Comments on HMS Ex Parte

April 6, 1999

Kent Dickerson
Brian Staihr
Carl Laemmli
Sprint - Local Telecommunications Division

Sprint

HMS Ex Parte Comments

Summary

- Expense Information for other States
- Continue with development of more representative inputs
- Comparing TPIS to Model Results produces expected results
- DLC "Kits" and Site Prep
- Underground Cable (..or 5,000' a day and 300 Pairs an Hour)
- "Spotty, Self-Censored, Self-Edited" Data
- Structure Sharing… a new wrinkle

Sprint

HMS Ex Parte Comments

One Size Does Not Fit All...

- Purpose of USF is to Recognize High cost Areas
- A Rural Company cannot Achieve RBOC Efficiency
- A Single set of Inputs is Inconsistent with USF
- There must be recognition of these costs
- Work Should Continue on Equitable, Differentiated Inputs that accurately reflect rural company costs

Sprint

HMS Ex Parte Comments

Operations Expense is not Reasonable

- Data provided for Sprint's other "non-rural" Companies
- Network Operations Expense
  - Proposed Input of $1.47 is 39% of Sprint Actual
  - Sprint Loop related expense alone is $2.24
  - $1.47 is not in Range of Reasonableness
- Customer and Corporate Operations Expense
  - Customer Ops is 39% of Sprint's actual ($1.37 v $3.50)
  - Sprint proposed $1.91 (Conservative 55% of actual)
  - General Support Assets 7.45% is only 27% of Actual
  - Sprint proposed 15.4% (Conservative 55% of actual)

Comparison of TPIS and Model Results

- Comparison is Producing Expected Results
- All models are producing similar variations

1) Range of Vintage Costs versus Current Cost
2) Less Growth to Drive Replacement in Rural Areas
3) Forward-Looking Plant can be More Expensive
   - Standard is not Least-Cost.... but Forward-Looking Least-Cost
   - Greater Capability
   - As density Drops, Fixed Cost per line increases

Outside Plant Costs....

- DLC Costs....
  - Kits
  - Sprint Supports elimination of T1
  - Sprint Supports need need for Small DLC to Replace T1
- Sprint Supports use of Pull Boxes for Rural Distribution
  - Cost is $630 for non-traffic bearing box
  - Spacing should be based on copper

Sprint

HMS Ex Parte Comments

The Cost of DLC Site Prep is not the Concrete

- Nevada Experience - 30 DLC Sites
- The Good Old Days....
- More Like Cellular Tower Site
- Find Suitable Location (Parking, Access, Network, Aesthetics)
- Locate owner and Negotiate, Cost of ROW
- Planning and Zoning, Legal, Engineering (PE), Notice Costs
- Road, Driveway, Electrical, Building, Environmental Permits
- Screening, Parking

Sprint

HMS Ex Parte Comments

Underground Cable Data Reflects Real World Costs

- It is Sprint's actual Cost
- Minimum of 4 Man Crew plus Equipment
- Haul Large Reels to Works Site
- Pump/Ventilate/Set up Pull/Tear Down
- Rod and Clean the Duct, Pre-Work Site Set up
- Flaggers, Traffic Control Set up, Signs
- After Hours or Restricted Hours
- 5,000' a day and 300 Pairs and Hour

Sprint

HMS Ex Parte Comments

"Spotty", "Self-Selected" Data?

Sprint has provided an Open Book...

- 100% Sample of '98 Construction (Representative USF States)
- 100% Sample of '98 Construction for Requested CLLI's
- Nevada Costs are among the the Highest Costs, CLLI's Provided
- Sprint "may" have double counted???? (HMS 3/17/99)
- Sprint is 75% Rate Capped
- "...no argument has yet been advanced that such historical data provides an accurate forward-looking representation." (HMS 3/17/99)
- Failure to rely on current data reduces this to a fiction.

Sprint

HMS Ex Parte Comments

"Spotty", "Self-Selected" Data?

The HMS have provided...

- 3-4 Year Old Opinions...
- Unsupported "validation"...
- Heavily Edited "validation" information...
  - Outdoor SAI Material Costs that Exceed HAI Installed costs
  - Cable Cost that exceed HAI installed Cost*
  - Single vendor quotes coded to appear to be multiple vendors
  - DLC, OC-3, Terminals, NIDS, Business Terminals....
  - "Quotes" from 1995

Sprint

HMS Ex Parte Comments

Structure Sharing

*

Questions?

*

There are no costs for "oversized" trenches in the inputs
(ILEC data reflect only actual ILEC costs, not hypothetical trenches)
(The HMS do an about face on incremental trench cost)

*

There is no cost in the inputs for spare Conduit capacity

*

40' Poles Have Room for several Attachers
(But you still need someone to actually attach)

*

Sprint Response to HAI Model Sponsors' *Ex Parte* Presentation 3/17/99

In their *ex parte* presentation dated March 17, 1999 AT&T and MCI WorldCom (known collectively as the HAI Model Sponsors, or "HMS") list a number of issues that raise concerns regarding the most recent version of the FCC's Synthesis Model.

Upon examination, however, we find that many of these "issues" are simply tired reiterations of ongoing arguments that have flooded the FCC and various state commissions for the past several years. For example, the HMS suggest...

