



# **REFORMING UNIVERSAL SERVICE FUNDING FOR RURAL ILECS:**

**An Idea Whose Time Has Come**

December 2004

 **ECONOMICS AND TECHNOLOGY, INC.**

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# Preface

## REFORMING UNIVERSAL SERVICE FUNDING FOR RURAL ILECS:

### An Idea Whose Time Has Come

ETI was asked by Western Wireless to bring fresh data analysis to the ongoing debate over whether the use of forward-looking economic costs as the cost basis for determination of universal service funding for rural ILECs would result in USF funding that is “sufficient.” Up to this point, the debate has focused upon the results of several White Papers released by the Rural Task Force back in the fall of 2000 and little to no new data has been analyzed regarding the impact that a movement away from an RoRR-based embedded cost formulation would have upon the ability of the RLECs to continue to provide universal service. This paper, prepared on Western Wireless’ behalf, represents ETI’s analysis of current data related to the sustainability of universal service under a FLEC-based USF mechanism.

This report was prepared under the overall direction of Lee L. Selwyn, President, and Susan M. Gately, Senior Vice President. Contributing to the report was Scott C. Lundquist, Vice President and Colin B. Weir, Analyst at ETI. The views expressed in this study are those of ETI, and do not necessarily reflect the views of Western Wireless.

December, 2004

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# **REFORMING UNIVERSAL SERVICE FUNDING FOR RURAL ILECS:**

## **An Idea Whose Time Has Come**

Since at least 1996, many policy-makers and industry observers have recognized the need to overhaul the system of high-cost universal service funding (USF) disbursements in a manner that would rely on forward-looking economic costs (FLEC) rather than the decades-old rate of return regulation (RoRR)-based system premised upon the embedded costs reported by rural incumbent local exchange carriers (rural ILECs or RLECs). In response, the RLECs have maintained a constant refrain of ‘FLEC just won’t work.’ Dire predictions have been offered by the RLECs of the damage that would be caused by movement away from embedded cost-based USF, but these arguments have not been substantiated with credible economic analysis or data. Noticeably absent from the debate has been a discussion or quantification of the economic consequences to consumers across the country of the funding of universal service at a level that is higher than what is required to “sufficiently” fund the provision of rural service.

This paper responds to the RLEC criticisms of FLEC. In particular, this paper refutes the following:

- Unquantified and unsubstantiated RLEC claims that any change from the existing RoRR-regulated embedded cost basis for universal service support would result in funding levels that would not be “sufficient” for maintenance of universal service as required by Section 254(b) of the 1996 Act.<sup>1</sup> To the contrary, this paper analyses returns to publicly traded RLECs and RLEC holding companies to demonstrate that the current system is actually generating excessive benefits to shareholders, not consumers of RLEC telephony services.

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1. Section 254(b) of the 1996 Act.

- Equally unsubstantiated RLEC claims that funding determined using FLEC would not meet the requirements of Section 254(b) that USF be set at levels that are “specific” and “predictable.”<sup>2</sup> To the contrary, this paper shows that the use of FLEC as the basis for larger ILECs’ universal service support has been quite stable and predictable.
- Fallacious RLEC claims that the use of an embedded cost basis somehow reflects the “real” costs of universal service, and that FLEC determined funding requirements would not be “real.” The evidence shows that forward-looking economic costs, properly measured, are more “real” than book costs.
- Incorrect claims by some RLEC proponents that modeled “embedded” and “forward-looking” costs are relatively similar. Analysis shows that these claims cannot be squared with market and demand realities that such modeling efforts have ignored.

Finally, this paper documents some of the oft-neglected economic impacts of funding universal service in a manner that does not offer proper incentives for RLECs to operate efficiently. These revenue transfers are occurring today, and need to be considered in conjunction with any *possible* negative impacts that the RLECs claim *might* occur from movement to a FLEC-based system.

**Unsubstantiated rural ILEC claims that modeled forward-looking economic costs would be not offer “sufficient” levels of funding are inconsistent with investor valuations of RLEC stock.**

The RLECs' assertion that the "sky would fall" if there were any changes to the embedded-cost, RoRR-based USF system is belied by the actual economic behavior of RLEC investors. In truth, investors have exhibited a continued willingness to pay premium prices (relative to book value) for RLEC common stock, demonstrating that investors do not share the pessimistic forecasts being advanced by the RLECs in this record. In other words, investment data on publicly-traded RLECs shows that RLECs appear to be over-compensated by the existing USF system.

*Market to book ratios that are significantly in excess of those of the RBOCs.*

The prices of publicly traded RLEC common stock relative to book value (market-to-book ratio) are in many cases equal to or greater than those ratios for the Regional Bells. This evidence, documented on Table 1 below, demonstrates that investors are willing to pay a premium over book value for RLEC stock, indicating their expectation that the RLEC will generate economic rents in excess of the “fair return” on the net book value of their investment – the nominal standard for setting rate

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2. *Id.*

levels under rate of return regulation. The "unique" geographical and scale-based cost disadvantages that the RLECs so frequently cite not only are not seen as handicaps to their financial operations, they are not substantial enough to dissuade investors from paying premium prices. Among the most likely explanations for investor willingness to pay premium prices for RLEC common stock is that the RLECs' purportedly "unique" cost characteristics are being over-compensated by the existing RORR-based USF funding system.

