

1 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

2
3 In the Matter of)
4 Determination of the cost of) DOCKET NO. 980696-TP
5 basic local telecommunications)
6 services, pursuant to)
7 Section 364.025, Florida)
8 Statutes.)

9
10 VOLUME 10

11 Pages 1080 through 1177

12
13 PROCEEDINGS:

HEARING

14 BEFORE:

15 CHAIRMAN JULIA L. JOHNSON
16 COMMISSIONER J. TERRY DEASON
COMMISSIONER SUSAN F. CLARK
COMMISSIONER E. LEON JACOBS, JR.
COMMISSIONER JOE GARCIA

17 DATE:

Tuesday, October 13, 1998

18 TIME:

Commenced at 9:30 a.m.

19 PLACE:

20 Betty Easley Conference Center
Room 148
21 4075 Esplanade Way
Tallahassee, Florida

22 REPORTED BY:

NANCY S. METZKE, RPR, CCR

23
24 APPEARANCES:

25 BUREAU OF REPORTING (As heretofore noted.)

RECEIVED 10-14-98

DOCUMENT NUMBER - DATE

11466 OCT 14 98

FPS - RECORDS/REPORTING

I N D E X

WITNESSES

NAME	PAGE NO.
------	----------

KEVIN DUFFY-DENO

Cross Examination by Mr. Lamoureux. . .	1088
Cross Examination by Mr. Melson . . .	1103
Cross Examination by Mr. Cox . . .	1105
Redirect Examination by Mr. Carver. . .	1108

PETER F. MARTIN

Direct Examination by Ms. Keyer . . .	1116
Prefiled Direct Testimony Inserted. . .	1119
Prefiled Rebuttal Testimony Inserted. .	1133
Cross Examination by Mr. Coker . . .	1154
Cross Examination by Mr. Henry . . .	1167

EXHIBITS - VOLUME 10

NUMBER	ID.	ADMTD.
#46		1115
#47		1115
#48		1116
#49 (Late-filed) MST analysis using DLC information	1115	
#50 Revised Exhibit PFM-1	1118	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

1 P R O C E E D I N G S

2 (Transcript follows in sequence from Volume 9).

3 KEVIN DUFFY-DENO

4 continues his testimony under oath from Volume.

5 COMMISSIONER DEASON: It seems to me that is a
6 serious flaw in the model if it doesn't create enough
7 cabling to at least meet the minimum requirement. That's a
8 flaw in both models. Why does that flaw exist?

9 DOCTOR DUFFY-DENO: Why does it exist?

10 COMMISSIONER DEASON: Yeah.

11 DOCTOR DUFFY-DENO: Well, I can explain why it
12 exists in the Hatfield Model, and then I can maybe provide
13 some reasons why it might exist in the BCPM model. The
14 best way to explain why it exists in the Hatfield Model is
15 to look at the following. I've got some overheads that
16 would explain this.

17 I need to get all the points up there so you
18 can -- There we go. What this shows is a placement of
19 customer locations, some address geocoded, some surrogate.
20 And this would be -- these would be spatially placed on a
21 map. The next step in the Hatfield pre-processing is to
22 form these locations into clusters. And the next overhead
23 shows a cluster formed out of those customer locations,
24 okay? And, again, this is all in the pre-processing stage.
25 This is not what you see on the CD you get with the model.

1 This, the outer perimeter of these points is
2 referred to as a convex hull. Now that is not really
3 important. What's important is that the boundary of the
4 cluster is formed by these connections between those outer
5 points. Now this is what's done by PNR. On behalf of the
6 Hatfield Model development team PNR geocoded the locations,
7 address geocoded locations, developed the surrogate
8 placement, formed these clusters of customers into these
9 irregular shaped polygon clusters; and then the last step
10 was the transformation of that irregular shape into a
11 regular shape. The models modeling -- transformation to a
12 regular shape makes modeling a heck of a lot easier to do.

13 So what happens is this irregular shape is
14 transformed into a rectangle. Now this rectangle is what's
15 included in the model. When you open the model MDB
16 database, you get essentially these rectangular clusters;
17 and this is the modeling tool used by the Hatfield Model to
18 estimate the amount of cable needed to serve the customers
19 in the PNR underlined clusters.

20 So what the minimum spanning tree test says is,
21 given the amount of cable estimated by this modeling tool
22 isn't enough to simply connect customers in the underlying
23 PNR cluster. And the reason the Hatfield Model falls short
24 is due to two reasons: Reason Number 1 is the
25 transformation of this irregular shape polygon into this

1 rectangle. What that tends to do is, it tends to compress
2 dispersion. The dispersion of customers that occurs in the
3 PNR cluster is greater than the amount of dispersion within
4 the modeled area. And the reason for that is not only the
5 transformation in the shape but also the placement of
6 uniform lots within that modeling area. In this case we
7 are assuming nine customers, and the model assumes
8 essentially uniform distribution of lots within that
9 rectangle.

10 Now the second reason for the failure in terms of
11 the minimum spanning tree test is that when the model
12 estimates the amount of branch and backbone cable, it will
13 extend the cables to only one lot's width and depth from
14 the perimeter. What that means is that the customers, in
15 order to be served with the -- And we are talking about
16 rural areas here. This is where predominantly the problem
17 occurs. In rural areas the default drop value is only 150
18 feet, so what happens is the model needs -- these customers
19 have to be compressed even further into the interior of
20 this modeled area to be connected to the branch and
21 backbone.

22 So when you add up the amount of branch, backbone
23 and drop for this modeled area and you compare it with the
24 amount of connecting distance needed to connect the
25 customers in the underlying PNR cluster in rural areas

1 where this, again, is predominantly the problem, the model
2 comes up short. So the reason for the shortage in the
3 Hatfield Model is transformation of these irregular shaped
4 clusters of customers into the regularly shaped rectangle
5 used by the model and the assumption that backbone and
6 branch cable extends to only within one lot depth and width
7 within the modeled area.

8 COMMISSIONER JACOBS: Excuse me. Does that
9 include the configuration -- I think it was mentioned in
10 the presentation -- where it was said that there was an
11 assumption that in those outlier areas they would have the
12 remotes from -- that would not come directly from the CO.
13 So would it need that same kind of connecting technology,
14 or would you have something else in place of that?

15 DOCTOR DUFFY-DENO: I believe you are referring
16 to the outlier clusters.

17 COMMISSIONER JACOBS: Yeah, yeah.

18 DOCTOR DUFFY-DENO: Yeah, this is the -- the MST
19 problem in the Hatfield Model is predominantly a problem
20 with the main clusters.

21 COMMISSIONER JACOBS: Oh, okay.

22 DOCTOR DUFFY-DENO: Okay? The outlier clusters,
23 because they are so small to begin with and because of the
24 connecting cable between the main cluster and the outliers
25 takes a right angle routing. The minimum spanning tree is

1 as straight as the crow flies. When you add up the
2 connecting cable to the outliers plus the outliers
3 internal, you are always going to be above the minimum
4 spanning tree for those outliers and that connecting cable.

5 COMMISSIONER JACOBS: I see.

6 DOCTOR DUFFY-DENO: So, really, the focus -- the
7 main area of concern is with the main clusters.

8 COMMISSIONER JACOBS: Thank you.

9 COMMISSIONER DEASON: The second half of that
10 question.

11 DOCTOR DUFFY-DENO: BCPM.

12 COMMISSIONER DEASON: Yes.

13 DOCTOR DUFFY-DENO: Unfortunately, the analysis
14 isn't as clear-cut in terms of BCPM, and I can give you
15 some thoughts I have. I would also recommend you talk to
16 Doctor Brian Staihr to see what thoughts he has on this.

17 One thing that jumps out is that BCPM uses a cap,
18 a road cap on the amount of distribution distance it
19 estimates within a quadrant. And the rationale for this --
20 what this road cap says is that the amount of branch,
21 backbone, drop and connecting cable cannot exceed the
22 amount of road mileage within that quadrant. And the idea
23 was, well, that cable is going to go along the roads, so
24 how can you have more cable distance than road distance?
25 Well, maybe that assumption contributes to the shortage of

1 BCPM on this account.

2 That's the only thing that comes to mind right
3 now. Again, Doctor Brian Staihr might have more thoughts
4 on this. You know, it is a problem. It is an issue in
5 both models, but clearly BCPM -- or Hatfield comes up far
6 worse on this test than does BCPM.

7 BY MR. LAMOUREUX (Continuing):

8 Q I just want to clarify something. What the MST
9 is, is if you've got a cluster and the model, Hatfield
10 Model, geocodes some locations in that customer -- in that
11 cluster and the others -- Let me backup. The others have
12 been placed surrogate, using the surrogate location
13 methodology somehow. So some of these customers have been
14 located through geocoding, some have been located through
15 the surrogate location methodology. The MST calculates a
16 distance for that to connect all those points?

17 A (WITNESS NODDED HEAD AFFIRMATIVELY).

18 Q That is not a comparison to if you were to take
19 that cluster out, drop it down on top of somewhere in
20 Florida and find where all the houses are in Florida,
21 households, houses, whatever you want to do, and calculate
22 that distance. It's not a comparison of that?

23 A No, it's not.

24 Q Okay. So what you've done is if you've got the
25 MST distance out of the Hatfield Model, some number --

1 we'll call it X for lack of creativity -- what you then do
2 is you add up all the distance, ground footers that you
3 find in the Hatfield Model itself for that cluster -- say
4 it's Y -- and you determine if Y is either equal to -- if Y
5 is equal or less than, if the Hatfield Model distance is
6 equal to or less than the MST distance than that?

7 A Less than.

8 Q Okay. Now if it's true that the surrogate
9 location methodology is a conservative approach in how it
10 places the surrogates, it could very well be that although
11 the route distance that comes out of the model for that
12 cluster is less than the MST distance for that cluster, the
13 route distance in that cluster is sufficient for the actual
14 amount of routage if you were to drop that cluster down on
15 top of the houses on Florida?

16 A Is it possible? Sure. Is it relevant?
17 Absolutely not. What the models are doing is -- and what
18 this test is doing is determining whether the model
19 estimates enough cable to serve customers in the locations
20 identified by the model. That would be the first cluster
21 that Mr. Lamoureux drew. It has no bearing whatsoever, or
22 it has no -- it is not in relation in any way to where
23 customers are actually located. We don't have a
24 comprehensive database on that. This is an internal model
25 consistency test. Does the model estimate enough cable to

1 serve customers in the locations identified by the model?

2 Now I don't care where they have identified those
3 locations. I don't care if they put them on the perimeter
4 of census blocks, I don't care if they put them on the
5 roads. I don't care if they put them all on top of each
6 other, the test is still valid, and the test still says:
7 Does the model estimate enough cable to connect, to at
8 least connect those customers? So this whole argument
9 about how the geocoded -- I'm sorry, the surrogate location
10 placement on the census block boundary somehow yields a
11 greater dispersion and hence the Hatfield Model in
12 actuality estimates enough cable to serve actual customers
13 is mind boggling to say the least. They are mixing apples
14 and oranges in essence. The focus of the MST analysis is
15 internal to the model. Does the model build plant to where
16 the model says customers are located, period.

17 Q The purpose of this proceeding is to determine
18 what's the appropriate cost to provide service to these
19 customers in Florida, right, or to determine how to
20 calculate the cost to provide service to these customers in
21 Florida?

22 A Correct, it is. And how do we do that? We build
23 models. Do we have some requirements that our models
24 should pass? Yes, they should be internally consistent.

25 Q But the ultimate check on whether the model does,

1 what the purpose of this proceeding is, is to determine if
2 the amount of footage for the location that actually exists
3 in Florida is enough cost to serve that actual location in
4 Florida. Would you agree with me on that?