- Any cost, input price, etc. which is based on actual known data, or reflects the real world practice of telephone companies, is *historical* or *embedded*, and therefore cannot be forward-looking.
- LECs provide self-selected, high-cost data (and "stand mute" on low-cost data); therefore actual data cannot be assumed to accurately reflect costs.
- The forward-looking cost of a network must be lower than the actual cost of the network, even if the forward-looking network represents a significant improvement and possesses capabilities that the current network does not.
- Forward-looking, competitive markets will somehow automatically and dramatically increase structure sharing among utilities.
- Even LECs that currently operate under price cap regulation are not efficient; therefore the forward-looking "competitive market" will create a wealth of new efficiency opportunities.

The key point contained in the HAI Sponsors' *ex parte* is found on the first page of that document, and can be summarized as follows: *The costs produced by the latest version of the Synthesis Model (SM) are higher than the costs the earlier version(s) produced; therefore the current costs are wrong, and the model and the inputs are flawed.*

Sprint has addressed each of these points numerous times in the past, and so will not re-address each one here. Rather, in the following pages we respond to specific allegations made by the HMS regarding Sprint, and point out certain logic inconsistencies, misinterpretations and errors contained in the HMS *ex parte* presentation.

One Size Does Not Fit All

The intent of USF is to provide subsidy assistance to customers living in high cost areas. The most fundamental premise of USF recognizes the higher cost to serve less-dense, rural areas as compared to more-dense, urban markets. Companies serving rural markets simply cannot achieve the same cost economies as companies serving urban markets. (If they could, all costs would be the same).

It would be entirely inconsistent with the core purpose of USF to suggest that companies serving different markets, i.e. a company serving predominately urban markets vs. a company serving predominately rural markets, could achieve the same cost economies. On average, Sprint non-rural companies serve much more rural markets than the corresponding RBOC in those states.

It is also inconsistent to ignore the reality that company *size*, as determined by access lines or any other measure, also impacts the efficiencies that any company can realize. This is not to imply that a smaller company operates less efficiently than a larger company. Rather, it suggests that a new and efficient provider (such as is modeled in a proxy model) can achieve greater efficiencies if it is serving 50 million access lines than if it is only serving 5 million. This is, of course, part of the theoretical argument that local service (particularly the last mile) is indeed a natural monopoly.

These two factors: the size of the efficient provider being modeled, and the characteristics of the territory being served, together affect the forward-looking costs calculated by any proxy model. They also affect the actual costs currently being incurred by companies.

Sprint understands that time constraints necessitate the initial use of one set of inputs for Federal USF and the FCC's Synthesis Model. However, it is a fact that one set of inputs cannot provide reasonable cost estimates for companies serving such dissimilar territories and operating at different levels. Furthermore, because the FCC's Model will be used to determine the actual dollars that companies will be allowed to receive, to use one set of inputs is to assume any and all companies are able to operate under the conditions that are reflected by those inputs.

Sprint's customers deserve better than to ignore the inability of one set of national inputs to adequately predict Sprint's (or any provider's) costs of providing basic telecommunications service. Efforts should continue in the future to develop additional inputs which fairly recognize

the size of markets, the size of companies, and the higher cost of serving rural markets; these will ultimately provide fair and adequate levels of Federal USF to customers living in high cost areas.

Network Operations Expense

In our last meeting we discussed Network Operations and Customer Operations expense inputs. It was noted that Sprint had only provided one company at that time. Therefore we are providing the same analysis for all Sprint Non-Rural Companies. (Attached as Exhibit "A")

The proposed value of $1.47 equates to only 39% of the average total company cost of $3.80 for Sprint Non-rural companies. The portion of this expense associated with loop investment alone equates to $2.24. The $1.47 is simply not in a range of reasonableness as Sprint's data clearly exhibits.

Customer and Corporate Operations

Sprint analysis continues to show that the current, proposed values for Customer Operations and Corporate Operations do not adequately reflect a reasonable, forward-looking estimate for Sprint's non-rural local exchange companies. (See Attachment "A" for a full discussion and analysis). A summary of key points follows.

The proposed value of $1.37 for Customer Operations expense equates to only 39% of the average total company cost of $3.50 for Sprint Non-rural companies.

Sprints proposed value for Customer Operations expense of $1.91 is a conservative 55% of total company expense. The $1.37 value is not within a range of reasonableness as Sprint's data clearly exhibits.

The proposed value of 7.45% for General Support expense equates to only 27% of the average total company cost for Sprint Non-rural companies.

Sprints proposed value of 15.4% is 55% of total company expense. The 7.45% is not within a range of reasonableness as Sprint's data clearly exhibits.

Recent, verifiable data is the only reliable indicator of forward-looking costs.

In their March 17, 1999 ex parte comments, the HMS state that, *"...no argument has yet been advanced that such historical data provide an accurate forward-looking representation."* The FCC has clearly stated, time and time again, their desire to obtain and rely upon this recent, verifiable, actual cost data. A forward-looking cost is simply the efficient cost of an activity on a going forward basis, i.e. ignoring "sunk" costs. What else would a reasonable person possibly use to determine the cost to build a telephone network than the actual, recent cost? Failure to consider the real costs that real companies are actually experiencing today would reduce this cost model to pure fiction.

It appears as though the HMS would have us ignore reality and rely instead on the unsupported "opinions of experts" who have limited or no recent industry experience. There is no need to limit ourselves to relying solely on opinions. We have the data.

The implication that ILEC costs are simply too high because they are regulated monopolies is unfounded. Over 75% of Sprint's access lines are under rate cap regulation. Every incentive exists to operate as efficiently as possible. Sprint's costs reflect this efficiency and serve as the best predictor of efficient network construction cost in the regions that Sprint serves. If it were actually possible to build the network for the HMS costs, CLECs would be doing it.

