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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of:	)	
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
	)	
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs	)	CC Docket No. 97-160
	)	

REPLY COMMENTS OF GTE

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October 3, 1997

SUMMARY

Any model that hopes to provide sufficient high cost support must accurately reflect a realistic mix of outside plant types, reasonable forward-looking installation and cable costs, appropriate drop lengths, a valid degree of structure sharing, and a loop design that uses forward-looking technology. The Hatfield Model fails on all of these counts. To assure sufficiency of support, GTE urges the Commission to base universal service support on actual forward-looking costs derived from carrier-specific inputs into state-approved engineering studies, until a competitive bidding mechanism can be implemented that eliminates the need for regulatory micro-management of network design and investment.

Plant mix. No proxy model can adequately consider the multitude of factors that determine the mix of outside plant in any specific area. That mix results from such highly localized elements as municipal ordinances, the effects of animal infestation, and climate, as well as the broad terrain and density factors identified in the FNPRM. The Commission should therefore utilize actual plant mix on a wire center basis, as recommended by the Florida Public Service Commission (FPSC) and numerous other commenters.

Cable and installation costs. Carriers should be permitted to utilize inputs reflecting the actual forward-looking costs of cable material and installation. Those costs will vary significantly from state to state, and possibly from wire center to wire center, and cannot possibly be predicted with accuracy based on a single set of nationwide inputs that is manipulated through the use of gross multipliers (the approach

of the Hatfield Model). The only way of assuring the universal service high cost support is sufficient is to take these real world costs into account.

Drop lengths. The presumed drop lengths in the Hatfield Model severely understate actual drop lengths and hence total drop costs. The Commission should estimate drop length based on lot size, grid size, and number of lines per geographic unit, as reflected in carrier-specific engineering models.

Structure sharing. The Hatfield Model's structure sharing assumptions are indefensible. Carriers already are taking maximum advantage of the relatively limited opportunities for sharing, so the level of sharing is unlikely to increase as a result of new regulatory requirements. Moreover, carriers today only rarely engage in sharing of buried cable, and such sharing would be highly problematic and engender substantial new costs that Hatfield ignores. Therefore, as recommended by the FPSC, the Commission should utilize carrier- and location-specific sharing data.

Loop design. The copper-based T1 loop design in the Hatfield Model is antiquated technology that will not minimize lifetime costs or support the provision of advanced communications services. In contrast, BCPM properly makes increased use of fiber and DLCs in the network, based on a realistic fiber/copper cross-over point and efficient, forward-looking technology.

Wireless technology. GTE agrees with AT&T and MCI that the Commission's cost model should not include wireless technology at this time. Currently, wireless technology is not generally a cost-effective or high quality substitute for landline service. However, as wireless capabilities develop and the Commission implements competitive bidding, any entity should be eligible to seek funding using any mix of technologies.

TABLE OF CONTENTS

I. The Actual Plant Mix Of Individual Carriers In Each State Should Be Used In Determining The Forward-Looking Costs Of Outside Plant. (Section Iii.C.2.A) 2

II. Installation And Cable Costs Should Be Determined Using The Actual Additional Expenses Associated With Labor And Materials, Not Through A Multiplier. (Section Iii.C.2.B) 5

III. The Hatfield Model's Predetermined Drop Lengths Do Not Reflect Actual Costs. (Section Iii.C.2.C) 7

IV. The Commission Should Utilize Carrier-Specific Sharing Percentages. (Section Iii.C.2.D) 10

V. Loop Design Must Reflect Forward-Looking Technology Rather Than The Hatfield Model's Archaic And Insupportable Copper T-1 Architecture. (Section Iii.C.2.E) 13

