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August 30, 2007

By Email
Honorable Kevin Martin
Chairman
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: Federal-State Joint Board on Universal Service, CC Docket Nos. 96-45; 05-337

Dear Chairman Martin:

In June, Criterion Economics released, and filed in the referenced dockets, two reports relating to the impact of universal service funding for wireless CETCs on wireless availability. Subsequently, three parties – Alltel, RTG and U.S. Cellular – submitted comments or ex parte communications criticizing some aspects of those studies.

The attached brief report addresses those criticisms and explains why they are incorrect and do not affect our original findings.

Should you have any questions, please feel free to call me at 202-448-9029.

Sincerely,

Jeffrey A. Eisenach

Attachment

c: Commissioner Adelstein
Commissioner Copps
Commissioner McDowell
Commissioner Tate
Mr. Thomas Navin
Mr. Jeremy Marcus
Mr. Nick Alexander
Mr. Ian Dillner
Mr. John Hunter
Ms. Renee Crittendon
Mr. Donald Stockdale
Mr. Randy Clarke
Mr. Scott Deutchman
Mr. Scott Bergmann

WIRELESS CETC STUDIES:
REPLY TO ALLTEL, RTG AND U.S. CELLULAR COMMENTS

Kevin Caves
Jeffrey Eisenach
Nicholas Vantzelfde

August 30, 2007

CRITERION ECONOMICS, L.L.C.

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I. INTRODUCTION

On June 13, 3007, we released two papers which present our analysis of the distribution and impact of Universal Service Fund ("USF") subsidies provided to wireless carriers ("wireless CETCs" or "CETCs").[1] Both studies were subsequently filed as part of an ex parte communication with the Federal Communications Commission ("FCC" or "Commission").[2] Subsequently, Alltel Corp, ("Alltel"), the Rural Telecommunications Group, Inc ("RTG") and U.S. Cellular submitted comments to the Commission criticizing some aspects our analysis.[3] In this brief report, we explain why these criticisms are without merit, and why our original analysis and conclusions are correct, including specifically: (1) in study areas where they receive funding, wireless CETCs serve fewer customers than unsubsidized wireless carriers; (2) wireless CETCs provide incremental coverage to only about two percent of households in these study areas; and (3) there is no statistically significant relationship between the subsidies received by wireless CETCs and either the extent of coverage or the number of choices available to customers in subsidized areas.

II. ROAMING COVERAGE IS NOT INCLUDED IN OUR ANALYSIS

Alltel suggests that our coverage data is flawed because by including roaming agreements in our analysis, we overstate the extent of redundancy between the coverage of wireless CETCs and unsubsidized wireless carriers. This is not accurate. Our coverage data does not include coverage provided through roaming agreements.

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[1] Kevin W. Caves and Jeffrey A. Eisenach, *The Effects of Providing Universal Service Subsidies to Wireless Carriers* (Criterion Economics, LLC, June 13, 2007); Nicholas Vantzelfde, *The Availability of Unsubsidized Wireless and Wireline Competition in Areas Receiving Universal Service Funds* (Criterion Economics, LLC, June 13, 2007).

[2] *See Letter* from Jeffrey A. Eisenach to Marlene H. Dortch, WC Docket No. 05-337 and CC Docket No. 96-45 (June 13, 2007).

[3] *See* Alltel Reply Comments, WC Docket No. 05-337 and CC Docket No. 96-45 (June 21, 2007) at 12-21; *Letter* from Kenneth C. Johnson, RTG, to The Honorable Kevin J. Martin, FCC, CC Docket 96-45 (July 12, 2007); and, *Letter* from David A. LaFuria, U.S. Cellular, to Marlene H. Dortch, WC Docket 05-337 (July 24, 2007). The criticisms contained in the RTG and U.S. Cellular letters mirror those in the more extensive Alltel comments. Accordingly, this paper focuses on the Alltel comments.

