Exhibit No :_____
Issues: TELRIC rates, Landline to Mobile traffic, Other
Witness: Robert C. Schoonmaker
Type of Exhibit: Rebuttal Testimony
Sponsoring Party: Petitioners
Case No : IO-2005-0468, et al. (consolidated)
Date: July 28, 2005

BEFORE THE PUBLIC SERVICE COMMISSION
STATE OF MISSOURI

In the Matter of the Petition of	)	
Alma Telephone Company	)	
for Arbitration of Unresolved	)	**Case No. IO-2005-0468, et al.**
Issues Pertaining to a Section 251(b)(5)	)	**(consolidated)**
Agreement with T-Mobile USA, Inc.	)	

REBUTTAL TESTIMONY

OF

ROBERT SCHOONMAKER

Jefferson City, Missouri
July 28, 2005

BEFORE THE PUBLIC SERVICE COMMISSION
STATE OF MISSOURI

In the Matter of the Petition of	)	
Alma Telephone Company	)	
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Agreement with T-Mobile USA, Inc.	)	

AFFIDAVIT OF ROBERT C. SCHOONMAKER

Robert C. Schoonmaker, of lawful age, being duly sworn, deposes and states as follows:

1. My name is Robert C. Schoonmaker. I am employed by GVNW Consulting, Inc. as President and Chief Executive Officer.

2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony with accompanying schedules.

3. I hereby affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief and that the information contained in the attached schedules is also true and correct to the best of my knowledge and belief.

Robert C. Schoonmaker

Subscribed and sworn to before me this 27th day of July, 2005.

Notary Public

My Commission expires: 3/21/2010

REBUTTAL TESTIMONY OF ROBERT C. SCHOONMAKER

Q. Please state your name and address.

A. My name is Robert C. Schoonmaker. My business address is 2270 La Montana Way, Colorado Springs, Colorado 80918.

Q. Are you the same Robert Schoonmaker that filed direct testimony in this case?

A. Yes.

Q. What issues will this rebuttal testimony address?

A. This testimony will respond to T-Mobile's direct testimony pertaining to issues 1, 2, 3, 4, 5, and 13, which concern the coordinated resolution of past traffic issues, Issue 7, which concern the prospective intraMTA traffic rate, and Issues 8, 9, 10, and 12, which concern IXC provisioned traffic. The other issues have already been addressed, or involve legal issues which can be adequately addressed in briefing.

Issues 1, 2, 3, 4, 5: Coordinated Resolution of Past Traffic Issues, Volumes, Jurisdiction, Rates, Compensation.

Q. In the testimony of Bill Pruitt, T-Mobile argues that the coordinated resolution of past traffic issues is outside the scope of this arbitration, and that the agreement resulting from this arbitration can only go back to the January 13, 2005 interconnection request date. What is your response on behalf of Petitioners?

A. If the situation the Act and FCC rules contemplate would exist at the time negotiations are begun actually existed between Petitioners and T-Mobile, I would agree with T-Mobile's analysis. The Act and Rules contemplate that, prior

to the interconnection no traffic would be exchanged and thus there would be no uncompensated traffic between the LEC and CMRS provider. In that situation the interim termination charges become effective as of the request date, subject to true-up when the agreement is finalized.

The situation that actually existed in Missouri between T-Mobile and Petitioners on January 13, 2005 was much different. T-Mobile has been sending traffic through SBC terminating to rural ILECs such as Petitioners since February 5, 1998 without having agreements with the rural ILECs approved. The result is that Petitioners have uncompensated T-Mobile traffic terminating to them for several years prior to the January 13, 2005 request date.

This situation, which is different than that envisioned by the Act and FCC rules, has resulted in numerous contested proceedings before the Commission. Petitioners believe that the Arbitrator and Commission have the authority to resolve this issue in this arbitration.

Q. What will likely happen if the Arbitrator refuses to address the traffic terminating prior to January 13, 2005?

A. It is likely the Petitioners will file a motion to reopen the record in TC-2002-57 to include additional the T-Mobile traffic volumes terminating between 2001 and January 13, 2005, and ask for resolution there.

Q. Why did Petitioners request that there be a comprehensive, coordinated resolution of past traffic issues at the time the agreements are ruled upon?

A. It is Petitioners' view that it is more efficient to resolve the pre-agreement traffic at the same time as the agreement is established, rather than continue with a piecemeal litigation approach. When tariff or complaint proceedings are commenced, the T-Mobile traffic continues to build up past the date a proceeding is commenced. A comprehensive resolution, if available in this arbitration, would allow dismissal of the present complaints, and avoid having to institute more proceedings.

Q. Why did Petitioners suggest that the negotiations include past traffic?

A. As I understand it, there were two reasons. First they wanted the matter resolved with T-Mobile. Second, they had successfully resolved the coordination of past compensation issues with Cingular, Sprint PCS, and Alltel. Those resolutions were comprehensive. Upon approval of agreements, past compensation amounts were paid through the effective date of the agreements, and MITG complaints in TC-2002-57 were dismissed. Petitioners believed they had an obligation under Section 252(i) of the Act to make the same available to T-Mobile, so they did.

Q. Has the comprehensive resolution Petitioners offered T-Mobile been utilized with other carriers?

A. Yes. It was actually utilized with T-Mobile in these negotiations. T-Mobile signed agreements with the comprehensive resolution with Choctaw and MoKan Dial. These agreements have been submitted and approved in TK-2005-0461 and TK-2005-0462. Petitioners previously made the same comprehensive resolution initially reached with Cingular available to Sprint PCS, Alltel, and US

Cellular, and all of those carriers voluntarily agreed and had those provisions included in the agreements approved by the Commission.

Q. Has there been a change of circumstance since the resolutions with these other wireless carriers?

A. After Petitioners initiated negotiations on January 13, 2005, the FCC issued its decision in T-Mobile's request for declaratory ruling that tariffs cannot apply to wireless traffic in the absence of an agreement. The FCC rejected T-Mobile's request, and upheld the application of state tariffs. Recently on July 14, 2005 the FCC promulgated a Small Entity Compliance Guide to provide guidance in implementing that decision. It is attached hereto as Schedule RCS 4. Of significance, Compliance Item 3 directs that it was permissible for LECs to charge access on non-access or intraMTA traffic terminated prior to April 29, 2005:

> "LECs are prohibited from imposing access charges pursuant to tariff on other carriers for the termination of non-access traffic unless the charges accrued prior to April 29, 2005. 47 C.F.R. § 20.11(d). For tariff charges that accrued prior to April 29, 2005, LECs are not prohibited from imposing them under federal telecommunications laws."

