MERCATUS CENTER
GEORGE MASON UNIVERSITY

REGULATORY STUDIES PROGRAM

Public Interest Comment on
Intercarrier Compensation and Universal Service[1]

High-Cost Universal Service Support, WC Docket No. 05-337
Federal-State Joint Board on Universal Service, CC Docket No. 96-45
Lifeline and Link Up, WC Docket No. 03-109
Universal Service Contribution Methodology, WC Docket No. 06-122
Numbering Resource Optimization, CC Docket No. 99-200
Implementation of the Local Competition Provisions to the Telecommunications Act of 1996, CC Docket No. 96-98
Developing a Unified Intercarrier Compensation Regime, CC Docket No. 01-92
IP-Enabled Services, WC Docket No. 04-36
Intercarrier Compensation for ISP-Bound Traffic, WC Docket No. 99-68

The Regulatory Studies Program (RSP) of the Mercatus Center at George Mason University is dedicated to advancing knowledge of the impact of regulation on society. As part of its mission, RSP conducts careful and independent analyses employing contemporary economic scholarship to assess rulemaking proposals from the perspective of the public interest. Thus, this comment does not represent the views of any particular affected party or special interest group, but is designed to evaluate the effect of possible changes in intercarrier compensation and universal service programs on overall consumer welfare.

I. Introduction

The Federal Communications Commission (FCC) announced on November 5 that it is seeking comments on three alternative proposals for universal service reform.[2] Two of the three—the "Chairman's Draft" and the "Alternative Proposal"—would reform intercarrier compensation as well; the "Narrow USF Reform" would not. The FCC also asks for comment on two specific questions: (1) Should the cost standard for establishing intercarrier compensation be based on Total Element Long Run Incremental Cost (TELRIC), or the

[1] Prepared by Jerry Ellig, senior research fellow, Mercatus Center at George Mason University. This comment is one in a series of Public Interest Comments from Mercatus Center's Regulatory Studies Program and does not represent an official position of George Mason University. The author would like to thank Gabriel Okolski for research assistance.

[2] Federal Communications Commission, *In the Matter of High-Cost Universal Service Support*, WC Docket No. 05-337, et al. (November 5, 2008). [Hereinafter "Further Notice"]

"incremental cost" standard outlined in two of the draft orders, and (2) Should terminating rates be set as single, statewide rates, or as a single rate for each operating company?[3]

It is entirely appropriate to consider intercarrier compensation and universal service reform together. Historically, intercarrier compensation has been used as a mechanism to promote universal service. Local telephone companies—particularly those servicing rural areas—can charge their customers lower monthly rates for a basic telephone connection because they receive a stream of revenues from companies that interconnect with them. Intercarrier compensation—particularly access charges paid by long-distance companies—thus act as a highly opaque form of subsidy.

Several broad themes emerge from the Further Notice and past FCC proceedings on universal service and intercarrier compensation. As directed by Congress, the commission is trying to ensure that universal service has adequate support so that services are available for customers and in locations where they might not otherwise be available. In addition, commissioners have expressed concern that subsidy dollars be spent efficiently, both to ensure that they have maximum impact and to prevent universal service contributions from being unnecessarily high. The FCC has long sought to replace implicit subsidies with explicit subsidies and to minimize undesirable side-effects, such as price distortions and regulatory arbitrage.

To assist the commission in these tasks, Mercatus Center scholars have suggested several principles that would lead to a reform plan most conducive to overall consumer welfare: (1) minimize charges on services whose demand is price-sensitive, (2) use fixed charges to recover fixed costs, (3) eliminate hidden cross-subsidies between different groups of customers, and (4) reduce incentives for waste and inefficiency.[4] This comment assesses the three proposals on these criteria.

The Chairman's Draft and the Alternative Proposal both do a better job of minimizing charges on services whose demand is price-sensitive, recovering fixed costs with fixed charges, and replacing opaque cross-subsidies with transparent subsidies. Based on the most recent calculations available in published economic literature, these two broader proposals would

[3] Further Notice at para. 41.

[4] Jerry Ellig, *Public Interest Ex Parte Comment on Intercarrier Compensation and Universal Service*, CC Docket No. 01-92 et al., available at http://www.mercatus.org/uploadedFiles/Mercatus/Publications/PICPDF_Intercarrier%20ExParte%20Comment_Ellig.pdf; Andrew Perraut and Jerry Ellig, *Public Interest Comment on High Cost Universal Service* Support, WC Docket No. 05-337 et al. (March 27, 2008), available at http://www.mercatus.org/uploadedFiles/Mercatus/Publications/High%20Cost%20Universal%20Service%20Support.pdf; Christopher Hixon, *Public Interest Comment: Establishing Just and Reasonable Rates for Local Exchange Carriers*, WC Docket 07-135 (Dec. 12, 2007), available at http://www.mercatus.org/uploadedFiles/Mercatus/Publications/20071217_PIC_on_Alleged_Access_Stimulation.pdf; Andrew Perraut and Jerry Ellig, *Notice of Ex Parte Communication, Universal Service Contribution Methodology*, WC Docket 06-122 (Nov. 2, 2007), available at http://www.mercatus.org/uploadedFiles/Mercatus/Publications/20071105_USF_Ex_Parte_Oct_2007.pdf; Jerry Ellig, *Public Interest Comment on Unified Intercarrier Compensation*, May 23, 2005, http://fjallfoss.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6517623936; Jerry Ellig, *Intercarrier Compensation and Consumer Welfare*, 2005 U. of IL. J. OF LAW, TECH., AND POL'Y 97 (2005).

increase overall economic welfare by at least $1.5 billion more annually than the Narrow USF Reform. Alternatively, if the FCC opts for the Narrow USF Reform, it could improve the transparency of intercarrier charges and create some downward pressure on excessive charges by allowing carriers to pass termination charges back to the customer who initiates the call.

