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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 SPRINT CORPORATION

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REPLY COMMENTS OF SPRINT CORPORATION

Sprint Corporation ("Sprint"), on behalf of its local, long distance and wireless divisions, submits its replies to the comments filed in the instant matter on July 23, 1999.

INTRODUCTION AND SUMMARY

In its initial comments in this matter, Sprint provided irrefutable support for the proposition that a single set of national input values is simply not workable. Sprint asserted – and proved – that, whether measured in terms of customers served, customer density, or number of metropolitan cities serviced, Sprint's non-rural territories are the antithesis of the regional Bell operating companies ("RBOCs") operations within the same states. Certain commenters, such as AT&T/MCI WorldCom ("HAI Sponsors"), would dismiss the differences in costs associated with company size as mere inefficiencies. Sprint has offered evidence to invalidate that claim and in these reply comments, addresses many similar unsupportable claims made by the HAI Sponsors in this most recent round of comments.

The HAI Sponsors' goal is not to establish inputs that will provide the forward-looking costs of an efficient provider, but inputs that will create the lowest costs possible. In many cases, as Sprint outlines below, the costs suggested by the HAI Sponsors are costs that not even the most efficient provider could achieve in the best of circumstances. The Commission must rely on actual data – like that provided by Sprint – not the pure supposition offered so freely by the HAI Sponsors.

I. National Averages vs. Multiple Input Sets

In reviewing the comments filed in response to the May 28, 1999 *Further Notice of Proposed Rulemaking* (“FNPRM”)¹, Sprint is strongly encouraged by the fact that the overwhelming majority of industry participants specifically addressing the issue of nationwide-average inputs vs. multiple sets of inputs (company specific, region specific, etc.), insisted that, not only are multiple inputs sets preferred but that they are a necessity if the model is to produce accurate cost estimates. Those endorsing multiple input sets include Aliant, Ameritech, Bell South, Cincinnati Bell, GTE, SBC, and Sprint, among others.² As Ameritech noted, “... these differences are not due to inefficiencies, but rather reflect the underlying market conditions for running a business... the use of national uniform inputs... will specify circumstances that no efficient firm would likely face” (page 8). Sprint enthusiastically agrees with Ameritech’s assessment of the situation.

Should the Commission agree with the commenters that multiple sets of inputs be adopted, Sprint suggests an implementation process made up of the following actions:

¹ *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, *Further Notice of Proposed Rulemaking*, FCC 99-119 (rel. May 28, 1999).

² It is worth noting that this group represents a wide distribution of company sizes, and that all three of the mid-sized local exchange carriers referred to in Sprint’s initial comments are included.

1. If the creation of company-specific inputs proves to be unreasonably burdensome or impossible, the Commission could proceed by identifying two initial cuts by which inputs should be allowed to vary, specifically the *size of provider* and *region*.
2. Specifically, as described in the FNPRM and in Sprint's comments, certain inputs such as prices of equipment (DLCs, switches) will vary according to the relative purchasing power of the provider. This variation can be successfully proxied by company size, and perhaps categorized (small/medium/large or by access lines).
3. In addition, other inputs such as plant mix and maintenance expenses will vary simply because of the regional differences involved (climate, topographical features, etc.). These items cannot be easily categorized, and so it will be necessary to turn to the actual experiences of local exchange companies ("LECs") operating in a given region, which does reflect the conditions under which any efficient provider will operate.
4. The creation of multiple input sets then becomes quite straightforward. For example, the Commission could produce three sets of inputs for equipment purchase prices that reflect size and scale categories. It could also create two new databases (similar to the soil type database currently used in the Synthesis Model) to reflect plant mix and maintenance expense by geographic region, such as a wire center or state-specific study area.
5. The Synthesis Model code would require some minimal alteration to access the region-specific information instead of the standard input table, but this would be a very minor adjustment.

Although this recommendation does not fully address the concerns of all parties (including Sprint), it does provide the Commission with a workable means of incorporating much of the needed variation in inputs into the Synthesis Model. It represents a manageable step toward accurately producing the forward-looking economic costs that would actually be incurred by a new

provider, given the provider's location and size. This recommendation represents a middle ground between the need for accuracy and the desire for administrative feasibility.

II. The Availability of the PNR Geocode Data and National Access Line Model

Sprint takes exception to the patently false claim offered by the HAI Sponsors that the PNR geocode data discussed in ¶28 of the FNPRM is available to all interested parties. Among commenting parties who specifically addressed this issue, the HAI Sponsors were the *only* parties to make this claim. All other commenting parties explicitly state that the data continues to be unavailable, contrary to the Commissions' own criteria. As SBC stated, "... while there may be theoretical reason for using geocode data, its use is infeasible since there is no publicly available source" (page 5).

