of access to broadband, Texas has increasingly adopted online coursework, electronic textbooks, and other educational resources that require use of the Internet.[61] "[T]he digital divide … disproportionately impacts children when their parents cannot provide them with computers and Internet access at home—critical tools in leveling the playing field for low-income students."[62]

Although rural communities and their students face challenges in gaining access to comparable telecommunications services at reasonable costs, these regions have a major impact on the overall Texas economy.[63] Traditionally rural economic activities such as agriculture, hunting, mining, and oil and gas produced over $233 billion of Texas's GDP in 2014.[64] And 14% of Texas' jobs are agriculture-related.[65] Rural areas also play a vital role in energy production in Texas, both in traditional energy sources and emerging renewable sources. Approximately 68% of Texas's oil and gas wells, and 73% of the State's wind farms are in rural counties.[66] Texas also has 117,000 rural manufacturing jobs, which represent 4.7% of all rural manufacturing jobs in the United States.[67] Furthermore, the per capita GDP of rural Texas is about twice that of the rural United States, accounting for a 50% larger share of total productivity.[68] In addition to these industries, rural tourism attracts nearly one quarter of the visitors to the State, and those tourists spend tens of billions of dollars in Texas annually.[69] Big Bend National Park alone reports up to 350,000 visitors annually.[70] Rural

> To ensure that rural communities remain viable involves assuring the provision of communications services comparable to those in urban areas, including voice and broadband products to support educational resources, sound governmental and safety services, health care, business opportunities, and a professional pool of talent.

[60] *Id.*
[61] See, e.g., Texas Education Agency, *Long-Range Plan for Technology, 2006-2020, A Report to the 80th Legislature from the Texas Education Agency* (2006), available at http://tea.texas.gov/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=2147494561&libID=2147494558.
[62] "Las Colonias in the 21st Century: Progress Along the Texas-Mexico Border," Jordana Barton, FEDERAL RESERVE BANK OF DALLAS, April 2015, available at https://www.dallasfed.org/assets/documents/cd/pubs/lascolonias.pdf.
[63] Jeremy G. Weber, Jason P. Brown, and John L. Pender, *Rural Wealth Creation and Emerging Energy Industries: Lease and Royalty Payments to Farm Households and Businesses, in* RURAL WEALTH CREATION 167, 169 (John L. Pender, Bruce A. Weber, Thomas G. Johnson, and J. Matthew Fannin eds., 2014) ("A recent econometric study of local economic impacts of wind power development estimated that wind power was associated with about $11,000 of additional annual personal income and 0.5 of additional jobs per megawatt of wind power capacity installed.").
[64] U.S. Bureau of Economic Analysis, available at *http://bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=2#reqid=70&step=10&isuri=1&7003=200&7035=-1&7004=naics&7005=-1&7006=48000&7036=-1&7001=1200&7002=1&7090=70&7007=2014&7093=levels*
[65] Texas Department of Agriculture, available at *https://texasagriculture.gov/About/TexasAgStats.aspx*.
[66] Energy Information Administration, Texas Railroad Commission.
[67] U.S. Department of Agriculture. http://www.usda.gov/documents/rural-manufacturing-jobs.pdf
[68] U.S. Census Bureau, Bureau of Economic Analysis. http://bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1
American Community Survey interactive tool: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.
[69] *National Park Service, Texas A&M*
[70] *Id.*

telecommunications also has a relationship to border security in Texas, especially considering that approximately half of the border between Texas and Mexico is served by a single rural provider.[71]

In short, Texas' vast rural areas represent economic opportunities that require telecommunications services and ultimately are important contributors to the overall health of the State's economy. Recent studies put the total direct economic impact of rural telecommunications in Texas at over $1.3 billion in 2015, with an indirect additional impact of over $1.2 billion.[72] The aggregate number of jobs created by rural telecommunications in 2015 was 6,388.[73] We simply cannot afford to neglect rural areas when considering communications policies.

It is clear that access to comparable telecommunications services is an issue that impacts opportunities for rural students living in communities that contribute significantly to the wealth of the State, as well as the economic health and well-being of the state as a whole. TUSF has the potential to shrink or close the urban/rural telecommunications divide, in turn giving rural students better access to online coursework and electronic study aids. Assuring that rural communities remain viable involves a statewide commitment to communications that are comparable in rural regions to those in urban areas, including voice and broadband products that support educational resources, sound governmental and safety services, health care, business opportunities, and a professional pool of talent.

Contribution Methodology

The federal Telecommunications Act requires that any state that establishes an explicit universal service support mechanism pursuant to Section 254(f) must fund such a program through contributions from every telecommunications provider that provides intrastate telecommunications service, and do so on an equitable and non-discriminatory basis.[74] The Texas Legislature implemented such a contribution methodology in the PURA.[75]

At the present, TUSF is collected at a rate of 3.3% applied to all telecommunications receipts of Texas' telecommunications providers. Because of the reductions in payments in the THCUSP, the rate is down from the 2012 TUSF surcharge of 4.3%. In fact, Texas's assessment rate has been generally trending down since it peaked at 5.65% in 2004.[76] The charge is calculated by multiplying the intrastate part of a customer's total bill by the set percentage rate (today 3.3%) after excluding 911 service fees. Like the federal program, Texas telecommunications companies typically pass through all TUSF costs to their customers.

Scope of support in Texas is narrower than current federal support

Texas limits the scope of available telecommunications services eligible to be reimbursed from universal service funds (i.e., "supported services"). The Texas services today include:

(a) Flat rate, single party residential and business local exchange telephone service, including primary directory listings;
(b) Tone dialing service;
(c) Access to operator services, directory assistance services and 911 service where provided by a local authority;

[71] http://bigbendgazette.com/2015/02/17/big-bend-telephone-honored-at-texas-capitol/.
[72] Kuttner, Hanns at 13.
[73] *Id.*
[74] 47 U.S.C. § 254(f).
[75] PURA § 56.022.
[76] Docket No. 21208, *Texas Universal Service Fund (TUSF) Administration*, Orders Changing TUSF Assessment (July 28, 2004; July 24, 2006; April 18, 2007; Aug.8, 2008; Nov. 10, 2011; July 9, 2013; Dec. 18, 2014).

(d) Dual party relay service;
(e) Ability to report service problems seven days a week;
(f) Availability of an annual local directory;
(g) Access to toll services; and
(h) Lifeline and tel-assistance services. [77]

The Texas support system has not yet been adjusted to accommodate the significant changes concerning broadband services adopted in the federal reforms in 2011 in the USF/ICC Transformation Order.

The list of supported services is nearly identical to the list of services that were *previously* eligible to receive federal support. The Texas support system, however, has not yet been reformed to accommodate the significant additions concerning broadband services adopted in the federal reforms in 2011 in the Transformation Order. The federal reforms present the rationale related to including broadband services in universal service.

> One of the [FCC's] central missions is to make "available … to all the people of the United States … a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges." [47 U.S.C. § 151]. For decades, the Commission and the states have administered a complex system of explicit and implicit subsidies to support voice connectivity to our most expensive to serve, most rural, and insular communities. Networks that provide only voice service, however, are no longer adequate for the country's communication needs.
>
> Fixed and mobile broadband have become crucial to our nation's economic growth, global competitiveness, and civic life. Businesses need broadband to attract customers and employees, job-seekers need broadband to find jobs and training, and children need broadband to get a world-class education. Broadband also helps lower the costs and improve the quality of health care, and enables people with disabilities and Americans of all income levels to participate more fully in society. Community anchor institutions, including schools and libraries, cannot achieve their critical purposes without access to robust broadband. Broadband-enabled jobs are critical to our nation's economic recovery and long-term economic health, particularly in small towns, rural and insular areas, and Tribal lands.
>
> . . . The universal service challenge of our time is to ensure that all Americans are served by networks that support high-speed Internet access—in addition to basic voice service—where they live, work, and travel. Consistent with that challenge, extending and accelerating fixed and mobile broadband deployment has been one of the Commission's top priorities over the past few years. . . . Today's Order focuses on costly-to-serve communities where even with our actions to lower barriers to investment nationwide, private sector economics still do not add up, and therefore the immediate prospect for stand-alone private sector action is limited. . . .
>
> Our existing universal service and intercarrier compensation systems are based on decades-old assumptions that fail to reflect today's networks, the evolving nature of communications services, or the current competitive landscape. As a result, these systems are ill equipped to address the universal service challenges raised by broadband, mobility, and the transition to Internet Protocol (IP) networks.[78]

[77] P.U.C. Subst. R. 26.403(d)(1).
[78] USF/ICC Transformation Order ¶¶2-6.

In summary, the FCC's Transformation Order argues that the former systems are "ill equipped to address the universal service challenges raised by broadband, mobility, and the transition to Internet Protocol (IP) networks." The U.S. Department of Agriculture also recently provided an economic analysis in support of a Department rule and in support of the federal initiatives to extend broadband into rural regions.[79] That study explained that support for broadband in high-cost regions is justified particularly because "broadband investment in rural areas yields significant economic and socioeconomic gains . . ."[80] Texas Legislators should determine whether the state's USF system adequately supports sufficient infrastructure investment to help ensure Texans are served by networks that support high-speed Internet access—in addition to basic voice service—where they live, work, and travel."

[79] US Department of Agriculture Executive Order 12866, effective February 6, 2013, available at http://www.gpo.gov/fdsys/pkg/FR-2013-02-06/pdf/2013-02390.pdf; "This rule [pertaining to the Rural Broadband Access Loan and Loan Guarantee Program (Broadband Loan Program] has been determined to be economically significant and was reviewed by the Office of Management and Budget under Executive Order 12866. In accordance with Executive Order 12866, an Economic Impact Analysis was completed, outlining the costs and benefits of implementing this program in rural America. . . . Because rural systems must contend with lower household density than urban systems, the cost to deploy fiber-to-the-home (FTTH) and digital subscriber line (DSL) systems in urban communities is considerably lower on a per household basis, making urban systems more economical to construct. Other associated rural issues, … also can add to the cost of deployment. Notwithstanding these challenges and obstacles, a recent analysis by USDA's Economic Research Service concluded that broadband investment in rural areas yields significant economic and socioeconomic gains . . ."

[80] *Id.*

III. Financial Data Demonstrating the Need for USF

This section of the White Paper is brief because policymakers generally recognize the *fact* that the provision of communication services in certain regions is high-cost (uneconomic), primarily because of low-density factors and challenging terrains. While the *existence* of high costs is generally accepted, there are relatively few studies related to *magnitude* of the costs. There have been three major studies that sought to quantify rural costs, with the oldest dating to the year 2000. This White Paper summarizes those data. Based on the authors' work in strategic financial projects in rural America, it appears that the data in all three studies are still "true" today as the high costs of providing telecommunications in low-density and rural areas have not been reduced materially. The reasons for ongoing high rural costs are that (i) labor costs have not declined, (ii) a costly shift is occurring as customers migrate from voice products to broadband, (iii) new and costly broadband equipment requires more frequent updates, and (iv) geographic densities have not improved to any significant extent.

Labor costs have not declined, a costly shift is occurring as customers migrate from voice products to broadband, new and costly broadband equipment requires more frequent updates, and geographic densities have not improved to any significant extent.

A second overarching point will also be made briefly. The financial principle related to universal service funding remains the same—there is a need in rural America for collaborative (USF and private) funding to assure stable and long-term investment, based on an appropriate return on investment. However, the risk associated with those rural investments has risen over the last twenty years, and notably over the last five years, which means that the appropriate returns on investment have almost certainly risen (although the federal and state support programs today do not reflect the higher costs of capital).[81]

This section addresses those topics in reverse order.

Financial principles affecting rural investment

Financial professionals, including executives of carriers, seek achievable economic returns that are based, in part, on universal service funding which is fundamental to rural investment. Those professionals focus on systems and businesses that rely on relatively simple, stable and long-term financial factors.

THE UNIVERSAL SERVICE PARTNERSHIP REQUIRES ASSURING A RETURN ON INVESTMENT

Universal service is fundamentally a partnership between telecommunications carriers and policymakers. Together, the partners assure the capital necessary to achieve investment and services in high-cost—otherwise uneconomic—regions. The Telecom Act spelled out in Section 254 the strategic policy goal, which is to provide rural areas with "comparable services" at "comparable rates" when compared with services and rates found in urban regions.[82] Notably, government is not providing the services alone but is effectively purchasing

[81] Independent Small LECs' Application for a Determination of Applicants' Cost of Capital for Ratemaking Purposes, Proceeding No. A. 15-09-005, California Public Utilities Commission, Testimony of Michael J. Balhoff, filed September 1, 2015 (California Cost of Capital).

[82] Telecom Act, Section 254(b)(3): "Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas."

a service that also relies on private investment and operations. The purchased service is provided by the private carrier which typically dedicates the majority of the capital and all of the operating expertise in a system which has been effective for decades.

The financial framework will not be belabored in this White Paper, but it is helpful to summarize the fundamentals in providing "utility" and universal services. No less an authority than the U.S. Supreme Court provides the principles.

The Supreme Court of the United States has confirmed the foundation for setting appropriate rates. The principle is that a carrier cannot be required to offer services if rates/revenues are too low. In *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) ("*Bluefield"*), the Supreme Court concluded that the rates/revenues must be set at a level that permits an appropriate return on investment:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the general part of the country on investments in other business undertakings which are attended by the corresponding risks and uncertainties. . . . The return should be reasonable, sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise money necessary for the proper discharge of its public duties.

Subsequently, in *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 391 (1944), which expanded on *Bluefield* and emphasized that a utility's revenues must also cover "capital costs," the Supreme Court found that:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. . . . By that standard *the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks*. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and attract capital. (Emphasis added.)

The fundamental financial point in the federal legislation, in the FCC's Orders, and in the Supreme Court's precedents is that the revenues that a public utility—carriers in high-cost regions—generates should be predictable and sufficient. If the POLR is required by federal or state law to maintain user rates at levels comparable to those in urban areas, then some mechanism must be employed to assure that the real costs are met. That mechanism has been and continues to be Universal Service support, including TUSF.

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INCREASING RISK ASSOCIATED WITH RURAL INVESTMENT

The authors provided testimony in 2015 and 2016 in a California proceeding regarding small-rural-carrier cost of capital. In addition to analyzing traditional sources using Ibbotson/Morningstar and Duff & Phelps, the authors studied recent transactional data—sales of rural telecommunications companies—to evaluate the arms-length financial indications of perceived risk related to rural telephony. The testimony notes that the average merger and acquisitions (M&A) purchase price in sales of rural telephone companies has declined to 4.5 to 5.5 times one dollar of operating cash flow in the period after 2007 compared with the price of about 8.0 times for one dollar of operating cash flow during the period 2000-2007.[83] What this means is that investors are affirming that perceived risk has *increased* to such an extent that, compared with the period from 2000 to 2007, those investors are requiring a significantly higher return on investment to offset the increased regulatory risk and financial uncertainties in the wake of the USF/ICC Transformation Order.[84]

Texas legislators should understand that regulatory uncertainty harms a rural telephone company's financial and operational outlook, raising the cost of lending, and impairing a carrier's ability to engage in strategic combinations. Transactions and combinations with other carriers become more difficult because of the challenge in modeling future performance and in determining underlying value. If there is to be sufficient funding, therefore, regulatory predictability and stability are essential.

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Is there a clear financial need for universal service?

Some commenters have questioned whether USF is necessary, particularly once a market is open to competition. To better ground the Texas policymakers' discussion about USF, this White Paper summarizes three major studies compiled to quantify the economic realities in rural and low-density regions. Two state studies are summarized, the first in 2007 related to Texas high-cost regions, performed by the authors of this White Paper. A second state study was performed in 2011 by the Communications Division of the California Public Utilities Commission. The final study was a national inquiry, performed in 2000 by the Rural Task Force which was created by Federal-State Joint Board on Universal Service. That national study in 2000 provided the foundational analysis that led to key FCC reforms of universal service and ICC in 2001.

TEXAS STUDY IN 2007

The Texas study was a 2007 financial and policy analysis, using confidential information from 350,000 access lines in Texas.[85] Because of the size of the study and fact that it was based on Texas-specific rural areas, the

[83] California Cost of Capital, see, esp., pp. 63-69.

[84] It could be argued that competitive and technology changes have affected risk, but those factor have not changed appreciably between the first period (2000-2008) and the second (post-2008). Regulatory risk appears to be the factor that has changed most significantly, which has also affected the lending environment.

[85] *See* Michael J. Balhoff, Robert C. Rowe, and Bradley P. Williams, *Universal Service Funding: Realities of Serving Telecom Customers in High-Cost Regions* (Balhoff & Rowe, LLC: Columbia, MD, 2007), available at http://balhoffwilliams.com/pdf/USF%20Funding%20Realities%20of%20Serving%20Telecom%20Customers%20in%20High%20Cost%20Regions%207-9-07.pdf. The data used in this study rely on forward-looking cost models similar to the HAI model that is mandated in Texas for the calculation of Universal Service payments. Texas

authors have confidence that the data are instructive.[86]

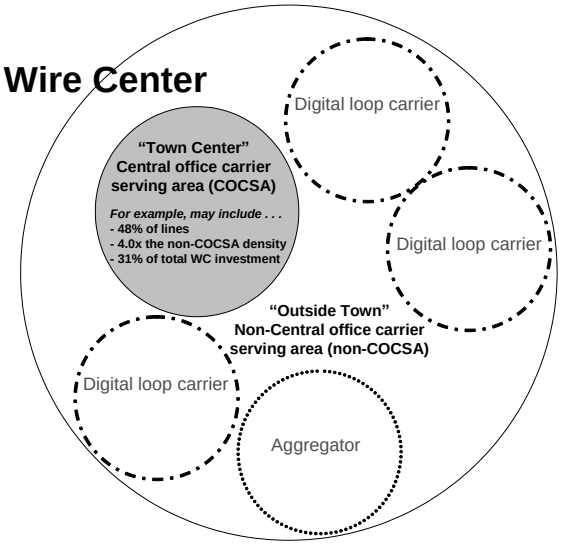
The 2007 study provided financial quantification for what the PUCT and the legislature already understand. The costs (investment and operating) of providing telecommunications services in population clusters, designated here as "Town Centers," are substantially lower than the costs Outside of Towns where lines per square mile are very few.[87] Figure 5 is a simplified illustration of a wire center with a Town Center served by the central office switch and an Outside of Town area that is served with digital loop carriers or other remote, non-switch devices. The graphic summarizes a few high-level statistics from that earlier study. The gray portion of the wire center is the "Town Center" where about 48% of the sampled wire centers' lines are concentrated, where the line density is about four times the density found in the "Outside of Town" region, and where the modeled loop investment is only about 31% of the total wire-center loop investment (significantly less expensive).

mandated the use of the HAI forward-looking (economic) cost model for the largest carriers in the State to compute USF payments. The modeled cost and investment data used in this report are also forward-looking, with some of the inputs updated by the companies to reflect underlying and verifiable current costs. Notably, the modeling is consistent across the entire data set. The model provides investment data that often do not match the embedded costs—due to the fact that the actually-incurred costs may have been incurred in an era when costs were higher or lower. Reconciling forward-looking to embedded costs will be affected by other factors as well, including the timing of the investment and how much the assets have depreciated. The model also proposes operating costs, which are particularly helpful in this study since it is difficult and contentious to allocate overhead and other supra-wire-center operations to an individual switching center. While the model is not perfect, no other solution would match as well with Texas's HAI model. To the extent possible, every effort has been made to be fair and precise in preparation of the original data and in summarizing the results. Still, it should be noted that the specific data points will be different from one company to another and from one region to another. It is the conviction of the authors, however, that the data tell a valuable directional story for policymakers and clearly point to the underlying systemic problems and challenges.

[86] Those 2007 study was based on large numbers of wire-center operations that were serving a total of more than 350,000 lines in Texas. The revenues in the study were actual "supported services" revenues, but the operating costs were forward-looking-modeled per-line calculations of the costs to provide the "supported services." The reason for using modeled costs was that sub-wire center costs are not tracked or certain allocations were necessary. The modeled costs represented a disciplined approach that was widely accepted as producing fair estimations. Further, the model has been tested with real operations and, according to expert sources, approximates the underlying operating costs for the carrier(s) in question

[87] The more technical definition of "Town Center" is the central office carrier serving area, or COCSA, where lines with lengths of 12,000 feet or less are served directly by the carrier's central office switches. The "Outside of Town" area is the non-COCSA service region, or the remaining wire center lines with lengths greater than 12,000 feet served by digital loop carriers or some other aggregator. The terms "Town Center" and "Outside of Town" are simply used here to make the description more readable.