This was and is a key issue in the piecemeal litigation. Even though it appears Petitioners have prevailed on this issue, the amounts Petitioners have offered to accept from T-Mobile in order to dismiss the past traffic are less than what T-Mobile would pay under Petitioners' access tariffs.

Q. Did Petitioners request that T-Mobile address this past traffic in their negotiations request?

A. Yes. In their January 13 request Petitioners requested to renew negotiations regarding both an agreement and past traffic compensation issues. See Schedule RCS 5.

Q. What was T-Mobile's response?

A. T-Mobile stated it was very open to resuming discussions. T-Mobile's response, attached hereto as Schedule RCS 6, appears to acknowledge that compensation for past traffic would be a component of the negotiations.

Q. What guidance do the statutes and rules provide as to whether the Commission can address the coordinated resolution of past traffic issue in this arbitration?

A. I am not aware of any specific statutory or rule guidance as to whether states can or cannot include past traffic within an arbitration. It does not appear to me the Act contemplated parties arbitrating about compensation for traffic delivered prior to the interconnection request. I do believe the Act is intended to give state arbitrators and commissions discretion with respect to determining the scope of arbitration issues.

47 USC 252(b)(1) permitted Petitioners to request arbitration for any "open issues". Petitioners requested this be considered an open issue. T-Mobile's response requested it be excluded from the open issue list. 47 USC 252(b)(4) directs that the Commission limits its consideration to the issues set forth in the Petition for Arbitration and the Response thereto. It would appear to me that the Commission has the discretion to include or not include this issue.

Q. Depending upon the decision the Commission makes, what effective date should be incorporated into the agreements (Issue 13)?

A. If the Commission excludes past compensation from the arbitration, the effective dates should be January 13, 2005. If the Commission includes the coordinated resolution of past compensation in the arbitration, it should choose the effective date that immediately succeeds the date for which past compensation is awarded. In their direct testimonies other witnesses for Petitioners have set forth these dates and amounts.

Issue 7 Prospective IntraMTA rate.

Q. T-Mobile witness Mr. Conwell's testimony is primarily focused on the issue of the forward-looking cost of providing transport and termination. Do you have any general comments regarding his testimony?

A. Yes. I have substantial concerns, which I will explain in greater detail, with the assumptions that Mr. Conwell makes to arrive at his proposed rate of $0.0074 or less as the forward-looking cost of transport and termination. Several of his major assumptions reflect the circumstances and processes that may be appropriate to Regional Bell Operating Companies (RBOC's) and other very large ILECs serving predominantly urban areas, but are not applicable to small rural telephone companies such as the Petitioners. In arriving at his assumptions and results he inappropriately attributes these RBOC characteristics and operations to the small companies. In my opinion he either does not appear to understand or chooses to ignore the differences in cost for transport that result, on a per minute basis,

between high volume traffic urban trunks and low volume trunks in rural areas. The cost characteristics are very different where interoffice traffic volumes are very low from small exchanges with very few customers.

Q. Do you have any comments regarding Mr. Conwell's discussion of the requirements of forward-looking cost studies that he outlines on Pages 8-10 of his direct testimony?

A. I do have a few observations that may be helpful. On Page 8, Lines 20 and 21, Mr. Conwell states that "The FCC rules specifically prohibit the use of embedded or historical costs." I do not disagree with that statement, taken in the appropriate context, that the FCC emphasizes that the costs should be forward-looking. However, it does not mean that one cannot look at embedded costs as the basis for determining the forward-looking cost or testing the validity of forward-looking cost estimates. Both Mr. Conwell and I, as well as the FCC and state commissions, ultimately have to look at costs that have been incurred in determining what the forward-looking cost of the network may be. Judgments have to be made regarding the validity of that cost data in relation to what is anticipated in the future to arrive at, or validate, forward-looking costs

On Page 10, Lines 6-10, Mr. Conwell emphasizes that costs should be developed on an individual company basis. While I also do not disagree with that concept, that does not mean that the forward-looking cost input assumptions for individual companies may not be the same. In fact, one of the arguments for using forward-looking cost rather than embedded cost is to (theoretically at least) remove from

cost consideration individual company differences that may be due to operational differences or inefficiencies.

Q. Does Mr. Conwell draw attention to your use of similar factors for the individual companies?

A Yes. On page 17, Lines 10 and 11, and Lines 15 and 16, he specifically draws attention to the fact that the factors used for all four companies are the same. It seems to me that he is trying to imply that this taints the study since the factors aren't different for the individual companies. However, no such inference that the studies are inappropriate should be drawn because these factors are the same for each study. As one can see from Mr. Conwell's analysis, he also uses the same factors and costs for each of the four companies in several of his adjustments.

Q. Mr. Conwell cites the decision of an arbitrator in Oklahoma criticizing the HAI model "...due to the ability of persons using it to be able to manipulate the inputs to reach almost any imaginable result." What are your comments?

A. While the arbitrator's criticism has validity related to the HAI model, it has equal validity to any other forward-looking cost study. Ultimately in preparing any forward-looking cost study the individual preparing the study has to make hundreds of decisions regarding various cost inputs that will impact the cost of the network for the particular company. That is true whether the study is the HAI Model, the FCC's Synthesis Model, the Benchmark Cost Proxy Model, an individual company proprietary model, or the analysis of an individual, such as some of Mr. Conwell's analysis. It is one of the reasons that some parties argued

before the FCC that embedded costs should be used rather than forward-looking cost. However, the FCC has decided that forward-looking costs must be used in these circumstances and the validity of the inputs becomes a key item in determining the final cost numbers.

Q. Mr. Conwell cited (Page 15, Line 5) the significant drop in costs between your initial and revised studies as an example of the changes that could occur in changing assumptions. What is your response?

A. That is one example. In this case, I reviewed the materials that were initially provided to US Cellular and which had been provided to T-Mobile to respond to its data request as quickly as possible. I noticed that in those model runs the two factors that assume the percentage of traffic (interLATA and intraLATA) that is transported over common trunks to the tandem switch were set at the model default factors of 20%. While this may be an appropriate assumption for RBOC's, it is not reflective of the Petitioner's traffic patterns where interLATA and intraLATA traffic is transmitted to the tandem switch in all cases. I therefore updated these assumptions and provided updated information to Mr. Johnson to provide to T-Mobile. The change in this assumption increased substantially the amount of traffic traveling over the common transport portion of the network which substantially reduced the cost per minute because of increased trunk efficiencies that can be obtained with higher traffic volumes.