5 A No, I can't. We don't know where actual
6 customers are located. You can't take that model, that
7 cluster and plop it down on top of Florida, some part of
8 Florida, and compare the distances with respect to what
9 actually it would take to serve those customers because we
10 don't know where those customers are located. That's the
11 whole reason we are going through all this, all this debate
12 about the customer location methodology. It is an
13 estimation methodology. And then to say that, well, we
14 have located customers using this state of the art
15 methodology, and, oh, by the way, our points aren't
16 accurate enough, therefore, you can't use the minimum
17 spanning tree test is ludicrous to say the least.

18 Q Whether or not it's possible to do it, the
19 ultimate test of whether a model does what the purpose of
20 this proceeding is for is whether it generates enough
21 cable, footage, plant to have sufficient cost to serve
22 actual locations in Florida.

23 MR. CARVER: Objection. Madam Chairman, he has
24 asked this exact same question three times, and I think
25 Doctor Duffy-Deno has answered it three times, and we are

1 just going over the same thing now again and again and
2 again.

3 MR. LAMOUREUX: Actually I don't think he
4 answered the question. I would have to think back. I'm
5 not sure it actually had a yes or no to it. And, again, he
6 answered the question of whether or not it was possible to
7 do the test, not whether that really should be the test
8 regardless of whether it's possible or not.

9 MR. CARVER: I believe the answer was no, and I
10 think he has stated that unequivocally several times, and
11 he has explained his answer at great length; and, again, I
12 think this is just repetitive.

13 CHAIRMAN JOHNSON: I thought his answer was no
14 too. Unless you are asking a different question, and when
15 you were just explaining what you were asking, you had
16 about three questions in there.

17 MR. LAMOUREUX: Let me ask the question, and if I
18 get the objection again, I will.

19 BY MR. LAMOUREUX (Continuing):

20 Q But my question is regardless of whether or not
21 there was a test that can be done to do it, the ultimate
22 test of whether a model serves the purpose of what this
23 proceeding is about is whether the model generates enough
24 plant and cost to serve an actual location in the State of
25 Florida?

1 A No, it --

2 MR. CARVER: Same objection. That's the same
3 question.

4 CHAIRMAN JOHNSON: I'm going to let him answer
5 it.

6 A It's not. The purpose of the model is to
7 estimate an accurate -- to accurately estimate the cost to
8 serve customers; and to determine whether the model is
9 accurate in that regard, we need to look at some internal
10 validity tests, and that's what the MST test does.

11 Q Following up on your last answer, it's to
12 determine the cost of serving actual customers, right?

13 A I certainly hope it is, yes.

14 Q I want to ask a question about how you did the
15 MST analysis for BCPM. The MST calculation you did for the
16 Hatfield Model was the MST distance for the Hatfield
17 cluster, right?

18 A That was one of the tests. I did a test for the
19 main cluster, and I also did a test for the main clusters
20 plus the outliers because there has been some argurent that
21 our analysis is biased because we don't include the
22 outliers; so we put in the outliers also and low and behold
23 came up with the same findings.

24 Q And on the BCPM side, the unit of analysis that
25 you did was the ultimate grid, the serving area?

1 A That's correct.

2 Q Okay. And my question is, when you were looking
3 at or calculating out the distance in the BCPM, did you
4 include in that the distribution from the DLC at the middle
5 of the serving area to each of the road-reduced
6 distribution areas?

7 A Absolutely.

8 Q When you calculated the MST for BCPM, did you
9 include this DLC as a point or a node in calculating the
10 minimum spanning tree distance for this ultimate area?

11 A Mr. Lamoureux, you've been doing your homework.
12 No, we have not, and the reason was that when this all got
13 started the minimum spanning tree program that was written
14 for the Hatfield Model clusters was just the connecting
15 distance between the points in the cluster, and we didn't
16 add a point in the centroid of the cluster -- I can't
17 honestly think of why we didn't do that, but we didn't.
18 And what Mr. Lamoureux is arguing, well, you've got to
19 connect customers not only to each other but to the
20 network, and that's the subfeeder termination point
21 within -- at the centroid of the cluster.

22 So what he is saying, I think, and he'll correct
23 me if I'm wrong, but what he is saying is that if you
24 compare the connecting cable distance, backbone, drop and
25 branch distance and compare that with an MST that does not

1 include the centroid of the ultimate grid as an additional
2 node, that your analysis isn't really an apples to apples,
3 and I'd be the first to agree. But guess what, we did it.
4 And would you like to know the results?

5 Q Sure.

6 A Sure. Does it increase the minimum spanning tree
7 distance for BCPM? Sure it does. Sure it does. You're
8 adding an additional node, okay? It's going to increase
9 it.

10 On average it increases the shortage in BCPM by
11 24%, and I can provide this as a late-filed exhibit. I've
12 got a table that shows this data. So it does increase the
13 amount of shortage in BCPM, and it's a good point, and I'm
14 glad we brought it up, and we need to -- if we are going to
15 go forward we need to include that additional node.
16 However, to be fair, don't we also need to do that HAI
17 model? Yes, we do; and yes, I have done it.

18 The MST distance also increases in the Hatfield
19 Model, and the shortage increases as well. However, the
20 shortage doesn't increase by as much in the Hatfield
21 Model. It increases by an average 8%. So if I can just
22 use these new MST numbers and reference back to my summary
23 statement where I said BCPM was short on average by 68% --
24 was short in 68% of its serving areas and Hatfield was --
25 I'm sorry, Hatfield was short in 68% of its serving areas

1 and BCPM was short in, I believe it was, 24% of its serving
2 areas.

3 What would be the new numbers if we used the
4 centroid of the clusters? The Hatfield Model would be
5 short in 88%. And this is just of its main clusters by the
6 way. I couldn't do it for the outliers. Hatfield is short
7 in 88% of its main clusters in the lowest density zone.
8 BCPM is short in 43% of its clusters in the lowest density
9 zones. And, again, we can file this as a late-filed
10 exhibit.

11 So, good point. Good point. But the relative
12 results of the test are fairly constant. BCPM performs,
13 still performs much better on this test than does the
14 Hatfield Model.

15 Q Now when you said it increases the average amount
16 of shortage by 24%, was the amount of distance that is
17 short that it increases by 24%?

18 A That was the amount of -- the difference between
19 the minimum spanning tree and the estimated distribution
20 distance, yeah, for the entire state actually. That's
21 the --

22 Q Is that -- I'm sorry, go ahead.

23 A That is the only number I've got, is for the
24 entire state.

25 Q That is not in the number of clusters that are

1 short, that increase as a result of doing this revised MST?

2 A That 24% increase?

3 Q Yeah.

4 A No, that's just the shortage, the total shortage.

5 Q Right. And when you rattled off the numbers 88%
6 and 40 something percent of Hatfield versus BCPM, you said
7 those were in the lowest density zones?

8 A That is the lowest density zone, yes.

9 Q The less than five density zone?

10 A The less than five, yes.

11 Q So it increased the number of clusters short in
12 BCPM, it went from 31% to 40 something percent?

13 A 32% to 43 in the lowest density zone.

14 Q And in that density zone it increased the number
15 of Hatfield clusters -- I'm sorry, the number of Hatfield
16 clusters by 86 and half roughly to about 88%?

17 A Yes. Yes. So, again, the effect was smaller in
18 the Hatfield Model than in the BCPM.

19 Q The last subject I want to cover, I don't need
20 any graphs for this. BCPM locates and builds plant to
21 house units and Hatfield locates and builds plant to
22 households; is that right?

23 A No, unfortunately, I can't agree with that
24 statement; and it's a clarification I need to make in
25 particular with respect to the Hatfield Model. The models

1 build plant to clusters of customers. Neither model builds
2 plant to specific households or housing units. So in terms
3 of the Hatfield Model, when we are talking about address
4 geocoded points, the model does not build plant to those
5 points. Those points are used to form clusters, just like
6 I have up here on the screen. Those points are used to
7 form clusters, and the model estimates the amount of cable
8 needed to serve that cluster, that serving area, and the
9 same for BCPM.

10 Q Okay. Let me ask a more precise question then.

11 A Okay.

12 Q The Hatfield Model builds plant and, therefore,
13 cost to clusters containing households. BCPM builds plant
14 and calculates costs based on ultimate grids containing
15 housing units?

16 A Yes. Let me restate that. As the fundamental
17 unit or the fundamental definition of a residential
18 customer, BCPM default is a housing unit which, as we know,
19 is an occupied or an unoccupied structure. And the
20 Hatfield Model uses as its definition of the residential
21 customer, it uses "households," but I also thought it was
22 households with phone service, which is a smaller number
23 than the population of households.

24 Q Generally, there are more housing units than
25 households?

1 A And there are more households than households
2 with phones.

3 Q So as a general proposition, by locating and
4 building to an area that encompasses housing units rather
5 than households, BCPM would build more plant than if it
6 simply built to areas based on households; would you agree
7 with that?

8 A As a general proposition, I would agree with
9 that.

10 Q Okay. And the FCC criteria specifically refers
11 to households, not housing units; is that right?

12 A The criteria in -- criterion uses the word
13 "households." Obviously that term -- there is a difference
14 of opinion as to whether the FCC truly meant households or
15 did it mean housing units, or did it mean households with
16 current telephone service. Obviously the sponsors of BCPM
17 interpreted that as housing units. The Commission may
18 interpret that differently.

19 COMMISSIONER CLARK: Doctor, let me ask you a
20 question on that. Households has a specific term in the
21 sense that it's -- and that's evidently what Hatfield is
22 equating the use -- As I understand it, they are using
23 the term -- they are saying the term "household," and the
24 FCC has the same meaning as in the census and, therefore,
25 you would use that measure.

1 DOCTOR DUFFY-DENO: Well, actually, if -- I think
2 my understanding is correct that they are using households
3 with phone service which would not be of a census
4 definition of a household.

5 COMMISSIONER CLARK: Well, if they are, I didn't
6 understand that, so let's just keep with the notion of they
7 are equating households. Is it possible that they are
8 equating household to the census use of the term?

9 DOCTOR DUFFY-DENO: I believe, yeah. If we
10 ignore the penetration issue, I believe that's what they
11 are doing.

12 COMMISSIONER CLARK: Well, let me ask you from
13 the standpoint of modeling for cost, which do you think is
14 correct to use, the housing units or the ones that actually
15 have people in them?

16 DOCTOR DUFFY-DENO: I believe that the models
17 should be costing what it would take to build plant to
18 housing units because of the incumbent's obligation to
19 serve. When the census did their census, on that
20 particular day, a house could have been vacant when the
21 very next day somebody moved in. That house would be
22 considered a housing unit but an unoccupied one in the
23 census data.

24 COMMISSIONER CLARK: Now is it possible to simply
25 adjust the Hatfield Model? Can you just change an input so

1 that you do use housing units for the Hatfield Model?

2 DOCTOR DUFFY-DENO: I believe it would be a
3 change in the pre-processing stage. It's something the
4 user could not do

5 COMMISSIONER CLARK: Well, if we thought that was
6 correct to do, we could have that changed in the Hatfield?

7 DOCTOR DUFFY-DENO: I'm assuming that you would
8 make a request to AT&T to make that change and they would
9 have that change executed. I might point out that BCPM,
10 although the default is building to housing units, can very
11 easily, by the user -- we don't have to go back to
12 pre-processing -- the user using BCPM can change the module
13 so that it builds to households.

14 COMMISSIONER DEASON: How much difference does it
15 make in the BCPM results as to whether you use households
16 or housing units?

17 DOCTOR DUFFY-DENO: I don't know. I don't know.
18 Doctor Brian Staihr might be able to answer that for you.
19 I haven't seen any runs.