VI. The Commission Should Not Include A Wireless Cost Threshold In The Model. (Section Iii.C.2.F) 15

VII. Conclusion 16

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REPLY COMMENTS OF GTE

GTE Service Corporation and its affiliated domestic telephone operating companies (collectively "GTE")[1] respectfully submit their Reply Comments regarding the Round III issues. The outside plant issues dealt with in Round III are a primary driver of the costs of providing universal service. Consequently, any model that hopes to provide sufficient high cost support must accurately reflect a realistic mix of outside plant types, reasonable forward-looking installation and cable costs, appropriate drop lengths, a valid degree of structure sharing, and a loop design that uses forward-looking technology. The Hatfield Model fails on all of these counts, while the BCPM generally produces results that are more in line with the real-world outside plant costs faced by telephone companies. Nonetheless, to assure sufficiency of support, GTE continues to

[1] GTE Alaska, Incorporated, GTE Arkansas Incorporated, GTE California Incorporated, GTE Florida Incorporated, GTE Hawaiian Telephone Company Incorporated, The Micronesian Telecommunications Corporation, GTE Midwest Incorporated, GTE North Incorporated, GTE Northwest Incorporated, GTE South Incorporated, GTE Southwest Incorporated, Contel of Minnesota, Inc., and Contel of the South, Inc.

urge the Commission to base universal service support on actual forward-looking costs derived from carrier-specific inputs into state-approved engineering studies,[2] until a competitive bidding mechanism can be implemented that eliminates the need for regulatory micro-management of network design and investment.

I. THE ACTUAL PLANT MIX OF INDIVIDUAL CARRIERS IN EACH STATE SHOULD BE USED IN DETERMINING THE FORWARD-LOOKING COSTS OF OUTSIDE PLANT. (Section III.C.2.a)

As AT&T and MCI acknowledged, "[b]ecause the costs of installing aerial, buried, and underground cable and wire facilities vary so greatly, a prime determinant of the cost of any network is the relative proportions of these types of plant."[3] Notwithstanding this recognition, the proponents of the Hatfield Model claim that their "optimization process" for determining plant mix, which considers only density and terrain and expressly disregards climate, will produce an appropriate forward-looking mix of outside plant. Indeed, these carriers go so far as to claim that the actual plant mix in place today "is unlikely to reflect the decisions a forward-looking efficiency company would make."[4] In reality, the Hatfield Model's method for determining plant mix is hopelessly crude; no proxy model can take into account the multitude of complex considerations that drive outside plant design. This is especially true when the model limits lot size to

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[2] Alternatively, if a carrier has not received timely state approval of an engineering model, it should be permitted to derive costs based on carrier-specific inputs into the BCPM platform, modified as recommended by GTE throughout this proceeding.

[3] AT&T/MCI Comments at 2.

[4] *Id.* at 5.

three acres as does Hatfield, in spite of the fact that lot size tends to increase as area density decreases.

Virtually every party except AT&T and MCI cautioned that the optimum plant mix cannot be determined by focusing solely on density and terrain. For example, Bell Atlantic explained that the actual plant mix in use reflects such factors as local regulations mandating underground plant, estimates of ultimate demand, prohibitions on aerial facilities over highways and railroads, the availability or lack of straight-line routes, the presence or absence of underground obstacles such as subway systems or steam pipes, safety considerations, and climate.[5] Likewise, Ameritech noted that local political considerations often constrain the permitted plant mix by limiting the use of aerial plant, and that outside plant design must take into account the effects of animal infestation.[6] For these reasons, Ameritech concluded that the relative plant mix in an area should be prima facie evidence of the most efficient plant mix.[7] And TDS pointed out that, as a result of local permit requirements and other factors, the "design of proper plant mix is far from a cut-and-dried mathematical exercise."

Notably, parties other than incumbent LECs also support using actual plant mix rather than an artificial model. The Florida Public Service Commission termed "unrealistic" the assumption that the only variations in plant mix are accounted for by differences in line density, and pointed specifically to local zoning ordinances as having

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5 Bell Atlantic Comments at 1, 3-4.