FIGURE 5: ILLUSTRATION OF "TOWN CENTER" AREA AND "OUTSIDE OF TOWN" AREAS[88]



Source: Balhoff & Rowe, LLC.

The operating data related to those Texas wire centers were examined to exclude receipts of universal service funding and determine whether and how much is the shortfall if *no USF were received.* All of the sampled wire centers were divided into exchanges in which the income statement and investments reflected (1) a negative return on investment, or (2) a 0%-10% return on investment, or (3) a 10%+ return on investment, which was assumed to be an approximately acceptable return.[89]

The data are analyzed and summarized in Table 6, which highlights that the wire centers generating returns above 10% are serving approximately 42% of the total 350,000 lines analyzed in this study. Further, those wire centers require only about 25% of the total "company" investment. At the other extreme is the negative return category where about 38% of the lines served in the sampled wire centers are generating an average of -9.7% return on investment in the absence of USF support. The wire centers with negative returns represent 77% of the total wire centers in the study and require 60% of total investment. The message from these wire center-level data is clear. Investment in 90% of the Texas wire centers (and service to 58% of customer lines), based on "supported services," is not financially justifiable *without USF support*, as the returns apparently do not cover the cost of capital in the absence of USF or other support. Because plant must be maintained, replaced, upgraded, and expanded, the analysis suggests

Investment in 90% of the Texas wire centers (and service to 58% of customer lines), based on "supported services," is not financially justifiable *without USF support*, as the returns apparently do not cover the cost of capital in the absence of USF or other services.

[88] "Digital Loop Carrier" (DLC) a technology that increases the number of channels in the local loop by converting analog signals to digital and multiplexing them back to the end office. It is a basic element in the configuration of telephony "outside plant."

[89] For purposes of the analyses in Part I, return on investment is calculated based on net modeled investment, that is, gross modeled investment required to provide R1/B1 "supported services" (loop, transport, and switching) reduced by an estimation of accumulated depreciation. It is believed that utilizing the net investment figure as the denominator in calculating the ROIs more closely approximates the return formulas employed by the PUC.

that investment in wireline plant that is reasonably similar in quality to today's infrastructure is very costly, and is unlikely to occur without USF.

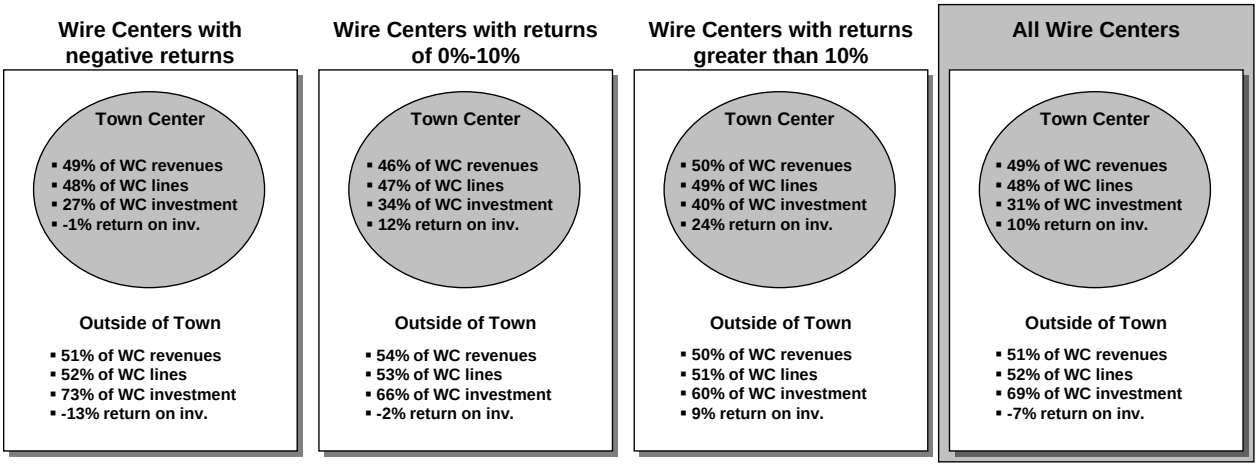
TABLE 6: WIRE CENTER RETURNS ON INVESTMENT FOR SUPPORTED ILEC SERVICES, *EXCLUDING USF RECEIPTS*

Wire Centers with negative returns	Wire Centers with returns of 0%-10%	Wire Centers with returns greater than 10%	All Wire Centers
38% of total lines	20% of total lines	42% of total lines	100.0% of total lines
77% of total wire centers	13% of toal wire centers	10% of total wire centers	100.0% of total wire centers
60% of total investment	15% of total investment	25% of total investment	100.0% of total investment
-9.7% return on investment	2.9% return on investment	15.1% return on investment	-1.5% return on investment

Source: Sampled Texas rural company data, and Balhoff & Rowe, LLC.

Because the data relied on modeled results, it was also possible to study wire-center data segregated into in-Town and Outside Town, again in the absence of USF support. The results of the more granular study are reflected in Figure 6. In this case, within the group of wire centers generating negative returns on investment (ROI), 49% of that wire-center group's revenues are generated in the denser region close to the switch (Town Center), where those lines are supported by only 27% of the total investment in those wire centers. The poorest-performing sectors are predictably the Outside of Town regions. In the negative return group, returns fall from negative 1% in the Town Center to negative 13% Outside of Town. A similar disparity in returns is evident across all wire center return groups and for all of the wire centers viewed as a single group.

FIGURE 6: SUB-WIRE CENTER ROI FOR SUPPORTED ILEC SERVICES, *EXCLUDING USF RECEIPTS*



Source: Sampled Texas rural company data, and Balhoff & Rowe, LLC.

To more clearly illustrate the impact on customers, Table 7 shows the calculation for what percentage of lines (customers) would continue to be served by an economically rational competitive carrier in the absence of USF receipts. In this analysis, the implications for rural consumers would be dramatic. Under a "bright line" test, where the carrier refused to invest in operations expected to generate returns below its 10% assumed cost of capital, only 30% of customers would continue to be served, leaving 70% unserved. Again, it is possible that a carrier would choose to continue to serve the Outside of Town region of the greater than 10% return group, adding another 21% of

> Without USF, at most 51% of the total lines studied would be served by a rational service provider, leaving almost half of the existing rural customers without service.

total lines to its new service territory. However, without USF, *at most* 51% of the total lines studied would be served by a rational service provider, leaving almost half of the existing rural customers without service.[90]

TABLE 7: LINES A RATIONAL CARRIER WOULD CHOOSE TO SERVE, *EXCLUDING USF RECEIPTS*

	Excluding USF Support			
Sub-WC Groupings:	**% of Total Lines**	**ROI**	**Served (ROI > 10%)**	**Unserved (ROI < 10%)**
Wire Centers with combined negative returns				
Town Center - sub-wire center segments	18%	-1%		18%
Outside of Town - sub-wire center segments	20%	-13%		20%
Wire Centers with combined returns of 0%-10%				
Town Center - sub-wire center segments	9%	12%	9%	
Outside of Town - sub-wire center segments	11%	-2%		11%
Wire Centers with combined returns greater than 10%				
Town Center - sub-wire center segments	21%	24%	21%	
Outside of Town - sub-wire center segments	21%	9%		21%
Total	**100%**		**30%**	**70%**

Source: Sampled Texas rural company data, and Balhoff & Rowe, LLC.

The 2007 report goes into greater detail, but the message is clear. Universal service monies are necessary, in this sampling, for the vast majority of the switching centers and for approximately half the lines. Without USF, half of the customers would not have access to even basic "supported services." While some critics of the current USF program point to the alternatives of wireless service or cable television plant, those networks are not ubiquitously carrier-class, are not pervasively reliable in the high-cost regions, and fail to provide cost-effective, high-volume broadband services.

While some critics of the current USF program point to the alternatives of wireless service or cable television plant, those networks are not ubiquitously carrier-class, are not pervasively reliable in the high-cost regions, and fail to provide cost-effective, high-volume broadband services.

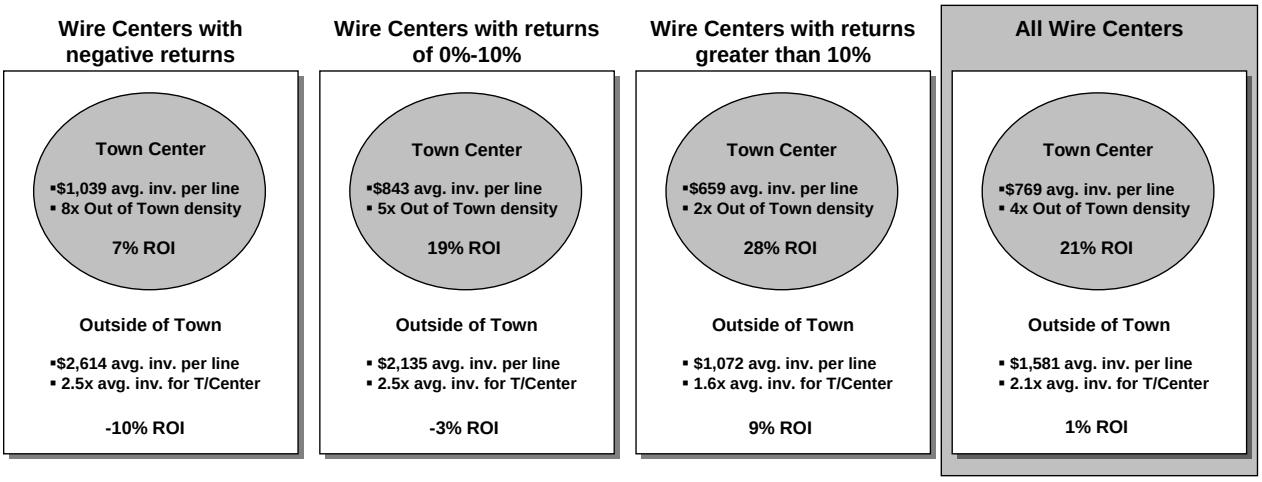
The authors conclude this summary of the 2007 report with comments on the relative capital investment costs and density statistics. Those data are illustrated in Figure 7. The graphic depicts the ROI-based sub-wire center groupings including USF receipts, and illustrates average per line investment (on a net basis). There are interesting insights in the illustration such as the relative line density in Town Centers versus Out of Town regions, and the disproportionately high investment required Outside of

[90] The table depicts wire center data segregated into the three ROI categories described above (negative returns, 0%-10% returns, and greater 10% returns), then subdivides those wire center groupings into Town Center and Outside of Town areas (as depicted in Figure 6). Thus, of the wire centers with negative returns, the Town Center ROI is -1% and the Outside of Town ROI is -13%; in the same way, of the wire centers generating 0%-10% returns, the Town Center region is generating ROIs at 12%, but the average is affected by the Outside of Town regions which are generating an average -2%. The first column indicates the percentage of total lines represented in each sub-wire center segment. The final two columns simply calculate whether or not the lines in the specific sub-wire center segments would be served by an economically rational service provider with a 10% cost of capital – if the sub-wire center segment returns are greater than 10%, the lines would be "Served" and if the sub-wire center segment returns are less than 10%, the lines would be "Unserved." For example, in the wire center group with combined returns greater than 10%, the Town Center sub-wire center segment generates a 24% ROI, so the 21% of total lines composing this segment would be served by an economically rational carrier. Conversely, the Outside of Town sub-wire center segment in the same wire center group generates only a 9% ROI, so the 21% of total lines composing this segment arguably would be unserved by an economically rational carrier with a 10% cost of capital.

Town versus inside the Town Centers. Notably, outside the Town Center, the investment costs range from about 1.6x-2.5x higher than the level required to provide service close to the switch where population density is higher. In each wire center grouping, the economic calculus is clear—Town Center population density (lines per square mile) is on average 4x (and at least 2x) the density found Outside of Town. Correspondingly, average investment per line in the towns is a fraction of the per-line investment required in the Outside of Town areas. The result is predictable. ROIs steadily increase as required per-line investment declines across the various return groupings and sub-wire center regions. While some of the returns appear high, the reality is that the consolidated ROI for the studied rural wire centers is only 7%, including current USF receipts; and this return is below the assumed cost of capital hurdle. Thus, the consolidated figures for "All Wire Centers" illustrate the intuitive, yet revealing, story. Town Center line density results in per-line investment that is 51% lower and returns that are twenty percentage points higher than those found Outside Town.

Without belaboring the findings, it should be noted that this study did not include any analysis of what would happen if access rates were to be reduced, as has happened in the FCC's USF/ICC Transformation Order of 2011. The point is that support levels are in the process of being reduced even more sharply than was studied eight years ago, making USF support even more important today.

FIGURE 7: INVESTMENT COSTS AND DENSITY BY WIRE CENTER RETURNS, *INCLUDING USF RECEIPTS*



Source: Sampled Texas rural company data, and Balhoff & Rowe, LLC.

CALIFORNIA COMMISSION'S STUDY OF COSTS FOR SMALL, RURAL CARRIERS

The second state study was performed in California and published in 2011. The Communications Division of the California Public Utility Commission (CPUC) issued the results of its analysis regarding costs in rural and high-cost areas.[91] The study was, in part, to provide data by which to evaluate the funding levels for the state's support of universal services.

[91] Communications Division of the California Public Utilities Commission, *Comparative Analysis of Small ILEC CHCF-A Carriers to Non-CHCF-A Carriers 2011*, December 2011, available at https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwj4iZ2l0aHJAhXC5yYKHdWfDM0QFggdMAA&url=http%3A%2F%2Fwww.cpuc.ca.gov%2FNR%2Frdonlyres%2F48FA1720-99CA-4124-A118-

There are ten ILECs that are receiving California High Cost Funding from the small company fund that is designated as the A-Fund (CHCF-A).[92] On a combined basis the companies, as of 2010, were reported to serve slightly more than 60,000 access lines. The CPUC findings were revealing and consistent with those from the Texas study outlined above.

The California study provides funding data and per-line data that are expanded here to assess the number of lines and the growth statistics.[93] While the number of California rural lines is contracting only slightly each year (at a compound annual growth rate of 1.4%), the CHCF-A total funding is increasing at an 8.3% CAGR and the per-line funding is rising at a 9.9% CAGR. The authors of this White Paper assume that greater levels of investment have been required as customers demand higher levels of broadband services, which, since 2008, are supported by the California fund.

TABLE 8: CPUC STUDY OF 2005-2010 HIGH-COST FUNDING FOR TEN SMALL AND RURAL CARRIERS

	CHCF-A Funding	Growth in funding	Total lines	Line growth	Funding per line	Growth in per line funding
2005	$ 25,446,077		$ 64,748		$ 393	
2006	$ 28,096,729	10.4%	$ 64,739	0.0%	$ 434	10.4%
2007	$ 31,393,619	11.7%	$ 66,512	2.7%	$ 472	8.8%
2008	$ 29,992,396	-4.5%	$ 64,639	-2.8%	$ 464	-1.7%
2009	$ 36,784,801	22.6%	$ 62,347	-3.5%	$ 590	27.2%
2010	$ 37,977,459	3.2%	$ 60,378	-3.2%	$ 629	6.6%

Source: Communications Division of California Public Utilities Commission; Balhoff & Williams, LLC

The California study justified small-carrier revenues and net income that are higher than those of larger carriers, based on the CPUC's previous findings that small-carrier costs are sharply increased in rural regions. The relative statistics that reflect the higher costs are included on the summary page in the CPUC's final report (emphasis added below).

> Revenue per Access Line is 164% greater for CHCF-A carriers than for Non-CHCF-A carriers on average, and 301% greater in 2010. Even after CHCF-A fund support is excluded, CHCF-A carriers still earned 100% more revenues per Access Line than their Non-CHCF-A counterparts on average, 189% more in 2010.
>
> Operating Expense per Access Line is 186% greater for CHCF-A [small] carriers than for Non-CHCF-A carriers on average, and 252% greater in 2010. Net Average Total Plant in Service [investment] per Access Line is 207% greater for CHCF-A carriers than for Non-CHCF-A carriers on average, and 431% greater in 2010.
>
> Net Income per Access Line is 106% greater for CHCF-A carriers than for Non-CHCF-A carriers on average, and 43% higher in 2010. Focusing on operating income, in 2010 CHCF-A carriers earned 773% more than

E8D5BA55D812%2F0%2FComparativeAnalysisofSmallLECCHCFACarrierstoNonCHCFACarriers2011.pdf&usg=AFQjCNGsJscJOsRdc4CZdKEqdLjms8NfGg&bvm=bv.108194040,d.eWE (CPUC 2011 Study).

[92] The companies are Calaveras Telephone Company, California-Oregon Thone Co., Ducor Telephone Company, Foresthill Telephone Co., Kerman Telephone Company, Pinnacles Telephone Co., The Ponderosa Telephone Co., Sierra Telephone Company, Inc., The Siskiyou Telephone Company, and Volcano Telephone Company.

[93] CPUC 2011 Study, slides 4-5.

Non-CHCF-A carriers. *When CHCF-A support is excluded from net income, CHCF-A companies' net income becomes negative.*

Operating Expense per Access Line is 186% greater for CHCF-A carriers than for Non-CHCF-A carriers on average, and 252% greater in 2010.

CHCF-A carriers' expenses per Access Line versus Non-CHCF-A carriers in 2010:

- 236% more on Plant Specific expenses
- 52% more on Customer Operating expenses
- 294% more on Other Operating expenses

Net Average Total Plant in Service [investment] per Access Line is 207% greater for CHCF-A carriers than for Non-CHCF-A carriers on average, and 431% greater in 2010.

CHCF-A carriers' Plant per Access Line versus Non-CHCF-A carriers in 2010:

- 333% more Land and Support
- 177% more Cable and Wire
- 10% more Central Office Switching
- 92% more Transmission[94]

The remaining parts of the report highlight the extraordinarily high costs in rural regions, focusing on additional data related to high ongoing operating costs. The study explains that CHCF-A "carriers are currently spending 10% to 333% more on operating expense components and 431% more [in] total than Non-CHCF-A carriers."[95]

RURAL TASK FORCE STUDY

To aid in the process of the federal reforms pursuant to the 1996 Telecom Act, in September 1997, the FCC's Federal-State Joint Board on Universal Service (Joint Board) appointed a Rural Task Force (RTF) that included representatives from regulatory commissions, government agencies, consumer advocacy groups, cost consultants, competitive carriers, a long-distance company (AT&T) and small rural carriers.[96] The RTF assessed the challenges of providing telecommunications services in rural regions and published its consensus findings in several reports, including its "White Paper 2" in January 2000.

[94] CPUC 2011 Study, slide 3.
[95] CPUC 2011 Study, slide 11.
[96] The Rural Task Force was created by the Joint Board on Universal Service to study potential reforms; its appointed membership included a wide range of industry interests and experts: Chairman William R. Gillis, Commissioner, Washington Utilities and Transportation Commission; Robert Schoonmaker, Vice President, GVNW Consulting, Inc.; Thomas Beard, President, National Phone Company; Carol Ann Bischoff, Executive Vice President and General Counsel, Competitive Telecommunications Association; Jack Brown, Management Consultant Golden West Telecommunications Cooperative, Inc.; David R. Conn, Vice President Law and Regulatory Affairs, McLeod USA, Inc.; Gene DeJordy, Executive Director: Regulatory Affairs, Western Wireless Corp.; Billy Jack Gregg, Director, West Virginia Consumer Advocate Division; Joel Lubin, Regulatory VP-Law and Public Policy, AT&T; Joan Mandeville, Assistant Manager, Blackfoot Telephone Company; Christopher McLean, Deputy Administrator, Rural Utilities Service, USDA; Gwen Moore, President, GEM Communications; Jack Rhyner, President and CEO, Telalaska; Jack Rose; David Sharp, President and CEO, Virgin Islands Telephone Corp.; Stephen G. Ward, Public Advocate, State of Maine Public Advocate Office. The RTF relied upon the professional support services of the National Exchange Carrier Association; The National Telecommunications and

To the best of the authors' knowledge, the RTF's White Paper 2 in the year 2000 remains the only national study of rural telephony costs, and the RTF findings remain strikingly similar to the data compiled in the two cited state studies that were prepared seven and eleven years later. The authors of this Texas White Paper believe that the financial factors affecting rural operating costs and investment have not changed appreciably since the publication of the RTF report.

The RTF's White Paper 2 in the year 2000 remains the only national study of rural telephony costs, and the RTF findings remain strikingly similar to the data compiled in the two state studies summarized above.

The RTF White Paper 2 highlighted the low-density, high-cost nature of 38% of the United States land area where there were approximately 13 households per square mile compared with 105 households per square mile in urban areas.[97] The RTF found significant cost factors that explain the differences between providing wired telecommunications services in urban and rural areas. In that study, the RTF found . . .

