BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of Determination of the cost of basic local telecommunications service, pursuant to Section 364.025, Florida Statutes.	:	DOCKET NO. 980696-TP

VOLUME 6

Pages 737 through 825

PROCEEDINGS:	HEARING
BEFORE:	CHAIRMAN JULIA L. JOHNSON COMMISSIONER J. TERRY DEASON COMMISSIONER SUSAN F. CLARK COMMISSIONER JOE GARCIA COMMISSIONER E. LEON JACOBS, JR.
DATE:	Monday, October 12, 1998
TIME:	Commenced at 9:30 a.m.
PLACE:	Betty Easley Conference Center Room 148 4075 Esplanade Way Tallahassee, Florida
REPORTED BY:	CATHY H. WEBSTER, RPR
APPEARANCES:	(As heretofore noted.)

I N D E X

EXHIBITS

PROCEEDINGS

(Transcript follows in proper sequence from Volume 5.)

RICHARD T. GUEPE

continues his testimony under oath from Volume 5

CONTINUED CROSS-EXAMINATION

BY MR. REHWINKEL:

Q Would you accept, subject to check, that 28 of the 45 wire centers listed under Centel are above the cost of the revenue benchmark that you have listed?

A Subject to check, yes.

Q And, again, these are HAI figures which may or may not differ from the BCPM outputs. I'm not advocating these.

A That's correct.

Q These are, just for the sake of argument, Mr. Wood's.

Mr. Guepe, you have recommended that only single line residential lines be used in calculating the need for universal service fund; is that correct?

A That's correct. Universal service is about having subscribers, households, connected to the network. If a household has two lines, that does not further the goals of universal service.

Q Even if the lines are because of an extended

family situation?

A If there is more than one line, it really does not; that's correct.

Q And is that definition consistent with the FCC's definition of what line should be included in a national universal service fund?

A I'm not sure that that's been decided at the FCC as far as which residential lines will be and won't be.

Q What about the Florida legislature's definition of basic service; is your single line residential definition consistent with that definition?

A Okay. With that definition, no.

MR. REHWINKEL: That's all I have, Madam Chairman.

CHAIRMAN JOHNSON: We're going to take a break, about twenty minutes.

(Brief recess.)

CHAIRMAN JOHNSON: If everyone can settle in, we're going to go ahead and go back on the record.

One preliminary announcement: We will adjourn this evening around 6:30. We will work past 5:00 o'clock, but probably no later than 6:30.

And with that, I think we're ready.

Mr. Rehwinkel, you were finished; right? You were finished; right?

MR. REHWINKEL: Yes.

CHAIRMAN JOHNSON: Okay. Go ahead, Mr. Powell.

MR. POWELL: Thank you, Madam Chair.

CROSS-EXAMINATION

BY MR. POWELL:

Q Mr. Guepe, good afternoon; Lewis Powell for GTE. I just have a couple of follow-up questions, if you will.

Did I understand you to say that there is no such thing as a low-cost or a high-cost area?

A For a new entrant.

Q So from the perspective of the new entrant, because there has not been deaveraging of UNE rates?

A Correct.

Q But from the perspective of the local exchange carrier, you would agree with me, would you not, that the costs, the underlying cost of providing service, varies widely depending on the area in which the service is provided?

A It certainly would, yes.

Q Mr. Guepe, did I understand you to say that AT&T at least as a new entrant doesn't know who and where the high-margin customers are?

A I'm not in marketing, so I don't know, but I don't think so because you don't know. It's a new market and you don't know. It's a -- What? You've got how many

million customers in Florida, and to say, you know, this 10,000 or this 100,000 are the ones that we know spend more money on local service. How much they spend on local service is only known to the local exchange carriers.

Q But you don't mean to be saying by that, do you, that from AT&T's perspective the residential customers in a small town would be deemed as desirable as the large business customers in the urbanized areas of the state?

A I'm talking about -- Repeat the question. It got long.

Q You don't mean to be saying that from AT&T's perspective, each and every customer in Florida, whether it's a small residential community on the one hand in a rural area of the state as compared with large business customers in heavily urbanized areas of the state, that in AT&T's eyes, that all those customers would be equally desirable?

A No, but when you're strictly talking about residential customers is what I'm saying is that AT&T does not know out of the several million residential customers which ones spend more money or don't.

If AT&T were to get in the market today, suppose everything was set up so that the market was open, that knowledge is not there.

Q So your comment then was limited to the

residential market?

A Yes.

MR. POWELL: I understand. Thank you, sir. That's all I have.

CROSS-EXAMINATION

BY MR. COX:

Q Good afternoon, Mr. Guepe. Will Cox on behalf of the Commission Staff. I have just a few questions.

If you could turn to page 6 of your direct testimony where you cite the Florida Statute that gave rise to this proceeding.

A Yes.

Q Section 364.025(4)(b), Florida Statutes.

A Yes.

Q The requirement states in essence that the Commission will provide a report that estimates the cost using the forward-looking cost based on a geographic area no larger than a wire center?

A That's correct.

Q Would you define the word "cost" here in this section of the statute?

A I think when you're getting into the definition of how the model works and the costs in the model, it would be better directed to Mr. Wood.

Q Okay.

A I mean, the forward-looking cost to me is what comes out of the Hatfield Model.

Q I guess the question I'm asking is what specific costs are we talking about? For example, would it be the total annual or monthly costs for whatever geographic area was selected?

A I would read it and think the Commission could report on the annual costs; it could report on monthly costs.

Q Or would it be the average per line cost?

A Or it could be the average per line because I think the Commission has discretion to do it or report all of it. I think the more information that the Commission provides probably the better off the recommendation is.

Q So you don't believe the statute requires the specific costs be looked at?

A When you say a specific cost, you mean, like give them one number back?

Q Correct.

A I don't know. My interpretation is they could give one number, they could give several numbers, but I'm not a lawyer.

Q Okay. Recognizing that you're not a lawyer, it also states that the cost should be on a basis no larger than a wire center; is that correct?

A That's correct.

Q And the model that AT&T is sponsoring, the HAI model, calculates costs at the cluster level; is that correct?

A It does it at the wire center level and that's where it's run. As far as the more granular, I think that's correct, but you need to check with Mr. Wood.

Q But you're acknowledging that the cluster level would be smaller or more granular than the wire center level; is that correct?

A That's correct.

Q Now the BCPM model, to the best of your understanding, calculates costs at the grid level, which is also smaller than a wire center level; is that correct?

A Based on the presentation earlier today, I would say that's correct.

Q Okay. If that's all true, would you not have to conclude that in this proceeding we're not faced necessarily with the decision of what level costs should be disaggregated to, but instead what level costs should be aggregated?

A I think it's part of the recommendation, since the legislature is looking into the establishment of a permanent universal service mechanism, if you give them the costs and how those costs are going to be used and what

appropriate way to use them would be a more complete recommendation.

Q Would it be fair to say that the costs would be aggregated up from either the HAI's cluster approach or the BCPM's grid approach to the wire center or census block group level; is that a fair statement?

A At whatever level actually the costs are -- You know, if you're looking at an individual cable, you've priced that cable, then somehow or other then you're aggregating up to whatever level it is; yes.

I mean, you're pricing individual components and you have to add them together to whatever level it is.

MR. COX: Thank you, Mr. Guepe. That concludes Staff's questions.

COMMISSIONER DEASON: I have a question. On page 18 of your testimony, where you've calculated the average residential revenue for the three largest companies.

A Yes.

COMMISSIONER DEASON: Why is it that the local service revenue for United/Centel is so much greater than BellSouth and GTE?

A These were numbers which they report, the carriers reported to the FCC by those categories. And I don't know why you've got the differences. I haven't looked. There's no explanation of that. It's just the FCC

had asked them for revenues in these categories and these are the numbers which the carriers provided.

COMMISSIONER DEASON: What is your understanding of what constitutes local service revenue?

A Local service revenue I believe included your basic service, your SLIC, your optional plans. It included any EAS service. It included vertical services. And any -- There might have been something else. I don't recall what else.

COMMISSIONER DEASON: And do you have an explanation of why the intraLATA toll level is so much greater for GTE than the other two companies?

A I do not know unless it might be since BellSouth I know has put in things like your ECS plans, which certainly have reduced the intraLATA toll. I mean, it's moved that really over to local revenues. That might be why BellSouth's intraLATA is so much less than GTE's.

COMMISSIONER DEASON: And for directory revenue, is that the amount that was -- of yellow page advertising -- the benefit of which is allocated to residential customers or how is that derived?

A It was from the ARMIS reports, which the local carriers -- It's the -- I forget what line number in ARMIS, but it's the director of revenues reported through ARMIS, which are reported to the FCC.

So, once again, I don't know the backup behind it to go beyond what here's what the carriers reported to the FCC in these categories. And so why they're so different between carriers, I don't have access to that data.

CHAIRMAN JOHNSON: Any other questions?

Redirect.

MR. HATCH: Just a couple of questions.

REDIRECT EXAMINATION

BY MR. HATCH:

Q Mr. Guepe, do you recall a series of questions asking about your participation in a North Carolina proceeding?

A Yes, I do.

Q Does North Carolina have a universal service statute like Florida's that defines universal service as an evolving level of access to telecommunication services?

A No, it does not.

Q Is the level of revenues relevant to determination of the appropriate cost model in this proceeding for any given ILEC?

A Pardon? I couldn't hear.

Q Is the level of revenues for any given ILEC relevant to a determination of the appropriate cost model under consideration in this proceeding?

A As far as the appropriate cost model, no. It is

relevant to the recommendation to the legislature or the recommendation to the legislature as far as how those costs should be used because you've got -- you're identifying the cost through the cost model and then you have to know how, what's the appropriate way to use those costs and how you're going to measure whether there is a subsidy. And you're going to have to know the revenues to do that.

Q Do you recall, I believe it was a question from Mr. Powell dealing with big business, urban customers versus rural residential customers; do you remember that discussion?

A Yes.