As an example, Hickory Tech, with only 75,000 subscriber lines (1/700th of size of SBC) has a market-to-book ratio of 4.74 – more than twice that of SBC. Similarly, investors, voting with their dollars, are willing to pay more than three times the book value for a share of common stock of little Warwick Valley Telephone – a company with less than 30,000 lines (and a market-to-book ratio of 3.18).

Company	Access Lines	Market Cap (\$000)	Shareholders Equity (\$000)	Investor Premium (\$000)	M/B ratio
Hickory Tech	75,251	146,386	30,857	115,529	4.744
Commonwealth	475,296	958,649	242,321	716,328	3.956
North Pittsburgh	72,900	315,105	84,807	230,298	3.716
Citizens Corp	1,274,019	4,518,531	1,383,744	3,134,787	3.265
Warwick Valley	29,602	129,589	40,766	88,823	3.179
Lynch Interactive Corp	52,100	85,568	33,735	51,833	2.536
ALLTEL Corp	3,040,500	16,943,597	6,997,500	9,946,097	2.421
BellSouth	21,576,000	49,384,283	21,864,000	27,520,283	2.259
SBC	52,936,000	85,106,675	40,210,000	44,896,675	2.117
Verizon	55,482,967	110,702,955	35,174,000	75,528,955	3.147

Source: See fn 3 below.

3. Yahoo! Finance available at <http://finance.yahoo.com> (accessed December 3, 2004); Third Quarter 2004 10Q Reports of: Warwick Valley Telephone Company (November 12, 2004); North Pittsburgh Systems Inc. (November 8, 2004); Commonwealth Telephone Enterprises Inc. (November 9, 2004); Hickory Tech Corp. (November 4, 2004); ALLTEL Corp. (November 5, 2004); Citizens Communications Company (November 4, 2004); BellSouth Corp. (November 2, 2004); SBC Communications Inc. (November 5, 2004); Verizon Communications Inc. (November 8, (continued...))

Company	Total Debt (\$millions)	Total Equity (\$millions)	Income tax rate	Unlevered Beta	Debt/Equity Ratio
Alaska Communications	\$533.8	\$155.7	38.3%	0.19	343%
Citizens Communications	\$4,384.6	\$3,900.0	36.0%	0.58	112%
Commonwealth Telephone	\$350.7	\$900.0	38.0%	0.64	39%
D&E Communications	\$221.8	\$184.9	33.3%	0.26	120%
Hector Communications	\$62.9	\$72.8	40.9%	0.40	86%
Hickory Tech Corp.	\$109.7	\$151.8	40.2%	0.61	72%
Lynch Interactive Corp.	\$181.1	\$98.4	36.1%	0.34	184%
Shenandoah	\$41.2	\$199.7	35.2%	0.66	21%
Telephone & Data Systems	\$4,118.0	\$4,700.0	40.0%	0.66	88%
Warwick Valley Telephone	\$7.1	\$125.6	33.4%	0.58	6%
BellSouth	\$13,603.0	\$50,300.0	35.0%	0.83	27%
SBC	\$17,622.0	\$87,300.0	33.0%	0.92	20%
Verizon	\$41,888.0	\$112,000.0	32.0%	0.80	37%
Sources: See fn 3 <i>supra</i> .					

*Common Stock with exceptionally low risk premiums.*

Further evidence that the *benefits* flowing from existing universal service funding levels are not necessary to sustain service being provided by RLECs (or are overcompensating those RLECs) is provided by viewing the exceptionally low risk premium (or *beta* value) associated with publicly traded RLEC stocks. Intuitively, one would expect investment in a high-cost rural carrier with “unique” geographic and scale economy considerations to be viewed as “riskier” than investment in a large RBOC, but the analysis of the available data shows just the opposite – RLEC investments

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3. (...continued)

2004); Lynch Interactive Corp. (November 15, 2004); Lynch Interactive Corp., 2004 Form 8Q Report, November 16, 2004; *Value Line Investment Survey*, July 2, 2004.

are actually viewed by investors as significantly less risky. Table 2 above provides the results of analysis of the unlevered beta for several publicly traded RLECs, revealing quite a bit about investor perceptions of these firms. Using the same companies for illustrative purposes as above, the unlevered beta for Warwick Valley Telephone, operating in the Catskill mountain areas of New York and New Jersey, is only 0.58 – compared to the 0.92, 0.83 and 0.80 for Verizon, BellSouth and SBC, respectively.<sup>4</sup> Hickory Tech’s unlevered beta is 0.61 – and this despite a relatively high debt/equity ratio of 72%.