- On average, plant specific expenses per loop were $180 for rural carriers compared to $97 per loop for non-rural carriers;
- Average rural carrier plant-specific expenses increase consistently as the number of lines served decreases, from approximately $110 per loop for carriers with more than 20,000 lines to $445 per loop for carriers with study areas having fewer than 500 lines;
- *Average* total plant investment per line ranges from $3,000 for rural carriers with the largest study areas to over $10,000 for rural carriers with the smallest study areas, and the investment costs per line for rural carriers can be as high as $40,500 line compared with non-rural carriers where the *range* of investment costs is $1,400 to $4,350;
- The range of total plant specific expenses per loop for rural carriers (up to $1,585) is substantially greater than for non-rural carriers ($38 to $163).[98]

Reconciling the state and RTF studies

The two state studies and the RTF study provide relatively confirmatory data. The high-level data are summarized below in Table 9. The RTF and California studies indicate that *average* investment per line is about three times greater in rural America compared with investment in urban areas, whether studied in 2000 or in 2011. The Texas study provides information about rural Outside of Town Center data, indicating that the investment is, on average, approximately twice the level of

The RTF and California studies indicate that *average* investment per line is about three times greater in rural America compared with investment in urban areas, whether studied in 2000 or in 2011. The operating costs for the RTF and California studies indicate that the difference in more rural regions is about twice the operating costs in urban areas.

Information Administration--U.S. Department of Commerce; The Rural Utility Service--U.S. Department of Agriculture and The Rural Policy Research Institute and the University of Missouri Office of Social and Economic Data Analysis.

[97] Rural Task Force, White Paper 2, January 2000, pp. 7-14 (RTF White Paper); available at http://www.wutc.wa.gov/rtf/old/RTFPub_Backup20051020.nsf/e1b9e65978d9348b882567d2008318d3/4951d0c8d59b2d4d8825687000826423/$FILE/Rtfwp2.pdf

[98] RTF White Paper, pp. 12-13.

investment inside the Town Center. However, these Texas data may understate the relative investment statistics, when compared with urban areas, as the towns in the Texas study were all rural and presumably somewhat more expensive to serve compared with denser truly urban areas. The operating costs for the RTF and California studies indicate that the cost to provide service in more rural regions is about twice the operating costs in urban areas. Finally, the statistics about household density for the national study indicate that rural areas are about one-tenth the density of urban areas. The Texas study compares density for rural Outside of Town areas with the density inside of rural towns, finding the Outside of Town areas to have only 25% of the density found in rural towns. Again, the Texas study, in comparing relative densities within rural areas, likely understates the density differences that are found when comparing these rural areas (outside and inside rural towns) with truly urban areas.

TABLE 9: TEXAS AND CALIFORNIA STATE STUDIES AND RTF STUDY—INVESTMENT/OPERATING COSTS/DENSITY

	2000 RTF Study	2007 Texas Study*	2011 California Study
Rural investment v. urban (per line)	333% ($10k v. $3k)	205%	333%
Rural operating costs v. urban (per line)	186% ($190 v. $80)	NA	207%
Rural household density v. urban	12% (13 v. 105)	25%	NA

*Comparisons based on Town Center with Outside Town.

Source: RTF White Paper 2; Balhoff & Williams, LLC; California Public Utilities Commission.

Economic Studies of Rural and Urban Interdependence

Two entities have provided economic studies concerning telecommunications in rural areas and the interdependence of rural and urban areas. The first is a study, entitled "Beyond Rural Walls: Identifying Impacts and Interdependencies among Rural and Urban Spaces," published in October 2015 by Joshua Seidemann.[99] The second includes articles published by the Federal Reserve Bank (FRBKC) of Kansas City in its Economic Review.

SEIDEMANN STUDY

Mr. Seidemann argues that there are interdependencies in rural and urban areas that impact economic and social factors

The Seidemann study argues that there is evidence of a positive impact arising from broadband investment, such that "every one percentage point in broadband penetration in a state [results in] employment . . . projected to increase 0.2% to 0.3% per year."[100] He cites various reports, including one from the United States Department of Agriculture that points to positive growth arising from wider broadband deployment.[101]

[99] Joshua Seidemann, "Beyond Rural Walls: Identifying Impacts and Interdependencies Among Rural and Urban Spaces," NTCA, October 2015, (Seidemann) available at www.ntca.org/images/stories/Documents/src%20beyond%20the%20rural%20walls%20white%20paper.pdf.

[100] *See* Sternberg, Peter, Moreheart, Mitchell, Vogel, Stephen, Cromartie, John, Breneman, Vince, and Brown, Dennis. "Broadband Internet's Value for Rural America," United States Department of Agriculture, Economic Research Institute, Economic Research Report No. 78, at 21 (Aug. 2009). See, also, Whitacre, Brian, Gallardo, Roberto, Strover, Sharon, "Broadband's Contribution to Economic Health in Rural Areas: A Causal Analysis and an Assessment of the Connected Nation Program," selected paper prepared for presentation at the Telecommunications Policy Research Conference, Arlington, VA, Sep. 27- 29, 2013, at 11 (http://agecon.okstate.edu/faculty/publications/4578.pdf) (last viewed Oct. 7, 2015, 18:41) (2013). Seidemann, p. 7.

[101] Seidemann, pp. 7-8, 18-20.

Mr. Seidemann argues that there are interdependencies in rural and urban areas that impact economic and social factors. Citing an Aspen Institute report, Mr. Seidemann contends that rural and urban regions depend largely on each other.[102] His argument is further supported by a 2008 study in Ohio which reports that urban areas rely on rural areas for some of the labor force as well as for food products, natural resources, environmental quality, tourism, etc.[103]

Finally, Mr. Seidemann references four studies about the potential loss of tax receipts if rural areas fail economically. The first is a North Dakota study that focused specifically on rural telecommunications companies, finding that those companies contributed more than $18 million in federal tax revenues and $31 million in North Dakota state tax revenues.[104] The study estimates that there were 1,100 direct jobs and 800 secondary jobs generated by rural broadband/telecommunications local exchange carriers. A second study was conducted by Colorado State University, which found that in 2010 rural wireline carriers generated about $64 million in "output" in the state with benefits of 165 direct jobs and 263 indirect jobs.[105] The study estimated that the job-related value to the state was $21 million. The final two studies were conducted by Wichita State[106] and New Mexico State University[107] which highlighted the likelihood for loss of indirect jobs, personal income and tax revenues if there is a failure in rural telecommunications companies.

FEDERAL RESERVE BANK OF KANSAS CITY ECONOMIC STUDIES

The second grouping of studies appeared as articles published by the Federal Reserve Bank of Kansas City in the FRBKC's 2001 and 2002 Economic Review. In one of the Federal Reserve articles, the authors contend that "[t]elecommunication technology mitigates much of the economic liability of low density and distance from markets. Many of the synergistic effects of density and 'face-to-face' contact can be replicated through virtual networking, teleconferencing, and other electronic means."[108] As noted earlier, the FRBKC was also concerned about the potential for serious economic losses in rural areas, with the creation of a rural ghetto, precipitated by the loss of critical infrastructure to support a rural middle class.

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[102] Seidemann, p. 11; Kubisch, Anne C., Topolsky, Janet, Gray, Jason, Pennekamp, Peter, Guitierrez, Mario. "Our Shared Fate – Bridging the Rural-Urban Divide Creates New Opportunities for Prosperity and Equity," Aspen Institute (Washington) (2008) at 7.

[103] Seidemann, pp. 11-12; Partridge, Mark D., Clark, Jill. "Our Joint Future: Rural-Urban Interdependence in 21st Century Ohio," prepared for Brookings Institution, at 5 (2008); http://www.greaterohio.org/files/policyresearch/partridge-report.pdf.

[104] McKee, Gregory. "The Effect of Changes in Universal Service Funding on the Economic Contribution of Rural Local Exchange Carriers to the North Dakota State Economy," Department of Agribusiness and Applied Economics, Agricultural Experiment Station, North Dakota State University, at 6 (Dec. 2011).

[105] Shields, Martin, Cutler, Harvey, and Marturana, Michael. "The Impacts of Colorado Telecommunications Association Members on the Colorado Economy," Regional Economics Institute, Colorado State University, at 9 (Oct. 26, 2011).

[106] "Kansas Rural Local Exchange Carriers: Assessing the Impact of the National Broadband Plan," W. Frank Barton School of Business, Center for Economic Development and Business Research, Wichita State University, at 11, 12 (2011).

[107] Peach, James, Popp, Anthony V., and Delgado, Leo. "The Potential Economic Impact of the National Broadband Plan on the New Mexico Exchange Carriers Group," Office of Policy Analysis, Arrowhead Center, New Mexico State University, at 18 (Las Cruces, NM 2011).

[108] Mark Drabenstott and Katharine H. Sheaff, "The New Power of Regions: A Policy Focus for Rural America—A Conference Summary," Economic Review, Second Quarter 2002, Federal Reserve Bank of Kansas City, pp. 2-3.

IV. Analyzing Other State Universal Service Programs

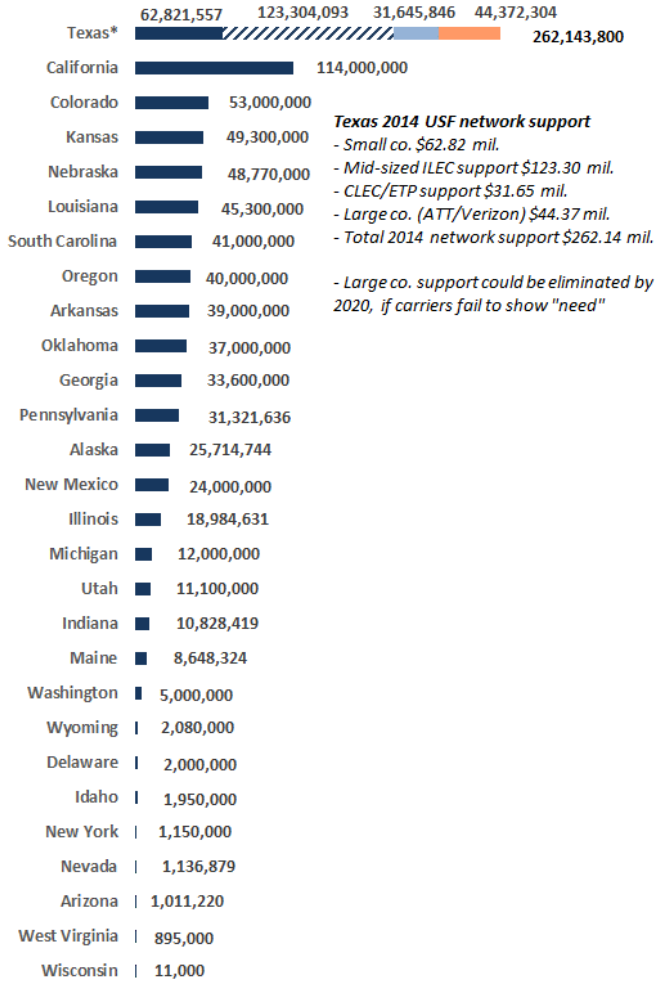
Data related to state universal service funds are compiled annually by the National Regulatory Research Institute. Since 1976, NRRI has served as the research arm to NARUC and its members, the utility regulatory commissions of the fifty states and the District of Columbia. NRRI's mission is focused on creating relevant and applicable research related to utilities.

NRRI's most recent report on state universal service funds was released in June 2015, and provides data for 2014. The report relies on self-reporting by the various commissions regarding state universal service funding, which includes support for various programs such as access restructuring funds (Intrastate Access Support or IAS), Lifeline funds, Telecommunications Relay Service (TRS), accessible telecommunications equipment (TEP) funds (to provide specialized customer premises equipment to the hearing and visually impaired), as well as other funds established by state law.

There are twenty-three states with high-cost funds, three states with intrastate access replacement funds but no so-called "high-cost fund" and seven states that have both.[109] Thus, twenty-six states have both access replacement and high-cost funds. Delaware and West Virginia report having small broadband funds but no IAS or high-cost funds. Figure 8 includes the total network-related support from high-cost, IAS and broadband funds in each of the states that provide those support mechanisms.

While Texas' high-cost funding is the largest absolute network-related amount in

FIGURE 8: HIGH-COST FUNDING IN THE STATES



Source: National Regulatory Research Institute, 2015 (data from 2014).
*Texas network data (SRILEC, IntraLATA, PURA, FUSF, HC, Uncertificated,) from Solix quarterly reports for FY 2014.

[109] States with high-cost funds are Maine, Vermont, New York, Wisconsin, Illinois, Indiana, South Carolina, Georgia, Arkansas, Louisiana, Texas, Oklahoma, Kansas, Nebraska, South Dakota, Wyoming, Colorado, Arizona, California, Nevada, Idaho, Oregon, and Washington; Alaska, New Mexico and Michigan have access replacement

2014, the effect of recent legislation—Texas Senate Bill 980 and Senate Bill 583—will be to sharply reduce the total Texas support going forward. To aid the reader, the authors have disaggregated in the figure the Texas funding that is more likely to continue (SRILEC) and the funding that may be eliminated or reduced in the next several years. For perspective, in 2014, total SRILEC fund support (small and mid-sized carriers) was approximately $97.8 million. The total small carrier (ILECs with less than 31,000 lines) network funding in 2014 was about $62.8 million. In light of the fact that the larger carriers will be required to undergo needs tests going forward, it can be assumed that the network-related total of $262.1 million out of total funding of $296.6 million is likely to be lower in future years and may be less than the funds disbursed in California which is obviously a geographically smaller and more populous state than Texas.[110]

In New Jersey, Maryland, Delaware, Rhode Island, Massachusetts, Connecticut, West Virginia, and Hawaii, and in the District of Columbia, more than 97% of the lines are covered by one dominant incumbent, which makes it illogical to create an intrastate system that allocates support.

With respect to the states that do not have network-related universal service funding (IAS or high-cost) to support investment in high-cost regions, eight of the states are relatively more densely-populated and have few incumbent local exchange carriers, as explained earlier. If we exclude those eight states, 62% of the U.S. states provide high-cost funding (defined as high-cost funds or access replacement). Six states have dedicated broadband funding: California, Colorado, Delaware, Maine, Nebraska and West Virginia. Only six states have no funding of any kind (no high-cost funding, Lifeline/Linkup, Schools and Libraries, Telecom Access Equipment, Relay, Telemedicine, E911, etc.). The states with no funding of any kind today are: Alabama, Florida, Massachusetts, New Jersey, Tennessee, and Virginia.

Assessing Key Elements of Universal Service in Other State Programs

To help in the analysis of TUSF, this paper summarizes perspectives on the seven other largest state funds, ordered by network-related Universal Service fund size: California, Colorado, Kansas, Nebraska, Louisiana, South Carolina and Oregon.

The programs are explained in terms of the dedicated purpose of the funding (for voice-based high-cost funding, IAS and/or broadband), the contributions approach, and the distribution methods. Again, because this White Paper is focused on network-related investment programs, the data and commentary do not address other more individualized universal service programs (e.g., Lifeline/Linkup, Telephone Relay Service, etc.).

This section begins with an overview of the eight largest programs, including Texas, with a focus on support for the networks of small carriers. Several key factors are probed, which include the focus of the support mechanisms.

A high-level summary is that Texas' support mechanisms are generally consistent with those of other states, but are different as Texas . . .

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but no other high-cost fund; and Colorado, Illinois, Kansas, Georgia, Maine, Washington, and South Carolina have both. Delaware has a broadband fund, but no other high-cost funding.

[110] California's population in 2015 was estimated to be 38.8 million, making it the most populous in the U.S., compared with Texas which is second with an estimated population of 27.0 million; Texas is also over 100,00 square miles larger than California. The Texas FY figures do not match the NRRI figures for 2014, which we assume can be explained by the fact that Texas' fiscal year closed at the end of August 2014.

- Provides support for the largest number of small carriers,
- Employs a relatively low assessment rate (compared with California, Kansas, Nebraska, and Oregon),
- Has a regular reporting requirement but not a defined regular audit of small carriers, and
- Does not currently support broadband services.

One final point is that the reports drawn from the various state programs also regularly cite concerns about contraction in the funding base.

TABLE 10: OVERVIEW OF EIGHT LARGEST STATE USF PROGRAMS

	Total fund size 2014	Number of small carriers	Network-related small-carrier funding	Regular review / audit	Basis of funding	2015 fund assessment rate	2014 Broadband support
Texas	$235 million	45	$63 million	Commission may require report or information	Embedded costs for small carriers	3.30%	No
California	$114 million	10	$34 million	Generally 3 years	Proceedings to target 10% return	7.89%	$22 million
Colorado	$53 million	10	$1.4 million for small carriers; $44 million for Qwest	Three years	Actual embedded cost of service net of relevant revenues	2.60%	$3 million in 2014; All funding transitioning to broadband by end of 2023
Kansas	$49 million	38 ILECs (AT&T is not funded) and 11 ETCs	$30 million for small carriers	Audits are conducted	Embedded costs for small carriers; model for larger carriers	6.47%	No
Nebraska	$49 million	32	$16.7 million	Generally audited every 3 years	Cost information supplied by the carriers	6.95%	$8 million in 2015; $51 million since inception in 2008
Louisiana	$45 million	10	$45 million	Review every three years	Loops costs supplied to USAC and NECA		No
South Carolina	$41 million	19	Approximately $28 million; no funding for AT&T in 2015		Embedded costs for small carriers; relies on a benchmark rate	2.66%	No
Oregon	$40 million	30	$14.65 million	Every 3 years	Embedded costs, relying on a benchmark rate	8.50%	None; commission noted that the legislature should make determination

CALIFORNIA

California employs six separate mandatory surcharge rates affecting end-user charges for intrastate telecommunications services, of which three are carrier network-support programs as will be described below.[111] The California Public Utilities Commission designates all of these initiatives as "public purpose" programs.

California's "waterfall" provision encourages small carriers to submit to a rate case or other proceeding to analyze the carrier's costs and confirm the proper support level every three years.

[111] The other non-carrier-network programs are the Universal Lifeline Telephone Service (ULTS) program, the DDTP for California Relay Service and Communications Devices, and the California Teleconnect Fund that provides a 50% discount on telecommunications services to schools, libraries, health care organizations, community colleges, and community based organizations.

California sponsors two cost-based funds, one for small carriers and one for large carriers. The state's "A Fund" dates to 1988 and supports the provision of services to customers of small rate-of-return carriers through a fund based on actual carrier costs. Those carrier costs are reviewed either in a general rate case (GRC) with evidentiary hearings before an administrative law judge in which the Office of Ratepayer Advocates (ORA) and other parties participate, or in a less formal advice letter process administered by the CPUC's Communications Division staff. Based on a proceeding to analyze the carrier's costs, the amount of support funding is maintained unchanged for three years after which the funding is reduced to zero over the next three years, unless the carrier presents itself for another GRC or evidentiary hearing. This reduction process is known as a "waterfall" provision which is intended to provide incentive for the carrier to submit periodically to a rate case to confirm the proper support level.

The A Fund supports carriers similar to those in Texas' SRILEC support system. The A Fund has thirteen eligible "small" carriers, but only ten small carriers are receiving funding at the present.[112] Since 1997, the targeted return on combined debt and equity investment has been set at 10.0%. A carrier receives support only if its Residential Local Basic Exchange (RLBE) rate is greater than or equal to 150% of AT&T's RLBE. The 2014 budget for the A-Fund carriers was about $34 million.

California's "B Fund" was established in 1996 to support the provision of high-cost services by the four large ILECs in the state—AT&T, Verizon, Frontier, and SureWest—as well as Cox California Telecom.[113] Support from the B Fund is the difference between the results of a cost proxy model and a monthly benchmark rate per line. Costs are calculated using the Cost Proxy Model or, alternatively, the HAI (formerly the Hatfield Model) version 5.3 model, both of which produce an estimated cost figure for each Census Block Group (CBG). Support costs are calculated for each customer based on the average per-customer cost in each CBG. If the cost of serving a customer in a CBG exceeds a benchmark level, the carrier is eligible to receive the funding for each of those customers.

The CPUC also administers the California Advanced Services Fund (CASF) program, authorized in 2007, to provide matching funds for the deployment of broadband infrastructure in unserved and underserved areas in California.[114] The initial funding was $100 million. On June 12, 2008, the CPUC issued requirements, timelines, and scoring criteria for parties to qualify for broadband project funding in Resolution T-17143. On September 25, 2010, Senate Bill 1040 authorized incremental broadband-related support funding of $125 million. On June 28, 2011, the Commission approved D.11-06-038 to implement the $10 million Rural and Urban Regional Broadband Consortia grant program. In 2014, the California Legislature affirmed the CASF program in California Senate Bill 1193.