Q Does it cost any more for an entrant to serve buying network elements or resale service under today's pricing mechanisms, does it cost any more for a new entrant to serve an urban residential customer versus a rural residential customer?

A The cost is the same.

Q Would that be true for urban business customers and rural business customers?

A Yes, it would be.

MR. HATCH: That's all the questions I have. Thank you, Madam Chairman.

CHAIRMAN JOHNSON: I think you're excused. There was an exhibit, but I think it was just

demonstrative.

Okay. Thank you.

WITNESS GUEPE: Okay. Thank you.

MR. COX: Chairman Johnson, while the next witness is coming to the stand, Staff wanted to bring one thing to your attention.

We inadvertently left off two orders off the Official Recognition List, which was Exhibit 14.

CHAIRMAN JOHNSON: Okay.

MR. COX: And they are two Florida Commission Orders from the 1995 Universal Service Proceeding. And the first was the final order, which was PSC-95-1592-FOF-TP.

And the second was the Order on Reconsideration, which was PSC-96-0730-FOF-TP.

And we would just ask that the exhibit be amended to reflect those two orders.

CHAIRMAN JOHNSON: Be so amended.

Is that it?

MR. COX: Yes. Thank you.

MR. LAMOUREUX: Good afternoon, Commissioners.

My name is Jim Lamoureux. I represent AT&T. And AT&T and MCI call as their next witness Don Wood.

And Mr. Wood will be testifying at this time only on his direct testimony.

CHAIRMAN JOHNSON: Okay.

WHEREUPON,

DON J. WOOD

was called as a witness on behalf of AT&T and MCI and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. LAMOUREUX:

Q Mr. Wood, could you please state your full name and business address for the record?

A Yes. My name is Don J. Wood.

My name is Don J. Wood. My business address is 914 Stream Valley Trail, Alpharetta, Georgia. That's A-l-p-h-a-r-e-t-t-a.

Q And did you cause to be prepared 22 pages of direct testimony filed on August 3rd, 1998, in this proceeding?

A Yes, I did.

Q Do you have any changes or corrections to make to that testimony?

A No, I do not.

Q If I were to ask you the same questions --

CHAIRMAN JOHNSON: Sir, could you at least point the other microphone to you also because we can't hear you. That might help. If not, you may have to move over.

WITNESS WOOD: Is that an improvement?

I'm sorry.

CHAIRMAN JOHNSON: Try speaking into the other mike. It may have a better --

WITNESS WOOD: Is that better? I don't know.

CHAIRMAN JOHNSON: You may just have to speak a little louder.

WITNESS WOOD: Okay. Is this better?

CHAIRMAN JOHNSON: That's a little better, yeah.

WITNESS WOOD: Okay.

COMMISSIONER DEASON: Madam Chairman, may I add, is anyone using this overhead apparatus, because it's directly between me and the witness?

MR. LAMOUREUX: I was going to use it with the next witness.

COMMISSIONER DEASON: Thank you, Mr. Melson. That's fine.

BY MR. LAMOUREUX (Continuing):

Q If I were to ask you the same questions as are contained in your direct testimony, would your answers be the same?

A They would.

Q And did you also have six exhibits attached to that direct testimony?

A That's correct.

Q Could you just very briefly identify what those exhibits are?

A Yes. Exhibit DJW-1 is my curriculum vita. It's a list of previous testimony.

Exhibit 2 is the Hatfield Model documentation. And attached to that -- That's a description of the model. Attached to that is a list of inputs and also a list of formulas within the model.

Exhibit DJW-3 is the Hatfield Inputs Portfolio which describes inputs and the sources for those inputs to the model.

Exhibit DJW-4 is the user guide to the HAI model.

Exhibit 5 is the list of results by wire center for each company of the local cost of basic local service.

And Exhibit 6 was the CD-ROM which contains the functioning model and the results of the model as we ran it.

Q And were updated versions of Exhibit 5 and Exhibit 6 filed on October 6, 1998?

A Yes. As I mentioned this morning, we had inadvertently left off the white pages listing cost from the previous run of the model. So we updated to include those costs.

MR. LAMOUREUX: I would like to move the admission of Mr. Wood's direct testimony and his six exhibits, recognizing, however, that the revised Exhibit 5

has already been made Exhibit 42 in this proceeding. So I'm not sure what the easiest way of doing this is.

CHAIRMAN JOHNSON: Well, what we'll do for now is we'll insert into the record his direct testimony as though read.

And we'll mark the exhibit. And --

MR. LAMOUREUX: So I guess this should be 43 through 48.

CHAIRMAN JOHNSON: It will be -- We'll do it as a composite exhibit and it will be 43. And the short title will be DJW 1 through --

MR. LAMOUREUX: Six.

CHAIRMAN JOHNSON: -- through 6.

No what were you saying about 5? It's already been revised?

MR. HATCH: Madam Chairman, DJW-5 was previously identified by Mr. Rehwinkel in his cross examination of Mr. Guepe.

CHAIRMAN JOHNSON: It's the same --

MR. HATCH: So in order to avoid -- DJW-5 is within what is now 43. It is also an excerpt from 43, which is what is now Exhibit 42, just to keep everything straight.

CHAIRMAN JOHNSON: Okay.

MR. HATCH: As best we can.

CHAIRMAN JOHNSON: So that's a Composite Exhibit DJW-1 through 6, and it's 43.

MR. LAMOUREUX: Yes, ma'am.

(Exhibit No. 43 marked for identification.)

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY OF

DON J. WOOD

ON BEHALF OF

MCI TELECOMMUNICATIONS CORPORATION and
AT&T COMMUNICATIONS OF THE SOUTHERN STATES, INC.

Docket No. 980696-TP

August 3, 1998

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Don J. Wood, and my business address is 914 Stream Valley Trail, Alpharetta, Georgia, 30022. I provide consulting services to the ratepayers and regulators of telecommunications utilities.

Q. PLEASE DESCRIBE YOUR BACKGROUND AND EXPERIENCE.

A. I received a BBA in Finance with distinction from Emory University and an MBA with concentrations in Finance and Microeconomics from the College of William and Mary. My telecommunications experience includes employment in a management capacity at both a Regional Bell Operating Company ("RBOC") and an Interexchange Carrier ("IXC").

I was employed in the local exchange industry by BellSouth Services, Inc. in its Pricing and Economics, Service Cost Division. My responsibilities included performing cost analyses of new and existing services, preparing documentation for filings with state regulatory commissions and the Federal Communications Commission ("FCC"), developing methodology and computer models for use by other analysts, and performing special assembly cost studies. I was then employed in the interexchange industry by MCI Telecommunications Corporation, as Manager of Regulatory Analysis for the Southern Division. In this capacity I was responsible for the development and implementation of regulatory policy for operations in the southern U. S. I then served as a Manager in the Economic Analysis and Regulatory Affairs Organization, where

I participated in the development of regulatory policy for national issues.

Q. HAVE YOU PREVIOUSLY PRESENTED TESTIMONY BEFORE STATE REGULATORY COMMISSIONS?

A. Yes. I have testified on telecommunications issues before the regulatory commissions of twenty-five states, Puerto Rico, the District of Columbia, state courts, and have presented comments to the FCC. A listing of my previous testimony is attached as Exhibit____(DJW-1). I have presented testimony to this Commission on costing issues on a number of previous occasions.

Q. PLEASE DESCRIBE YOUR EXPERIENCE REVIEWING COST MODELS AND METHODOLOGIES.

A. While employed in the BellSouth Service Cost organization, I had the opportunity to work with a number of cost models and to analyze and review the manner in which these models were used in the cost development process. Since that time, I have reviewed cost studies performed by each of the Regional Bell Operating Companies ("RBOCs") and other Tier 1 local exchange companies ("LECs"), including United, GTE, and Centel. When such materials have been provided, my review has included an evaluation of the methodologies, computer models and spread sheets, and inputs/assumptions used.

I have also been asked by regulators to develop detailed rules to be used

by the incumbent LECs when performing cost studies pursuant to a forward-looking, incremental cost methodology. My proposed costing rules have been adopted and implemented in both Delaware and Wyoming.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to present Release 5.0a of the HAI Model sponsored by AT&T of the Southern States, Inc. ("AT&T") and MCI Telecommunications Corporation ("MCI"). The documentation attached to my testimony describes the Model, including all inputs and assumptions, in detail.

After an exhaustive review, I have concluded that the HAI Model is the most accurate and reliable means of developing the information that the Commission needs in order to determine the "total forward-looking cost, based upon the most recent commercially available technology and equipment and generally accepted design and placement principles, of providing basic local telecommunications service" as indicated in Section 364.025 (4) (b) of the Florida Statutes.

More generally, the HAI Model provides an accurate and reliable means of determining the economic cost of providing basic local telecommunications service specific to discreet geographic areas within the state. For purposes of this proceeding, the HAI Model was used to generate these costs at the wire center level; in other words, the cost of providing basic local telecommunications service calculated by the Model and attached to my

testimony is specific to the unique characteristics of the area served by each incumbent LEC central office.

My recommendation that the Commission utilize the HAI Model to calculate the total forward looking costs of basic local telecommunications service is based on my conclusion that it calculates costs based on sound economic costing principles, including the criteria established by the FCC in its Order in CC Docket 96-45, and calculates costs in a manner that is consistent with the definition of basic local telecommunications service in Section 364.02 (2) of the Florida Statutes.

Q. WHAT STEPS MUST A COST MODEL PERFORM CORRECTLY IN ORDER TO ACCURATELY CALCULATE THE COST THAT AN EFFICIENT PROVIDER WOULD INCUR IN ORDER TO PROVIDE BASIC LOCAL TELECOMMUNICATIONS SERVICE?

A. There are two fundamental steps that a cost model must perform in order to accurately calculate costs. First, because the costs of a local network are a direct function of where customers are located in relation to the serving wire center, the cost model must accurately determine customer locations. A means of accurately locating customers is essential if the two primary cost drivers of local loop costs -- loop length and customer density -- are to be correctly incorporated. Second, the cost model must connect those customers with the serving central office using network facilities that are efficient and which reflect

the most recent commercially available technology.