Roaming agreements allow the subscribers of one carrier to "roam" onto the network of a partner carrier. In some cases, subscribers are charged "roaming fees" when they use their phones on these partner networks in areas not served by their own carriers' facilities. Increasingly, however, carriers offer "national" plans that allow subscribers to use their carrier's partner networks without incurring additional charges.[4]

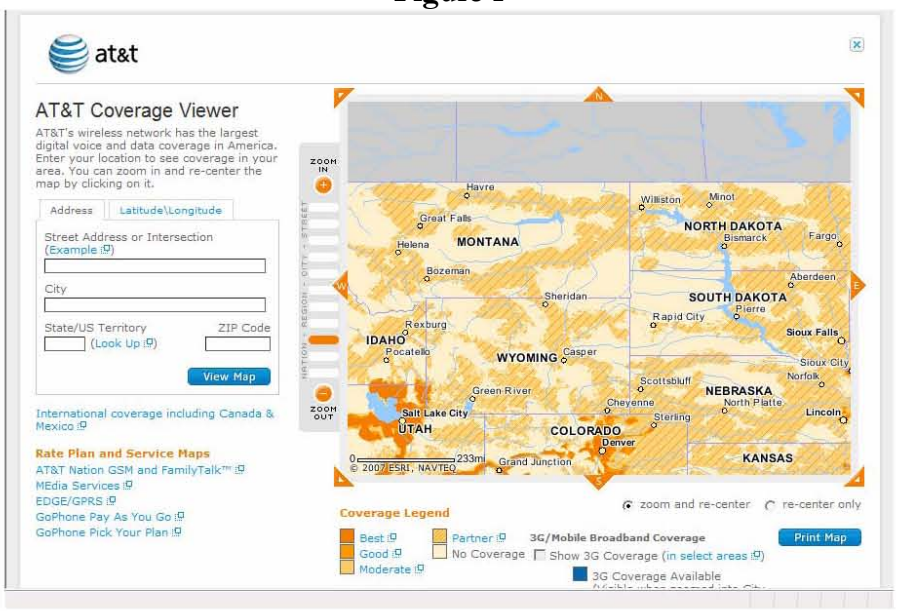
Alltel claims that some carrier coverage maps do not distinguish between areas served by a carrier's own facilities and those served through roaming agreements: "Some of the carriers' website maps appear not to disclose that in many areas, a wireless carrier's on-net coverage is actually provided via roaming or a comparable arrangement involving resale of another carrier's service." As a specific example, Alltel observes that Alltel itself "has entered into such arrangements with Verizon Wireless and other carriers to allow those carriers to extend their 'on-net' coverage into areas where only Alltel has facilities."[5]

Alltel's claim that our coverage data includes roaming agreements is, again, simply incorrect. First, as shown in the AT&T coverage map in Figure 1 below, carrier coverage maps, including those maps that formed the basis of our analysis, typically *do* distinguish between coverage provided by the carrier's own network and coverage provided through roaming agreements.

[4] For example, Verizon Wireless' National Single Rate Plan includes roaming on its partner networks such as Alltel and Sprint.

[5] Alltel Comments at 13 and 15, n. 26.

Figure 1



Alltel's example of its arrangement with Verizon Wireless further proves the point. Figure 2 shows Verizon's published coverage map for Montana. Figure 3, on the other hand, is a map provided by Alltel showing the facilities-based coverage areas of Alltel, Cingular (AT&T) and Verizon Wireless in Montana. Note that, contrary to Alltel's assertion, Verizon's published map does *not* show coverage provided through its roaming arrangement with Alltel (i.e., it does not include the Alltel coverage territory).