20 MR. LAMOUREUX: I have no further questions.

21 CHAIRMAN JOHNSON: We are going to take a
22 30-minute lunch break.

23 (BRIEF RECESS)

24 CHAIRMAN JOHNSON: We are going to go back on the
25 record.

1 MR. LAMOUREUX: With the Commission's indulgence,
2 may I ask one last question? (Inaudible)

3 CHAIRMAN JOHNSON: Your mike -- I can hear you,
4 but your mike isn't on.

5 MR. HATCH: The mike is not activated.

6 CHAIRMAN JOHNSON: Well, maybe that is because I
7 need to turn them on.

8 You want to ask one last question?

9 MR. LAMOUREUX: One last question, and I promise
10 it will only be one question.

11 CHAIRMAN JOHNSON: Okay.

12 BY MR. LAMOUREUX (Continuing):

13 Q In I think the next to last line of questions we
14 talked about, I asked you if doing the MST for the BCPM you
15 had added a point in the middle of the ultimate grid for
16 that DLC, and you gave me some numbers, or analysis you did
17 for that. All I wanted to ask you is, in that analysis you
18 did, did that also include the addition of points in the
19 four quadrants where -- which would be connected to that
20 point in the middle of the ultimate grid?

21 A I don't know. I'll need to find out.

22 MR. LAMOUREUX: Thank you very much, and I
23 appreciate the indulgence.

24 CHAIRMAN JOHNSON: Okay.

25 DOCTOR DUFFY-DENO: I will add that maybe Doctor

1 Staihr knows the answer to that question.

2 CHAIRMAN JOHNSON: If you could pull your mike
3 down a bit?

4 DOCTOR DUFFY-DENO: I would just add that maybe
5 Doctor Staihr knows the answer to that question.

6 CHAIRMAN JOHNSON: Okay. Mr. Melson.

7 CROSS EXAMINATION

8 BY MR. MELSON:

9 Q Doctor Duffy-Deno, I'm Rick Melson representing
10 MCI. I've just got a few questions for you this
11 afternoon.

12 I believe part of the point of your MST analysis
13 is you want to be sure that the model does not understate
14 the amount of distribution required to serve an area; is
15 that correct?

16 A Generally correct, yes.

17 Q And would you also agree, on the other side, that
18 you don't want to overstate the required amount of
19 distribution?

20 A Conceptually, yes. The problem is we don't have
21 a benchmark on the other side as to what is the appropriate
22 amount of cable or distribution, cable distance to serve
23 customers. We only have this lower-bound minimum spanning
24 tree benchmark.

25 Q And I believe -- let's focus on the numbers you

1 gave us for the BCPM model. I believe you indicated that
2 after your refined analysis there were some 43% of the
3 grids in the lowest density zone in which BCPM fell short;
4 is that correct?

5 A That would be the minimum spanning tree, that's
6 correct, using the road centroid of the ultimate grid as an
7 additional node.

8 Q Can you tell me what that percentage is if you
9 focus not just on the lowest density zone but across all
10 density zones?

11 A Across -- so the average number of grids short
12 across the entire BellSouth territory?

13 Q Yes.

14 A 4.6%.

15 Q So 4.6% of the total grids BCPM does not place
16 enough distribution to meet the MST minimum?

17 A Correct, over BellSouth's entire service
18 territory.

19 Q Okay. So then there are roughly 95% of the grids
20 in which that minimum is exceeded?

21 A That's correct.

22 Q Have you done any analysis of the amount or
23 percentage by which the minimum was exceeded in that 95% of
24 the grids?

25 A I have not.

1 Q Do you know, for example -- Could you tell us
2 whether the average was more or less than twice the MST
3 minimum?

4 A I have not done that analysis. I can't tell
5 you.

6 Q And so without that analysis, even recognizing
7 that the amount needed may be somewhere above the minimum,
8 we don't have any information on how far above the minimum
9 the BCPM numbers would be?

10 A That data is readily available. I don't have it
11 here. However, again, because we don't have a benchmark
12 for what is the appropriate level of cable, we only have a
13 benchmark for the lower bound, it's not really that useful,
14 because we don't know by how much to offset the minimum
15 shortage -- the minimum spanning tree shortage.

16 MR. MELSON.

17 That's all. Thank you.

18 BY MR. COX (Continuing):

19 Q Good afternoon, Doctor Duffy-Deno.

20 A Good afternoon.

21 Q Will Cox on behalf of the Commission staff, and I
22 have just a couple of quick questions.

23 This exhaustive discussion you had on the minimum
24 spanning tree analysis, the last number that you gave for
25 BCPM was 43% under building, and that was based on when you

1 looked at shortage including from the customer location to
2 the DLC; is that correct?

3 A Correct, when we include the road centroid of the
4 ultimate grid as an additional node.

5 Q Okay.

6 A And that was for the lowest density zone.

7 Q Okay.

8 A The less than five house housing units per square
9 mile.

10 Q And you also stated that when you do the minimum
11 spanning tree analysis, it didn't factor into play things
12 such as geographic obstacles that might cause different
13 routing; so, in fact, the 43% is probably an understatement
14 of the under building; is that correct, or fair to say?
15 This is just looking at the model, I understand that. It's
16 an internal check that you have.

17 A To the extent that -- The answer -- I guess
18 the answer is, yes, to the extent that the appropriate
19 amount of plant needed is greater than the minimum spanning
20 tree amount, yeah. But, again, we don't know what that
21 number is.

22 Q Okay. Given that, staff sees that as a fairly
23 substantial percentage of under building based on that
24 internal check of the minimum spanning tree analysis. What
25 adjustments to BCPM should be made to correct for this

1 understatement of distribution plant as indicated by the
2 minimum spanning tree analysis?

3 A One point -- one thing that comes to mind is that
4 one of the reasons that the Hatfield Model also understates
5 is because the cable -- Let me -- If I can put up my
6 overhead again, I can explain it better, I feel. One of
7 the reasons for the under build in the Hatfield Model was
8 the branch and backbone cable in the modeling, modeled area
9 was limited to within one lot depth and width of the
10 boundary of that modeled area. The same thing happens in
11 BCPM. So one adjustment that comes to mind is to, in
12 BCPM's road-reduced area, when the branch and backbone
13 cable is laid out, is to extend it to maybe to the
14 perimeter of that road-reduced modeled area instead of
15 within one lot depth, width and depth of that boundary.

16 Q Would that be considered a pre-processing
17 adjustment?

18 A No, it would be a change to the code itself in
19 the Excel spreadsheets.

20 Q Is that something that the staff could perform?

21 A Certainly. And I'm sure the sponsor would be
22 happy to guide the staff in determining exactly what cells
23 should be changed and in what manner to achieve that
24 effect.

25 Q Would you be the one for us to ask how

1 specifically to do that?

2 A It certainly can be asked through me. I would
3 probably send it on to our coding experts to make sure we
4 get you the right cell references.

5 Q Okay. What other adjustments might be made to
6 correct the problem?

7 A That's the only one that comes to mind, and I
8 would certainly direct that question to Doctor Staihr. He
9 might have some additional thoughts on that.

10 Q Thank you, Doctor Duffy-Deno.

11 A You're welcome.

12 MR. COX: That concludes staff's questions.

13 CHAIRMAN JOHNSON: Commissioners?

14 (NO RESPONSE)

15 CHAIRMAN JOHNSON: Redirect.

16 MR. CARVER: Yes, thank you, I have just a few
17 redirect questions.

18 REDIRECT EXAMINATION

19 BY MR. CARVER (Continuing):

20 Q Doctor Duffy-Deno, early in the cross examination
21 by Mr. Lamoureux there was a discussion that had to do with
22 the possible use of geocoding in BCPM and I think you said
23 that it might make sense to do that if it would be -- if it
24 would result in a substantial increase in precision. I
25 think -- I believe the figure you said was if the geocoding

1 rate was 80% or higher. Do you recall that?

2 A I recall that discussion, yes.

3 Q Okay. Let me ask you: Where do high-cost areas
4 tend to be?

5 A My understanding and looking at the data, they
6 tend to occur in the rural, low-density areas.

7 Q Have you ever seen a rural, low-density area
8 where the geocode success rate was 80% or higher?

9 A Not to my knowledge.

10 Q Thank you.

11 Moving to a different area. If you could just
12 flip back to the national park example. I had one question
13 for you on that. Now I believe in that example when you
14 did the Hatfield portion of the location, I believe the
15 hypothetical was that Hatfield could geocode one customer
16 and the other two were placed at surrogate locations; is
17 that correct?

18 A Yes, as I recall this example, we have a census
19 block, and we were talking about this occurring within a
20 state park or a national forest, and we had three locations
21 identified by the census, and we were assuming for talking
22 purposes that one of those was accurately address geocoded
23 and the remaining two were going to be placed on the
24 boundary of the census block, according to the Hatfield
25 surrogate methodology, and I placed them, one there

1 (indicates) and one there (indicates).

2 Q Now in that example, as to the two customer
3 locations that are placed on the census block boundary, how
4 close are those likely to be to the actual customer
5 locations?

6 A Well, in this example here, and again, assuming
7 we have a very large census block, they could be fairly far
8 removed from their actual location. With a sparsely
9 populated census block with few roads in it, people tend to
10 be located along the roads; and by placing customers on the
11 boundary, they could be pretty far indeed from where they
12 actually reside.

13 Q Just to clarify, in that particular example,
14 there is not a road on the boundary, is there?

15 A As I've drawn it, no; and there not necessarily
16 is a road on the boundary.

17 Q Okay. So assuming that's the case, those
18 customers would be placed, it looks like, about half the
19 distance of the census block off of the road running
20 through it?

21 A As I've drawn it, yeah, a fairly far distance.

22 Q And the last thing I wanted to ask you about is a
23 slightly different area. Let's assume --

24 COMMISSIONER GARCIA: I'm sorry, Mr. Carver, what
25 was the point you were trying to make there? Because I

1 missed it completely.

2 MR. CARVER: Okay.

3 COMMISSIONER GARCIA: And I'm sure there was
4 subtlety to it, and --

5 MR. CARVER: Well, the point I was trying to make
6 is that the two surrogate locations are in positions where
7 it's very unlikely that customers would ever be there
8 because they are at the boundary. There are no roads on
9 the boundary. The road runs down through the middle, so
10 they've located the customers, if it's a big census block,
11 a long way from the road that runs down the middle; so it's
12 an extremely unlikely location. Whereas, with BCPM, if the
13 customers are on the road, at least in a linear sense, you
14 are a little bit closer to where they would be in real
15 life.

16 COMMISSIONER GARCIA: I thought there was more
17 subtlety involved. Thank you.

18 MR. CARVER: It was a fairly broad ploy.

19 BY MR. CARVER (Continuing):

20 Q The last point I wanted to make --

21 A If I can, Mr. Carver, following up on
22 Commissioner Garcia's point, Mr. Lamoureux pointed out that
23 we have an ultimate grid where BCPM identifies one location
24 in which the satellite observations indicates there are no
25 locations. I just want to make a follow-up point that that

1 is also possible in the Hatfield methodology as we have
2 shown here. Due to the surrogate placement, you could
3 place somebody on a census block boundary where indeed
4 there is nobody actually located there; so it is an
5 artifact of the modeling process.

6 COMMISSIONER GARCIA: So it's a problem with
7 either model?

8 DOCTOR DUFFY-DENO: Yes.

9 BY MR. CARVER (Continuing):

10 Q And the final question I would ask you, or series
11 of questions is this: Let's assume that the Hatfield Model
12 does successfully geocode a customer; that is, it geocodes
13 the address of the customer on the road near the actual
14 house, some distance from the actual house. Once it's done
15 that, does Hatfield actually build plant -- and when I say
16 build, I mean model plant -- to that location?

17 A No, it doesn't. And the graphic that I just had
18 up shows that. Once again, this irregular shape polygon
19 cluster is the PNR cluster that's formed out of the
20 geocoded, address geocoded and surrogate locations; and
21 just for talking purposes, suppose that point here is
22 address geocoded. The model does not build to that
23 location. What the model does is it builds to a serving
24 area such as this -- well, which is this rectangular
25 cluster which is used to determine the amount of cable

1 needed to serve the customers in the underlying polygon
2 cluster.

3 Q So then in effect, at least for modeling
4 purposes, the customers would sort of be moved from where
5 PNR said they actually are to a different location?

6 A Conceptually, yes. The models don't spatially
7 move customers around. Customers are located in these
8 spatial locations. For modeling purposes though, you can
9 argue, well, the amount of cable estimated by the model
10 implies that the customers are located here rather than
11 here for modeling purposes.