By correctly performing these two fundamental steps, a cost model can determine the network investment necessary for an efficient provider to serve a specific geographic area.

Q. HAVE OTHER STATE COMMISSIONS IN THE REGION CHOSEN TO RELY ON THE HAI MODEL TO CALCULATE THE COST OF BASIC LOCAL TELECOMMUNICATIONS SERVICE IN ORDER TO DETERMINE THE AMOUNT OF UNIVERSAL SERVICE FUNDING REQUIRED?

A. Yes. Both the Kentucky and Louisiana Commissions have recently chosen to rely on the HAI Model.

At p. 10 of its May 22, 1998 Order in Administrative Case No. 360, the Kentucky Public Service Commission stated that it "adopts the HAI Model to establish the Kentucky USF and determines that the HAI Model complies with the FCC's criteria." The Kentucky Commission went on to describe that its decision was based on the ability of the HAI Model to perform the fundamental tasks described above. Specifically, the Kentucky Commission found that "the HAI Model more accurately locates customers" (p. 10), and that "the HAI Model produces a reasonable and accurate estimate of the average loop length for all loops in the study area. The customer location and loop methodology used to determine the loop lengths are explained in detail in the HAI Model

documentation" (p.11).

The Kentucky Commission went on to state its conclusion that, after more accurately locating customers, the HAI Model develops an estimate of the "costs incurred by an efficient carrier building a network using actual technology and costs," and that "the model correctly applies a long run assumption by treating the ILECs' embedded cost structure, except for the location of wire centers, as variable and avoidable" (p.12).

The Louisiana Public Service Commission has also elected to rely on the HAI Model. In its April 20, 1998 Order No. U-20883 Subdocket-A, the Louisiana Commission voted to unanimously adopt the Staff's Final Recommendation. The Staff's Final Recommendation urges the use of the HAI Model rather than the BCPM for reasons consistent with those articulated by the Kentucky Commission. Specifically, the Louisiana Staff found at p. 8 that the HAI Model more accurately locates customers in nonrural areas: "Based upon the evidence presented in this proceeding, Staff believes that the Hatfield approach to locating nonrural customers is superior to BCPM's method that makes basic, but reasonable, assumptions regarding customer location. Nevertheless, the BCPM does not locate customers...Clearly, a model that actually locates customers is more accurate than one that estimates customer locations." After an extensive analysis of the performance of each model in locating rural customers, the Louisiana Staff concluded that in rural areas "the Hatfield Model is more accurate than the BCPM" (p. 11). In summary, the

Louisiana Staff found that the HAI Model "more accurately locates customers in the more urban areas and that it is as accurate or more accurate at locating customers in the more rural areas than the BCPM" (p. 27).

The Louisiana Staff also concluded that, once customers are located, the HAI Model does a better job at designing a forward looking local network to serve those customers: "Staff believes that the Hatfield Model more accurately reflects the least cost, most efficient, and reasonable technology for providing the supported services," and that "the engineering design standards used in the Hatfield Model are superior to the ones used in the BCPM" (pp. 22-23, 27). The Louisiana Staff concluded that "in this regard, the Hatfield Model better meets the FCC's criteria" (p.27). Again, each of these Staff conclusions was unanimously adopted by the Louisiana Commission.

Q. WHAT IS YOUR ASSESSMENT OF THE HAI MODEL?

A. After a thorough review of both the HAI Model and its supporting documentation, I have concluded that the results of the HAI Model represent the most accurate and verifiable costs for universal service cost calculations. These results are calculated in compliance with sound economic costing principles generally and specifically comply with the FCC's stated cost standards. The results are based on inputs that are specific to the operating territory of BellSouth, GTE, United, and Centel in Florida, but are appropriately independent of each incumbent LEC's embedded network and

operations. In addition, the degree of precision in Release 5.0a of the HAI Model far exceeds that available through competing models -- including the most recent release of the BCPM -- or earlier releases of the HAI Model. The HAI Model is able to more accurately locate customers (in contrast, BCPM does not actually locate a single customer), and then uses this customer location information to better design a local network that is based on the most recent commercially available technology and equipment and generally accepted design and placement principles.

Q. PLEASE DESCRIBE THE INFORMATION ABOUT THE HAI MODEL THAT YOU ARE PROVIDING WITH YOUR TESTIMONY.

A. I have attached a number of documents to my testimony which provide an extensive and detailed description of the HAI Model, including its calculation algorithms, inputs and assumptions, and operation. It is simply not feasible to include the level of detail included in these documents within the body of my testimony. Such detailed information is essential, however, to a complete understanding of any cost model, including the HAI Model, the BCPM, or any other model considered by the Commission. For any model that will be considered in this proceeding, the Commission and Staff should require this level of detailed information regarding calculations, inputs, and model operation.

First, the HAI *Model Description* document, attached as

Exhibit___(DJW-2), provides details regarding the Model's purpose, usefulness, and operational mechanics. This documentation of the HAI Model also includes four Appendices, A through D, which describe in further detail the development and use of the Florida-specific database underlying the Model and the user-definable inputs to the Model.

I have also attached as Exhibit___(DJW-3) the *HAI Inputs Portfolio*, or "HIP." The HIP describes in more detail the source of the inputs and assumptions to the Model, and also includes four appendices: Appendix A graphically describes the configuration of the interoffice network used by the Model, Appendix B describes the basis for the Model's assumptions regarding structure sharing, and Appendix C provides additional detail regarding the development of expense-related assumptions used in the Model. Appendix D includes a description of the basis for adjustments made specifically to network operations expenses in order to ensure that they are forward-looking in nature.

Exhibit___(DJW-4) is the HAI Model Automation Description and User Guide. This document provides detailed, step-by-step instructions for successfully loading and running the HM.

Exhibit___(DJW-6) is complete and functioning copy of the HAI Model, including a copy of the runs of the Model used to produce the costs of basic local exchange telecommunications service sponsored by AT&T and MCI in this proceeding.

This extensive documentation and the Model software should permit the

Commission and Staff to conduct a full review of the HAI Model. In addition, the Model is based on the principles of public access and complete disclosure, which should further facilitate the Commission's evaluation.

This principle of public access and complete disclosure is applied in the following ways:

The HAI Model software, including all inputs necessary to duplicate the results sponsored by AT&T and MCI in this proceeding, is available. Release 5.0a of the HAI Model is attached as Exhibit___(DJW-6). The availability of the Model makes it possible for the Commission, Staff, and incumbent LECs to gain an understanding of how the HAI Model works, to review all inputs and assumptions, and to determine which inputs and assumptions have a significant effect on the Model outputs.

The HAI Model is designed around a user-friendly interface and the documentation includes complete instructions for running the Model. A graphical user interface permits even inexperienced users to run the Model, review input values, and conduct sensitivity analysis on a simple "point and click" basis. The *Automation Description and User Guide* (Exhibit___(DJW-4)) contains complete instructions for loading the Model onto a personal computer, conducting runs, and adjusting inputs for sensitivity analysis. The Model permits the user to run and store up to 9,999 different scenarios (up from 99 scenarios in Release 4.0), allowing complete sensitivity analysis of the Model inputs to be conducted with unprecedented ease.

A complete list and detailed description of the inputs and assumptions used in the HAI Model is provided as a part of the Model documentation. Appendix B to the HAI Model Documentation, entitled *Inputs, Assumptions, and Default Values* lists the default values for the user definable inputs and assumptions and explains what each value is intended to represent. Such a listing makes review and understanding of the inputs to the Model a straight-forward process, and the accompanying explanations make validation of the inputs possible. In addition, the *HAI Inputs Portfolio* (Exhibit___(DJW-3)) provides a description of the basis for the default values selected for these inputs, and in many cases describes how the publicly available data was identified and collected.

A complete description of the process used by the HAI Model to calculate the costs associated with universal service funding requirements, including the calculations and algorithms used, is provided as part of the Model documentation. The process used by the Model to calculate costs is described in detail in the HM *Model Description*, Exhibit___(DJW-2). In addition, Appendices to the documentation provide additional detail regarding the sources of the input data used, describes the data tables present in the Model, and describes and explains the input fields used.

Q. YOU STATED THAT THE HAI MODEL COMPLIES WITH THE FCC'S CRITERIA FOR STATE-CONDUCTED ECONOMIC COST STUDIES.

PLEASE EXPLAIN HOW IT DOES SO.

A. The FCC adopted 10 requirements in paragraph 250 of its May 7, 1997 Order in CC Docket No. 96-45 in order to ensure consistency in the calculations of universal service support at the state and federal levels. Following is a listing of the FCC criteria and a description of how the HAI Model meets each of these criteria. For clarity, I have divided a number of the FCC criteria into sub parts in those cases in which one criteria contains multiple requirements.

(1) The technology assumed in the cost study or model must be the least-cost, most-efficient, and reasonable technology for providing the supported services that is currently being deployed.

The HAI Model utilizes the least cost, most efficient technology that is currently being deployed by incumbent LECs, including digital loop carrier systems, digital switching, fiber rings for interoffice transport, and signalling system 7. In those parts of the network in which different technologies may be more efficient in different situations (the feeder portion of the local loop, for example), the Model examines each individual case and chooses the technology that is most efficient in each case. Release 5.0a of the HAI Model contains additional capabilities for such "dynamic modelling." For example, the HAI Model can now (if so requested by the user) adjust the mix of aerial and buried plant in response to geographic conditions in order to ensure that the most efficient structure type is used in a given area.

(1a) A model must include the incumbent LECs' wire centers as the center of the loop network and the outside plant should terminate at the incumbent LECs' current wire centers.

The HAI Model assumes the existing locations of the incumbent LECs' wire centers. The location of these switching locations is taken from the latest version of the Local Exchange Routing Guide ("LERG"), which is maintained by Bellcore. The distance between wire centers is also developed using data from the LERG. All loops developed in the Model are engineered to terminate on the existing incumbent LEC wire centers.

