Now the question is, "How much of this inflated cable investment is borne by Cass County's interoffice transport system versus other users of interoffice cable?" The answer is 100%. Cass County's cost study fails **_____

_____

_____

_____**.

Instead, the full burden is placed on 871 interoffice trunks (cell I15), resulting in grossly overstated costs per trunk and per minute of use. If a reciprocal compensation rate is set based on HAI 5.0a costs, the CMRS Providers would be subsidizing Cass County local services, which use the **_____

_____**.

Q. AFTER COMPUTING THE TOTAL INVESTMENT IN BURIED CABLE, AERIAL CABLE AND POLES, WHAT DOES HAI 5.0A DO?

A. The model allocates the investments to common, direct and dedicated transport in proportion to the quantity of trunks for each. In Exhibit WCC-15, I do this by dividing the total cable plant investments (cols. R - T) by total trunks (col. I) to calculate unit investments per trunk (cols. U - W). I then multiply the unit investments times the HAI model quantity of common transport trunks (col. X) to compute common transport investments in buried cable, aerial cable and poles.

In the next step, HAI 5.0a calculates the annual costs associated with the plant allocated to common transport. These include capital costs (depreciation, cost of capital and income taxes) and operating expenses (cable network expenses, support expenses, common overheads and others). The annual costs represent

HAI 5.0a's estimate of *forward-looking economic costs* for common transport cable.

In the final step, annual costs are divided by annual minutes of use to calculate the common transport cost per minute. The result is $0.0138, the same figure appearing in the summary of costs in Exhibit WCC-11 and the same figure derived by the Petitioner from HAI model output.

Correcting for Transport Issues No. 1, 2 and 3.

Q. IS IT POSSIBLE TO MODIFY THE INPUT VALUES TO HAI 5.0a TO CORRECT FOR TRANSPORT ISSUES NOS. 1, 2 AND 3?

A. It may be possible, but I think it is very difficult to make HAI 5.0a work for small ILECs. Keep in mind that reciprocal compensation rates are to be based on company-specific costs. With respect to Transport Issues Nos. 1 – 3, this means the following:

- Interoffice mileages must reflect cable route distances among each company's network nodes based on a forward-looking design of fiber rings and point-to-point interoffice links. Some Petitioners have single fiber rings and others have multiple rings. The smallest companies with single switches only have a point-to-point connection to the meet point with the intermediate carrier.
- Cable sizes must be based on total anticipated fiber demand for interoffice transport systems, digital loop carrier systems, leased fibers and others. Forward-looking cable sizes will vary by Petitioner and cable route within its network.

- Unit investments must reflect total demand and the sharing of cable investment among multiple users. Each Petitioner's situation is different.

To develop company-specific costs using HAI 5.0a would require manipulating the input data in some fashion to account for these key factors affecting transport cable costs.

Q. IS IT PRACTICAL FOR A SMALL ILEC TO COMPUTE COMMON TRANSPORT CABLE COSTS THAT ARE CORRECT AND COMPLY WITH THE FCC RULES?

A. Yes, I believe so. I have computed corrected common transport cable costs for Cass County in Exhibit WCC-16. Cass County falls in the middle of the Petitioners in terms of network complexity. Grand River Mutual Telephone has a more complicated interoffice network, while Farber Telephone, Peace Valley Telephone and others have relatively simple networks.

Q. ARE THE CORRECTIONS TO CASS COUNTY'S COMMON TRANSPORT CABLE COSTS IN EXHIBIT WCC-16 BASED ON HAI 5.0a COST DATA AND INFORMATION PROVIDED BY THE COMPANY?

A. Yes, the corrections reflect company-specific information obtained in responses to T-Mobile data requests on cable route distances, cable sizes, cable sharing and interoffice trunks in service. HAI 5.0a cost data are used for fiber cable costs, capital cost factors, operating expense factors and the common transport minutes of use per trunk. Exhibit WCC-16 corrects only for the methodological flaws in HAI 5.0a related to the three issues.

Q. DID ALL PETITIONERS PROVIDE THE SAME INFORMATION AS CASS COUNTY?

A. T-Mobile's data requests sought the same information from all the Petitioners; however, the complete set of information was not produced by any of the companies. In the case of Cass County, it took several exchanges between the attorneys for T-Mobile and the Petitioners to obtain sufficient information to produce Exhibit WCC-16. I believe each Petitioner, though, should be able to provide this information.

Q. DESCRIBE THE CORRECTIONS TO CASS COUNTY'S COMMON TRANSPORT CABLE COSTS?

A. Exhibit WCC-16 corrects Cass County's costs using the following steps:

- First, the forward-looking cable size is determined for each cable route (col. F). The current quantity of fibers in service is "bumped-up" to the next cable size, where eight, twelve and 24 fiber cables were selected as possible choices. This complies with FCC Rule 51.505 and its requirement for an efficient network configuration. It avoids cable sizes with fiber capacity that likely will never be employed.
- The HAI 5.0a cable cost data are used to develop an installed cable cost per foot (col. G). These data are shown in cells B37 – B40.
- For simplicity, I assumed 100% buried cable versus 95% assumed in the Petitioner cost studies. The difference between assuming 100% versus 95% buried cable has little impact on the result.

- Total buried cable investment is computed for each cable route based on the cable length (col. E) and the cable cost per foot (col. G).
- Per FCC Rule 51.511, the total buried cable investment is divided by total fibers in service to compute the unit investments shown in col. I.
- **_____
  _____
  _____
  _____
  _____
  _____
  _____**
- Cass County provided the number of voice grade trunks or DS0s added to the transport system at each switch. Based on the location of each switch along the Company's interoffice ring, I estimated the cumulative DS0s on the OC48 system along each cable route. I adjusted the total DS0s circuits using HAI 5.0a's assumption of 90% transmission terminal fill. Example: **_____
  _____**.[29]

[29] **_____
_____
_____
_____.**

NP

- The cable investment per DS0 is computed by dividing the cable investment for the OC48 transport system by the DS0s in service along each cable route. This also complies with FCC Rule 51.511.
- Annual costs per DS0 or trunk are calculated using the same annual cost factors in HAI 5.0a (col. N), and the costs are divided by 100,539 annual minutes of use per trunk, which is the traffic volume estimated by Cass County. These calculations determine the cost for a minute of traffic to travel along each cable route.
- The last step is to weight the per-minute cable costs by the percentage of wireless traffic expected over each interoffice link. **_____

_____

_____

_____

_____**

And, so on.

The corrected common transport cable cost is $0.0021 per minute versus $0.0138 in the HAI model.

Q. PLEASE SUMMARIZE FOR THE COMMISSION THE MAIN POINTS RELATED TO COMMON TRANSPORT CABLE COSTS.

A. I would like for the Commission to be aware of and address the following:

- HAI 5.0a as used by the Petitioners does not accurately model small ILEC networks. It overstates interoffice cable lengths, overstates cable sizes,

fails to recognize cable sharing, and ultimately overstates common transport cable costs. In the case of Cass County, HAI 5.0a's common transport cable cost estimate is 6.6 times the Company's true forward-looking economic cost.

- Correcting for HAI 5.0a's flaws is not a matter of combining the erroneous results of all the Petitioners to produce an average cost in hopes that "errors cancel out." When the results of most, if not all, Petitioners are overstated, the average can only be overstated. Each Petitioner's cost study must be corrected.
- Transport cable costs can be properly and practically calculated per the FCC Rules using the approach I have shown for Cass County in Exhibit WCC-16. The method is straightforward and requires network information that should be available to all Petitioners. Based on information provided by some Petitioners, I have been able to correct the common transport cable costs of 20 Petitioners. These costs are used in the corrected transport and termination costs shown in Exhibit WCC-1. T-Mobile and Cingular are attempting to obtain cost information for the other seven Petitioners so that similar corrections can be made for these companies.

Transport Issue No. 4: Oversized Transmission Equipment and Costs

Q. WHY DO YOU CONSIDER THE PETITIONER TRANSMISSION EQUIPMENT AND COSTS TO BE OVERSIZED?

A. There are two main reasons. First, the HAI 5.0a model assumes the same combination of transmission equipment is used at every central office for all Petitioners, regardless of their network architecture (fiber ring or point-to-point) and interoffice transport bandwidth requirements. This combination of equipment includes an OC48 add / drop multiplexer, an OC3 terminal multiplexer and a digital cross connect system (per DS3). **_____

_____

_____

_____

_____

_____.** HAI 5.0a cannot model a least cost, most efficient network using the same equipment combination for all companies.

Secondly, HAI 5.0a assumes that optical regenerators are required every 40 miles along interoffice cable routes. Normally, this would not add much to transmission equipment costs, because cable route distances between network nodes generally are less than 40 miles. **_____

_____.** However, because HAI 5.0a inflates cable distances by assuming two cables connect every Petitioner switch to the nearest BOC switch, regenerator quantities and costs become substantially overstated.

Q. CAN YOU ILLUSTRATE HOW HAI 5.0a COMPUTES TRANSPORT TRANSMISSION EQUIPMENT COSTS?

A. Yes, Exhibit WCC-17 shows the cost calculations for Cass County and Peace Valley Telephone. The HAI model estimates that $104,400 of transmission

equipment is required at each switch to multiplex and add / drop trunks, special access and other circuits to the interoffice ring for transport to another network location. In the case of Peace Valley this would be $104,400 of transmission equipment **_____ _____**.

For one of Cass County's central offices, HAI 5.0a adds an additional $15,000 for an optical regenerator, because it calculated 40 miles of fiber cable from the Creighton office (CGTNMOXA) to the nearest Southwestern Bell office. **_____ _____ _____** In the case of Peace Valley, the HAI model adds $60,000 of regenerator costs (4 regenerators X $15,000 each), because it assumes Peace Valley has 172 miles of cable to the nearest BOC wire center – when, in fact, **_____ _____**.

Q. IS IT POSSIBLE TO CORRECT THE TRANSPORT TRANSMISSION EQUIPMENT COSTS?

A. Yes, but it requires information that is not available in the HAI model. In its data request No. 34, T-Mobile requested information on the total demand for transport for each interoffice link in a Petitioner's network, the transport system size (say, OC-3 vs. DS3 point-to-point) and the system capacity. Data request No. 33 asked for total demand – actual and modeled by HAI 5.0a – for each interoffice link. The assumption was that HAI 5.0a might be modeling each Petitioner's network in a way that bears some resemblance to reality; this, of course, turns out to not be

the case. Therefore, to correct the Petitioners' transmission equipment costs, this type of information is needed either for the Petitioners' existing networks, if they consider them to be representative of their forward-looking design, or for a forward-looking design. In addition, current transmission equipment costs based on currently available technology and vendor pricing are needed to estimate plant investment.