12 Q Let me see if I can ask the question a little
13 more precisely. Basically, the Hatfield Model would model
14 the customer location as if it were somewhere other than
15 where the customer really is?

16 A Yes, for purposes of estimating the amount of
17 cable, the customers are, for modeling purposes,
18 assigned -- or located here. That determines the amount of
19 cable.

20 Q Okay. And for purposes of my last question, I'm
21 going to call this moving customers, although we understand
22 that the customers aren't literally moved. We are talking
23 about a difference in actual location and modeled
24 locations.

25 A Okay.

1 Q But in moving the customer from the clustered
2 location to the location in the rectangle, is that distance
3 significant that the customer is moved?

4 A It can be. It can be. In rural areas, these
5 clusters tend to be large and sparsely populated; and also
6 depending on the shape of the cluster, if you've got an
7 oddly shaped polygon cluster, the transformation to a
8 rectangle can bring about, in your terms, a fairly large
9 movement of customers for modeling purposes.

10 Q And in rural areas, those clusters sometimes get
11 as big as 10, 15, 20 square miles; is that correct?

12 A Oh, yes. There are some, I think, upwards of 20
13 square miles.

14 Q So then the movement of the customer from their
15 location in the polygon cluster to the location in the
16 rectangle could be a movement of perhaps several miles or
17 more?

18 A Possibly.

19 Q Thank you.

20 MR. CARVER: That's all I have.

21 MR. COX: Chairman Johnson, there was one item
22 that the witness mentioned that he could provide us an
23 exhibit, and I had forgotten to mention it in my
24 questions. It was the MST analysis using the DLC
25 information, and we would ask if we could make that an

1 exhibit, if he could provide that as he suggested that he
2 could.

3 CHAIRMAN JOHNSON: Okay. We'll identify it as
4 49. It will be a late-filed. And what was a short title?

5 MR. COX: MST analysis using DLC information.

6 DOCTOR DUFFY-DENO: Good enough. Would you also
7 like the Hatfield results?

8 MR. COX: Yes, please.

9 CHAIRMAN JOHNSON: Okay. Exhibits.

10 MR. LAMOUREUX: Could I ask if we could include
11 within that just an answer to the question if that DLC
12 information includes the four points in the quadrant that
13 connect to the DLC.

14 DOCTOR DUFFY-DENO: Certainly. And, again,
15 Doctor Staihr might be able to answer that for you.

16 MR. LAMOUREUX: I'll ask him.

17 DOCTOR DUFFY-DENO: Okay.

18 MR. CARVER: BellSouth moves 46 and 47.

19 CHAIRMAN JOHNSON: Shows those admitted without
20 objection.

21 CHAIRMAN JOHNSON: Staff.

22 MR. COX: Doctor Duffy-Deno, would that require a
23 late-filed for that exhibit, or do you have that
24 information with you?

25 DOCTOR DUFFY-DENO: I've got the -- I would like

1 to do a check to make sure we've got accurate numbers.

2 MR. COX: Okay. So you would like to provide it
3 as a late-filed?

4 DOCTOR DUFFY-DENO: Late-filed if I could.

5 MR. COX: Okay. So staff will just move item --
6 Exhibit 48.

7 DOCTOR DUFFY-DENO: And I don't have the Hatfield
8 numbers; it's only written down. I would like to get it in
9 a nice typed form for you.

10 CHAIRMAN JOHNSON: Show 48 admitted without
11 objection. Thank you.

12 Are we ready for --

13 You may be excused.

14 Are we ready for Mr. Martin?

15 MS. KEYER: Yes. BellSouth calls its next
16 witness, Peter Martin.

17

18

19

20

21 Whereupon,

22

PETER F. MARTIN

23 was called as a witness on behalf of BellSouth and, after
24 being duly sworn, testified as follows:

25

1 DIRECT EXAMINATION

2 BY MS. KEYER:

3 Q Would you please state your name and business
4 address?5 A My name is Peter F. Martin, and my business
6 address is 675 West Peachtree Street, Atlanta, Georgia,
7 30375.8 Q Mr. Martin, by whom are you employed and in what
9 capacity?10 A I'm employed by BellSouth Telecommunications as a
11 director in regulatory.12 Q Have you caused to be filed in this docket 10
13 pages of direct testimony with an exhibit titled "Revised
14 Exhibit RFM-1," and 14 pages of rebuttal testimony dated
15 September 2nd, 1998?16 A Yes, with the note that it should be PFM-1, not
17 RFM-1.

18 Q Thank you.

19 Was this testimony prepared by you or at your
20 direction?

21 A Yes, it was.

22 Q Do you have any changes to either your direct or
23 rebuttal testimony?

24 A No, I do not.

25 Q Mr. Martin, if I were to ask you the same

1 questions today as were asked in your direct and rebuttal
2 testimony, would your answers be the same?

3 A They would.

4 MS. KEYER: Madam Chairman, I move Mr. Martin's
5 direct and rebuttal testimony be inserted into the record
6 as if read and ask that Revised Exhibit PFM-1 be marked for
7 identification.

8 CHAIRMAN JOHNSON: The testimony will be inserted
9 into the record as though read, and PFM-1 will be marked as
10 Exhibit 50.

11 MS. KEYER: Thank you.

12

13

14

15

16

17

18

19

20

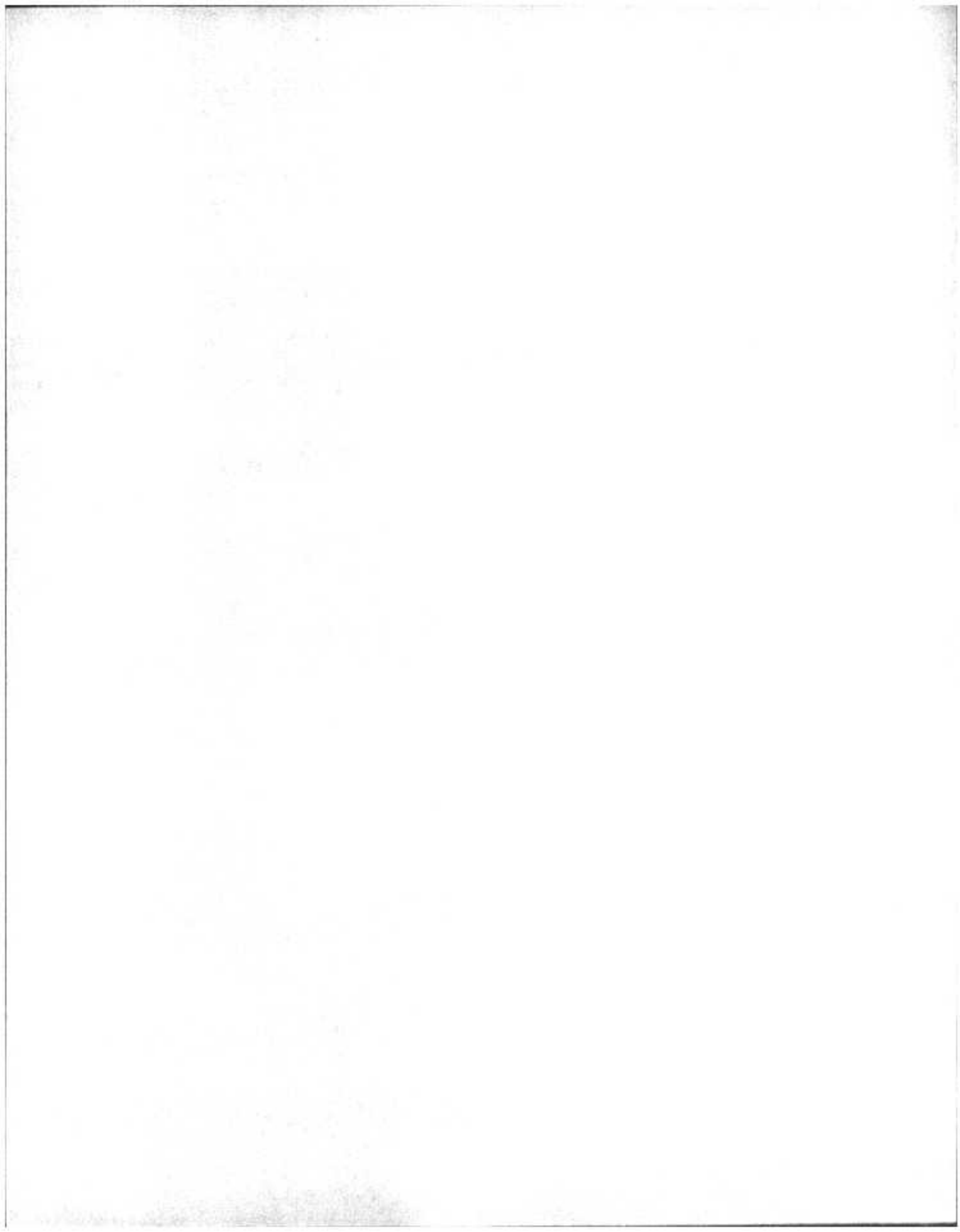
21

22

23

24

25



1 BELLSOUTH TELECOMMUNICATIONS, INC.
2 REBUTTAL TESTIMONY OF PETER F. MARTIN
3 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
4 DOCKET NO. 980696-TP
5 SEPTEMBER 2, 1998

6
7 I. INTRODUCTION
8

9 Q. PLEASE STATE YOUR NAME, ADDRESS AND POSITION WITH
10 BELLSOUTH TELECOMMUNICATIONS, INC. (HEREINAFTER
11 REFERRED TO AS "BELLSOUTH" OR "THE COMPANY").
12

13 A. My name is Peter F. Martin and I am employed by BellSouth as a Director in
14 Regulatory. My business address is 675 West Peachtree Street, Atlanta, Georgia
15 30375.
16

17 Q. ARE YOU THE SAME PETER F. MARTIN WHO FILED DIRECT
18 TESTIMONY IN THIS DOCKET?
19

20 A. Yes, I am.
21

22 II. PURPOSE AND SUMMARY
23

24 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY BEING FILED TODAY?
25

1 A. The purpose of my testimony is to rebut certain issues raised in Joseph Gillan's
2 (Florida Competitive Carriers Association - "FCCA") and Richard Guepe's
3 (AT&T) direct testimonies.
4

5 Q. PLEASE COMMENT GENERALLY ON THE DIRECT TESTIMONY FILED
6 ON AUGUST 3, 1998.
7

8 A. Mr. Gillan and Mr. Guepe have addressed matters outside the scope of this
9 proceeding. BellSouth prepared its direct case in response to the issues as ordered
10 on July 24, 1998 as did most of the other parties. However, AT&T and the FCCA
11 have taken this opportunity to address issues that will necessarily be considered in
12 future proceedings by this Commission or the Legislature. The issues list for this
13 proceeding was very specific. Since the nature of the issues raised by AT&T and
14 FCCA bears directly on the establishment of a sufficient and explicit state
15 universal service fund, BellSouth must respond and I am compelled to address
16 these issues herein. Dr. William Taylor, of National Economic Research
17 Associates, Inc, also rebuts the testimony of Messrs. Guepe and Gillan.
18

19 The Commission need not address these parties' comments or BellSouth's replies
20 on these outside matters at this time, but the Commission should hold these
21 matters for the appropriate proceeding that will follow.
22

23 Q. MR. GILLAN, AT PAGE 2 OF HIS DIRECT TESTIMONY, STATES THAT
24 THE PRINCIPAL MOTIVATOR OF UNIVERSAL SERVICE IS PROFIT
25 INCENTIVES. DO YOU AGREE?

1 A. Certainly not. The principal motivator of universal service is the public policy
2 goal of providing local telephone service to all consumers at an "affordable" rate.
3 Over the past few decades, state commissions have adopted local service rates to
4 consumers that are below the costs to provide such service and have further
5 required the local exchange companies to provide service to all consumers in their
6 service areas. This policy has resulted in a 94 percent penetration level
7 nationwide for telephone service. Such a policy was sustainable in a monopoly
8 environment, but it will not work in a competitive environment when new entrants
9 can cherry pick the most profitable customers--those customers that have
10 traditionally provided support for basic local exchange service.

