EXHIBIT A

Exhibit 1

Effective Long Run Management of the High-Cost Universal Service Support Mechanism

An outline for managing fund size over the long run while encouraging efficient competitive entry and maximizing consumer benefit in rural and high-cost areas.

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EFFECTIVE LONG RUN MANAGEMENT OF THE HIGH-COST UNIVERSAL SERVICE SUPPORT MECHANISM

An outline for managing fund size over the long run while encouraging efficient competitive entry and maximizing consumer benefit in rural and high-cost areas.

I. Introduction

In its request to the Joint Board, the Commission sought a review of "certain of the Commission's rules relating to the high-cost universal service support mechanism to ensure that the dual goals of preserving universal service and fostering competition continue to be fulfilled." The Commission's wording is directly on target: the Act's dual goals of making competitive alternatives available to all Americans – including those in rural, insular, and high-cost areas – while ensuring the availability of service in these areas are being met. Now a full seven years after the Act was signed, progress in making competitive alternatives available, particularly in rural and high-cost areas,[1] has been slower than some advocates would have liked. Recent interest by competitors and potential competitors of the incumbent carriers serving these rural areas has increased, as have petitions by the competitors for ETC status. Such a petition brings with it a commitment and obligation to provide service, including the supported services described in 47 C.F.R. §54.101, in these areas.

As the number of potential competitors and corresponding petitions for ETC status has increased, so has the friction between these new entrants and the incumbent local exchange carriers ("ILECs") with ETC status ("IETCs"), who have long received support in the form of implicit and explicit subsidies. Petitions for designation as a competitive ETC ("CETC") have consistently been met with opposition from IETCs. This opposition has rarely been based on a purported failure of the new entrant to advertise and offer the supported services as required by 47 C.F.R. § 54.201, but instead has focused on whether a grant of the petition would serve the "public interest". Not surprisingly, these arguments appear to have been motivated by ILEC interest rather than public interest concerns, and have ranged from "an additional ETC will increase our network costs" to "designating CETCs in our study area will make the fund too large" to "our customers don't want another competitor here." These arguments have consistently been exposed as attempts to erect or maintain barriers to competitive entry based on unsupported facts and shaky economics. Both state regulators and the Commission (in those cases in which it has primary jurisdiction) have consistently concluded that the designation of CETCs will bring benefits to end users in rural areas and, while some fine-tuning of the mechanism is probably in order, the sky is not falling. In reality, the program is working: every dollar of support received by a CETC represents a dollar spent in a rural area that would not have been spent otherwise. New pricing plans and new

[1] In order to simplify the references and increase readability, throughout this paper I am using the terms "rural" and "high-cost" somewhat interchangeably when referring to the "rural, insular, and high-cost" areas addressed in the Act. It is important to remain mindful, however, that not all rural areas are high-cost, nor are all high-cost areas rural.

services based on both wireline and wireless network technologies are becoming available in areas where they were not available before. The application of the Commission's principle that federal support mechanisms should be competitively neutral and technology-neutral is enabling people living in rural areas to receive telecommunications services that provide an important boost to economic development in rural areas and, equally important, address important health and safety issues that are particularly acute in rural areas for which no wireline service-based solution exists.

The collective outcry from the incumbent providers has increased in volume as more CETC designations have been made, and a rallying cry of "we must stop this before its too late" has been taken up. But what exactly is the "this" that must be stopped? Competitive alternatives for customers who have never had one? Pricing plans with expanded local calling and reduced rate or flat-rated long distance calling? Wireless coverage that makes a rural area an attractive location for corporate or industrial relocation? A mobile communications service that addresses significant health and safety concerns left unaddressed by the incumbents?

The most prevalent "this" offered up by the incumbents to date has been "the fund will get too big." There are three fundamental problems with this claim: (1) To date, the increases in the size of the high-cost fund that have resulted from the "modified embedded cost" mechanism used to calculate support for the rural ILECs, and the definition of portability that creates a "make whole" protection plan for these companies, outweigh support received by CETCs. In reality, the incumbent ILECs don't so much mind that the fund is growing, so long as no one else is getting part of "their" money. (2) Short-term growth in the fund, while worthy of review and oversight, is not unexpected. In its decision not to cap per-line support, the Commission explicitly created an element of the mechanism that would protect incumbent LECs at the expense of constraining fund size. (3) Prudent management of the high-cost fund, including an effort to minimize the size of the fund over the long run, is not inconsistent with a mechanism that results in a short-run increase. To the contrary, an attempt to minimize the size of the fund on a quarter-by-quarter basis will almost certainly result in a larger-than-necessary fund over the long run (while simultaneously reducing competitive alternatives available to consumers in rural areas).

The most effective means of ensuring that the dual goals of fostering competition and preserving universal service *continue* to be fulfilled, while controlling the size of the fund over the long run, is to manage the program with a long-term view. The short-run, static analyses typically offered up by the incumbent LECs in an attempt to restrict the availability of support to CETCs provide little useful information and are fundamentally at odds with such long-run stewardship. The remainder of this paper outlines a framework for management of the program with such a long-run perspective. The structure follows the format of the Joint Board's February 7, 2003, request for comments.

II. Basic Principles to Guide the Process

The following basic principles need to be explicitly recognized when evaluating the performance of the universal service high-cost mechanism to date or when considering adjustments to that program. I will apply these principles when formulating answers to the Joint Board's questions in subsequent sections of this paper.

A. A freely operating competitive marketplace is superior to regulation in its ability to generate solutions that are low-cost and most responsive to consumer demands. The essential role of regulation at this stage of market development, especially in rural areas, is to help create an environment that permits – to the extent possible – the meaningful operation of competitive market forces.

In a universal service context, this principle manifests itself in the following ways:

1. The objective of the Act to promote the development of competition generally, and to make services available in rural areas that are comparable to those in urban areas specifically, cannot be met without the portability of universal service support.