A major strength of the Narrow USF Reform is its use of reverse auctions to determine subsidy amounts in all study areas. By awarding subsidies to the carrier that offers to serve an area for the lowest subsidy amount, reverse auctions could significantly reduce, or at least help control, the size of the universal service fund. The other two proposals use reverse auctions only if current subsidy recipients will not commit to offering broadband to all customers in the study area. If the FCC adopts either the Chairman's Draft or the Alternative Proposal, it could create additional opportunities to eliminate waste if it used reverse auctions to award subsidies in all study areas.

The Chairman's Draft and Alternative Proposal share several strengths. Both should reduce waste by eliminating many opportunities for regulatory arbitrage created by the current intercarrier compensation system, requiring uniform rather than carrier-specific intercarrier compensation rates, and allowing carriers to ask for waivers to serve certain very high-cost areas with satellite technology when that is the only economical option.

They also share several weaknesses. By requiring carriers to offer broadband as a condition for receiving subsidies, they could induce carriers to build duplicative subsidized broadband networks that compete with unsubsidized broadband networks in some study areas. This deficiency could be fixed by allowing carriers to commit to offering broadband to all customers in the study area who would not otherwise have access to broadband, rather than requiring them to offer broadband to all customers in the study area. The broadband mandate also has the potential to create internal cross-subsidies if carriers are not permitted to opt out; the reverse auction is an important safety valve that should reveal whether this mandate requires cross-subsidies.

The Alternative Proposal offers several improvements that are likely to lead to less waste than the Chairman's Draft. The phaseout of funding for competitive Eligible Telecommunications Carriers (ETCs) helps ensure that the FCC will subsidize only one network in high-cost areas that may not be able to support any network without subsidies. (The call for a further rulemaking on universal service subsidies for mobile services, however, may blunt this potential benefit.) The Alternative Proposal's automatic waiver allowing carriers to use satellite technology in certain very high-cost areas is an efficiency-enhancing measure that could probably be expanded upon.

Finally, none of the proposals include outcome measures that would allow the FCC to determine whether the universal service programs have achieved the intended outcomes in the past or will achieve them in the future. This is the subject of a separate FCC proceeding announced in September.[5]

[5] FCC, Comprehensive Review of the Universal Service Fund Management, Administration, and Oversight, *Notice of Inquiry* (WC Docket 05-195), 73 Fed. Reg. 199 (Oct. 14, 2008).

II. The Alternative Proposals

The accompanying table summarizes my understanding of some key differences between the three proposals. These are by no means all of the differences, but the ones most relevant to this comment.

The Narrow USF Reform proposal, as its name implies, focuses on universal service reform. It uses reverse auctions to award subsidies in all study areas and switches from a revenue-based to a numbers-based contribution method for residential service. It does not address broadband or intercarrier compensation.

The Chairman's Draft and the Alternative Proposal both require subsidy recipients to offer broadband, use reverse auctions to award subsidies only in study areas where current recipients are not willing to commit to offer broadband, allow subsidy recipients to use satellite technology only in limited circumstances, and establish a numbers-based universal service contribution method for residential service. In addition, both propose a ten-year transition to new, uniform intercarrier compensation rates to be set by states based on incremental cost; allow an increase in the Federal Subscriber Line Charge to replace some of the lost revenues; and offer additional universal service support to replace lost revenues in some cases.

There are also key differences between the Chairman's Draft and the Alternative Proposal. The Chairman's Draft continues to fund competitive ETCs, based on their own costs, if they commit to offering broadband. The Alternative Proposal simply phases out subsidies to the competitive ETCs—but then seeks comment on how to design universal service mechanisms for wireless. Compared to the Chairman's Draft, the Alternative Proposal makes several additional concessions to rural rate-of-return carriers, such as keeping their current USF funding mechanisms in place until 2010, giving them an automatic (but narrow) waiver to substitute satellite technology to serve very high-cost loops, and declining to require these carriers to prove that their rates and Subscriber Line Charges are at the maximum legal level when determining whether they should receive additional USF support to make up for revenues lost due to intercarrier compensation reform.