*Premium prices paid for rural company exchanges.*

The excessive level of high cost universal service funding has been reflected in the sale of rural exchanges at premiums substantially above their book value. The fact that the federal high cost USF mechanism has been supplying financial support well in excess of “sufficient” levels is also manifested in ways other than the market-to-book ratios discussed above. As was originally documented in our earlier report *Lost in Translation*,<sup>5</sup> the sale of individual rural exchanges at prices significantly in excess of their net book value implies this as well – i.e., buyers of these exchanges have bid up their prices to premium levels on the basis of expectations that the cash flow generated by the combination of local service revenue, interstate access charges and universal service subsidies will exceed the embedded cost “revenue requirement.” The premium price thus represents investor capitalization of the excessive returns on book value that are anticipated.

Table 3 below documents the above-cost premiums paid to GTE-Southwest and Qwest in connection with the sale of exchanges in five separate transactions in eight states in the years 2000 and 2001.<sup>6</sup> As the table demonstrates, in the summer of 2000, GTE-Southwest concluded sales to Valor Telecom and Century Telephone (“CenturyTel”) of approximately 650,000 lines in four states. In each sale, the price paid for the access lines was more than twice their net book value. Valor Telecom paid a premium of more than \$2,000 per access line for property in Oklahoma and a \$1,600 per-line premium for the exchanges in Texas and New Mexico, while CenturyTel paid a premium of \$2,200 per line in Arkansas. In total, GTE-Southwest booked a gain in excess of \$1-billion for the sale of these exchanges.

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4. Qwest is left out of the RBOC comparisons since the impact of Qwest’s accounting irregularities over the last several years from makes it unsuitable for comparisons of this kind without considerable additional analysis of the Qwest data.

5. *Lost in Translation: How Rate of Return Regulation Transformed the Universal Service Fund for Consumers into Corporate Welfare for the RLECs*, Economics and Technology, Inc., Susan Gately and Scott Lundquist, February, 2004, at 23-25.

6. GTE-Southwest, 2000 10K Report, filed March 30, 2001.

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Similarly, Qwest also sold off a number of exchanges to smaller carriers in 2000 and 2001. Qwest reported the sale of 20,000 access lines in North and South Dakota in 2000.<sup>7</sup> The access lines were sold for a total of \$19-million, more than half of which – \$11-million – was recorded as a gain. Based upon this data, it appears that Qwest sold these access lines, whose net book cost was about \$550 per line (for all plant, not just NTS plant), for approximately \$950 per line. In 2001, Qwest sold exchanges in Arizona and Utah amounting to some 41,000 lines, for a gain of approximately \$51-million, or \$1,244 per line in excess of book value.

Table 3 ILEC Exchanges Sold by GTE and Qwest to Smaller ILECs Commanded a Premium More than Twice the Net Book Cost of the Assets							
Seller / Buyer	State/ Date of Sale	No. of Lines	Cash Price	Gain Recorded on Sale	Estimated Net Book Value	Premium over Book Value	Premium Paid Per Line
		(A)	(\$000) (B)	(\$000) (C)	(\$000) (D)=(B)-(C)	(A) / (D)	(C) / (A)
GTE / Valor	Oklahoma 6/30/00	130,000	\$420,000	\$264,500	155,800	270%	\$2,035
GTE / Century	Arkansas 7/31/00	93,000	\$332,900	\$208,900	124,000	268%	\$2,246
GTE / Valor	TX & NM 8/31/00	425,000	\$1,249,600	\$681,600	568,000	220%	\$1,604
Qwest / UBTA	AZ & UT 2000	41,000	\$94,000	\$51,000	43,000	219%	\$1,244
Qwest / Citizens	ND & SD 2001	20,000	\$19,000	\$11,000	8,000	238%	\$550
Source: GTE Southwest and Qwest 2000 10K Reports, filed March 30, 2001 and April 2, 2001, respectively; and Qwest 2001 10K Report, filed April 1, 2002.							

Given that the premiums paid in these sales are all in excess of 100%, of the net book value, if one assumes that the buyers are rational, the sale prices demonstrate that the buyers are anticipating the receipt of positive economic rents from these acquisitions. A portion of that economic rent will come from USF support. As was discussed at more length in our earlier report, review of an order of the Arizona Corporation Commission relating to a proposed sale of an exchange from Qwest to Citizens seems to acknowledge that all funds that Citizen might obtain from the Universal Service

7. Qwest Corporation, 2000 10K Report filed with the US Securities and Exchange Commission, April 2, 2001.

Fund (as a result of acquiring the new exchanges) would not actually be needed by Citizens in order to cover its cost of service.<sup>8</sup>

More generally, as a policy matter, there is little if any basis for USF support to exchanges whose investors have demonstrated a willingness to pay a premium over book value. Under rate of return regulation, investors are entitled to earn a “competitive return” that is sufficient to permit recovery of their investment and to attract sufficient capital to operate the business. If the authorized rate of return has been properly set in light of USF support flowing to the ILEC, the market value and book value of the exchange should be roughly equal. The persistence of premiums over book value for assets subject to rate of return regulation is indicative of excessive earnings, arising from an excessive rate of return and/or from unnecessary high-cost support.