(1b) The loop design incorporated into a forward-looking economic cost study should not impede the provision of advanced services.

Release 5.0a of the HAI Model replaces the coarse-gauge cable and load coils present in previous versions with T-1 technology. As a result, even the longest loops (those greater than 18,000 feet) can fully accommodate advanced services, including ISDN and other high speed data applications. The HAI Model conducts explicit tests of the outside plant facilities that it models in order to ensure that these parameters are not exceeded.

(1c) Wire center line counts should equal actual incumbent LEC wire center line counts, and the study's or model's average loop length should reflect the incumbent carrier's actual average loop length.

Line counts at the wire center level are estimated by the HAI Model based on demographic data, and the state-wide totals for both residence and business lines are normalized to the totals reported by the incumbent LECs in ARMIS and the NECA USF Loops filing. The current release of the Model has the capability to normalize residence and business line counts at the wire center level, if this data is provided by the incumbent LEC. The Model also can be used to develop average loop lengths at the wire center level, so that this information can be validated.

(2) Any network function or element, such as loop, switching, transport, or signalling, necessary to produce supported services must have an associated cost.

The Model developers have systematically identified all elements necessary to provide universal service, at a sufficiently disaggregated level of detail to allow costs to be assigned to each element.

(3) Only long-run forward-looking economic cost may be included. The long run period used must be a period long enough that all costs may be treated as variable and avoidable. The costs must not be the embedded cost of the facilities, functions, or elements.

The HAI Model is designed to accurately estimate the costs that an efficient carrier would incur to provide service in the geographic area being

studied. In othe words, the costs developed by the Model are constrained by the geographic and demographic characteristics of the area being studied, but are not constrained by the embedded characteristics of the Incumbent LEC's network or operations. In doing so, the Model correctly applies a long run assumption by treating the incumbent LEC's embedded cost structure -- except for the location of wire centers -- as variable and avoidable.

This treatment of costs is consistent with sound economic cost principles and the requirements of this paragraph of the FCC Order.

(3a) The study or model must be based on the current cost of purchasing facilities and equipment (rather than list prices).

The developers of the HAI Model have identified public sources of information regarding the prices (net of applicable discounts) of network facilities and equipment, although equipment vendors have been reluctant to provide the information for this purpose. For many inputs to the Model, the judgement of subject matter experts with extensive experience in the acquisition of network facilities and equipment has been used and this judgement has been validated using vendor information where available. All facility and equipment prices used as inputs to the Model are based on discounted, rather than list, prices.

(4) The rate of return must be either the authorized federal rate of return on

interstate services or the state's prescribed rate of return for intrastate services.

The HAI Model accepts cost of debt, cost of equity, and percentage of debt as direct inputs through the graphical user interface; either federal or state values can be easily accommodated. The Model has been run using the proposed intrastate cost of capital described in the testimony of John Hirschleifer.

(5) Economic lives and future net salvage percentages used in calculating depreciation expense must be within the FCC-authorized range.

The HAI Model allows the user to separately input state-specific projected lives and net salvage values. The values used in the Model in this proceeding reflect the lives and salvage values adopted in the three-way meetings between the FCC, Commission, and incumbent LEC, where those values fall within the FCC range. Any values from the three-way meetings that fall outside of the FCC range have been adjusted to the nearest end-point of the range. The recommended values for depreciation lives and net salvage values are contained in the testimony of Mike Majoros.

(6) The cost study or model must estimate the cost of providing service for all businesses and households within a geographic region. This includes the provision of multi-line business services, special access, private lines, and multiple residence lines. Such inclusion will permit the cost study or model to

reflect the economies of scale associated with the provision of these services.

The HAI Model develops costs based on the total demand for network elements, including loops, switching, and interoffice transport. Total demand includes the demand created by residence (first and additional lines), business (single and multi-line), public (coin) , and special access services. By designing a forward-looking network based on total demand, the HAI Model properly includes economies of scale.

(7) A reasonable allocation of joint and common costs must be assigned to the cost of supported services. This allocation will ensure that the forward-looking economic cost does not include an unreasonable share of the joint and common costs for non-supported services.

The HAI Model systematically assigns so-called "joint and common" costs to the services and/or network elements being studied. Expenses that have traditionally (and incorrectly) been treated as fixed overheads have been directly assigned as variable expenses in proportion to investments or line counts as appropriate. The treatment of these costs in the Model helps to ensure that the joint and common costs caused by the provision of non-supported services are not inappropriately included in the costs reported for supported services.

(8) The cost study or model and all underlying data, formulae, computations,

and software associated with the model must be available to all interested parties for review and comment. All underlying data should be verifiable, engineering assumptions reasonable, and outputs plausible.

The complete Model software has been provided to the Commission, Staff, and other parties on a CD-ROM (Exhibit___DJW-6)). The Model can be run and sensitivity analyses can be performed to determine the impact on the results if inputs or assumptions are changed. In addition, all parties are being provided with the *Model Documentation* which describes the Model calculations and inputs in detail, the *HAI Inputs Portfolio*, which describes in detail the inputs to the Model and the basis for their development, and the *Automation Description and User Guide*, which includes complete instructions for using the HAI Model.

(9) The cost study or model must include the capability to examine and modify the critical assumptions and engineering principles. These assumptions and principles include, but are not limited to, the cost of capital, depreciation rates, fill factors, input costs, overhead adjustments, retail costs, structure sharing percentages, fiber-copper crossover points, and terrain factors.

Each of the types of data listed is an input to the Model that can be reviewed and changed by the user. In addition, each of the Model's cells containing formulae is unlocked, making it possible for the user to make direct changes to both calculations and inputs. The graphical user interface to the

Model makes it a simple task for the user to run and store up to 9,999 different "what-if" scenarios in order to determine the impact of a wide range of input values.

(10) The cost study or model must deaverage support calculations to the wire center serving area at least, and, if feasible, to even smaller areas such as a Census Block Group.

The HAI Model can calculate and display universal service results by wire center, line density zone, or Census Block Group (even though Release 5.0a of the HAI Model calculates costs based on actual customer locations and not at the CBG level, the calculated costs can be aggregated at any one of three levels depending on the user's selection). As a result, the Commission can be provided with information regarding the total state universal service funding requirements or can consider such requirements for distinct geographic areas. The cost results prepared for this proceeding are specific to each incumbent LEC wire center.

Q. YOU STATED PREVIOUSLY THAT RELEASE 5.0a OF THE HAI MODEL PROVIDES A NUMBER OF ENHANCEMENTS THAT INCREASE THE LEVEL OF PRECISION OF THE RESULTS. PLEASE DESCRIBE THESE ENHANCEMENTS.

A. While previous releases of the HAI Model represented the most accurate

forward-looking economic cost data available to date, the Model has undergone additional development work in order to capture differences in the cost of providing basic local telecommunications service in different geographic areas of the state with an even greater degree of precision. While a complete list of enhancements is contained at pages 4-8 of the HAI *Model Description*, two enhancements of Release 5.0a warrant special attention.

First, attempts to criticize the HAI Model during arbitration and subsequent generic cost proceedings have focused almost exclusively on the unit of disaggregation of study data. Previous releases of the HAI Model calculated costs at the level of the Census Block Group, or CBG. While such an approach is clearly preferable to the simple statewide averages produced by the BellSouth cost studies presented in those proceedings, there was a recognition by the HAI Model developers that even greater precision could be gained when calculating costs by identifying the actual location of individual residence and business end users. Such an approach has been incorporated into Release 5.0a of the HAI Model. By developing costs based on the actual locations of most customers, this release of the HAI Model provides a degree of precision in its results that simply cannot be duplicated by a model such as the BCPM which uses a more simplistic approach of arbitrarily distributing end users along roadways or within an artificial grid structure.

Second, the current release of the HAI Model permits "dynamic modelling" for a number of network facilities. Rather than developing costs

based on the type of facility or structure most likely to occur under certain conditions, the HAI Model can now evaluate the characteristics of the geographic area being studied to determine the most economic and efficient means of serving the area. This capability adds a degree of both accuracy and precision not found in a "static" model such as the BCPM which cannot make such adjustments.

Q. WHAT COSTS ARE INCLUDED BY THE HAI MODEL WHEN CALCULATING UNIVERSAL SERVICE FUNDING REQUIREMENTS?

A. The HAI Model includes all of the costs associated with basic local telecommunications service as defined in Section 364.02 (2) of the Florida Statutes, and as defined by the Federal-State Joint board on Universal Service in the FCC's CC Docket 96-45. All costs that would be incurred by an efficient provider on a forward looking basis to provide basic local telecommunications service pursuant to these definitions are included by the HAI Model, and are developed using a process that captures the cost differences of sc g different geographic areas with unprecedented precision.

Q. WHAT COST INFORMATION ARE YOU PROVIDING TO THE COMMISSION?

A. The cost information that I am providing has been produced by running the HAI Model on a wire center-specific basis for the areas served by BellSouth,

GTE, United, and Centel. The output of the Model, attached as Exhibit___(DJW-5), shows the cost of providing basic local telecommunications service and how this cost varies by wire center.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

BY MR. LAMOUREUX (Continuing):

Q Mr. Wood, do you have a summary of your direct testimony?

A Yes, I do.

Good afternoon, Commissioners. Given the presentation process that we went through earlier this morning, I may set a personal record on brevity for a summary.

Ultimately we want you to have the best possible cost information that can be provided to you. In order to properly calculate those costs, any cost model is going to have to place the right telephone plant in place in the right amounts within the areas being studied.

I strongly believe that in order to properly place that plant, the model first has to have the correct information about groups of customers, actual groups of customers, not arbitrarily created groups of customers. And to do that you need the underlying locations. That is the process that this model performs for you.

A grid overlay system cannot accurately capture those customer groups and even putting actual customer locations into a grid overlay system would simply arbitrarily allocate the actual customers' locations to grids and it wouldn't help you any in that regard.