Figure 2

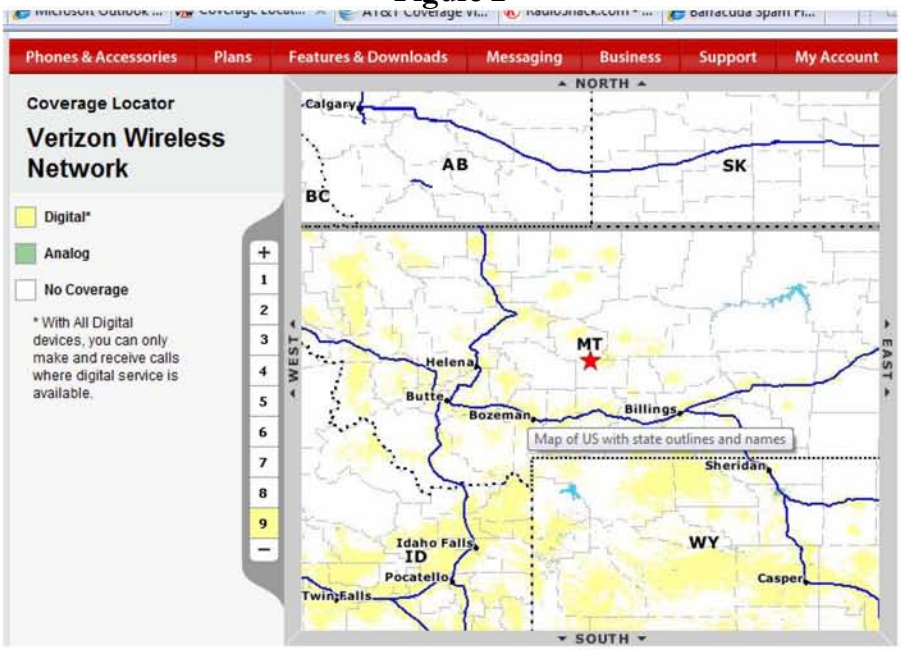
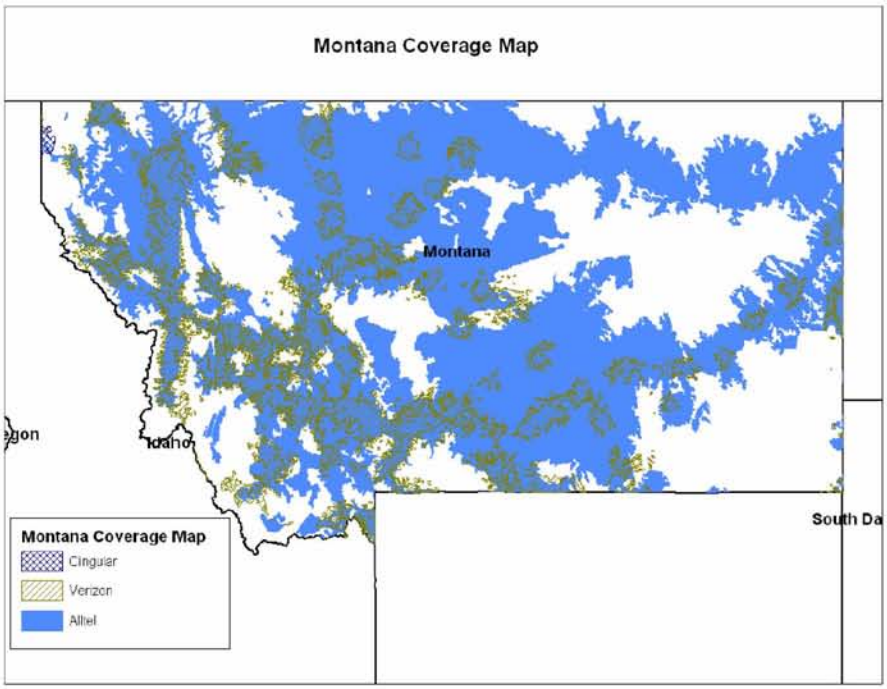


Figure 3[6]



[6] Alltel Comments at 16.

As these examples indicate, it is possible, using the coverage maps published by wireless carriers, to distinguish between the coverage provided by a carriers' own network from the coverage provided by a roaming partner, and we did so. To confirm the accuracy of our analysis, however, we confirmed the specifics of each of the coverage maps with both customer service representatives and retail store managers. Alltel's claim that our coverage data fails to distinguish between facilities-based and roaming coverage is simply incorrect.

III. ALLTEL'S DATA CONFIRM CARRIER COVERAGE MAPS ARE HIGHLY ACCURATE

In addition to its specific claim that our coverage maps include roaming coverage, Alltel suggests more broadly that our use of the published coverage maps is "improper." Alltel then presents maps from an engineering firm, American Roamer, to "illustrate the infirmities of Criterion's reliance"[7] on published coverage maps. Contrary to Alltel's claims, American Roamer's maps only confirm the accuracy of the published coverage maps upon which we relied.

Alltel's analysis focuses on two states, Montana and South Dakota. It seems unlikely that these two states were chosen at random, as they are among the few states in which our data show that wireless CETCs provide *more* coverage in their subsidized areas than unsubsidized carriers provide.[8] Rather than supporting Alltel's rhetoric on this point,[9] the American Roamer data results simply confirm our findings. This is not surprising, since, as we discuss in our papers, wireless carriers have large incentives to ensure that their coverage maps are, in fact, accurate.