Sprint specifically takes exception to the HAI Sponsors' absurd claim that the PNR geocode data is easier to verify than other data because the data "... can be verified merely by determining whether a customer resides at the location indicated by the data" (pages 5-6). Sprint respectfully asks the HAI Sponsors exactly how such verification is to proceed when, in order to review the PNR data, any interested party must travel to PNR's headquarters in Jenkintown, Pennsylvania and, once there, is not permitted to:

- 1) copy the data onto a disk;
- 2) write the data on a sheet of paper; or
- 3) view the data except in a special room into which no visitor may take a computer of any kind.

With regard to PNR's National Access Line Model ("NALM"), Sprint reiterates its opposition to the use of this highly proprietary econometric model without some type of validation by all interested parties. Sprint concurs with the comments of GTE that if the Commission intends to use

the NALM it “... must be made publicly available to enable interested parties to understand how the model assigns access lines to wire centers, and whether this process is accurate” (page 38). In its initial comments, Sprint raised this issue of accuracy in its discussion of measures of goodness of fit, significance of variables, etc.; however, none of these measures have been provided as part of these dockets. Until the NALM is available and capable of being reproduced in the same fashion as the Commission’s own econometric specifications (such as the expense equations using ARMIS data, the cable equations using RUS data, and the switching equations using RUS and depreciation data), Sprint asserts that the NALM results cannot be used in the Commission’s Synthesis Model.

III. Expenses

In their comments on expenses, the HAI Sponsors demonstrate the extreme inconsistency that has permeated their participation in these dockets.

a) Nationwide Estimates

In their comments regarding operating expenses, the HAI Sponsors support the use of a single set of expense inputs, and somewhat flippantly remark that “... expenses should not reflect idiosyncratic individual LEC expenses” (page 45). This statement illustrates the inconsistency with which the HAI Sponsors have approached the entire proxy modeling process. The HAI Sponsors readily admit that region-specific factors such as soil type and water table depth will affect the cost of *building* plant but apparently believe these same factors (plus others, such as climate and weather) do not affect the cost of *maintaining* that plant. Using the logic employed by the HAI Sponsors, it would seem that if a single set of expense inputs adequately represents the costs an efficient carrier could achieve, then one could assume (incorrectly) that a single average soil type and a single average water table depth are all that is required when constructing the network. Obviously, this logic is flawed and the Synthesis Model authors at the Commission understand that regional

differences affect construction costs. They also affect maintenance expenses, and expenses such as maintenance *do* vary for LECs and *will* vary for efficient providers operating in different areas, serving different sized markets. The Synthesis Model must reflect these differences.

b) Removal of One-Time Expenses

The HAI Sponsors express their disagreement with the Commission’s position regarding removal of one-time expenses. Sprint welcomes this opportunity to point out to the Commission the flaws contained in the HAI Sponsors’ statements on this point. As the Commission is well aware, many one-time expenses are an unavoidable fact of life for any firm doing business, including a new, efficient entrant. But the SEC reports cited by the HAI Sponsors raise questions as to what may legitimately be considered a one-time expense. The HAI Sponsors aver that, “... nearly 20 percent of yearly corporate operations expenses and 2.5 percent of yearly network operations expenses consist of non-recurring charges” (page 46). To the extent that these “non-recurring” expenses occur yearly, they represent an ongoing cost of doing business both for existing LECs and for new, efficient providers. As such, it must be questioned whether they are indeed “non-recurring” expenses.

c) Converting Expenses to 1999 Values

Throughout this proceeding, the HAI Sponsors have railed against the use of any existing or current LEC data on the grounds that existing data (of any sort) reflects embedded costs and, therefore, is inappropriate for use in a forward-looking mechanism. Yet, in order to support their claims with regard to converting expenses to 1999 values, the HAI Sponsors, turn to existing LEC data as provided in the “*Refresh the Record*” proceeding. They state that 8.4%, not 6%, accurately reflects “...actual incumbent LEC productivity gains... [or] currently achieved productivity

improvements” (at page 46). It appears that the HAI Sponsors have elected to pick and choose the areas for which current LEC activity may be appropriately incorporated into the model.