Q. CAN YOU SHOW HOW THE TRANSPORT TRANSMISSION EQUIPMENT COSTS WOULD BE CORRECTED?

A. Yes, Exhibit WCC-18 shows Cass County's cost calculations with several obvious corrections based on the issues that I have described for transmission equipment. I have removed the OC-48 add / drop multiplexer and used only the OC-3 ADM / terminal multiplexer. **_____ _____** I also removed the regenerator investment, since it does not apply. The interoffice trunk quantities from the cost corrections for common transport cable are used (Exhibit WCC-16). And I reflected the number of nodes that mobile-to-land traffic would pass through depending on the destination switch. The resulting transmission equipment cost is $0.0017 or about 70% of the value in Cass County's cost study. The cost correction, though, would be much greater for smaller ILECs, where the oversized transmission equipment causes their costs to be substantially overstated.

Q. HAVE YOU MADE SIMILAR CORRECTIONS TO THE TRANSMISSION EQUIPMENT COSTS OF OTHER PETITIONERS?

A. As in the case of common transport cable, I corrected the costs of twenty of the Petitioners, where I had enough information about their networks and demand to do so. Corrected transmission equipment costs for these companies were combined with the corrected cable costs to produce the common transport costs per minute for these twenty companies shown in Exhibit WCC-1.

Transport Issue No. 5: Unnecessary Inclusion of Dedicated Transport Costs

Q. WHY HAVE THE PETITIONERS INCLUDED DEDICATED TRANSPORT IN ADDITION TO COMMON TRANSPORT IN THEIR COST STUDIES?

A. They have not explained the reason for doing this. It makes no sense whatsoever. HAI 5.0a defines dedicated transport a "full-period, bandwidth-specific interoffice transmission path between LEC wire centers and an IXC POP (or other off-network location)." And, it defines common transport as a "switched trunk between two switching systems on which traffic is commingled to include LEC traffic as well as traffic to and from multiple IXCs." A mobile-to-land call cannot simultaneously pass over these two types of transport – it is one or the other. Likewise, a call would not go over one and then the other, because the HAI model assumes that the two types of transport are over the same cables and transmission equipment between the Petitioners' switches and the nearest Bell Operating Company switch. A call would have to pass through a fiber cable over common transport, and then turn around a pass through the same cable over dedicated transport. It is pure fiction and an intentional duplication of costs.

Q. DOES THE METHOD YOU HAVE USED TO CORRECT CASS COUNTY'S COMMON TRANSPORT COSTS MAKE THIS ISSUE IRRELEVANT?

A. Yes, Exhibits WCC-17 and WCC-18 model the actual interoffice network of Cass County and determine the cost per minute of transport to each of the Company's switches over common transport trunks. It is not necessary to add any additional costs for dedicated transport.

Q. WHAT IS YOUR RECOMMENDATION WITH RESPECT TO THIS ISSUE?

A. Dedicated transport costs should be excluded entirely from all Petitioner transport and termination costs.

Correction of the Petitioner Cost Studies

Q. PLEASE SUMMARIZE THE CORRECTIONS THAT ARE NECESSARY TO PROPERLY COMPUTE THE PETITIONERS' FORWARD-LOOKING ECONOMIC COSTS FOR COMMON TRANSPORT?

A. First, common transport cable costs must be corrected for proper cable length and cable sizes. Cable sharing should be recognized through the proper calculation of forward-looking unit costs. Transmission equipment then should be sized according to each Petitioner's network requirements. Finally, dedicated transport costs should be excluded entirely. I have made these corrections for twenty companies, and I will attempt to correct the common transport costs of the remaining Petitioners as the necessary information is made available.

ANALYSIS OF ISUP SIGNALING COSTS

Description of Costs

Q. WHAT ARE ISUP SIGNALING COSTS?

A. Carriers use signaling to set-up and take-down interoffice calls, whether the call remains on their network or is destined to the network of another carrier. Most carriers use a Signaling System 7 (SS7) network that is separate from the network used in transporting voice or data communications. An SS7 network may be used, for example, to retrieve information from a database (and these are known as TCAP messages). Of relevance to this proceeding are ISUP messages over an SS7 network. ISUP is an acronym meaning ISDN User Part. ISUP signaling refers to the exchange of short data messages between Petitioner end offices and computers used to set-up interoffice telephone calls. The computer is referred to as a Signal Transfer Point (STP) and is part of the SS7 network. ISUP signaling costs are the capital costs and operating expenses associated with plant used to handle these messages.

Q. EARLIER YOU SAID THAT ISUP SIGNALING COSTS ARE SMALL. IF SO, WHY ARE YOU COMMENTING ON THE SIGNALING COSTS OF THE PETITIONERS?

A. Some of the Petitioners have estimated very high signaling costs. As I discuss below, HAI 5.0a's cost methodology for small ILECs is wrong, and the costs should be corrected.

Q. WHAT ARE THE PETITIONER'S ISUP SIGNALING COSTS?

A. Exhibit WCC-19 shows the signaling cost per minute of use for each Petitioner. The ILEC costs range from $0.0007 per minute for Fidelity Telephone Company to $0.0193 per minute for Iamo Telephone Company.

Q. WHAT ARE THE MAIN COMPONENTS OF THESE COSTS?

A. ISUP signaling costs consist of two parts - the cost of the data link or transport between the Petitioner's end office and the STP, and the cost of the STP. Exhibit WCC–20 gives the breakdown of each ILEC's signaling cost between these two components. The link cost is the larger part of the total, representing on average 90% of ISUP signaling costs. I focused on link costs for my analysis.

Signaling Issue No. 1: Overstatement of Signaling Link Costs

Q. WHY ARE THE SIGNALING LINK COSTS COMPUTED BY HAI 5.0a WRONG?

A. The HAI model generally overstates signaling link costs. It does this in two ways.

First, the model assumes there is a pair of signaling links for every Petitioner switch, whether it is a standalone, host or remote switch. The Petitioners do not have signaling link pairs for all their switches. For example, the HAI model assumes Fidelity Telephone has a pair of signaling links for each of eight switches, or a total of 16 links.[30] In reality, based on its response to T-Mobile's

[30] The HAI model indicates Fidelity Telephone has eight end office switches. **___ _____ ** SS7 links would not be required for DLC systems or the remotes.

data request, **_____

_____**.

Secondly, the HAI model assumes that the signaling links run over the same, fictitious interoffice cable routes as common transport; i.e., a cable route from each Petitioner switch to the nearest BOC switch. Consequently, the Petitioner signaling link costs suffer from the effects of Transport Issue No. 1. They also suffer from Transport Issues No. 2 and 3.

Correction of Petitioner Cost Studies

Q. HOW DID YOU CORRECT THE PETITIONER ISUP SIGNALING COSTS FOR THESE ERRORS?

A. I used the actual, current costs the Petitioners are paying for SS7 interconnection links, which were provided in response to T-Mobile data request No. 41. **_____

_____

_____

_____

_____** This is the amount paid by ILECs using the Missouri Network Alliance as their service provider.

Then, I simply divided the monthly SS7 interconnection service charge by the HAI model estimate of ISUP and TCAP messages (on a monthly basis).[31] The resulting cost per message was adjusted to compute the corrected link cost per

[31] TCAP stands for "Transaction Capabilities Application Par." TCAP messages are requests for and responses to requests for database lookups made by ILEC switches.

minute, using the same values as in HAI 5.0a for messages per call attempt, call completion ratio and minutes per call. I did not modify the STP costs per minute of the Petitioners. The graph in Exhibit WCC-21 shows the corrected ISUP signaling costs per minute. The corrected ILEC signaling costs range from **_____ _____**. The larger companies (with more than 20 million signaling messages per year) have signaling costs of $0.001 per minute or less.

Q. DO YOU RECOMMEND FURTHER ADJUSTMENTS IN THE ISUP SIGNALING COSTS?

A. No, I will accept that the "least cost, most efficient" means for Peace Valley Telephone to reach STPs is to **_____ _____**.[32] However, if there is a lower cost alternative, the TELRIC methodology requires that its forward-looking economic costs reflect this alternative. At this point, I have no way of knowing what other alternatives the Company might have. The same comments apply to the other Petitioners with relatively high signaling link costs per minute.

CONCLUSIONS AND RECOMMENDATIONS

Q. HAVING ANALYZED THE PETITIONER COST STUDIES PRODUCED USING THE HAI 5.0a MODEL WHAT IS YOUR OVERALL IMPRESSION?

---

[32] **_____ _____ _____ _____.**

A. HAI 5.0a as used by the Petitioners utterly fails to accurately model the transport and termination costs of small ILECs in Missouri. Its results bear no relationship to the real world network architectures of the Petitioners; its cost data, particularly for switching, are outdated; and, it makes key assumptions, such the percentage of end office switching that is usage sensitive, that are no longer valid. Even the developers of the HAI model have recognized the need to change the model with respect to the usage-sensitive portion of switching. The current HAI model assumes that no portion of switching cost is usage-sensitive.

Q. HAS THE COST EXPERT FOR THE PETITIONERS RECOGNIZED THESE ISSUES IN HAI 5.0a?

A. Yes, in his direct testimony in the *Alma* arbitration, Mr. Schoonmaker expressed "concerns about the validity of the results of the HAI Model I am presenting." Schoonmaker Direct Testimony, IO-2005-0468, at 7 (July 21, 2005). He went on to describe his "concerns" about "a lack of sufficient time and resources to fully explore all the proposed default inputs" and that the model's default values "may not reflect the economic costs of the companies in all respects." *Id.* at 7-8. He noted the "broad inputs and generalized formulas for all companies, rather than specific inputs for individual companies, [which] tend to mask unique circumstances of individual companies, which cause substantial differences in costs in the real world." *Id.* at 8. Perhaps the most prescient of his observations was the following:

> [The] results from the model are likely to be less accurate for smaller geographic areas, such as individual exchanges or small companies with a few exchanges, than they are for large

> companies, such as SWBT and Verizon who have hundreds of exchanges. *Id.* at 8.