I think this is the correct process. Once we

have that information, we apply sound engineering principles and build a network from that point.

It's a fully operating network and it provides both basic and enhanced services in its capability.

That concludes my summary.

The results of that process are DJW-5.

CHAIRMAN JOHNSON: Okay.

MR. LAMOUREUX: Mr. Wood is available for cross examination.

CHAIRMAN JOHNSON: Any questions on this end?

Seeing none, do you want to start with BellSouth again?

MR. CARVER: Thank you, Madam Chairman.

CROSS-EXAMINATION

BY MR. CARVER:

Q Good afternoon, Mr. Wood.

A Good afternoon, Mr. Carver.

Q My name is Phil Carver and I represent BellSouth. And before I begin, if I could ask, there is a microphone in one of the spaces down from this one that's sticking up there. Could you move that down a little bit?

Thank you. It's blocking out Mr. Wood.

How many density zones does the Hatfield Model utilize?

A It will report results based on nine density

zones, anything from less than five miles per square mile up to over ten thousand.

Q And based on the Florida run of the HAI model, at which density zones are the customers who need support according to Hatfield?

A We actually ran it on a wire center basis rather than on a density zone basis in the results that we provided to you.

Q So you really don't know whether most of the customers who need support are in the zero to five or five to one hundred or one hundred to two hundred? There's nothing that would allow you to make that determination?

A I may have some of that material.

I do have some cost information, but to determine whether they're going to require support, we have to match that with revenue information, which I don't really have.

And, again, this really isn't -- I mean, this is something that's created by the model when it's run, but it's not really something we prepared here or provided as results.

Q Well, let me ask you. In the other states that you've testified, I believe this issue has come up, and in those states weren't typically customers who needed support in either the zero to five density zone or in the five to one hundred?

A Oftentimes those are the highest cost areas. And then depending on what revenues you're going to match that with, you would have customers there. It is certainly most likely, but I can't tell you definitively for Florida where they would be.

Q Well, then let's just go with your general experience. In your general experience, haven't most of the customers who need support been in the zero to five density zone?

A That's certainly the highest cost. And, yes, typically that's where a lot of those customers are.

Q Okay. And in the zero to five density zone, the geocode success rate in Florida is 34%; correct?

A That's right.

Q Okay. So more than -- Assuming Florida follows the pattern that we've seen in other states, more than half of the customers would be in a density zone for which about -- well, you have basically about a 34% success rate in geocoding; correct?

A I'm sorry; I didn't understand the first part. More than half --

Q Well, you've told us that you don't have Florida-specific information. But I'm saying assuming that Florida follows the pattern of the other states.

A Yes.

Q Then that would mean about half of the customers who according to Hatfield need support are in a density zone where you have a 34% success rate geocoding?

A I don't know about a half, but certainly quite a few of them would be.

Q Okay. Well, I think you told me that in other states your experience has been that most of them, I think was what you told me, are in the zero to five zone; correct?

A That's right. I just don't know exactly how many in Florida.

Q Now the Hatfield Model has 1578 user adjustable inputs; correct?

A That's right. That's how many are -- Well, quite a few more are user adjustable. Those are the ones that are actually on the up front, pull down menus in the user interface.

Q Okay. And these are the ones that are described in Appendix B to your Exhibit 2, which is entitled "HM5.0a, Inputs, Assumptions, and Default Values;" is that correct?

A That's right.

Q Now this particular appendix to that exhibit takes these 1578 inputs and puts them in about 202 categories; correct?

A I'll take your word for the number of

categories. It does try to categorize those into a number of different areas just to make it easier to deal with 1600 pieces of information.

Q Okay. And it also provides the national default values for these user adjustable inputs; correct?

A It does.

Q Now in the particular run of the Hatfield Model that's been filed in this docket, that was prepared under your supervision; was it not?

A It was.

Q And in the Hatfield run that was prepared under your supervision, I believe you changed three categories of inputs. That would be B-16, regional labor adjustment; B-178, cost of capital; and B-185, directory listing; is that correct?

A I think the answer is yes. Let me repeat it back and make sure we've got the same thing.

Q Yeah, the three that I found -- The three categories were B-16, regional labor adjustment?

A Right.

Q B-178, cost of capital?

A Right.

Q And B-185, directory listing?

A That's correct.

Q Okay. So out of 202 --

A And, of course, within -- I'm sorry. And, of course, within each one of those categories, there are quite a few inputs that would be affected.

Q And we'll get to that in just a moment.

So basically out of the 202 categories of inputs, you used the national default inputs for about 199 and you changed three of them to Florida-specific values; correct?

A Those were the categories that required a change in order to produce Florida-specific results; that's right.

Q Now you mentioned that there were a greater number of individual inputs that were changed. And I believe that's because with the specific input or category of input, rather, regional labor adjustment, when that one is adjusted, then it causes flow-through changes to a number of different items that have an element of labor in them; correct?

A Well, that's one of the reasons. If you look at I guess each category in turn, cost of capital would have three separate inputs that would be impacted in that category.

For depreciation -- I haven't counted. I believe it's about 40 or 50 because there's a separate input for the expected economic life and for the expected residual net salvage value. So that would be another 50 or so.

The regional labor adjustment factor flows

through to 135 different inputs in terms of assets and another 189 in terms of excavation and restoration costs.

Q So how many all together does the regional labor adjustment factor flow into?

A About 225, thereabouts, I think doing the math in my head. I'm sorry. Three hundred and twenty-five, thereabouts.

Q Okay. Perhaps there's been some confusion because at the time of your deposition, we requested that you file a late-filed exhibit that would show the particular inputs into which this labor adjustment would flow.

A Yes.

Q And I was faxed a copy of something that I presumed was from you. Actually I guess it was sent to me by an AT&T employee. And it was represented to me that this was going to be in your late-filed exhibit. And it's entitled "Inputs Adjusted by Regional Labor Adjustment Factor." And it only lists 135.

A That's right. And that's the same document I have here. And, as I indicated to you in my deposition, one of the items listed here is not an input but a category. And that's excavation and restoration. And I told you at that time I didn't know exactly how many of those there were but there were quite a few and I'd count

them up for you.

That count, at least that I came up with, is 189.

Q Okay. So, all together, if you take all of these flow-through changes, how many inputs have been changed? Something a little bit short of 400?

A Yeah, something less than 400.

Q So of the 1578 inputs, 400 would be changed as a result of your changing these 3 categories and roughly 1175 you would simply use the default national value for the Florida run; correct?

A Well, we would use those values not simply to use them but because they are values that didn't need to be changed in order to produce Florida-specific results. The vast majority of these are applied to Florida-specific data, the geographic and demographic data I talked about. And because of that, there's nothing to change for those inputs.

But I think your numbers are about right in terms of the breakout, the ones we changed and the ones we didn't.

Q Okay. It would be helpful, Mr. Wood, if you could give me a yes or a no before you explain.

So just to back up a little bit, my question was approximately 1178 of these particular inputs you utilize the national default values; now is your answer to that

yes?

A I think your number is about right. And the reason for that is that those numbers were not -- It wasn't necessary to change those in order to produce Florida-specific result.

Q And those --

COMMISSIONER CLARK: Mr. Wood, I'd like you to be clear. He's characterizing them as default.

A Yes.

COMMISSIONER CLARK: Is that what they are?

A Well, default in terms of that's what's in there until you change it; yes. It's things like at what level of capacity should you be operating a cable in a low density area. Well, that's an engineering decision that really isn't specific to Florida. You don't need to change that number.

What you do need to make sure of is that that number is applied to Florida-specific information in order to produce the results. In other words, if you have an assumed capacity on that cable, you need to be applying it to a design for cable routes and cable sizes that's specific not just to Florida but to specific areas. And they are.

So we've got two categories here: One is the things you need to change to produce state-specific or

company-specific results; the other category are things that we don't need to change.

So, yes, they're defaults in that we didn't change them, but it's not as if it's some national value that wouldn't be specific to Florida in the way that it's used in the model. And that's the distinction I wanted to draw.

COMMISSIONER CLARK: Okay.

BY MR. CARVER (Continuing):

Q And just so that we're clear, Mr. Wood, Appendix B specifically identifies these as default values; does it not?

A That's right. And, again, that's what you get until you change them.

Q Now, let's see. There are at least a few inputs in here, are there not, that reflects Florida-specific labor that were not affected by your labor input change; is that correct?

A Actually, I'm not sure what you're asking.

Q Okay.

A The labor factor flows through all the assets that are put in place on an EF&I basis that have a labor and material component. And it does flow through to all of those.

Q If you would, please, turn in this particular

appendix to No. B-90, wire center construction costs.

A Yes.

Q Okay. Now there would be labor involved in the construction cost represented in this category; correct?

A Yes. It would be a different form of labor than we've been talking about, but certainly it takes people to construct a building.

Q And the construction that's represented in B-90 would occur in the State of Florida; would it not?

A That's correct.

Q So to the extent it's construction that involves labor and it occurs in the State of Florida, then whoever does it would be paid at the Florida-specific rate; correct?

A Presumably.

Q But you did not change that one to reflect the Florida labor rate; did you?

A No. In this particular case, again, these values come from both R.S. Means and the National Construction Estimator, which are published sources of construction costs. And these costs are representative of what those costs would be.

Q Now --

A You can change those; we just haven't.

Q Wouldn't you agree that you should change them

given the fact that it reflects Florida-specific labor?

A No, I don't think you should, but you certainly have the capability to do so in the way the model is set up.

Q So some procedures involving labor you change to reflect the Florida-specific labor rate; the B-90 you don't change, even though it reflects labor performed in Florida; is that correct?

A That's correct, for the reasons that I've just described.

Q Now one -- On this list I guess which may or may not be correct, but on the list that was faxed to me on your behalf on Friday, one of the categories was "contractor excavation and restoration."

A Yes.

Q How many particular categories of inputs are represented by that one-line listing?