The fact is that productivity gains are driven by technology changes, and that these changes are already incorporated in the model and already assumed in forward-looking investments. In a very real sense, the existing productivity gains to which the HAI Sponsors refer in their comments are largely a result of the existing LECs’ networks being converted to a network similar to the one in the Synthesis Model. To take these gains and apply them to the modeled, forward-looking network investment is a clear case of double counting. A hypothetical, new efficient provider (such as the one modeled in the Synthesis Model) will not exhibit the same productivity gains exhibited recently by LECs because the new provider is starting from a very different point.

IV. Digital Loop Carriers

With regard to the costs for digital loop carriers (“DLCs”), the HAI Sponsors claim that Sprint has significantly overstated its forward-looking costs (page 34). Sprint reiterates the fact that Sprint’s costs and suggested inputs are actual, verifiable data based on its operating experience and documented costs.

Contrary to the belief of the HAI Sponsors, material components cannot be arbitrarily selected to produce a *working* DLC system. Regardless of this fact, in their comments, the HAI Sponsors attempt to do exactly that: pick and choose piece parts from various contracts and various vendors in pursuit of the lowest possible (yet unattainable) cost. As part of its comments, Sprint submitted a document detailing the components required to purchase and install a working DLC system including such items as batteries, power transfer switches, ring generators and cabinet-to-pad installation template. It appears that the HAI Sponsors have chosen to select only some of these required components in an effort to reduce costs and match their unsupported HAI inputs. In

order to validate further the actual installed DLC costs incurred by Sprint, attached hereto are 1999 vendor contracts that form the basis for Sprint's DLC spreadsheet components.³

Sprint thanks the HAI Sponsors for finding an error in Sprint's spreadsheet calculation. The error involved the omission of lines 20, 21, 119, 120 and 121. *The result of correcting this error is that the DLC costs previously provided were understated by \$506.54.* The remaining claims proffered by the HAI Sponsors regarding the estimation of DLC costs, however, are filled with inaccuracies. Specifically:

HAI Sponsors' Claim: Sprint assumes the use of expensive Cool Cell™ equipment that is not generally used in the industry.

Fact: The Cool Cell™ is used by Sprint to prolong the life of the battery due to the high ambient air temperatures incurred in Sprint's high temperature serving territories. Prior to the use of Cool Cell™ by Sprint in Nevada, batteries were being replaced approximately once per year. The use of the Cool Cell™ produces a payback period of only four years ($\$7,887.03 / \$2,000.00 = 3.94$ years) which more than justifies the initial installation.

Furthermore, when new batteries are placed in the Cool Cell™, the battery manufacturer provides an unconditional 5-year warranty. While use of the Cool Cell™ may not be necessary in some states, it is definitely cost-effective in others by saving maintenance and premature battery replacement. *The use of the Cool Cell™ is yet another example of why one set of inputs is not appropriate for all companies or all regions.* Any new and efficient provider operating in Sprint's Nevada territory, Sprint's Texas territory, or such regions as Arizona, New Mexico, Southern California, Florida and more, would be operating inefficiently if the Cool Cell™ was *not* used.

³ These vendor contracts are proprietary to Sprint and are, therefore, being filed under seal.

The use and results of the "Cool Cell™" Passive Temperature Regulating Battery Enclosure have been documented by the following:

- October 1993 issue of Outside Plant magazine, "*Cooling Without Power*" by Aaron Chang.
- "*Temperature of Equipment/Battery Cabinets in Non-Controlled Environment Locations in Phoenix, AZ*" by Jimmy Godby & Curtis Ashton, presented at Intelec Conference, Vancouver, British Columbia, in July, 1994.
- GTE Test Results, Brownwood, TX. August, 1995.
- "*Las Vegas Cool Cell Thermal Data*" Lucent Technologies by D.C Watkins, October 31, 1997.

HAI Sponsors' Claim: Sprint applies excessive mark-ups for supply expenses.

Fact: The HAI Sponsors provide absolutely no justification, evidence, proof or supporting information for their opinion. They suggest a significantly lower percentage based on nothing other than the opinions of their highly paid engineering team. The mark-up included in Sprint's spreadsheet represents the exact amount actually paid by Sprint. There is no opinion, conjecture, or estimation involved.

HAI Sponsors' Claim: Sprint applies excessive mark-ups for sales tax.

Fact: The argument made by the HAI Sponsors here is, quite simply, ludicrous. They state that because Sprint operates its own logistics company, North Supply, there is no reason to apply sales tax to both supply expense and material. If this fact is at all relevant (which it is not) it seems that the HAI Sponsors are suggesting that the model assume every new, efficient provider operates its own logistics company.