2. The support that has been historically available to ILECs represents an enormous competitive advantage (beyond the obvious advantage of customer recognition). For example, a potential new entrant may utilize a technology that, if it had historically been used to provide service to the area, would represent a lower total cost solution than that offered by the incumbent. Clearly, the customers in the geographic area in question – and society at large – will be better off if service is provided by the new entrant. Because the incumbent has had the opportunity to build its network incrementally over time while receiving support, it may be impossible for a new entrant – even if the new entrant represents a lower total cost solution – to capture sufficient initial market share to make investment worthwhile.

The support that has been historically available to ILECs also represents a distinct competitive advantage in terms of service quality. It is not a meaningful exercise to compare the service quality of an ILEC that has received decades of federal support to the current service quality of a new entrant that has yet to receive support or has only recently begun to receive support. Both of these examples of the advantage of operating as a historically supported incumbent – if not fully addressed – inevitably lead to a "first in winner" scenario and a virtually insurmountable barrier to market entry.

3. It is essential that over the long run, competitive market forces have the opportunity to test each provider and drive all providers to an efficient level of operation. An observation that incumbent LECs have historically been subjected to some regulatory oversight is *not* sufficient evidence to conclude that incumbent LECs are operating at the level of efficiency demanded by competitive market forces.

B. The Act's goals of maintaining universal service and promoting competition must be viewed over the economic "long run"; a purely short-term or static analysis is likely to lead to a conclusion and course of action that sacrifices long-run customer benefit - including but not limited to the opportunity to select from multiple suppliers, new product offerings, the ability to originate and receive calls in a geographically expanded area, and lower prices – in order to minimize short-run costs.

In a universal service context, this principle manifests itself in the following ways:

1. The best means of minimizing the cost to society of the universal service high-cost program over the long run may not be, and probably is not, equal to the best means of minimizing the size of the fund for the next quarter. Conversely, an attempt to minimize the size of the fund in the short term – to the exclusion of all other considerations – will almost certainly cause the size of the fund to be significantly larger over the long run than it need or should be.

2. "Technology-neutral" has both a short-term and long-term component. In the short run, it is sufficient to make funds equally available to an ETC (and for a carrier to be designated as an ETC) without regard to the technology used to provide service. For example, wireless companies must meet the same set of requirements for ETC status and receipt of support as wireline carriers, and it is clear that creating a higher hurdle for wireless companies would fail a test of technological neutrality. Over the long run, it is necessary to be cognizant of the fact that the vast majority of ILECs are (at least primarily) wireline carriers. Any explicit or implicit elements of the universal service high-cost mechanism that benefit ILECs distort the technology choice and may result in the "wrong" technology (defined here as a technology other than the lowest-cost option or other than the technology option that best meets customer needs over the long run) being selected by the marketplace. In fact, the marketplace will not have made the selection.

C. Decisions regarding the availability and magnitude of universal service funding must be directly related to economic costs; that is, costs that would be recoverable in a competitive marketplace by an efficient provider. Any compromise in this cost standard will permit the perpetuation of operational inefficiencies and will inflate the size of the fund.

In a universal service context, this principle manifests itself in the following ways:

1. Decisions regarding the application and use of cost proxy models, including models or refinements to existing models yet to be developed, need to be based on a recognition of the characteristics of the area being studied rather than simply on the classification of the ILEC. For example, the Hybrid Cost Proxy Model ("HCPM") has

been used to develop costs for low-density areas served by Tier 1 ILECs that are comparable to the areas served by some rural ILECs. It is also necessary to recognize that the ability of a proxy model to calculate economic costs for some large "rural" ILECs may be quite robust. While further development of proxy models should be undertaken, it may be possible to use existing models to calculate economic costs for ILECs that currently qualify as rural carriers.

2. Any cost analysis performed to address universal service questions must be performed at a level that is sufficiently discrete to discern fixed and variable costs. The ILEC tendency to characterize all network costs as fixed at the level of the entire network significantly distorts the results and creates the misleading impression that higher unit costs are the inevitable short-run outcome of competitive entry.

3. Any cost analysis must be essential to the operation of the program and yield information that cannot be obtained through the operation of a competitive marketplace. If the operation of competitive market forces can serve the same function, then the administrative costs and delay associated with such studies would outweigh any benefit. A cost analysis of ILECs is unavoidable at present, because there is no alternative basis for determining levels of support. Thus, going forward, it will be necessary to undertake an effort to calculate, as accurately as possible, the economic costs of the ILECs. It is not necessary, however, to expend the resources to calculate the costs of a new entrant (wireline or wireless), because any information gained would simply duplicate information that competitive market forces will provide (if allowed to operate).

D. "Universal Service" must be defined in terms of the functionality and benefit provided to consumers; it should not be defined according to how ILEC tariffs have traditionally been structured and should not carry forward historic regulatory requirements that do not provide a benefit or essential function to consumers.

In a universal service context, this principle manifests itself in the following ways:

1. The definition of basic service should not be based on existing ILEC tariff structures. Such an approach "locks in" the existing service and rate structures and artificially constrains the development of solutions that are responsive to consumer needs. ILECs often take the position of "we welcome competition so long as all competitors are required to offer services that look and work exactly like ours and cost the same amount (or perhaps a bit more)." Such a position can effectively negate nearly all benefits of competition: consumers will only be able to "choose" among identical services or rate plans.

2. Historic regulatory requirements need to be carefully evaluated in order to ensure that they will operate as intended in a competitive marketplace. Some requirements, such as equal access, may have little or no meaning in terms of consumer

benefit in this context but can represent an entry barrier that will discourage otherwise efficient investment.

E. "Universal Service" is not defined in the Act as simply a goal to perpetuate or maintain the existing service provided by existing carriers. The objective to open all markets to competition and to make advanced telecommunications and information services available does not exempt "rural" areas of the country; in fact §§254(b)(1) – (3) explicitly include rural, high cost, and insular areas. The elements of a universal service program designed to meet these objectives over the long run (as none of these are meaningful short-run objectives) are likely to be different than the elements of a program designed to ensure that ILECs continue to operate in a manner similar to what they have historically.