Q. Does Mr. Conwell's change in the assumptions regarding end office switching cause substantial changes as well?

A. They certainly do. Mr. Conwell's changes regarding the percent of usage sensitive cost of the switch and the cost per line caused a reduction in the cost of local switching of 93% (from $0.0104 which I recommended to $0.0007 which is his conclusion). This emphasizes the importance of reviewing and determining the appropriateness of assumptions in the development of forward-looking cost.

Q. Does the requirement to use forward-looking cost studies that is imposed by the FCC raise particular concerns as it relates to rural companies?

A It does. The development of both modeling or cost study techniques and appropriate forward-looking cost inputs can be time consuming and costly undertakings. The FCC spent several years, several rounds of hundreds or thousands of pages of comments, and numerous workshops with wide industry participation before arriving at conclusions regarding the model it should use for USF purposes for non-rural companies and the appropriate inputs for that model. The FCC's order adopting inputs after years of consideration encompassed over 200 pages. Expenditures by industry participants to develop various models and inputs were in the millions of dollars. With the exception of updating the model annually to reflect new access line counts for the non-rural companies, the FCC has not revisited the inputs to its model since its adoption in 1999.

To expect small rural companies such as the Petitioners that possess a few hundred or thousand lines, to develop studies, update models, and update inputs to develop costs for arbitration proceedings where limited amounts of revenue are at stake doesn't make economic sense. The cost of fully developing and

documenting studies could be many times greater than the revenues at stake. Thus, the companies of necessity use existing models with limited updates to the inputs to derive an estimate of their forward-looking cost.

Q. On Page 16 of Mr. Conwell's testimony he states, "It is important to note that the HAI 5.0a model was produced in 1998 and contains plant construction costs dating from the mid- to early-1990s. It is unlikely the HAI 5.0a model results are representative of the ILECs forward-looking economic costs in 2005." Do you agree with his conclusion?

A. I do not. While it is true that the HAI 5.0a model was submitted in 1998 and depended on somewhat earlier data than that, that does not mean that the forward-looking costs produced by the model should not be considered "representative" of the ILEC's forward-looking costs. There have undoubtedly been changes in the costs of some of the inputs in the model, probably both up and down. Certainly over that time period labor costs, which represent a substantial portion of the costs in the model, have increased. However, as the development of forward-looking costs is certainly somewhat of an art form, I do not have any reservations in indicating that such costs are reasonable representations of the forward-looking costs of the companies.

Q. Does Mr. Conwell use data from a similar time period in arriving at one of his major conclusions?

A. Yes. Mr. Conwell uses data from WWC-5, a 1997 Rural Utilities Service filing of actual switch costs from a sample of switches across the country as the basis for developing on Exhibit WWC-7 what he calls the "Corrected End Office

Switching Investment per Line." This calculation is neither based on the individual Petitioners' costs nor on data more recent than data contained in the HAI model.

Q. Let's turn now to Mr. Conwell's analysis of end office switching cost. On Pages 18 and 19 he discusses what he describes as "two main errors" in the switching cost calculation. Do you agree that there are "two main errors" in your calculations?

A. No, I don't. First, I want to make it clear that what we are talking about is a difference in position regarding two significant input items into the cost calculation process. Mr. Conwell's criticism in this area is directed to input values, not to the method of calculation. Second, while I understand that Mr. Conwell has a different opinion about what the correct input into the process should be than I do, this difference in opinion as to inputs does not amount to an "error", but is really a difference as to what is the appropriate forward-looking data to use in the calculation.

Q. Mr. Conwell identifies as the first "error" in your calculations the use of a 70% factor for the traffic sensitive portion of the switch in comparison to the less than 10% that he proposes. What is Mr. Conwell's basis for arguing that the amount should be less than 10%?

A. On Page 21 of his testimony Mr. Conwell discusses the "component pricing" of switches that was prevalent in the 1990's and then testifies that in recent years that pricing of switches has changed to a "per-line" pricing concept. He argues

that given this new pricing method that the current cost of switching equipment is much less price sensitive than in the past.

Q. Do you agree with Mr. Conwell's assessment of the change in pricing methods for switching equipment?

A. I believe Mr. Conwell's testimony may be accurate in regard to changes in pricing methods for the RBOCs. I have read testimony in some RBOC arbitration cases where it appears that at least some of the RBOCs have entered into switch purchase contracts, usually multi-year contracts, which are based on the "per-line" pricing that Mr. Conwell discusses. However, Mr. Conwell's perceptions are not correct as it pertains to switch purchases by small rural LECs such as the Petitioners. These companies do not have long term purchase agreements with manufacturers addressing the purchase of large volumes of switches. They purchase switches on an individual switch basis, frequently obtaining bids from multiple manufacturers. Those bids continue to be developed on an individual switch basis based on the component pricing that was used for all switches in earlier years.

Q. What is the basis for your observations regarding switch pricing for rural LECs such as the Petitioners?

A. Our firm has an engineering section that regularly assists our clients in developing RFP's for switch replacements and in evaluating bids from manufacturers for replacement switches. I have recently confirmed with them that those bids continue to be based on component pricing for the individual switches.

Q. Did you adopt the 70% End Office Non-Line Port fraction input solely because it was an HAI default value?

A. That was not the only reason. I was also aware that after its review of the model inputs the FCC had also adopted this value as an input for non-rural companies. In reviewing the Tenth Report and Order in Docket No. 96-45 this input was adopted without discussion in the text of the Order which indicates to me that there was no contention among the parties about its adoption.

Q. Mr. Conwell cites excerpts from a Virginia Arbitration Order in his Exhibit WCC-7. What in your response?

A. The Arbitration Order cited is a specific arbitration order related to Verizon and its operations in Virginia. The Company circumstances of Verizon in Virginia are very different than those of the Petitioners, both in terms of Verizon's buying capability and the size of switches that Verizon primarily uses. While Verizon's serving area in Virginia probably encompasses some rural areas, its primary operating area is highly urban areas with large customer concentrations such as the portion of Virginia immediately adjacent to the Washington, DC area. In this Order the FCC adopted use of the SCIS model for developing switching costs rather than the FCC Synthesis Model which uses switching cost development similar to HAI.