6 Ameritech Comments at 3.

7 *Id.* at 4.

a major effect on the type of outside plant deployed in an area.[8] For this reason, the FPSC urged the Commission to allow plant mix inputs at the wire center level,[9] a suggestion that GTE strongly endorses. Similarly, the Rural Utilities Service noted that "weather conditions are a major factor in a carrier's preference for buried plant," that ice storms as well as hurricanes cause great damage to aerial cable, and that even "normal conditions such as exposure to sunlight and temperature extremes shorten the life of aerial cable."[10] Their discussion clearly and succinctly explains why "forward looking" is not synonymous with complete disregard for historical information and lessons learned.

In short, critical determinants of the outside plant mix, such as zoning ordinances and climate conditions, are inherently local and not susceptible to incorporation in a one-size-fits-all algorithm. Thus, the existing plant mix is highly likely to represent the mix that would be chosen by an efficient carrier on a forward-looking basis. In contrast, the Hatfield Model, which ignores zoning factors and dismisses climate considerations as "data limitations" that are too hard to "identif[y] or quantif[y] with any accuracy,"[11] will produce results that reflect practical real-world outcomes only by accident, if at all. To assure sufficient high cost support, the Commission must permit carriers to utilize the actual outside plant mix on a wire center basis, as recommended by the FPSC.

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8 Florida Public Service Commission ("FPSC") Comments at 4.

9 *Id.* at 5.

10 Rural Utilities Service ("RUS") Comments at 4; *see also* Sprint *et al.* Comments at 11.

11 AT&T/MCI Comments at 5.

II. INSTALLATION AND CABLE COSTS SHOULD BE DETERMINED USING THE ACTUAL ADDITIONAL EXPENSES ASSOCIATED WITH LABOR AND MATERIALS, NOT THROUGH A MULTIPLIER. (Section III.C.2.b)

The record supports basing high cost support on the additional expenses of procuring and installing buried, underground and aerial cable, rather than utilizing the Hatfield Model's approach of unvarying nationwide input values and a cost multiplier to account for difficult terrain conditions.[12] The FPSC, for example, urged the Commission to reject the use of a single set of nationwide values, pointing out that "labor costs for performing cable installation will vary at least on a regional basis, if not on a state-specific basis."[13] The FPSC also endorsed the approach of specifying the additional costs caused by cable installation in difficult terrain rather than the Hatfield Model's approach of using cost multipliers.[14]

As TDS explained, the Hatfield Model's approach of ignoring local conditions and using a multiplier will produce seriously inaccurate results:

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[12] AT&T and MCI conceded that the Hatfield Model still does not separate material and installation costs, contrary to the Commission's tentative conclusion (in ¶ 68 of the FNPRM) that those costs should be separated. AT&T/MCI Comments at 8. Moreover, as GTE pointed out in its opening comments (at 4), the Hatfield Model apparently does not account for the additional cost of the messenger strand associated with aerial cable. In addition, Hatfield in yet another unseen version is apparently proposing different multipliers for trenching and restoration, claiming restoration costs are not higher as terrain varies. Routing cable in a straight line over a mountain challenges the logic implied in this assumption.

[13] FPSC Comments at 5.

[14] *Id.*

> tables allowing individualized adjustments to reflect actual data are more likely to provide reliable predictions than general factors or multipliers that minimize local differences in costs and conditions. It would cause fatal distortions to cost predictions to use a national average of contract and construction prices: The prices of various cost factors differ dramatically from place to place, and the variations are the result of many different conditions.[15]

RUS echoed this concern:

> A multiplier will overestimate the cost of placing large cables in rock and will underestimate the cost of placing small cables in rock. In addition, the Hatfield ratios are unrealistic. ... Hatfield increases cable length by 20% to reflect a practice of going around rock. This would be a very poor practice, and to RUS' knowledge, no LECs do this. It would greatly increase the difficulty of accurately locating the buried cable ... [and] increase the probability that a paralleling facility would ... be cut .... It also would violate the assigned construction corridors currently used by state highway departments and landowners.[16]