To address Alltel's allegations, we compared our coverage estimates with those provided by American Roamer for Montana and South Dakota. We used American Roamer maps to calculate

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[7] Alltel Comments at 13.

[8] Note that our studies did not claim that there are *no* instances in which CETC coverage exceeded the coverage provided by unsubsidized carriers, only that these instances are rare. Another example of a state in which CETC coverage exceeds that provided by unsubsidized carriers is Maine, as noted in the maps submitted by U.S. Cellular.

[9] *See* Alltel Comments at 12 (arguing that our "outrageous claim" that unsubsidized carriers serve more rural and remote areas than CETCs "does not even survive the smell test, let alone a detailed analysis of the data").

the "covered pops" (i.e., the population living in areas with coverage) associated with those maps, and compared them with our own estimates of covered pops. As shown in Table 1 below, the differences between the two estimates are generally small. Moreover, with the exception of Sprint's coverage in South Dakota, which we discuss below, the American Roamer maps generally show *more* coverage than the published unsubsidized carrier maps upon which we relied. Thus, rather than overstating coverage, as Alltel claims, Alltel's own data show that, if anything, our data *understated* the coverage provided by these carriers.

Table 1

	Montana		
Covered Pops	American Roamer Alltel	Carrier Coverage Maps Criterion	% Difference
Alltel	868,948	829,453	-5%
Verizon	713,941	700,465	-2%
Cingular	752	429	-43%
	South Dakota		
Covered Pops	American Roamer Alltel	Carrier Coverage Maps Criterion	% Difference
Alltel	739,792	694,255	-6%
Verizon	629,597	632,246	0%
Cingular	21,221	19,223	-9%
Sprint	230,988	304,413	32%
T-Mobile	151,535	14,609	-90%

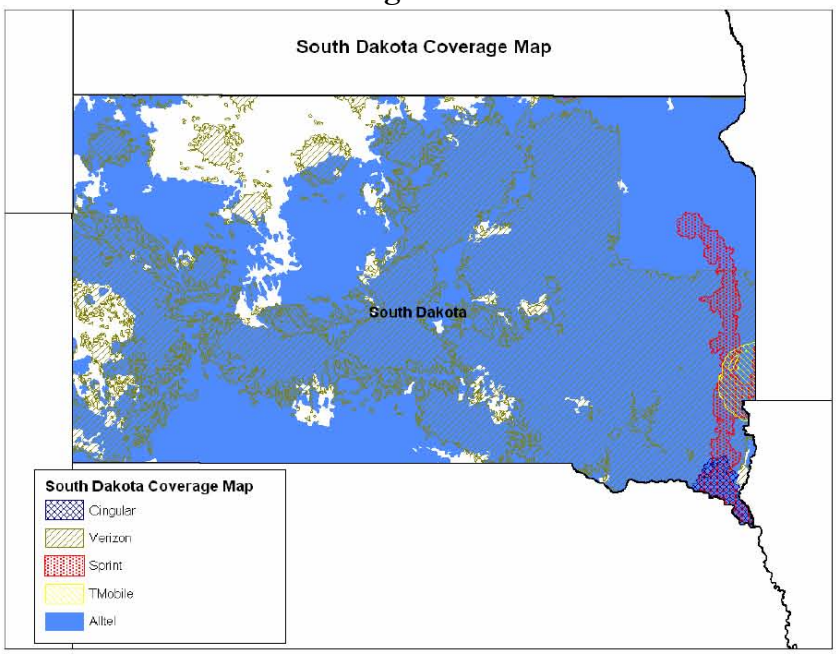
Two differences between our coverage data and the American Roamer data are worth discussing specifically. First, American Roamer understates Sprint's coverage in South Dakota, in part because it apparently fails to include any coverage by Nextel (now part of the Sprint network). Second, it drastically overstates T-Mobile's coverage in South Dakota. These differences can be seen by examining Figures 4, 5 and 6 below. Figure 4 shows the coverage data for wireless carriers

in South Dakota provided by American Roamer. Figures 5 and 6 show the published maps for South Dakota from Sprint and T-Mobile, respectively.