Q. Mr. Conwell also cites testimony from Washington that the HAI developers have adopted a 0% non-line port switching factor in later versions. Can you comment on this observation?

A. It is true that the HAI developers in later versions of the model have adopted a 0% factor in place of the 70% factor. The HAI Input manual for version 5.3 of the HAI model refers to testimony in a Minnesota case involving Qwest as the support for adopting that factor. I have reviewed that Minnesota testimony and the rationale indicated in that testimony was that Qwest had entered into a switch purchase contract that was based on per-line pricing only. Thus the rationale for the change by the HAI developers would be no more applicable to the RLECs than would Mr. Conwell's assertions about changes in switch pricing. These changes are not applicable to rural LECs such as the Petitioners.

Q. In summary, in regard to the use of the 70% non-line port switching factor is Mr. Conwell correct in stating that you made an "error" in using this factor?

A. No, he is not. His primary basis for this conclusion is an erroneous assumption regarding the pricing of digital switches for rural LECs based apparently on changes in pricing of switches for RBOCs. His assumption regarding digital switch pricing for rural LECs such as the Petitioners is incorrect, and the assumptions that he has made reducing the 70% factor to less than 10% is incorrect.

Q. In his analysis of the appropriate cost per line of COE switching, Mr. Conwell presents Exhibit WCC-4 which is described as a comparison of ILEC embedded costs to the HAI embedded costs per line. What are your comments on this analysis?

A. The analysis is based on outdated and incorrect data. From the face of the Exhibit it is clear that the comparison is intended to be to 1996 data, not current data of

the companies. The more important concern is the source of the "embedded cost" data that is presented. The Exhibit describes this as "1996 ARMIS Switching Investment". ARMIS refers to the FCC's Automated Reporting Management Information System. The Petitioners are not subject to the requirements to submit data to the ARMIS system, and have never been, so this data is not actual data submitted by the companies to the ARMIS system. While Mr. Conwell doesn't explain the source of the 1996 ARMIS data, I presume that it may have come from the HAI output files provided to him which contains an "ARMIS" worksheet. Unfortunately, Mr. Conwell either was not aware, or did not recognize, that in the HAI model, "ARMIS" data for non-ARMIS reporting companies is based on an RBOC composite file, rather than actual data from the companies themselves, since that data is not reported.

Q. Have you prepared a Schedule comparing the HAI investments in COE switching to the actual investments of the Petitioners?

A. I have. The schedule is Schedule RCS-7. In this schedule I have compared the HAI investments per line to the actual embedded investment of the companies for 2003 as reported to the Commission in the companies' annual reports, data which is publicly available on the Commission's web site. As noted on the schedule, Chariton Valley leases its switches so there is no COE switching investment shown on Chariton Valley's annual report. For the other three companies, in total, the HAI investment per line is 24% less than the 2003 embedded investment, a far different picture than Mr. Conwell portrays and which he uses as

one basis for making significant changes to the COE switching cost that I have presented.

Q. On Page 19, Lines 11-16, Mr. Conwell offers his opinions on his expectations for changes in switching costs in comparison to the increase that you proposed in this input value. What are your comments in this regard?

A. In my direct testimony (Pages 18-21) I provide the explanation for this change. In summary, the HAI default assumptions produce results nearly 45% below the COE switching investment for small Missouri companies. The default input was, in my opinion, inappropriate, and I therefore increased the input amount. The results for the Petitioners and for the small Missouri companies with the revised assumption still show a COE switching investment around 25% less than the actual investment, an amount I believe is more than adequate to reflect potential reductions in switch costs since the investments were made. I would also note that the experience of the GVNW engineering staff has been that while COE switch costs have declined somewhat for small ILECs, such reductions have been less than for the RBOCs.

Q. Please comment on Mr. Conwell's derivation of the switching investment per line that he uses in his "corrected" calculations.

A Mr. Conwell uses as a basis for his calculations the 1997 RUS data shown on Exhibit WCC-5 and makes certain adjustments to that data to arrive at what he describes as the "current" switching cost per line. The criticisms that Mr. Conwell espoused in regard to the study that I produced regarding the data being

potentially out-of-date and not applicable to the individual companies are equally applicable to Mr. Conwell's cost derivations.

Q. In summary, what is your recommendation to the Commission in regard to the end office switching cost that should be applied in this case?

A I continue to fully recommend the costs that I developed and presented in direct testimony. Mr. Conwell's criticisms of those costs are based on inappropriate assumptions as they relate to the Petitioners, and on data that is not consistent with the costs incurred and expected to be incurred by the Petitioners. His result of $0.0007 would not provide the Petitioners appropriate compensation for terminating T-Mobile's calls under the FCC requirements.

Q. Mr. Conwell also makes adjustments to the ISUP signaling cost element. Would you comment on his assumptions, analysis, and conclusions regarding this element?

A. Yes. Mr. Conwell proposes a cost of $0.0012 per minute in comparison with the costs between $0.0035 and $0.0056 that I presented. Mr. Conwell first comments that the cost per circuit between $297 to $461 per circuit per month "seems high" to him. Apparently, Mr. Conwell's experience doesn't' have much relevance in the rural environment in which the Petitioner's operate.

I have checked with each of the Petitioners and have found that three of the four companies are currently paying $686.54 for each A-link, or a total of $1,373.08 per month and the fourth is paying over $700 per A-link. These amounts are considerably higher than the amounts developed by the HAI model, and nearly

eight times the amount of $88.59 that Mr. Conwell uses in his "corrected" analysis. Mr. Conwell's $88.59 is based on Southwestern Bell's unbundled signaling rates available to CLEC's. He describes this as "an efficient alternative." Unfortunately, the Petitioners are not CLECs, are not making local connections with SBC, and do not have these rates available to them. In fact, in the case of at least one company, SBC charged a higher rate for the A-links than what the company is now paying to an alternative provider. Mr. Conwell's analysis of ISUP signaling costs on Exhibit WCC-15 substantially understates the cost of the Petitioners in providing this service element.

Q. On Page 28, Lines 16-20 Mr. Conwell discusses his comparison between the common transport rates I have proposed and the common transport UNE rates of the RBOCs and other large companies. Do you agree with Mr. Conwell's assessment?