The Commission must understand that HAI 5.0a is inaccurate for all the Petitioners in this arbitration and therefore cannot be used to determine forward-looking economic costs as the basis of reciprocal compensation rates for small ILECs in Missouri.

Q. YET, MR. SCHOONMAKER SUPPORTED THE COSTS DEVELOPED BY HAI 5.0a, DID HE NOT?

A. Mr. Schoonmaker gave the following rationale for supporting the HAI model results:

> Given the requirements in the FCC rules to develop forward-looking costs and the current state of tools that are available to develop such cost results at a reasonable cost to the companies, I believe the costs developed are the best available forward-looking costs of these companies for meeting the requirements of the FCC rules. However, I specifically have concerns about giving too much reliance to individual company results when those results reflect a single exchange or only a few exchanges. While individual company results have been developed for each of the Petitioners, I believe it is more appropriate to use an average of the companies as a proxy for each of the individual companies rather than using the individual company rates themselves. Schoonmaker Direct, IO-2005-0468, at 9.

Q. DO YOU AGREE WITH HIS RATIONALE?

A. Absolutely not. I have shown in my testimony for Cass County Telephone that it is not difficult or necessarily costly to compute transport and termination costs that comply with the FCC rules. Much of the complexity of the HAI model is in developing loop costs where customer locations and feeder and distribution cable design and costing are very involved. Reciprocal compensation (or recovery of transport and termination costs) does not involve loop costs, so a tool as complex

as HAI 5.0a, even if it was not as flawed as it is, is not necessary. The HAI model also is complex, because it models Bell Operating Company and large Independent company networks involving hundreds of switches and complex interoffice networks. The networks of the Petitioners are much simpler. Again, there is no need for the complexity of the HAI model.

I believe it is very practical for the Petitioners to determine forward-looking economic costs using simple methods, such as those I employed for Cass County. I already have computed corrected ISUP Signaling costs using the actual rates the Petitioners are paying for SS7 network connection. If the Commission adopts the position taken by the FCC and other state commissions regarding usage-sensitive switching costs, I have computed a cost of $0.0012 per minute for end office switching. And, I have estimated common transport for twenty of twenty-seven petitioners. The results of these corrections are shown in Exhibit WCC-1 and the graph I presented early in my testimony.

In short, we are very close to having reasonable forward-looking economic costs for the Petitioners. There is no need to try to "fix" the HAI model.

Q. IS MR. SCHOONMAKER CORRECT THAT AVERAGING THE PETITIONER COST RESULTS REDUCES THE CHANCES FOR ERROR?

A. With all due respect, he is wrong about this. As I have shown, HAI 5.0a systematically overstates interoffice cable lengths and cable sizes. It does not recognize the sharing of interoffice cables. Each Petitioner's end office switching

cost is based on an inflated switching investment per line that Petitioners attempt to justify by an erroneous comparison of embedded investment to HAI model results. ISUP signaling costs suffer from the same interoffice cable costing errors. And dedicated transport costs should not be included for any of the companies. All of these errors result in overstating transport and termination costs and no amount of averaging will eliminate the errors.

Q. What is your overall conclusion concerning Petitioners' transport and termination costs?

A. When properly corrected through application of appropriate TELRIC principles, the costs incurred by the Petitioners are less than the 3.5 cent per minute rate which they propose. Under governing FCC rules the Petitioners have failed to prove that their rate proposal is cost-justified. In my testimony I provide corrections to the Petitioners' costs, using appropriate governing TELRIC principles, and provide a chart containing those costs for each Petitioner. See Exhibit 1. T-Mobile and Cingular propose that the Arbitrator and the Commission approve interMTA rates for each Petitioner on an individual basis (not a single collective rate, as the Petitioners propose), and that those rates be set at levels no higher than the costs set forth in Exhibit 1. For the seven Petitioners for which I cannot provide accurately redetermined costs, due to their failure to provide necessary information, their proposed rate of 3.5 cents is not supported by their costs, and for those companies the Arbitrator and the Commission should determine that traffic will be exchanged on a bill-and-keep basis unless and until

they respond fully to the T-Mobile data requests. If they respond promptly, I may be able to propose rates for those companies in my rebuttal testimony.

Q. WILL YOU CONTINUE TO ATTEMPT TO OBTAIN PETITIONER INFORMATION NECESSARY TO CORRECT TRANSPORT COSTS FOR THE REMAINING PETITIONERS?

A. Yes, I plan to make every attempt to obtain this information and will either provide a late exhibit for addition to my direct testimony, or I will include the corrected transport costs in rebuttal testimony.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Petition for Arbitration of Unresolved Issues in a Section 251(b)(5) Agreement with T-Mobile USA, Inc.	)))))	Case No. TO-2006-0147, et al Consolidated

AFFIDAVIT OF W. CRAIG CONWELL

STATE OF SOUTH CAROLINA

COUNTY OF GREENVILLE

W. Craig Conwell, appearing before me, affirms and states:

1. My name is W. Craig Conwell. I am an independent telecommunications consultant.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of T-Mobile USA, Inc. and Cingular Wireless, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby affirm that my answers contained in the attached testimony to the questions propounded, including any attachment thereto, are true and accurate to the best of my knowledge, information and belief.

W. Craig Conwell

Subscribed and sworn to before me in the 5th day of Jan, 2006.

Notary Public

My Commission Expires:

3-24-09

Exhibit WCC–1

Corrected Transport and Termination Costs

	Corrected Cost Studies				
Company	End Office Switching *	ISUP Signaling	Dedicated Transport	Common Transport	Total
BPS Tel. Co.	$ 0.00118	$ 0.00133	$ -	$ 0.00142	$ 0.0039
Cass County Tel. Co.	$ 0.00118	$ 0.00069	$ -	$ 0.00545	$ 0.0073
Citizens Tel. Co. - MO	$ 0.00117	$ 0.00100	$ -	$ 0.00244	$ 0.0046
Craw-Kan Tel. Coop. - MO	$ 0.00119	$ 0.00157	$ -	NA	NA
Ellington Tel. Co.	$ 0.00118	$ 0.00225	$ -	$ 0.00568	$ 0.0091
Farber Tel. Co.	$ 0.00118	$ 0.00209	$ -	$ 0.00413	$ 0.0074
Fidelity Tel. Co.	$ 0.00117	$ 0.00039	$ -	$ 0.00545	$ 0.0070
Granby Tel. Co. - MO	$ 0.00118	$ 0.00136	$ -	$ -	$ 0.0025
Grand River Mutual Tel. Co. - MO	$ 0.00118	$ 0.00046	$ -	$ 0.00545	$ 0.0071
Green Hills Tel. Co.	$ 0.00119	$ 0.00108	$ -	$ 0.00545	$ 0.0077
Holway Tel. Co.	$ 0.00119	$ 0.00558	$ -	NA	NA
Iamo Tel. Co. - MO	$ 0.00119	$ 0.00287	$ -	NA	NA
Kingdom Tel. Co.	$ 0.00119	$ 0.00092	$ -	$ 0.00568	$ 0.0078
KLM Tel. Co.	$ 0.00118	$ 0.00269	$ -	$ 0.00640	$ 0.0103
Lathrop Tel. Co.	$ 0.00119	$ 0.00252	$ -	$ 0.00091	$ 0.0046
Le-Ru Tel. Co.	$ 0.00120	$ 0.00608	$ -	$ 0.00740	$ 0.0147
Mark Twain Rural Tel. Co.	$ 0.00119	$ 0.00099	$ -	$ 0.00545	$ 0.0076
McDonald County Tel. Co.	$ 0.00117	$ 0.00118	$ -	$ 0.00740	$ 0.0097
Miller Tel. Co. - MO	$ 0.00119	$ 0.00307	$ -	$ 0.00413	$ 0.0084
New Florence Tel. Co.	$ 0.00116	$ 0.00680	$ -	$ 0.00413	$ 0.0121
Oregon Farmers Mutual Tel. Co.	$ 0.00117	$ 0.00279	$ -	$ 0.00413	$ 0.0081
Peace Valley Tel. Co.	$ 0.00120	$ 0.00929	$ -	$ 0.00413	$ 0.0146
Rock Port Tel. Co.	$ 0.00116	$ 0.00195	$ -	NA	NA
Steelville Tel. Exch. Inc.	$ 0.00117	$ 0.00145	$ -	$ 0.00545	$ 0.0081
Goodman Tel. Co.	$ 0.00119	$ 0.00199	$ -	NA	NA
Ozark Tel. Co.	$ 0.00118	$ 0.00199	$ -	NA	NA
Seneca Tel. Co.	$ 0.00118	$ 0.00199	$ -	NA	NA

* Note: End office switching costs reflect today's usage-sensitive portion of switching plant, which is limited to switch trunk equipment connecting interoffice trunks.

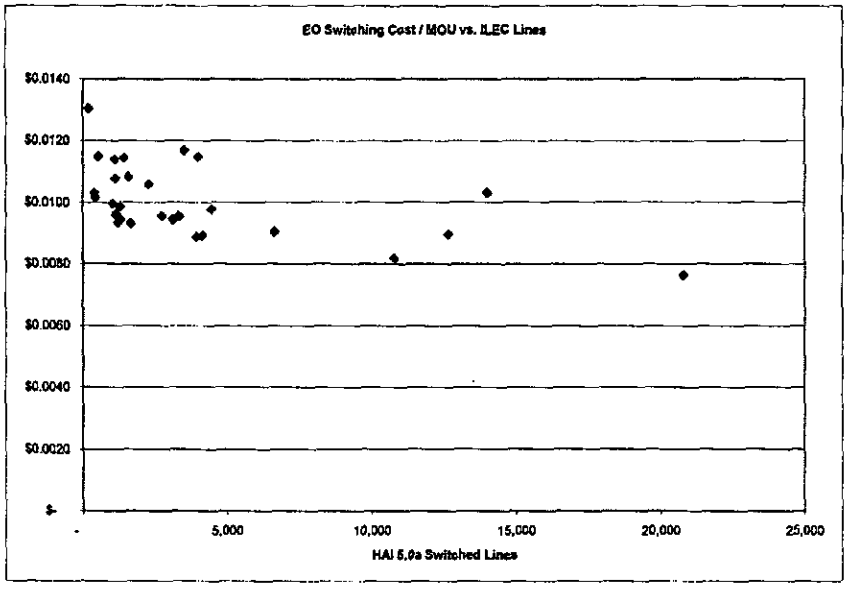
NA: Not available; insufficient Petitioner information available to produce corrected common transport costs.