The California Advanced Services Fund program, authorized in 2007, provides matching funds for the deployment of broadband infrastructure in unserved and underserved areas in California. The initial funding was $100 million.

[112] Current recipients are Calaveras Telephone Company, California-Oregon Telephone Co., Ducor Telephone Company, Foresthill Telephone Co., Kerman Telephone Company, Pinnacles Telephone Co., The Ponderosa Telephone Co., Sierra Telephone Company, Inc., The Siskiyou Telephone Company, and Volcano Telephone Company.

[113] Frontier is in the process of purchasing Verizon's California ILEC properties, so Verizon will no longer be eligible for state universal service, thereby reducing the number of large ILEC carriers to three.

[114] D.07-12-054, in accordance with Public Utilities (P.U.) Code § 701.

The goal of the CASF program is to supply funding for infrastructure projects that will provide broadband access to no less than 98 percent of California households. The CPUC is to give priority to projects that provide last-mile broadband access to households that are unserved by an existing facilities-based broadband provider.

On February 1, 2012, the CPUC approved D.12-02-015 that set a maximum CASF grant award of 70% of project costs for unserved areas and 60% for underserved areas. The Decision set a new definition for underserved areas, "where broadband is available, but no wireline or wireless facilities-based provider offers service at advertised speeds of at least 6 mbps download and 1.5 mbps upload."[115] Since that time, the California Legislature passed Senate Bill 740 in October 2013, expanding provider eligibility. The legislation requires the CPUC to grant priority to last-mile projects serving unserved premises, ensures that existing providers have the opportunity to upgrade their networks where there are underserved households before funds are assigned to any other provider, and limits participation of local governments if another other eligible entity has applied.

Rationale

The California Public Utilities Code § 275.6 requires the CPUC, in administering the CHCF-A, to promote customer access to advanced services in rural areas relying on small company rate calculations using all reasonable investments necessary to provide voice services and deploy broadband-capable facilities. Public Utilities Code § 739.3 requires the CPUC to establish and maintain the CHCF-B to provide support to large providers that are Carriers of Last Resort for provision of basic telecommunication service in the high-cost portions of their service areas. High-cost areas of California are those in which the cost to the COLR to provide service is $36 or more per telephone line.

In its 2011 report, the CPUC explained that the state's USF programs support "basic telephony in hard to serve, high cost areas . . . . The California High Cost program for small carriers makes carrier recipients whole in the event of a reduction of federal USF support, and unless California revises its High Cost program, California customers will have to pay higher in-state . . . surcharges to reimburse small carriers for any USF High Cost support withdrawn and reallocated to broadband."[116] As explained above, California also created CASF in 2007 to support projects that will a) provide broadband services to areas currently without broadband access and b) build out facilities in underserved areas.

Funding of California Universal Service

The California State Controller holds the funds for all six California universal service funds. Table 11 summarizes funding percentages applied to California intrastate revenues for each of the California universal service funds from 2010 to the present. The funding percentages vary as the individual funds may reflect surpluses or deficits.

[115] D.12-02-015.
[116] CPUC 2011 Study, p. 5.

TABLE 11: CALIFORNIA FUNDING RATE BASED ON INTRASTATE TELECOM REVENUES 2010-2015

Effective	CHCF-A	CHCF-B	CTF	CASF	ULTS	DDTP	Total
10/01/15	0.35%	0.00%	1.08%	0.46%	5.50%	0.50%	7.89%
10/01/14	0.18%	0.00%	0.93%	0.46%	1.15%	0.20%	2.92%
10/01/13	0.18%	0.30%	0.59%	0.16%	1.15%	0.20%	2.58%
12/01/12	0.40%	0.30%	0.59%	0.14%	1.15%	0.20%	2.78%
11/01/11	0.00%	0.30%	0.08%	0.14%	1.15%	0.20%	1.87%
12/01/10	0.00%	0.45%	0.08%	0.00%	1.15%	0.20%	1.88%

Universal Lifeline Telephone Service (ULTS)
California Relay Serve and Communications Device Fund (CRS)
California High Cost Fund A (CHCF-A)
California High Cost Fund B (CHCF-B)
California Telephone Fund (CTF)
California Advanced Services Fund (CASF)

Summary Comments

The California Universal Service program is larger and more complex than the other programs surveyed below. While the larger California COLRs are managed through the use of models, California's statewide system in support of A-Fund customers relies on assessments of the small carriers' actual investment and costs based on proceedings at approximately regular intervals. The surcharge and funding related to broadband support has been increasing in recent years, as the state has committed to expanding higher bandwidth services. The surcharge was 0.25% in 2008 and has nearly doubled to 0.46% in 2015, funded in part through the reductions to the CHCF-B. However, California's overall Universal Service fund size has risen sharply because of non-network support, notably for Lifeline Telephone Service.

COLORADO

The Colorado Public Utilities Commission (Colorado PUC) manages a system of support mechanisms assisting in the provision of basic service in high-cost areas as spelled out in the Colorado Revised Statutes (C.R.S.) §40-15-502(5)(a). Signed on May 18, 1998, Senate Bill 98-177 amended §§ 40-15-208 and 40-15-502(5) and required significant changes to the existing high-cost fund program previously adopted by the commission. The Colorado PUC administers the state's High Cost Fund (CHCF). The rules for the High Cost Support Mechanism (HCSM) and High Cost Administration Fund are found in the Code of Colorado Regulations (CCR) 723-2, rules 2840-2855.[117] The rules require all telecommunications service providers that provide Colorado intrastate telecommunications services to contribute to the Colorado High Cost Fund based on their proportionate share of end-user telecommunications revenues.

Rationale

In 1998, the Colorado Legislature provided the rationale for the universal service program, which is to assure basic telecommunication service to customers in rural, high-cost areas.

[117] 4 Code of Colorado Regulations (CCR) 723-2, Part 2: Rules Regulating Telecommunications Providers, Services, and Products, rules 2840- 2855, available at https://doc-10-a0-apps-viewer.googleusercontent.com/viewer/secure/pdf/3nb9bdfcv3e2h2k1cmql0ee9cvc5lole/9i7t6uuc7qt5sstq9mfetq0m2catv4h7/1447963575000/drive/*/ACFrOgDhciNsqDaXBuBr6-8IlpIR80dzMXZY9Eouhn2C99sAE3kO19P_XZHOrdZSmRoZoERqTZ-VGHVUx4t1mEVUWlyXyekkVKE2r7FsqOAyi2-P6y0xlsvFnC2bIho=?print=true&nonce=lck9i0e5o84gs&user=*&hash=qoj6178mlasprei703mouu9tmttb135r.

> The purpose of the High Cost Support Mechanism is to provide financial assistance to local exchange providers to help make basic local exchange service affordable and allow such providers to be fully reimbursed for the difference between the reasonable costs incurred in making basic service available to their customers within a rural, high-cost geographic support area and the price charged for such service, after taking into account any amounts received by such providers under price support mechanisms. . . . The Commission shall ensure that no local exchange provider is receiving funds from this or any other source that, together with local exchange service revenues, exceeds the cost of providing local exchange service to customers of such provider. The High Cost Support Mechanism shall be supported and distributed equitably and on a nondiscriminatory, competitively neutral basis through a rate element assessed on all telecommunications service providers in Colorado.[118]

In 2014, in Colorado House Bill 14-1328, the Legislature modified the purpose of the state's universal service program to include support for broadband networks. … Colorado shifted state universal service funds from the traditional voice mechanism to broadband support.

In 2014, in Colorado House Bill 14-1328, the Legislature modified the purpose of the state's universal service program to include support for broadband networks, which the bill described as:

> . . . the plant, equipment, components, facilities, hardware, and software used to provide broadband internet service at measurable speeds of at least four megabits per second downstream and one megabit per second upstream or at measurable speeds at least equal to the Federal Communications Commission's definition of high-speed Internet access or broadband, whichever is faster, with:
>
> (a) sufficiently low latency to enable the use of real-time communications, including voice-over-Internet-protocol service; and
> (b) either no usage limits or usage limits that are reasonably comparable to those found in urban areas for the same technology.[119]

House Bill 14-1328 also required the shifting of state universal service funds from the traditional voice high-cost mechanism over to broadband support. The transition schedule was proposed as 5% of HCSM funding which should be allocated from traditional support to broadband network support for each year 2016 and 2017, 10% for each year 2018 and 2019, 15% for each year 2020 and 2021, and 20% for each year 2022 and 2023. The entire amount of the HCSM fund would, therefore, be available for broadband support by the end of 2023. At this point, the plan is not completely defined nor has it been adopted.

The newly-created Broadband Fund enacted by House Bill 14-1328, enables the Colorado PUC to transfer HCSM funds to the Broadband Fund, but limits the funds to be transferred to those collected at the surcharge rate in effect on May 10, 2014 (2.60%), provided the funds are no longer needed to support universal basic service in Colorado in areas determined to be effectively competitive. The Colorado PUC must balance this intent to advance broadband with high cost funds needed to support voice services. Colorado, like most states, is dealing with a significantly declining contribution base.

[118] Section 1. 40-15-208, Colorado Revised Statutes (2)(a).
[119] Colorado House Bill 14-1328, Section 1, (3.7).

Funding of State Universal Service

According to Senate Bill 98-177, the HCSM, including funding for larger carriers, was capped at $60 million for the first two calendar years (1998 and 1999), and is now capped at $54 million. The fund size was estimated to be approximately $53.1 million in 2014 and 2015. The fund in 2014 included an estimated amount to be transferred to the Broadband Fund of approximately $3.1 million plus $200,000 for the Broadband Fund administration.[120] The administration of the HCSM, according to House Bill 14-328 which modified the applicable regulations to include broadband, is funded through the state treasury to reimburse the commission and contractors.[121] The commission reported that the Broadband Fund transfer amount is HCSM funding that Qwest/CenturyLink would have received in 56 wire centers that were found to be effectively competitive and no longer require HCSM funds.

TABLE 12: COLORADO USF RATE BASED ON GROSS INTRASTATE TELECOM REVENUES 2008-2015

	2008	2009	2010	2011	2012	2013	2014	2015
1Q	2.70%	2.20%	2.20%	2.20%	2.90%	2.90%	2.60%	2.60%
2Q	2.70%	2.20%	2.20%	2.20%	2.90%	2.60%	2.60%	2.60%
3Q	2.20%	2.20%	2.20%	2.90%	2.90%	2.60%	2.60%	2.60%
4Q	2.20%	2.20%	2.20%	2.90%	2.90%	2.60%	2.60%	2.60%

Table 12 provides the quarterly history related to the assessment rate applied against gross intrastate telecommunications revenues from 2008 to 2015, pursuant to Rule 2846. The current quarterly Colorado Universal Service charge is 2.6% applied to gross intrastate revenues of landline providers, payphone aggregators, providers of video-conferencing, long-distance companies, and paging companies.[122]

Annual funding for each carrier through 2015 (estimated by the commission) is summarized in Table 13. Total annual funding has remained relatively stable throughout the period. However, it is apparent that there is a modest reallocation of funding from larger carriers to smaller carriers. Qwest (now CenturyLink) is receiving relatively lower levels of funding, while smaller carriers have been receiving somewhat larger disbursements.

[120] 2014 Annual Report of the Colorado High Cost Support Mechanism, December 1, 2014, at 14.

[121] Colorado Revised Statutes, 40-15-208, Section 2, (3)(a): "There is hereby created, in the state treasury, the Colorado high cost administration fund, referred to in this section as the 'fund', which shall be used to reimburse the commission and its contractors for reasonable expenses incurred in the administration of the high cost support mechanism, including administrative costs incurred in association with broadband service, as determined by rules of the commission. The General Assembly shall appropriate annually the moneys in the fund that are to be used for the direct and indirect administrative costs incurred by the Commission and its contractors. At the end of any fiscal year, all unexpended and unencumbered moneys in the fund shall remain in the fund and shall not be credited or transferred to the general fund or any other fund. Based upon the high cost support mechanism, the balance remaining in the fund, and the amount appropriated annually by the general assembly for use by the commission, each year the commission shall determine the nondiscriminatory, competitively neutral assessment on all telecommunications service providers in Colorado that will be necessary to cover the cost of implementing and administering the high cost support mechanism. Only the moneys from the assessment for administering the High Cost Support Mechanism shall be transmitted to the state treasurer, who shall credit the same to the fund. All interest derived from the deposit and investment of moneys in the fund remain in the fund and do not revert to the general fund."

[122] 4 CCR 723-2, rule 2846; Colorado has a *de minimis* exemption if a provider's contribution to the HCSM in a given year is less than $5,000 (see 4 CCR 723-2, rule 2846(B)(I)(A).

TABLE 13: COLORADO HCSM ANNUAL DISBURSEMENTS 2008-2012

Company	2008	2009	2010	2011	2012	2013	2014*	2015*
Rural carriers								
Agate Mutual Telephone Company	14,361	16,941	16,941	16,941	16,941	16,941	16,941	16,941
Delta County Tele-Comm	165,721	165,721	165,721	165,721	165,721	165,721	165,721	165,721
Nucla-Naturita	221,852	242,020	242,020	242,020	282,162	321,867	321,867	321,867
Nunn Telephone Company	22,482	58,540	58,540	47,485	47,485	47,485	47,485	47,485
Peetz Cooperative Telephone Company	47,485	26,441	26,441	26,441	26,441	26,441	26,441	26,441
Phillips County Telephone Company	168	30,847	30,847	30,847	30,847	30,847	30,847	30,847
Pine Drive	450,075	450,075	839,269	681,059	681,059	681,059	681,059	681,059
Rico Telephone Company	-	-	-	1,255	13,015	13,015	13,015	13,015
Roggen Telphone	35,345	51,614	51,614	51,614	51,614	51,614	51,614	51,614
Willard	-	-	11,366	29,042	29,042	29,042	29,042	29,042
Total rural ILEC	**957,489**	**1,042,199**	**1,442,759**	**1,292,425**	**1,344,327**	**1,384,032**	**1,384,032**	**1,384,032**
Non-Rural ILEC								
Qwest Corp.	56,787,689	53,952,430	50,346,487	50,069,355	48,553,314	47,459,168	43,950,763	47,247,168
Wireless carriers								
Northeast Colorado Cellular	2,026,785	2,409,718	2,608,961	2,787,574	2,796,321	2,970,135	4,345,478	4,345,759
NNTC	-	-	-	-	31,509	150,547	155,840	155,840
Undesignated carriers								
ECAs							3,296,686	
Total	**59,771,963**	**57,404,347**	**54,398,207**	**54,149,354**	**52,725,471**	**51,963,882**	**53,132,799**	**53,132,799**

*Colorado Commission estimates.
Source: Colorado Public Utilities Commission Annual Report 2014.

With respect to broadband, House Bill 14-1328 added Section 4, 40-15-509.5 in the Colorado Revised Statutes 40, which reallocates previously voice-centric support funding to broadband:

> The Commission may transfer to the Broadband Deployment Board only the moneys that it determines are no longer required by the HCSM to support universal basic service through an effective competition determination. After each transfer to the Broadband Deployment Board, the Commission shall use the moneys remaining in the HCSM to support basic service. Nothing in this section increases any surcharge rate charged to help fund the HCSM.[123]

Summary Comments

The Colorado Legislature and Public Utilities Commission have managed the state's universal service plan using a capped fund. Users of network services throughout the state pay for access to a ubiquitous network in the form of a surcharge of 2.6% applied against gross intrastate telecommunications revenues. The Colorado Legislature is considering making its universal service program relatively consistent with the federal plan by gradually shifting its funding from voice-centric services to broadband support. The entire repurposing of funding is proposed to be completed by the end of 2023 for services that will, by law, be consistent with the FCC's definition of high-speed Internet access or broadband.

Key insights that can be drawn from the Colorado USF approach include relatively stable-to-increasing funding for small carriers, and the potential to shift support from voice-centric services to broadband services. To manage the increase in broadband support allocations, the

To manage the increase in broadband support allocations, the Colorado PUC is downsizing funding to larger carriers, while wrestling with sharp declines in the intrastate wireline revenues from which state USF is drawn.

[123] House Bill 14-1328, Section 4, 40-15-509.5(3), available at http://www.leg.state.co.us/clics/clics2014a/csl.nsf/fsbillcont2/1E390935433C251F87257C620063CC4A/$FILE/1328_enr.pdf.

Colorado PUC is downsizing funding to larger carriers, while wrestling with sharp declines in the intrastate wireline revenues from which state USF is drawn.

KANSAS

The Kansas Universal Service Fund (KUSF) was enacted by Kansas House Bill 2728 of the 1996 Legislature and was created/implemented by the Kansas Corporation Commission (KCC) on March 1, 1997, pursuant to the Kansas Statutes Annotated (KSA) 66-2008.[124]

The fund provides for support of Lifeline assistance to disadvantaged households, Kansas Relay Services for parties who are hearing-impaired, a Telecommunications Access Program to provide terminal equipment for disabled persons, as well as funding for network enhancements and upgrades in rural regions.

Rationale

The purpose of the KUSF is to assure quality services are made available to all Kansans at affordable rates. Initially, the KUSF high-cost support program was based on access charge reductions, but the current approach is increasingly focused on providing cost-based support. As is the case in California, support for the networks of AT&T and CenturyLink relies on a high-cost model, while support for rate-of-return carriers is based on embedded costs, consistent with KSA 66-2008(e). All KUSF Eligible Telecommunications Carriers (ETCs) are eligible to receive support from the KUSF. The eligible recipients include 38 incumbent carriers and 11 competitive eligible telecommunications carriers.

Funding Kansas Universal Service

Pursuant to KSA 66-2008(a), all Interexchange Carriers (long distance), Incumbent Local Exchange Carriers (ILECs), Electing Carriers, Competitive Local Exchange Carriers (CLECs), Wireless, and Interconnected Voice over Internet Protocol (VoIP) providers must contribute to the KUSF. The statutes permit the carriers to pass through KUSF assessments to customers. The Kansas Fund Administrator is GVNW Consulting, Inc. which was selected in a competitive bidding process.

The current Kansas statute limits total annual KUSF distributions to $30 million for rate-of-return ILECs, pursuant to subsection (b) of KSA 66-2005. A waiver of the cap can be granted if there is a demonstration that a carrier would experience significant hardship. The statute authorizes the use of embedded costs in determining support levels "until at least March 1, 2017."[125]

The current Kansas statute limits total annual KUSF distributions to $30 million for rate-of-return ILECs.

AT&T has not received KUSF support since the end of 2013, and, pursuant to KSA-66-2008, CenturyLink receives $11.4 million in annual funding, so the total ILEC funding, including the small carriers, is approximately $40.9 million at the present. The total fund, including other supported services, is reflected in Table 14, including the increased assessment rates per-line for Southwestern Bell/AT&T.

[124] Kansas Statutes Annotated (revised) 66-2008, available at http://www.ksrevisor.org/statutes/chapters/ch66/066_020_0008.html: "Kansas universal service fund; funding; authorized expenditures; distributions; limitations and cap; supplemental funding. On or before January 1, 1997, the commission shall establish the Kansas universal service fund, hereinafter referred to as the KUSF.

[125] Kansas Statutes Annotated (revised) 66-2005(2)(e).

TABLE 14: KANSAS FUNDING STATISTICS 2010-2015

Order Date	4/12/2010	1/13/2011	1/24/2012	1/16/2013	1/23/2014	1/15/2015
Size of fund	$ 73,618,003	$ 65,704,400	$ 65,222,764	$ 61,580,159	$ 55,209,588	$ 51,300,287
Amount to collect	$ 78,201,395	$ 67,665,278	$ 62,711,271	$ 62,873,250	$ 55,703,984	$ 52,812,928
Assessable revenue	$ 1,178,585,745	$ 1,095,109,391	$ 1,022,510,902	$ 978,937,291	$ 920,620,825	$ 816,624,064
KUSF assessment rate	6.64%	6.18%	6.13%	6.42%	6.05%	6.47%
Per line Amount						
SWBT/ATT	$ 1.90	$ 2.04	$ 2.02	$ 2.38	$ 2.49	$ 3.28
CenturyLink	$ 1.81	$ 1.91	$ 1.63	$ 1.85	$ 1.79	$ 1.99
RLECS in Stipulation	$ 1.39	$ 1.45	$ 1.45	$ 1.53	$ 1.44	$ 1.56
Growth						
Size of fund	11.5%	-10.7%	-0.7%	-5.6%	-10.3%	-7.1%
Assessable revenue	-4.4%	-7.1%	-6.6%	-4.3%	-6.0%	-11.3%
Per-line ATT	25.0%	7.4%	-1.0%	17.8%	4.6%	31.7%
Per-line CenturyLink	21.5%	5.5%	-14.7%	13.5%	-3.2%	11.2%
Per-line RLECs	20.9%	4.3%	0.0%	5.5%	-5.9%	8.3%

Summary Comments

The KUSF treats small carriers differently from larger carriers, as does California. Smaller carriers will be funded on the basis of their embedded costs at least through 2017. No provision exists at the present for funding high-cost broadband networks in Kansas.