Next, the HAI Sponsors claim that *some* states do not have a sales tax, and in *some* states central office circuit equipment is exempt from sales tax (HAI Sponsors' Appendix B, page B-4). Sprint does not disagree with these assertions, but points out that *these facts only provide further justification for the need for multiple input sets*. In fact, a simple but effective model enhancement would be to create a database (or look-up table) of state-specific taxes. Finally, the HAI Sponsors suggest a lower sales tax percentage that would be applied to material only, but provide no rationale, data or evidence of any kind to support the number suggested.

HAI Sponsors' Claim: Sprint fails to make use of forward-looking technology such as GR-303-capable hardware.

- **Fact:** If, at any point in time, the Synthesis Model is intended to represent a forward-looking network and environment that involves any type of unbundling of network elements, the GR-303 option is inappropriate and unacceptable. If the Synthesis Model is *not* intended or used to represent the costs of providers operating in an unbundled element environment, then only under those circumstances would Sprint agree that the GR-303 option is acceptable. Because the Commission has never suggested that the model will be used for calculating the cost of UNEs and because Sprint believes that the Commission is correct not to make such an endorsement (since a proxy model using a single set of nation-wide average inputs is grossly inappropriate for UNEs), Sprint agrees that the GR-303 option is acceptable, but *only* for this specific, universal service estimation.

HAI Sponsors' Claim: Sprint applies excessive mark ups for labor.

Fact: The HAI Sponsors provide a condensed list containing only three labor functions that they believe should be included in labor costs: selection of a location, ordering, and placement and turn up of a remote terminal site and central office bay. The labor costs reflected in the Sprint DLC spreadsheet that has been provided to the Commission are for the engineering and installation associated with the design and placement of the central office terminal equipment and the remote terminal site and equipment. Included in the cost inputs provided by Sprint are the following work functions: installation of central office racks, installation of central office cabling, installation of common equipment at both the central office and remote terminal site, installation of cards at both the central office and remote terminal site, site procurement, site design, coordination with power companies, coordination with all utility companies, coordination with developers, determination of line size requirement, ordering of equipment, creation of site drawings, obtaining of permits, and the overseeing of site construction for the engineering function. The installation crew terminates fiber optic as well as copper cable, turns up and tests equipment, and records battery levels. Sprint's reported labor costs *are* the costs associated with efficient DLC installation. These costs are the current input prices. The HAI Sponsors, on the other hand, provide no support or justification for their proposed alternative.

V. Cable Costs

To its great credit, the Commission has sought to base its cost inputs on data, rather than opinion. The Commission has asked for, and received, cost data from LECs. It has asked for and received support data for those costs, and it has asked for and received detailed reviews of the methods used to develop those costs.

Sprint understands the need for facts and can appreciate that there might be some skepticism in the minds of other parties regarding the LEC cost data. Recognizing this, Sprint has offered unprecedented access to its cost data – it has virtually been an open book. Sprint has provided contracts, source data, and invoices. Sprint has demonstrated an audit trail from actual contractor invoices, purchase orders, time reports, through to “booked costs”⁴. Sprint has demonstrated that this *linkage* does exist. Sprint has provide data based on over 12 months of construction activity across its entire service territory to demonstrate that “self-selected” data was not used in an effort to manipulate costs. Further, Sprint has demonstrated how its costs for splicing, placing, engineering and structure were developed directly from the source data, and has provided the calculations and rationale used to allocate those costs to each of the cable sizes. There is no evidence in the record that suggests that Sprint’s proposed costs are based on anything other than actual cost.

The HAI Sponsors offer no specific rebuttal of Sprint’s costs or its approach to cost development. On page 15 of their comments, the HAI Sponsors simply dismiss this extensive, supported data. They offer no specific comments, they identify no particular problems, and they offer no suggestions for improvement. The HAI Sponsors merely reject all the available data, in favor of their own, unsupported opinions.

The HAI Sponsors claim to have asked Sprint to provide the “logic-trail” between costs and the Sprint proposed cable costs, and then claim that such a trail does not exist. On the contrary, Sprint filed this very logic trail on June 11, 1999⁵. The HAI Sponsors have, therefore, had the opportunity to review the information. They have chosen not to do so.

⁴ Sprint *ex parte* letter from Pete Sywenki to Magalie Roman Salas dated June 11, 1999 (CC Docket No. 96-45 and CC Docket No. 97-160).