Exhibit WCC-2

End Office Switching Costs

HAI 5.0a Output - MO ILECs

Company	EO Switching Cost / Minute	Minutes of Use	Switched Lines	Percent of Total MOU
BPS Tel. Co.	$ 0.0096	38,491,741	3,335	3%
Cass County Tel. Co.	$ 0.0091	76,557,012	6,633	6%
Citizens Tel. Co. - MO	$ 0.0089	45,762,507	3,943	4%
Craw-Kan Tel. Coop. - MO	$ 0.0106	26,055,608	2,284	2%
Ellington Tel. Co.	$ 0.0108	18,223,586	1,579	1%
Farber Tel. Co.	$ 0.0131	2,427,510	211	0%
Fidelity Com. Svc. I	$ 0.0077	261,807,131	20,794	20%
Fidelity Com. Svc. II	$ 0.0082	128,570,072	10,792	10%
Fidelity Tel. Co.	$ 0.0090	146,978,886	12,667	11%
Granby Tel. Co. - MO	$ 0.0096	31,461,510	2,743	2%
Grand River Mutual Tel. Co. - MO	$ 0.0103	161,848,746	14,008	12%
Green Hills Telecom. Svc.	$ 0.0094	14,325,195	1,222	1%
Green Hills Tel. Co.	$ 0.0117	40,241,177	3,529	3%
Holway Tel. Co.	$ 0.0115	6,305,165	552	0%
Iamo Tel. Co. - MO	$ 0.0114	12,802,483	1,118	1%
Kingdom Tel. Co.	$ 0.0098	51,088,930	4,461	4%
KLM Tel. Co.	$ 0.0115	16,619,991	1,448	1%
Lathrop Tel. Co.	$ 0.0099	14,893,363	1,303	1%
Le-Ru Tel. Co.	$ 0.0094	14,824,245	1,306	1%
Mark Twain Com. Co.	$ 0.0108	12,602,724	1,124	1%
Mark Twain Rural Tel. Co.	$ 0.0115	45,634,646	4,013	3%
McDonald County Tel. Co.	$ 0.0094	36,227,359	3,115	3%
Miller Tel. Co. - MO	$ 0.0100	11,937,083	1,048	1%
New Florence Tel. Co.	$ 0.0102	5,135,848	439	0%
Oregon Farmers Mutual Tel. Co.	$ 0.0096	13,263,512	1,143	1%
Peace Valley Tel. Co.	$ 0.0103	4,548,122	402	0%
Rock Port Tel. Co.	$ 0.0093	19,545,162	1,667	1%
Steelville Tel. Exch. Inc.	$ 0.0089	47,865,151	4,139	4%
Total	$ 0.0092	1,306,044,265	111,018	100%
Goodman Tel. Co.	$ 0.0099	19,402,087	1,706	
Ozark Tel. Co.	$ 0.0094	22,736,454	1,970	
Seneca Tel. Co.	$ 0.0089	32,872,951	2,857	



	A	B	C	D	E	F	G	H	I
1	**Transport and Termination TELRIC**								
2									
3	**End Office Switching**								
4									
5	**Company:**	**Cass County Tel Co**							
6									
7					Switch - CLLI Code				
8		CGTNMOXA	CLEVMOXA	DRXLMOXA	ELYNMOXA	GRCYMOXA	PCLRMOXA	Total - Original	
9	**Plant Investment**								
10	*End office switching*								
11	Constant EO switching investment term, small ICO	$ 520.14	$ 520.14	$ 520.14	$ 520.14	$ 520.14	$ 520.14	$ 520.14	
12									
13	Multiplicative EO switching investment term	-14.922	-14.922	-14.922	-14.922	-14.922	-14.922	-14.922	
14	Switched lines	437	619	864	517	1,396	2,800	6,633	
15	Switch port administrative fill	98%	98%	98%	98%	98%	98%	98%	
16	Equipped line capacity	446	631	882	528	1,424	2,857	6,768	
17	Switch size adjustment	$ (91.02)	$ (96.22)	$ (101.20)	$ (93.55)	$ (108.35)	$ (118.74)		
18									
19	Trunk port investment / end	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	
20	Lines / trunk port	6	6	6	6	6	6	6	
21	Trunk port investment adjustment	$ (16.67)	$ (16.67)	$ (16.67)	$ (16.67)	$ (16.67)	$ (16.67)	$ (16.67)	
22									
23	Analog line circuit offset for DLC lines, per line	$ 5.00	$ 5.00	$ 5.00	$ 5.00	$ 5.00	$ 5.00	$ 5.00	
24	Total DLC lines	442	642	873	522	1,443	2,913	6,835	
25	Total lines	442	642	873	522	1,443	2,913	6,835	
26	Percent DLC lines	100%	100%	100%	100%	100%	100%	100%	
27	DLC line adjustment	$ (5.00)	$ (5.00)	$ (5.00)	$ (5.00)	$ (5.00)	$ (5.00)	$ (5.00)	
28									
29	SS7 link termination investment, both ends	$ 900	$ 900	$ 900	$ 900	$ 900	$ 900	$ 900	
30	Link termination investment at switch	$ 450	$ 450	$ 450	$ 450	$ 450	$ 450	$ 450	
31	SS7 links / line	0.0045	0.0031	0.0023	0.0038	0.0014	0.0007		
32	SS7 link investment / line	$ 2.04	$ 1.40	$ 1.03	$ 1.72	$ 0.62	$ 0.31		
33									
34	Trunk ports / line								
35	Local direct trunks (X 2)	0.0272	0.0249	0.0206	0.0268	0.0166	0.0137		
36	Local tandem trunks	0.0045	0.0031	0.0023	0.0038	0.0021	0.0014		
37	Operator services trunks	0.0091	0.0078	0.0069	0.0096	0.0055	0.0045		
38	Direct routed access trunks	0.0430	0.0389	0.0344	0.0402	0.0319	0.0306		
39	Tandem routed access trunks	0.0408	0.0374	0.0332	0.0383	0.0312	0.0302		
40	IntraLATA direct trunks (X 2)	0.0045	0.0031	0.0023	0.0038	0.0014	0.0007		
41	IntraLATA tandem trunks	0.0181	0.0171	0.0149	0.0172	0.0125	0.0110		
42	Total ports / line	0.1472	0.1323	0.1145	0.1398	0.1012	0.0920		
43									
44	Total lines / wirecenter	442	642	873	522	1,443	2,913	6,835	
45	Total switched lines	437	619	864	517	1,396	2,800	6,633	
46	Trunk port investment / end	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	
47	Trunk port investment / line	$ 14.88	$ 13.74	$ 11.57	$ 14.11	$ 10.46	$ 9.57		
48									
49	Subtotal - Investment / line	$ 424.38	$ 417.39	$ 409.88	$ 420.76	$ 401.21	$ 389.61		
50									

	A	B	C	D	E	F	G	H	I
1	**Transport and Termination TELRIC**								
2									
3	**End Office Switching**								
4									
5	**Company:**	**Cass County Tel Co**							
6									
7					Switch - CLLI Code				
8		CGTNMOXA	CLEVMOXA	DRXLMOXA	ELYNMOXA	GRCYMOXA	PCLRMOXA	Total - Original	
49	Subtotal - investment / line	$ 424.38	$ 417.39	$ 409.88	$ 420.76	$ 401.21	$ 389.61	$ [illegible]	
50									
51	Switch port administrative fill	98%	98%	98%	98%	98%	98%	98%	
52	Switch installation multiplier	1.1	1.1	1.1	1.1	1.1	1.1	1.1	
53	End office switching investment / line	$ 476.34	$ 468.50	$ 460.06	$ 472.28	$ 450.33	$ 437.32	$ 451.22	
54									
55	End office switching investment	$ 208,024	$ 289,922	$ 397,566	$ 244,364	$ 628,485	$ 1,224,612	$ 2,992,974	
56									
57	*MDF / protector*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
58									
59	*Wirecenter*								
60	Square feet of floor space / switch	500	500	500	500	1,000	1,000		
61	Building construction cost / sq. ft.	$ 75	$ 75	$ 75	$ 75	$ 85	$ 85		
62	Building investment	$ 37,500	$ 37,500	$ 37,500	$ 37,500	$ 85,000	$ 85,000		
63									
64	Power plant	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 10,000	$ 10,000		
65	Wirecenter investment	$ 42,500	$ 42,500	$ 42,500	$ 42,500	$ 95,000	$ 95,000	$ 360,000	
66									
67	*Land*								
68	Square feet of land / switch	1,000	1,000	1,000	1,000	2,000	2,000		
69	Land cost / sq. ft.	$ 5.00	$ 5.00	$ 5.00	$ 5.00	$ 7.50	$ 7.50		
70	Land investment	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 15,000	$ 15,000	$ 50,000	
71									
72	Total plant investment	$ 255,524	$ 337,422	$ 445,066	$ 291,864	$ 738,485	$ 1,334,612	$ 3,402,974	
73									
74	**Annual costs**								
75	*Capital costs*								
76	Capital cost factors								
77	Digital switching	16.2%	16.2%	16.2%	16.2%	16.2%	16.2%	16.2%	
78	Buildings	15.1%	15.1%	15.1%	15.1%	15.1%	15.1%	15.1%	
79	Land	16.8%	16.8%	16.8%	16.8%	16.8%	16.8%	16.8%	
80	Annual capital costs								
81	End office switching	$ 33,662	$ 46,914	$ 64,333	$ 39,542	$ 101,700	$ 198,163	$ 484,314	
82	MDF / protector	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
83	Wirecenter	$ 6,420	$ 6,420	$ 6,420	$ 6,420	$ 14,350	$ 14,350	$ 54,379	
84	Land	$ 841	$ 841	$ 841	$ 841	$ 2,524	$ 2,524	$ 8,413	
85	Total	$ 40,923	$ 54,175	$ 71,594	$ 46,803	$ 118,574	$ 215,037	$ 547,106	
120									