Finally, the use of this actual cost data greatly improves and simplifies the modeling process. For instance, instead of developing complex algorithms to predict the combination of trench, plow, backhoe and other placement methods in order to calculate costs, actual cost data will take you directly to an end result. Further, use of actual cost data allows many miscellaneous costs that might be missed in the modeling process to be identified and incorporated into the cost model.

Sprint has not provided "Self-Selected Embedded Data"

Sprint has offered an "open book" on its OSP construction costs by providing the entire 1998 actual construction costs for seven states, as well as for the specific exchanges requested in the FCC data request. Incredibly, the HMS characterize Sprint's open book, 100% sample as "spotty", "self-selected" and "self-censored".

In turn, the HMS ask the FCC to accept the unsupported opinions of a group of "experts" who are employed by the HMS to defend input values they "developed" three to four years ago.

The HMS assert that this data has been "validated". However they have never produced a witness in a proceeding to which Sprint was a party who could testify to the source, veracity, method of collection or any other information regarding this "validation". Portions of this "validation" information were included in the HIP and reproduced in the HMS *ex parte* Figure 8.

In the recent Missouri USF proceeding, AT&T filed some 500 pages of documentation that it purportedly used in the validation of its cost information. More remarkable than the information that was ultimately included in the HIP and the HMS *ex parte* is the information that was not included, such as...

- Material costs for Outdoor SAIs that are consistently higher than the HAI "installed" costs
- Material costs for copper cable which were higher than the HAI "installed" costs
- 35 Pages of DLC costs that exceed HAI inputs
- OC-3 Terminal Costs that exceed HAI inputs
- Quotes from single companies represented as being quotes from many companies
- Quotes of 1995 prices
- Material Costs for pedestals, terminals, NIDS, Business Terminals
- Data that demonstrates that the lowest cost available in any one state in the nation is not available in all states.

When their data didn't "validate" the preferred HAI input values, the HMS apparently ignored the data. In some cases, the HMS selectively used costs for one size of an input item and ignored data from the same source for other sizes. For instance, as noted in the HIP, when their cable data showed that their cable cost formula for 6 and 12 pair cables produced a cost that was too high compared to the actual cable prices, the HMS reduced the model input. When the same quotations showed that larger cable sizes were actually far more expensive than the model input, the actual data was ignored.

Comparisons of Model Results to Telephone Plant in Service (TPIS) produce expected results and do not suggest a model problem.

ATT/MCI suggest that the Synthesis Model is producing inappropriate costs because the forward-looking cost results are higher than ILEC embedded costs in some areas (based on ARMIS Telephone Plant in Service (TPIS). Far from being an error, this is exactly what we would expect to see. In fact, the HAI model will show the same pattern. If embedded investment (TPIS) were a

good predictor of forward-looking cost, we wouldn't be engaging in this enormous modeling exercise.

TPIS is the original book cost of all the plant that is currently in service, the embedded network. It includes plant placed yesterday as well as plant placed 20 years ago at a fraction of today's costs. The embedded network may not be of a forward-looking design and clearly wasn't constructed at today's costs.

Variations between TPIS and forward-looking costs are very often most pronounced in rural areas, just as AT&T/MCI's data suggests. Again, this is a function of reality and does not indicate or reflect "model problems". The more rural an area is, the more costly a forward-looking design becomes relative to a "traditional" loop design[1]. In more rural areas, one often sees an older average plant life because there are fewer of the drivers that cause new cable placement, such as growth, business services and demand for advanced services. Further, because of the higher replacement costs of long rural cable runs, cable additions may have been deferred with analog carrier technology.

OSP construction costs, a significant portion of rural network costs, are not diminishing over time. Cable construction is both equipment and labor intensive, with costs that are increasing not decreasing. At the same time, environmental, safety, state and local regulations, property costs, and customer expectations have increased the cost of new construction[2].

Sprint Underground Cable Placement Costs are accurate and reflect current, real world costs

The data that Sprint provided in response to the FCC data request represents Sprint's actual, real world cost for placing underground copper cable in 1998. AT&T/MCI's overly simplistic "cost analysis" fails to consider such things as...

---

[1] There seems to be an assumption that a forward-looking design (DLC's, 12,000' CSA's, non-loaded loops, able to support advanced services) has an inherently lower cost than an older plant design. While this is generally true for the more densely populated areas, when densities drop significantly, CSA's may well be more expensive.

[2] For example, 15 or 20 years ago Sprint was often able to acquire cable easements at little or no cost because property owners were happy to support expanded services. All too often today, property owners are very cognizant of property values and view utilities as having "deep pockets". Many counties now require that cable be placed at greater depth and place restrictions on where and when cable may be placed. There are significant additional restrictions on the use of aerial plant.

1) real crew size (4 or more),
2) the need to provide traffic control when working on or near roadways[3],
3) the need to "rod" and clean the duct in advance of actual cable placement[4],
4) time to pump out water and ventilate the manhole,
5) the cost of construction equipment,
6) time to pick up, haul and deliver large cable reels,
7) travel time to the work site and a myriad of other real world issues[5].

The suggestion by HMS that it is possible for a two or three man crew to pull 5,000 feet of copper cable through eight or more sections of conduit in one day is ludicrous. It is unsupported by any data and clearly contradicted by the facts. (This may be the same Herculean crew that can splice 300 pairs an hour.)