With respect to Sprint, American Roamer indeed appears to ignore coverage provided by the Nextel network, which is now part of Sprint (see the light green area in Figure 5). Thus, American Roamer substantially understates Sprint's coverage in South Dakota.

With respect to T-Mobile, T-Mobile does not itself claim to have *any* coverage in Sioux Falls, South Dakota, contrary to what the American Roamer maps indicate. If T-Mobile really covered 130,000 pops in and around Sioux Falls, we would expect T-Mobile's own coverage maps to show this coverage, since this represents a large addressable market. T-Mobile's maps do not indicate coverage here, and, in fact, the closest T-Mobile store to Sioux Falls is 55.5 miles away in Worthington, Minnesota. Thus, American Roamer also substantially overstates T-Mobile's coverage in South Dakota.

Figure 4[10]



[10] Alltel Comments at 17.

Figure 5

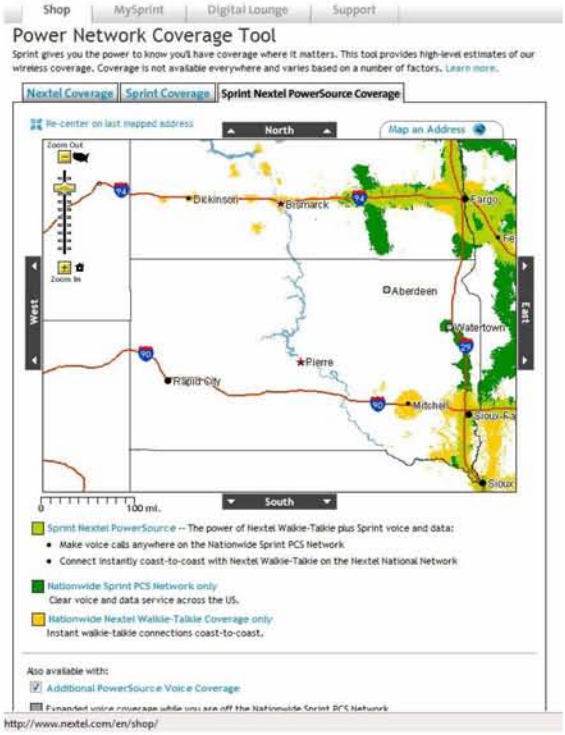
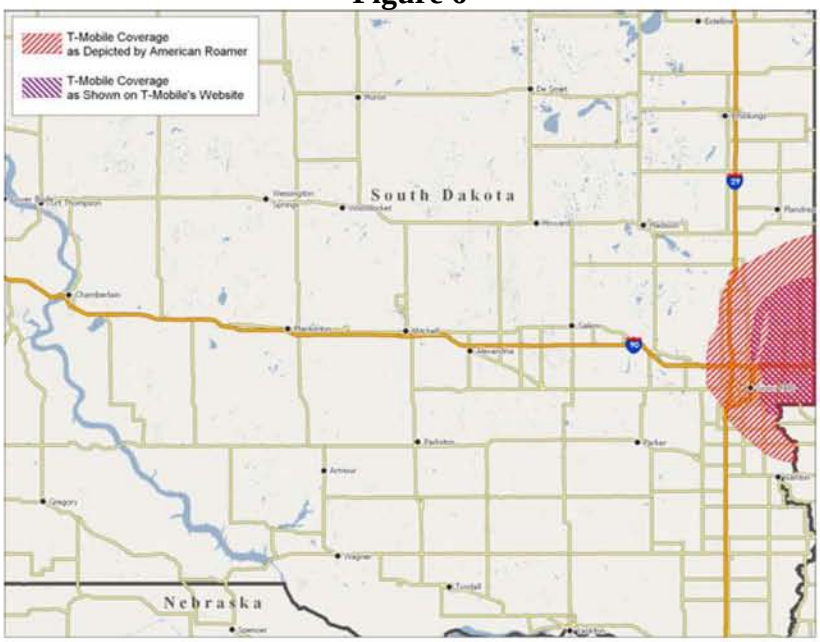


Figure 6



In short, with respect to the American Roamer data presented by Alltel regarding carrier coverage: (a) it is broadly consistent with the data we used; (b) in most cases it shows our data to be conservative; and, (c) to the extent there are significant differences, the differences appear to result from errors in the American Roamer data.[11]