**Rural ILEC claims that modeled forward-looking economic costs would be unstable or unpredictable are belied by the FCC’s successful experience using the Synthesis Model as the basis for high cost support for non-rural carriers.**

Many of the initial comments filed by rural ILECS and their proponents argue that use of forward-looking economic costs (“FLEC”) instead of embedded costs as the basis of high cost funding might jeopardize the sufficiency and predictability for rural carrier support.<sup>9</sup> However, none of the critics of economic cost modeling present any new evidence on this point, and fail to confront the *fact* that the FCC has been successfully using an economic cost model, the Synthesis Model (also referred to as the Hybrid Cost Proxy Model or “HCPM”) since 2000 to determine high cost support for non-rural ILECS. Several critics of the modeling approach refer back to the White Papers on modeling issues released by the Rural Task Force in 2000, however, today, more than four years after those White Papers were released, it is no longer clear that the underlying assumptions remain

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8. See *Lost in Translation* at 24 - 25. In a settlement related to a proposed exchange sale that required Citizens to continue to offer the same products and services as Qwest at the same prices as prior to the sale the Commission also found the following “If Citizens obtains additional revenues from the Federal Universal Service Fund related to the wire centers it is acquiring from Qwest, the rates and charges adopted by Citizens will be interim and subject to refund in the next rate case, effective on the date Citizens becomes entitled to the additional Federal Universal Service Fund revenues.” See, *In the Matter of Joint Application of Qwest Corporation and Citizens Utilities Rural Company, Inc. for Approval of the Transfer of Assets in Certain Telephone Wire Centers to Citizens Rural and the Deletion of those Wire Centers from US West’s Service Territory*, Arizona Corporation Commission Docket Nos. T-01051B-99-0737, T-01954B-99-0737, Decision No. 63268, 2000 Ariz. PUC LEXIS 3, August 24, 2000, at 5.

9. See, for example, Alaska Telephone Association at 14-15 (current models cannot accurately predict FLEC for rural carriers); Fairpoint Communications at pages 10-15 (embedded costs are more specific, predictable and sufficient, per Section 254(b) of the 1996 Act); NTCA at 2-3 and Attachment A (Dale Lehman, “The Role of Embedded Cost in Universal Service Funding”), at 3-4 (the primary emphasis of the Telecom Act is on the support being “sufficient” and “predictable” and specific for the purposes of universal service).

valid (to the extent they were even valid at the time). Continued reliance upon works such as the RTF White Paper #4 (*A Review of the FCC's Non-Rural Universal Service Fund Method and the Synthesis Model for Rural Telephone Companies* from September, 2000) without a view to the results of *actual* experience with the models as they have been used in the intervening periods is misplaced.

We have reviewed the Synthesis Model's costs results for the four years that it has been applied by the FCC to determine non-rural ILECs' high cost support. Under the FCC's rules (47 C.F.R. §54.309), the Synthesis Model is used in several ways. First, it is used to calculate the national average FLEC per line, which serves as the basis for setting a national cost benchmark, which is established at 135% of the national average level. Second, it is used to calculate the non-rural ILECs' statewide average FLEC per line of providing the supported services. Those states that exhibit a statewide average FLEC higher than the benchmark level receive support, equal to seventy-six percent (76%) of the increment above the benchmark level, times the reported number of access lines.<sup>10</sup> Finally, the model is used to calculate FLEC for each individual wire center, so that each state's support can be distributed to individual carriers within the state in proportion to wire centers' costs relative to the national benchmark. The model's national average and statewide average FLEC per line results are publicly available from the Universal Service Administrative Corporation ("USAC").<sup>11</sup> Wire center-specific per-line cost results and associated line counts are not publicly available for analysis, presumably because carriers provide them on a confidential basis only.

Figure 1 presents a summary of the Synthesis Model's estimates of statewide average FLEC per line for the ten states that currently receive model-based non-rural high cost funding.<sup>12</sup> As the Table demonstrates, the per-line FLEC results generated by the Synthesis Model are relatively consistent over time when evaluated on a statewide average basis. Not surprisingly, the data also confirm a declining cost trend, in which statewide average loop costs have been reduced on average by about 1.5% per year over the four-year period.<sup>13</sup> Contrary to the *unsupported* contentions of the rural ILECs, the Synthesis Model's cost results have been extremely stable and predictable over time. Rather than dramatic swings in funding levels, the slowly declining cost results generated by the Synthesis Model over the four year period since inception of its use for determining universal