Sprint has not Double-Counted Costs

AT&T/MCI make an unsupported suggestion that costs "may" have somehow been double counted. Sprint has simply spread the actual total costs in each Part 32 account to each of the specific cable sizes placed. The records serve as the inputs to Sprint's Continuing Property records, and are audited for compliance. No "double counting" has taken place.

Structure Sharing

Sprint has previously provided in-depth, fact based analysis of structure sharing opportunities and limitations. Key issues in structure sharing include:

- The National Electrical Safety Code imposes specific requirements on parties sharing poles, trenches and conduit. These requirements can drive increased costs.

---

[3] Most underground conduit is located in or near roadways. Two "Flaggers" must be provided during construction. In some regions that Sprint serves, statues require that traffic control must be done by local law enforcement at substantial cost.
[4] Rodding and cleaning may be done weeks or more in advance of actual placement to ensure that the duct is useable and allow adequate time for corrective measures or work order modifications as needed.
[5] Other examples of cost drivers can be: Special Permits to work in roadway, (Cost and Time), Restricted Work Hours (9-4) can drive down productivity, May need to be on site in advance to block off work area so cars won't park in the way, After hours work may be required (premium pay), near-site storage.

- An ILEC cannot unilaterally implement structure sharing. There must be another provider in the area to share with.
- Sharing must be in the economic interest of all parties.
- The timing of trench availability is a significant restrainer to sharing.
- Conduit leasing is not "sharing" in the context of the models. Conduit leasing is a far more attractive scenario for a provider than sharing of construction costs.
- The HMS assume wildly speculative and unsupported levels of structure sharing that assume facilities based providers will share every foot of trench or pole line. The HMS have acknowledged on the witness stand that their proposed levels of sharing are not attainable now or in the future[6].

It is certainly true that adequate pole space is provided in the model for poles to be shared by power. However, we must ask once again, who *else* is going to share these poles in the rural distribution? Cable television companies that don't or cannot economically serve these areas today? Non-existent facilities based providers? Will they attach to 100% of the poles?

The proper calculation of pole sharing cost is not the simple allocation that the HMS would have us believe. For instance, under current Federal rules, telephone companies have specific calculations that must be used to determine the rates that they may charge others to attach to their poles. Power companies, on the other hand, are free to charge ILEC's whatever the market will bear. This disparity creates significant additional cost for the ILEC.

In their March 30 *ex parte* the HMS allege that the HAI, BCPM and SM model costs inputs include oversized trenches specifically for the purposes of structure sharing. They further state that it is therefore reasonable that trenching cost be reduced if less sharing is to be assumed in the model.

With the exception of poles, there simply is no "extra" capacity (cost) in the model or inputs.

The size of trench is not a function of the model, it is a function of the input costs. The Sprint cost data *does not* reflect the cost of "oversized" trenches designed for sharing. The costs reflect only the cost of the trench required to place the telephone facilities. Where a buried cable trench is shared, the costs reflect only Sprint's portion of the trench cost. Therefore, it is completely inappropriate to further reduce trenching cost.

---

[6] Testimony of AT&T witness Wells, in North Carolina UNE and Florida USF proceedings.

Further, HMS's position is completely contrary to their previous assertions and the data that they submitted as figure 8 with this ex parte. When Sprint has pointed out that additional costs must be incurred for a larger trench before sharing is applied, the HMS have steadfastly asserted that there *is no* incremental cost for larger trenches[7]. How can they now insist that there is such an incremental cost, when it suddenly appears to be in their financial interest to do so?

The HMS state that, "...spare conduit is placed in trenches, manhole capacity is installed to accommodate this spare conduit". They conclude that the reason for this is that the conduit is intended to be shared with other services, and hence the cost should be shared away. This is pure fabrication on the part of the HMS. None of the models place any conduit beyond the immediate requirements generated for the ILEC by the model. No additional conduit is placed, and no additional cost is modeled[8]. Therefore, it would be completely inappropriate to reduce the input costs of or share away the costs of the conduit and manholes.

In appendix "B", beginning on page 152, the HIP correctly describes the reasoning behind this in great detail, including the fact that conduit for other users or services are specifically not, specifically should not, and cannot be included in the modeled conduit capacity. How could a model possibly anticipate the requirements of other providers? It is astonishing that the HMS would now have us believe that the exact opposite is true.

In a final attempt to confuse the issues, the HMS conclude that, *"It would be an improper cross-subsidy if the SM were to assume that universal service should bear the complete cost of structures that benefit ILEC services not costed by the SM."* It is fundamental to all the modeling methodologies that the total demand for services - whether or not the service is supported by USF - is included in the total model demand. The costs for the required network is then spread across the total service demand to determine a "unit" cost. This ensures that each service shares equally in the cost of the network and *ensures* that *no* cross-subsidy is created. Sprint does not understand how this methodology, used from the start by all models, is suddenly responsible for creating cross-subsidies.

DLC Costs

[7] Hatfield Inputs Portfolio Section 6.4, page 130. HMS Figure 8 clearly demonstrates HMS belief that there is no incremental cost for larger trenches.
[8] Models do provide one spare conduit for maintenance purposes as is industry practice.