In addition to these methodological flaws, the Hatfield Model is further objectionable because the nationwide input values are not based on reliable information. For example, the New Mexico State Corporation Commission recently stated that:

> the method used by the AT&T engineering to collect data from vendors was flawed. A questionnaire was sent to vendors asking the cost of installing cable in different soil, bedrock, and density conditions. The AT&T questionnaire did not define the terms used in the questionnaire. Therefore, one contractor's estimates could be higher than another due, for example, to a different perception of what constitutes rocky soil. Also the contractors that responded to the questionnaire could have differing views as to what line or household density bands constitute rural, suburban and urban conditions.[17]

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15 TDS Comments at 7.

16 RUS Comments at 5.

17 In the Matter of the Interconnection Contract between AT&T Communications of the Mountain States, Inc. and GTE Southwest, Inc., Docket No. 97-35-TC (released Sept. 19, 1997) at ¶ 47.

The New Mexico Commission consequently held that, "[b]efore it would be appropriate to use the Hatfield Model to set permanent prices for unbundled loops, the data collected by the Hatfield engineering team, and used as validation to the inputs to the model, must be improved," and stated that "[t]he Commission disagrees with the method used by the Hatfield Team to collect data from outside plant contractors."[18] In addition, neither model recognizes the increased routing necessary to preserve archeological and historical sites, circumvent or broach areas characterized by large vertical distances or bodies of water, circumvent areas susceptible to adverse environmental impacts or necessary to meet local government regulations.

As recommended by the FPSC, carriers should be permitted to utilize inputs reflecting the actual forward-looking costs of cable material and installation. Those costs will vary significantly from state to state, and possibly from wire center to wire center, and cannot possibly be predicted with accuracy based on a single set of nationwide inputs that is manipulated through the use of gross multipliers. The only way of assuring that universal service high cost support is sufficient is to take these real-world costs into account.

III. THE HATFIELD MODEL'S PREDETERMINED DROP LENGTHS DO NOT REFLECT ACTUAL COSTS. (Section III.C.2.c)

As GTE explained in its opening comments, drop lengths (the length of the wire connecting a residence or business to the distribution cable) are determined by numerous factors, including lot size, location of the living unit within the lot, and location

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[18] *Id.* at ¶¶ 50, 55.

of the demarcation point on the living unit.[19] The Hatfield Model utilizes a predetermined drop length in each density zone, ranging from 150 feet in the two least dense zones to 50 feet in the five most dense zones.[20] BCPM estimates drop length based primarily on lot size.

As with every other portion of the network, the Hatfield Model understates the costs associated with drops. Although AT&T and MCI continue to assert that their model produces results consistent with Bellcore's finding that the average nationwide drop length is 73 feet,[21] GTE explained in its opening comments that when the Hatfield Model is used to calculate drop lengths included in the Bellcore survey, it produces an average drop length of only 64 feet.[22] This results in a roughly $900 million understatement of drop costs nationwide. Statements made by Hatfield representatives in the FCC Workshops lead GTE to believe that maximum drop lengths may be employed inconsistently when used to determine the appropriate economic copper/fiber crossover point for distribution facilities and the program's default maximum value for actual drop costs. However, GTE, has not seen the revised Hatfield model, and

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19 GTE Comments at 5. Drop length certainly influences drop costs. Nonetheless, as Bell Atlantic explained, drop costs are also affected by factors in addition to drop length, such as the number of attachment points between the distribution terminal and subscriber. Bell Atlantic Comments at 6-7. Neither the Hatfield Model nor BCPM takes these factors into account.

20 AT&T/MCI Comments at 9.

21 AT&T/MCI Comments at 9.

22 GTE Comments at 6. GTE also noted that when the Model is used solely for New Hampshire, it calculates a drop length of only 87 feet, which is 30 percent less

(Continued...)

therefore would urge the Commission to revisit this issue when it does become available.