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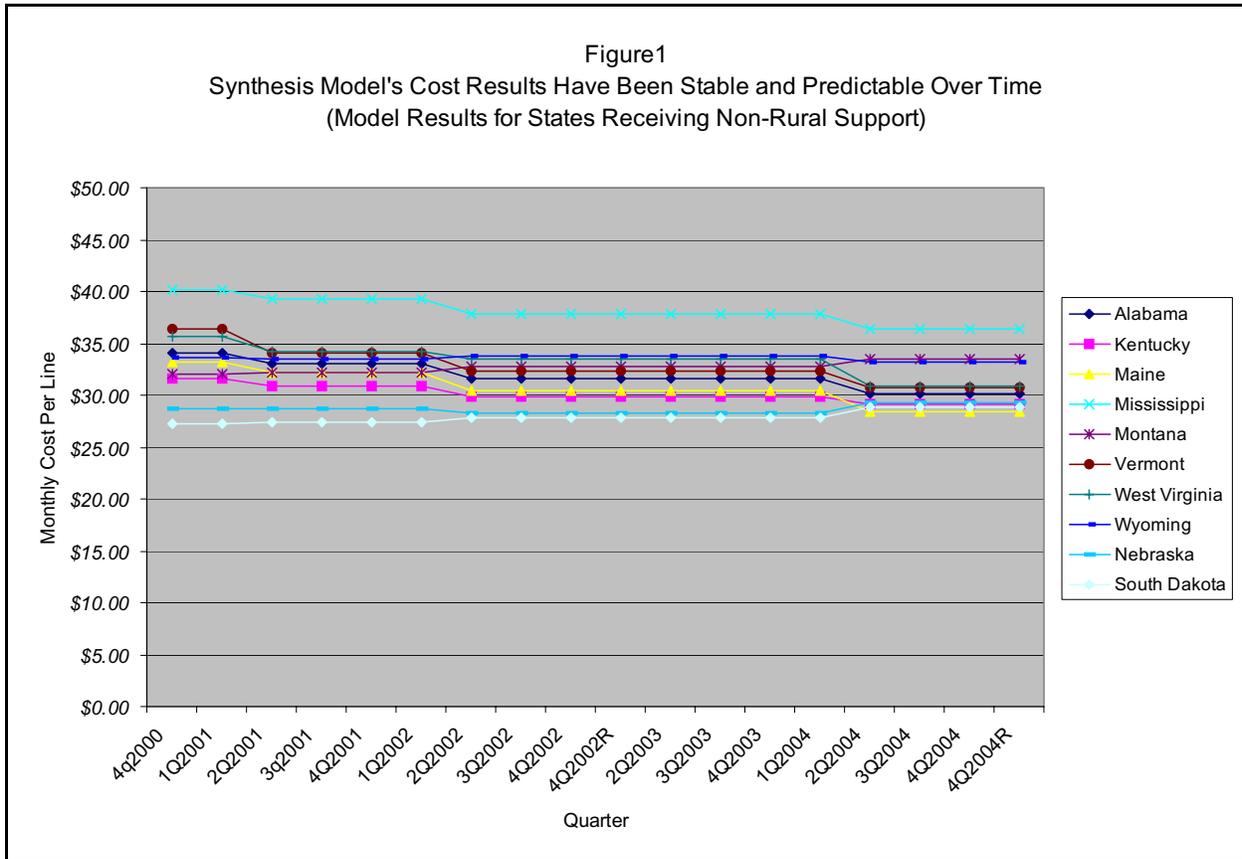
10. Non-rural carriers have also been subject to the "hold harmless" mechanism to ensure that support does not fall below historical levels, but that mechanism is beyond the scope of the cost modeling mechanisms we are addressing, and thus no relevant here.

11. We obtained data from <http://www.universalservice.org/overview/filings/> (for years 2003-2004) and <http://www.universalservice.org/overview/filings/archive.asp> (for years 2000-2002).

12. Under the non-rural model mechanism, Kentucky began qualifying for support in 2002, while Nebraska and South Dakota began qualifying in 2004).

13. The corresponding average annual change in per-line costs for all states, including those that do not receive non-rural support, is 1.725%.

service needs reveals precisely the kind of year over year efficiency increases in the provision of service in high cost areas that is one of the goals movement to a FLEC modeling approach.



**The argument put forth by some rural LEC proponents that FLEC is less “real” than booked, embedded costs is a distracting fallacy.**

Several of the initial comments filed by the rural ILECS and their proponents attempt to argue that forward-looking economic costs (FLEC) are less legitimate than carriers’ booked, embedded costs, because they are somehow less “real” than those booked costs, which they characterize as being the “actual” or “real” costs. The ICORE Companies make the most grandiose statement of this argument:<sup>14</sup>

14. ICORE Comments, at 4.

Small, rural ILECs do not provide universal service using hypothetical networks, nor do they write theoretical checks to pay for forward looking economic costs.

Instead, they fulfill their universal service and carrier of last resort obligations with real equipment and facilities, paid for with real money.

While less dramatic, the same sentiment is found in the comments filed by other RLEC interests, including the Plains Rural Independent Companies, which argue that “all FLEX proxy models suffer from the deficiencies of their hypothetical nature – they attempt to model a real network, but often fail to do so,”<sup>15</sup> and OPASTCO asserts that “what the Commission determined is that FLEC is to not reflect the network that actually exists and on which capital has been expended and needs to be recovered, but instead on a network that has no basis in reality.”<sup>16</sup> To the extent that these commentators are attacking FLEC as being less meaningful in an economic sense than “actual” booked costs, they are introducing a distracting and plainly incorrect contention.