In their March 30 *ex parte*, the HMS alleges once again that Sprint DLC costs are too high. Specifically, the HMS state the following reason, *"As our previous ex parte presentations have shown, this appears to be the result of costing out DLC that was engineered on a custom design basis, rather than based on a standard design."* Sprint has informed the HMS on many, many occasions - verbally in FCC ex parte meetings, in written testimony, and under oath in state proceedings - that that this is simply not the case. Sprint DLC costs are based on standard DLC "Kits". This efficiency is not a new "insight" or "invention" of the HMS, but a standard, long time industry practice. Yet despite repeatedly making HMS aware of this fact they continue to misrepresent the facts rather than develop any substantive argument.

The HMS refuse to acknowledge that Concrete is not the driver of DLC Pad site Costs.

In the recent Nevada UNE proceeding, Sprint provided AT&T with a detailed copy of the construction costs for 30 DLC sites placed in the state in 4Q 1997 through 1Q 1998. The average cost to develop a site was $22,000. The cheapest site, $13,000+, was four times higher than the HMS's proposed cost. Sprint has demonstrated that the real world costs include many items other than "concrete" as the HMS claims. Yet the HMS apparently prefer to inundate the Commission with quotes on the price of cement, representing that this is the only cost of site prep.

Development of a DLC site is more akin to the development of a cellular tower site. (Do you want a 48" tall, 80" wide brown box in your yard!!!?) There are substantial costs incurred for finding a location that is suitable for placement (access, parking, proximity to network, etc.), negotiating the right-of-way, and paying for the easement. Sprint may have to prepare a site plan with run-off studies, adequate "site-distance" for parking pull-off, and environmental permits. In many areas this work must be done a civil engineer. In most jurisdictions DLC sites must receive planning and zoning approval, which may require legal representation. Various electrical, highway and other permits must be obtained. As a condition of placement, Sprint may be required to provide walls or mature trees to screen the site from adjacent property. Clearly, "concrete" is a minor part of the cost of site prep.

Sprint Agrees that elimination of the T1 feeder option creates a need for a small DLC input (as is modeled by Sprint in BCPM).

Sprint supports the Commission Staff's conclusion that T1 carrier is not forward looking technology and the resulting decision not to use it in the model. However, this does create a need to develop inputs for the costs of a small, fiber fed NGDLC to use in lieu of T1. The BCPM

model contains inputs for DLCs for small, medium, and large applications. Sprint's inputs are attached as Exhibit "C".

Sprint agrees with the use of pull boxes for rural distribution conduit.

In most rural density zones, distribution conduit would be fairly limited and could potentially use pull boxes in lieu of manholes. The limited use of distribution conduit should be reflected in the distribution plant mix for that zone.

As AT&T/MCI indicated, material cost is in the neighborhood of $325 for a small pull box. Shipping, tax, purchasing and installation would bring the installed cost to about $629. This amount would reflect a pull box that could be used in a sidewalk or non-traffic bearing area. A traffic rated enclosure would be substantially higher in cost.

Material	$325
Sales Tax	$22
Supply Expense	$42
Engineering	$20
Installation	$220
Total	**$629**

Sprint has not mis-classified buried cable in conduit as Underground Cable

The HMS suggest that the inputs for the use of distribution conduit probably arise out of a mis-understanding of the Part 32 accounting rules by ILECs, indicating that conduit runs under roads, etc are not classified as underground conduit in Part 32 accounts. This is correct and Sprint would correctly account for this plant as buried not underground plant. This is a universally understood concept, and each of the models clearly provides inputs for this cost in the buried cable structure costs. The costs that Sprint submitted conform to Part 32 account definitions.

The HMS mis-characterize the reason for placing manholes as being solely for the purposes of splicing cable. Manholes/Pull boxes are placed to allow access to the conduit and cable at road intersections or other likely locations, to allow short sections of heavy cable to be pulled in, to facilitate going around corners, etc.

While fiber cable can certainly be pulled for longer distances than copper cables, spacing of 2,000' will not generally occur. The primary reason is quite simply that the conduit system must be designed to support both fiber and copper cables. Pull boxes must be placed based on the shorter copper spacing requirements. Fiber cables would simply be pulled through the intermediate holes.

Structure Type Optimization is Not Needed

Sprint believes that it is far more accurate to use actual plant mix as a predictor of forward-looking plant mix. The selection of Aerial, Buried or Underground cable is driven by a myriad of different issues: economic, aesthetic, regulatory, weather-related and others. Engineers evaluate and weigh these issues when selecting the type of plant that is in place today, and incorporate these many factors into the final decision. The accumulation of those decisions is reflected in the actual plant mix. At best, a model can make only a simplistic analysis. It cannot begin to account for all the drivers.

The idea of using an optimization routine to choose plant mix to minimize costs is theoretically appealing. However, because the Synthesis Model will be used to determine what actual dollars a provider will be allowed to recover, the theoretical must be tempered with the realistic.

Optimization routines must, by necessity, use only cost-minimization as the ultimate, overriding criteria. However, the efficient providers who *will build plant* and whose cost recovery *will be determined* by this model must consider all of the criteria above, not just cost. For example, if regulatory requirements prohibit the placement of aerial cable in a region the new provider must abide by this ruling, regardless of the cost. The existing plant-mix data for the region reflects this condition. An optimization routine cannot.

SPRINT LTD
ASSIGNMENT OF NETWORK OPERATIONS EXPENSE
TO BASIC LOCAL SERVICE

To illustrate Sprint's belief that the $1.47 Network Operations USF input in the HCPM is too low, we have calculated a per line input for each of Sprint's non-rural LEC's. A calculation is also presented for the total of all Sprint non-rural LEC's. Our calculations are designed to approximate a reasonable level of USF expenses.