In a universal service context, this principle manifests itself in the following ways:

1. Historically, the goal of ensuring the availability of services and affordable pricing has been equivalent to the goal of protecting rural ILECs and ensuring their continued operation (with some regulatory constraints on service quality and earnings). The requirements of the Act and the ongoing development of new technology require a shift away from this paradigm, even in rural areas. It cannot and should not be assumed: (1) that the characteristics of a rural service area dictate service by a single provider, (2) that, even if the area exhibits the characteristics of a natural monopoly, the wireline network of the ILEC represents the lowest-cost solution for serving the area, or (3) that the ILEC cannot operate more efficiently than it currently does, or cannot operate at the level of efficiency demanded by competitive market forces, simply because it is providing service in a rural area.

2. Short-run and long-run objectives must be explicitly considered. As new entrants build out their networks, an "ILEC preservation" objective may be appropriate *in the short run* in order to ensure service availability. But such an "ILEC preservation" objective cannot and should not replace the stated goals of the Act or become, in and of itself, a long-term objective. It is possible that over the long run the most efficient method of ensuring the availability of basic service at affordable rates and providing other telecommunications and information services in rural areas *will not include the ILEC.* This is the inherent friction between "ILEC interest" and "public interest." Over anything other than the very short run, these concepts are different in an economic sense and were clearly intended to be different concepts by Congress.

III. State of the Marketplace and Universal Service Fund

A. Growth rates for support to CETCs (¶11)

The concepts of "growth in support to CETCs" and "growth in size of fund" are fundamentally different and must be distinguished when considering this kind of information. Growth in the overall size of the fund is a function of many factors – including the decision to wean rural ILECs over a five-year period by adopting modified embedded cost recovery and other transitional measures. Growth in the overall size of the fund is an issue that must be considered in the short run (for pragmatic reasons) and over the long run (for both conceptual and pragmatic reasons). The objective must be to find a way to get through the short-run "growing pains" in order to achieve the maximum benefits to rural consumers and a fund whose size is minimized over the long run.

Currently, an observation that support to competitive ETCs has grown over the past 18 months simply means that the process of ETC qualification and provisioning of qualified lines by CETCs is working exactly as intended. As competitors enter rural markets, support to carriers other than the ILECs will inevitably grow. This should not be viewed as an adverse or unintended consequence.

In the long run, growth in support to CETCs versus growth in support to IETCs is useful only as a barometer of how well the process is working. In an environment of truly portable support, the relative amount of support going to CETCs and IETCs would have no impact on the overall size of the fund. Under such a mechanism, the relative amount of support going to each type of ETC would be viewed as exactly what it is: a measure of the success (or lack of success) of competitive entry.

Under the current mechanism, growth in the support to CETCs is a measure of growth in new investment in rural areas. Support to IETCs may or may not represent new investment, and most likely represents costs associated with the operation of a network whose efficiency has not been tested by competitive market forces.

B. What factors affect competitive entry in rural and high-cost areas, and is there a relationship between competitive entry and receipt of high-cost support by CETCs? (¶12)

Upon first analysis, the relationship is exactly what is expected: entry into rural and high-cost areas is a direct function of the cost to serve those areas. Investment that could not be justified without high-cost support may be justified when that support is available. Competitive entry is made possible in many places because of the availability of high-cost support.

The question as posed is not technology-neutral. The concept of competitive entry makes sense only when the market in question is defined, in this case geographically. For a wireline carrier, serving a given geographic market means that any customer with access to the wireline network facilities can have access to the service being provided (*e.g.*, communication from an established fixed point) and will have a

service (transmission) quality that is roughly equal to other end users on that wireline network [exceptions for data on copper]. "Serving the area" means the placement of wires to a series of fixed locations; the "area" actually served – the area within which a customer can avail itself of the service being provided – is actually a very small fraction of the overall "area" generally being described (wireline service is highly constrained in terms of location – with apologies to Cliff Robertson, the old AT&T slogan "from anywhere, to anywhere" was never true. More accurately, it would read "from anywhere, if but only if the caller is at or near[2] its designated point of contact with the wireline network, and to anywhere if but only if the called party is at a known location and that location is at or near a designated point on the wireline network. For a wireline carrier, a complete network buildout ultimately means offering service from and to a small percentage of the overall area.

For a wireless carrier, "serving the area" means placing transmission facilities (towers) in the locations that will provide coverage to what the carrier perceives as the area with highest demand. As buildout progresses, the area within which a customer can avail itself of the service being provided (communication from any geographic location to another, potentially unknown, geographic location) expands. Complete buildout for a wireless carrier means coverage of potentially all of the area in question.

The recognition of the key differences in how network buildout occurs has important implications. An incumbent (wireline) LEC can offer wireline service "throughout" a general area with its existing network. It can offer all essential elements of the supported services from and to all locations that customers expect such service to be available: at designated connections to the wireline network. A wireless carrier may, at the level of buildout that can be justified without support, provide service to a portion of the same area. However, the availability of support will enable the wireless carrier to extend coverage into additional (higher cost) areas and to improve transmission quality in all areas.

The salient question is: at what point do wireline and wireless services become substitutable as basic local telephone service? The answer will be different for different end users. Those whose calling takes place in areas with existing coverage, who are interested in a larger local calling area, are price-sensitive for toll (long distance) service, or place a high value on mobility may see wireless service as a substitute relatively early. For other customers, there is clearly a threshold level of geographic coverage that the wireless carrier must attain in order for wireless service to serve as an effective substitute. Without support, it is likely that wireless service will never attain this level of geographic coverage (just as wireline networks would not have attained their degree of geographic coverage without historical support).

It is possible that, once the threshold level of geographic coverage is attained in a given geographic area, the majority of customers will see wireless service as a substitute for wireline service even if they do not do so today. Once this threshold level of

[2] Cordless phones permit an end user to utilize a wireline service without being literally bound to an assigned location, but still require that the user not roam more than a few hundred feet.

coverage is reached, a significant number of customers may conclude that the advantages of mobility, expanded calling, and nation-wide flat-rated calling plan make wireless a superior means of attaining the supported services. It is also possible that – for a given geographic area – wireless service represents a lower total cost solution than wireline service (in other words, the cost to provide the supported services to all customers may be lower if a wireless network is used).