11
12 A fair and sustainable way to fund universal service in a competitive environment
13 must be established, one which does not fall only on the incumbent local
14 exchange company. Since universal service reform is revenue neutral to local
15 exchange companies upon implementation, there is no profit incentive to create a
16 universal service fund as Mr. Gillan alleges.

17
18 In addition, in a competitive environment, all telecommunications service
19 providers should pay their fair share to support the funding of universal service.
20 If implicit subsidies remain in one provider's rates but are not found in another's
21 rates, it is hardly competitively neutral.

22
23 Q. MR. GILLAN ALSO SUGGESTS IN HIS DIRECT TESTIMONY THAT THE
24 COSTS OF THE FAMILY OF RESIDENTIAL SERVICES SHOULD BE

1 COMPARED TO THE REVENUES PROVIDED BY THESE SERVICES TO
2 DETERMINE THE NEED FOR A SUBSIDY (PAGE 3). DO YOU AGREE?
3

4 A. No. This misplaced suggestion would only continue the implicit subsidies
5 currently in vertical services, toll, and other services in direct contravention to the
6 intent of the 1996 Telecommunications Act ("Act") which directs that implicit
7 subsidies be replaced by explicit subsidies. If implicit subsidies remain in an
8 incumbent local exchange company's rates, competitive neutrality cannot be
9 achieved. Support for consumers in high cost areas must be available to all
10 eligible telecommunications companies, both large and small, from a universal
11 service fund. This is only possible with a fund based upon explicit support from
12 all telecommunications carriers. Neither competitive neutrality nor portability can
13 be achieved as long as implicit subsidies remain in an incumbent local exchange
14 carrier's (ILEC) rates.
15

16 Also, Mr. Gillan's suggested analysis would not consider the significant number
17 of BellSouth's customers who do not purchase any discretionary services, and
18 therefore do not provide any contribution to universal service. Indeed, in its News
19 Release of August 14, 1998, AT&T indicated that it was instituting a \$3 minimum
20 monthly charge. According to AT&T, in any month, 15 percent of its new
21 customers spend less than \$3 per month. It is hypocritical to suggest that
22 incumbent local exchange companies should not be able to recover the cost of
23 providing basic service to its below cost customers when carriers like AT&T are
24 now imposing minimum charges on their customers in an effort to either recover
25 their costs or to drive their low revenue customers away.

1 Q. IS MR. GILLAN'S RECOMMENDATION THAT THE COMMISSION
2 ADOPT A COST STUDY WHICH INCLUDES A "FAMILY OF SERVICES"
3 A REASONABLE INTERPRETATION OF FLORIDA STATUTE 364.025
4 (PAGE 3)?

5
6 A. No. Florida Statutes 364.25 specifically states:

7 "Basic local telecommunications service" means voice-grade, flat-rate
8 residential, and flat-rate single-line business local exchange services
9 which provide dial tone, local usage necessary to place unlimited calls
10 within a local exchange area, dual tone multi-frequency dialing, and
11 access to the following: emergency services such as "911," all locally
12 available interexchange companies, directory assistance, operator
13 services, relay services, and an alphabetical directory listing. For a
14 local exchange telecommunications company, such term shall include
15 any extended area service routes, and extended calling service in
16 existence or ordered by the commission on or before July 1, 1995."

17
18 The Florida Statute is specific and does not include optional calling, access
19 service and vertical services.

20
21 Q. DOES THE HAI MODEL INCLUDE "THE FULL COST OF THE LOOP AND
22 SWITCH TO PROVIDE ALL SERVICES THAT CAN BE FURNISHED TO
23 CONSUMERS" AS SUGGESTED BY MR. GUEPE AT PAGE 7?
24

1 A. No. The HAI model only includes the cost for supported services. On page 1 of
2 the HAI Model Release 5.0a Model Description attached to Mr. Don Wood's
3 direct testimony, it states: "The HAI Model uses the definition of basic local
4 telephone service adopted by the Federal-State Joint Board on Universal Service
5 ("Joint Board") for universal service funding purposes." Mr. Guepe would have
6 you think that all the costs for his residential family of services is included in their
7 model when it is not. For example, the HAI model does not include variable costs
8 associated with providing access service.

9
10 Q. MR. GILLAN FURTHER SUGGESTS IN HIS DIRECT TESTIMONY (AT
11 PAGE 7) THAT IT IS NOT POSSIBLE TO CONDUCT A COST STUDY
12 LIMITED TO "DIAL TONE" LOCAL SERVICE WITHOUT IMPLICATING
13 OTHER SERVICES. DO YOU AGREE?

14
15 A. No. The Benchmark Cost Proxy Model (BCPM), as well other cost proxy
16 models, are designed to estimate the cost of providing basic local service. Indeed,
17 the criteria set out in the Federal Communications Commission's (FCC) Universal
18 Service Order (para. 250) does not require the models to include or calculate the
19 cost of other services in the model. Determination of the cost of other services is
20 not necessary to calculate the cost of basic local telecommunications service. The
21 local loop is not a shared cost as some would contend. Dr. Taylor addresses the
22 concept of shared cost in his testimony.

23
24 Q. DO YOU AGREE WITH MR. GILLAN'S TESTIMONY AT PAGE 11 THAT
25 THERE IS NO COMPETITION IN THE STATE OF FLORIDA?

1 A cellular telephone is useless without the service provider. The cellular service
2 provider will not give you the free phone unless you commit to a contract for
3 some specified period of time. Thus, the cellular provider is assured of getting a
4 certain level of revenues. In contrast, basic local telecommunications service is
5 functional without any other services required and many of our customers do not
6 purchase additional services. BellSouth cannot require that customers purchase
7 basic service in combination with other services nor can it require subscribers to
8 execute contracts which lock in customers for a period of time. Thus, unlike with
9 the cellular packages, there is a significant likelihood that some customers will be
10 unprofitable.

11
12 Q. ARE THE REVENUES FROM TOLL, VERTICAL SERVICES AND ACCESS
13 EVENLY DISTRIBUTED AMONG ALL CUSTOMERS, AND IF NOT, WHAT
14 ARE THE IMPLICATIONS ON UNIVERSAL SERVICE?

15
16 A. The revenues are not evenly distributed. We have found that 41 percent of
17 BellSouth's residential customers in Florida take no vertical services. When you
18 include those residential customers who subscribe to only one vertical service the
19 percentage increases to 65 percent. Toll revenues are even more skewed. Indeed,
20 some 82% of BellSouth's residential customers make no intralata toll calls during
21 a month. Thus, a small subset of BellSouth's residential customers accounts for a
22 large share of discretionary revenues. It is these customers that competitors will
23 seek out. Competitors will not seek to serve those customers with minimal
24 discretionary service revenues. Competitors will leave these customers to the
25 incumbent LEC. Meanwhile, as the competitors win over the more lucrative

1 customers, the implicit subsidies available to support universal service will
2 "shrink". Universal service in Florida will be jeopardized.

3
4 Q. WHAT SHOULD BE THE APPROPRIATE BENCHMARK FOR
5 CALCULATION OF UNIVERSAL SERVICE SUPPORT AS OPPOSED TO
6 THE BENCHMARK PROPOSED BY MR. GUEPE AT PAGE 14 OF HIS
7 TESTIMONY?

8
9 A. The appropriate benchmark for universal service is the maximum rate for the
10 services which comprise universal service including the subscriber line charge and
11 mandatory EAS and zone charges. The inclusion of access, toll and vertical
12 service revenue in the benchmark would only embed the implicit subsidies that
13 are to be made explicit.

14
15 In a book entitled Letting Go: Deregulating the Process of Deregulation, Dr.
16 Alfred Kahn makes the point that facilities based competition is doomed if the
17 subsidies for below cost services are insufficient. He states as follows:

18 As the [FCC] Commission explicitly recognizes, to its credit, the
19 competition that it is our national policy to encourage makes the
20 overpricing of the subsidizing services unsustainable. Moreover, the
21 way in which the Telecommunications Act and the FCC's interpretation
22 of it has proceeded to make those cross-subsidies unsustainable ensures
23 that competitors will not enter into the local markets *on a facilities basis*
24 unless the subsidies are sufficient to make up the difference between the

1 suppressed rates and the incremental costs (or efficient prices) of
2 providing *basic service* itself. (Author emphasized with Italics.)

3 (Letting Go: Deregulating the Process of Deregulation, Alfred E. Kahn,
4 MSU Public Utilities Papers, 1998, page 128.)

5
6 Inflating the benchmark for universal service by including additional revenues
7 other than those for basic local telecommunications service will create an
8 insufficient explicit subsidy. Besides violating the Act, Dr. Kahn notes that an
9 insufficient explicit subsidy will harm facilities-based competition.

10
11 Q. MR. GUEPE REPORTS THAT THE COST OF UNIVERSAL SERVICE FOR
12 BELLSOUTH IS \$680.6 MILLION WHICH EQUATES TO ONLY \$15.11 PER
13 RESIDENCE LINE PER MONTH (PAGE 12). PLEASE COMMENT.

14
15 A. These numbers do not pass the common sense test. If it only costs \$15.11 per
16 residence line per month in Florida then why isn't AT&T building out a network
17 in Florida and providing residential service? By constructing a facilities-based
18 network, AT&T could avoid paying access charges and provide the supported
19 services. The revenues it would collect would certainly exceed \$15.11 per line
20 (especially if vertical services are included, per AT&T's recommendation).
21 Indeed, the HAI Model shows costs of \$11.00 or less per month in some of the
22 Miami wire centers. Yet, AT&T is not providing residential basic service in any
23 of these wire centers. Last year, AT&T stopped its efforts to enter the residential
24 market after losing millions of dollars. If AT&T based its initial entry decision on
25 similarly unrealistically low cost figures, it may very well explain these losses.

1 Q. IN DEFENSE OF HIS POSITION, MR. GILLAN SUGGESTS THAT THE
2 FLORIDA STATUTES ARE INCONSISTENT AND AMBIGUOUS IN
3 REGARD TO THE DEFINITION OF "BASIC LOCAL
4 TELECOMMUNICATIONS SERVICE" (PAGES 16 AND 17). DO YOU
5 CONCUR?

6
7 A. No. The statute is clear and succinct. The difficulty is Mr. Gillan's twisted
8 interpretation. The Florida Legislature has (1) specifically defined basic local
9 telecommunications service in Section 364.025 F. S., (2) requested the
10 Commission to report on the cost of basic local telecommunications service by
11 February 15, 1999, and (3) will use this information to establish a permanent
12 universal service mechanism for the state. It is hard to imagine the instructions
13 being any more clear and unambiguous.

14
15 Q. IS IT APPROPRIATE AS MR. GILLAN (PAGE 20) AND MR. GUEPE (PAGE
16 10) ASSERT, TO USE THE SAME LEVEL OF AGGREGATION FOR
17 MODELS WHICH DETERMINE UNE RATES AND UNIVERSAL SERVICE
18 COSTS?

19
20 A. No. First of all, the calculation of unbundled network elements rates is
21 determined by costing out the equipment and services necessary to provide certain
22 network elements from an ILEC to an ALEC. These company specific
23 calculations are based on costs that have historically been averaged across the
24 ILEC's study area in order to smooth the rates across all areas of the state.
25 Therefore, until rates (especially business rates) are rebalanced at the state level, it

1 is not appropriate to disaggregate costs for unbundled network elements to an area
2 smaller than the study area. Business rates cannot be rebalanced until a sufficient
3 universal service fund is established.