Perhaps recognizing that their drop length assumptions produce indefensible results, AT&T and MCI seek to minimize the lengths that would result if the Commission adopts an estimation approach. In this regard, they advise the Commission that houses are usually placed closer to the front of the lot,[23] and they presume that the interface will be conveniently located at the corner of the house closest to the street and that the distribution line will be located along the street.[24] Even assuming that the Hatfield assumption of a mere 3 acre lot size is representative of rural America, the remaining presumptions are flawed in several respects. For example, as TDS points out, the drop may connect to the house or business structure at the side or the back rather than the front.[25] And, even if the interface point is at the front of the structure, the distribution line may occupy a right-of-way through the backyard or along the opposite side of the street. Accordingly, the Commission should not embrace these simplistic assumptions, which are aimed at artificially minimizing predicted drop lengths.

Once again, the Commission can assure sufficient high cost support only by using drop length results produced by state-approved, carrier-specific engineering

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(...Continued)
than the 125 feet estimate produced by the 1993 New Hampshire Incremental Cost Study. *Id.*

23 AT&T/MCI Comments at 9-10.

24 *Id.* at 10.

25 TDS at 8.

models. By considering local conditions and actual plant deployment, such models can produce far more accurate results, on a regional basis, than the Hatfield Model's predetermined drop lengths. If particular carriers cannot or choose not to utilize an engineering model, BCPM (using carrier-specific inputs) would be an acceptable alternative because it takes lot size into consideration.

IV. THE COMMISSION SHOULD UTILIZE CARRIER-SPECIFIC SHARING PERCENTAGES. (Section III.C.2.d)

In determining how much of the costs of cable installation should be attributed to the providers of universal service, the Commission properly proposes to consider the extent to which the outside plant structures and installation activities are shared by the incumbent telephone company and other utilities. GTE urges the Commission to examine sharing on a carrier- and location-specific basis, because the factors that determine the extent of the opportunity for sharing – such as the type of plant deployed, municipal regulations, age of the subdivision, and the needs and desires of other utilities – are highly localized. The importance of using specific sharing inputs is persuasively confirmed by the FPSC:

> [A]doption of a single value [such as the 66% default proposed by Sprint] is inconsistent with and renders meaningless the preceding proposals that take into account differences in installation activities, terrain, and line density. More importantly, though, we believe that the selection of an appropriate value to use for structure sharing must be determined at least on a state by state basis (if not at a lower level, such as a county or a wire center). The FPSC contends there are too many variables that could affect the degree to which sharing is or is not possible. Of particular concern to us is the likely impact on low-density areas of selection of a global sharing value; adoption of a uniform value could assume

away a telephone company's legitimately incurred costs, even where another utility may not even be present.[26]

The record also confirms that the Hatfield Model's sharing assumptions are untenable. AT&T and MCI suggested that current levels of sharing are "the minimum that is achievable" and will rise due to regulatory requirements and increased competition. In reality, however, there is no basis for expecting an appreciable increase in sharing. As Bell Atlantic pointed out, "[c]arriers place facilities when they are required to serve their customers," and "different carriers place their facilities at different times because their customer demand for new or upgraded facilities often occurs at different times."[27] TDS likewise noted that sharing is most often possible in new subdivisions, but that "[u]pgrades of existing facilities offer less potential for savings from sharing."[28]

Similarly, RUS compellingly demonstrated that sharing is not often possible in rural areas. As RUS explained, it is highly unlikely that different utilities concurrently will have both the need and the financing to build new plant; physical separation of facilities is the best way to minimize power line-induced noise in copper telecommunications cables; highway departments often assign different corridors to different utilities; and sharing with buried electric facilities would generally require trenching, which is "far more costly than plowing in rural areas."[29] Indeed, even if AT&T and MCI were correct

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26 FPSC Comments at 7-9.