	Chairman's Draft	Narrow USF Reform	Alternative Proposal
Universal Service			
Broadband (768 kbps download, 200 kbps upload)	• Incumbent and competitive ETCs must offer broadband to receive subsidies	• No requirement	• Incumbent LECs and auction winners must offer broadband to receive subsidies
Reverse Auctions	• Subsidies awarded via reverse auction where neither incumbent nor competitive ETCs commit to offering broadband • Reserve price equal to incumbent's current subsidy in study area	• Used to award subsidy to one carrier per study area • Reserve price equal to incumbent's 2007 subsidy	• Subsidies awarded via reverse auction where incumbent declines to offer broadband • Reserve price equal to subsidy the incumbent would have qualified for
Subsidy cap	• Incumbent ETCs: Capped at annualized December 2008 level • Competitive ETCs: Based on their own costs but capped at 2008 levels	• Total high-cost fund capped at 2007 level	• Price cap carriers: subsidy capped at annualized December 2008 level • Rate-of-return carriers: subsidy capped at 2010 level • Competitive ETCs: subsidies phased out over 5 years
Technology	• Any technology but satellite permitted • Satellite requires waiver from FCC	• Wireline or wireless	• Any technology but satellite permitted • Satellite requires waiver from FCC • Rural rate-of-return carriers receive automatic waiver for very high-cost loops
USF contributions	• Replaces percentage assessments with $1.00/month charge on residential numbers • Per minute contribution for prepaid wireless • Connections-based contribution from business services to be designed in subsequent proceeding	• Replaces percentage assessments with $0.85/month charge on residential numbers • Per minute contribution for prepaid wireless • Sets connections-based fees for business services	• Replaces percentage assessments with $1.00/month charge on residential numbers • Per minute contribution for prepaid wireless • Connections-based contribution from business services to be designed in subsequent proceeding

	Chairman's Draft	Narrow USF Reform	Alternative Proposal
Intercarrier Compensation			
New per minute rate	• Ten-year transition to statewide uniform intercarrier compensation rates set by states	• Does not address intercarrier compensation	• Ten-year transition to statewide uniform intercarrier compensation rates set by states
Rate-setting standard	• Based on incremental cost of call termination	• Does not address intercarrier compensation	• Based on incremental cost of call termination
Revenue recovery	• Caps on Federal Subscriber Line Charge to be raised	• Does not address intercarrier compensation	• Caps on Federal Subscriber Line Charge to be raised
Additional USF support	• Incumbents in states where retail rates are deregulated cannot receive additional USF support • Incumbent carriers must demonstrate their rates and Subscriber Line Charges are at maximum legal level • Price cap carriers: USF support to replace lost intercarrier revenues awarded after considering all of the firm's costs and revenues • Rate-of-return carriers: No similar requirement	• Does not address intercarrier compensation	• Price cap incumbents in states where retail rates are deregulated cannot receive additional USF support • Price cap carriers must demonstrate their rates and Subscriber Line Charges are at maximum legal level • Price cap carriers: USF support to replace lost intercarrier revenues awarded after considering all of the firm's costs and revenues • Rate-of-return carriers: No similar requirements
Mobile service	• Maintains subsidies to competitive ETCs	• No proposal	• Seeks comment on future USF mechanisms for advanced mobile and wireless services

III. Comparison on the Four Principles

A. Minimize charges on services whose demand is price-sensitive

Most universal service contributions and intercarrier compensation payments act like a tax on telephone usage. This tax reduces the economic welfare of both consumers and phone companies by inducing consumers to use their phones less. In general, consumer demand for telephone usage is more price-sensitive than demand for telephone subscription.[6] Therefore, reforms that promote overall consumer welfare should minimize usage-based charges. The

[6] Chairman's Draft, fn. 666, and Alternative Proposal, fn. 657.

Chairman's Draft and the Alternative Proposal do more than the Narrow USF Reform proposal to reduce usage-based charges.

All three proposals would significantly reduce usage-based charges by eventually eliminating most revenue-based universal service contributions in favor of numbers-based contributions. The principal exception is the revenue-based contribution for prepaid wireless. This exception, however, may well be consistent with the general principle of minimizing charges on price-sensitive services. Many prepaid wireless users have low incomes, and their demand for telephone subscription is likely more price-sensitive than that of typical households.[7] Revenue-based contributions may lighten the burden on these customers, thus encouraging them both to stay on the telephone network and to use their phones.

The $2.7 billion in federal universal service charges on interstate long-distance in 2002 cost producers and consumers $1.16 billion in lost welfare (43 percent of revenue raised).[8] Moving to a numbers-based USF contribution system would eliminate this hidden cost. Using 2004 data, James Taylor and I estimated that the welfare loss associated with wireless universal service charges totaled $994 million, equal to 56 percent of the $1.77 billion in revenues raised.[9] Switching the USF fee to a numbers-based charge would cut the deadweight loss by $529 million.[10] Based on these figures, the Narrow USF Reform proposal would improve economic welfare by about $1.69 billion annually while raising the same amount of revenue.

The two proposals that include intercarrier compensation reform do more to reduce usage-based charges than the Narrow USF Reform proposal. Both would reduce per minute intercarrier compensation rates to a level that reflects incremental cost. The FCC cites several pieces of evidence suggesting that incremental cost is below $0.0007/minute.[11] This is a significant improvement over the average $0.008/minute access charge in 2006,[12] or the 8.9–36 cents/minute access charges reported in a filing by the Intercarrier Compensation Forum in 2004.[13]

The Further Notice seeks comment on the appropriate cost standard for setting intercarrier compensation rates. The Chairman's Draft and the Alternative Proposal both seek to replace the TELRIC standard with an incremental cost standard derived from mainstream