	A	B	C	D	E	F	G	H	I
1	**Transport and Termination TELRIC**								
2									
3	**End Office Switching**								
4									
5	**Company:**	**Cass County Tel Co**							
6									
7		Switch - CLLI Code							
8		CGTNMOXA	CLEVMOXA	DRXLMOXA	ELYNMOXA	GRCYMOXA	PCLRMOXA	Total - Original	
87	*Network expenses*								
88	Network expense factors								
89	Digital switching	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	
90	Land & buildings	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	
91	Annual network expenses								
92	End office switching	$ 9,881	$ 13,771	$ 18,884	$ 11,607	$ 29,853	$ 58,169	$ 142,166	
93	MDF / protector	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
94	Wirecenter	$ 4,687	$ 4,687	$ 4,687	$ 4,687	$ 10,476	$ 10,476	$ 39,698	
95	Land	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
96	Total	$ 14,568	$ 18,458	$ 23,571	$ 16,294	$ 40,329	$ 68,645	$ 181,864	
97									
98	*Support expenses*								
99	Ratio of support expenses to direct expenses	22.3%	22.3%	22.3%	22.3%	22.3%	22.3%	22.3%	
100	Direct expenses	$ 55,491	$ 72,633	$ 95,165	$ 63,097	$ 158,902	$ 283,682	$ 728,970	
101	Total	$ 12,377	$ 16,201	$ 21,226	$ 14,074	$ 35,443	$ 63,275	$ 162,596	
102									
103	Annual costs							$ 891,566	
104									
105	Corporate overhead factor							10.4%	
106	Annual costs w/ corporate overhead							$ 984,269	
107									
108	Carrier-to-carrier customer service percentage							0.2%	
109	Annual costs before uncollectibles							$ 986,061	
110									
111	Uncollectibles percentage							0.4%	
112	Total annual costs							$ 990,354	
113									
114	End office non-port fraction							70%	
115	Non-line port annual costs							$ 693,248	
116									
117	Annual switched minutes							76,557,012	
118	Cost / minute							$ 0.00906	
119									
120									

Exhibit WCC-4

Missouri Small Companies
Comparison of Central Office Switching Investment
Actual Data to USF Models

		Actual 2003 COE Investment	HAI - Missouri Cost Runs	HAI - Default	% Diff HAI - Missouri Runs to Actual	% Diff HAI - Default to Actual
AllTel Missouri, Inc.	1	29,416,818	25,441,000	19,458,000	-13.52%	-33.85%
Alma Telephone Company	2	244,127	173,000	134,000	-29.14%	-45.11%
BPS Telephone Company	3	1,430,445	1,536,000	1,159,000	7.38%	-18.98%
Cass County Telephone Company	4	6,106,918	3,047,000	2,298,000	-50.11%	-62.37%
Chariton Valley Telephone Co	5	0	3,663,000	2,800,000	#DIV/0!	#DIV/0!
Choctaw Telephone Company	6	320,447	253,000	194,000	-21.05%	-39.46%
Citizens Telephone Company of MO	7	3,066,150	1,805,000	1,359,000	-41.13%	-55.68%
Craw Kan Telephone Coop., Inc.	8	12,178,306	1,114,000	857,000	-90.85%	-92.96%
Ellington Telephone Company	9	773,305	768,000	591,000	-0.69%	-23.57%
Farber Telephone Company	10	212,755	111,000	87,000	-47.83%	-59.11%
Fidelity Telephone Company	11	5,534,617	6,598,000	4,942,000	19.21%	-10.71%
Goodman Telephone Company, Inc.	12	589,186	795,000	603,000	34.93%	2.34%
Granby Telephone Company	13	2,598,904	1,258,000	947,000	-51.59%	-63.56%
Grand River Mutual Telephone Corporation	14	13,573,848	6,712,000	5,136,000	-50.55%	-62.16%
Green Hills Telephone Corporation	15	1,030,977	1,754,000	1,358,000	70.13%	31.72%
Holway Telephone Company	16	440,153	275,000	213,000	-37.52%	-51.61%
Iamo Telephone Company	17	2,567,649	554,000	429,000	-78.42%	-83.29%
Kingdom Telephone Company	18	3,842,062	2,111,000	1,608,000	-45.06%	-58.15%
KLM Telephone Company	19	810,051	698,000	535,000	-13.83%	-33.95%
Lathrop Telephone Company	20	959,356	617,000	470,000	-35.69%	-51.01%
Le-Rue Telephone Company	21	1,612,377	621,000	474,000	-61.49%	-70.60%
Mark Twain Rural Telephone Company	22	3,747,821	2,428,000	1,979,000	-35.22%	-47.20%
McDonald County Telephone Company	23	1,763,550	1,440,000	1,088,000	-18.35%	-38.31%
Mid-Missouri Telephone Co	24	1,413,149	1,771,000	1,368,000	25.32%	-3.19%
Millers Telephone Company	25	705,216	487,000	368,000	-30.94%	-47.82%
Mokan Dial Inc- Mo	26	2,319,485	344,000	262,000	-85.17%	-88.70%
New Florence Telephone Company	27	110,589	213,000	164,000	92.61%	48.30%
New London Telephone Company	28	702,420	439,000	333,000	-37.50%	-52.59%
Northeast Missouri Rural Tel Co	29	6,919,581	3,647,000	2,775,000	-47.29%	-59.90%
Orchard Farm Telephone Company	30	537,456	354,000	269,000	-34.13%	-49.95%
Oregon Farmers Mutual Tel. Co.	31	808,549	529,000	400,000	-34.57%	-50.53%
Ozark Telephone Company	32	719,687	918,000	695,000	27.56%	-3.43%
Peace Valley Telephone Company	33	765,229	196,000	151,000	-74.39%	-80.27%
Rock Port Telephone Company	34	1,206,103	768,000	580,000	-36.32%	-51.91%
Seneca Telephone Company	35	1,640,929	1,295,000	972,000	-21.08%	-40.77%
Steelville Telephone Exchange, Inc.	36	1,727,346	2,333,000	1,865,000	35.06%	7.97%
Stoutland Telephone Company	37	1,020,298	607,000	463,000	-40.51%	-54.62%
Total		113,415,859	74,010,000	56,584,000	-34.74%	-50.11%
Total Less CV, GH, Ckan, GRM, MoKan		84,313,243	60,423,000	46,171,000	-28.34%	-45.24%

The total used for comparison purposes exludes the following companies:
Chariton Valley - No actual investment because switch is leased
Green Hills - Remote switching unit investment is recorded as circuit equipment investment rather than COE switching
Craw-Kan - Actual data includes both Missouri and Kansas exchanges, HAI only includes Missouri exchanges.
Grand River Mutual - Actual data includes both Missouri and Iowa exchanges, HAI only includes Missouri exchanges.
MoKan - Actual data includes both Missouri and Kansas exchanges, HAI only includes Missouri exchanges.

Exhibit WCC-5 – Page 1 of 2

Missouri Small Companies
Comparison of Central Office Switching Investment
Actual Data to USF Models

		Actual 2003 COE Investment	HAI - Missouri Cost Runs	HAI - Default	% Diff HAI - Missouri Runs to Actual	% Diff HAI - Default to Actual
BPS Telephone Company	3	$ 1,430,445	$ 1,536,000	$ 1,159,000	7%	-19%
Cass County Telephone Company	4	$ 6,106,918	$ 3,047,000	$ 2,298,000	-50%	-62%
Citizens Telephone Company of MO	7	$ 3,066,150	$ 1,805,000	$ 1,359,000	-41%	-56%
Ellington Telephone Company	9	$ 773,305	$ 768,000	$ 591,000	-1%	-24%
Farber Telephone Company	10	$ 212,755	$ 111,000	$ 87,000	-48%	-59%
Fidelity Telephone Company	11	$ 5,534,617	$ 6,598,000	$ 4,942,000	19%	-11%
Granby Telephone Company	13	$ 2,598,904	$ 1,258,000	$ 947,000	-52%	-64%
Holway Telephone Company	16	$ 440,153	$ 275,000	$ 213,000	-38%	-52%
Iamo Telephone Company	17	$ 2,567,649	$ 554,000	$ 429,000	-78%	-83%
Kingdom Telephone Company	18	$ 3,842,062	$ 2,111,000	$ 1,608,000	-45%	-58%
KLM Telephone Company	19	$ 810,051	$ 698,000	$ 535,000	-14%	-34%
Lathrop Telephone Company	20	$ 959,356	$ 617,000	$ 470,000	-36%	-51%
Le-Rue Telephone Company	21	$ 1,612,377	$ 621,000	$ 474,000	-61%	-71%
Mark Twain Rural Telephone Company	22	$ 3,747,821	$ 2,428,000	$ 1,979,000	-35%	-47%
McDonald County Telephone Company	23	$ 1,763,550	$ 1,440,000	$ 1,088,000	-18%	-38%
Millers Telephone Company	25	$ 705,216	$ 487,000	$ 368,000	-31%	-48%
New Florence Telephone Company	27	$ 110,589	$ 213,000	$ 164,000	93%	48%
Oregon Farmers Mutual Tel. Co.	31	$ 808,549	$ 529,000	$ 400,000	-35%	-51%
Peace Valley Telephone Company	33	$ 765,229	$ 196,000	$ 151,000	-74%	-80%
Rock Port Telephone Company	34	$ 1,206,103	$ 768,000	$ 580,000	-36%	-52%
Steelville Telephone Exchange, Inc.	36	$ 1,727,346	$ 2,333,000	$ 1,865,000	35%	8%
Total less Green Hills, Craw-Kan & Grand River		$ 40,789,145	$ 28,393,000	$ 21,707,000	-30%	-47%

EXHIBIT WCC-5 CONTAINS INFORMATION DEEMED PROPRIETARY BY PETITIONERS.