IV. ALLTEL'S "STATIC ANALYSIS" ARGUMENTS ARE WITHOUT MERIT

Alltel argues our analysis is "misleading," "unsupported" and "unrealistic" because it uses a "fundamentally *static* definition of incremental coverage," resulting in two errors. First, Alltel claims that we ignore the fact that CETCs in some areas might have "commenced operations years before the arrival of a Verizon or other national carrier," and, as a result, we unfairly label the CETC's coverage "redundant" when the CETC was actually the first one providing service. Second, Alltel argues that our analysis fails to capture the effects of CETC subsidies "in the past," and also ignores the effect of ongoing CETC subsidies on carriers' investment decisions in the future.[12] Both criticisms are simply wrong.

First, our use of the term "redundant" has nothing to do with the timing of entry or "who went first." Rather, as we explain, "redundant" simply means that areas being served by a CETC are also currently being served by an unsubsidized wireless carrier. The fact that an unsubsidized wireless carrier is serving the area demonstrates that it is economically feasible to do so – without subsidies – and that the subsidies, if they ever were necessary in the past, are no longer necessary today. If it is also true, as Alltel suggests, that CETCs have been designated and permitted to receive USF subsidies for providing coverage in areas that were *already* served by other, unsubsidized carriers, that would only seem to strengthen our conclusions – but that was not our point.

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[11] We performed a similar analysis of the maps provided by U.S. Cellular for Maine and reached the same conclusions.

[12] Alltel Comments at 18.

Second, our analysis demonstrates that there is no statistically significant relationship between the amount of USF subsidies provided to CETC carriers from 2003-2006 and the extent of CETC coverage in 2007. We used data on CETC funding from 2003-2006 specifically because we recognized there could be a "lag" effect between the time funding is provided and the time carriers actually invest in expanded coverage. Thus, we explicitly took into account the effect of CETC subsidies provided "in the past" to assess the impact on today's coverage. As for the future, Alltel presents no evidence (nor even any argument) to suggest that USF subsidies will result in increased coverage when these subsidies have failed to produce any statistically significant increase in coverage up until now.

V. STUDY AREA SIZE HAS NO BEARING ON INCREMENTAL COVERAGE

Alltel's final complaint is that our studies relied on CETC funding in, and population counts for, entire ILEC study areas, and thus fail to take into account the fact that CETCs are sometimes designated to receive funding for only a subset of wire centers in each study area. In particular, Alltel argues that we "vastly overstate the areas in which CETCs are receiving high cost funding."[13]

While it is true that available data on USF disbursements are reported at the study area level, and thus do not permit attribution of CETC funding to individual wire centers, this fact does not affect the results of our analysis of incremental coverage. First, study areas are simply aggregations of wire centers, and if USF subsidies resulted in greater CETC coverage in subsidized wire centers within a study area, and (as one would expect) did not affect coverage in unsubsidized wire centers, then the effects of the subsidies would still be observed at the aggregated (study area) level, and would be captured by our regression analysis. Second, it is possible that, by including in our population counts areas within study areas which are not receiving USF subsidies, we have

[13] Alltel Comments at 19.

overstated the population *living* in areas where CETCs receive subsidies. Most important however, our estimate of the number of *incremental covered pops* covered by CETCs (3.2 million) is unaffected, as are all of our conclusions based on that estimate, with the single exception of the ratio of incremental pops to total pops in subsidized study areas. We reported (accurately) that the total population living in study areas where CETCs are receiving funding is 147.7 million, and that the ratio of incremental pops to total pops in those areas was approximately two percent (= 3.2/147.7). If the latter figure is reduced by 33 percent (to ~100 million) to reflect wire centers within those study areas that do not actually receive funds, then the effect is to change the ratio of incremental pops to total pops from two percent to three percent (= 3.2/100). If it is reduced by half (to ~75 million), the ratio rises to four percent (= 3.2/75). Whether the figure is two, three, or four percent does not affect our conclusion – which is that the incremental coverage provided by wireless CETCs is very small.

VI. CONCLUSION

Alltel's criticisms of our analyses are without merit. Our findings, and most important, our conclusion, stand: Subsidies to wireless CETCs are not an effective or efficient means of increasing the availability of wireless services to rural America.