A That's what I was describing to you before. I don't know about categories. I counted up 189 inputs that would be affected or would fall into that category and that would be affected by the labor adjustment factor. But that's the category I was describing to you a few minutes ago.

Q Can you tell me whether it would affect B-197?

A I'll have to look and see what B-197 is.

Yes.

Q Okay. Let me ask you about input sources. Generally speaking, the Hatfield engineering team would be responsible for the default values for many of the user adjustable inputs; correct?

A They would, and that's why we're going to have Mr. Wells here to talk about those.

Q Now, on the other hand, the engineering team would not have been responsible for the inputs under the general heading "switching and interoffice transmission inputs;" is that right?

A That's generally true. As we discussed in my deposition, I think most of those came from Dr. Mercer or Mr. Chandler. One's a Ph.D. physicist; one's a switch engineer.

Q I'm having trouble hearing you. Who do they come from?

A I'm sorry. Dr. Mercer, who is a Ph.D. physicist who worked at BellCore for at least the bulk of his career; and Dick Chandler, who is a switch engineer.

Q Now these inputs, again, to go back to the category list, just so we're clear on which ones they are, they're all of them between B-74 and B-177, inclusive; correct?

A I think that's right. I don't usually deal with

these in terms of the B classification, but I believe that's correct.

Q And the engineering team would also not be responsible for the inputs that are under the general heading of "Other; in other words, categories B-181 through 196; is that correct?

A That's generally true. And, again, as we discussed in the deposition, I think there are some specific exceptions to that that they were involved in because "other" is a pretty broad category.

Q So basically, just to add it up here, if we take these 200 categories, it appears that the engineering team is responsible for, by my count, roughly 85 of them and other people are responsible for roughly 120 of them; does that sound about right?

A In terms of categories, I have no idea.

In terms of the total number of inputs, it's a very different mix than that because the engineering team inputs are a much larger percentage of the total.

Q Well, let's go back then and make --

A Because there are very different number of inputs in each of these categories you're talking about. Some have as few as two or three.

Q Well, it's kind of hard to talk about almost 1600 categories. So I'm just trying to do it at the summary

level.

Let's go back and look at the numbers then again. B-74 through B-177, you've told me the engineering team was not responsible for those. That's 103; right?

A I'm sorry. 74 through --

Q B-74 through B-177, all of the switching and interoffice transmission, that would be 103 inputs that the engineering team is not responsible for; correct?

A No; what I think I described to you before, also made it pretty clear, that they may have been involved in specific inputs. There is no hard and fast rule here, but some people are involved in all of the inputs in a particular category, just because they are grouped this way, and a different group of people handled exclusively a different category; it simply didn't work that way.

Q Well, Mr. Wells I think in his testimony, he tells us that the engineering team is responsible for certain inputs. And my question that I asked you before and that I thought you answered was is the engineering team responsible for these? That's B-74 through B-177.

A Right. And the answer is not primarily. There are other individuals primarily responsible for switching and interoffice, but I don't want to mislead you. I don't want to suggest to you that none of the engineering team members had any input on any of these inputs that we're

talking about here because they may very well have.

Q Okay. But in terms of direct responsibility then, if we look at B-74 through B-177, that's 103 inputs that the engineering team is not directly responsible for; correct?

A That's right.

Q So, and "other" gives us another 15 or so; that is, B-181 through B-196, that the engineering team is not directly responsible for; correct?

A That's right.

Q So of the 202 categories, there would appear to be roughly 118 that were done -- And when I say "done," I mean primarily or directly responsible for. That role is fulfilled by someone other than the engineering team; correct?

A That's right. I just don't -- So that we're clear, the relative proportion of categories is not the same as the relative proportion of inputs. If you look at the total number of inputs here, the outside plant engineering team probably had direct responsibility for close to 1400 out of the 1600. So we can't just count categories because there is a different number of inputs in each category.

Q Now for these categories, the switching inputs, the 103 or so, there is not a switching team that takes

responsibility for those inputs in the same way that the engineering team takes responsibility for theirs; is there?

A Well, I'm sure Dr. Mercer and Mr. Chandler would be happy to take responsibility for this information, but, no, there is not a separate team of individuals. And it really goes back to what I was just explaining.

This is a much more manageable list in terms of the total here compared to the outside plant inputs where we're talking about 1330 to 1400 of them. That was certainly a task that necessitated more of a team effort or at least a larger team.

Q Now as to these switching inputs, you've told me Dr. Mercer -- And who was the other gentleman whose name you've used?

A Dick Chandler.

Q Okay. Now do you know that Dr. Mercer -- And is it Mr. or Dr. Chandler?

A I honestly don't know.

Q Okay. Well, we'll just call him Mr. Chandler then.

Do you personally know that one or the other of them developed every one of these 103 switching category inputs?

A No. Again, I'm not sure how else to articulate this to you, Mr. Carver. It may very well be that while

they had primary responsibility, other folks, including potentially members of the engineering team, might have been involved in certain of these inputs in this category. I'm not sure how else to describe that to you.

Q Okay. But as we go through category by category, you couldn't tell me whether it was Dr. Mercer on one, Mr. Chandler on another, the engineering team maybe helped on some other? You just don't know the process; correct?

A Well, I know the process, but I can't tell you input by input whether this was totally Dr. Mercer, totally Mr. Chandler, or some combination of the two, or whether they then tapped an outside source like a member of the engineering team.

Q And you're not aware, are you, of any documentation that would reflect exactly what information was used to arrive at these inputs; are you?

A Yes. That would be Exhibit 3 to my testimony, the Hatfield Inputs Portfolio.

Q I'm sorry; once again I can't hear you.

A I'm sorry; I've never been soft spoken before.

The Hatfield Inputs Portfolio is Exhibit 3 to my testimony describes the source for quite a few of these inputs.

Q Okay. So it's your testimony that the Inputs Portfolio gives a detailed description of exactly who

determined that the default value was appropriate, what they looked at to make that determination; is that what you're telling us?

A No. That's -- I'm sorry, Mr. Carver. I thought the question you asked me was did I know of a document that described the sources of information that were relied on. And the answer is yes; it's the Inputs Portfolio.

Q Okay.

A But it does not purport to be an exhaustive list of every individual that was involved in developing these inputs.

I'm not sure the individuals themselves could sit down now at this point and recall with any degree of accuracy exactly who talked about what for every input.

Q And as far as you know there aren't any records that will reflect that process of exactly what they did to set the input values; are there?

A No.

Q Moving to another area, in your presentation this morning on slide 18, there is a section that says the HAI model determines customer location by matching the address information from Metromail and Dun and Bradstreet. And then you go and describe the process.

A Yes.

Q Now isn't it true that the actual customer

location process is done outside of the Hatfield Model?

A Well, the whole process of developing this information that feeds then into the engineering calculations is a separate component. So, I guess, yes, you could characterize it as outside the model that actually calculates how long a cable goes where. That's a different process.

Q So that's a yes?

A Well, I guess.

Q Yeah, I mean your explanation is on the record, but I'd just like to get yes or no's. So that -- Just so we're clear, the customer location process is not done in the model; it's done in the reprocessing portion of the model; right?

A Well, I would call that part of the model, but it's certainly not part of the Excel spreadsheets that are used to calculate the facility's requirements then to serve the area. It is in fact a separate process.

Q And it's done by a company called PNR; correct?

A That's right.

Q Okay. I just want to be sure we're clear. In your deposition, at page 107, after you identify PNR, on lines 23 and 24, I said, "And that occurs outside the model?"

And you said, "That's correct."

A That's right. I just want to make sure that we're on the same page in terms of what we're talking about in terms of the model. I mean, yes, this is part of the Hatfield process.

No, it is not part of the Excel spreadsheets.

Q Okay. So basically what happens is this firm called PNR, through a process that we'll talk about in a minute, develops customer location data; it goes -- The end result of that process goes into a file and then that file is loaded into the Hatfield Model; correct?

A Broadly speaking, yes.

Q Okay. Now to go through the process -- And I don't want to repeat what you told us this morning, but I just want to make sure we're clear on who does what. PNR utilizes the Metromail and Dun and Bradstreet data to geocode customers by latitude and longitude and by address when possible; correct?

A They use Metromail and Dun and Bradstreet to collect the addresses. The conversion then to latitude and longitude is done through a separate process utilizing information from different companies.

Q And that process is done by PNR; correct?

A It is done by PNR based on softwars that they license from other providers, but the other providers are not Metromail and Dun and Bradstreet. It's a separate

process, separate step in the process.

Q Okay. So that s -- I understand your explanation again, but that's a yes? PNR does this process?

A Yes, PNR does the process but not just relying on Metromail and Dun and Bradstreet.

Q And the development of surrogate locations for customers who can't be located by address, that's also done by PNR; correct?

A That's right. They create the file, the database file, that then goes into the model that has the information about these customer groups and all the characteristics of these customer groups.

Q And PNR uses an algorithm to develop from these particular customer locations a polygon cluster; correct?

A That's right.

Q An then once they have the polygon cluster -- And this gets back again to what you've described to us this morning -- then the cluster is converted by PNR into the rectangles that are the serving area; correct?

A That are oftentimes the serving area, but, again, to be clear, it is possible that a given cluster may contain more than one serving area. And because of the size of the cluster, either in terms of the physical dimensions or the number of lines, we may include more than one serving area in order to meet the engineering

constraints.

Q Okay. But with that exception, though, to go back to my question, in general, PNR is the one who does this process of taking the polygon clusters and converting them into the rectangular serving areas; correct?

A That's right.

Q And all of these steps that are done by PNR, up to the point where we actually have the rectangular serving area created, that's all preliminary processing; correct?

A That's right. Again, it's -- It's step one to the process, and then, step two, applying the engineering algorithm and the Excel spreadsheets.

Q Now the end result of the process that PNR has done, which is loaded into the model, is the MDB data file; correct?

A It's the HMDB data file; that's right.

Q Okay.

A That was included on DJW-6.

Q I'm not sure where I got that acronym. Tell me again what are the correct letters?