Previously, Sprint has presented similar calculations in Ex Parte comments filed in CC Docket Nos. 96-45 and 97-160. The last filed comments of January 26, 1999 resulted in a proposed input of $2.93, which was based on total Sprint LTD operations for 1997. Our proposals were met with various arguments about the methodology of determining our input, and that our input should incorporate productivity assumptions. While Sprint recognizes that some parties quibble with our calculation details, we believe nonetheless that our calculations approximate a reasonable level of expense. And, we further believe that the point is made that the HCPM input of $1.47 is drastically understated. In fact, that input is only about one-half of the $2.91 amount presented here for the composite of all Sprint non-rural LEC's. We do not believe that all of that difference can be explained by the relatively small impacts of suggested changes to our calculation methodology.

The total book Network Operations expense for all Sprint non-rural LEC's is $234,935,062, and total access lines is 5,151,000. Those expenses yield $3.80 monthly per line. Sprint wishes to emphasize that the basic local service input for all Sprint non-rural LEC's of $ 2.91 already represents a 23.4% reduction from that amount.

A summary of results and an explanation of calculation methodology follows:

Sprint Non-rural Company	Calculated Monthly Input
Total All Sprint Non-rurals	$ 2.91
Sprint of Ohio	$ 3.19
Centel of Nevada	$ 3.13
Centel of Texas	$ 3.23
Sprint of Florida	$ 2.73
Centel of Virginia	$ 3.39
Carolina Tel & Tel	$ 2.79
Centel of Carolina	$ 2.63

Expense for each Network Operations subaccount is assigned to the network functions supported by the underlying activities charged to that account. For example, Power account 6531, supports central office switching, loop circuit, and interexchange circuit equipment. So, the expense in account 6531 is assigned to those functions based on the relative amount of investment which supports those functions.

Total investment is from Sprint LEC general ledgers as of December 31, 1997. IX transport investment is derived using ratios from Part 36 reports for each study area (LEC company). The ratio of IX circuit equipment to total circuit equipment per Part 36 reports was applied to the 223X, Circuit Equipment account balance per the general ledger at December 31, 1997. And, the ratio of IX cable & wire to total cable & wire per Part 36 reports was applied to the 24XX accounts per the general ledger at December 31, 1997. Loop investment was derived as the totals for the circuit and cable & wire accounts less the IX transport amounts for those accounts. Account 221X, Switching, was of course all associated with the switching function.

Expenses assigned to the loop are assumed to apply 100% to basic local service. Expenses assigned to IX transport are assumed not to apply at all to basic local service. And, expenses assigned to the switching function are further assigned to local switching based on a ratio of local telephone calls to total telephone calls. For example, Power account 6531, is assigned to switching, IX circuit and loop circuit based on the relative investments in those categories. The expense assigned to switching is then assigned to basic local service (local switching) based on the percentage of local telephone calls.

SPRINT LTD
ASSIGNMENT OF NETWORK OPERATIONS EXPENSE
TO BASIC LOCAL SERVICE

Then, loop and local switching related expenses were subtotaled for each subaccount to arrive at an amount assigned to basic local service for that subaccount. All subaccounts were then totaled on the last page of the calculation to arrive at a total Network Operations expense for basic local service. This total is then divided by the number of switched and special access lines (switched lines are from 1997 ARMIS), and then divided by twelve to arrive at a monthly per line input.

Expenses relating to customer premises work (accounts 6534.3 & .4) and land & buildings work (accounts 6534.8 and 6535.2) were not assigned to basic local service.

Sprint LTD
All Non-Rural LECS
Assign Network Operations
Year Ended Dec 1997

Method of Assignment								*SW & Circ*				*Sw & Trans*
Plant Account						6531				6532.2		
		Investment				Power				Traffic Engineering		
Number	Account Description	Loop	IX Transport	Switching	Total	Loop	Transport	Switching	Total	Loop	Transport	Switching	Total
221X	Switching			2,125,747,875	2,125,747,875			8,132,204	8,132,204			3,446,183	3,446,183
223X	Circuit	1,090,532,641	406,087,233		1,496,619,874	4,171,912	1,553,516		5,725,428		658,334		658,334
2411	Poles	116,254,525	10,712,283		126,966,808						17,366		17,366
2421	Aerial Cable	574,183,497	49,224,491		623,407,988						79,801		79,801
2421	Aerial Fiber	34,500,356	4,480,848		38,981,204						7,264		7,264
2422	Underground Cable	383,146,219	25,413,769		408,559,988						41,200		41,200
2422	Underground Fiber	36,964,203	21,510,198		58,474,401						34,872		34,872
2423	Buried Cable	2,489,448,325	103,150,966		2,592,599,291						167,225		167,225
2423	Buried Fiber	166,292,439	40,632,563		206,925,002						65,872		65,872
2441	Conduit	214,034,029	24,651,810		238,685,839						39,965		39,965
	Unassigned												
	Total	5,105,356,234	685,864,161	2,125,747,875	7,916,968,270				13,857,632				4,558,081
	Check Total					4,171,912	1,553,516	8,132,204	13,857,632	-	1,111,898	3,446,183	4,558,081
Loop/Switching Assignment Ratios						100%	0%	78.97%		100%	0%	78.97%	
USF Expenses						4,171,912	-	6,422,375	10,594,288	-	-	2,721,610	2,721,610