27 Bell Atlantic Comments at 9.

28 TDS Comments at 10.

29 RUS Comments at 5-6.

that sharing will increase, there is no indication that increased sharing would lower total costs. The sharing process itself causes coordination costs that would need to be taken into account, but are ignored by the Hatfield Model.[30]

Nor are AT&T and MCI right in asserting that sharing of buried plant should be presumed.[31] In this regard, the FPSC stated that it "agrees completely with the FCC's conclusion that 100 percent of the costs incurred in burying cable with a plow should be attributed to the telecommunications carrier."[32] As RUS explained, "[e]ven if a multiple facility cable plow were to become commercially feasible, its use would be substantially more complicated and expensive than current plowing equipment because it would have to meet the handling requirements (such as minimum bend radii and pull tensions) of two dissimilar facilities."[33] The fact is that buried cable is only very rarely shared today, and there is no reason to expect the level of sharing to increase.

The Commission should reject both the Hatfield Model's sharing assumptions and the proposed 66 percent compromise. Neither approach will produce accurate, forward-looking estimates of sharing. Instead, as urged by the FPSC, the Commission should utilize actual sharing data on a localized, carrier-specific basis.

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30 *See* TDS Comments at 11.

31 AT&T/MCI Comments at 13. GTE's opening comments showed that the Hatfield Model's sharing assumptions are internally inconsistent and that its approach to buried cable violates AT&T's own trenching guidelines and the testimony of AT&T witnesses in state proceedings and does not reflect industry practice. GTE Comments at 7-8.

32 FPSC Comments at 7.

33 RUS Comments at 6.

V. LOOP DESIGN MUST REFLECT FORWARD-LOOKING TECHNOLOGY RATHER THAN THE HATFIELD MODEL'S ARCHAIC AND INSUPPORTABLE COPPER T-1 ARCHITECTURE. (Section III.C.2.e)

In its opening comments, GTE explained at length that the Hatfield Model's use of DLCs on copper-based T1 lines to reach subscribers beyond 18,000 feet from the serving area interface relies on antiquated technology and violates maximum allowable repeater spacing and line resistance constraints.[34] The RUS succinctly confirmed GTE's analysis, noting that, "[i]n moving from loaded loops to T1 distribution loops, Hatfield has traded a 50-year-old technology for a 25-year-old technology."[35] As RUS explained, "[n]o RUS-financed projects currently use new T1 carrier in distribution loops. It requires careful and expensive interfacing to maintain modem signal integrity. The T1 facilities on copper cable will not migrate gracefully to provide an *evolving* level of telecommunications."[36] The Hatfield Model's loop design thus will engender substantial lifetime costs that will not be experienced with forward-looking technology. In short, then, the Hatfield Model's loop design fails the Commission's criteria on several counts: it is not forward-looking, it is not the most efficient technology available, and it will not support the provision of advanced telecommunication services.[37]

In contrast, the BCPM loop design, which makes more extensive use of fiber and DLCs to serve distant customers, utilizes modern, cost-effective technology that is

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34 GTE Comments at 9-10.

35 RUS Comments at 4.

36 *Id.* (emphasis in original).

capable of supporting advanced services. While AT&T and MCI criticize BCPM for placing "excessive numbers of digital loop carriers"[38] in the network, this criticism is unfounded. DLCs are available in a wide range of sizes, are essentially modular, and can be quite inexpensive.[39] BCPM's proposed design thus meets the Commission's requirements and, unlike the Hatfield Model, assures that all customers – including those residing near the Hatfield 18,000 linear foot distance limit from the serving area interface – can receive high quality universal service.

Finally, the Commission should not take on faith the 18,000 foot cross-over point recommended by the Joint Board, which derives from an NCTA/ETI analysis. As Ameritech explained, that analysis suffers methodological flaws and is not sufficiently accurate or company-specific to produce a reliable cross-over point.[40] GTE concurs with Bell Atlantic that the most appropriate fiber/copper cross-over point will depend on numerous factors, including the investment in associated conduit structure, maintenance expenses, and the fact that fiber optic electronic equipment is fungible.[41]

(...Continued)

37 *See* FNPRM at ¶¶ 83-86.