⁵ *Id.*

In conclusion, the HAI Sponsors have offered no valid criticism of Sprint's actual cost information, nor have they offered any valid data to take the place of Sprint's information.

VI. Cable Material Cost

The HAI Sponsors discuss some of the shortcomings of the NRRI/RUS cable costs, in particular the "adjustments" that were done to jury-rig the equation when it produced negative costs for large cables. At page 14 of their comments that the HAI Sponsors claim that, "... the coefficients for the tapering component are inherently defective as an initial matter and that the straight line "fix" is essentially unsupported."

After summarily dismissing the NRRI data as "unsupported", the HAI Sponsors proceed to introduce an equation for cable material cost that is also essentially "unsupported". They do not base their formula on an analysis of data points for cable cost. *In fact, they do not provide any evidence that their equation produces accurate cable prices.* The only way to do so would be to compare the costs generated by their equation to actual costs. If actual costs are available, the only value of a formula might be in projecting missing data points.

Sprint provided raw cable material costs to the Commission and demonstrated that these data represented the actual invoice cost paid to the supplier. At this point, Sprint must ask, what better evidence is there?

There are clearly some challenging areas remaining in the development of these Synthesis Model inputs. Cable cost, however, is not one of them. It is simple. It is straightforward. The Commission has the facts before it and it should rely on those facts rather than the supposition put forward by the HAI Sponsors.

VII. Determining the Cost of 26 Gauge Cable

The HAI Sponsors, once again, make the absurd argument that the only difference in the cost of similarly sized 24-gauge cable and 26-gauge cable is the weight of the cable - *in spite of the fact that actual data shows this is not the case*. The HAI Sponsors' argument for this position is that, since their unsupported hypothesis does not fit the actual data, the *data* must be wrong. Sprint takes this opportunity to suggest to the HAI Sponsors a different explanation: their hypothesis is wrong and the data is right. The HAI Sponsors do not provide a shred of evidence in support of their contention.

Furthermore, it is simply not the case that cable costs vary solely on the weight of the copper. The data provided to the Commission does not reveal such a variance, nor does logic support such a conclusion. The cost of cable contains many costs that are fixed, and that do not vary at all with the cost of copper. For instance, the costs for labor, equipment and buildings to manufacture the cable are the same regardless of wire gauge. Neither does it cost less to market 26-gauge cable because it is lighter. Similarly, it does not cost less to generate a bill and process accounts receivable because the cable is lighter. Sprint asserts that to the extent an adjustment is to be made to the cost of the cable based on copper, it must be made only to the raw material cost of the wire and not based on weight.

VIII. Buying Power Adjustments for Buried Cable

Sprint needs to make it very clear that *if* the concept of a "buying power adjustment" is appropriate, it is *only* applicable when using the NRRI cable data. The cost data provided by Sprint and other LECs already reflect the actual price paid, so there would be no reason to add a further adjustment. In other words, the prices for cable that Sprint has provided to the Commission reflect the actual buying power that an efficient provider of Sprint's size would have.

Furthermore, in Sprint's review of the credentials of the HAI "experts", their experience is almost exclusively with the RBOCs. These "expert" opinions on cable costs, therefore, would obviously reflect the cost that they believe an RBOC would pay. It would be completely inappropriate to add a "large LEC buying power adjustment" to the HAI Sponsors' proposed costs that are already based on RBOC experience and associated buying power.

Finally, as Sprint and several other parties pointed out, the whole notion of a "buying power discount" is a bit of a shell game. In calculating the buying power discount by comparing RUS and Bell Atlantic cable prices and then multiplying RUS costs by the resulting difference, the end result will be the original Bell Atlantic costs!

Obviously, while this approach does create the illusion of using the publicly available RUS data, it in fact actually uses Bell Atlantic prices. Sprint asserts that, to the extent Bell Atlantic data is used, Sprint data should be used as well, as should company-specific data in all cases. As an alternative, the data and inputs must be allowed to vary to reflect legitimate differences in providers, including new and efficient entrants.

IX. Cable Fill Factors

The HAI Sponsor argue that lines or pairs per household should be set at an artificially low level because residential second lines and multiple business lines are not supported services and because the effective fill will be higher than the design fill due to incremental cable sizes. Sprint notes, however, that should the Commission intend to exclude residential second or multi-business lines from the cable distribution fill factors as the HAI Sponsors suggest (page 22), then the associated lines count and houses must be eliminated from the model as well. Failing to do so will result in artificially low unit and total costs, because facilities will not be provided to serve all existing customers, even though they remain in the line and house counts.