4
5 Second, the cost proxy model for universal service is predicated on the
6 assumptions of an efficient provider constructing a network using "total forward-
7 looking cost, based upon the most recent commercially available technology and
8 equipment and generally accepted placement principles." The proxy models are
9 designed to calculate costs based on small geographic areas. The Legislature
10 correctly instructed the Commission to calculate these costs on a wire center
11 basis. Calculations at this level will better target necessary support and promote
12 efficient competitive entry of ALECs seeking universal service support by
13 limiting the area they must serve.

14
15 Q. PLEASE COMMENT FURTHER ON MR GILLAN'S DISCUSSION OF THE
16 GEOGRAPHIC BASIS OF CALCULATIONS FOR UNIVERSAL SERVICE
17 AND UNES.

18
19 A. Mr. Gillan's arguments for consistency are self-serving and contradictory. On
20 one hand, he argues that UNES should be deaveraged for all wire centers (at page
21 21) yet on the other, he argues that universal service costs should be calculated on
22 a statewide level (at page 22). It would appear that Mr. Gillan is only interested
23 in a wire center basis of calculation if it concerns UNES. Determining support for
24 universal service on a statewide basis would result in an insufficient fund. An
25 insufficient fund will disincent ALECs from ever competing for rural and high

1 A. Absolutely not. In this regard, the FCC adopted the principle of competitive
2 neutrality to ensure that it would show no preference to any provider. Universal
3 service support is fully portable to any eligible telecommunications company. It
4 is not a protected revenue source. AT&T is attempting to shield universal service
5 support from carriers in this proceeding since AT&T advocates that no universal
6 service support should be provided. Under AT&T's plan, no competition will
7 ever develop in rural and high cost areas since support will not be available to
8 new entrants.

9
10 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

11
12 A. This Commission should report to the Legislature the cost of universal service for
13 BellSouth as calculated by the BCPM 3.1 model with BellSouth inputs by wire
14 center. In addition, the testimony of Richard Guepe of AT&T and Joseph Gillan
15 of FCCA should be disallowed as I have outlined in this rebuttal testimony.
16 Similarly, rebuttal testimony contained herein that discusses Mr. Guepe's and Mr.
17 Gillan's direct testimony as well as Dr. Taylor's rebuttal testimony should be set
18 aside for a future proceeding on universal service.

19
20 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

21
22 A. Yes.

23
24
25

1 BELL SOUTH TELECOMMUNICATIONS, INC.
2 DIRECT TESTIMONY OF PETER F. MARTIN
3 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
4 DOCKET NO. 980696-TP
5
6

7 I. INTRODUCTION
8

9 Q. PLEASE STATE YOUR NAME, ADDRESS AND POSITION WITH
10 BELL SOUTH TELECOMMUNICATIONS, INC. (HEREINAFTER
11 REFERRED TO AS "BELL SOUTH" OR "THE COMPANY").
12

13 A. My name is Peter F. Martin and I am employed by BellSouth as a Director in
14 Regulatory. My business address is 675 West Peachtree Street, Atlanta, Georgia
15 30375.
16

17 Q. PLEASE GIVE A BRIEF DESCRIPTION OF YOUR BACKGROUND AND
18 EXPERIENCE.
19

20 A. I graduated from the Georgia Institute of Technology with a Bachelor of Industrial
21 Engineering Degree in 1981. I was awarded a Master of Business Administration
22 Degree in 1988 from Georgia State University.
23

24 I began employment with Southern Bell in 1981 as an Outside Plant Engineer in
25 Southeast Florida. I have held positions in the Revenue Requirements/Pricing and

1 Pricing and Economics organizations. From June of 1990 to September 1996, I
2 served in BellSouth as a Manager in Regulatory Policy and Planning. I have been
3 in my present position since September 1996.

4
5 Q. HAVE YOU TESTIFIED IN OTHER PLACES ON UNIVERSAL SERVICE?

6
7 A. Yes, I have testified in all nine BellSouth States. In addition, I was a panelist
8 before the Federal-State Joint Board on Universal Service during a workshop that
9 was held in January, 1997 on cost proxy models.

10
11 II. PURPOSE AND SUMMARY

12
13 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY BEING FILED TODAY?

14
15 A. My purpose is to address several critical issues surrounding the cost of basic local
16 telecommunications service as it relates to universal service. These issues are
17 outlined in the Commission's Order of July 24, 1998. Specifically, I address the
18 following issue numbers: 1, 2, 3, 5a, 5b, 6a and 6c.

19
20 I also will review the federal universal service mechanism and provide this
21 Commission with the cost of universal service by wire center in BellSouth's
22 service area in Florida. This estimate is based on the cost model attached to Ms.
23 Daonne Caldwell's direct testimony.

24
25 Ms. Caldwell will discuss the BellSouth specific inputs used in the BCPM 3.1.

1 model to calculate the forward-looking economic costs of providing universal
2 service. Dr. Kevin Duffy-Deno and Dr. Bob Bowman will address various
3 aspects of the BCPM 3.1 model.
4

5 It is important that this Commission select a cost proxy model that engineers a
6 forward looking network that would actually transmit telephones calls in a quality
7 manner, and that is based on realistic inputs or universal service itself could be
8 jeopardized. While you sift through detailed arguments regarding the cost of
9 universal service, please remember that the end result should be a sustainable and
10 sufficient universal service fund as required by the Telecommunications Act of
11 1996. Such an outcome will keep basic local rates in this state affordable for
12 many more years to come.
13

14 Q. WHAT SPECIFICALLY WOULD YOU LIKE TO SEE THIS COMMISSION
15 DO?
16

17 A. I propose that the Commission adopt BellSouth's universal service cost
18 calculations for submittal to the state legislature.
19

20 Q. BEFORE YOU ANSWER THE SPECIFIC QUESTIONS SET OUT FOR
21 COMMENTS, CAN YOU PROVIDE SOME BACKGROUND ON WHAT HAS
22 OCCURRED AT THE FCC?
23

24 A. Yes.
25

1
2 III. THE FCC'S ORDER ON UNIVERSAL SERVICE
3

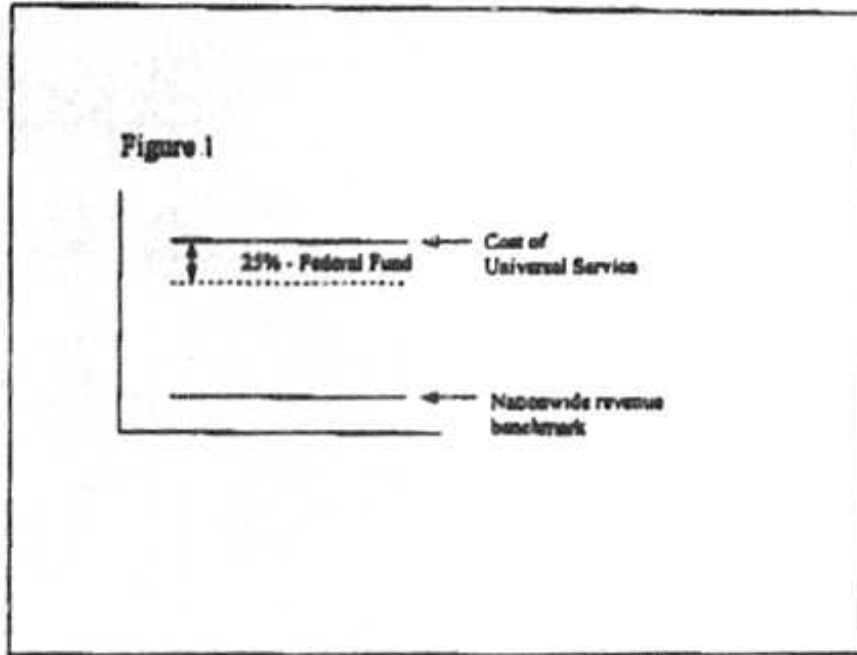
4 Q. WHAT HAS THE FCC DONE ON UNIVERSAL SERVICE?
5

6 A. On May 8, 1997, the FCC issued its Report and Order in CC Docket No. 96-45.
7 In this Report and Order, the FCC adopted many of the recommendations set forth
8 by the Federal-State Joint Board on universal service. The FCC's Order put forth
9 a framework for how much high cost support will be provided from the Federal
10 High Cost Fund. It also provided details on the FCC's proposals for dealing with
11 schools, libraries, health care, and low income support.
12

13 Q. PLEASE DESCRIBE THE FCC'S MECHANISM FOR FUNDING HIGH COST
14 SUPPORT.
15

16 A. The FCC's mechanism for funding high cost support provides explicit support for
17 a small part of the difference between the cost of providing universal service and
18 an FCC revenue benchmark. The FCC method is illustrated in Figure 1 below.
19 The FCC directed that the cost of universal service be calculated using a forward
20 looking cost proxy model, and that it be calculated for areas no larger than wire
21 centers. The cost is next compared to an FCC revenue benchmark. The federal
22 fund will then cover twenty-five percent (25%) of the difference between the cost
23 and the FCC revenue benchmark. If the cost for that area is less than the FCC
24 revenue benchmark, then the federal fund support for that area is zero.
25

1 The FCC has tentatively chosen a \$31 revenue benchmark to calculate universal
 2 service support an eligible telecommunications carrier ("ETC") would receive
 3 from the federal fund. They could have chosen another benchmark to use in
 4 calculating federal support. However, by selecting a \$31 revenue benchmark and
 5 a 25/75% jurisdictional split between interstate and intrastate, the FCC effectively
 6 has limited federal universal support and left the states to deal with supporting the
 7 rest.



21
22
23
24
25

Q. HOW WILL THE FEDERAL HIGH COST FUND BE SUPPORTED?

1 A. All interstate service providers will contribute to the fund based on their
2 nationwide share of interstate revenues received from end users. Access revenue
3 and other wholesale revenue are excluded from this calculation.

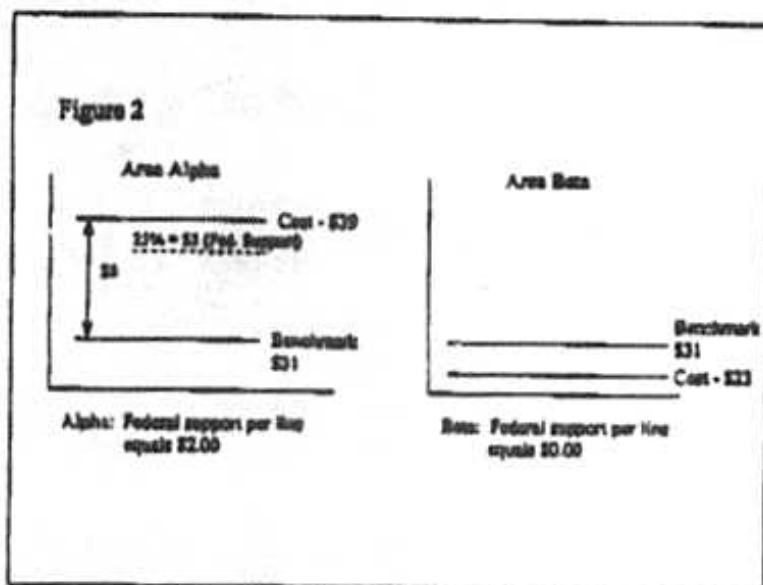
4
5 Q. WHAT DO LOCAL EXCHANGE COMPANIES ("LECS") DO TO REFLECT
6 THE SUPPORT THEY RECEIVE FROM THE FEDERAL FUND?

7
8 A. The FCC will require that LECs make adjustments to their interstate access prices
9 to reflect the net amount of support they will receive from the federal universal
10 service fund. The net amount of support is equal to the amount that BellSouth's
11 receipts from the fund exceed BellSouth's contribution to the fund. Thus,
12 implementation of the Federal Universal Service Fund will be revenue neutral to
13 the LECs on day one. LECs reduce their prices by the net amount of funding they
14 receive from the universal service fund.

15
16 Q. CAN YOU PROVIDE SOME EXAMPLES OF HOW THE FEDERAL
17 MECHANISM WILL WORK?