[7] Chairman's Draft, paras. 135-38.
[8] Jerry Ellig, *Costs and Consequences of Federal Telecommunications and Broadband Regulations*, 58 FEDERAL COMMUNICATIONS LAW JOURNAL 17 (Feb. 2006) at tbl. 2.
[9] Jerry Ellig and James Taylor, *The Irony of Transparency: Unintended Consequences of Wireless Truth-in-Billing*. LOYOLA CONSUMER LAW REVIEW 19:1 (2006) at 65.
[10] *Id.*. This calculation assumed a USF fee of 86.6 cents per phone number, which would raise approximately the same revenue from wireless customers that actual USF assessments raised in 2004. The $1.00 per number fee proposed in the Chairman's Draft and the Alternative Proposal would, therefore, lead to a slightly higher deadweight loss, but still a substantial reduction compared to the current system.
[11] See., e.g., Chairman's Draft, paras. 253-61.
[12] Federal Communications Commission, TELECOMMUNICATIONS INDUSTRY REVENUES (2006), Tbl. 10.
[13] *Ex Parte Brief of the Intercarrier Compensation Forum in Support of the Intercarrier Compensation and Universal Service Reform Plan*, CC Docket No. 01-92, Appendix C at 2.

microeconomics.[14] This change promotes overall economic welfare by ensuring that per-minute intercarrier compensation charges reflect only the additional cost of using resources to switch calls. As the FCC notes, TELRIC "measures the long run average incremental cost of the switch including common costs and overhead, not just the additional costs of using the function to terminate another carrier's traffic. In other words, TELRIC measures the *average* cost of providing a function, which is not necessarily the same as the *additional* cost of providing that function."[15] To provide accurate price signals, intercarrier compensation rates should incorporate only those costs that vary with usage, not a share of common or overhead costs. Therefore, the proposed "incremental cost" standard will better promote overall economic welfare than the TELRIC standard, for the reasons the FCC points out in its well-reasoned and comprehensive discussion.

My most recent estimate suggests that in 2002, the deadweight loss associated with long-distance access charges was about $1.5 billion.[16] Falling access charges and long-distance minutes have no doubt reduced this figure somewhat in the ensuing years. Nevertheless, the figure may underestimate the total welfare loss due to intercarrier compensation because it only calculates the effects of long-distance access charges, not other intercarrier compensation. Reducing intercarrier compensation rates down to the level of incremental cost would virtually eliminate the remaining hidden cost. Thus, the Chairman's Draft or the Alternative Proposal would increase economic welfare by about $2.19 billion annually by eliminating usage-based intercarrier compensation charges that do not reflect incremental costs and by substituting numbers-based for revenue-based universal service contributions.

B. Use fixed charges to recover fixed costs

Most costs of phone networks are fixed. Current intercarrier compensation and universal service programs diminish economic welfare by recovering fixed costs with usage-based charges. The Narrow USF Reform proposal seeks to cover most fixed costs with a monthly, fixed, per number charge. The Chairman's Draft and the Alternative Proposal do this to an even greater extent, since they would replace most per-minute intercarrier compensation charges with fixed charges: increases in the Federal Subscriber Line Charge and numbers-based universal service contributions.

C. Eliminate hidden cross-subsidies

Congress in 1996 expressed a preference for explicit, rather than implicit, support mechanisms for universal service.[17] Intercarrier compensation is an implicit subsidy that is not transparent to consumers. The total amount of subsidy is not transparent to consumers, and the specific intercarrier charges are not transparent to the individual consumer whose calling decision causes his or her phone company to incur the charges. The Universal Service Fund, in contrast, is an explicit subsidy funded by explicit charges passed through to consumers on their phone bills.

[14] Chairman's Draft, paras. 237-68; Alternative Proposal, paras. 231-63.
[15] Chairman's Draft, para. 266.
[16] Ellig, *supra* note 8, at tbl. 2.
[17] Chairman's Draft, para. 169.

1. Narrow USF Reform

The Narrow USF Reform proposal moves to a less inefficient funding mechanism for the Universal Service Fund, but it preserves the opaque subsidies inherent in the current intercarrier compensation arrangements. If the FCC decides to adopt the Narrow USF Reform plan, it could improve the transparency of the access charge subsidy by permitting the carrier paying the charge to pass that charge directly back to the consumer originating the call, along with clear disclosure of the source of the charges.[18] This change would make the access charge more transparent to the calling party and help generate market-based pressures to lower excessive access charges. A calling party who is more aware of access charges is more likely to seek alternative ways of communicating with people whose carriers impose high access charges. For example, individuals calling a household whose wireline carrier imposes high access charges might opt to contact that household via a wireless number, e-mail, or computer-to-computer Voice over Internet Protocol—in much the same way that Americans currently seek alternatives that let them avoid excessive termination rates on international calls.

2. Comprehensive Reforms

The comprehensive proposals replace opaque intercarrier compensation subsidies with explicit subsidies, improving transparency. In that respect, they are superior to the Narrow USF Reform proposal. However, two provisions in these proposals run the risk of reintroducing opaque cross-subsidies within companies, contrary to the FCC's goal and the intent of Congress.

a. Criteria for awarding additional USF support

Both the Chairman's Draft and the Alternative Proposal state that price cap carriers can receive additional universal service support to replace lost intercarrier compensation revenues only after the FCC reviews all of their costs and revenues, both regulated and non-regulated.[19] This requirement reflects the legitimate concern that carriers might earn excessive profits on subsidized lines through a combination of universal service subsidies and various unregulated services that were not very prevalent five years ago, such as broadband and ancillary services built into the network. Clearly, if a carrier is earning profits on a line, the line should receive no additional universal service subsidies to replace lost intercarrier compensation revenues. (Indeed, perhaps the current level of subsidy should also be reduced.)