A It's the -- Let me make sure. I think it shows up on DJW-6 as HM.DB, the DB being the suffix for Microsoft access database.

Q Now this file doesn't contain the data points that represent the customers that were fixed in the

constraints.

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Q Now this file doesn't contain the data points that represent the customers that were fixed in the

analysis of PNR; does it?

A No. And let me go back one step. I'm sorry, Mr. Carver; it should HM50.MDB is the correct file name as it was provided on Exhibit 6.

Q Okay. Just for shorthand, if I call it the MDB file, you'll know what I'm talking about?

A I should; yes, sir.

Q Okay. Now to go back to my question, because I just want to be sure we're clear, the geocoded locations that PNR has fixed by the application of the algorithm to the underlying data, that is not reflected in the MDB file; correct?

A Oh, it's certainly reflected in that file because that's how the clusters that are in that file were created.

Q Right. But if we want to see the actual data points where the customer locations are, we couldn't see that from looking at the MDB file; could we?

A No, that's not -- Those points have already been used in the clustering process. And it's the characteristics of the clusters that are reported on the database file.

So, no, the previous information in the process isn't included for practical reasons as much as anything else. As you know, this database is already very large. And to add in that information, we wouldn't be able to fit

it on the CD-ROM.

Q And the surrogate locations that are set by PNR, they are not specifically included in the MDB file; correct?

A No; that's right. Those data points aren't there because they've already been used to create what is on the file in terms of the cluster data.

Q And the polygon clusters, those aren't in the MDB file either?

A I'm not sure what you mean.

Yeah, all the clusters are there.

Q They're rectangular clusters, though; right? In other words, the MDB file would not reflect the earlier step where the customer locations were made into the polygon cluster that you showed us this morning? That wouldn't be in the --

A It would not include a separate set of data for the cluster as an irregular polygon and then a separate set of data for the cluster as a rectangle; that's right.

Q And the one that it would include would be the rectangle?

A That's right.

Q Now isn't it true that PNR will not release the customer locations that it uses to perform the clustering analysis?

A I don't think they're PNR's to release. I think they're licensed from other companies. I don't think they have the legal authority to release those.

Q Well, you say they're licensed from other companies. But what I'm talking about is if we take the underlying data, and we apply the algorithms as PNR does, and then we have customer locations, for whatever reason PNR won't release those underlying customer locations; will they?

A The answer is the same: I don't think they have the authority to do that. And it depends on which specific piece of information you want as to which licensing agreement would apply.

Q Okay. So your answer is no, PNR would not release the specific underlying customer location data?

A Well, if by "release," you mean just generally put it out in the public record domain, no, I don't think they can. If by "release" you mean allow you to come and look at it and review it, then the answer clearly is yes because that process has happened not only in the context of this proceeding but with others.

Q PNR will not allow that information to leave its premises; will it?

A Again, I don't think they can.

Q Okay. So no is your answer?

A I believe the answer is no.

Q Okay. We seem to be having a little difficulty here clarifying PNR's position. So what I want to do is show you a letter and see if you've seen this letter and then I have a few questions.

A All right.

Q Have you had a chance to review that, Mr. Wood?

A I'm almost done, Mr. Carver.

CHAIRMAN JOHNSON: Do you want it marked?

MR. CARVER: Yes, please.

CHAIRMAN JOHNSON: Mark it as 44.

(Exhibit No. 44 marked for identification.)

BY MR. CARVER (Continuing):

Q Have you read it, Mr. Wood?

A I have.

Q Would you please read aloud the first paragraph, which is just two sentences long?

A Sure. "The purpose of this letter is to respond to your request for cluster data underlying version 5.0 of the Hatfield Model. The specific data that you requested cannot be released because it is proprietary either to our data vendors or to AT&T and MCI."

Q So basically what this letter tells us is that PNR refuses to release the cluster data; correct?

A Well, I think it tells you that they can't. And,

in fact, if you read on to the next sentence, it tells you what I just told you before. And that is they can't release the data points for the customer locations because it says "The actual geocoded customer locations are proprietary to our data vendors and cannot be resold or provided by PNR to any third party," which in fact was my understanding.

Q And we also read down in the second paragraph, it gives us a list of all the things that PNR can't or won't release. And they include the actual polygon boundaries for each cluster; correct?

A That's right; that's No. 1.

Q And they also include the number of customers in each cluster that are placed at actual geocoded locations versus the number of customers located by default on census block boundaries; correct?

A That's right. And, again, it's my understanding "release" here means they can't provide you with that information into the public domain, but you have been allowed to visit it and review the information on-site.

Q Now, so we've got those two categories, plus there's a general reference in paragraph one to cluster data underlying; they won't release that either; correct?

A That's right.

Q Now PNR has also taken the position, haven't

they, that if someone wants to see how this information works or if they want to replicate the information, then PNR will help them do that for a price; correct?

A That's two separate questions. If you want to see how it works, they will allow you to do that and they won't charge you a price.

If you want to duplicate this process, which would then create something for you that would have substantial market value, as it does for them, then they will assist you in doing that and train you on how to do it, including the underlying software for a price; that's right.

Q Okay.

A But those are two very separate tasks here. To understand it doesn't cost you anything. To replicate it, to have then this to be able to sell, as PNR has it to sell, would cost you something. I think that's quite reasonable.

Q Okay. Just so we're clear, I want to be sure that we've got the two separate processes separated. If you wanted to see the contents of the DBF points file that is maintained by PNR and it is utilized to generate the polygon clusters that are ultimately loaded in the Hatfield, you would not be able to see that or you would not be able to obtain it from PNR and take it with you at

any price; correct?

A That's right. That's information that they've created, but you would be able to review it and evaluate it on-site.

And this process that we're describing here from PNR is exactly the same process, Mr. Carver, that I've been on the other side of attempting to review BellSouth's models and BellCore models. It's the same set of restrictions. You don't take them with you. You go in; you visit them on-site. They're subject to very stringent agreements. And you don't take this information with you because it's a model that has market value to BellCore and they don't want that released.

So this is actually really very, very comparable to the process that's been applied to an evaluation of SCIS, for example, which is used by BellSouth.

Q Now have you actually personally gone to PNR and looked at these clusters?

A I have not.

Q Okay. So then personally you don't really know how the process would work if one tried to go to PNR and review the clusters; correct?

A I have seen some selected pieces of information, but I have not gone through the process of trying to go to PNR and somehow audit their process; no. I haven't been

asked to do that.

Q Now to get back to this alternate offer that PNR would make, that they would somehow sort of train you to replicate the data.

A Yes.

Q The cost for that or the price for that, what you would have to pay PNR would be something upwards of two million dollars; correct?

A I think that includes a lot of things. I think that includes -- Well, I've got the letter here somewhere that I think you're referring to.

Let's get on the same page.

Well, I do have it somewhere in this book.

I think what that figure includes, if I recall right, is the licensing fees for the underlying software because there are quite a few pieces of underlying software and databases that you would be licensing as they have licensed it. That would include training you on how to do that process and an on-going level of support for a period of time.

Q And the price is that is something in excess of two million dollars?

A I think for that complete package, that's the premium choice package, and I think it is over two million dollars.

Q And that price would be the price to anyone, whether it was an individual party, a Commission that wanted to see how the underlying data process worked, whoever; it would cost two millior dollars?

A No. Again, that's the distinction I wanted to make before, Mr. Carver. And I guess we're talking past each other.

If the Commission wants to see how the information works, the cost is zero.

If BellSouth wants to go and duplicate the product that PNR has created, that is created by going out, spending real money to license software, real money to license databases, its real efforts of its employees to create this process, that can then yield something useful, if you want to walk away with the fruits of their labors, they're going to charge you for that.

That is not the same as a question of how to understand the process either from a representative of your company or whether the Commissioners wanted to understand the process.

Q Okay. But you didn't answer my question.

A Very different process, very different price tag.

Q Right. But my question is if someone didn't just want to go on-site and do a limited review and, instead, if someone knowing that they couldn't have the file of actual

data points that PNR created, if they wanted to replicate it to see how that process really worked, to replicate that process it's two million dollars plus, whether it's a party or a Commission or anyone else; correct?

A No, sir. I -- We'll try it one more time.

Q Is there a different price for a Commission?

A No.

Q I'm talking about replicating the process.

A That's right.

Q Okay. And didn't you tell me in your deposition that even if the Commission wanted that, it would still be two million dollars to do that?

A No. I told you if the Commission wanted to walk out with the same viable product to sell that anybody else would walk out with that PNR created, I presume the price would be the same.

What you contrasted that with in your question, if I heard you correctly, is some form of limited review at PNR. And that's not the dichotomy here. You can go to PNR; you can conduct the review on apparently the same footing that I was granted when I was trying to review SCIS. And I, quite frankly, had a lot of the same interests in doing that.

Q Well, Mr. Wood, we're just going in circles.

A I didn't want to walk out with a model to sell,

but I did want to walk out with an understanding.

Q Mr. Wood, we're --

A In this case as well, the price would be zero.

Q We're just going in circles now because you've already told us you've never been to PNR and you've never tried to look at the underlying data; correct?

MR. LAMOUREUX: I'm going to object. I think this question has been asked and answered pretty clearly at this point.

MR. CARVER: Well, I think it has been, but he just made a representation as to what would occur at PNR and the type of review you would be allowed to do.

Earlier he told us that he has never tried to do that himself. So I guess maybe the question I should ask is how could he possibly make a statement as to what the review would entail if he's never done it.

WITNESS WOOD: I've conducted -- As I was describing before, I have a very comparable experience to this. I was permitted access to a model that I wanted to gain the understanding to, if I understand this letter right, on pretty near the same ground rules, almost verbatim, very, very near.

And I was told by BellSouth and other companies sponsoring that model that that was the correct degree of access to make a full and complete understanding of that

model.

But that's not the same as being able to walk out with it on diskette and sell it to somebody. That quite properly is something that PNR should charge for.