A. I do not. I do not find it surprising at all, let alone "extraordinary", that the common transport costs in small rural LECs are tens or even hundreds of times the UNE costs of large RBOCs who offer such services primarily in urban areas. In my review of forward-looking costs for companies in several states, it is very typical that common transport for costs for small rural LECS are tens, or even hundreds of times, the costs for large urban RBOCs. The costs for providing transport service in rural areas are far different than those in urban areas, as measured on a per minute basis, because of the substantial efficiencies that companies with large traffic volumes can gain from fiber technology. These gains are far greater in urban areas than rural areas.

Q. Can you provide some background information as to why this is true?

A. Yes. First, it is appropriate to outline the capacity of various types of circuits that Mr. Conway discussed in his testimony. The typical circuit types that are relevant to this discussion in this case are the following:

Type of Circuit	Voice or DSO circuits	DS-1 Circuits	DS-3 Circuits	OC-3 Circuits	OC-12 Circuits
Voice or DS-0	1	NA	NA	NA	NA
DS-1	24	1	NA	NA	NA
DS-3	672	28	1	NA	NA
OC-3	2016	84	3	1	NA
OC-12	8064	336	12	4	1

Although the circuit types increase in a specific progression, based on the cost of the fibers required and the cost of the transmission equipment, it is generally economically efficient to increase to a higher circuit type well below the capacity of the lower circuit type. While the factors that impact this vary between manufacturers, geography, type of equipment, and other factors, I have used some cost relationships developed using the NECA tariff to illustrate this concept. Our analysis using this basis shows, for example, that if a company needs only three voice or DS-0 circuits, it is less expensive to use a DS-1 circuit, rather than three DS-0s to provision the service. Under the NECA tariff, OC-3 service is actually less expensive than DS-3 service so DS-3 service might be rarely used. Under these circumstances if a company needed more than seven DS-1's or 168 voice grade (DS-0) circuits, it would be more economical to use OC-3 service, even though 1,848 or over 90% of the circuits would not be utilized. In the case of the Petitioners, they generally find themselves in the situation where a higher capacity circuit is more economical even if a large portion of the available capacity will not be used. Availability of equipment also adds to this issue since it is very

difficult, at this point in time, to find any fiber terminal equipment with only a DS-1 capacity. Mr. Conwell's analysis fails to take this type of situation into consideration and assumes in developing his cost that the circuit can be used to its full efficient capacity.

Q. Can you explain with an example how this impacts the costs of the Petitioners?

A. Yes. Let's take Alma for example. Mr. Conwell's Exhibit WCC-12 shows that HAI indicates that Alma needs 25 common transport trunks. Alma reports that it has 60 trunks of all types, including common transport, that leave it's office to the world. Based on the table above, Alma would presumably need three DS-1s to carry this traffic. However, since separate DS-1 terminal equipment is unavailable, Alma would need to use a DS-3 or OC-3 circuit. If in its circumstances an OC-3 is more economical than a DS-3 as is indicated by the NECA tariff, it would be economically efficient and appropriate for Alma to use an OC-3 circuit with the capability of 2,016 voice circuits, even though it only has a need to utilize 60 of those circuits.

Q. In calculating the cost per DS-0 for Alma, how many circuits does Mr. Conwell assume will be used by Alma?

A. He assumes that 1,411 of the circuits will be used by Alma, 70% of the 2,016 available circuits and calculates the cost per DS-0 on that basis (See Exhibit WCC-11). That cost is then projected through the remainder of his cost calculations. While it reflects the cost of a DS-0, if all the circuits could be used, it does not reflect at all the cost of the DS-0s that Alma in fact needs, and

provides. His calculations vastly understate the actual cost to Alma of the circuits that they need and use from the facility.

Q. Do Mr. Conwell's calculations assume the same 1,411 circuits in use for each of the other Petitioners?

A. They do. While the other Petitioners are larger and utilize more of the circuits than does Alma, they still utilize far less than the 1,411 circuits that Mr. Conwell assumes. Mr. Conwell's calculation of a theoretical cost per DS-0 also understates their costs substantially, though not to the degree that Alma's is understated.

Q. Does Mr. Conwell's calculation of the transmission terminal cost of Exhibit WCC-13 which is carried to Line 44 of Exhibit WCC-12 reflect this same conceptual framework?

A. I believe that it does. On Page 32, Lines 8-10 Mr. Conwell indicates that "...the transmission equipment investments and costs per DS0 also appear to be quite high." He then proceeds to do a theoretical calculation arriving at an average transmission investment of $140 per DS0 for each company. This calculation appears to be based on the same theoretical maximum available capacity from the investment, rather than recognizing the actual capacity used by the company in spite of the fact that their circumstances do not provide for maximum use of the facility.

Q. Is this same theoretical capacity philosophy used by Mr. Conwell in calculating the per minute rate based on the understated costs per DS-0 that Mr. Conwell has developed?

A Yes. Lines 36 and 38 of Exhibits WCC-9 and WCC-12 reflect both the annual minutes that could be transported through the trunks if the full trunk capacity was utilized and the actual minutes the company is estimated to use on a forward looking basis, respectively. The actual minutes reflect the traffic that the Petitioners are expected to handle through their facilities and the only minutes for which they could be compensated. The minutes on Line 36, which are between 40% and 80% higher than the actual minutes, are calculated to represent a theoretical full capacity of the trunks.

Q. Why is the theoretical capacity of the trunks so much higher than the actual usage?

A Trunk groups are sized with the intent to cause only 1% block of calls during the busiest hour of the year, a rate known as a P01 grade of service. This means that during of hours of the day and year, they will be used at less than full capacity. In small trunk groups from small exchanges this "underutilization" is magnified by the probability that a certain number of customers will pick up the phone at the same time and engineering tables take these probabilities into account. As the volume of traffic and the size of the trunk group is increased, the degree of underutilization of any one trunk decreases. The theoretical full capacity of the trunks is based on calculations of trunk usage in large offices with heavy usage and trunk groups that are used more efficiently.

Q. Why should the actual usage be used in calculating the per minute rate for local transport rather than the theoretical usage of a fully utilized urban trunk?

A. Because that is the units that the Petitioners will be handling in their transport systems and the units that will provide the revenue to recover the cost. The Petitioners should not be penalized for doing appropriate engineering for offices of the size that they serve, but which cannot and will not handle the same amount of traffic per trunk as will a trunk in a large urban office.

Q. On Page 31, Lines 6-8 of his testimony Mr. Conwell opines that the use of the actual minutes that the Petitioners will experience on their networks violates FCC rules? How do you respond?