But the FCC's proposal is much broader than that, and the excessive breadth could revive opaque internal cross-subsidization. Considering *all* of a carrier's costs and revenues to determine whether it will receive additional universal service support is tantamount to telling the carrier that it must subsidize universal service with revenues earned from broadband, ancillary services, long-distance, or video sales to *all* of its customers—including customers

[18] For a more detailed explanation, see Jerry Ellig, *Public Interest Comment on Unified Intercarrier Compensation*, May 23, 2005, http://fjallfoss.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6517623936

[19] Chairman's Draft, para. 314; Alternative Proposal, para. 309.

whose lines do not receive universal service subsidies. This is precisely the type of stealthy, opaque, inefficient, and unsustainable cross-subsidy that occurred prior to the AT&T breakup.

The language employed in the draft FCC proposals, as well as the language of commenters who raised this issue,[20] might be taken to imply that price cap carriers are expected to subsidize universal service only out of a bucket called "profit." Hence, one might argue that the carrier's obligation to subsidize universal service out of profits from sales of unregulated services on unsubsidized lines implies no obligation to increase the price of unregulated services. In that case, there is no hidden cross-subsidy from one group of consumers to another; price cap carriers are merely being directed to channel some of their excessive profits into universal service.

This sounds suspiciously like the logic that has historically shrouded opaque cross-subsidies in the mantle of the public interest.[21] More to the point, it effectively employs the logic of rate-of-return regulation to determine subsidy levels for price cap carriers. Price cap carriers can receive universal service support to replace lost intercarrier compensation revenues only if they can prove that they cannot otherwise earn a "normal profit."[22] This diminishes, to some extent, the efficiency-enhancing incentives associated with price caps, because a more efficient price cap carrier that earns higher profits will find that it is less likely to receive additional universal service support to replace lost intercarrier compensation revenues.

Fortunately, a simple wording change could prevent price cap carriers from earning excessive profits on subsidized lines without generating internal cross-subsidies or undermining the efficiencies of price cap regulation. Instead of considering all of a price cap carrier's costs and revenues, the FCC should consider all of its costs and revenues *on lines receiving universal service subsidies*. The carrier could receive additional universal service funding to replace lost intercarrier compensation revenues if it could demonstrate that it is unable to earn a normal profit on the lines that receive universal service subsidies, taking into account the revenues from regulated services, unregulated services, and existing subsidies attributable to those lines. This would prevent carriers from receiving additional universal service subsidies for lines on which they already earn adequate profits from a combination of regulated services, unregulated services, and pre-existing subsidies.

Thus modified, the provision could be applied both to price cap and to rate-of-return carriers. The Chairman's Draft and Alternative Proposal both cite commenters and scholars who express concern that rural carriers earn profits that seem excessive when compared to the returns earned by price cap carriers.[23] "Rural carrier" and "rate-of-return carrier" are not synonymous, but is it clear that the commenters are talking about more than just the price cap carriers when they decry "high overhead, sumptuous living, [and] rich dividends."[24] If anything, this is an argument for scrutinizing the costs and revenues of rate-of-return carriers

[20] Chairman's Draft, paras. 312-13, and Alternative Proposal, paras. 307-08.
[21] Michael Crew and Charles Rowley, "Toward a Public Choice Theory of Monopoly Regulation," *Public Choice* 57 (1988): 49-67.
[22] Chairman's Draft, para. 323, and Alternative Proposal, para. 317.
[23] Chairman's Draft, para. 312, and Alternative Proposal, para. 307.
[24] Thomas W. Hazlett, "Universal Service Telephone Subsidies: What Does $7 Billion Buy?" at 33, cited Id.

even more closely before deciding whether to grant additional universal service support. To avoid internal cross-subsidies, however, such scrutiny should be limited to these carriers' subsidized lines.

b. Broadband

By itself, the broadband mandate in the comprehensive proposals runs some risk of reintroducing opaque cross-subsidies. The requirement could have the effect of mandating that carriers must cross-subsidize broadband with revenues earned from other services.

Other aspects of these proposals minimize this risk. If the FCC considers modifying either the Chairman's Draft or the Alternative Proposal, is it important to understand the aspects of those proposals that allow them to avoid mandating internal cross-subsidies for broadband.

The comprehensive proposals allow carriers to opt out of the broadband mandate by declining to accept subsidies; they can retain subsidies by agreeing to offer broadband. If no carrier in a study area agrees to offer broadband, then the commission will hold a reverse auction to award subsidies to a carrier willing to offer broadband.

If the reverse auction draws no bidders, that may be a sign that the broadband mandate effectively creates internal cross-subsidies. Thus, the reverse auction is a crucial relief valve that prevents forcing existing subsidy recipients to cross-subsidize broadband and allows potential auction participants to signal, via their decision to participate, whether they believe they would have to furnish cross-subsidies. For these reasons, it is crucial that the commission allow existing subsidy recipients to opt out of the broadband mandate by foregoing subsidies and that the commission retain the reverse auction for awarding subsidies.