From a valid economic perspective, the term “actual cost” is something of a red herring. Commenting parties use the term “actual costs” to refer to historic, embedded costs as reflected on the ILEC’s books. However, the term is almost never used by economists<sup>17</sup> and, as such, the manner in which it is being used in those comments has no support in the economics literature. Illustrating the difference between “actual” and economic costs, Prof. Robert Pindyck notes that:

An Economist thinks of cost differently from an accountant, who is concerned with the firm’s financial statements. Accountants tend to take a retrospective look at a firm’s finances, because they have to keep track of assets and liabilities and evaluate past performance. ... Economists – and we hope managers – take a forward-looking view of the firm. They are concerned with what cost is expected to be in the future. ...<sup>18</sup>

Pindyck observes both that actual costs are different from forward-looking costs and that each set of costs has its own separate set of applications. While historical costs may be appropriate for

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15. Plains Rural Independent Companies, at 5.

16. OPASTCO Comments, at 9.

17. Among five widely-used economics texts, none make any mention of the concept of “actual costs.” Michael Parkin, *Economics*, Addison Wesley, 1990; Karl E. Case & Ray C. Fair, *Principles of Economics*, Prentice Hall, 1989; Paul A. Samuelson, *Economics*, McGraw Hill 1992; Gregory Mankiw, *Principles of Microeconomics*, South-Western, 1998; and James C. Bonbright, Albert L. Danielsen & David R. Kamerschen, *Principles of Public Utilities Rates*, Public Utilities Reports, 1988. The term does appear in an accounting text, and refers to costs recorded on a company’s books. Clyde P. Stickney & Roman L. Weil, *Financial Accounting: An Introduction to concepts, methods, and Uses*, The Dryden Press, 2000, p. 861.

18. Robert S. Pindyck, *Microeconomics*, Prentice-Hall (1998), at 206.

use in an accounting setting, these accounting costs are not suited for use in a forward-looking cost analysis. Indeed, there is no *a priori* reason to expect that forward-looking economic costs and booked “actual costs” should be the same or even directly comparable. As expressed in a textbook on business valuation:

Under any standard of value, the true economic value of a business enterprise equals the company’s accounting book value only by coincidence. More likely than not, the true economic value of a company will either be higher or lower than its accounting book value. *There is no theoretical support, conceptual reasoning, or empirical data* that the value of a business enterprise (under any standard of value) will necessarily equal the company’s accounting book value. ... *This is because book value is not related to economic value.*<sup>19</sup>

The concept of “actual cost” as used here by the critics of FLEC is anything but definitive. When the U.S. Supreme Court heard similar arguments from incumbent ILECS in the context of their attacks on the total element long run incremental cost (“TELRIC”) version of FLEC, the Court unequivocally rejected them:<sup>20</sup>

They say that the technical meaning of “cost” is “past capital expenditure,” *ibid.*, and they suggest an equation between “historical” and “embedded” costs, *id.*, at 20, which the FCC defines as “the costs that the incumbent LEC incurred in the past and that are recorded in the incumbent LEC’s books of accounts,” 47 CFR §51.505(d)(1) (1997). The argument boils down to the proposition that “the cost of providing the network element” can only mean, in plain language and in this particular technical context, the past cost to an incumbent of furnishing the specific network element actually, physically, to be provided.

According to the courts:

The incumbents have picked an uphill battle. At the most basic level of common usage, “cost” has no such clear implication. A merchant who is asked about “the cost of providing the goods” he sells may reasonably quote their current wholesale market price, not the cost of the particular items he happens to have on his shelves, which may have been bought at higher or lower prices.

The Supreme Court proceeded to explain that even in traditional ratemaking practices, costs of service were not literally equated to utilities’ booked costs alone, without further examination:

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19. Shannon P. Pratt, *et al.*, *Valuing A Business: The Analysis and Appraisal of Closely Held Companies*, McGraw-Hill (2000), (“*Valuing a Business*”) at 308, emphasis supplied.

20. *Verizon v. FCC*, 535 U.S. 467, 498 (2002).

When the reference shifts from common speech into the technical realm, the incumbents still have to attack uphill. To begin with, even when we have dealt with historical costs as a ratesetting basis, the cases have never assumed a sense of “cost” as generous as the incumbents seem to claim. “Cost” as used in calculating the rate base under the traditional cost-of-service method did not stand for all past capital expenditures, but at most for those that were prudent, while prudent investment itself could be denied recovery when unexpected events rendered investment useless, *Duquesne Light Co. v. Barasch*, 488 U. S. 299, 312 (1989). And even when investment was wholly includable in the rate base, ratemakers often rejected the utilities’ “embedded costs,” their own book-value estimates, which typically were geared to maximize the rate base with high statements of past expenditures and working capital, combined with unduly low rates of depreciation. See, e.g., *Hope Natural Gas*, 320 U. S., at 597.598.<sup>21</sup>

Finally, the Supreme Court concluded in relevant part that:

The fact is that without any better indication of meaning than the unadorned term, the word “cost” in §252(d)(1), as in accounting generally, is “a chameleon,” *Strickland v. Commissioner, Maine Dept. of Human Services*, 96 F. 3d 542, 546 (CA1 1996), a “virtually meaningless” term, *R. Estes, Dictionary of Accounting* 32 (2d ed. 1985). As JUSTICE BREYER put it in *Iowa Utilities Bd.*, words like “cost” “give ratesetting commissions broad methodological leeway; they say little about the ‘method employed’ to determine a particular rate.” 525 U. S., at 423 (opinion concurring in part and dissenting in part).