Sprint LTD
All Non-Rural LECS
Assign Network Operations
Year Ended Dec 1997

Method of Assignment				*OSP*				*All Investment*				*All Investment*
Plant Account		6532.3 Assignment				6532.4 Traffic Administration				6532.5 Records			
Number	Account Description	Loop	Transport	Switching	Total	Loop	Transport	Switching	Total	Loop	Transport	Switching	Total
221X	Switching							1,392,620	1,392,620			2,321,647	2,321,647
223X	Circuit					714,430	266,036		980,466	1,191,031	443,510		1,634,542
2411	Poles	470,595	43,363		513,958	76,161	7,018		83,179	126,968	11,699		138,668
2421	Aerial Cable	2,324,276	199,259		2,523,535	376,159	32,248		408,407	627,098	53,761		680,859
2421	Aerial Fiber	139,656	18,138		157,795	22,602	2,935		25,537	37,680	4,894		42,574
2422	Underground Cable	1,550,963	102,874		1,653,838	251,007	16,649		267,656	418,455	27,756		446,211
2422	Underground Fiber	149,630	87,073		236,702	24,216	14,092		38,308	40,371	23,492		63,863
2423	Buried Cable	10,077,206	417,552		10,494,757	1,630,888	67,576		1,698,464	2,718,865	112,657		2,831,522
2423	Buried Fiber	673,146	164,479		837,626	108,942	26,619		135,561	181,617	44,377		225,994
2441	Conduit	866,403	99,790		966,193	140,218	16,150		156,368	233,758	26,924		260,682
	Unassigned												
	Total				17,384,403				5,186,565				8,646,561
	Check Total	16,251,875	1,132,528	-	17,384,403	3,344,621	449,323	1,392,620	5,186,565	5,575,843	749,070	2,321,647	8,646,561
Loop/Switching Assignment Ratios		100%	0%	78.97%		100%	0%	78.97%		100%	0%	78.97%	
USF Expenses		16,251,875	-	-	16,251,875	3,344,621	-	1,099,816	4,444,438	5,575,843	-	1,833,512	7,409,355

Sprint LTD
All Non-Rural LECS
Assign Network Operations
Year Ended Dec 1997

Plant Account Number	Account Description	6532.1 Supervision Loop	Transport	Switching	Total	Sum of all Oth 6532	6533.3 Line Testing Loop	Transport	Switching	Total	Loop	6533.4 Trunk Testing Loop	Transport	Switching	Total	Transport
	Method of Assignment															
221X	Switching	-	-	1,283,556	1,283,556											
223X	Circuit	341,566	245,201	-	586,767		3,172,381			3,172,381			1,647,889			1,647,889
2411	Poles	120,769	14,241	-	135,010		338,187			338,187			43,470			43,470
2421	Aerial Cable	596,481	65,441	-	661,922		1,670,311			1,670,311			199,751			199,751
2421	Aerial Fiber	35,840	5,957	-	41,797		100,362			100,362			18,183			18,183
2422	Underground Cable	398,025	33,786	-	431,811		1,114,560			1,114,560			103,128			103,128
2422	Underground Fiber	38,400	28,596	-	66,996		107,530			107,530			87,288			87,288
2423	Buried Cable	2,586,124	137,133	-	2,723,257		7,241,855			7,241,855			418,583			418,583
2423	Buried Fiber	172,750	54,018	-	226,769		483,748			483,748			164,886			164,886
2441	Conduit	222,346	32,773	-	255,119		622,629			622,629			100,036			100,036
	Unassigned															
	Total				6,413,005					14,851,583						2,783,215
	Check Total	4,512,302	617,147	1,283,556	6,413,005		14,851,583	-	-	14,851,583	-		2,783,215	-		2,783,215
Loop/Switching Assignment Ratios		100%	0%	78.97%			100%	0%	78.97%		100%		0%	78.97%		
USF Expenses		4,512,302	-	1,013,683	5,525,985		14,851,583	-	-	14,851,583	-		-	-		-

Sprint LTD
All Non-Rural LECS
Assign Network Operations
Year Ended Dec 1997

Plant Account Number	Account Description	6533.5 COE Testing Loop	Transport	Switching	Total	6533.1& 6 Supervision & Dispatch Loop	Transport	Switching	Total	6534.2 COE Supervision Loop	Transport	Switching	Total
	Method of Assignment			*Sw & Circ*				*Sum of all Oth 6533*				*Sw & Circ*	
221X	Switching			9,674,741	9,674,741	-	-	5,129,522	5,129,522			9,609,154	9,609,154
223X	Circuit	4,963,251	1,848,191		6,811,442	4,313,491	1,853,613	-	6,167,103	4,929,605	1,835,662		6,765,267
2411	Poles					179,306	23,048	-	202,353				
2421	Aerial Cable					885,595	105,908	-	991,502				
2421	Aerial Fiber					53,212	9,641	-	62,852				
2422	Underground Cable					590,947	54,678	-	645,626				
2422	Underground Fiber					57,012	46,280	-	103,292				
2423	Buried Cable					3,839,612	221,932	-	4,061,544				
2423	Buried Fiber					256,482	87,422	-	343,904				
2441	Conduit					330,116	53,039	-	383,155				
	Unassigned												
	Total				16,486,183				18,090,854				16,374,421
	Check Total	4,963,251	1,848,191	9,674,741	16,486,183	10,505,773	2,455,559	5,129,522	18,090,854	4,929,605	1,835,662	9,609,154	16,374,421
Loop/Switching Assignment Ratios		100%	0%	78.97%		100%	0%	78.97%		100%	0%	78.97%	
USF Expenses		4,963,251	-	7,640,588	12,603,839	10,505,773	-	4,051,020	14,556,792	4,929,605	-	7,588,791	12,518,396