The HAI Sponsors further suggest that since the “effective” fill will actually be higher due to incremental cable sizing, a design fill factor of 1.2 is sufficient. This is simply incorrect, and it is inconsistent with actual, forward-looking practices. The provider must size cables based on actual need. As an example, assume that what is required is 1.3 pairs per home, but that for some reason the network planner designs for only 1.2. Under this arrangement, if a LEC serves 80 customers on Maple Street, the LEC would place a 100 pair cable ($80 \times 1.2 = 96$). In reality, the LEC would actually need 104 pair to serve the existing customers.

Sprint agrees that the *existing* distribution fill in the network is not the proper benchmark, since it does not take into consideration the model’s approach of “sizing up” with regard to cable pairs. In certain cases, existing distribution fill might result in fill factors that are too low.

X. Splicing Costs

The HAI Sponsors make several arguments regarding the proper calculation of cable splicing costs as a percentage of the cable material costs. Sprint continues to reject this approach in favor of a cost per pair foot approach based on actual data. The relationship between cable *material* cost and *splicing* cost is tenuous at best. For instance, as the HAI Sponsors correctly point out, the gauge of the wire being spliced has little or no bearing on the cable splicing cost. However, if one calculates splicing costs as a percentage of cable material cost, one would conclude that it is less expensive to splice a 26-gauge cable than it is to splice a 24-gauge cable, because the 26-gauge cable itself is less expensive. This is simply not the case. As the Commission is aware, cable splicing is a labor-intensive activity. The cost is 100% labor cost. Consequently, regardless of the type of arrangement a LEC purchasing department is able to obtain on the cable material prices, it costs the same to splice it.

Further, as this Commission has correctly assumed, it costs basically the same for Sprint, an RUS company or an RBOC to splice similar cables. *There are no economies of scale for cable splicing based on company size.* A cable splicer working for an RBOC can splice no faster than a cable splicer working for Sprint. The cost is purely a function of local labor rates.

The most egregious, and unintended, impact of this calculating cable splicing costs as a percentage of cable material costs is that changes in the Commission's decisions regarding cable prices will drive changes in splicing costs. So, for instance, if the Commission were to proceed with the ill-conceived notion of adjusting the RUS cable material costs by 15% to reflect "RBOC purchasing power", the splicing costs would be reduced by 15% as well. There is clearly nothing in the record to suggest that any such relationship exists.

On page 17 of their comments, the HAI Sponsors suggest that splicing costs based on the NRRI data are too high because the RUS companies use "inefficient" individual pair connectors instead of the "efficient" modular splices that large LECs would use. They suggest that when using individual connectors, splicing rates of 75-100 pairs an hour are reasonable, and that with modular splicing, 300 pairs an hour is typical. Sprint notes that, using this logic, there would be a 300-400% efficiency gain. The data simply does not bear this out. The average splice cost per pair in the RUS data for individual connectors is \$1.46. The average cost per pair for modular splicing is \$1.31⁶. The *data* shows an 11% efficiency gain for modular splicing. One must ask whether the HAI Sponsors believe that RUS companies would willingly pay 3 to 4 times too much when bidding cable splicing work? Sprint feels comfortable suggesting that they would not.

The HAI Sponsors' "experts" next make the implausible argument that the relationship between material cost and splicing cost should be similar for copper and fiber cable. There is simply no logical evidence of a relationship between the two at all, other than the fact that the activity

⁶ At \$60/hour, modular productivity is still only an average of 50 pairs an hour (\$60/\$1.31=46 pairs).

involved with both is called “splicing”. Furthermore, it is ridiculous to expect that there would be any relationship – what is involved are totally different cable materials, totally different splice methods, and significantly different distances between splices.

The HAI Sponsors argue that the NRRI data contains an over abundance of “small cables” and that this drives up splicing cost relative to companies with “large cables”. If there is validity to this position, then the HAI Sponsors have made an excellent argument for company specific inputs. Obviously all providers, all markets, and all serving areas cannot simply be categorized as either “large” or “small”; there is clearly a continuum. Furthermore, the Sprint splicing cost data provided to the Commission reflects the exact mix of cable sizes and costs that exist in Sprint’s service area, and the exact mix of cable sizes and costs that would be faced by any efficient provider serving that area.