**Claims that modeled “embedded” and “forward-looking” costs are relatively similar cannot be squared with market and demand realities that such modeling efforts have ignored.**

At the November 17 Joint Board hearing, Prof. Dale Lehman stated that he had “done some simulations of how forward-looking costs and embedded costs differ across a number of characteristics. And you can produce fairly confident predictions about how different they might be, and it’s on the order of 10 percent or less for loop costs.”<sup>22</sup> Dr. Lehman’s analysis of embedded and forward-looking TELRIC costs was co-authored with Dennis Weisman<sup>23</sup>, and models the annual recurring cost revenue requirement assuming (1) the original acquisition cost of the assets involved, and (2) the “current cost” of those assets extant in any given year. There is no attempt to reflect or

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21. *Id.* at 26-27 (footnotes omitted).

22. Joint Board hearing transcript, at 114.

23. Dale E. Lehman & Dennis L. Weisman, *The Telecommunications Act of 1996: the “costs” of managed competition*, Kluwer Academic Publishers (2000).

recognize differences in the relative efficiency of the service provisioning processes based upon the historic embedded technology and costs vis-a-vis that being driven by current technology and cost parameters. The model merely assumes given rates of cost changes over time, and given patterns of plant acquisitions and retirements over time. Dr. Lehman's model includes only a limited number of variables, and uses exactly the same inputs in both the "embedded" and "forward-looking" simulations, inputs that fail to reflect any differences in the relative efficiency of past vs. forward-looking service provisioning strategies and decisionmaking and, perhaps more importantly, fail to reflect any reality as to the manner in which plant is acquired and operated by a local telephone company.

The model used by Lehman and Weisman varies investment costs, depreciation periods, and the cost of capital in the embedded and TELRIC versions by applying randomly-generated adjustments to baseline figures, but these are only a few of the critical inputs to a proper cost model. They ignore critical differences in maintenance and other operating expenses, and also assume identical common and incremental costs, on the notion that there is no reason to assume that future operating costs will be higher or lower than those in the past. Dr. Lehman also does not vary utilization rates between embedded and TELRIC costs, an input that is almost certain to differ as between embedded and efficient forward looking service provisioning strategies.

Even the basic mechanisms of the model are unrealistic. The model assumes that exactly one unit of the asset being modeled (a subscriber loop) is added in each of 200 years. The assets are assumed to have a useful life of exactly 25 years, such that beginning in year 26 the first unit is retired and *two new units* are acquired. That process continues through year 50. In year 51, two units are retired (the one added in year 1 and the one added in year 26), and three new units are acquired (two to replace the retired units, and the one net annual plant addition being assumed by the model). Because the model injects the same *quantity* of net plant additions in each of the 200 years, the *rate of growth* expressed in percentage terms *decreases* from one year to the next. For example, at the end of year 1 there is one unit in service; at the end of year 2 there are two units in service, i.e., a 100% year-over-year growth rate. However, at the end of year 3 there are three units in service, representing a 50% year-over-year growth rate for year 3 vis-a-vis year 2. And so on. The *sole difference* between the so-called "embedded" and "forward-looking" simulations lies in the manner in which the average investment cost per unit is calculated. In the embedded model, Lehman/Weisman calculate the average original cost, net of depreciation, over all vintages of plant still in services. In the "forward-looking" model, only the cost of the most current vintage is used. Because the *growth rate* of net plant additions is extremely small for most of the 200 years of the model run, it is neither surprising – nor particularly interesting – that the "embedded" and "forward-looking" costs as produced by this utterly contrived "analysis" turn out to be relatively similar.

What is perhaps more interesting for purposes of this discussion is exactly what market realities and technological facts Lehman/Weisman have elected to ignore. Plant in service does not grow by a constant amount, and in many cases may not be growing at all. For example, the availability

of multi-phone “family” wireless pricing plans appears to have resulted in less demand for additional residential wireline access lines, such as for “teen” lines. The growth in demand for high-speed DSL or cable modem Internet access has similarly affected the demand for additional dial tone lines that had previously been used for Internet access. Digital carrier technology has also reduced the need for ILECs to add copper and fiber plant, since additional capacity can be obtained through the use of electronics. Hence, Lehman/Weisman’s assumption of constant (and limited) positive growth does not appear to reflect today’s reality. Moreover, because the model assumes a constant annual infusion of plant rather than, for example, large up-front or periodic investments, it effectively ignores the scale economies that are available when constructing and maintaining an efficient local telephone network. The 200-year time period over which the model is run is patently unrealistic and is clearly incapable of predicting, let alone incorporating, the demand and technology conditions likely to exist throughout the two centuries. Although Lehman/Weisman report a statistical “confidence interval” for their model results, all that is being measured in actuality is the effect of the random variation that Lehman/Weisman have incorporated into the otherwise untenable assumptions upon which the model is based.