A. I disagree with Mr. Conwell. Section 51.511(a) of the FCC rules states:

> (a) The forward-looking economic cost per unit of an element equals the forward-looking economic cost of the element, as defined in § 51.505, divided by a reasonable projection of the sum of the total number of units of the element that the incumbent LEC is likely to provide to requesting telecommunications carriers and the total number of units of the element that the incumbent LEC is likely to use in offering its own services, during a reasonable measuring period.

The actual minutes that I am arguing should be used are reflective of the "reasonable projection" of the total number of units of the element that the ILEC is expected to use itself and the "total number of units of the element that . . . [it] will provide to requesting telecommunications carriers." The theoretical units that Mr. Conway uses in his calculations are not units that the Petitioners would expect to provide to anyone.

Q. What is your evaluation of the "Corrected ILEC Common Transport Costs" that Mr. Conwell presents in his Exhibit WCC-12?

A. These calculations vastly understate the forward-looking common transport costs of the Petitioners because they use inappropriate hypothetical assumptions

regarding usage of the Petitioner's networks and the cost of providing service over their networks.

Issues 8, 9, 10, and 12, IXC provisioned traffic.

Q. In direct testimony Mr. Pruitt sets forth T-Mobile arguments as to why Petitioners should be responsible to compensate T-Mobile for IXC provisioned landline to mobile traffic. Do you agree with his analysis?

A. No. It appears to me T-Mobile is premising its position on excerpts of legal authorities not accurately placed in the context of how local and IXC traffic is required to be provisioned. T-Mobile fails to consider the dialing parity obligations for IXC traffic that ILECs are required to abide by under federal law. ILECs are required to offer equal access to IXCs. ILECs are required to allow IXCs to market toll services to local subscribers. When a local subscriber chooses an IXC to be his or her carrier, 1+ calls must be handled pursuant to access compensation, not reciprocal compensation. T-Mobile also fails to recognize the business relationships established by the Petitioners' access tariffs which put the Petitioners in the position of renting their facilities to IXCs. T-Mobile's position asking for reciprocal compensation to be added to the toll compensation for this traffic is not an appropriate position. The same call should not be subject to two different and inconsistent compensation regimes.

Q. How do you think the Arbitrator should evaluate this issue?

A. In my direct testimony I set forth the historical development of local calling areas and 1+ toll provisioning by IXCs. I described the regulatory fact that IXCs own

the 1+ toll revenues, and are obligated to pay originating and terminating compensation to LECs and CMRS providers (including T-Mobile) who provide originating and terminating facilities for this 1+ traffic. I also provided a summary of state and federal authorities that I believe fairly clearly establish separate, independent, and mutually exclusive IXC toll compensation and reciprocal compensation structures.

In particular the FCC ruled that maintaining separate and distinct access and reciprocal compensation regimes was intended to "preserve" the access regime. T-Mobile's position does not preserve a separate regime. Instead it imposes a new regime, and keeps the old regime, on the same call.

An IXC provisioned call is not subject to reciprocal compensation because it is not a "call between a LEC and a CMRS provider". The call is between the IXC and the CMRS provider. The LECs involvement is that of a seller of facilities to the IXC so that the IXC can complete its obligation to its end user.

Q. At page 29 of his testimony, Mr. Pruitt argues that "Calling Party Network Pays" (CPNP) support the T-Mobile position. Do you agree with him?

A. No. In fact I think CPNP supports the Petitioners' position. For these calls the IXC is providing service to the originating end user. It is the IXC that is the Calling Party's Network, so the IXC is responsible to pay T-Mobile.

Q. Assuming T-Mobile's position were correct, would T-Mobile be responsible to pay the Petitioners for T-Mobile traffic carried by an IXC to Petitioners' exchanges?

A. Yes.

Q. Has T-Mobile done so since 1996?

A. No. Such traffic does terminate to Petitioners over IXC trunks. T-Mobile has never reported it or paid for it. It is reported by the terminating tandem provider, and it has been paid for by the IXC delivering the traffic to the terminating tandem.

Q. At pages 30-31 of Mr. Pruitt's direct testimony, he seems to imply that the ILEC's are not implementing dialing parity correctly. What is your response?

A. The Petitioners understand that if T-Mobile has telephone numbers that are rated within the ILEC's local calling areas as described in the ILEC's state tariffs and an appropriate interconnection that dialing should be on a seven-digit basis. To the Petitioners knowledge, T-Mobile has no such telephone numbers. Since T-Mobile's telephone numbers are not located in rate centers within the ILEC's prescribed local calling areas, pursuant to the ILEC's tariffs and the FCC's presubscription requirements the calls are to be dialed on a 1+ basis and directed to the end users presubscribed IXC. I believe that is consistent with 47 CFR 51.207 which says a LEC shall permit customers within a local calling area to dial the same number of digits to make a local telephone call.

Issue 9: IXC traffic to ported number

Q. T-Mobile argues that Petitioner should be responsible to pay for such IXC traffic that terminates to a T-Mobile customer that has ported a landline number from a Petitioner as its T-Mobile number. Please set forth your response.

A. I agree that IXC traffic to a ported number should be treated no differently than IXC traffic to a non-ported number. However this issue is basically the same as the IXC traffic issue discussed above. An IXC call terminating to a ported or non-ported number is an IXC call, not the ILECs, and compensation for the call should be the responsibility of the IXC, not of Petitioners.

Further, this issue is moot at the present time. Because T-Mobile has not established a local presence with Petitioners, each Petitioner has received a suspension or modification from the Commission. These Orders were entered in IO-2004-0453 for Alma, CO-2004-0469 for Chariton Valley, TO-2004-0455 for Mid-Missouri, and IO-2004-0468 for Northeast.

Issue 10: Billing mechanism

Q. Mr. Pruitt testifies in support of a "net billing" mechanism. Please respond for Petitioners.

A. I think this issue is determined by the landline to mobile IXC provisioned traffic responsibility issue. If Petitioners are correct that they have no reciprocal compensation obligations to T-Mobile for IXC access traffic, there will be no traffic to "net".

Q. Mr. Pruitt suggests also that bill and keep can be ordered by the Commission because the landline to mobile IXC provisioned traffic is roughly balanced or equivalent in volume to the mobile to landline SBC transited traffic. What is your response?