18
19 A. Certainly. Assume that there is a company that serves two census block groups
20 (CBGs) called Alpha and Beta. A cost model, which the FCC has promised to
21 designate by the end of this year, will calculate the monthly per line cost of
22 universal service as \$39.00 in Alpha and as \$23.00 in Beta. These costs are then
23 compared to the FCC revenue benchmark, which is tentatively set at \$31.00 for
24 residential lines. This is illustrated in Figure 2. In area Alpha, the difference
25 between the monthly cost and the benchmark is \$8.00. Under the FCC's

1 mechanism, the FCC will provide twenty-five percent (25%) of this amount, or
 2 \$2.00, as monthly support to any ETC that provides universal service in this area.
 3 In area Beta, the cost is less than the benchmark, so the FCC's mechanism does
 4 not provide any support out of the federal fund.



18 Q. IS THAT ALL THERE IS TO THE FEDERAL HIGH COST FUND?

19
20 A. Yes. Conceptually, it is a simple framework, and it should be relatively easy to
 21 construct a state-high cost fund that will fit well with the federal fund. To do so,
 22 the Florida Commission should first adopt a reasonable cost proxy model, such as
 23 the BCPM 3.1. The Florida Commission should then have a proceeding to deal
 24 with the remaining universal service issues so that it can establish a Florida
 25 Universal Service Fund.

2 Q. HASN'T THE FCC REFERRED MANY OF THE ABOVE ISSUES BACK TO
3 THE JOINT BOARD, AND WHAT WILL BE THE IMPACT OF CHANGES IN
4 THE FCC'S APPROACH?

5
6 A. On July 17, 1998, the FCC referred several issues back to the Federal-State Joint
7 Board for consideration. Such issues as the 25% federal factor and the revenue
8 assessment base were sent back to the Joint Board. It is certainly possible that
9 changes to the federal mechanism will result from this referral. However, the
10 focus of this proceeding (the cost of universal service) is unaffected by the FCC's
11 referral of issues back to the Joint Board.

12
13
14 IV. THE NEED FOR A STATE HIGH COST FUND

15
16 Q. DOES THE CREATION OF A FEDERAL FUND NEGATE THE NEED FOR A
17 STATE HIGH COST FUND?

18
19 A. No, it does not. The federal fund only deals with a small part of the implicit
20 support that is currently built into LEC rates. State universal service support
21 mechanisms will need to deal with the remainder of the implicit universal service
22 support. The FCC recognized this fact in its Access Reform Order, wherein it
23 strongly encouraged states to identify and address the amount of implicit support
24 built into intrastate rates. In a speech given by William Kennard on February 9,
25 1998 to the National Association of State Utility Consumer Advocates, the FCC

1 Chairman said that "states have an obligation to take all reasonable steps as
2 promptly as possible to reform existing intrastate universal service support
3 mechanisms to make them compatible with competitive local markets by making
4 the subsidies explicit and portable." The United States Congress also recognized
5 the need for state funding mechanisms. Indeed, one of the principles set forth in
6 the Telecommunications Act of 1996 ("the Act") is that "[t]here should be
7 specific, predictable and sufficient federal and state mechanisms to preserve and
8 advance universal service." (47 U.S.C. Section 254(b)(5)) In fact, Section 254(f)
9 of the Communications Act requires that "Every telecommunications carrier that
10 provides intrastate telecommunications services shall contribute, on an equitable
11 and nondiscriminatory basis, in a manner determined by the State to the
12 preservation and advancement of universal service in that State."

13
14 Finally, Chapter 364 .025(4)(b), Florida Statutes, requires this Commission to
15 report on the cost of universal service to the Legislature by February 15, 1999 in
16 order for the Legislature to establish a permanent universal service mechanism.

17
18 Q. CAN RATES THAT CURRENTLY PROVIDE IMPLICIT SUPPORT FOR
19 UNIVERSAL SERVICE BE SUSTAINED IN A COMPETITIVE
20 ENVIRONMENT?

21 =

22 A. No. Competitors will target customers who currently provide the most implicit
23 support. They will target high revenue business customers, and those residential
24 customers that purchase considerable amounts of vertical and/or toll services.
25 Competitors will market their services only to these high margin ILEC customers

1 and leave the remaining high cost customers to the incumbent LEC. Indeed, even
2 AT&T and MCI agree that implicit subsidies are not sustainable in a competitive
3 environment (ATT, Dr. Kaserman Direct Testimony, NC Docket No. P-100, Sub
4 133B, Page 9, "...the system is unsustainable in a competitive market
5 environment. Where they are allowed to operate, market forces will inexorably
6 eliminate cross-subsidies."; MCI, Dr. Cabe Direct Testimony, KY Admin. Case
7 No. 360, page 13, "... competition in local and intralata toll markets can be
8 expected to drive the prices of vertical and toll services below levels that have
9 been sustainable in the historically monopoly environment.").

10
11 Q. DOES BELLSOUTH HAVE A PROPOSAL FOR A STATE UNIVERSAL
12 SERVICE FUND?

13
14 A. Yes. However, since this proceeding is narrowly focused on the cost of universal
15 service, I will save discussion of BellSouth's proposal for a future proceeding.

16
17 Q: FOR PURPOSES OF DETERMINING THE COST OF BASIC LOCAL
18 TELECOMMUNICATIONS SERVICE APPROPRIATE FOR ESTABLISHING
19 A PERMANENT UNIVERSAL SERVICE MECHANISM, WHAT IS THE
20 APPROPRIATE COST PROXY MODEL TO DETERMINE THE TOTAL
21 FORWARD-LOOKING COST OF PROVIDING BASIC LOCAL
22 TELECOMMUNICATIONS SERVICE PURSUANT TO SECTION 364.025
23 (4)(b), FLORIDA STATUTES? (ISSUE 2)

24

1 A: The BCPM 3.1 model is the appropriate cost proxy model for determining the
2 total forward-looking cost of providing basic local telecommunications service. It
3 was designed for this purpose and meets the ten criteria set out in the FCC's
4 Universal Service Order of May 8, 1997. BellSouth has run the BCPM 3.1
5 model for Florida and the results for BellSouth's territory by wire center are
6 attached as Exhibit PFM-1. BellSouth recommends that the Commission use the
7 BCPM 3.1 model with the inputs recommended by BellSouth for calculating the
8 total forward looking cost of basic local telecommunications service for
9 BellSouth.

10

11

12

V. ISSUES LIST

13

14 Q: WOULD YOU NOW SPECIFICALLY DISCUSS THE OTHER ISSUES
15 PARTICULAR TO THIS DOCKET?

16

17 A: Yes.

18

19 Q: WHAT IS THE DEFINITION OF THE BASIC LOCAL
20 TELECOMMUNICATIONS SERVICE REFERRED TO IN SECTION
21 364.025(4)(B)? (ISSUE 1)

22

23 A. Basic local telecommunications service is defined in Florida Statute 364.02 (2)
24 which states:

1 "Basic local telecommunications service" means voice-grade, flat-rate
2 residential, and flat-rate single-line business local exchange services
3 which provide dial tone, local usage necessary to place unlimited calls
4 within a local exchange area, dual tone multifrequency dialing, and
5 access to the following: emergency services such as "911," all locally
6 available interexchange companies, directory assistance, operator
7 services, relay services, and an alphabetical directory listing. For a
8 local exchange telecommunications company, such term shall include
9 any extended area service routes, and extended calling service in
10 existence or ordered by the commission on or before July 1, 1995.

11

12

13 Q. FOR PURPOSES OF DETERMINING THE COST OF BASIC LOCAL
14 TELECOMMUNICATIONS SERVICE APPROPRIATE FOR ESTABLISHING A
15 PERMANENT UNIVERSAL SERVICE MECHANISM, SHOULD THE
16 TOTAL FORWARD-LOOKING COST OF BASIC LOCAL
17 TELECOMMUNICATIONS SERVICE PURSUANT TO SECTION
18 364.025(4)(b), FLORIDA STATUTES, BE DETERMINED BY A COST
19 PROXY MODEL ON A BASIS SMALLER THAN A WIRE CENTER? IF SO,
20 ON WHAT BASIS SHOULD IT BE DETERMINED? (ISSUE 3)

21

22 A. Initially, the forward-looking cost of basic local telecommunications should be
23 calculated at the wire center level. Current telecommunications providers capture
24 data at this level of aggregation on a standardized basis. Therefore, a wire center

1 basis for cost calculation would be less burdensome initially than going to a more
2 targeted area of measure like a census block group (CBG).

3
4 However, the Commission's goal should be to move the basis of support
5 calculations from a wire center to a CBG basis (a smaller geographic area) for two
6 reasons. First, small areas more accurately target universal service support to
7 areas with high costs. Within a wire center, costs can vary greatly. By choosing a
8 smaller area (a CBG), the accuracy of calculations are greater than when numbers
9 are aggregated to the wire center level. Second, choosing small areas not only as
10 the basis for universal service support but also as the basis for designating service
11 areas for ETCs enables new competitive entrants to compete as an ETC and
12 receive universal service support, without having to serve an extended service
13 area (such as a wire center).

14
15 Q. FOR PURPOSES OF DETERMINING THE COST OF BASIC LOCAL
16 TELECOMMUNICATIONS SERVICE APPROPRIATE FOR ESTABLISHING
17 A PERMANENT UNIVERSAL SERVICE MECHANISM, FOR WHICH
18 FLORIDA LOCAL EXCHANGE COMPANIES MUST THE COST OF BASIC
19 LOCAL TELECOMMUNICATIONS SERVICE BE DETERMINED USING
20 THE COST PROXY MODEL IDENTIFIED IN ISSUE 2? (ISSUE 5A)

21 =

22 A. The FCC stated in paragraph 232 of its Universal Service Order that a cost proxy
23 model should be used when calculating the forward-looking economic cost for
24 non-rural LECs. The non-rural LECs operating in Florida are BellSouth, Sprint,
25 and GTE.

1
2 The FCC has decided that rural carriers would not use forward looking economic
3 cost models until further review by the FCC and not prior to January 1, 2001.
4 Further, the FCC states that rural carriers would be gradually transitioned from the
5 current mechanism to a forward-looking economic cost model.(para. 203)
6 BellSouth believes that the bifurcated approach set out by the FCC (i.e. - treat
7 non-rural and rural companies separately) is reasonable for use in Florida.
8

9 Q. FOR EACH OF THE LECS IDENTIFIED IN (5A), WHAT COST RESULTS
10 FROM USING THE INPUT VALUES IDENTIFIED IN ISSUE 4 IN THE COST
11 PROXY MODEL IDENTIFIED IN ISSUE 2? (ISSUE 5B)
12

13 A. The forward-looking costs for BellSouth from the BCPM 3.1 are attached in
14 Exhibit PFM-1. It provides the cost by wire center for BellSouth's designated
15 service area. These costs are based on the forward-looking inputs as provided in
16 Ms. Daonne Caldwell's direct testimony.
17

18 Q. FOR PURPOSES OF DETERMINING THE COST OF BASIC LOCAL
19 TELECOMMUNICATIONS SERVICE APPROPRIATE FOR ESTABLISHING
20 A PERMANENT UNIVERSAL SERVICE MECHANISM, SHOULD THE
21 COST OF BASIC LOCAL TELECOMMUNICATIONS SERVICE FOR EACH
22 OF THE LECS THAT SERVE FEWER THAN 100,000 ACCESS LINES BE
23 COMPUTED USING THE COST PROXY MODEL IDENTIFIED IN ISSUE 2
24 WITH THE INPUT VALUES IDENTIFIED IN ISSUE 4? (ISSUE 6A)
25

1 A. No.

2

3 Q. IF NOT, FOR EACH OF THE FLORIDA LECS THAT SERVE FEWER THAN
4 100,000 ACCESS LINES, WHAT APPROACH SHOULD BE EMPLOYED TO
5 DETERMINE THE COST OF BASIC LOCAL TELECOMMUNICATIONS
6 SERVICE AND WHAT IS THE RESULTING COST? (ISSUE 6C)

7

8 A. The Commission should refrain at this time from using a cost proxy model for
9 LECs serving fewer than 100,000 access lines. These carriers should generally
10 fall into the definition of "rural LECs", and as such should use embedded costs in
11 determining the cost of basic local telecommunications service. This
12 methodology is consistent with the FCC's determination in their Universal
13 Service Order.