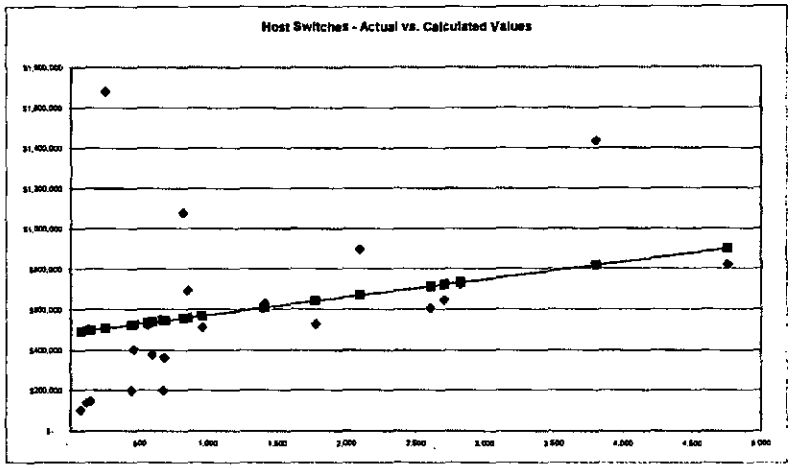
RUS Calculated vs. Actual Costs

Host Offices

Fixed cost (1999)	$	486,700
Cost / line (1999)	$	87

Number of Lines	Actual Cost per RUS Data	Additional Cost Items: MDF @ $12 / Line	Power	Engineering @ 8%	Actual, Plus Additions	Calculated Cost	Cost Differential	
75	$ 81,000	$ 900	$ 12,000	$ 7,512	$ 101,412	$ 493,225	79%	
120	$ 115,589	$ 1,440	$ 12,000	$ 10,322	$ 139,351	$ 497,140	72%	
150	$ 121,319	$ 1,800	$ 12,000	$ 10,810	$ 145,929	$ 499,750	71%	
253	$ 1,540,904	$ 3,036	$ 12,000	$ 124,475	$ 1,680,415	$ 508,711	-230%	*
443	$ 164,290	$ 5,316	$ 12,000	$ 14,526	$ 196,134	$ 525,241	63%	
460	$ 354,675	$ 5,520	$ 12,000	$ 29,776	$ 401,971	$ 526,720	24%	
560	$ 467,603	$ 6,720	$ 12,000	$ 38,906	$ 525,229	$ 535,420	2%	
598	$ 329,951	$ 7,176	$ 12,000	$ 27,930	$ 377,057	$ 538,726	30%	
674	$ 163,218	$ 8,088	$ 12,000	$ 14,664	$ 197,970	$ 545,338	64%	
684	$ 315,709	$ 8,208	$ 12,000	$ 26,873	$ 362,790	$ 546,208	34%	
820	$ 977,080	$ 9,840	$ 12,000	$ 79,914	$ 1,078,834	$ 558,040	-93%	*
850	$ 620,200	$ 10,200	$ 12,000	$ 51,392	$ 693,792	$ 560,650	-24%	**
960	$ 451,225	$ 11,520	$ 12,000	$ 37,980	$ 512,725	$ 570,220	10%	
1,412	$ 526,088	$ 16,944	$ 40,000	$ 46,643	$ 629,675	$ 609,544	-3%	
1,779	$ 429,417	$ 21,348	$ 40,000	$ 39,261	$ 530,026	$ 641,473	17%	
2,100	$ 766,053	$ 25,200	$ 40,000	$ 66,500	$ 897,753	$ 669,400	-34%	
2,615	$ 490,666	$ 31,380	$ 40,000	$ 44,964	$ 607,010	$ 714,205	15%	
2,714	$ 526,839	$ 32,568	$ 40,000	$ 47,953	$ 647,360	$ 722,818	10%	
2,830	$ 596,830	$ 33,960	$ 40,000	$ 53,663	$ 724,453	$ 732,910	1%	
3,810	$ 1,243,673	$ 45,720	$ 40,000	$ 106,351	$ 1,435,744	$ 818,170	-75%	*
4,760	$ 683,650	$ 57,120	$ 40,000	$ 60,862	$ 821,632	$ 900,820	9%	

* Hosts with large numbers of subtending remotes (10, 13 and 10 remotes / host, respectively).
** Host with large expenditure for ISDN.



RUS Calculated vs. Actual Costs

Remote Offices

Fixed cost (1999)	$	161,800
Cost / line (1999)	$	87

			Additional Cost Items						
Number of Lines	Actual Cost per RUS Data	MDF @ $12 / Line	Power	Remote to Host Connection	Engineering @ 8%	Actual, Plus Additions	Calculated Cost	Cost Differential
75	$ 80,762	$ 900	$ 12,000	$ 27,598	$ 9,701	$ 130,961	$ 168,325	22%
120	$ 46,328	$ 1,440	$ 12,000	$ 27,598	$ 6,989	$ 94,355	$ 172,240	45%
151	$ 72,413	$ 1,812	$ 12,000	$ 27,598	$ 9,106	$ 122,929	$ 174,937	30%
250	$ 109,381	$ 3,000	$ 12,000	$ 27,598	$ 12,158	$ 164,137	$ 183,550	11%
440	$ 80,559	$ 5,280	$ 12,000	$ 27,598	$ 8,435	$ 113,872	$ 200,080	43%
460	$ 98,249	$ 5,520	$ 12,000	$ 27,598	$ 11,469	$ 154,836	$ 201,820	23%
578	$ 88,733	$ 6,936	$ 12,000	$ 27,598	$ 10,821	$ 146,088	$ 212,086	31%
600	$ 104,276	$ 7,200	$ 12,000	$ 27,598	$ 12,086	$ 163,160	$ 214,000	24%
680	$ 181,249	$ 8,160	$ 12,000	$ 27,598	$ 18,321	$ 247,328	$ 220,960	-12%
688	$ 256,750	$ 8,256	$ 12,000	$ 27,598	$ 24,368	$ 328,972	$ 221,656	-48%
810	$ 296,970	$ 9,720	$ 12,000	$ 27,598	$ 27,703	$ 373,991	$ 232,270	-61%
865	$ 117,218	$ 10,380	$ 12,000	$ 27,598	$ 13,376	$ 180,572	$ 237,055	24%
960	$ 176,249	$ 11,520	$ 12,000	$ 27,598	$ 18,189	$ 245,556	$ 245,320	0%
1,864	$ 117,218	$ 22,368	$ 40,000	$ 27,598	$ 16,575	$ 223,759	$ 323,968	31%
1,880	$ 229,663	$ 22,560	$ 40,000	$ 27,598	$ 25,586	$ 345,407	$ 325,360	-6%
2,510	$ 273,000	$ 30,120	$ 40,000	$ 27,598	$ 29,657	$ 400,375	$ 380,170	-5%
2,740	$ 281,600	$ 32,880	$ 40,000	$ 27,598	$ 30,566	$ 412,644	$ 400,180	-3%

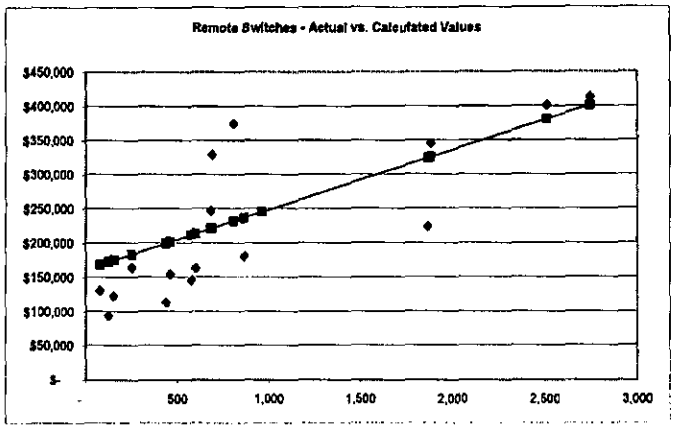


EXHIBIT WCC-7 CONTAINS INFORMATION DEEMED PROPRIETARY BY PETITIONERS.

EXHIBIT WCC-7 CONTAINS INFORMATION DEEMED PROPRIETARY BY PETITIONERS.

Exhibit WCC-8

EXHIBIT WCC-8 CONTAINS INFORMATION DEEMED PROPRIETARY BY PETITIONERS.

Exhibit WCC-9

EXHIBIT WCC-9 CONTAINS INFORMATION DEEMED PROPRIETARY BY PETITIONERS.

Exhibit WCC-10

Common Transport Costs

HAI 5.0a Output - MO ILECs

Company	Common Transport Cost / MOU	Minutes of Use	Percent of Total MOU
BPS Tel. Co.	$ 0.0106	16,681,429	3%
Cass County Tel. Co.	$ 0.0163	33,177,848	6%
Citizens Tel. Co. - MO	$ 0.0181	19,832,693	4%
Craw-Kan Tel. Coop. - MO	$ 0.0626	11,291,890	2%
Ellington Tel. Co.	$ 0.1478	7,897,294	1%
Farber Tel. Co.	$ 0.1147	1,051,771	0%
Fidelity Com. Svc. I	$ 0.0052	113,462,832	20%
Fidelity Com. Svc. II	$ 0.0086	55,719,388	10%
Fidelity Tel. Co.	$ 0.0099	63,698,099	11%
Granby Tel. Co. - MO	$ 0.0099	13,634,729	2%
Grand River Mutual Tel. Co. - MO	$ 0.0695	70,142,418	12%
Green Hills Telecom. Svc.	$ 0.0305	6,208,030	1%
Green Hills Tel. Co.	$ 0.0628	17,439,584	3%
Holway Tel. Co.	$ 0.1596	2,731,987	0%
Iamo Tel. Co. - MO	$ 0.1878	5,547,427	1%
Kingdom Tel. Co.	$ 0.0297	22,140,359	4%
KLM Tel. Co.	$ 0.0564	7,202,482	1%
Lathrop Tel. Co.	$ 0.0204	6,454,377	1%
Le-Ru Tel. Co.	$ 0.0392	6,424,217	1%
Mark Twain Com. Co.	$ 0.0795	5,460,951	1%
Mark Twain Rural Tel. Co.	$ 0.0397	19,776,407	3%
McDonald County Tel. Co.	$ 0.0290	15,700,051	3%
Miller Tel. Co. - MO	$ 0.0226	5,173,352	1%
New Florence Tel. Co.	$ 0.0212	2,225,208	0%
Oregon Farmers Mutual Tel. Co.	$ 0.0258	5,747,516	1%
Peace Valley Tel. Co.	$ 0.2716	1,970,808	0%
Rock Port Tel. Co.	$ 0.0850	8,470,425	1%
Steelville Tel. Exch. Inc.	$ 0.0117	20,743,692	4%
Total	$ 0.0309	566,007,264	100%
Goodman Tel. Co.	$ 0.0280	8,408,092	
Ozark Tel. Co.	$ 0.0327	9,853,014	
Seneca Tel. Co.	$ 0.0200	14,246,088	