If any one of these conditions hold true in a given area, the typical ILEC argument that "a wireless carrier does not 'need' and should not receive support because it is 'already serving' the area" is shown to be nonsense. The wireless carrier may indeed be serving a portion of the existing area served by the ILEC. The support is needed in order for the wireless carrier to build out to the threshold level at which wireless service becomes a viable substitute for wireline service. If support is withheld based on an observation that the wireless carrier is currently serving a portion of the area, customers may be denied the ability to avail themselves of a substitute service that confers any number of advantages over their existing service. Such an outcome is clearly not consistent with an objective to make services available in rural areas that are comparable to those available in urban areas. Similarly, withholding support on this basis may mean the perpetuation of a high-cost technology in the area (simply because that technology got there first) when a lower total cost solution is available. Such an outcome is clearly not consistent with an objective to minimize the size of the fund over the long term.

C. To what extent does line growth in rural areas represent "secondary lines"? (¶13)

The framing of this question is not technology-neutral. The concept of "lines" is inherently associated with wireline technology. With a traditional wireline network, the cost to provide a second or third line to a given location is substantial. It is assumed that in most cases, several or all members of a household or business will share the use of a common line. Like a line, wireless service represents a form of network access, but an important distinction must be recognized. A line is associated with a location (and therefore a group of individuals comprising a household or business) rather than an individual. Wireless access is not bound to a single location but is directly associated with an individual. In the context of wireline services, "universal service" is meaningful in terms of "places within that area." In the context of wireless services, "universal service" is meaningful in terms of "people who live and work in that area."

In both the Act and in 47 C.F.R. § 54.101, the concept of universal service is described in terms that are technology-neutral in that the description of the objectives of universal service (in the Act) and the listing of supported services (in §54.101) do not presuppose a preferred technology. Both are stated in terms of functionality available to the user, not in terms of how it should be provided. The mechanics of making universal service support available should likewise not presuppose a preferred technology by focusing on a concept, such as lines, that is technology-specific.

Perhaps more importantly, the framing of this question is not neutral with regard to incumbents versus competitive carriers. An end user may utilize both an existing wireline service and – because it provides some desired feature (*e.g.*, mobility, expanded calling, flat-rate toll) – a wireless service. Prior to the wireless service becoming available, it is meaningful to refer to the wireline service as "primary." If wireless coverage reaches the necessary threshold so that the end user decides to subscribe only to wireless service, the wireless service is properly characterized as the "primary" service. In between those two points in time, such a distinction may have no meaning. Does the end user subscribe to a "primary" wireline service and use the wireless service only for convenience or emergencies? Does the end user subscribe to a "primary" wireless service and use the wireline service only as a backup? At what point does the above set of circumstances evolve from one into the other? The problem, of course, is that if the incumbent's line is designated as "primary" prior to competitive entry, and a CETC's line (or network access) can only receive a primary designation after extensive network buildout, it is highly unlikely that any CETC "line" will ever be designated as a primary line.

D. To what extent does wireless or other technology represent the addition of a complementary service rather than substitution for wireline in rural and high-cost areas? (¶ 14)

The answer to the question as phrased is that wireless service represents a substitute for wireline service once a threshold level of transmission coverage and quality is reached. The focus on statistics regarding the current level of substitution is misplaced, however. Particularly in rural and high-cost areas, the current statistics reflect the degree to which consumers have (to date) found it beneficial to substitute wireless service (provided via a network that has received limited or no support to make a complete buildout feasible) for a wireline service (provided via a network that has most likely received decades of support to make buildout feasible). An answer of "not yet" regarding substitution in rural areas should not be interpreted as a "no."

The question regarding complementary services also needs to be refocused. The basic service elements of wireless and wireline services are clearly substitutes. Basic telecommunications service (defined for this purpose as the supported services) received from a wireless carrier is not complementary to the same service received from a wireline service, or vice versa – they are by definition the same service. Customers may find the mobility or expanded calling options to be complementary services to the basic telecommunications service offered by a wireless provider, and may find the wireless provider's basic offering to be more attractive as a result. It is these additional features that are complementary to the supported services; the basic service offering of one carrier is not complementary to the basic service option of another carrier.

IV. Methodology for Calculating Support in Competitive Study Areas

A. Does providing support for multiple ETCs in high-cost areas result in inefficient competition? (¶16)

No. The argument that "if the ILEC must receive support to service a given geographic area, it follows that the characteristics of the area can't support one profitable provider, much less more than one" carries with it several implied assumptions that have not been tested: (1) The incumbent provider is operating at a level of efficiency consistent with that demanded in a competitive marketplace, (2) the technology used by the ILEC represents the lowest-cost means of providing service to the area, (3) the network costs of the ILEC are fixed at the level of the entire network, and (4) consumers consider the services provided by the ILEC (including the supported services) to be preferable to the services offered by a potential competitor. If any of these conditions does not hold (and there is no empirical evidence that they will), the restriction of support to ILECs will institutionalize existing inefficiencies. The answer ultimately comes down to a short-run versus long-run consideration: in a pure short-run, static view, providing support to one carrier is less costly than providing support to more than one carrier (assuming the existing mechanism is retained that permits ILECs to always be "made whole" by recalculating per-line support when a line is lost). Over the long run, shutting out competitive market forces could be an extremely expensive proposition: an inefficiently operating provider will be permitted to operate a network based on an inefficient technology with no incentive to invest. Supporting such a scenario in the long term will not minimize the size of the fund.

B. Does providing support for multiple ETCs in high-cost areas impose greater costs on the universal service fund? (¶16)

Only if (1) a short-run, static analysis is considered, and (2) the ILEC "make whole mechanism" is retained. The most effective means of managing the size of the fund over time is to take a long-run view so that incentives for efficiency and the potential for technology substitution can have an effect. Managing the fund on a quarter-by-quarter basis will not minimize the size of the fund over time.

It is also essential to consider that many factors, beyond the act of permitting multiple ETCs, impose greater costs on the fund. A mechanism that permits the recovery of embedded costs imposes greater costs on the universal service fund than a mechanism that permits the recovery of economic costs. A mechanism that permits an ILEC to recalculate per-line support in order to be made whole imposes greater costs on the universal service fund than one in which support is capped or truly portable. Even if the primary objective is to minimize the size of the fund in the short run (a poor long-run strategy), restricting the availability of support to only incumbent ETCs is not the most effective means of doing so.