Sprint LTD
All Non-Rural LECS
Assign Network Operations
Year Ended Dec 1997

	Method of Assignment	*Not Assigned*				*OSP*	*Not Assigned*				*All 6534 Assigned*	*Not Assigned*
Plant		6534.3 & .4		6534.5 & .7			6534.8		6534.1 & 9			6535.2
Account		Cust Prem		CWF Supervision			Land & Bldg		General Supervision & Other Admin			Land & Bldg
Number	Account Description	Unassigned	Loop	Transport	Switching	Total	Unassigned	Loop	Transport	Switching	Total	Unassigned
221X	Switching							-	-	2,065,766	2,065,766	
223X	Circuit							1,059,761	394,629	-	1,454,390	
2411	Poles		674,655	62,166		736,821		145,037	13,364	-	158,401	
2421	Aerial Cable		3,332,135	285,662		3,617,797		716,339	61,411	-	777,750	
2421	Aerial Fiber		200,214	26,004		226,218		43,042	5,590	-	48,632	
2422	Underground Cable		2,223,496	147,483		2,370,979		478,005	31,706	-	509,711	
2422	Underground Fiber		214,513	124,829		339,342		46,116	26,836	-	72,951	
2423	Buried Cable		14,446,911	598,612		15,045,523		3,105,782	128,689	-	3,234,471	
2423	Buried Fiber		965,038	235,801		1,200,839		207,463	50,692	-	258,155	
2441	Conduit		1,242,095	143,061		1,385,156		267,024	30,755	-	297,779	
	Unassigned	22,236,715					(123,065)					694,055
	Total	22,236,715				24,922,675	(123,065)				8,878,007	694,055
	Check Total	22,236,715	23,299,057	1,623,618	-	24,922,675	(123,065)	6,068,569	743,672	2,065,766	8,878,007	694,055
Loop/Switching Assignment Ratios			100%	0%	78.97%			100%	0%	78.97%		
USF Expenses			23,299,057	-	-	23,299,057		6,068,569	-	1,631,431	7,699,999	

Sprint LTD
All Non-Rural LECS
Assign Network Operations
Year Ended Dec 1997

Method of Assignment		OSP				SW & Circ							All 6535 Assigned
Plant Account Number	Account Description	6535.3 Cable & Wire				6535.4 CO Equipment				6535.1, .5, .6, .9 Supervision, Admin, Drafting			
		Loop	Transport	Switching	Total	Loop	Transport	Switching	Total	Loop	Transport	Switching	Total
221X	Switching							2,323,646	2,323,646	-	-	7,405,165	7,405,165
223X	Circuit					1,192,056	443,892		1,635,948	3,798,933	1,414,628	-	5,213,562
2411	Poles	239,970	22,112		262,082					764,754	70,468	-	835,222
2421	Aerial Cable	1,185,216	101,608		1,286,824					3,777,134	323,812	-	4,100,946
2421	Aerial Fiber	71,215	9,249		80,464					226,953	29,476	-	256,429
2422	Underground Cable	790,881	52,458		843,340					2,520,439	167,179	-	2,687,618
2422	Underground Fiber	76,301	44,401		120,701					243,160	141,500	-	384,660
2423	Buried Cable	5,138,660	212,922		5,351,582					16,376,262	678,555	-	17,054,816
2423	Buried Fiber	343,257	83,873		427,130					1,093,916	267,292	-	1,361,208
2441	Conduit	441,804	50,886		492,690					1,407,973	162,166	-	1,570,140
	Unassigned												
	Total				8,864,812				3,959,594				40,869,766
	Check Total	8,287,303	577,509	-	8,864,812	1,192,056	443,892	2,323,646	3,959,594	30,209,524	3,255,076	7,405,165	40,869,766
Loop/Switching Assignment Ratios		100%	0%	78.97%		100%	0%	78.97%		100%	0%	78.97%	
USF Expenses		8,287,303	-	-	8,287,303	1,192,056	-	1,835,090	3,027,146	30,209,524	-	5,848,200	36,057,724

Sprint LTD
All Non-Rural LECS
Assign Network Operations
Year Ended Dec 1997

Method of Assignment

Plant Account Number	Account Description	Total 653X Loop	Transport	Switching	Total
221X	Switching	-	-	52,784,205	52,784,205
223X	Circuit	29,848,418	12,605,102	-	42,453,520
2411	Poles	3,136,400	328,317	-	3,464,717
2421	Aerial Cable	15,490,744	1,508,663	-	16,999,406
2421	Aerial Fiber	930,776	137,332	-	1,068,108
2422	Underground Cable	10,336,800	778,897	-	11,115,697
2422	Underground Fiber	997,247	659,258	-	1,656,505
2423	Buried Cable	67,162,163	3,161,435	-	70,323,598
2423	Buried Fiber	4,486,359	1,245,332	-	5,731,691
2441	Conduit	5,774,367	755,544	-	6,529,911
	Unassigned				22,807,705
	Total				234,935,062
	Check Total	138,163,274	21,179,878	52,784,205	234,935,062
Loop/Switching Assignment Ratios		100%	0%	78.97%	
USF Expenses		138,163,274	-	41,686,116	179,849,390
			Total Lines		5,151,000
			Per Line Monthly Input		$ 2.91