NEBRASKA

In 1997, the Nebraska Legislature passed Legislative Bill 686 that directed the Nebraska Public Utilities Commission (Nebraska PUC) to establish a Nebraska Universal Service Fund (NUSF).

Rationale

The goal of the NUSF, in conjunction with federal universal service funds, is to ensure that all Nebraskans have comparable access to telecommunications services at affordable prices. Since inception of the fund, the Nebraska PUC has created four programs within the NUSF: 1) the high cost program; 2) the low-income assistance program; 3) the rural tele-health program; and 4) the broadband program.

Supported services include basic local exchange service (not including extended area service(s)), dual tone multi-frequency signaling or the functional equivalent, access to directory assistance services, equal access to interexchange services, access to emergency 911 or Enhanced 911 services, access to operator services, toll blocking for qualifying low-income users, and other services which the commission may designate.[126]

The Nebraska Broadband Program was created on November 21, 2011, at approximately the same time the FCC was releasing its USF/ICC Transformation Order.[127] In 2015, the Nebraska PUC also began a Broadband Adoption Pilot Program, with $500,000 in grants for projects "aimed at breaking down barriers to broadband adoption."

The Nebraska Broadband Program was created November 21, 2011. In 2015, the Nebraska PUC also began a Broadband Adoption Pilot Program, with $500,000 in grants for projects "aimed at breaking down barriers to broadband adoption."

[126] Nebraska Administrative Code, Title 291, Chapter 10, Section 004.020.
[127] Nebraska Public Utilities Commission, NUSF-77, opened January 26, 2010; see also Docket NUSF-92, December 10, 2013.

began a Broadband Adoption Pilot Program with $500,000 in grants for projects "aimed at breaking down barriers to broadband adoption."[128]

In its 2015 Annual Report, the Nebraska PUC reported on the NUSF Broadband Program, which, since 2008, has provided more than $51.3 million for projects in the state to construct new or upgrade existing broadband facilities. The funding was dedicated to 138 approved broadband projects, which, according to the report, benefited more than 54,000 Nebraskans.[129] In 2015, the NUSF Broadband Program provided $8 million for broadband infrastructure projects.

Funding Nebraska Universal Service

A NUSF surcharge is assessed on all end-user telecommunications services provided in Nebraska intrastate commerce.[130] Subject to the surcharge are local exchange services, extended area services, vertical features, mobile radio services, paging services, wireless telecommunications services and message charges (excluding toll charges), and intrastate interexchange services. The NUSF is not assessed on local, state, or federal taxes, 911 surcharges, or other surcharges. Exempt from the NUSF surcharge are customers who qualify for the Nebraska Lifeline Service.

The NUSF surcharge rate has been 6.95% except for October 2005-June 2006, when the rate was 5.75%. Table 15 provides funding data, with the high-cost infrastructure support data shaded in grey. Notably, in 2015, certain price-cap carriers (Qwest/CenturyLink, Frontier/Citizens, and Windstream) were excluded from receiving funds.[131] The final column of the table indicates that the rate-of-return carriers have received relatively predictable levels of funding, declining at a 3.0% compound annual rate.

Funding is determined by the NUSF Director on the basis of cost information supplied by the carriers.[132] Carriers receiving NUSF are to submit their annual audits to the Nebraska PUC, and, if there is not an annual audit, must provide audited results to the commission at least every third year.[133]

The data related to the individual rate-of-return carriers' funding is included in Table 16. The average annual per-line funding is $378 in 2014 and the monthly per-line funding is approximately $33 across the entire grouping. The range of monthly funding per line for Nebraska rate-of-return carriers in 2014 was from $10 to $80, reflecting the disparity in costs that are typically reported from one carrier to the next.

[128] Nebraska Public Service Commission, 2015 Annual Report to the Legislature, September 30, 2015, available at http://nebraskalegislature.gov/FloorDocs/104/PDF/Agencies/Public_Service_Commission/268_20150930-081138.pdf (NPUC 2015 Report), p. iv.
[129] NPUC 2015 Report.
[130] Nebraska Administrative Code, Title 291, Chapter 10, Section 2.01 ff.
[131] In October 2014, the Commission began assessing whether its universal service approach was consistent with the federal universal service program. The Commission sought to ensure that price cap carriers took appropriate advantage of the FCC's Connect America Fund (CAF) opportunities and that broadband deployment in the state was targeted efficiently with CAF broadband-centric support.
[132] Nebraska Administrative Code, Title 291, Chapter 10, Section 004.02E.
[133] Nebraska Administrative Code, Title 291, Chapter 10, Section 004.07C: "A telecommunications company that receives NUSF funding, and does not conduct an annual third party audit in the course of its business, may elect to perform an independent third party audit pursuant to this Rule once per three-year period. The results of each tri-annual audit shall be provided to the Department by the end of each year that is evenly divided by three."

TABLE 15: NEBRASKA FUNDING STATISTICS 2004-2015

Year	Collected	Disbursed	Total HC Fund	ROR RLECs
2004	$ 64,100,000	$ 68,900,000	$ 73,044,595	$ 23,425,541
2005	$ 61,100,000	$ 68,350,000	$ 71,787,021	$ 23,105,611
2006	$ 53,400,000	$ 79,500,000	$ 61,773,013	$ 22,869,103
2007	$ 51,300,000	$ 77,100,000	$ 55,837,206	$ 20,099,096
2008	$ 51,200,000	$ 56,600,000	$ 45,700,000	$ 25,730,226
2009	$ 55,600,000	$ 49,100,000	$ 32,357,615	$ 25,407,577
2010	$ 54,300,000	$ 50,200,000	$ 39,933,223	$ 23,832,768
2011	$ 48,300,000	$ 53,900,000	$ 42,500,000	$ 24,810,966
2012	$ 46,200,000	$ 53,900,000	$ 40,375,000	$ 23,962,815
2013	$ 48,600,000	$ 51,200,000	$ 41,940,000	$ 20,215,296
2014	$ 46,100,000	$ 50,200,000	$ 37,273,191	$ 16,992,279
2015	$ 49,300,000	$ 49,900,000	$ 16,727,373	$ 16,727,373

TABLE 16: NEBRASKA FUNDING FOR ROR CARRIERS 2011-2015

	2011	2012	2013	2014	2015
Arapahoe	$ 840,711	$ 794,142	$ 635,413	$ 544,646	$ 526,743
Benkelman	$ 469,761	$ 443,552	$ 362,843	$ 312,000	$ 302,244
Cambridge	$ 342,762	$ 323,500	$ 258,520	$ 221,324	$ 214,187
Clarks	$ 276,695	$ 257,099	$ 205,547	$ 176,039	$ 170,323
Cons Telco	$ -	$ -	$ 104,366	$ -	$ -
Cons Tele	$ 441,597	$ 510,227	$ 216,128	$ -	$ -
Cons Telecom	$ 334,819	$ 550,500	$ 1,912	$ 187,346	$ 221,697
Cozad	$ 69,326	$ 196,620	$ 155,457	$ 131,895	$ 140,071
Curtis	$ 341,490	$ 342,688	$ 264,110	$ 139,462	$ 145,087
Dalton	$ -	$ -	$ -	$ -	$ -
Diller	$ 357,983	$ 338,107	$ 277,545	$ 238,655	$ 231,192
Elsie	$ -	$ -	$ -	$ -	$ 37,364
Glenwood	$ 957,681	$ 938,453	$ 801,830	$ 686,445	$ 664,633
Great Plains	$ 11,625,400	$ 10,978,849	$ 8,797,756	$ 7,549,258	$ 7,309,697
Hamilton	$ -	$ -	$ 461,224	$ 391,786	$ 378,462
Hartington	$ 161,573	$ 152,143	$ 120,329	$ 102,118	$ 98,624
Hartman	$ 76,301	$ 123,012	$ 96,405	$ 199,735	$ 193,490
Hemingford	$ 617,943	$ 577,297	$ 471,764	$ 379,840	$ 313,626
Hershey	$ 121,454	$ 133,181	$ 105,151	$ 90,389	$ 86,889
Hooper	$ -	$ 55,569	$ 82,217	$ 105,976	$ 79,195
Huntel	$ 903,599	$ 134,079	$ 799,220	$ -	$ 370,059
K&M	$ 174,913	$ 282,780	$ 304,123	$ 222,135	$ 254,759
Keystone	$ 238,104	$ 140,230	$ 100,877	$ 286,023	$ 127,936
Mainstay	$ 206,252	$ 179,263	$ 150,847	$ 113,173	$ 103,318
Neb Central	$ 1,885,229	$ 2,328,251	$ 1,989,187	$ 1,958,764	$ 1,897,182
Northeast	$ 2,175,509	$ 2,054,800	$ 1,640,499	$ 1,404,035	$ 1,358,793
Pierce	$ 117,310	$ 169,416	$ 242,535	$ 207,387	$ 201,023
Plainview	$ 245,416	$ 231,898	$ 186,294	$ 160,190	$ 155,181
Southeast	$ 505,382	$ 476,384	$ 378,559	$ 322,563	$ 311,819
Stanton	$ 206,610	$ 194,785	$ 154,893	$ 132,058	$ 127,676
Three River	$ 838,258	$ 792,617	$ 634,288	$ 543,773	$ 526,631
Wauneta	$ 278,889	$ 263,374	$ 215,456	$ 185,266	$ 179,473
W/o large carriers[1]	**$ 24,810,966**	**$ 23,962,815**	**$ 20,215,296**	**$ 16,992,279**	**$ 16,727,373**

[1] Large carriers are Qwest, CenturyLink, Citizens and Windstream

Summary Comments

The NUSF today supports the services of small rate-of-return carriers that are judged to be most vulnerable in meeting the communications needs of rural customers. Nebraska also sponsors support for broadband networks through the NUSF. Funding levels for the small carriers are determined on the basis of cost information supplied by the carriers, which is audited by the Nebraska PUC at least every third year.

LOUISIANA

The Louisiana Public Service Commission (LPSC) first defined—but did not create—a state universal service fund (SUSF) in the LPSC's General Order dated May 22, 1995, and in the commission's Regulations for Competition in the Local Telecommunications Markets. As happened in other states, the Louisiana universal service fund grew out of settlements between carriers. In 1989, the LPSC concluded that the public interest warranted state-wide implementation of a Local Optional Service plan (LOS) by BellSouth and the smaller independent carriers, and, pursuant to that plan, required BellSouth (now AT&T) to reduce its rates and provide some of its intraLATA revenues to the independent carriers to assure those smaller carriers were not harmed by changes to the LOS. In 1998, the LPSC voted to create a formal state plan to protect the LOS under the direction of a commission-appointed administrator. In 2005, the LPSC voted to approve the creation of an explicit SUSF based on the $42.2 million received by the rural ILECs through the Interim LOS Preservation Fund.

Rationale

The LPSC staff noted in its 2007 report to the LPSC that "there is likely to be a need for State universal service support as long as the Commission obligates the rural incumbent local exchange carriers to serve as carriers of last resort and deploy networks so as to provide service on a ubiquitous basis."[134]

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Funding Louisiana Universal Service

Contributions from the state's Telecommunications Service Providers (TSPs) into the SUSF are assessed annually, and funding is provided only to recipient carriers designated as COLRs. There are ten small independent ILECs. The contributions to the SUSF are based upon the intrastate telecommunications end-user revenues of all TSPs, including wireless, VoIP and cable telecommunications carriers, providing service in Louisiana, pursuant to a February 9, 2009 General Order. Pursuant to the General Order, the underlying basis for the fund was changed to the rural ILECs' loop costs as submitted to the National Exchange Carrier Association and the federal Universal Service Administration Company. The LPSC evaluates the SUSF every three years.

[134] Louisiana Public Service Commission, General Order, Docket Number R-30480, *In Re: Review of the Existing State Universal Service Fund as Established by LPSC General Order dated April 29, 2005, as amended May 18, 2005*, at 1.

In November 2013, the LPSC relieved AT&T of its COLR obligations and certain other obligations, but reiterated that AT&T and all state TSPs are required to support the SUSF.[135]

Summary Comments

Louisiana's USF program has remained relatively stable in support of smaller carriers. CenturyLink also receives funding, but AT&T/BellSouth, which is the largest carrier in the state, has never received any support. The reasoning was that BellSouth was the primary original contributor of the funding for the LOS. The LPSC has remained steadfast in providing support to carriers for the provision of high-cost COLR services to rural customers, with the LPSC retaining the right to review the process every three years.

SOUTH CAROLINA

In 1997, the Public Service Commission of South Carolina (SCPSC) adopted a Benchmark Cost Proxy Model as the state forward-looking model for BellSouth, GTE, and Sprint/United. The SCPSC also adopted the South Carolina Telephone Coalition's proposed embedded cost model for 19 smaller carriers. In 2001, pursuant to S.C. Code Ann. § 58-9-280(E), the SCPSC ordered a state USF to offset incumbent LECs' reduced intrastate access rates that included implicit support for universal service. The access rate reductions and the receipt of state USF were explicitly designed to be revenue-neutral for carriers.

Rationale

In the 2001 Order, the SCPSC clearly articulated its understanding that, because competitors do not have an obligation to serve all customers in a region, certain actual costs of COLR services provided by ILECs should be paid through the universal service mechanisms.

> Congress recognized that the implicit cross-subsidies that have traditionally supported Universal Service could not be maintained in a competitive marketplace. Competitors would naturally target those customers who are charged above-cost rates or who provide a greater than average amount of revenues, and would undercut those rates, since such competitors have no obligation to serve an entire service area. The incumbent local exchange carrier (ILEC) would lose the source of funding that supports Universal Service, and local rates would have to rise substantially to reflect the actual costs of providing service in the fully competitive environment.[136]

Supported services include single-party residential and single-line business customers' access to basic voice grade local service with dual-tone multi-frequency signaling (i.e., touch-tone), access to available emergency services and directory assistance, the capability to access interconnecting carriers, and access to operator services, among others.

Funding South Carolina Universal Service

The SCPSC is the Administrator for the South Carolina Universal Service Fund, as presented in Section 58-9-280(E)(1) of the South Carolina Code (SCC). Consistent with Section 58-9-280(E) of the SCC, carriers and other providers offering telecommunications services are required to pay into the state's USF. Companies are judged to be offering telecommunications services in South Carolina if such services are being offered "for a fee" to an end user.

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[135] LPSC, General Order No. R-31839 at 20; available at http://lpscstar.louisiana.gov/star/ViewFile.aspx?Id=14d64aec-51d0-4e35-9b6b-724eaeed13da.

[136] Public Service Commission of South Carolina, DOCKET NO. 97-239-C, ORDER NO. 2001-419, June 6, 2001 at 27.

The state USF, which includes provisions for high-cost network services and low income customers, shall be the sum of the differences, for each ILEC carrier of last resort, between the cost of basic local exchange telecommunications services less the maximum rate approved by the SCPSC for basic local exchange telecommunications service within each area (less any federal universal service support received for serving the same area). In addition, the SCPSC will provide support for any state mandated support for low-income Lifeline services. The cost component is calculated on a per-line basis for residential and single-line business services.

The funding for the South Carolina support paid to carriers is outlined in Table 17, based on data reported by the South Carolina regulatory staff and audited results. While the data are not comprehensive, it is apparent that the funding levels over the five-year period have been relatively stable, as the contribution base has declined. The contribution factor has been relatively stable at about 2.6% to 2.7%, and is 2.67% in 2016.

TABLE 17: SOUTH CAROLINA FUNDING FOR TOTAL STATE USF 2012-2016

Year	Contributions	Disbursements	Growth in disbursements	Contribution factor	Contribution base	Growth in contribution based
2012	30,872,663	30,539,563	-25.3%	NA	NA	NA
2013	30,696,656	30,147,041	-1.3%	2.60%	1,181,004,001	NA
2014	28,815,366	28,899,698	-4.1%	2.55%	1,132,056,494	-4.1%
2015	27,967,744	NA	NA	2.66%	1,051,906,675	-7.1%
2016	28,245,262	NA	NA	2.67%	1,059,716,997	0.7%

In 2015, Senate Bill 277 was introduced and passed the senate in South Carolina to expand the contributors to the state USF to include VoIP and wireless (CMRS) providers.[137]

Summary Comments

South Carolina has a relatively stable fund that supports high-cost services provided by smaller carriers. There is, as yet, no broadband funding component within the South Carolina USF. The contribution factor remains relatively low for the state.

OREGON

In 1999, the Oregon Legislative Assembly enacted Oregon Senate Bill 622 (Oregon Revised Statutes (ORS) 759.425), which established the state's universal service policy and directed the Public Utility Commission of Oregon (PUCO) to implement a competitively neutral and nondiscriminatory Oregon Universal Service Fund (OUSF).

Rationale

The Oregon statutes require that "the universal service fund shall provide explicit support to an eligible telecommunications carrier that is equal to the difference between the cost of providing basic telephone service and the benchmark, less any explicit compensation received by the carrier from federal sources specifically targeted to recovery of local loop costs and less any explicit support received by the carrier from a federal universal service program."[138]

[137] Available at http://www.scstatehouse.gov/sess121_2015-2016/bills/277.htm; the bill is in the South Carolina House.
[138] ORS 759.425(3)(a).

Funding Oregon Universal Service

In 1999, the PUCO's Order No. 00-312 in Phase IV of Docket UM 731 created the basic workings of the OUSF, including adopting: (1) a cost proxy model, (2) the inputs for the cost proxy model, (3) the benchmark rate used in the model, (4) the formula for computing OUSF support, and (5) the support distribution mechanism. The calculation and distribution of support for the non-rural ILECs (i.e., Qwest/CenturyLink and Verizon/Frontier's legacy high-cost wire centers) was governed exclusively by this mechanism until 2014.

The PUCO sets the rural ILEC support through adoption of memoranda of understandings and stipulations, which rely to a great extent on "agreements" among the carriers compared with proceedings in other states.

The networks and services of the rural incumbent carriers were funded through the OUSF program, beginning in 2003, pursuant to a stipulation that established an embedded cost methodology that was to be reviewed every third year, unless extended by the commission. The level of support is based significantly on a benchmark local service rate which is determined by the PUCO. The PUCO sets the rural ILEC support through adoption of memoranda of understandings and stipulations, which rely to a great extent on "agreements" among the carriers compared with proceedings in other states. In 2006, a memorandum of understanding was signed by the rural carriers agreeing to a 15% increase in disbursement amounts above the annual $8.9 million approved for the previous three years, compared with an 81% increase that was initially supported by the cost methodology.

In 2012, the Oregon companies agreed to a cap on support at $15.65 million, which was distributed among the rural carriers in a formula designed by the carriers. In 2012, the rural carriers and the PUCO entered into a stipulation (Phase II Stipulation), approved by the PUCO to create a three-year phase down of OUSF support.[139] At the present, there is not a cap on the surcharge which is set at 8.5%.[140]

The PUCO is studying a Phase III Stipulation, which has not been adopted at this time. For non-rural companies, there are proposed reductions in OUSF support over five years beginning January 1, 2017, such that OUSF support totals $12.688 million at the end of the period, declining 27.5% from $17.5 million in 2016. For the rural carriers, the 2015 OUSF is set at $14.65 million, and then over a five-year phase-down period, the proposed support would be reduced 15.2% as presented in Table 18.[141] The funding levels are not linked to line counts. On January 12, 2015, the PUCO declined to accept the Phase III Stipulation until after further study, noting that the commission did not have sufficient "evidence to determine whether the stipulated carrier compensation amounts are in the public interest."[142]

[139] Order 13-162, on May 2, 2013.
[140] Public Utility Commission of Oregon, UM 1481, Order 15-365, on November 12, 2015, at 3.
[141] Rural ILECs' OUSF receipts will not be affected by line counts; see Order No. 13-162, Docket UM 1481 Phase II, dated May 2, 2013, page 4.
[142] UM 1481, Order 15-365, on November 12, 2015, at 4.