D. Reduce incentives for waste and inefficiency

In economic terms, "waste" or "inefficiency" occur whenever resources are employed in a way that produces less value than the cost of the resources. In the context of universal service, waste and inefficiency could be said to occur whenever more resources are used than are necessary to achieve the universal service goals. This may occur because of duplication—more activity is funded than is necessary to accomplish the goal. Or, it may occur because of diversion—the right level of productive activity is funded, but some resources are also expended on other activities that are not necessary to advance the goal.

In some cases, the proposals before the FCC reduce waste and inefficiency. In other cases, the presence or absence of various provisions in some proposals runs the risk of promoting waste and inefficiency.

1. Absence of outcome measures

The 1996 Telecommunications Act states that federal universal service programs should provide "quality services" at "just, reasonable, and affordable rates;" provide access to "advanced telecommunication and information services" in all regions; and provide low-income and rural and high-cost area customers with services that are "reasonably comparable to those services provided in urban areas" at rates "reasonably comparable" to those for

similar services in other areas.[25] Therefore, the universal service regulations in CFR Title 47 ought to be evaluated on how well they are achieving these intended outcomes.

But the universal service programs have no outcome measures. Without outcome measures, the FCC is flying blind. The commission cannot be sure whether universal service subsidies or intercarrier compensation achieved their universal service goals in the past, or at what cost. Similarly, it is difficult to project the effects of future reforms on outcomes if there are no outcome measures.

For this reason, the FCC's Notice of Inquiry on Universal Service Fund Management, Administration, and Oversight is particularly relevant—especially paragraph 25's request for suggestions on performance measures.[26] Expeditious adoption of valid and verifiable outcome measures is one of the most significant things the FCC could do to curb waste in universal service programs. It is unfortunate that this most significant step in ensuring that the programs accomplish their congressionally-mandated goals has been hived off into a separate proceeding on management and oversight, rather than included as a central feature of universal service reform. In the absence of outcome measures, sweeping claims about what the universal service programs have achieved or will accomplish ring hollow.

2. Treatment of competitive ETCs

The commission proposes to eliminate the "identical support rule," which offers competitive ETCs the same per-line subsidy as the incumbent whose territory the competitor serves. The identical support rule promotes waste when it encourages the construction and operation of a second telephone network in a location that cannot even support one network without subsidies. The least wasteful solution is to have only one subsidized network in an area that requires subsidies.

If the FCC decides to explicitly include broadband as a service supported by universal service subsidies, the same logic holds. It is wasteful to subsidize two broadband competitors in a high-cost area that could not even support one without a subsidy. Therefore, the Alternative Proposal's complete phaseout of support for competitive ETCs reduces waste to a greater extent than the Chairman's Draft, which continues to subsidize ETCs (based on their own costs) if they agree to offer broadband.

---

[25] Sec. 254(b).

[26] FCC, Comprehensive Review of the Universal Service Fund Management, Administration, and Oversight, *Notice of Inquiry* (WC Docket 05-195), 73 Fed. Reg. 199 (Oct. 14, 2008). Mercatus Center scholars have filed comments proposing performance measures for universal service programs in prior proceedings, and we expect to file reply comments in the Comprehensive Review proceeding after reviewing performance measures suggested by other commenters. See Maurice McTigue and Jerry Ellig, *Public Interest Comment on Performance Measures for Universal Service Programs*, WC Docket 05-195 (October 17, 2005), available at http://www.mercatus.org/uploadedFiles/Mercatus/Publications/MC_RSP_PIC2005-07FCCPerfMeasures_051017.pdf; Maurice McTigue and Jerry Ellig, *Ex Parte Comment on Performance Measures for Universal Service Programs*, WC Docket 05-195 (Jan. 26, 2006), available at http://www.mercatus.org/uploadedFiles/Mercatus/Publications/MC_RSP_ExPartePIC2006-02FCCPerfMeasures_060126.pdf; Jerry Ellig and Gabriel Okolski, *Public Interest Comment on Biennial Review of Telecommunications Regulations*, WC Docket 08-183 (Oct. 2, 2008),available at [ ].

3. Excessive broadband subsidies

The breadth of the broadband mandate in both the Chairman's Draft and the Alternative Proposal will likely promote waste in another way. If subsidizing two broadband competitors where none would exist without a subsidy is wasteful, surely it is wasteful to subsidize one broadband competitor in places where broadband is already offered by a competitor that does not receive subsidies.

The Chairman's Draft requires incumbents and competitive ETCs to commit to offering broadband to all of their customers as a condition for receiving universal service subsidies. Since the Alternative Proposal phases out funding for competitive ETCs, the mandate applies only to incumbents. Under both plans, reverse auction participants would have to commit to offering broadband to all of their customers.

In some areas served by subsidized carriers, broadband may already be available due to the presence of unsubsidized cable companies, wireless companies, or municipal wi-fi. Requiring subsidy recipients to offer broadband to all of their customers in such areas would duplicate some existing coverage. Subsidy dollars would be diverted from making broadband available where it does not currently exist. And unsubsidized providers would be forced to compete with subsidized providers. This problem could be worse under the Chairman's Draft, since it retains subsidies to competitive ETCs as well as incumbents that agree to provide broadband. That could lead not just to subsidies for duplication of unsubsidized broadband networks, but to multiple subsidized networks that partially or completely duplicate unsubsidized ones!