C. Are the current rules competitively neutral and do they promote efficient competition? (¶16)

Generally, yes. Making support levels reflective of economic costs will significantly improve the performance of the existing mechanism in this regard. Restricting support to only incumbent ETCs would eliminate the possibility of competition and ensure inefficient operation of the ILECs into perpetuity.

D. To what extent do costs of competitive ETCs differ from the costs of incumbents? (¶17-18)

The answer to this question represents information that the market can and should be allowed to provide. In terms of both operating efficiency and the technology underlying its network, a CETC's costs are either (1) higher than those of the IETC, (2) equal to those of the IETC, or (3) lower than those of the IETC. If the CETC's costs are higher, because it operates in efficiently, relies on a technology that is a less efficient solution for serving the area in question, or both, a CETC that receives support based on the IETC's costs will not find it financially viable to enter the geographic market and invest in facilities. This is the desired result: a less efficient provider should not be encouraged to enter, nor should its entry be supported.[3]

If the CETC incurs costs equal to those of the incumbent, it will find itself on identical financial footing if it receives support based on the incumbent's costs. If the CETC believes that it has a superior basic service, or superior complementary services that will make its basic service more desirable, it could rationally enter the market and make the required investments (knowing that it will be on a roughly equal cost footing with the incumbent).

If the CETC has a lower cost than the IETC, its entry should be encouraged. If this CETC receives support based on the incumbent's cost, its entry and investment schedule will be accelerated. This scenario is roughly the same as the equal-cost scenario, with the exception being that some additional funds may be available to accelerate buildout or other investment. The use of the support funds is the same – their use is restricted to investment, maintenance, and operation, and only the timing changes. The level of the support funds does not confer an advantage – either fair or unfair – upon the CETC: it arrived with an advantage by virtue of its lower cost. That lower cost can result in lower prices to consumers and a smaller fund over the long run.

[3] It is important to distinguish between high unit costs that are the result of early low market penetration and high unit costs that are caused by operational or technology factors. For this reason, I am using the term cost in this context to mean the conceptual equivalent of Total Service Long Run Incremental Cost ("TSLRIC"). Comparing costs on this basis will eliminate any distortion by putting the CETC's costs on a long-run basis.

E. Do the rules create an unfair advantage for ETCs with lower cost? (¶17-18)

No. Any cost advantage exists independently of the level of support and should not be arbitrarily eliminated. It is perhaps instructive to turn the question around. If support for the CETC is based on a calculation of its lower costs, would support to IETCs based on their higher costs create an unfair advantage for IETCs? The answer is clearly yes – a carrier that should have been at a cost disadvantage in the marketplace (in this case the CETC) will have had that disadvantage artificially eliminated. More important, the outcome would be highly undesirable for consumers in the area and society at large: the ILEC would have no incentive to improve efficiency (if this is the source of its higher cost), a high-cost technology may be perpetuated (if this is the cause of the higher cost), or both. For the same reasons, a CETC with higher costs than the incumbent should not receive a higher level of support based on this differential.

At the end of the day, support should make competitive entry into a high-cost area feasible where it otherwise would not be – if, but only if, the potential new entrant has costs (measured on a basis equivalent to TSLRIC) that are equivalent to, or lower than, the IETC. The level of support to different ETCs should not be used as a tool to equalize cost differences among carriers. Doing so converts a means of ensuring service availability into a means of ensuring the operation of a given carrier.

The consequences of different scenarios using the "equivalent support" and "differentiated support" methods are summarized in Table 1:

Table 1: Implications of Equivalent Support versus Differentiated Support

CETC to IETC Cost Relationship (Cost = TSLRIC)	**Equivalent Support** (current mechanism)	**Differentiated Support** (support based on each carrier's cost)
CETC Cost < IETC Cost	IETC cost benchmark sends correct signal to marketplace, CETC has incentive to invest, CETC investment accelerated by amount of cost differential, IETC has incentive to become more efficient, One cost study (IETC) needed, End user benefits from competitive entry and incentives for IETC to become more efficient, Fund size minimized over long run.	IETC cost benchmark sends no signal to marketplace, CETC has incentive to invest but on extended timeframe, IETC inefficiencies protected; no incentive to before more efficient, Two cost studies (IETC and CETC), must have consistent methodologies but may need to reflect different technologies, End user benefits from competitive alternative but not from lower prices, Fund size higher than necessary long run because of institutionalized IETC inefficiency.
CETC Cost = IETC Cost	IETC cost benchmark sends correct signal to marketplace, CETC has incentive to invest, IETC has incentive to become more efficient, One cost study (IETC) needed, End user benefits from competitive entry and incentives for IETC to become more efficient, Fund size minimized over long run.	IETC cost benchmark sends correct signal to marketplace, CETC has incentive to invest, CETC investment accelerated by amount of cost differential, IETC has incentive to become more efficient, Two cost studies (IETC and CETC), must have consistent methodologies but may need to reflect different technologies, End user benefits from competitive entry and incentives for IETC to become more efficient, Fund size minimized over long run.
CETC Cost > IETC Cost	IETC cost benchmark sends correct signal to marketplace, CETC has no incentive to invest, IETC has no incentive to become more efficient, One cost study (IETC) needed, No end user benefits, Fund size may be minimized over long run.	IETC cost benchmark sends no signal to marketplace, CETC has artificial incentive to invest, IETC has no incentive to become more efficient, Two cost studies (IETC and CETC), must have consistent methodologies but may need to reflect different technologies, End user benefits from competitive alternative but not from lower prices, Fund size higher than necessary long run because of potential for inefficient entry.

As Table 1 makes clear, for each scenario (CETC costs less than IETC costs, CETC costs equal to IETC costs, CETC costs greater than IETC costs) the option with the most favorable set of outcomes is the use of an equivalent support mechanism based on ILEC costs. Of course, the benefits to rural consumers are much greater if CETCs exist that have lower costs than the IETC. Whether this is true is independent of how the mechanism operates, and is not within the Commission's control. How consumers in rural areas will fare if a lower-cost provider exists is within the Commissions control, however. Maintaining an equivalent support mechanism based on the IETC's costs assures the best outcome.