A. It appears to me that the Commission has already rejected T-Mobile's argument it can count landline to IXC traffic in determining "balance" or "equivalent volumes". In a 2005 complaint case T-Mobile contended landline to mobile IXC provisioned traffic was "equivalent in volume" to wireless to landline traffic. The Missouri Commission rejected this contention and Ordered T-Mobile to pay for the total amount of wireless to landline traffic. The Commission stated:

> "The Wireless Respondents maintain that the intraMTA traffic that they exchange with the Complainants is symmetrical, that is, that equivalent volumes flow in both directions. ..... The record shows, and the Commission finds, that the Complainants routed all traffic originating on their networks and intended for subscribers of the Wireless Respondents through an IXC."[1]

It appears to me the Commission considered such traffic to be the compensation responsibility of the IXC, not the rural ILEC.

Issue 12. Scope of compensation for traffic exchanged

Q. Mr. Pruitt asks the Commission to include in the TTA language suggested by T-Mobile that would include a statement that compensation is "reciprocal and symmetrical". Is this language appropriate?

A. No. This issue is likewise determined by the IXC traffic issue. If Petitioners are not responsible for IXC traffic, the traffic the TTA will address goes only one

[1] *BPS Telephone Company, et al. v Voicestream Wireless Corporation, Western Wireless Corp , and Southwestern Bell Telephone Company*, Case No. TC-2002-1077, Report and Order, p. 14 (Jan. 27, 2005).

way: from T-Mobile through SBC to Petitioners. That is why the seventy or so of these approved agreements are entitled "Traffic Termination Agreements". If the traffic is only one way, compensation cannot be reciprocal, and compensation cannot be symmetrical.

Q. Does this conclude your rebuttal testimony?

A. Yes.

Schedule RCS-4

Federal Communications Commission
Washington, D.C. 20554

July 14, 2005

Small Entity Compliance Guide

Reciprocal Compensation Arrangements Between Local Exchange Carriers and Commercial Mobile Radio Service Providers

DA 05-2002

CC Docket No. 01-92

This Guide is prepared in accordance with the requirements of Section 212 of the Small Business Regulatory Enforcement Fairness Act of 1996. It is intended to help small entities—small businesses, small organizations (non-profits), and small governmental jurisdictions—to comply with the new rule/s adopted in the above-referenced FCC rulemaking docket/s. This Guide is not intended to replace the rule/s and, therefore, final authority rests solely with the rule/s. Although we have attempted to cover all parts of the rule/s that might be especially important to small entities, the coverage may not be exhaustive. As a result, in any civil or administrative action against a small entity for a violation of a rule or rules, the content of the Small Entity Compliance Guide may be considered only as evidence of the reasonableness or appropriateness of proposed fines, penalties or damages. This Guide may not apply in a particular situation based upon the circumstances, and the FCC retains the discretion to adopt approaches on a case-by-case basis that may differ from this Guide, where appropriate. Any decisions regarding a particular small entity will be based on the statute and regulations. Interested parties are free to file comments regarding this Guide and the appropriateness of its application to a particular situation; the FCC will consider whether the recommendations or interpretations in the Guide are appropriate in that situation. The FCC may decide to revise this Guide without public notice to reflect changes in the FCC's approach to implementing a rule, or to clarify or update the text of this Guide. Direct your comments and recommendations, or calls for further assistance, to the FCC's Consumer Center:

1-888-CALL-FCC (1-888-225-5322)

TTY: 1-888-TELL-FCC (1-888-835-5322)

Fax: 202-418-0232

fccinfo@fcc.gov

Compliance Requirements

1. Objectives of the proceeding

The Commission has adopted rules applicable to non-access telecommunications traffic exchanged between wireless carriers and local exchange carriers, which ensure that intercarrier charges for the termination of non-access traffic may only be imposed pursuant to agreement between the carriers. The rules will also facilitate the ability of incumbent local exchange carriers to obtain such agreements if they desire them. *See Developing a Unified Intercarrier Compensation Regime, T-Mobile et al. Petition for Declaratory Ruling Regarding Incumbent LEC Wireless Termination Tariffs*, CC Docket 01-92, Declaratory Ruling and Report and Order, FCC 05-42; 47 C.F.R. §§ 20.11(d), 20.11(e). The compliance requirements these rules impose are discussed below in sections 3 through 5 of the Compliance Guide

2. Definitions

a. Local Exchange Carrier or "LEC"

The term "local exchange carrier" means any person that is engaged in the provision of telephone exchange service or exchange access. 47 U.S.C. § 153(26).

b. Incumbent Local Exchange Carrier or "ILEC"

The term "ILEC" means, with respect to a particular geographic area, the LEC that:

(1) on February 8, 1996, provided telephone exchange service in such area;

and

(2) on February 8, 1996, was a member of the National Exchange Carrier Association (NECA); **or** is a person or entity that, on or after February 8, 1996, became a successor or assign of a NECA member. 47 U.S.C. § 251(h)(1).

c. Commercial Mobile Radio Service provider or "CMRS provider"

The term "CMRS provider" means a provider of mobile service that is

(1) provided for profit, interconnected with the public switched telephone network, and available to the public or a substantial portion of the public,

or

(2) the functional equivalent of such a service. 47 C.F.R. § 20.3.

d. Non-access traffic

The term "non-access traffic" means any telecommunications traffic that is not subject to access charges. Such traffic includes telecommunications traffic exchanged between a LEC and a CMRS provider that, at the beginning of the call, originates and terminates within the same Major Trading Area (MTA). 47 C.F.R. § 51.701(2). The definition of an MTA can be found in section 24.202(a) of the Commission's rules. 47 C.F.R. § 24.202(a).

3. **Prohibition on imposing termination charges pursuant to tariff on or after April 29, 2005**

Pursuant to new rules, LECs are prohibited from imposing charges pursuant to tariff on other carriers for the termination of non-access traffic unless the charges accrued prior to April 29, 2005. 47 C.F.R. § 20.11(d). For tariff charges that accrued prior to April 29, 2005, LECs are not prohibited from imposing them under federal telecommunications law. However, these charges may still be challenged under applicable state laws. For telecommunications subject to access charges, compensation may continue to be imposed pursuant to tariff.