Surely the FCC did not intend to use scarce universal service subsidy dollars to build duplicative broadband networks. The FCC can avoid this problem by giving subsidy recipients an option: either commit to offering broadband to all their customers, or commit to offering broadband to all of their customers who would not otherwise have broadband available. For high-cost study areas that have no prospect of receiving unsubsidized broadband service, these two options are the same thing. But in study areas that have some unsubsidized broadband services available, the second option would allow subsidy recipients to focus on the unserved customers, instead of forcing them to build subsidized broadband networks that partially compete with unsubsidized broadband providers.

4. Satellite exemptions

Both the Chairman's Draft and the Alternative Proposal regard satellite broadband as an inferior service that is only acceptable for serving very high cost areas where other forms of broadband are not economical. Both require carriers to seek a waiver by demonstrating that "there is no other economic option for serving those customers."[27] The Alternative Proposal adds an automatic waiver for "very high cost loops," whose number cannot exceed 2 percent of the carrier's loops in the study area.[28]

[27] Chairman's Draft, para. 27; Alternative Proposal, para. 27.
[28] Alternative Proposal, para.27.

Both of these proposals recognize that even the "universal" part of universal service has some limits when faced with sufficiently high costs. The Alternative Proposal's automatic waiver offers additional flexibility and will help contain costs; in that sense, the Alternative Proposal could lead to less waste. This approach could probably be expanded to further reduce waste in ways that are consistent with the spirit of the proposal. For example, previous research on universal service has identified a combined satellite broadband and VoIP plan available for $150/month.[29] It would not be unreasonable to grant an automatic waiver for any line whose cost would exceed $150/month, or some other similar threshold established by FCC research.

5. Regulatory Arbitrage

The two proposals offering comprehensive intercarrier compensation reform document numerous instances of "regulatory arbitrage" engendered by the current intercarrier compensation system. Regulatory arbitrage is a form of waste because it moves resources from their most productive uses to those uses that best allow companies to profit from artificial price differences created by regulation. By shrinking intercarrier compensation and requiring a uniform rate in each state, both of these proposals reduce opportunities for regulatory arbitrage. In that respect, they do more to reduce waste than the Narrow USF Reform proposal.

6. Uniform vs. carrier-specific termination rates

The FCC asks whether states should set uniform, statewide termination rates that apply to all carriers, as specified in the Chairman's Draft and Alternative Proposal, or carrier-specific rates. A statewide average rate is less likely to generate waste, for several reasons.

First, a statewide average rate will likely reduce the waste generated in the course of the state-level decisionmaking process, since carriers would not be expending resources to obtain the most favorable compensation rate for themselves and the least favorable rate for others. The process may still be contentious, but at least the carriers will be fighting over a single rate for all. Second, a single, low statewide rate minimizes opportunities for regulatory arbitrage after rates are established. Businesses that generate a lot of call-termination activity will be more likely to locate where it makes economic sense, rather than chasing offers from a carrier that just happens to receive a little better termination rate. Third, a uniform rate will likely convey a more accurate price signal about the cost of switching, since, as the FCC notes, "softswitches are infinitely scalable, and thus the incremental cost of termination does not vary with the number of lines the switch serves."[30]

7. Extensiveness of reverse auctions

There is one respect in which the Narrow USF Reform proposal offers a clearly superior approach to reducing waste. It is the only proposal that would use reverse auctions to award universal service support in all study areas.

[29] Jerry Ellig & Joseph Rotondi, *Outcomes and Alternatives for Universal Telecommunications Services: A Case Study of Texas*, 12 TEXAS REVIEW OF LAW & POLITICS 1 (2007) at __.
[30] Chairman's Draft, para. 274.

Both of the other proposals effectively let current subsidy recipients avoid reverse auctions if they commit to providing broadband to all customers in the study area. Under the Alternative Proposal, a reverse auction is held only if the incumbent subsidy recipient declines to commit to offering broadband to all customers in the study area. Under the Chairman's Draft, a reverse auction is held if neither the incumbent subsidy recipient nor the competitive ETC subsidy recipients will commit to offering broadband to all customers in the study area. If no one bids in the reverse auction, then the FCC will know that the reserve price (maximum subsidy) was too low. But if a current subsidy recipient avoids the reverse auction by committing to offer broadband, the FCC has no analogous way of knowing whether it paid too much.

Since we do not know what the results of the reverse auctions would be, we cannot predict how much waste they would eliminate under the different proposals. But by holding reverse auctions in all study areas, the Narrow USF Reform proposal clearly has the potential to eliminate much more waste by ensuring that the FCC pays only the minimum subsidy necessary to elicit service in high-cost areas.

V. Conclusion

The biggest difference between the three proposals before the FCC is that the Chairman's Draft and Alternative Proposal reform intercarrier compensation, while the Narrow USF Reform proposal does not. Based on the most recent calculations available in published economic literature, the proposals that reform intercarrier compensation would increase overall economic welfare by at least $1.5 billion more annually than the Narrow USF Reform.