**The potential downside risk of allowing the existing RoRR-based system to continue to incent RLECs to behave inefficiently can not be ignored in evaluating any perceived risks attendant to adopting a FLEC-based system**

The dismal pictures that have been painted by the RLECs of the *potential* impact that a movement to a FLEC basis for determination of universal service funding might have upon the ability of RLECs to continue to provision service in rural areas (if such a change results in a reduction of funds flowing to rural carriers) is not the only risk attendant to miscalculating the level of funding required to actually sustain universal service. It must be recognized that funding universal service at anything above what is required for “sufficiency” also carries risk and economic consequences -- risks and consequences for which little or no concern has been evidenced. The economic impact upon telephone service subscribers nationwide of providing *too much* universal service to the RLECs is in fact much greater than the potential downside of underfunding an individual RLEC through the USF system.

In our earlier report, *Lost in Translation*, we estimated that the present RoRR-based USF funding mechanism was *overstating* (and hence over collecting) the level of USF funding that would otherwise be required if RLECs had proper incentives to operate efficiently.<sup>24</sup> We estimated that the present fund was approximately \$1-billion greater than necessary because of lack of incentives inherent in the present mechanism to dissuade the RLECs from operating *inefficiently*. This represents an unnecessary \$1-billion revenue transfer from US businesses and consumers to the RLECs that provides *no appreciable benefits to the economy or the individual*

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24. *Lost in Translation*,, at 10.

## *Reforming Universal Service Funding for Rural ILECs*

*rural consumer*: no additional services are provided to rural consumers, no lower prices are offered, nothing. Reformation of the funding plan in a manner that created incentives for efficiency (as with use of a FLEC-based-mechanism) would free up the same \$1-billion to be spent on the purchase of additional telecommunications services, jobs, food, housing or any thing else needed by US consumers and businesses, while maintaining consistent and sufficient funding for rural *consumers*.

Additionally, at a time when many states with large urban populations are stumbling to sustain economic growth and to keep businesses interested in continuing their operations within the state, a plan that causes businesses operating in those areas to incur costs substantially in excess of what is required to sustain universal service in rural areas has economic impacts that are simply too large to ignore.<sup>25</sup> The effect is that businesses located in net contributor states are required to pay full freight for their own telecommunications services plus in some cases \$20 to \$30 per line per year more in USF surcharges. Meanwhile, competitors located in rural Wyoming or South Dakota (net recipient states) would have that same local service *subsidized* by more than \$150 per line per year. Moreover, to the best of our knowledge, no one has attempted to quantify the impact of a higher-than-necessary universal service fund requirement on the decisions of businesses to eliminate jobs and outsource telecom-intensive operations (such as call centers) off-shore.

Table 4 below provides a simplified analysis of the net flow of USF funds (contributions net of receipts) from net payor states to net recipient states. The present debate threatens to focus consideration upon concerns that services provided to rural consumers in places like Kansas (where the average annual per line net receipt is close to \$90) might possibly be downgraded in some manner by a move to a FLEC-based system. That same focus should be leveled at the sizeable economic impact on residential consumers in urban locations like Washington DC or Trenton, New Jersey (where the cost of living is much higher than in Kansas) of having to pay more for telecommunications services through application of a higher than necessary USF factor because the existing system fails to create the proper incentives for efficiency.

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25. Consider, for example that the net outflow of funds from California and New York alone is in excess of a half a billion dollars. Net contributions from the top five contributor states (California, Florida, New Jersey, New York and Pennsylvania) are close to \$1-billion. (Based upon calculations performed using data from the 1 Q 2005 USAC Appendix HC 02 and from the 2004 Joint Board Monitoring Report Table 1.13)

<b>Table 4</b> <b>Businesses and Consumers in Net Contributor States Face Economic Consequences Resulting from Overstatement of Universal Service Requirements Under the Current Embedded Cost Regime</b>						
Net Payor States Annual Per Line Net Contribution			Net Recipient States Annual Per Line Net Receipt			
\$0 to \$10	\$10 to \$20	More than \$20	\$0 to \$20	\$20 to \$50	\$50 to \$100	More than \$100
GA	CA	CT	AZ	AL	AR	AK
IN	FL	DC	CO	IA	KS	MS
MI	IL	DE	HI	ID		MT
NC	NH	MA	KY	LA		ND
NV	NY	MD	ME	NE		SD
TN	OH	NJ	MN	NM		WY
TX	PA	RI	MO	OK		
UT			OR	VT		
VA			SC	WI		
			WA	WV		





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