38 AT&T/MCI Comments at 17.

39 *See* RUS Comments at 6, Bell Atlantic Comments at 11-12

40 Ameritech Comments at 11.

41 Bell Atlantic Comments at 9-10.

GTE's own experience confirms that Ameritech's use of a maximum cross-over point of 12,000 feet is the best engineering practice.[42]

VI. THE COMMISSION SHOULD NOT INCLUDE A WIRELESS COST THRESHOLD IN THE MODEL. (Section III.C.2.f)

In its opening comments, GTE explained that wireless technologies currently are not a cost-effective substitute for wireline service, and that it was therefore reasonable to exclude wireless technologies from the cost model at this time.[43] GTE remains hopeful that future wireless technologies may, in particular locations, be cost-effective means of providing universal service. Nonetheless, the best means of taking advantage of wireless capabilities will be through the competitive bidding process, which will allow individual carriers to determine the most efficient choice of technology for each supported area.

Notably, the proponents of the Hatfield Model, which seize every opportunity to adjust their model to predict unreasonably low predicted universal service costs, agreed that the cost model adopted by the Commission should not include wireless technologies. As AT&T and MCI explained:

> [T]o be done correctly, such a model would require development of cost models for each technology, rather than the simple $10,000 cap on investment assumed in BCPM. For example, because there is a large fixed cost component of wireless systems, the size of the customer base served by a wireless system will

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[42] *See* Ameritech Comments at 11-12; *see also* Sprint *et al.* Comments at 16 (explaining that the optimal breakpoint for 26 gauge copper is 12,000 feet, given the mix of services provided by telephone companies, and that higher breakpoints would require adjustments to the copper gauge and therefore the cost).

[43] GTE Comments at 14-15.

> have an effect on the per-customer cost. In addition, any alternative technology modeled would have to be engineered so that it would be capable of achieving the level of service required to receive universal service support, e.g., wireless services would have to be capable of supporting the same advanced services as the wireline network.[44]

Indeed, even AirTouch concedes that a single nationwide cost threshold is inappropriate, and that any wireless cost threshold would have to be tailored to local conditions.[45]

For these reasons, GTE concurs with AT&T's and MCI's conclusion that "using a wireline-only model for the time being is unlikely significantly to distort the market."[46] Certainly, once a competitive bidding mechanism is implemented that requires all bidders to meet the same quality and reliability requirements, any provider should be free to seek universal service funding using whatever technology or combination of technologies that entity believes is most efficient.

VII. CONCLUSION

As GTE has explained throughout this proceeding, the best short-term way of promoting both efficient network design and sufficient high cost support is to use state-

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[44] AT&T/MCI Comments at 20-21.

[45] AirTouch Comments at 7. AirTouch's reluctance to turn over its own data, given the competitive nature of the CMRS market (AirTouch at 9), underscores the wisdom of permitting wireless carriers to participate in the universal service funding mechanism through a competitive bidding process. To determine realistic levels of wireless costs, the Commission would need company-specific information; the publicly available information cited by AirTouch is too general in nature to provide any assurance that it reflects the true costs of using wireless technology to provide universal service.

[46] *Id.* at 21.

approved, carrier-specific engineering models, based on existing network design and actual, verifiable forward-looking inputs. If a carrier is unable to develop or receive state approval of such a model within the Commission's time frame for implementing the new high cost support mechanism, it should be able to derive costs by running its own specific input values through the BCPM platform (modified as recommended by GTE in this proceeding). Although flawed in many respects, BCPM clearly produces more accurate results than the Hatfield Model. Nonetheless, because any model will place substantial burdens on carriers and the Commission and require a high degree of regulatory micro-management, the Commission should promptly initiate the promised proceeding to examine market-based mechanisms for allocating high cost assistance.

Respectfully submitted,

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