COMMISSIONER CLARK: Mr. Carver, that's what I understood his answer to consistently be.

MR. CARVER: Well, I the guess the problem is he continues to make representations about what happens when one goes on-site at PNR. And then when I ask him how he can make that representation, he falls back to some analysis he's done on premises at BellSouth.

And the question I'm getting to is he's never gone to PNR and he's never tried to conduct the analysis, so he really can't speak about what PNR would allow him to do or would allow any other party to do.

Now we have people in the case who have tried to do this who can address it, but Mr. Wood has not done that.

So the question is if he has never done that himself and he has never actually gone to PNR, how can he possibly represent to the Commission what PNR would allow? And I don't think he's ever answered that question.

MR. LAMOUREUX: I think he just explained that in his last answer.

CHAIRMAN JOHNSON: The question has been asked and answered. I mean, you may not agree with the answer,

but.

BY MR. CARVER (Continuing):

Q Okay. Other than this review on-site -- I'm going to try one last time to get an answer on the question about replicating. If one wanted PNR to replicate the analysis that's plugged into the Hatfield Model, it would cost two million dollars even if it were this Commission that wanted to have that done; correct?

A And the answer is, yes, if they wanted to walk away with something worth two million dollars that they could then sell.

MR. CARVER: Thank you. That's all I have.

CHAIRMAN JOHNSON: Mr. Fons.

MR. FONS: I have some questions.

CROSS-EXAMINATION

BY MR. FONS:

Q Mr. Wood, my name is John Fons, and I'm representing Sprint-Florida.

A Good afternoon, Mr. Fons.

Q Good afternoon.

This morning in your presentation, you showed us a slide -- and I didn't get one of your handouts. So I'm just calling from memory -- a slide of households that might be served as a group. Do you remember that?

A There were several. It might be helpful if we

looked at the particular page. Certainly there are several slides that showed arrangements of households that might be in a group. And I need to take a minute and retrieve that copy as well.

Q Let's look at slide No. 12, please.

A Yes, sir.

Q And is this slide representing households that should be served together or might be served together as a group?

A That's right. It's purely illustrative. I'm not trying to map any houses that might exist in Florida. This is an illustrative example. But, yes, this is the slide that begins the process of how to identify what this group would be.

Q Okay. And then over on slide 21 you continue this process, what you call the HAI loop plant design process. Are these -- Are you trying here to map customers together as a group in this exhibit or is it the next one, Page 22?

A Actually, page 12 and Page 21 or 22 have different illustrative groups of households. I'm not intending the households of locations somehow on page 12 to map to what's on 21 or 22. They're both just illustrative arrangements of where customers might be located.

Q But it is your position that the HAI or any model

should group households together that should be served as a group?

A If they are physically located together, yes; absolutely.

Q And you discussed how overlaying a grid over that group of customers -- and I believe that's what you present in No. 13; you did some kind of an overlay over that, over No. 12?

A That's right.

Q Okay. And what we have here, slide, is just a grid; it's not the overlay that you used; isn't that correct?

A Well, actually, I had intended to apologize in the presentation. I don't remember if I recalled to do it or not. I had intended 12 and 13 to actually both appear on the same page so that you would see the locations and the grid.

The only reason they were split up was for my purpose of laying the grid on the households during the presentation.

So if that's caused some confusion, I apologize. That wasn't quite the way that I had intended these to come out.

Q I believe you stated, though, that overlaying a grid over a group of customers could cause customers to be

served separately who should in reality be served together. Do you remember that statement?

A Yes; yes.

Q And I believe you indicated that this type of thing occurred approximately or over 25 -- yeah -- 25% of the time; is that correct?

A In terms of analysis, looking back at the process in earlier versions of this model, when we were looking at census block group boundaries as the overlay, there were, more than 20% of the time you would find, because these are typically bounded by roads, you'd find customers on each side that would logically be in a group but were divided by the road and, therefore, would have been divided by the grid process in the model, well over 25.

Q And you're referring to an earlier HAI model?

A Yes.

Q Which model was that?

A I believe it's Release 2. Release 2 and 3 would have had some variation of that.

And, again, while -- Because of the way the CBGs are drawn, they're likely to capture groups within them because that's what the census bureau was trying to do when they draw the boundary, but it turned out that there were some cases where you would have customers on each side that were split up. That's why using artificial boundaries is

not a good idea when looking at customer clusters.

Q But was this an analysis that you conducted of versions 2 and 3 of the Hatfield?

A Yes.

Q And when did you conduct those analyses?

A On an ongoing basis I guess starting -- Gosh, it's hard to remember when we started doing this.

Fall of '96 is when the earliest versions came out, through early this year at least. There was the basis for the model clustering was on the census block group rather than the new clustering algorithm that gets away from that.

So during that whole period I had occasion to look at this several times.

Q But the grid process with regard to the HAI model, version 2 or 3?

A Right. And, to be clear, I'm talking generally it effectively was a grid process in the sense that CBGs were used and those boundaries were considered fixed in terms of splitting up customers. It wasn't a literal overlay in that model. It wasn't the type of overlay that BCPM uses, but it was in a sense a fixed boundary that was looked at, that could have split customer groups.

Q So it was not a grid method as proposed by BCPM; isn't that correct?

A No, I'm much more concerned about the BCPM process.

Q I'm just asking you the question: Yes or no, it was not the grid process used by the BCPM; was it?

A No. The BCPM process is much more problematic because it's much more likely to split customer groups.

Q This analysis that you did for the versions 2 and 3 of the HAI model, did you file those analyses with this Commission?

A No, I don't think there was ever -- It's nothing quite that formal. It was simply because I was involved with the model quite a bit in evaluating it, I was personally interested in looking at that, but it was -- To my recollection, it wasn't an issue that came up in these proceedings and it wasn't something that we addressed.

Q Was your analysis even Florida specific?

A Oh, yes.

Q It was specific to Florida, your analysis of versions 2 and 3 of the Hatfield Model with regard --

A Oh, I certainly, yes, had occasion to look at Florida information in that process.

Q But you've never filed it in any proceeding?

A No, it's never really been an issue in any proceeding.

Q Did you do a similar analysis for BCPM?

A I've not done anything directly comparable, although Mr. Pitkin has analyzed quite a bit of this, as we describe in our rebuttal testimony. He would be the right person to talk to about that.

Q But you have not?

A I have not attempted to do that.

Q Let's turn to your geocoding, if we might, please. Tell me again what the geocoding does.

A The geocoding process matches the address information that is obtained either from Metromail or Dun and Bradstreet to a latitude and longitude point code of where the customer would be located.

Q And this is necessary for your clustering process?

A Yes. It's necessary to know where the customers actually are in order to begin the clustering process.

Q And I believe you indicated this morning in your slides that currently 70% of the Florida end users can be geocoded, which means that 30% cannot be?

A That's right, statewide; that's the right number.

Q And I believe you also said that geocoding is successful in those areas where it's most important for the accurate determination of costs; do you remember saying that?

A It is most successful in those areas. And, again

I had the discussion with Chairman Johnson about that. It's the areas not the highest and lowest densities but those in between where clustering is really the most essential in order to design the network facilities correctly. At both ends of the spectrum, it's relatively less important.

Q You've indicated that it's most successful in those areas where you're most concerned about clustering, but I thought your slide said that it's most important for the accurate determination of costs.

What areas of Florida are most important for the accurate determination of costs?

A No, that's not quite what I said. What I said was that in order to determine the correct costs and in order to do clustering correctly, that's most important in these areas that are not either extreme but those in the middle.

Q Well, let me read from your slide, if I have the correct --

A I'm sorry, which slide?

Q It's No. 18. It says, "Success rate is relatively high, up to 85% in the area ir which successful geocoding is most important for the accurate determination of costs."

And what I'm trying to find out is what areas is

geocoding most important for the accurate determination of costs?

A Well, once again, it's those areas that are not either extreme of density but those in the middle. And the reason it's most important is because for those areas accurate clustering is most essential to the accurate deployment and efficient deployment of the outside plant. And to extreme cases, clustering is less important because of the way the model designs plant in those areas.

Q Well, let me just ask you: Isn't the purpose of this proceeding to determine the cost of providing local exchange service in particular for high cost areas?

A Well, it's certainly to determine where those costs, high cost areas are; that's right.

Q And you're saying that geocoding is not important for those high cost areas?

A No, sir. What I said here is it is relatively more important in the middle ground because that's where clustering and accurate clustering is most essential to proper network deployment.

As I described this morning, in the very lowest areas, we have some clustered individuals but by and large the network design for those areas is not based on building to clusters or groups. It's based on those outlier road cables that build individually to one customer or to a very

small group, one to four customers. And in that least dense area, we have the vast majority of that road cable directly to those locations. So clustering is less important there simply because there are fewer people to cluster.

Q How about on a wire center basis; is geocoding important on a wire center basis?

A Yes, because a wire center will include a mix of varying density areas. So certainly for almost all wire centers there will be areas served by that wire center where clustering is very important.

Q And would you agree that geocoding then is important for those wire centers that are the highest cost to serve?

A It will be important for all wire centers. And, again, each of those wire centers is going to serve a mix of high and low density areas and the relative importance will vary with the density of the area.

Q Are you familiar with an ex parte that was filed by AT&T with the FCC on March 2nd, 1998?

It would have been filed by someone named Mike Leiberman. And its purpose is to show the wire center level geocode success.

A I don't think I have that one, or at least I don't think I have that one in my notebook.

Q Let me ask a few questions concerning that. Is that -- Do you know whether or not that was filed on a wire center by wire center basis in the State of Florida?

A Not without seeing it; no, sir.

Q Do you know what the geocode success rate was for Florida that was filed at the FCC?

A Yes. I actually have the attachment to the original ex parte at the FCC, which is an exhibit to my rebuttal testimony. It's Exhibit 6 to my rebuttal testimony.

And that is I believe a direct copy of what was included in the ex parte with regard to geocode success rates

(Whereupon, the transcript continues in Volume 7 without omission.)