After discussing these relative percentages, the HAI Sponsors reject this approach and offer their version of a formula for splicing costs. The question before Commission now is this : *How is the formula validated?* Is there evidence that the underlying assumptions are correct? Is there evidence that cables are spliced every 1,000 feet? Does the suggested formula in fact take 1 hour or 2 hours to set up? Does the formula produce the right answer, or even a reasonable range of answers? Sprint maintains that the *only* way to validate such a formula is to compare the outcome to actual experience. Anything less reduces it to pure speculation or a vapid mathematical exercise with no connection to a forward-looking reality. It is significant that the HAI Sponsors offer no validation.

Sprint provided cable splicing costs that were developed by taking total actual cable splicing costs for each type of cable (aerial, buried and underground) and apportioning those costs based on pair feet placed. This methodology avoids the need to engage in unsupported speculation about “splicing methods”, “pairs per hour”, “set up time”, “big cables/small cables”, “distance between

splices”, and “labor rates”. It is important to note that Sprint has provided the actual data. Sprint’s inputs are not only *based on* current prices, as required by the Commission’s own criteria, the inputs *are* current prices. In light of the availability of actual data, why use unsupported formulas?

XI. Structure Costs – Adjustment for Non-Rural Buying Power.

The HAI Sponsors suggest that the “large LEC buying power adjustment” proposed for NRRI cable material costs should be applied to construction labor as well. There is absolutely nothing in the record that provides any basis in fact for this position. There has been no comparison made between small and large LEC costs, no data provided showing that a contractor will offer any discount at all based on company size – not to mention an arbitrary percentage based on the cost of cable. At least the analysis conducted by Gabel and Kennedy provided some kind of data to support their position on cable costs, flawed as it was. The HAI Sponsors, on the other hand, offer nothing but wild speculation. They do not even offer so much as a comparison of their own costs to the resulting “discounted costs”. Unless evidence is provided that purchasing power *as it relates to cable costs* somehow has a measurable impact on construction labor, the application of any type of “adjustment” is completely without foundation.

The RUS contractors are rebuilding large portions of exchanges, a fact that Gabel & Kennedy and the Commission’s staff have cited as being one justification for the use of the RUS data. There are simply no significant economies of scale to be gained beyond these large jobs. Construction is a labor and equipment intensive operation, with limited opportunity for economies of scale when comparing large and “very-large” jobs. Further, Sprint’s own evidence suggests that contractors doing telephone construction typically operate on approximately a 15% profit margin at best. Sprint must ask, therefore, how would it be possible for a contractor to go into a more

expensive urban area, and provide a 16% volume discount? Clearly, the answer is that such discounting does not occur.

XII. Distribution Plant Mix

Sprint has offered plant mix percentages that are based on the current plant mix, adjusted for trends during the past three years. There are many factors that impact the efficient plant mix in a given area. The outside plant engineer has considered these factors and selected the alternative that minimize costs over the long term and that meet cost and regulatory requirements. This is clearly the best indicator of the appropriate plant mix. Once again, the HAI Sponsors offer nothing but speculation on this point.

The HAI Sponsors rail at the Commission proposal citing wide variances between the HAI and Commission-proposed inputs in the highest density zone. Importantly, it seems that the HAI Sponsors appear to have forgotten that this is simply a function of the elimination of “block cable”.

XIII. Structure Sharing

In an obvious attempt to drive down the costs produced by the Synthesis Model, the HAI Sponsors continue to ignore the *forward-looking realities* of structure sharing. The Commission did establish a “forward-looking” standard, but it also stipulated that, before employing that standard, a forward-looking “technology/cost” must be *currently available*.

First, the Synthesis Model platform models a single provider offering basic local service to the market. The notion of sharing structure with additional providers of basic local telephone service is antithetical to the foundations upon which the platform was built and upon which costs are calculated. If multiple telephone companies exist to share structure, then those same telephone

companies must share the demand and the cost per line produced by the model must be adjusted accordingly. This is not the manner in which the Synthesis Model was intended to be used.

Accordingly, the issue is simply one of structure sharing with other non-telecommunications related utilities. In their endless attempt to drive down the costs produced by the Synthesis Model, the HAI Sponsors have re-interpreted exactly what it is that a forward-looking cost model is designed to do. According the HAI Sponsors, the model is not designed to produce a realistic forward-looking economic cost, but rather a cost that might be obtained in a mythical “best of all possible worlds”, assuming mythical circumstances and mythical arrangements with providers, contractors, and other utilities.