TABLE 18: PROPOSED OREGON USF PHASE-DOWN 2016 TO 2021

	2016	2017	2018	2019	2020	2021	2021/2016
Frontier Northwest	$ 7,000,000	$ 6,615,000	$ 6,230,000	$ 5,845,000	$ 5,460,000	$ 5,075,000	**-27.5%**
Qwest/CenturyLink	10,500,000	9,922,500	9,345,000	8,767,500	8,190,000	7,612,500	**-27.5%**
Total Frontier/Qwest	17,500,000	16,537,500	15,575,000	14,612,500	13,650,000	12,687,500	**-27.5%**
Rural companies	14,431,170	13,991,643	13,552,115	13,112,587	12,673,059	12,233,531	**-15.2%**
Total OUSF	31,931,170	30,529,143	29,127,115	27,725,087	26,323,059	24,921,031	**-22.0%**
Frontier Northwest		-5.50%	-5.82%	-6.18%	-6.59%	-7.05%	
Qwest/CenturyLink		-5.50%	-5.82%	-6.18%	-6.59%	-7.05%	
Total Frontier/Qwest		-5.50%	-5.82%	-6.18%	-6.59%	-7.05%	
Rural companies		-3.05%	-3.14%	-3.24%	-3.35%	-3.47%	
Total OUSF		-4.39%	-4.59%	-4.81%	-5.06%	-5.33%	

In 2012, the PUCO was also asked to revise the definition of USF to include broadband services but responded that such a revision was the responsibility of the state legislature rather than the PUCO.[143]

Under the requirements of ORS 759.425(4), the PUCO sets a surcharge on all retail telecommunications services in the state. VoIP services are not included within the definition of "retail telecommunications services" and are not subject to the surcharge, but the PUCO reports that a "significant number of facilities-based providers of VoIP have been making voluntary OUSF contributions."[144] In spite of the fact that no legislative cap on the surcharge exists, the PUCO and the carriers have been concerned about unacceptably high rates for the surcharge, with the result that the rural carriers have agreed to levels of support reduced from what might have been assigned under the PUCO's embedded cost formula.

Summary Comments

Like most of the other states surveyed, Oregon divides its state USF into larger carriers and smaller, rate-of-return carriers. The process differs from the other USF programs summarized in this White Paper, as the PUCO relies on agreements and stipulations to engineer disbursements that are judged to be politically acceptable. The surcharge is currently at a relatively high level as customers are required to pay 8.5% of total retail intrastate telecommunications to the fund. The remaining significant item is that the PUCO has declined to address the issue of support for broadband services, which the commission explained was a decision to be made by the legislature.

[143] *In the Matter of the Petition filed by the Oregon Telecommunications Association to Amend OAR 860-032-0190,* Docket AR 577/UM 1481, Order No. 14-113 at 3 (417/14).
[144] White Paper On Oregon Universal Service Issues, May 15, 2015, available at http://edocs.puc.state.or.us/efdocs/HAH/um1481hah132225.pdf, p. 17

V. The Texas Legislature and TUSF

This White Paper has provided an overview of the goals, approaches and challenges with respect to state USF programs. As the Texas Legislature evaluates this important policy, there appear to be several major policy issues and State USF management issues.

Major policy issues include the following.

- **Should Texas support networks and services in high-cost regions through a state universal service mechanism that is "predictable," "sufficient," and "specific"?** The FCC and other large states affirm the value of such a program to support the provision of COLR services to customers in uneconomic-to-serve regions and are increasingly focusing on support for small carriers which are judged to be the most vulnerable when confronted with the financial challenges of serving as the COLR.
- **The second major issue is whether support is sufficient to address modern infrastructure.** The FCC and three of the other state programs surveyed have affirmatively committed to the "modernization" of universal service through inclusion of broadband obligations and support. The expanded commitments arise because commerce and other socially beneficial programs increasingly rely on broadband.
- **Another issue is more complex, as it relates to how funding should be collected and whether the current approach is sustainable in funding state universal service over the long term.** The problem is that legacy funding that relies on voice-telecommunications revenues is shrinking by approximately 5%-10% each year, even as communications evolve from voice to critical data networks. Neither the FCC nor any of the other states appear to have good answers when pressed on the so-called "contribution methodology." The FCC has set a capped budget for federal high-cost support, but is in the process of requiring carriers to provide higher speeds and more robust networks . . . with no significant incremental funding, and without any reform of the contribution mechanisms. The other states surveyed in this report are increasingly concerned about the shrinking legacy telecommunications revenue pool, and are managing the process by shrinking the amount of support funding allocated to the larger carriers, while generally providing some stability to the support provided to small carriers.

The two management issues arising from the surveys of other states are the following.

- **How should Texas determine the high costs that should be funded?** Other states have generally relied upon some study of embedded costs. This is the approach recommended by the Rural Task Force to the Federal-State Joint Board on Universal Service and to the FCC almost 15 years ago. That recommendation to purposefully avoid models and use embedded costs is a result of the only national study of rural telecommunications provider costs, which were found to be so disparate that they defied models. The authors believe that the conclusions of the RTF White Paper 2 remain just as true today because of the variability of cost factors identified by the RTF. The FCC is considering forward-looking models, but there are significant concerns about the prudence of utilizing models to calculate appropriate high-cost support for rural companies that are affected by such disparate forces.
- **Should the allocations of support rely on benchmark rates?** Most of the other surveyed states use benchmark rates, and the FCC is also requiring benchmark rates to determine what funding

> will be required above some "normalized" rate. While benchmark rates can be defended, the case for rates similar to those in urban areas can be disputed in light of the fact that rural customers have a smaller calling scope and presumably lesser realized value

Major issues to be resolved by the Texas Legislature

As Texas legislators review the state USF program in light of the near-term potential reductions in support to small carriers, it is important to recall that if new legislation is not adopted, the SRILECs will be funded differently beginning in September 2017. If SRILEC support reverts to a per-line calculation methodology, there is the potential for damaging effects in rural communities, which could negatively impact residents in those communities and the overall state economy.

PREDICTABLE AND SUFFICIENT STATE SUPPORT

Both the surveyed states and the FCC strongly affirm the importance of Universal Service. It is also clear that—absent predictable and sufficient funding—rural carriers will be unable to actively invest in the necessary network elements to ensure Universal Service.

The authors believe that if a change to a per-line funding mechanism, as could occur in 2017, were forced upon rural carriers, such a change will undercut the Telecom Act's requirement that states should provide predictable and sufficient mechanisms to support investment and advance universal service in high-cost areas.[145]

In fact, Texas law specifically addresses the distinction between small and large ILECs in PURA Sec. 53.251: (1) "there are differences between small and large incumbent local exchange companies" and (2) "there are a large number of customer-owned telephone cooperatives and small, locally owned investor companies. PURA encourages the adoption of policies to "allow a rural or small incumbent local exchange company or cooperative to . . . [provide necessary information] in substantially less burdensome and complex form than is required of a larger incumbent local exchange company." PURA Sec. 53.252(3)(A). These clear policy directives in PURA allow the legislature the flexibility to address SRILEC-specific concerns, which should be done to better ensure universal service across this state's large rural areas.

LONG-TERM CONTRIBUTION CHALLENGES

A complex USF issue remains the definition of a sustainable contribution base for funding universal service—for the nation as well as the states. To date, neither the FCC nor the states have found a satisfactory solution. The difficulty is that traditional network support was based on other users of the voice network paying for the broader voice network costs. However, the wireline *voice* network is shrinking which means that the source of traditional funding is declining precisely at the time when the FCC and states are seeking additional investment to support expensive and evolving broadband networks. The Colorado PUC articulated a problem which runs through most of the surveyed state reports.

> Total projected contributions in 2015 to the HCSM fund [in Colorado] are estimated to be $46.6 million while projected distributions are estimated to total $53.1 million. There continues to be a steady decline in wireline revenues as consumers abandon wireline [voice-based] service. Additionally, highly competitive wireless price plans and the proliferation of consumer data packages have resulted in a significant decline in wireless contributions.[146]

[145] 1996 Telecom Act, Section 254(b)(5).
[146] Colorado Report, December 2014, at 3.

It is notable that the FCC has broadened the definition universal service, which might suggest that payments from users of voice services are only partial sources. However, the FCC has delayed reform of the contribution mechanism, likely because the Agency has no politically acceptable answer.

Because there are no ready and politically acceptable solutions, the FCC and the states have employed "workarounds." The FCC and virtually all of the states have set caps or limits on universal service funds available to carriers serving high-cost regions. Notably, in setting caps on funding, the policymakers have passed over any inconvenient studies or obligations about determination of whether the funding is "sufficient" to achieve comparable services at comparable rates as required under current law. Effectively, the legislated goal of "sufficient and predictable" universal service is given brief—if any—attention in a period when regulators have conceded they have no good idea about how to reform the voice-based payment/contribution system.

In addition to the caps on funding, the states and the FCC have employed other "workarounds" to shrink the geographic areas where support is required. Thus, the regulators have focused on areas where competitive providers offer service to eliminate some funding, and they have worked to reduce funding for larger carriers that are presumably not as vulnerable to reductions in support as the small carriers. It is possible that the network base will stabilize as voice-alone services shrink further, and the broadband networks continue to grow. But the substantive concerns about the level of sufficient funding and the long-term sustainability are not addressed.

Because there are no ready and politically acceptable solutions . . . the states and the FCC have employed other "workarounds" to shrink the geographic areas where support is required. Thus, the regulators have focused on areas where competitive providers offer service to eliminate some funding, and they have worked to reduce funding for larger carriers that are presumably not as vulnerable to reductions in support as the small carriers.

The Texas Legislature might choose one of several approaches, all of which have obvious limitations. The Legislature could continue to focus the support on the most vulnerable regions and hope that the contribution problem stabilizes. The Legislature could choose to appropriate funding from the tax base, consistent with the approach that Colorado uses for the administrative costs of USF. However, this appropriations approach creates a conceptual confusion about universal service which should be a payment for services (not a taxation), and a tax-approach creates a potential for unpredictability. A third possibility is that the Legislature might set the assessment rate at higher-than-currently-necessary levels to create a foundation for future payments, akin to the endowments established at universities.

The authors have no specific recommendations at this time, but contend that the issue is important and should be studied further . . . and soon. If the states are the laboratory for approaches that might be adopted by federal agencies, such a careful review has merit even beyond Texas.

Management issues

Two issues arise consistently concerning the management of state universal service funds, at least in the surveyed states.

DETERMINATION OF COST APPROACH

The FCC and the other states have generally relied upon some study of embedded costs to determine the appropriate funding levels for carriers, particularly for smaller rural carriers. The theory is that the carrier invests in network and services which provide actual costs that can be used to calculate end-user rates.

However, in assuring rural rates comparable to those in urban areas, the greater expense in rural regions should be offset by support funding from network users across the nation or across the state. Actual costs that are expensed or capitalized provide the best indicators of the excess costs of providing POLR services to customers in high-cost areas, particularly in light of the fact that model-based costs do not appear very accurate across widely-divergent rural properties. This use of embedded costs is the approach recommended by the Rural Task Force to the Federal-State Joint Board on Universal Service and to the FCC almost 15 years ago. That recommendation arose as a result of the only national study of rural costs, and the authors believe that the conclusions of the RTF White Paper 2 remain approximately correct concerning costs in low-density regions.

The surveyed states, as well as Texas, provide good indications that embedded costs have been a sound basis for calculating the appropriate levels of support. The FCC is currently in the process of assessing models that might be used to compute "forward-looking costs" for rural carriers. The proposal to use models is controversial. The FCC appears to favor such an approach because of a belief that models will be more convenient to manage and because of the argument that such a mechanism will create greater efficiencies. Many or even most rural carriers disagree. The authors of this White Paper are also skeptical, particularly in light to the FCC's oft-criticized models over the last 20 years. Notably, where there might be some margin for error in modeling large carriers' investment costs, the authors argue that imprecise estimates in modeling for small and vulnerable carriers can prove fatal. The authors of this White Paper recommend that the Texas Legislature should understand the risks in adopting a modeling approach, and should change from embedded costs only if there is a high degree of certitude that the models are reliable and will not cause serious harm.

The authors of this White Paper recommend that the Texas Legislature should understand the risks in adopting a modeling approach, and should change from embedded costs only if there is a high degree of certitude that the models are reliable and will not cause serious harm.

BENCHMARK RATES

Most of the other surveyed states use benchmark rates, and the FCC is also requiring benchmark rates, to determine what level of support funding will be required above some "normalized" end-user rate in order to cover the costs to serve uneconomic regions. The use of benchmark rates has shifted the funding requirements from USF to the end-user. Traditionally, rural rates were set at levels that were nominally lower than those paid by urban customers, sometimes one-half the level of urban rates. The rationale was that rural customers were able to place calls across relatively smaller service regions that had fewer customers, and therefore the lower rates reflected lower network value available to the rural customer.

The more recent approach has been to determine average statewide or national end-user rates, and apply those averages as "benchmarks" which are used to set a threshold rate level, above which the carrier might be eligible for support to the extent its costs exceed the benchmark rate. The real effect of this approach appears to be to reduce the USF funding obligation, so that the federal or state mechanisms might better manage the shrinking voice-related pool from which USF is funded.

This approach has been employed frequently, as is apparent in the surveyed states outlined above.

Recommended approach

The brief survey in the previous section highlights the variety of methods to collect, calculate, and distribute state universal service funds. Texas is today considering new challenges in supporting

customers served by small and rural providers. The State has thinly-populated rural regions across vast geographies, and must determine how to properly support telecommunications services across these vast regions and whether to update its TUSF to include broadband consistent with the federal reforms. Compared with the major state USF programs surveyed in the previous section of this White Paper, Texas has the largest number (45) of small carriers, as was apparent in the summary data in Table 10. Administrative costs in monitoring the TUSF are potentially burdensome for the carriers and for the PUCT, making it difficult to argue for a rate case approach similar to the one California uses (with its 10 CHCF-A-supported companies).

Given the challenges, Texas might create appropriate approaches based on systems that have been effective for other utility industries. For example, electric utility regulators in various southeastern states have at times adopted a "rate band" or "earnings band" mechanism to determine acceptable ranges for support. Such a mechanism would be somewhat similar to the California telecommunications approach of considering target rates of return in allocating small carrier funding. However, in light of regulatory policy for small ILECs expressed in Chapter 53, Subchapter F of PURA, Texas would not need to require a carrier to engage in a full "rate case" in order to adjust support. So long as the company's rate of return falls within a certain prescribed earnings band, support could be maintained. The PUCT would only be required to consider adjustments to support for companies that are over-earning or under-earning. Since Texas ILECs already file an *Earnings Report for Telephone Utilities* each year, those data might serve to facilitate an abbreviated or administrative proceeding to make such a determination.[147] A "rate band" approach would allow the PUCT to consider the small carrier's earnings in deciding the allocation of TUSF support, but in an abbreviated manner that does not overly burden the small ILECs (due to their small size) or the PUCT (due to the large number of small ILECs in Texas). A target rate or a "rate band" approach is consistent with PURA Secs. 53.251 and 53.252.[148]

A "rate band" approach would allow the PUCT to consider the small carrier's earnings in deciding the allocation of TUSF support, but in an abbreviated manner that does not overly burden the small ILECs (due to their small size) or the PUCT (due to the large number of small ILECs in Texas).

Regardless of what specific approach the Legislature and regulators adopt, the authors recommend that the Legislature should assess certain high-level policies/goals:

- **Provide continuity and predictability in regions served by small carriers.** In every state surveyed, investment in rural regions has been supported through predictable and relatively stable funding levels, with a goal of ensuring service for customers in areas served by smaller carriers. Texas must have similarly predictable and stable support in order to ensure service to its large rural population across vast rural geographies, which remain important for customers as well as for the broader Texas economy. A virtually-fixed funding approach is one clear way to maintain support and assure that investment in ubiquitous advanced telecommunications networks will occur over the foreseeable future. Such an approach appears to ensure little or no disruption to the present rural telecommunications policy.

[147] The rule which requires small ILECs to file *Earnings Reports for Telephone Utilities* annually is 16 TAC § 26.73.

[148] There are other regulatory provisions prescribing abbreviated review by the PUCT as well. *See, e.g,* PURA Secs. 53.301 - .308 (allowing small ILECs to make minor rate changes), 16 TAC § 25.192(h) (allowing electric utilities to adjust their rate base on an interim basis).

- **Provide a review mechanism.** The surveyed states in this White Paper generally provide a mechanism for review of the sufficiency of the state USF. In California, there are general rate cases for the ten carriers that are funded, relying on an analysis of embedded costs and earnings. In the case of most of the other states, regular audits are urged or required. Texas has a more challenging fact pattern as the State has the largest number of small carriers (45) compared with all the other states in the survey. Compelling every carrier to submit to certain formal proceedings at regular intervals would be more difficult for the PUCT to manage. One solution is the earnings band approach suggested above, but there may be a variety of available methods that might allow for efficient review consistent with Texas policy.
- **Consider broader funding.** Similar to the FCC's approach in redefining Universal Service with a goal of allocating funds to broadband buildouts and similar to the approach of other states to either authorize more funding (e.g., California) or reallocate large-carrier funding (e.g., Colorado), the Legislature might consider providing support for broadband expansion to assure that there is no "rural ghetto" and to provide a stable and modern economic base in rural Texas. This expansion appears consistent with the spirit of the House and Senate charges regarding broadband initiatives, but situates those charges within a sustainable plan that is consistent with the federal reforms of 2011. Such an approach accommodates the fundamental reality that education does not occur only at the schools, but to a great extent in the homes in those communities. Importantly, expansion of TUSF to include broadband would be a commitment to social and economic benefits to regions important to the State of Texas.

The authors' recommendations are neither exhaustive nor exclusive. Texas policymakers may consider a variety of approaches to deal with the challenges inherent to universal service policy. The important thing to remember is that—however the state chooses to proceed—small and rural carriers need sufficient and predictable support to continue investing in uneconomic areas so that all Texans can receive the telecommunications services they need to enjoy the economic opportunities and health and education advantages afforded by such services. The strategic goal of a State USF reform should be to ensure that all Texans are able to benefit from economically and socially vibrant rural communities which are an integral part of the broader Texas network and economy.

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APPENDICES

Appendix 1: Texas PUC Docket 18516 (1999)

PUC DOCKET NO. 18516

COMPLIANCE PROCEEDING FOR IMPLEMENTATION OF THE SMALL AND RURAL INCUMBENT LOCAL EXCHANGE CARRIER UNIVERSAL SERVICE PLAN	§ § §	PUBLIC UTILITY COMMISSION OF TEXAS

FINAL ORDER[149]

I. Summary

In this Order the Public Utility Commission (Commission) implements the Small and Rural Incumbent Local Exchange Company (ILEC) Universal Service Plan portion of the Texas Universal Service Plan (TUSF) in accordance with the requirements set out in the Public Utility Regulatory Act (PURA),[150] the Commission's substantive rules,[151] and the federal Telecommunications Act:[152] the Commission shall "adopt and enforce rules to establish a universal service fund to assist telecommunications providers in providing basic local telecommunications service at reasonable rates in high cost and rural areas."[153]

The Commission makes the following determinations:

1. The monthly per-line support (MPLS) for each small and rural incumbent local exchange company (SRILEC) study area is calculated in the following manner:[154] (a) Texas Universal Service Fund (TUSF) support (dollars) for each SRILEC study area for the 1997 test year is divided by the number of eligible lines, resulting in dollars-per-line-per-year; and (b) the dollars-per-line-per-year amount is divided by 12 (months/year), resulting in the MPLS for each SRILEC study area (dollars-per-line-per-month), as reflected in Attachment 1.[155] Monthly support payments shall be disbursed pursuant to P.U.C. SUBST. R. 26.404(f). (Section IV-C)

2. TUSF support for each SRILEC study area, based on a 1997 test year and pursuant to P.U.C. SUBST. R. 26.404, is set forth in Attachment 1 and totals $79,640,269. This support is computed by summing the dollar amounts in (a), (b), and (c) below.[156]

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[149] Full version available at http://interchange.puc.state.tx.us/WebApp/Interchange/Documents/172929.DOC.

[150] Public Utility Regulatory Act, TEX. UTIL. CODE ANN. §§ 11.001-64.158 (Vernon 1998 & Supp. 2000) (PURA).

[151] In particular, P.U.C. SUBST. R. 26.404.

[152] Telecommunications Act of 1996 § 254(b)(3), 47 U.S.C.A. § 153 (West Supp. 1997) (FTA). FTA § 254(b)(3) requires rural consumer to have access to telecommunications services at rates that are "reasonably comparable to rates charged for similar services in urban areas."

[153] PURA § 56.021(1).