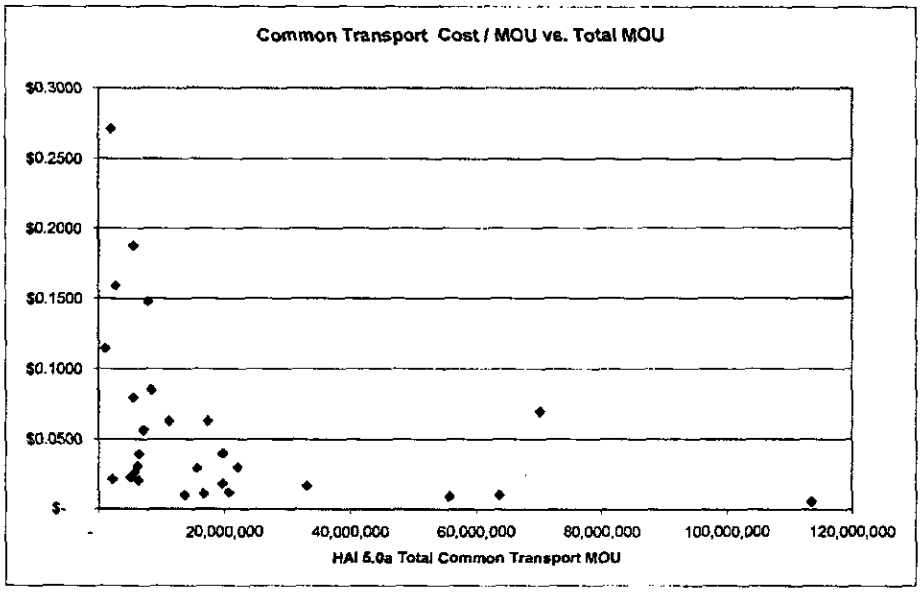


Exhibit WCC-11

Common Transport Costs

HAI 5.0a Output - MO ILECs

Company	Fiber Cost / MOU	Transmission Equipment Cost / MOU	Total Cost / MOU	Transport % of Total
BPS Tel. Co.	$ 0.0081	$ 0.0025	$ 0.0106	76%
Cass County Tel. Co.	$ 0.0138	$ 0.0025	$ 0.0163	84%
Citizens Tel. Co. - MO	$ 0.0159	$ 0.0022	$ 0.0181	88%
Craw-Kan Tel. Coop. - MO	$ 0.0550	$ 0.0076	$ 0.0626	88%
Ellington Tel. Co.	$ 0.1383	$ 0.0095	$ 0.1478	94%
Farber Tel. Co.	$ 0.1028	$ 0.0118	$ 0.1147	90%
Fidelity Com. Svc. I	$ 0.0045	$ 0.0007	$ 0.0052	86%
Fidelity Com. Svc. II	$ 0.0076	$ 0.0010	$ 0.0086	89%
Fidelity Tel. Co.	$ 0.0080	$ 0.0018	$ 0.0099	81%
Granby Tel. Co. - MO	$ 0.0078	$ 0.0021	$ 0.0099	79%
Grand River Mutual Tel. Co. - MO	$ 0.0627	$ 0.0069	$ 0.0695	90%
Green Hills Telecom. Svc.	$ 0.0265	$ 0.0040	$ 0.0305	87%
Green Hills Tel. Co.	$ 0.0523	$ 0.0105	$ 0.0628	83%
Holway Tel. Co.	$ 0.1491	$ 0.0107	$ 0.1598	93%
Iamo Tel. Co. - MO	$ 0.1762	$ 0.0114	$ 0.1876	94%
Kingdom Tel. Co.	$ 0.0251	$ 0.0046	$ 0.0297	84%
KLM Tel. Co.	$ 0.0488	$ 0.0076	$ 0.0564	86%
Lathrop Tel. Co.	$ 0.0179	$ 0.0025	$ 0.0204	88%
Le-Ru Tel. Co.	$ 0.0346	$ 0.0046	$ 0.0392	88%
Mark Twain Com. Co.	$ 0.0709	$ 0.0086	$ 0.0795	89%
Mark Twain Rural Tel. Co.	$ 0.0304	$ 0.0093	$ 0.0397	77%
McDonald County Tel. Co.	$ 0.0261	$ 0.0029	$ 0.0290	90%
Miller Tel. Co. - MO	$ 0.0198	$ 0.0027	$ 0.0226	88%
New Florence Tel. Co.	$ 0.0160	$ 0.0052	$ 0.0212	75%
Oregon Farmers Mutual Tel. Co.	$ 0.0233	$ 0.0025	$ 0.0258	90%
Peace Valley Tel. Co.	$ 0.2610	$ 0.0106	$ 0.2716	96%
Rock Port Tel. Co.	$ 0.0809	$ 0.0041	$ 0.0850	95%
Steelville Tel. Exch. Inc.	$ 0.0093	$ 0.0025	$ 0.0117	79%
Total	$ 0.0273	$ 0.0036	$ 0.0309	88%

Exhibit WCC-12

	A	B	C	D	E
1	**Common Transport Costs - Interoffice Cable**				
2					
3	**HAI 5.0a Model**				
4	Cass County Tel. Co.				
5					
6					
7					
8	Wirecenter	Wirecenter Connects to BOC CLLI	Distance to BOC CLLI	Factor for Route Diversity	Miles of Fiber Cable
9	CGTNMOXA	ARCHMOAX	20.2	2	40.5
10	CLEVMOXA	KSCYMO40	9.8	2	19.6
11	DRXLMOXA	ADRNMOAX	15.8	2	31.6
12	ELYNMOXA	ARCHMOAX	14.9	2	29.7
13	GRCYMOXA	ARCHMOAX	13.6	2	27.2
14	PCLRMOXA	KSCYMO40	10.4	2	20.9
15	Total		84.7		169.5
16					

Exhibit WCC-13

EXHIBIT WCC-13 CONTAINS INFORMATION DEEMED PROPRIETARY BY PETITIONERS.

Exhibit WCC-14

EXHIBIT WCC-14 CONTAINS INFORMATION DEEMED PROPRIETARY BY PETITIONERS.

Exhibit WCC-15

	A	E	F	I	J	K	L	M	N	O	P	Q	R	S	T
1	**Common Transport Costs - Interoffice Cable**														
2															
3	**HAI 5.0a Model**														
4	Cass County Tel. Co.														
5															
6															
7			Total Demand				Buried Cable Investment				Poles		Total Investment		
8	Wirecenter	Miles of Fiber Cable	total DS-0 equivalents, with SA	total DS-0 equivalents, with SA (excl. SS7)	Fiber Cable Investment	Buried Cable Sheath	Fiber Cable	Cable Sheath	Buried Cable Placement	Adjustment for Sharing with Feeder	Pole Investment	Adjustment for Sharing with Feeder	Buried Cable	Aerial Cable	Poles
9	CGTNMOXA	40.5	65	63	$ 748,018	$ 3,575	$ 710,617	$ 3,396	$ 359,369	$ (114,462)	$ 14,853	$ (4,194)	$ 958,921	$ 37,401	$ 10,660
10	CLEVMOXA	19.6	101	99	$ 362,321	$ 21,173	$ 344,205	$ 20,115	$ 174,069	$ (60,226)	$ 7,195	$ (2,568)	$ 478,183	$ 18,116	$ 4,627
11	DRXLMOXA	31.6	101	99	$ 584,389	$ 1,919	$ 555,169	$ 1,823	$ 280,757	$ (98,107)	$ 11,604	$ (2,855)	$ 739,643	$ 29,219	$ 8,749
12	ELYNMOXA	29.7	72	70	$ 549,326	$ 14,749	$ 521,859	$ 14,012	$ 263,912	$ (103,211)	$ 10,908	$ (2,886)	$ 696,572	$ 27,466	$ 8,022
13	GRCYMOXA	27.2	182	180	$ 502,574	$ 1,962	$ 477,446	$ 1,863	$ 241,451	$ (78,776)	$ 9,980	$ (2,160)	$ 641,984	$ 25,129	$ 7,820
14	PCLRMOXA	20.9	361	359	$ 385,697	$ 54,711	$ 366,412	$ 51,976	$ 185,300	$ (99,633)	$ 7,659	$ (1,499)	$ 504,055	$ 19,285	$ 6,160
15	Total	169.5	883	871	$ 3,132,325	$ 98,089	$ 2,975,706	$ 93,185	$ 1,504,858	$ (554,414)	$ 62,199	$ (16,162)	$ 4,019,337	$ 156,615	$ 46,037
16															

	A	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG
1	**Common Transport Costs - Interoffice Cable**													
2														
3	**HAI 5.0a Model**													
4	Cass County Tel. Co.													
5														
6														
7		Investment / Trunk				Common Transport Investment			Annual Costs					
8	Wirecenter	Buried Cable	Aerial Cable	Poles	Common Transport Trunks	Buried Cable	Aerial Cable	Poles	Buried Cable	Aerial Cable	Poles	Total	Minutes of Use	Common Transport - Cable Cost / MOU
9	CGTNMOXA	$ 15,250	$ 595	$ 170	28.0	$ 426,991	$ 16,654	$ 4,747	$ 111,408	$ 4,971	$ 1,621	$ 117,998		
10	CLEVMOXA	$ 4,810	$ 182	$ 47	37.0	$ 177,959	$ 6,742	$ 1,722	$ 46,431	$ 2,013	$ 588	$ 49,032		
11	DRXLMOXA	$ 7,469	$ 295	$ 88	44.0	$ 328,618	$ 12,982	$ 3,887	$ 85,740	$ 3,875	$ 1,327	$ 90,942		
12	ELYNMOXA	$ 9,988	$ 393	$ 115	31.0	$ 309,005	$ 12,184	$ 3,559	$ 80,623	$ 3,637	$ 1,215	$ 85,475		
13	GRCYMOXA	$ 3,568	$ 140	$ 43	66.0	$ 235,488	$ 9,218	$ 2,868	$ 61,441	$ 2,751	$ 979	$ 65,172		
14	PCLRMOXA	$ 1,403	$ 54	$ 17	124.0	$ 173,921	$ 6,654	$ 2,125	$ 45,378	$ 1,986	$ 726	$ 48,090		
15	Total				330.0	$ 1,651,982	$ 64,434	$ 18,908	$ 431,019	$ 19,234	$ 6,456	$ 456,709	33,177,848	$ 0.0138
16														

Exhibit WCC-16

EXHIBIT WCC-16 CONTAINS INFORMATION DEEMED PROPRIETARY BY PETITIONERS.