Different ways of asking the same fundamental question are as follows: Under what circumstances would it be beneficial to discourage market entry and investment by a low-cost provider? Under what circumstances would it be beneficial to protect a high-cost provider from the effects of competitive market forces? Absent a compelling description of such circumstances, there is no benefit to an attempt to differentiate support. On the cost side, the development of support based on a CETC's costs will require the development and application of a set of new cost models similar to the HCPM that can accommodate a variety of carrier types, operations, and network technologies. Before the time and necessary expense are incurred, it is reasonable to first determine if the marketplace will provide the necessary information.

As described previously, it will. The only required assumptions are the following: (1) CETCs will not misappropriate support funds, and (2) CETCs are reasonably well managed by people with some insight into their cost structure. A CETC considering entry into a high-cost area will evaluate that entry based on the following consideration: given the level of per-line support available and the number of potential customers that can be reached, should investments rationally be made in this area? A CETC with higher costs than the IETC will not invest (as it should not). A CETC with costs equal to the IETC will have an incentive to invest equal to that of the IETC. A CETC with lower costs than the IETC will invest, with any incremental support funds that result from the cost differential being used to accelerate that investment. In order to determine if the USF mechanism is operating in a manner that is in the long-run interests of both consumers in high-cost areas and society at large, the information needed about CETC costs is simply the following: are its costs higher or lower than those of the IETC? This is information that the market can provide without the time and expense of a CETC cost study.

Put another way, a cost study of the IETC's operations is necessary to set a benchmark level of operating/network cost. Support set equal to this benchmark will create the correct set of incentives and signals to the marketplace: If you can beat this cost level, enter with our blessing and receive support funds that must be used for this purpose. If you can't beat this cost level, we already have a lower-cost provider so thanks, but no thanks.

F. Should support in competitive areas be based on the lowest-cost provider's costs in order to promote efficiency? (¶19)

This issue also has an important time dimension. During the period of time necessary for entry to occur and network buildout to take place, the existing support mechanism based on incumbent costs makes economic sense as the appropriate cost benchmark. A "beat this if you can" cost benchmark equal to the IETC's costs will encourage efficient investment but will not encourage inefficient investment. As a competitor's network buildout reaches completion in a given geographic area, the benchmark should change to reflect the costs of the low-cost provider. This new benchmark will then create the correct incentives and send the correct signals to the marketplace.

G. To what extent should quality of service be taken into consideration? (¶19)

The answer to this question requires consideration, described previously, of the differences in how a wireline or wireless provider build out and serve an area. During the competitive buildout phase, service quality should be a non-issue in terms of USF plan mechanics.[4] It is not meaningful to compare the service quality of an incumbent ETC (as the beneficiary of decades of support) with the service quality of a CETC (whose receipt of support has been limited and whose service quality is a function of buildout progress) in order to determine whether the CETC should qualify for support. Limiting support in this way would require any potential competitor to engage in an instant buildout of the area prior to receiving any high-cost support. Such a requirement creates a substantial (if not insurmountable) barrier to entry and is not competitively neutral: IETCs were not required to engage in an instantaneous buildout. Such a requirement would have been an effective barrier to their network deployment. CETCs may very well succeed in the necessary buildout in a shorter amount of time than was required for the incumbent, and if the CETC is a lower cost provider this abbreviated buildout time should be encouraged.

H. To the extent the costs of CETCs are lower than those of the IETCs, what effect would this have on incumbent providers? (¶19)

For an IETC with inefficient operations, the immediate "effect" will be the creation of a strong incentive to become more efficient. How IETCs respond to this incentive is of course up to them, as any consequences of their response (or lack of response) should be. For an ILEC operating a network that, for the geographic area in question, is based on a technology with a higher cost than the technology employed by a CETC, the "effect" may be that the ILEC may cease to be a provider in that area. This is exactly the same "effect" on the IETC that would accrue to any similarly-positioned provider in a competitive market. When considering this effect, the questions set forth previously should be considered: Under what circumstances would it be beneficial to

[4] The market will take care of this issue. A CETC that does not offer the level of service quality demanded by end users will not win/keep customers and will not receive support.

discourage market entry and investment by a low cost provider? Under what circumstances would it be beneficial to protect a high-cost provider from the effects of competitive market forces?

I. How should the Commission determine the lowest cost of service? (¶19-20)

J. Should high-cost support be awarded to the ETC with the lowest bid for support in a designated service area for a set period of time? (¶20)

K. What level of competition should be present prior to auctions being conducted in a given service area? (¶20)

These three questions have a common answer. During the market entry/buildout phase, the Commission need not attempt to calculate costs for CETCs and should not move to an auction process. As described above, the costs (on a TSLRIC basis) of the IETC represent the appropriate cost benchmark upon which support should be based. An auction would be premature during this period; while a CETC with lower costs might be able to underbid the IETC, such a mechanism would delay the CETC's buildout and eliminate funding for the IETC during a time in which end users may have service alternative that they view as an effective substitute for the service received from the IETC.

Once the entry/buildout phase has ended, an auction process may prove to be an effective mechanism. The low-cost provider should be able to successfully bid for any funding that is necessary, the size of the fund will be minimized, and a new benchmark will be established in order to create incentives for both existing ETCs in the area and potential new entrants. An additional but not insignificant benefit of an auction process over the long run is that it may eliminate the administrative costs associated with conducting cost studies in order to determine the identity and cost level of the new (if new) low-cost provider. The low-cost provider should identify itself through the bidding process. Potential new entrants will evaluate their investment plans based on their perception of their ability to underbid the supported ETC in the next auction.

L. Claims regarding the impact on calculated per-line costs of IETCs resulting from CETC entry, and

M. Should the per-line support amount available to both the IETC and CETCs in a given area be frozen? (¶24)

During any period of time that support continues to be calculated by dividing the IETC's embedded (booked) costs by the number of lines, it is appropriate to freeze per-line support at the time a CETC enters the market. It is important to recognize that the oft-made and dire prediction of upwardly spiraling per-line costs is a function of the

embedded cost recovery mechanism that continues to be used to calculate support for rural ILECs, and not an inherent characteristic of using a per-line support mechanism. The arithmetic that drives this prediction exists only in a top-down methodology in which total costs are divided by the number of lines.