[154] P.U.C. SUBST. R. 26.404(e)(1).

[155] Attachment 1, Column G.

[156] Attachment 1, Column E. The test-year in this proceeding is calendar year 1997. The amount of $79,640,269 is the sum of (a), (b), and (c), and $2,520,347. For the sake of calculating the monthly per line support amount (Column G of Attachment 1), the toll pool support total in Attachment 1, Column A includes support for the non-pooling SRILECs, in the amount of $2,520,347, to replace revenues (net of expenses) foregone as a result of Commission-ordered access rate reductions as applied to the termination of ILEC-to-ILEC calls. This amount will be offset by a reduction to SWBT's annual TUSF support, as specified in Attachment 4A.

(a) IntraLATA toll pool support for each SRILEC is shown in Attachment 4 and totals $32,876,983. This support is calculated in conformance with P.U.C. SUBST. R. 26.404(e)(1)(A), and the toll pool is dissolved effective January 1, 1999.[157] Further, due to the dissolution of the toll pool, it is appropriate policy and in the public interest to permit certain SRILECS to: (1) obsolete their intraLATA private line tariffs and replace them with Special Access Service Tariffs; and (2) withdraw from concurrence in Southwestern Bell Telephone Company's (SWBT's) Message Telecommunications Service Tariff and file their own tariffs in accord with all Commission requirements and rules. (Section IV-A)

(b) Total switched access revenue reduction support for each SRILEC is shown on Attachment 1 and totals $25,981,070.[158] This support is calculated in conformance with P.U.C. SUBST. R. 26.404(e)(1)(B). (Section IV-B)

(c) Total intraLATA toll revenue reduction support for each SRILEC is set forth in Attachment 1 and totals $18,261,869.[159] This support is calculated in conformance with P.U.C. SUBST. R. 26.404(e)(1)(B). (Section IV-B)

3. The new commission-ordered toll and access rates for each SRILEC are just, reasonable, and in the public interest; are not unreasonably preferential, prejudicial, or discriminatory, pursuant to PURA § 53.003; and are competitively neutral, pursuant to PURA § 56.026(d).[160] (Section IV-B)

4. Certain SRILECs shall implement intraLATA equal access, effective January 1, 1999.[161] (Section IV-D)

5. It is appropriate to further reduce access rates for SRILECs having, from prior rate cases, a Commission-ordered Lifeline and Linkup program in place during the test year. (Section IV-E)

6. Telecommunications utilities with more than six percent of total access minutes for the most recent 12 months shall reduce their toll rates (*i.e.*, flow through to end-use customers) in accord with: (1) access rate reductions ordered by the Commission in this proceeding; and (2) the reduction of access rates ordered by the Legislature in Senate Bill (SB) 560.[162] (Section IV-F)

8.[sic] In order to ensure that the Commission-ordered toll reductions are flowed through to end-use customers, ILECs shall charge the intraLATA toll rates indicated in their intraLATA toll tariffs. The

[157] Attachment 1, Column A. Reimbursement from the TUSF due to the elimination of the intraLATA toll pool is referred to as "toll pool settlement amounts."
[158] Attachment 1, sum of Columns C and D.
[159] Attachment 1, Column B.
[160] The toll and access rates for each small and rural ILEC are set out in Attachments 2 and 3, respectively.
[161] Order No. 9 (May 22, 1998). The Legislature recognized that the implementation of intra-LATA dialing parity would reduce revenues of some Incumbent Local Exchange Companies (ILECs) – revenues containing support permitting the ILECs to provide basic local telecommunications services at affordable rates to customers in the study areas of SRILECs (PURA § 56.025(d)). This support now becomes explicit as part of the TUSF (PURA § 56.025(f)). IntraLATA equal access is implemented by P.U.C. SUBST. R. 26.275.
[162] Public Utility Regulatory Act, TEX. UTIL. CODE ANN. §§ 11.001-64.158 (Vernon 1998 & Supp. 2000) (PURA).

approval of the SRILECs' intraLATA tariffs, reflecting Commission-approved toll reductions, is sufficient proof that SRILEC toll reductions have been passed through to end-use customers. (Section IV-F)

Appendix 2: Texas SB 980 (April 2011)

AN ACT

relating to communications services and markets.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

SECTION 1. Subsections (a) and (g), Section 51.001, Utilities Code, are amended to read as follows:

(a) Significant changes have occurred in telecommunications since the law from which this title is derived was originally adopted. Communications providers, including providers not subject to state regulation, such as wireless communications providers and Voice over Internet Protocol providers, have made investments in this state and broadened the range of communications choices available to consumers. To encourage and accelerate the development of a competitive and advanced telecommunications environment and infrastructure, [~~new~~] rules, policies, and principles must be reformulated [~~formulated and applied~~] to reduce regulation of incumbent local exchange companies, ensure fair business practices, and protect the public interest. [~~Changes in technology and market structure have increased the need for minimum standards of service quality, customer service, and fair business practices to ensure high quality service to customers and a healthy marketplace where competition is permitted by law. It is the purpose of this subtitle to grant the commission authority to make and enforce rules necessary to protect customers of telecommunications services consistent with the public interest.~~]

(g) It is the policy of this state to ensure that customers in all regions of this state, including low-income customers and customers in rural and high cost areas, have access to telecommunications and information services, including interexchange services, cable services, wireless services, and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at prices that are reasonably comparable to prices charged for similar services in urban areas. [~~Not later than November 1, 1999, the commission shall begin a review and evaluation of the availability and the pricing of telecommunications and information services, including interexchange services, cable services, wireless services, and advanced telecommunications and information services, in rural and high cost areas, as well as the convergence of telecommunications services. The commission shall file a report with the legislature not later than January 1, 2001. The report must include the commission's recommendations on the issues reviewed and evaluated.~~]

SECTION 2. Section 51.002, Utilities Code, is amended by adding Subdivisions (3-a) and (13) to read as follows:

(3-a) "Internet Protocol enabled service" means a service, capability, functionality, or application that uses Internet Protocol or a successor protocol to allow an end user to send or receive a data, video, or voice communication in Internet Protocol or a successor protocol.

(13) "Voice over Internet Protocol service" means a service that:

(A) uses Internet Protocol or a successor protocol to enable a real-time, two-way voice communication that originates from or terminates to the user's location in Internet Protocol or a successor protocol;

(B) requires a broadband connection from the user's location; and

(C) permits a user generally to receive a call that originates on the public switched telephone network and to terminate a call to the public switched telephone network.

. . . . [omitted changes to Sections 3-9 that do not concern universal service or deregulated carriers]

SECTION 10. Subsection (d), Section 56.023, Utilities Code, is amended to read as follows:

(d) The commission shall adopt rules for the administration of the universal service fund and this chapter and may act as necessary and convenient to administer the fund and this chapter. The rules must include procedures to ensure reasonable transparency and accountability in the administration of the universal service fund.

SECTION 11. Subchapter B, Chapter 56, Utilities Code, is amended by adding Section 56.032 to read as follows:

Sec. 56.032. SUPPORT AVAILABLE TO DEREGULATED MARKETS. (a) An incumbent local exchange company may not receive support from the universal service fund for a deregulated market that has a population of at least 30,000.

(b) An incumbent local exchange company may receive support from the universal service fund for a deregulated market that has a population of less than 30,000 only if the company demonstrates to the commission that the company needs the support to provide basic local telecommunications service at reasonable rates in the affected market. A company may use evidence from outside the affected market to make the demonstration.

(c) An incumbent local exchange company may make the demonstration described by Subsection (b) in relation to a market before submitting a petition to deregulate the market.

SECTION 12. Subsection (c), Section 58.255, Utilities Code, is amended to read as follows:

(c) [~~Each contract shall be filed with the commission.~~] Commission approval of a contract is not required.

SECTION 13. Subsection (c), Section 59.074, Utilities Code, is amended to read as follows:

(c) [~~Each contract shall be filed with the commission.~~] Commission approval of a contract is not required.

SECTION 14. Section 65.051, Utilities Code, is amended to read as follows:

Sec. 65.051. MARKETS DEREGULATED. A market that is deregulated as of September 1, 2011, shall remain deregulated. Notwithstanding any other provision of this title, the commission may not reregulate a market or company that has been deregulated [~~(a) Except as provided by Subsection (b), all~~

~~markets of all incumbent local exchange companies are deregulated on January 1, 2006, unless the commission determines under Section 65.052(a) that a market or markets should remain regulated.~~

[~~(b) A market of an incumbent local exchange company in which the population in the area included in the market is less than 30,000 is deregulated on January 1, 2007, unless the commission determines under Section 65.052(f) that the market should remain regulated~~].

SECTION 15. Subsections (a), (b), and (c), Section 65.052, Utilities Code, are amended to read as follows:

(a) An incumbent local exchange company may petition the commission to deregulate a market of the company that the commission previously determined should remain regulated. Notwithstanding any other provision of this title, only the incumbent local exchange company may initiate a proceeding to deregulate one of the company's markets. Not later than the 90th day after the date the commission receives the petition, [~~Except as provided by Subsection (f),~~] the commission shall:

(1) determine whether the regulated [~~each~~] market [~~of an incumbent local exchange company~~] should remain regulated [~~on and after January 1, 2006~~]; and

(2) issue a final order classifying the market [~~company~~] in accordance with this section [~~effective January 1, 2006~~].

(b) In making a determination under Subsection (a), the commission may not determine that a market should remain regulated if:

(1) the population in the area included in the market is at least 100,000; or

(2) the population in the area included in the market is [~~at least 30,000 but~~] less than 100,000 and, in addition to the incumbent local exchange company, there are at least two competitors operating in all or part of the market that [~~three competitors of which~~]:

(A) are unaffiliated with the incumbent local exchange company [~~at least one is a telecommunications provider that holds a certificate of operating authority or service provider certificate of operating authority and provides residential local exchange telephone service in the market~~]; and

(B) provide voice communications service without regard to the delivery technology, including through:

(i) Internet Protocol or a successor protocol;

(ii) satellite; or

(iii) a technology used by a wireless provider or a commercial mobile service provider, as that term is defined by Section 64.201 [~~at least one is an entity providing residential telephone service in the market using facilities that the entity or its affiliate owns; and~~

[~~(C) at least one is a provider in that market of commercial mobile service as defined by Section 332(d), Communications Act of 1934 (47 U.S.C. Section 151 et seq.), Federal Communications Commission rules, and the Omnibus Budget Reconciliation Act of 1993 (Pub. L. No. 103-66), that is not affiliated with the incumbent local exchange company~~].

(c) If the commission deregulates a market under this section and the deregulation results in a regulated or transitioning company no longer meeting the definition of a regulated or transitioning

company, the commission shall issue an order reclassifying the company as a transitioning company or deregulated company, as those terms are defined by Section 65.002 [~~The commission shall issue an order classifying an incumbent local exchange company as a deregulated company that is subject to Subchapter C if:~~

[~~(1) the company does not have any markets in which the population in the area included in the market is less than 30,000; and~~

[~~(2) the commission does not determine that a market of the company should remain regulated on and after January 1, 2006~~].

SECTION 16. Section 65.102, Utilities Code, is amended to read as follows:

Sec. 65.102. REQUIREMENTS. (a) A deregulated company that holds a certificate of operating authority issued under this subchapter:

(1) is a nondominant carrier governed in the same manner as a holder of a certificate of operating authority issued under Chapter 54;

(2) is not required to:

(A) fulfill the obligations of a provider of last resort;

(B) comply with retail quality of service standards or reporting requirements;

(C) file an earnings report with the commission unless the company is receiving support from the Texas High Cost Universal Service Plan; or

(D) comply with a pricing requirement other than a requirement prescribed by this subchapter; and

(3) [~~, except that the deregulated company:~~

[~~(1) retains the obligations of a provider of last resort under Chapter 54;~~

[~~(2)~~] is subject to the following provisions in the same manner as an incumbent local exchange company that is not deregulated:

(A) Sections 54.156, 54.158, and 54.159;

(B) Section 55.012; and

(C) Chapter 60[~~; and~~

[~~(3) may not increase the company's rates for stand-alone residential local exchange voice service before the date that the commission has the opportunity to revise the monthly per line support under the Texas High Cost Universal Service Plan pursuant to Section 56.031, regardless of whether the company is an electing company under Chapter 58~~].

(b) Except as provided by Subsection (c), in [~~In~~] each deregulated market, a deregulated company shall make available to all residential customers uniformly throughout that market the same price, terms, and conditions for all basic and non-basic services, consistent with any pricing flexibility available to such company [~~on or before August 31, 2005~~].

(c) A deregulated company may offer to an individual residential customer a promotional offer that is not available uniformly throughout the market if the company makes the offer through a medium other than direct mail or mass electronic media and the offer is intended to retain or obtain a customer.

SECTION 17. Section 65.151, Utilities Code, is amended to read as follows:

Sec. 65.151. PROVISIONS APPLICABLE TO TRANSITIONING COMPANY. (a) Except as provided by Subsection (b), a [~~A~~] transitioning company is governed by this subchapter and the provisions of this title that applied to the company immediately before the date the company was classified as a transitioning company. If there is a conflict between this subchapter and the other applicable provisions of this title, this subchapter controls.

(b) A transitioning company is not required to fulfill the obligations of a provider of last resort in a deregulated market.

SECTION 18. Section 65.152, Utilities Code, is amended to read as follows:

Sec. 65.152. GENERAL REQUIREMENTS. (a) A transitioning company may:

(1) exercise pricing flexibility in a market subject only to the price and rate standards prescribed by Sections 65.153 and 65.154 [~~in the manner provided by Section 58.063 one day after providing an informational notice as required by that section~~]; and

(2) introduce a new service in a market subject only to the price and rate standards prescribed by Sections 65.153 and 65.154 [~~in the manner provided by Section 58.153 one day after providing an informational notice as required by that section~~].

(b) A transitioning company may not be required to:

(1) comply with [~~exchange-specific~~] retail quality of service standards or reporting requirements in a market that is deregulated; or

(2) file an earnings report with the commission unless the company is receiving support from the Texas High Cost Universal Service Plan.

SECTION 19. Section 65.153, Utilities Code, is amended by amending Subsection (c) and adding Subsection (c-1) to read as follows:

(c) Except as provided by Subsection (c-1), in [~~In~~] each deregulated market, a transitioning company shall make available to all residential customers uniformly throughout that market the same price, terms, and conditions for all basic and non-basic services, consistent with any pricing flexibility available to such company [~~on or before August 31, 2005~~].

(c-1) A transitioning company may offer to an individual residential customer a promotional offer that is not available uniformly throughout the market if the company makes the offer through a medium other than direct mail or mass electronic media and the offer is intended to retain or obtain a customer.

SECTION 20. Subchapter D, Chapter 65, Utilities Code, is amended by adding Sections 65.154 and 65.155 to read as follows:

Sec. 65.154. RATE AND PRICE REQUIREMENTS NOT APPLICABLE. (a) A transitioning company is not required to comply with the following requirements prescribed by this title on submission of a written notice to the commission:

(1) a direct or indirect requirement to price a residential service at, above, or according to the long-run incremental cost of the service or to otherwise use long-run incremental cost in establishing prices for residential services; or

(2) a requirement to file with the commission a long-run incremental cost study for residential or business services.

(b) Notwithstanding Subsection (a), a transitioning company may not:

(1) establish a retail rate, price, term, or condition that is anticompetitive or unreasonably preferential, prejudicial, or discriminatory;

(2) establish a retail rate for a basic or non-basic service in a deregulated market that is subsidized either directly or indirectly by a basic or non-basic service provided in an exchange that is not deregulated; or

(3) engage in predatory pricing or attempt to engage in predatory pricing.

(c) A rate or price for a basic local telecommunications service is not anticompetitive, predatory, or unreasonably preferential, prejudicial, or discriminatory if the rate or price is equal to or greater than the rate or price in the transitioning company's tariff for that service in effect on the date the transitioning company submits notice to the commission under Subsection (a).

(d) This section, including Subsection (a)(1), does not affect:

(1) other law or legal standards governing predatory pricing or anticompetitive conduct; or

(2) an infrastructure commitment under Chapter 58 or 59.

Sec. 65.155. COMPLAINT BY AFFECTED PERSON. (a) An affected person may file a complaint at the commission challenging whether a transitioning company is complying with Section 65.154(b).

(b) Notwithstanding Section 65.154(a)(2), the commission may require a transitioning company to submit a long-run incremental cost study for a business service that is the subject of a complaint submitted under Subsection (a).

SECTION 21. The following provisions of the Utilities Code are repealed:

(1) Section 52.057;

(2) Subsection (b), Section 53.065;

(3) Subsections (d), (e), and (f), Section 65.052;

(4) Section 65.054; and

(5) Section 65.055.

SECTION 22. (a) In this section, "commission" means the Public Utility Commission of Texas.

(b) The commission shall initiate one or more proceedings to review and evaluate whether the universal service fund accomplishes the fund's purposes, as prescribed by Section 56.021, Utilities Code,

or whether changes are necessary to accomplish those purposes. The commission may not initiate a proceeding to review the Texas High Cost Universal Service Plan before January 2, 2012.

(c) The commission has all authority necessary to conduct the review, including determining issues relevant to each telecommunications provider's need for universal service fund support, adjusting monthly per line support amounts under Section 56.031, Utilities Code, and implementing any other changes it determines are necessary and in the public interest.

(d) Notwithstanding Subsection (b), Section 56.024, Utilities Code, a party to a commission proceeding examining the universal service fund is entitled to access confidential information provided to the commission under Subsection (a), Section 56.024, Utilities Code, if a protective order is issued for the confidential information in the proceeding.

(e) The commission shall complete each proceeding required by this section not later than November 1, 2012. The commission shall provide to the legislature a copy of the commission's findings and of any orders issued under this section.

SECTION 23. (a) Except as provided by Subsection (b) of this section, this Act takes effect September 1, 2011.

(b) Sections 56.032, 65.154, and 65.155, Utilities Code, as added by this Act, take effect January 2, 2012.

Appendix 3: Texas HB 2603 (May 2011)

AN ACT

relating to the distribution of universal service funds to certain small and rural local exchange companies.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

SECTION 1. Section 56.031, Utilities Code, is amended to read as follows:

Sec. 56.031. ADJUSTMENTS: TEXAS HIGH COST UNIVERSAL SERVICE PLAN. The commission may revise the monthly per line support amounts to be made available from the Texas High Cost Universal Service Plan [~~and from the Small and Rural Incumbent Local Exchange Company Universal Service Plan at any time after September 1, 2007,~~] after notice and an opportunity for hearing. In determining appropriate monthly per line support amounts, the commission shall consider the adequacy of basic rates to support universal service.

SECTION 2. Subchapter B, Chapter 56, Utilities Code, is amended by adding Section 56.032 to read as follows:

Sec. 56.032. ADJUSTMENTS: SMALL AND RURAL INCUMBENT LOCAL EXCHANGE COMPANY UNIVERSAL SERVICE PLAN. (a) For purposes of this section, "consumer price index" means the Consumer Price Index for All Urban Consumers, as published by the federal Bureau of Labor Statistics of the United States Department of Labor.

(b) Except as provided by Subsections (c), (d), (e), and (f), the commission may revise the monthly support amounts to be made available from the Small and Rural Incumbent Local Exchange Company Universal Service Plan by revising the monthly per line support amounts, after notice and an opportunity for hearing. In determining appropriate monthly per line support amounts, the commission shall consider the adequacy of basic rates to support universal service.

(c) On the written request of a small or rural incumbent local exchange company that receives monthly per line support amounts, the commission shall disburse funds to the company in fixed monthly amounts based on the company's annualized amount of recovery for the calendar year ending on December 31, 2010. A company may submit only one request under this subsection and must submit the request on or before December 31, 2011.

(d) On the written request of a small or rural incumbent local exchange company that is not an electing company under Chapter 58 or 59, the commission annually shall set the company's monthly support amounts for the following 12 months by dividing by 12 the annualized support amount calculated under this subsection. The commission shall calculate the annualized amount:

(1) for the initial 12-month period for which a company makes an election under this subsection, by:

(A) determining the annualized support amount calculated for the requestor in the final order issued by the commission in Docket No. 18516; and

(B) adjusting the support amount determined under Paragraph (A) at the beginning of each calendar year by a factor equal to the most recent consumer price index published at that time, beginning with the 1999 calendar year and ending in the year the company makes an election under this subsection; and

(2) for the 12-month period following the initial period for which a company made an election under this subsection and for subsequent 12-month periods, by adjusting the most recent annualized support amount calculated by the commission by a factor equal to the percentage change in the consumer price index for the most recent 12-month period.