Exhibit WCC-17

	A	B	C	D	E	F	G	H	I	J	K
1	**Transport Transmission Equipment Investment and Cost / Minute**										
2											
3	HAI 5.0a Results - Small MO ILECs										
4											
5					Cass County Telephone Company				Peace Valley Telephone		
6		CGTNMOXA	CLEVMOXA	DRXLMOXA	ELYNMOXA	GRCYMOXA	PCLRMOXA	Total	PCVYMOXX		
7	Transmission Equipment										
8	OC-48 (12 DS3) Add / drop multiplexer	$ 44,200	$ 44,200	$ 44,200	$ 44,200	$ 44,200	$ 44,200	$ 265,200	$ 44,200		
9	OC-3 terminal multiplexer	$ 30,200	$ 30,200	$ 30,200	$ 30,200	$ 30,200	$ 30,200	$ 181,200	$ 30,200		
10	Digital cross-connect system (per DS3)	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 180,000	$ 30,000		
11	Regenerator	$ 15,000	$ -	$ -	$ -	$ -	$ -		$ 60,000		
12	Leased facility "quasi" investment										
13	Total IO trunks	65	101	101	72	182	361	883	62		
14	Investment / trunk	$ 112	$ 112	$ 112	$ 112	$ 112	$ 112	$ 112	$ 112		
15	Leased facility total	$ 7,242	$ 11,320	$ 11,277	$ 8,023	$ 20,307	$ 40,337	$ 98,506	$ 6,931		
16											
17	Total transmission equipment investment	$ 126,642	$ 115,720	$ 115,677	$ 112,423	$ 124,707	$ 144,737	$ 739,906	$ 171,331		
18											
19	Total IO trunks (excluding SS7 links)	63	99	99	70	180	359	871	60		
20	Transmission equipment investment / trunk	$ 2,014	$ 1,164	$ 1,168	$ 1,609	$ 693	$ 403	$ 850	$ 2,851		
21											
22	Common transport trunks	28	37	44	31	66	124	330	27		
23	Common transport transmission equipment investment	$ 56,392	$ 43,068	$ 51,395	$ 49,872	$ 45,744	$ 49,940	$ 296,410	$ 76,974		
24											
25	Overall annual cost factor							28.4%	27.0%		
26	Annual costs							$ 84,327	$ 20,810		
27											
28	Annual minutes of use							33,177,848	1,970,808		
29	Transmission equipment cost / minute							$ 0.0025	$ 0.0106		

Exhibit WCC-18

EXHIBIT WCC-18 CONTAINS INFORMATION DEEMED PROPRIETARY BY PETITIONERS.

Exhibit WCC-19

ISUP Signaling Costs

HAI 5.0a Output - MO ILECs

Company	ISUP Signaling Cost / MOU	Minutes of Use	Percent of Total MOU
BPS Tel. Co.	$ 0.0007	38,491,741	3%
Cass County Tel. Co.	$ 0.0011	76,557,012	6%
Citizens Tel. Co. - MO	$ 0.0014	45,762,507	4%
Craw-Kan Tel. Coop. - MO	$ 0.0053	26,055,608	2%
Ellington Tel. Co.	$ 0.0156	18,223,586	1%
Farber Tel. Co.	$ 0.0105	2,427,510	0%
Fidelity Com. Svc. I	$ 0.0004	261,807,131	20%
Fidelity Com. Svc. II	$ 0.0004	128,570,072	10%
Fidelity Tel. Co.	$ 0.0007	146,978,886	11%
Granby Tel. Co. - MO	$ 0.0006	31,461,510	2%
Grand River Mutual Tel. Co. - MO	$ 0.0068	161,848,746	12%
Green Hills Telecom. Svc.	$ 0.0019	14,325,195	1%
Green Hills Tel. Co.	$ 0.0059	40,241,177	3%
Holway Tel. Co.	$ 0.0137	6,305,165	0%
Iamo Tel. Co. - MO	$ 0.0193	12,802,483	1%
Kingdom Tel. Co.	$ 0.0021	51,088,930	4%
KLM Tel. Co.	$ 0.0056	16,619,991	1%
Lathrop Tel. Co.	$ 0.0009	14,893,363	1%
Le-Ru Tel. Co.	$ 0.0024	14,824,245	1%
Mark Twain Com. Co.	$ 0.0062	12,602,724	1%
Mark Twain Rural Tel. Co.	$ 0.0036	45,634,646	3%
McDonald County Tel. Co.	$ 0.0019	36,227,359	3%
Miller Tel. Co. - MO	$ 0.0011	11,937,083	1%
New Florence Tel. Co.	$ 0.0014	5,135,648	0%
Oregon Farmers Mutual Tel. Co.	$ 0.0012	13,263,512	1%
Peace Valley Tel. Co.	$ 0.0196	4,548,122	0%
Rock Port Tel. Co.	$ 0.0088	19,545,162	1%
Steelville Tel. Exch. Inc.	$ 0.0009	47,865,151	4%
Total	$ 0.0027	1,306,044,265	100%

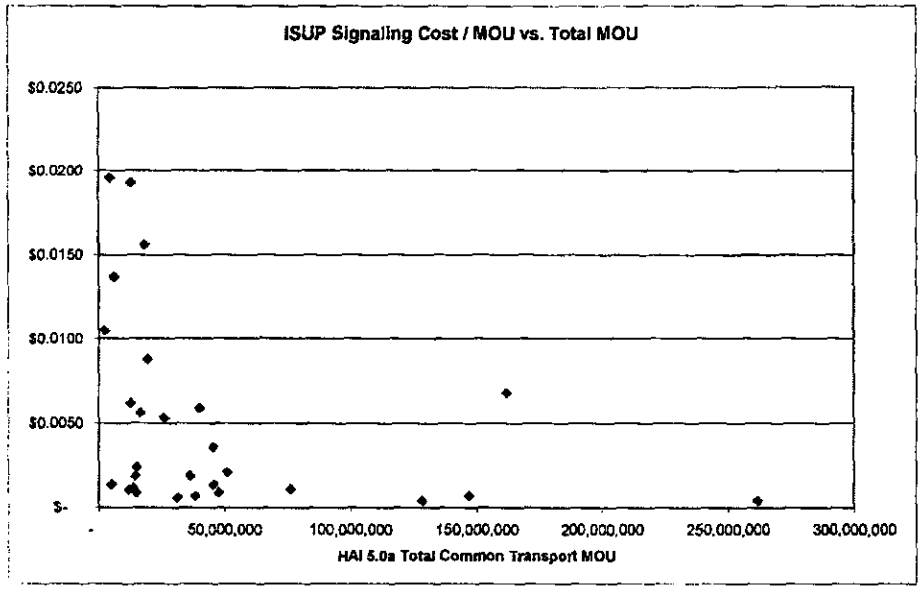


Exhibit WCC-20

ISUP Signaling Costs

HAI 5.0a Output - MO ILECs

Company	STP Cost / MOU	Link Cost / MOU	Total Cost / MOU	Link % of Total
BPS Tel. Co.	$ 0.0003	$ 0.0004	$ 0.0007	61%
Cass County Tel. Co.	$ 0.0003	$ 0.0008	$ 0.0011	76%
Citizens Tel. Co. - MO	$ 0.0003	$ 0.0011	$ 0.0014	81%
Craw-Kan Tel. Coop. - MO	$ 0.0003	$ 0.0050	$ 0.0053	95%
Ellington Tel. Co.	$ 0.0003	$ 0.0153	$ 0.0156	98%
Farber Tel. Co.	$ 0.0003	$ 0.0102	$ 0.0105	98%
Fidelity Com. Svc. I	$ 0.0003	$ 0.0001	$ 0.0004	34%
Fidelity Com. Svc. II	$ 0.0003	$ 0.0001	$ 0.0004	31%
Fidelity Tel. Co.	$ 0.0003	$ 0.0004	$ 0.0007	61%
Granby Tel. Co. - MO	$ 0.0003	$ 0.0003	$ 0.0006	54%
Grand River Mutual Tel. Co. - MO	$ 0.0003	$ 0.0065	$ 0.0068	96%
Green Hills Telecom. Svc.	$ 0.0003	$ 0.0016	$ 0.0019	87%
Green Hills Tel. Co.	$ 0.0003	$ 0.0056	$ 0.0059	96%
Holway Tel. Co.	$ 0.0003	$ 0.0134	$ 0.0137	98%
Iamo Tel. Co. - MO	$ 0.0003	$ 0.0190	$ 0.0193	99%
Kingdom Tel. Co.	$ 0.0003	$ 0.0018	$ 0.0021	87%
KLM Tel. Co.	$ 0.0003	$ 0.0053	$ 0.0056	95%
Lathrop Tel. Co.	$ 0.0003	$ 0.0006	$ 0.0009	69%
Le-Ru Tel. Co.	$ 0.0003	$ 0.0021	$ 0.0024	89%
Mark Twain Com. Co.	$ 0.0003	$ 0.0059	$ 0.0062	96%
Mark Twain Rural Tel. Co.	$ 0.0003	$ 0.0033	$ 0.0036	93%
McDonald County Tel. Co.	$ 0.0003	$ 0.0016	$ 0.0019	87%
Miller Tel. Co. - MO	$ 0.0003	$ 0.0008	$ 0.0011	76%
New Florence Tel. Co.	$ 0.0003	$ 0.0011	$ 0.0014	81%
Oregon Farmers Mutual Tel. Co.	$ 0.0003	$ 0.0009	$ 0.0012	78%
Peace Valley Tel. Co.	$ 0.0003	$ 0.0193	$ 0.0196	99%
Rock Port Tel. Co.	$ 0.0002	$ 0.0086	$ 0.0088	97%
Steelville Tel. Exch. Inc.	$ 0.0003	$ 0.0006	$ 0.0009	71%
Total	$ 0.0003	$ 0.0024	$ 0.0027	90%

Exhibit WCC-21

EXHIBIT WCC-21 CONTAINS INFORMATION DEEMED PROPRIETARY BY PETITIONERS.