While such an approach is an effective means of making IETCs "whole" and insulating them from any impact of competitive entry (and in the process eliminating any incentives for efficiency that such competitive market forces might create), it is a very poor method of estimating the relevant measure of per-line costs for at least two reasons. The first, of course, is that the relevant cost – the one that will permit the recovery of those costs recoverable in a competitive marketplace, and the one that will send the correct signals to potential new entrants – is an economic cost. A "cost" based on the regulatory accounting reflected in the IETC's books is not a valid substitute in this context: it won't constrain the IETC in that same way that competitive market forces will, and it won't send a correct signal to potential new entrants.

Second, and equally important, the total cost/total lines methodology can only be meaningful if the IETC's network costs are fixed at the level of the entire network. There is no empirical evidence to support this implicit yet critical assumption. To the contrary, each of the economic cost models that have been considered by the Commission to date for the calculation of costs in a universal service context (various versions of HAI, various versions of BCPM, and later sythesis models that combine elements of HAI and BCPM) produce results that indicate network costs vary at a much more granular level. If costs are not fixed at the level of the entire network, the existing methodology for calculating per-line support will overstate costs and lead to a higher than necessary level of support.

In contrast, a mechanism based on economic costs will not lead to an upward spiral in per-line support when a CETC enters the market. Such a bottom-up approach focuses on the act of calculating the unit cost of providing a line (or, in technology-neutral terms, providing network access) rather than on an act of making the IETC whole. Competitive markets do not include make-whole provisions, nor do they permit the recovery of costs in excess of those that would be incurred by an efficient provider. There is no reason for the size of the high-cost fund to be inflated (and in a way that will continue over the long run) in an effort to protect the interests of competitors rather than the interests of end users.

N. The methodology for determining the location of a "line" served by a wireless provider. (¶25)

The Commission has previously concluded that the customer billing address methodology represents a reasonable and administratively simple solution to the problem of locating a wireless customer. Beyond administrative ease, this methodology has economic merit as well. As described previously, the fundamental differences between wireline and wireless technology make the notion of a "line" obsolete. Carriers using

both types of technology provide network access to customers: wireline service offers access at a fixed, designated point, and wireless service offers network access from any point within covered area.

The question of where to "locate" the wireless customer's point of access for the purpose of determining the reasonable amount of support is relatively straightforward. It is reasonable to conclude that an end user that seeks to utilize a wireless provider to obtain the supported services will want to use that service – at least a portion of the time – at his or her home or business. The wireless provider must, at a minimum, be able and willing to provide service at an acceptable level of quality at that "essential" location. If the essential location for a given end user is in a low cost area, the CETC, like the IETC, will not receive high-cost support. If the end user's "essential location" is in a high-cost area, the CETC will receive support commensurate with that higher cost.

At the end of the day, the mobility of wireless service doesn't change the basic equation: there are places that an end user will insist that the supported services (at a minimum) be available, else the person will not subscribe to the service. The wireless provider must therefore serve that essential location, whether it be in a low or high cost area. The location represented by the customer's billing address remains the most likely location that the end user will consider service to be essential.

V. Scope of Support

A. Should support be limited to a single connection to the residential or single-line business end user? (¶28)

No. The imposition of such a requirement during a period of market entry and buildout would be tantamount to a requirement that any new entrant engage in an instantaneous buildout of the entire area. Such a requirement (1) ignores financial realities and would create an insurmountable barrier to entry, (2) does not represent how IETCs were required to build out their networks, and (3) will not work as intended if support levels continue to be calculated based on the current methodology of dividing total IETC network costs by supported lines. In addition, a "single connection per location" requirement is at odds with the definition of universal service in the Act and the definition of supported services in 47 C.F.R. § 54.101, would represent an administrative nightmare in terms of implementation and operation, and would create distorted incentives for carriers seeking to serve an area.

First, a "single connection per location" restriction would require a potential new entrant to generate sufficient capital – prior to entering a high-cost area – to completely build out the area before receiving any high-cost support. Under this scenario, a carrier that could serve the area at a lower cost than the IETC could never enter the market. Such an outcome would mean higher prices for consumers and a larger high-cost fund over the long run. Second, it is not technology-neutral, and certainly not neutral with regard to incumbents versus new entrants, to require a potential new entrant to

instantaneously build out an area that the incumbent built out over time while receiving high-cost support. Third, support based on a subset of lines is inconsistent with the method currently being used to calculate per-line support for IETCs (and by extension CETCs). In an environment in which per-line support equals total embedded cost divided by lines, it will be necessary to get the denominator right in order to avoid distorting the amount of per-line support. Dividing by supported lines would clearly inflate per-line support and would effectively continue to give the IETC support for all lines. In order to make the correct calculation, it will be necessary to first calculate support based on total lines, and then apply that support to a properly-identified subset of lines.

Equally important, a "single line per location" restriction is not consistent with the Act or 47 C.F.R. § 54.101. For example, §54.101 is written entirely in terms of services or functionalities available to end users, not services or functionalities available at a given location. The notion of a "primary line" to a location is meaningful only in a world served exclusively by wireline services. The "user of telecommunications services" described in § 54.101 who lives or works in a rural area may seek to use those services at more than one location, just as a "user of telecommunications services" might seek to do in an urban area. In practice and in accordance with the language of the Act and § 54.101, the "customer" is an end user, not a location.

B. How should it be determined which line receives support? (¶29-30)

C. Should the end user designate the line to be supported? (¶29-30)

Even without the significant conceptual problems described above, a "primary line" mechanism will suffer from problems of administration. If only one line is to be supported, the process of designating that "primary" line must be neutral with regard to technology and neutral between incumbents and new entrants. Clearly, designating the customer's wireline or first installed service as primary would fail a test of neutrality.