(e) If a company elects to receive monthly support amounts under Subsection (d), the commission, on its own motion or on the written request of the company, may initiate a proceeding to recalculate the most recent annualized support amount to be used as the basis for adjustment for a subsequent 12-month period under Subsection (d)(2). If, based on the recalculation, the commission by order adjusts a company's most recent annualized support amount, the adjusted support amount supersedes the annualized support amount calculated in accordance with Subsection (d).

(f) The commission shall administratively review requests filed under Subsections (c) and (d). Except for good cause, the commission shall approve the request not later than the 60th day after the date the commission determines the company is eligible and has met all the procedural requirements under this subchapter.

(g) This section does not affect the commission's authority under Chapter 53 or this chapter.

(h) This section and any monthly support amount approved under this section expire on September 1, 2013.

SECTION 3. Effective September 1, 2013, Section 56.031, Utilities Code, is amended to read as follows:

Sec. 56.031. ADJUSTMENTS. The commission may revise the monthly per line support amounts to be made available from the Texas High Cost Universal Service Plan and from the Small and Rural Incumbent Local Exchange Company Universal Service Plan at any time after September 1, 2007, after notice and an opportunity for hearing. In determining appropriate monthly per line support amounts, the commission shall consider the adequacy of basic rates to support universal service.

SECTION 4. Except as otherwise provided by this Act, this Act takes effect September 1, 2011.

Appendix 4: Texas SB 583 (May 2013)

AN ACT

relating to eligibility for support from the universal service fund.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

SECTION 1. Section 56.023, Utilities Code, is amended by amending Subsection (b) and adding Subsections (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), and (q) to read as follows:

(b) The eligibility criteria must require that a telecommunications provider, in compliance with the commission's quality of service requirements:

(1) offer service to each consumer within an exchange in the company's certificated area for which the incumbent local exchange company receives support under a plan established under Section 56.021(1) and to any permanent residential or business premises to which the company is designated to provide services under Subchapter F; and

(2) render continuous and adequate service within an exchange in the company's certificated area for which the incumbent local exchange company receives support under a plan established under Section 56.021(1) and to any permanent residential or business premises to which the company is designated to provide services under Subchapter F.

(f) Except as provided by Subsection (g), for an incumbent local exchange company or cooperative that served greater than 31,000 access lines in this state on September 1, 2013, or a company or cooperative that is a successor to such a company or cooperative, the support that the company or cooperative is eligible to receive on December 31, 2016, under a plan established under Section 56.021(1)(A) is reduced:

(1) on January 1, 2017, to 75 percent of the level of support the company or cooperative is eligible to receive on December 31, 2016;

(2) on January 1, 2018, to 50 percent of the level of support the company or cooperative is eligible to receive on December 31, 2016; and

(3) on January 1, 2019, to 25 percent of the level of support the company or cooperative is eligible to receive on December 31, 2016.

(g) After the commission has adopted rules under Subsection (j), an incumbent local exchange company or cooperative that is subject to Subsection (f) may petition the commission to initiate a contested case proceeding as necessary to determine the eligibility of the company or cooperative to receive support under a plan established under Section 56.021(1)(A). A company or cooperative may not file more than one petition under this subsection. On receipt of a petition under this subsection, the commission shall initiate a contested case proceeding to determine the eligibility of the company or cooperative to receive continued support under a plan established under Section 56.021(1)(A) for service in the exchanges that are the subject of the petition. To be eligible to receive support for service in an exchange under this subsection, the company or cooperative must demonstrate that it has a financial need for continued support. The commission must issue a final order on the proceeding not later than the 330th day after the date the petition is filed with the commission. Until the commission issues a final order on the proceeding, the company or

cooperative is entitled to receive the total amount of support the company or cooperative was eligible to receive on the date the company or cooperative filed the petition. A company or cooperative that files a petition under this subsection is not subject to Subsection (f) after the commission issues a final order on the proceeding. If the commission determines that a company or cooperative has demonstrated financial need for continued support under this subsection, it shall set the amount of support in the same proceeding. The amount of support set by the commission for an exchange under this subsection may not exceed:

(1) 100 percent of the amount of support that the company or cooperative will be eligible to receive on December 31, 2016, if the petition is filed before January 1, 2016;

(2) 75 percent of the amount of support that the company or cooperative will be eligible to receive on December 31, 2016, if the petition is filed on or after January 1, 2016, and before January 1, 2017;

(3) 50 percent of the amount of support the company or cooperative is eligible to receive on December 31, 2016, if the petition is filed on or after January 1, 2017, and before January 1, 2018; or

(4) 25 percent of the amount of support that the company or cooperative is eligible to receive on December 31, 2016, if the petition is filed on or after January 1, 2018, and before January 1, 2019.

(h) Except as provided by Subsection (i), for an incumbent local exchange company that is an electing company under Chapter 58 or 59 or a cooperative that served greater than 31,000 access lines in this state on September 1, 2013, or a company or cooperative that is a successor to such a company or cooperative, the support that the company or cooperative is eligible to receive on December 31, 2017, under a plan established under Section 56.021(1)(B) is reduced:

(1) on January 1, 2018, to 75 percent of the level of support the company or cooperative is eligible to receive on December 31, 2017;

(2) on January 1, 2019, to 50 percent of the level of support the company or cooperative is eligible to receive on December 31, 2017; and

(3) on January 1, 2020, to 25 percent of the level of support the company or cooperative is eligible to receive on December 31, 2017.

(i) After the commission has adopted rules under Subsection (j), an incumbent local exchange company or cooperative that is subject to Subsection (h) may petition the commission to initiate a contested case proceeding as necessary to determine the eligibility of the company or cooperative to receive support under a plan established under Section 56.021(1)(B). A company or cooperative may not file more than one petition under this subsection. On receipt of a petition under this subsection, the commission shall initiate a contested case proceeding to determine the eligibility of the company or cooperative to receive continued support under a plan established under Section 56.021(1)(B) for service in the exchanges that are the subject of the petition. To be eligible to receive support for service in an exchange under this subsection, the company or cooperative must demonstrate that it has a financial need for continued support. The commission must issue a final order on the proceeding no later than the 330th day after the date the petition is filed with the commission. Until the commission issues a final order on the proceeding, the company or cooperative shall continue to receive the total amount of support it was eligible to receive on the date the company or cooperative filed a petition under this subsection. A company or cooperative that files a petition under this subsection is not subject to Subsection (h) after the commission issues a final order on the proceeding. If the commission determines that a company or cooperative has demonstrated financial need

for continued support under this subsection, it shall set the amount of support in the same proceeding. The amount of support set by the commission for an exchange under this subsection may not exceed:

(1) 100 percent of the amount of support that the company or cooperative will be eligible to receive on December 31, 2017, if the petition is filed before January 1, 2017;

(2) 75 percent of the amount of support that the company or cooperative will be eligible to receive on December 31, 2017, if the petition is filed on or after January 1, 2017, and before January 1, 2018;

(3) 50 percent of the amount of support that the company or cooperative is eligible to receive on December 31, 2017, if the petition is filed on or after January 1, 2018, and before January 1, 2019; or

(4) 25 percent of the amount of support that the company or cooperative is eligible to receive on December 31, 2017, if the petition is filed on or after January 1, 2019, and before January 1, 2020.

(j) The commission by rule shall establish the standards and criteria for an incumbent local exchange company or cooperative to demonstrate under Subsection (g) or (i) that the company or cooperative has a financial need for continued support for residential and business lines under a plan established under Section 56.021(1).

(k) Subsections (g) and (i) do not authorize the commission to initiate a contested case hearing concerning a local exchange company that has elected to participate in a total support reduction plan under 16 T.A.C. Section 26.403 that requires the company to forego funding under a plan established under Section 56.021(1) after January 1, 2017. This section does not affect any obligation of a local exchange company subject to such a total support reduction plan.

(l) Subsections (f), (g), (h), and (i) do not apply to an incumbent local exchange company that elects, not later than March 1, 2014, to eliminate, not later than September 1, 2018, the support it receives under a plan established under Section 56.021(1).

(m) Nothing in this chapter relieves any party of an obligation entered into in the commission's Docket No. 40521.

(n) Nothing in this section is intended to affect the rate rebalancing proceeding in the commission's Docket No. 41097.

(o) Notwithstanding the provisions of this chapter, the commission has no authority, except as provided by Subsections (f), (g), (h), (i), (j), (k), (m), and (n) to reduce support provided to an incumbent local exchange company that is an electing company under Chapter 58 or 59 or is a cooperative that served greater than 31,000 access lines in this state on September 1, 2013:

(1) under a plan established under Section 56.021(1)(A) before January 1, 2019; or

(2) under a plan established under Section 56.021(1)(B) before January 1, 2020. This subsection expires on January 2, 2020.

(p) If an incumbent local exchange company or cooperative is ineligible for support under a plan established under Section 56.021(1) for services in an exchange, a plan established under Section 56.021(1) may not provide support to any other telecommunications providers for services in that exchange, except

that an eligible telecommunications provider that is receiving support under Section 56.021(1)(A) in that exchange shall continue to receive such support for a 24-month period following the date the incumbent local exchange provider or cooperative ceases receiving support in that exchange. The support received by the eligible telecommunications provider during the 24-month period shall be at the same monthly per line support level in effect for that exchange as of the date the incumbent local exchange provider or cooperative ceases receiving funding in that exchange.

(q) Notwithstanding the period for continued support specified by Subsection (p), if the eligible telecommunications provider receiving continued support under that subsection is a cooperative or an affiliate of a cooperative, the telecommunications provider is entitled to continued support through December 31, 2017, at the same monthly per-line support amount as the provider is receiving as of the date the support ceases for that exchange for the incumbent local exchange company or cooperative. Support authorized under this subsection ceases December 31, 2017.

SECTION 2. Section 56.024, Utilities Code, is amended by amending Subsection (b) and adding Subsections (c) and (d) to read as follows:

(b) A report or information the commission requires a telecommunications provider to provide under Subsection (a) is confidential and not subject to disclosure under Chapter 552, Government Code.

(c) A telecommunications provider shall file with the commission the provider's annual earnings report if the provider:

(1) is not a local exchange company subject to a total support reduction plan under 16 T.A.C. Section 26.403 or that has made an election under Section 56.023(l);

(2) serves greater than 31,000 access lines; and

(3) receives support under a plan established under Section 56.021(1).

(d) A report filed under Subsection (c) is confidential and not subject to disclosure under Chapter 552, Government Code.

SECTION 3. Section 56.025, Utilities Code, is amended by amending Subsection (a) and adding Subsection (g) to read as follows:

(a) In addition to the authority provided by Section 56.021:

(1) [~~,~~] for each local exchange company that serves fewer than 31,000 access lines and each cooperative, the commission[~~:~~

[~~(1)~~] may adopt a mechanism necessary to maintain reasonable rates for local exchange telephone service; and

(2) for each local exchange company and each cooperative that serves 31,000 or fewer access lines and that on June 1, 2013, is not an electing company under Chapter 58 or 59, the commission shall adopt rules to expand the universal service fund in the circumstances prescribed by this section.

(g) Notwithstanding any other provision of this section, after December 31, 2013, the commission may not distribute support granted under this section, including any support granted before that date, to a local exchange company or cooperative that serves greater than 31,000 access lines or that is an electing company under Chapter 58 or 59 on June 1, 2013.

SECTION 4. Section 56.026, Utilities Code, is amended to read as follows:

Sec. 56.026. PROMPT AND EFFICIENT [~~UNIVERSAL SERVICE FUND~~] DISBURSEMENTS. [~~(a) A revenue requirement showing is not required for a disbursement from the universal service fund under this subchapter.~~

[~~(b)~~] The commission shall make each disbursement from the universal service fund promptly and efficiently so that a telecommunications provider does not experience an unnecessary cash-flow change as a result of a change in governmental policy.

SECTION 5. Subsections (b), (c), (d), (e), (f), and (h), Section 56.032, Utilities Code, as added by Chapter 535 (H.B. 2603), Acts of the 82nd Legislature, Regular Session, 2011, are amended to read as follows:

(b) Except as provided by Subsections [~~(c),~~] (d) and[~~,~~] (e), [~~and (f),~~] the commission may revise the monthly support amounts to be made available from the Small and Rural Incumbent Local Exchange Company Universal Service Plan by any mechanism, including support reductions resulting from rate rebalancing approved by the commission, [~~by revising the monthly per line support amounts,~~] after notice and an opportunity for hearing. In determining appropriate monthly [~~per line~~] support amounts, the commission shall consider the adequacy of basic rates to support universal service.

(c) A [~~On the written request of a small or rural incumbent local exchange~~] company that receives frozen monthly [~~per line~~] support amounts as prescribed by a final order issued by the commission in the commission's Docket No. 39643 is entitled to continue to receive that monthly support until the support is revised under Subsection (b)[~~, the commission shall disburse funds to the company in fixed monthly amounts based on the company's annualized amount of recovery for the calendar year ending on December 31, 2010. A company may submit only one request under this subsection and must submit the request on or before December 31, 2011~~].

(d) For each [~~On the written request of a~~] small or rural incumbent local exchange company that is not receiving frozen support amounts as described by Subsection (c) and is not an electing company under Chapter 58 or 59, the commission annually shall set the company's monthly support amounts for the following 12 months by dividing by 12 the annualized support amount calculated under this subsection. The commission shall calculate the annualized amount:

(1) for the initial 12-month period for which a company makes an election under this subsection, by[~~:~~

[~~(A)~~] determining the annualized support amount received by the company as of January 1, 2013 [~~calculated for the requestor in the final order issued by the commission in Docket No. 18516; and~~

[~~(B) adjusting the support amount determined under Paragraph (A) at the beginning of each calendar year by a factor equal to the most recent consumer price index published at that time, beginning with the 1999 calendar year and ending in the year the company makes an election under this subsection~~]; and

(2) for [~~the 12-month period following the initial period for which a company made an election under this subsection and for~~] subsequent 12-month periods, by adjusting the most recent annualized support amount calculated by the commission by a factor equal to the percentage change in the consumer price index for the most recent 12-month period.

(e) The [~~If a company elects to receive monthly support amounts under Subsection (d), the~~] commission, on its own motion or on the written request of the company, may initiate a proceeding to recalculate the most recent annualized support amount to be used as the basis for adjustment for a subsequent 12-month period under Subsection (d)(2). If, based on the recalculation, the commission by order adjusts a company's most recent annualized support amount, the adjusted support amount supersedes the annualized support amount calculated in accordance with Subsection (d).

(f) [~~The commission shall administratively review requests filed under Subsections (c) and (d).~~] Except for good cause, the commission shall establish monthly support amounts under Subsection (d) [~~approve the request~~] not later than the 60th day after the date the commission determines the company is eligible [~~and has met all the procedural requirements under this subchapter~~].

(h) Subsections (a), (c), (d), (e), and (f) [~~This section~~] and any monthly support amount approved under those subsections [~~this section~~] expire [~~on~~] September 1, 2017 [~~2013~~].

SECTION 6. Section 3, Chapter 535 (H.B. 2603), Acts of the 82nd Legislature, Regular Session, 2011, which amended Section 56.031, Utilities Code, is repealed.

SECTION 7. The Public Utility Commission of Texas shall adopt rules under Subsection (j), Section 56.023, Utilities Code, as added by this Act, not later than December 1, 2014. The commission shall initiate the rulemaking proceeding not later than January 1, 2014.

SECTION 8. This Act takes effect June 1, 2013, if it receives a vote of two-thirds of all the members elected to each house, as provided by Section 39, Article III, Texas Constitution. If this Act does not receive the vote necessary to take effect on that date, this Act takes effect on the 91st day after the last day of the legislative session.

Appendix 5: State Universal Service Funding 2014

(Table figures in US dollars)	HCF	Intrastate Access Reform (IAS)	Broadband Fund	Lifeline Linkup	Schools Libraries	Relay Service	Telecom Access Equipment	Other	Total	Total HCF + IAS	Total HCF + IAS + Broadband
Alabama									***No fund***	***No fund***	***No fund***
Alaska		25,714,744		2,008,087		54,451		1,457,292	***29,234,574***	***25,714,744***	***25,714,744***
Arizona	1,011,220								***1,011,220***	***1,011,220***	***1,011,220***
Arkansas	39,000,000								***39,000,000***	***39,000,000***	***39,000,000***
California	92,000,000		22,000,000	150,000,000	85,000,000	28,000,000			***377,000,000***	***92,000,000***	***114,000,000***
Colorado	50,000,000		3,000,000						***53,000,000***	***50,000,000***	***53,000,000***
Connecticut						1,745,172			***1,745,172***	-	-
Delaware			*2,000,000*						***2,000,000***	-	***2,000,000***
District of Columbia				408,123		283,611			***691,734***	-	-
Florida									***No fund***	***No fund***	***No fund***
Georgia	15,000,000	18,600,000				1,400,000	763,000	797,000	***36,560,000***	***33,600,000***	***33,600,000***
Hawaii									-	-	-
Idaho	1,950,000			1,142,500		139,000			***3,231,500***	***1,950,000***	***1,950,000***
Illinois	18,984,631						3,396,370		***22,381,001***	***18,984,631***	***18,984,631***
Indiana	10,828,419								***10,828,419***	***10,828,419***	***10,828,419***
Iowa						823,190	459,129		***1,282,319***	-	-
Kansas	48,000,000	1,300,000		3,900,000		928,500	450,000	518,000	***55,096,500***	***49,300,000***	***49,300,000***
Kentucky				360,000		90,000	90,000		***540,000***	-	-
Louisiana	45,300,000								***45,300,000***	***45,300,000***	***45,300,000***
Maine	7,400,000		1,248,324		3,830,000	600,000	185,000	50,000	***13,313,324***	***7,400,000***	***8,648,324***
Maryland						7,800,000			***7,800,000***	-	-
Massachusetts									***No fund***	***No fund***	***No fund***
Michigan		12,000,000							***12,000,000***	***12,000,000***	***12,000,000***
Minnesota				2,000,000		2,400,000	1,400,000		***5,800,000***	-	-
Mississippi						725,000			***725,000***	-	-
Missouri				1,150,316			1,500,000		***2,650,316***	-	-
Montana								770,342	***770,342***	-	-
Nebraska	40,720,000		8,050,000	530,000				900,000	***50,200,000***	***40,720,000***	***48,770,000***
Nevada	1,136,879						1,202,373		***2,339,252***	***1,136,879***	***1,136,879***
New Hampshire							96,000		***96,000***	-	-
New Jersey									***No fund***	***No fund***	***No fund***
New Mexico		24,000,000		800,000					***24,800,000***	***24,000,000***	***24,000,000***
New York	1,150,000			22,800,000		5,600,000		15,300,000	***44,850,000***	***1,150,000***	***1,150,000***
North Carolina						16,670,356			***16,670,356***	-	-
North Dakota						360,000			***360,000***	-	-
Ohio						2,954,598			***2,954,598***	-	-
Oklahoma	37,000,000			1,807,321	36,445,707	7,136,931			***82,389,959***	***37,000,000***	***37,000,000***
Oregon	40,000,000			4,600,000					***44,600,000***	***40,000,000***	***40,000,000***
Pennsylvania	31,321,636								***31,321,636***	***31,321,636***	***31,321,636***
Rhode Island					1,200,000	470,084	75,000	40,000	***1,785,084***	-	-
South Carolina	27,800,000	13,200,000		1,000,000		2,200,000	600,000	500,000	***45,300,000***	***41,000,000***	***41,000,000***
South Dakota						1,500,000			***1,500,000***	-	-
Tennessee									***No fund***	***No fund***	***No fund***
Texas*	336,000,000								***336,000,000***	***336,000,000***	***336,000,000***
Utah	11,100,000								***11,100,000***	***11,100,000***	***11,100,000***
Vermont				715,000		500,000		5,000,000	***6,215,000***	-	-
Virginia									***No fund***	***No fund***	***No fund***
Washington	5,000,000			4,000,000			5,000,000		***14,000,000***	***5,000,000***	***5,000,000***
West Virginia			895,000				360,000		***1,255,000***	-	***895,000***
Wisconsin	11,000			2,510,000	36,809,200	2,055,000	1,800,000	1,000,000	***44,185,200***	***11,000***	***11,000***
Wyoming	2,080,000			56,364					***2,136,364***	***2,080,000***	***2,080,000***
Total	***862,793,785***	***94,814,744***	***37,193,324***	***199,787,711***	***163,284,907***	***84,435,893***	***17,376,872***	***26,332,634***	***1,486,019,870***	***957,608,529***	***994,801,853***

**** NRRI does not assign Texas' fund to any single category.***

Source: NRRI June 2015 report (State Universal Service Funds 2014).