Throughout their comments, the HAI Sponsors provide anecdote after anecdote to illustrate the “new incentives” or “additional requirements” for increased structure sharing that will occur in some hypothetical, futuristic competitive environment. Sprint has no doubt that in isolated cases (such as the Anchorage Telephone situation cited on page 30 of the HAI Sponsors’ comments), there may be special circumstances which will allow new and efficient providers to share structure to a greater degree than is currently enjoyed by LECs. *However, once again, the HAI Sponsors only provide more support for the need for multiple input sets, to reflect the varying realities that will be faced by providers in various regions.* There is absolutely no reason to believe that the Anchorage Telephone situation involving two local electric companies will be available to all providers everywhere, or any providers anywhere other than Alaska. The HAI Sponsors would have the Commission believe that because some providers in some places might be able to share structure with multiple electric companies, this arrangement should be *de rigueur* in the Synthesis Model. While Sprint agrees that this would represent a utopian solution, it does not represent the forward-looking realities that will be faced by new, efficient providers offering basic local service using forward-looking technology.

Clearly, on average, large sharing opportunities are not currently available nor will they be in the near future. If such opportunities were available, price cap LECs – which have every incentive to reduce costs - would be dashing to take advantage of such opportunities. Sprint certainly believes that it is appropriate to revisit the model inputs over the next few years and make adjustments if sharing becomes more widespread. Until that time, however, the claims of the HAI Sponsors remain nothing more than agenda-driven, anecdotally based wishful thinking.

Furthermore, the HAI Sponsors continue to ignore the additional costs of trenching, coordination and other costs that are incurred to share a trench. These costs must be included in the model before sharing percentages are applied if sharing is indeed assumed to take place.

The HAI Sponsors attempt to confuse the issue of underground conduit *sharing* with conduit *leasing*. In underground conduit sharing, both parties share in the cost of the initial trenching and would place their own cables, pipes, conduits, etc in the trench. Conduit leasing, on the other hand, occurs when the owner of a conduit rents out one of the existing ducts to a user. Leasing is outside of the scope of structure sharing. The model provides only enough conduits for the LEC facilities. Since the capacity needed for leasing is not provided in the model, it is inappropriate to “share the cost away” as suggested by the HAI Sponsors.

Sprint has provided the Commission with extensive analysis of the relative costs of leasing and sharing. This analysis clearly shows that leasing is a far more economical alternative to sharing the cost of the initial construction.

XIV. Formulas in HAI Sponsors’ Attachment “A”

In their Attachment “A”, the HAI Sponsors propose formulas for the development of placing, splicing and engineering costs. Fundamentally, Sprint agrees with the approach of “building up” the costs, but Sprint strongly disagrees with the values and assumptions used in the formulas.

Fundamentally, none of the data or components of the formulas are supported by any facts, proof, or evidence. They are not supported by comparison to actual cost to demonstrate that they are in fact valid. They are nothing more than the unsupported estimates of HAI “experts”. HAI Sponsors (at page 14) suggest that the cable cost algorithm employed by the Commission’s staff is “inherently defective” and that the straight-line fix is unsupported. The HAI Sponsors then turn around and offer data that is based on no data at all! Sprint has offered actual costs – those costs should be used.

CONCLUSION

Sprint wishes to reiterate the recommendations it provided in its initial comments. Specifically, there are significant errors in certain of the input methodologies that will affect all companies – errors that are emphasized by the misstatements offered up by the HAI Sponsors. It is imperative that these errors be corrected prior to the model being used to calculate federal universal service support. Moreover, the input values suggested by the Commission do not reflect the forward-looking economic costs of all efficient providers, including Sprint. In order to correct this inequity, the Commission may choose to do one of two things. It may create multiple input sets to reflect legitimate differences in costs incurred by providers. Alternatively, it can continue to depend on a single set of inputs, however, it must guarantee that that current funding levels (i.e. “hold harmless”) are maintained so that no carrier is harmed by such homogenous input values. Also, if a single set of inputs is used, the Commission must make clear that the results from the model are not appropriate for any company specific regulatory purpose such as UNEs, interconnection or access proceedings. Finally, if a single set of inputs is used, the Commission may wish to re-evaluate treating mid-sized LECs as non-rural.

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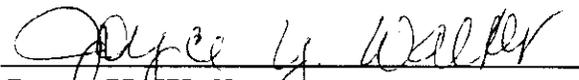
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August 6, 1999

CERTIFICATE OF SERVICE

I, Joyce Y. Walker, hereby certify that I have on this 6th day of August 1999, served via U.S. First Class Mail, postage prepaid, or Hand Delivery, a copy of the foregoing "Reply Comments of Sprint Corporation," 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, filed this date with the Secretary, Federal Communications Commission, and to the persons on attached list.


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