The only apparent option would be customer designation, which brings with it a new set of problems. Consider a customer that subscribes to both a wireline and wireless service. Who will ask the customer which service is "primary"? Should the customer be told that the designation of one service as primary may mean the loss of the other service? Can the customer change his or her mind? Experience with slamming in other contexts in the industry does not bode well for such a mechanism. Carriers will have a significant incentive to mis-report their service as "primary."

Finally, while carriers should pay attention to their customers, a primary line designation will create an undesirable dynamic. Carriers will have an incentive to devote significant resources to an effort to have customers choose them as "primary." This kind of "pick me as your best friend on the playground" attention is likely to divert both resources and attention from a more proper focus on responsive service offerings and quality.

VI. Process for Designating ETCs

A. What factors should be considered when determining public interest? (¶33)

Experience in state proceedings indicates that state regulators have been able to reach decisions regarding the public interest of an application for ETC designation without additional guidance, and the Commission has apparently had no problems applying this standard when called upon. To the extent any further guidance is contemplated, it should be consistent with the following principles. First, any question regarding whether competition should be encouraged in rural areas has already been answered; the Act sets objectives for services to all Americans and contemplates opening all telecommunications markets to competition, including rural markets.

Attempts by IETCs to put competition itself on trial are misguided; the public interest question is *not,* "Will the end users of telecommunications services in rural areas benefit from competitive alternatives?" Congress has already answered, "yes." The public interest determination must be more narrow and fact-based. Is there something specific about the applicant's service offerings that makes an ETC designation not in the public interest? Is there something unique about the rural area in question[5] that would compel a finding that competition is not in the public interest? In short, the public interest standard must be applied to the facts of a specific ETC application, and not be expanded into a reconsideration of the stated goals of the Act.

B. Consideration of quality of service obligations imposed on IETCs when determining whether a CETC application is in the public interest. (¶34)

As described previously, it is not a meaningful exercise to compare the service quality of a carrier that has not begun, or only recently has begun, to receive support with the service quality of an incumbent that has been receiving support for decades. Setting quality thresholds for CETCs may create a barrier to entry and would be administratively inefficient. The marketplace can effectively monitor CETC service quality; if the service is substandard, end users won't buy it and the CETC will not receive support for that customer.

C. What weight should the Commission place on the presence of disaggregation zones when considering the public interest of a CETC designation? (¶35)

Experience in state proceedings strongly suggests that the three paths for disaggregation previously adopted by the Commission constitute an effective means of matching costs

[5] Contrary to many rural ILEC claims, that fact that a company serves a rural area does *not* make it unique among rural carriers.

and support. For a number of legitimate reasons,[6] a carrier seeking an ETC designation may seek that designation for an area smaller than the ILEC study area. Other than the potential for the CETC to selectively enter only low-cost areas in order to take advantage of averaged per-line support,[7] there is no reason to require carriers seeking to operate as a CETC to serve exactly the same geographic area as the incumbent. Even this theoretical possibility of mischief is effectively addressed by deaveraged support.

As a result, the Commission should place significant weight on the presence of disaggregation zones as an assurance that the CETC will not selectively enter but will have an equal incentive to serve all customers within the area. Because the rural ILECs can disaggregate costs and support below the wire center level simply through a process of self-certification, a lack of disaggregation zones also has important information content: it tells the Commission that the ILEC does not believe that costs vary across its study area to a degree that would create the incentive for selective entry. In either case, a component of a public interest evaluation will have been addressed: the Commission will have the assurance that a CETC will not have the ability to selectively enter only the low-cost portions of the area in question.

VII. Conclusion and Recommendations

While it is not without growing pains and is in some need of fine-tuning, the existing high-cost universal service support mechanism is beginning to be successful in achieving the dual goals of introducing competition and ensuring the availability of affordable, quality telecommunications service in rural and high-cost areas. CETCs are investing in network infrastructure and are beginning to bring competitive alternatives (including technology alternatives) to consumers in these areas.

As the pro-competitive goals of the Act begin to be met, resistance from the incumbent providers is not unexpected. Despite paying lip service to competition, the incumbents understand that the competitive entry made possible by portable high-cost funding may erode their revenues and over time reveal inefficiencies in their operation and choice of technology. It is not surprising that the incumbents' proposed solutions to the current issues involve various means of restricting competitive entry.

When each of the issues is examined at greater depth, it is clear that dual goals of the Act do not need to be compromised at this time. The current mechanism of per-line support based on IETC costs sends the correct signals to the marketplace and encourages efficient entry. Going forward, refining the mechanism to base per-line support on the

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[6] The primary limitation for wireless carriers is often the boundary of their CMRS license area. If this boundary is within the boundary of an ILEC study area, it will simply be impossible for the wireless provider to receive ETC designation at the level of the entire ILEC study area.

[7] There are a number of practical reasons why a CETC would not seek to undertake such a strategy, but it does remain at least a theoretical possibility. Disaggregation of support eliminates that theoretical possibility. A CETC that enters only low-cost areas will receive either no per-line support or a level of support consistent with the lower costs in the area.

incumbent's economic (rather than embedded) costs will increase the accuracy of these marketplace signals and maximize consumer benefit over the long run.

Management of the high-cost fund must be undertaken with a long-run perspective. Attempts to minimize the size of the fund in the short run will almost certainly result in a larger than necessary fund over the long run. This negative consequence will be compounded by the fact that if the incumbents' proposals for short-run fund minimization are adopted, rural Americans will have fewer competitive alternatives available to them.

Finally, the Commission must be diligent when considering various alternatives for modifications to the high-cost mechanism in order to ensure that a customer protection mechanism does not devolve into a carrier protection mechanism. The incumbents continue to put forth a short-run, static analysis that supports their various proposals to minimize the size of the fund and ensure the availability of service by sacrificing the competitive goals of the Act. When a long-run analysis is undertaken, it becomes clear that such a sacrifice is neither necessary nor desirable.

Congress did not state that the goal of "opening all telecommunications markets to competition" is a desirable one only if the path from monopoly to competition is short and cost-free. In most cases, it is neither. Congress was absolutely correct when it envisioned competitive market forces – if permitted to operate – as the most effective means of improving the efficiency of all carriers and making new technologies, new services, and lower prices available to all Americans, including those in rural areas. The path designed by the Commission will allow those goals to be reached over time.