4. **ILEC right to obtain a compensation agreement through negotiation and arbitration**

Under pre-existing rules and statutory provisions, CMRS providers could request interconnection with an ILEC, and require the ILEC to enter into a process of negotiation and, if necessary, arbitration to reach an agreement on interconnection and compensation terms. 47 U.S.C. §§ 251(c)(1), 252; 47 C.F.R. §§ 20.11, 51.301, 51.703. However, ILECs could not compel negotiation and arbitration with the CMRS provider. Under the new rule, ILECs may also request negotiation to establish an interconnection and compensation agreement. 47 C.F.R. § 20.11(e). If a CMRS provider receives such a request, both parties must negotiate the terms of interconnection and compensation in good faith in the same manner as if the request had been made by the CMRS provider under pre-existing rules. 47 C.F.R. § 51.301. Between the 135th and 160th day (inclusive) after the date on which the CMRS provider receives a request for interconnection, either party to the negotiation may seek arbitration by a state commission of any unresolved issues in the same manner and to the same extent as they would be entitled to do if the initial request for an agreement had been made by the CMRS provider. 47 U.S.C. § 252(b). In providing ILECs with the procedural right to request interconnection and initiate a negotiation and arbitration process, the Commission has not altered the substantive rights of either ILECs or CMRS providers to interconnection or intercarrier compensation. As a result, in arbitration, disputes over interconnection and intercarrier compensation terms should be resolved in the same fashion as they were prior to the new rule

5. **Interim Termination Charges During Negotiation and Arbitration**

Once an ILEC has made a request to a CMRS provider for an interconnection and compensation agreement, the parties may impose intercarrier charges for the termination of non-access traffic at the same interim rates that would apply had the request been made by the CMRS provider, and under the same terms. 47 C.F.R. § 51.715. Such interim charges are subject to a "true-up" once final rates are established. *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket 96-98, Report and Order, 11 FCC Rcd 15499, 16031, para. 1067 (1996); 47 C.F.R. § 51.715(d). A "true-up" is an adjustment to past compensation that allows each carrier to receive the level of compensation it would have received during the interim period had the final rates been in effect during the interim arrangement. *Id*

6. **Web-links**

- Declaratory Ruling and Report and Order, CC Docket 01-92, *Developing a Unified Intercarrier Compensation Regime, T-Mobile et al. Petition for Declaratory Ruling Regarding Incumbent LEC Wireless Termination Tariffs*
  http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-42A1.pdf

- 47 C.F.R. § 20.11
  http://wireless.fcc.gov/rules.html

Schedule RCS 5

From: Craig Johnson [cjohnson@aempb com]
Sent: Thursday, January 13, 2005 11:12 AM
To: Mark Johnson; Dan Menser
Cc: 'Ray Ford'; 'Andy Heins'; 'Bryan Lade'; 'Craig Johnson'; 'Gary Godfrey'; 'Harriet Eudy'; 'Janie Prettyman'; 'Jim Simon'; 'Lisa Chase'; Lise Rhea; 'Oral Glasco'; 'Gary Romig'; 'Denise Day'
Subject: MITG/T-Mobile negotiations

Mark, Dan:

The MITG companies would like to renew the Traffic Termination Agreements and past traffic compensation negotiations with T-Mobile. According to pleadings filed in Illinois and with the FCC, T-Mobile has indicated a willingness to receive such requests.

We have successfully concluded such negotiations with Cingular, Sprint PCS, and most recently Alltel (wireless).

In the meantime, we are awaiting a Commission decision in TC-2002-57. Some of my clients with Wireless Termination Tariffs have been observing the STCG/SBC blocking activities, and may be interested in duplicating them. We have continued to monitor FCC filings regarding T-Mobile's position regarding the lawfulness of state tariffs. Finally, the Western District Court of Appeals has upheld our position in the "Alma" access tariff case, although some wireless carriers have recently requested transfer from the Missouri Supreme Court

The traffic volumes from T-Mobile to the MITG members were not as substantial as those from Cingular, Sprint PCS, or Alltel. We believe it would be in both our and T-Mobile's interests to attempt to bring our dispute to resolution, rather than continue the expense of "multi-front" litigation

Please advise if you are willing to renew these negotiations.

Craig S. Johnson
Andereck, Evans, Milne, Peace, and Johnson, LLC

Schedule RCS 6

Sent: Thursday, January 13, 2005 4:55 PM
To: 'Craig Johnson'; Mark Johnson
Cc: 'Ray Ford'; 'Andy Heins'; 'Bryan Lade'; 'Gary Godfrey'; 'Harriet Eudy'; 'Janie Prettyman'; 'Jim Simon'; 'Lisa Chase'; Lise Rhea; 'Oral Glasco'; 'Gary Romig'; 'Denise Day'; Tedesco, Greg
Subject: RE: MITG/T-Mobile negotiations

Craig, we are very open to resuming discussions. As compensation for past traffic is a component of the discussions, we may move forward more quickly by discussing actual dollars. I have attached a spreadsheet template based on previous discussions with a few of your clients. T-Mobile is prepared to discuss settlement figures once we have MOUs and an initial offer from the LECs. If settlement figures are not readily available, we are open to beginning discussions more focused on compensation going forward. Suggested times for a conference call include:

TUE 1/18 at 11.30am central
THURS 1/20 at 3.30pm central
FRIDAY 1/21 at 11.30am or 4pm central

Thanks for contacting us; regards,
Dan

Dan Menser
Director - Legal Affairs
T-Mobile USA, Inc
12920 SE 38th Street, Bellevue, WA 98006
425/378-4000 (office) ~ 425/920-2638 (fax)
http:\\www.t-mobile.com

Embedded Switch Investment of Petitioners
Based on 2003 Annual Report to MPSC

		Alma Telephone Company	Chariton Valley Telephone Co	Mid-Missouri Telephone Co	Northeast Missouri Rural Tel Co	Total
		(a)	(b)	(c)	(d)	(e)
1	COE Switching Investment	$ 244,127		$ 1,413,149	$ 6,919,581	$ 8,576,857
2	Access Lines	367		4,446	8,846	13 659
3	Embedded COE Switching/Line	$ 665		$ 318	$ 782	$ 628
4	HAI Switching Investment	$ 173,123		$ 1,771,236	$ 3,646,812	$ 5,591,171
5	HAI Access Lines	352		3,592	7,735	11,679
6	HAI Cost/Line	$ 492		$ 493	$ 471	$ 479
7	% Difference - HAI to Embedded Cost/Line	-26%		55%	-40%	-24%

Note: Chariton Valley Telephone Company leases its COE switches rather than owning them outright so their annual report shows no COE Switching investment.