The Chairman's Draft and the Alternative Proposal both do a better job of minimizing charges on services whose demand is price-sensitive, recovering fixed costs with fixed charges, and replacing opaque cross-subsidies with transparent subsidies. There could be some backsliding into opaque cross-subsidies, however, due to the provision that the FCC will examine all of a price cap carrier's costs and revenues before deciding if it should receive additional universal service support to replace lost intercarrier compensation revenues. The FCC could avoid this problem, while preserving the laudable intent of the provision, by stating that it will take into account all of the carrier's costs and revenues only on subsidized lines. Alternatively, if the FCC opts for the Narrow USF Reform, it could improve the transparency of intercarrier charges, and create some downward pressure on excessive charges, by allowing carriers to pass termination charges back to the customer who initiates the call.

If this were all that were at stake, either of the comprehensive proposals would be much better than the Narrow USF Reform, and their merits would be pretty evenly matched. When it comes to the issue of reducing waste and inefficiency, however, different proposals have different strengths and weaknesses.

A major strength of the Narrow USF Reform is its use of reverse auctions to determine subsidy amounts in all study areas. The other two proposals use reverse auctions only if current subsidy recipients will not commit to offering broadband to all customers in the study area. If the FCC adopts either the Chairman's Draft or the Alternative Proposal, it could create

additional opportunities to eliminate waste if it used reverse auctions to award subsidies in all study areas.

The Chairman's Draft and Alternative Proposal share several strengths. Both should reduce waste by eliminating many opportunities for regulatory arbitrage created by the current intercarrier compensation system, requiring uniform rather than carrier-specific intercarrier compensation rates, and allowing carriers to ask for waivers to serve certain very high-cost areas with satellite technology when that is the only economical option.

They also share several weaknesses. By requiring carriers to offer broadband as a condition for receiving subsidies, they could induce carriers to build subsidized broadband networks that compete with unsubsidized broadband networks in some study areas. This deficiency could be fixed by allowing carriers to commit to offering broadband to all customers in the study area who would not otherwise have access to broadband. The broadband mandate also has the potential to create internal cross-subsidies if carriers are not permitted to opt out; the reverse auction is an important safety valve that should reveal whether this mandate requires cross-subsidies.

The Alternative Proposal offers several improvements that are likely to lead to less waste than the Chairman's Draft. The phaseout of funding for competitive ETCs helps ensure that the FCC will subsidize only one network in high-cost areas that may not be able to support any network without subsidies. (The call for a further rulemaking on universal service subsidies for mobile services, however, may blunt this potential benefit.) The Alternative Proposal's automatic waiver allowing carriers to use satellite technology in certain very high-cost areas is an efficiency-enhancing measure that could probably be expanded upon.

Finally, none of the proposals includes outcome measures that would allow the FCC to determine whether the universal service programs have achieved the intended outcomes in the past or will achieve them in the future. Hopefully, the FCC will deal with this serious omission expeditiously in its concurrent *Notice of Inquiry* on Comprehensive Review of Universal Service Fund Management, Administration, and Oversight.[31]

[31] See fn. 5 *supra*.

Appendix I

RSP Checklist

Element	Agency Approach	RSP Comments
1. Has the agency identified a significant market failure?	The FCC has clearly identified incentive problems created by pre-existing regulations that these reforms are intended to solve. **Grade: A**	No measurement of outcomes the regulations are supposed to achieve, so it is difficult to gauge effectiveness of current system or proposed reforms.
2. Has the agency identified an appropriate federal role?	These are longstanding issues in interstate telecommunications regulation. **Grade: A**	Given the FCC's argument that costs of telephone switching are likely to be very similar, it is puzzling why the FCC even left the determination of intercarrier compensation rates to the states.
3. Has the agency examined alternative approaches?	Three different alternatives presented and extensively analyzed: two similar and one very different. **Grade: B**	The alternatives are somewhat similar regulatory variations on how to solve the same problem.
4. Does the agency attempt to maximize net benefits?	All three proposals will reduce economic inefficiency cost of current system. No outcome measures or benefits estimates that would permit calculation of net benefits. **Grade: B-**	Since economic inefficiency of funding mechanisms will fall, net benefits of universal service policies are likely to increase (or net costs are likely to decrease).

Element	Agency Approach	RSP Comments
5. Does the proposal have a strong scientific or technical basis?	Proposals would reduce charges on price-sensitive services, cover fixed costs with fixed charges, make subsidies more transparent, and reduce waste. **Grade: B+**	General thrust of reforms is consistent with insights from past 20 years of literature on the economics of telecom. Oddly, the commission does not explicitly address the deadweight loss issue, which would provide additional support for reform.
6. Are distributional effects clearly understood?	Distributional effects not consistently accounted for. A few general statements that universal service is intended to expand opportunities available to people in rural areas. Some special provisions are included to accommodate needs of low-income households. **Grade: C**	
7. Are individual choices and property impacts understood?	Behavioral issues like consumer price sensitivity and firms' response to regulatory arbitrage opportunities are discussed extensively. Access to telephone and broadband are presumed to be virtually rights, regardless of what tradeoffs individual consumers might be willing to make. **Grade: B**	The second issue is consistent with legislative treatment of universal service.