14

15 XV. SUMMARY AND CONCLUSION

16

17 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

18

19 A. It is critically important that this Commission get the cost of universal service
20 right. Consumers will be ill served if the costs are underestimated. The BCPM
21 cost model is an excellent tool for calculating the cost of universal service. The
22 inputs that BellSouth recommends be used in the model are both "real world" in
23 nature and representative of what an efficient provider would incur in building a
24 forward looking network capable of providing high quality basic local exchange
25 service. BellSouth's cost estimations should be approved by this Commission for

1 submittal to the Florida Legislature, and for subsequent use in the establishment
2 of a state universal service fund.

3

4 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

5

6 A. Yes, it does.

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 BY MS. KEYER (Continuing):

2 Q Mr. Martin, have you prepared a summary of your
3 testimony?

4 A Yes.

5 Q Would you please provide the commissioners with
6 that summary?

7 A Yes. Good afternoon. I am here today on behalf
8 of BellSouth Telecommunications to propose the adoption of
9 BellSouth's universal service cost calculations for
10 submittal to the state legislature. In the Commission's
11 July 24th, 1998, order, a list of issues was identified to
12 assist the Commission in its obligation to report to the
13 legislature by February 15th of next year the cost of basic
14 local telecommunication service in Florida.

15 In this docket, the Commission focuses on the
16 cost of universal service in order to meet this
17 obligation. Subsequent dockets will need to be established
18 to consider the remaining issues related to the
19 establishment of a permanent universal service fund.

20 This docket is a critical first step in the
21 Commission and legislature's work in establishing a
22 permanent universal service mechanism. If the cost of
23 basic local service is not accurately estimated, then the
24 state universal service fund cannot be correctly sized.
25 The end result of this and subsequent proceedings should be

1 a sustainable and sufficient universal service fund as
2 required by the Telecommunications Act of '96. Such an
3 outcome will keep local rates in this state affordable for
4 many years to come.

5 Now before I get to the issues that were put out
6 for comment, I need to note that at least one party went
7 well beyond the clearly defined issues list. The
8 Commission was quite clear on the issues to be addressed in
9 this proceeding. Those issues are obviously related to the
10 task set out by the legislature, which was to determine the
11 cost of basic local exchange service. However, AT&T chose
12 to go beyond the issues list and discuss the revenue
13 benchmark they believe to be appropriate. While I believe
14 this issue would be more appropriately addressed in a
15 future proceeding, I will simply note that AT&T's position
16 is at odds with the fully competitive marketplace.

17 AT&T says that all residential revenues should be
18 included in the calculation of the revenue benchmark;
19 however, this position ignores the reality that many
20 customers don't buy vertical services or intraLATA toll
21 services. These customers will not be sought after by
22 competitors unless universal service support makes up for
23 the difference between the cost of basic local exchange
24 service and the revenues received from it.

25 AT&T's proposal also violates competitive

1 neutrality for the incumbent LEC or ILEC. The ILEC will
2 still be expected to serve customers who don't cover their
3 costs. Such a position will not be tenable in a
4 competitive marketplace. It is interesting to note the
5 hypocrisy in AT&T's position since they recently announced
6 a minimum \$3 monthly charge to ensure all customers, all
7 new customers at least cover their cost.

8 Now I'll go back and discuss the specific issues
9 on the Commission's issue list. The first issue in this
10 docket is the definition of basic local telecommunications
11 service referred to in Section 364.025(4)(b). The
12 statutory definition is clear and succinct. The definition
13 of basic local telecommunications service can be summarized
14 as dial tone service. Most parties are using this
15 definition.

16 The only party who seems to have trouble
17 understanding this definition is Mr. Gillan on behalf of
18 the FCCA. He tries to cloud this simple matter by saying
19 that basic local telecommunications services really refers
20 to a family of services, including vertical and toll
21 services. He does this in support of his position on the
22 size of the fund. The statute is clear on the definition
23 of basic local telecommunications service, and it does not
24 include vertical, toll or access services. I recommend we
25 use the definition spelled out in the statute.

1 The next issue is what is the appropriate cost
2 proxy model to determine the total forward-looking cost of
3 providing basic local telecommunications service.
4 BellSouth supports the adoption of the BCPM 3.1 model with
5 company-specific inputs as provided in Ms. Daonne
6 Caldwell's testimony. The BCPM model with BellSouth
7 recommended inputs provides a total forward-looking cost of
8 basic telecommunications service provided in BellSouth's
9 service area.

10 On the other hand, the cost submitted by AT&T and
11 MCI calculated via the HAI model using their recommended
12 inputs should not be adopted. The results do not pass the
13 common-sense test. For example, the HAI sponsors say it
14 cost less than \$11 per line in several of the Miami wire
15 centers. That is less than the revenue received via basic
16 rates in the subscriber line charge. According to their
17 own study, AT&T could make money in these wire centers even
18 from customers who only get basic dial tone. Yet, to the
19 best of my knowledge, AT&T is not providing residential
20 service in any of these markets. The action or lack
21 thereof by AT&T makes the point quite clearly that their
22 model and inputs understate the cost of providing basic
23 local service.

24 The last issue is whether the forward-looking
25 cost of basic local telecommunications service should be

1 determined on a basis smaller than a wire center.
2 Initially, the cost should be determined at the wire center
3 level due to the availability of such data; however, in the
4 future, the cost in the associated universal service
5 support should be determined on an even smaller basis to
6 better target universal service support since costs can
7 vary greatly even within a wire center.

8 Also, choosing small areas not only as the basis
9 for universal service support but also as the basis for
10 designating service areas for eligible telecommunications
11 carriers or ETCs enables new competitive entrants to
12 compete as an ETC and receive universal service support
13 without having to serve an extended service area such as a
14 wire center. AT&T proposed the support be calculated at
15 the statewide level. Such an approach is at odds with the
16 local competition envisioned by the Telecommunications Act
17 of '96. New entrants would not receive universal service
18 support under AT&T's approach since calculations would be
19 aggregated to the statewide level. Thus, new entrants
20 would never have an incentive to serve and enter the rural
21 and high cost areas. Targeting universal service
22 calculations in designated service areas for ETCs on a
23 basis at least as small as a wire center minimizes barriers
24 to competitive entry and maximizes competitive
25 opportunities for viable market entry.

1 impact of nine cents a line. I don't remember if it went
2 up or down, but it wasn't very significant either way. The
3 original was 32.40 per line, and this new one is 32.31, so
4 it went down by nine cents a line on average.

5 Q At page 9 of your testimony you point out that
6 implicit subsidies cannot continue in a competitive
7 environment. Are the subsidies that you are referring to
8 there the subsidies that are necessary to support basic
9 local service?

10 A Implicit subsidies, yes, that's the extent to
11 which basic local exchange service, the cost exceeds the
12 revenue.

13 Q And would you agree that the size of the
14 universal service fund, once it's determined by the
15 Commission, that will determine -- that will define the
16 amount of subsidy that is necessary to support universal
17 service; is that correct?

18 A Could you say that again?

19 Q Yes. Once the Commission decides what the size
20 of the universal service fund should be, that defines the
21 amount of subsidy that's necessary to support universal
22 service?

23 A I think if the Commission looks at the total
24 difference between the rates and the costs for basic local
25 exchange service, I think you're right. They would define

1 the amount of the, subsidy and that would be the amount in
2 the universal service fund.

3 Q And once the size is determined, by definition,
4 then there would be no other subsidies in other rates that
5 would be necessary to support universal service; would you
6 agree with that?

7 A If they dealt with the total amount of subsidies,
8 there would be no subsidies left to be dealt with. You
9 would have taken care of the universal service problem and
10 made it explicit.

11 Q Do you know what share of the market BellSouth
12 has for basic residential service in its service territory?

13 A In Florida I believe it's over 99%.

14 Q On Page 6 of your direct, your direct testimony,
15 you have a discussion there about what's going on at the
16 FCC -- this is at lines 8 through 14 -- with regard to what
17 the LECs will do to reflect what they would receive from a
18 universal service fund. And you mention in that particular
19 part of your testimony that the LECs would reflect a net
20 amount. Can you explain that please?

21 A Yes. What that means is, and this is already
22 begun by really -- It will continue next year. All that
23 means is that we simply reflect the net amount of support
24 received. So if BellSouth, for example, were to receive a
25 hundred million dollars from the federal fund but we had to

1 pay in 50 million dollars, we would net 50 million dollars;
2 and then our rates would have to be -- interstate access
3 rates would have to be reduced by 50 million dollars.
4 We'll propose something similar for a state funding
5 mechanism whenever we get to that point.

6 Q Well, if BellSouth paid in a hundred million and
7 received from the fund a hundred million, the net effect
8 would be zero; is that correct?

9 A Well, you'd also have to account for the fact
10 that we will be paying into the fund, and we have to have a
11 way to recover that.

12 Q Well, the net effect would be zero?

13 A The net effect of this should be zero in total on
14 the revenues.

15 Q All right. In that case you would not have any
16 offsetting rate adjustments; is that right?

17 A Only if we --

18 Q If you net?

19 A No, that's not correct. The only way that would
20 be correct is if we paid in exactly as much as we received,
21 and the chances of that happening would be astronomically
22 small.

23 Q Well, perhaps you didn't understand my question
24 or I may not have made it as clear as I could. What my
25 question was, if you paid in a hundred million and received

1 a hundred million, the net effect -- under those
2 circumstances, the net effect would be zero and there would
3 be no rate adjustment?

4 A Yeah, I agree. The chances of that happening are
5 pretty small, but you're right.

6 Q Well, if that were the case and there is no rate
7 adjustments, we would have a hundred-million-dollar
8 universal service fund with no rate adjustments, and my
9 question is does that meet the requirement that universal
10 service report should be made explicit in your view?

11 A I believe it does. The FCC believes it meets the
12 explicit mandate. I will say the FCC is also looking at
13 possibly moving that out and having customers use a
14 surcharge type approach. The joint board is considering
15 this now, and I think that would be a positive change; but
16 even if that change is not made, yes, I believe it would
17 meet the explicit mandate of the Act.

18 Q And how would that be explicit?

19 A All carriers would know what their obligation is
20 to provide -- to support universal service. They would
21 have a defined amount that they would have to pay into the
22 fund, and that's different from the old environment where
23 only the ILEC was having to support universal service, so
24 competitive local exchange carriers will also have to
25 contribute to the federal fund.

1 Q But in that case, isn't it true that you would be
2 recovering it through revenues you have built into your
3 current rates?

4 A That's true. That doesn't violate the explicit
5 mandate of the Act in my layman's opinion.

6 Q You mention in your summary that you were
7 recommending that the cost be determined on a wire center
8 basis initially and then move to a census block group
9 later. When you go to a -- generally speaking, the census
10 block groups are smaller areas; is that correct?

11 A That's correct.

12 Q And when you move to the smaller areas, doesn't
13 that result in a larger universal service fund than if you
14 did it on a wire center basis?

15 A Generally, yes, it does.

16 Q I'd like to move now to your rebuttal testimony
17 at Page 6. There you mention that the HAI model doesn't
18 include variable cost of access. Is it possible you could
19 be wrong about that as far as this proceeding is concerned?

20 A From what I heard from Don Wood yesterday, it
21 sounds like he may have made a change. I was relying on
22 MCI testimony from Kentucky where Tom Hyde said that it
23 does not include variable cost of access, so I was relying
24 on an MCI witness's testimony. I heard yesterday Don Wood
25 said he did factor in some of those costs, so maybe they've

1 updated the model.

2 Q Were you in the room today when he made that
3 statement again?

4 A I was. I also reviewed his testimony last night
5 and in no place in his testimony did he say he included
6 those costs. In fact, I think he resubmitted those cost
7 studies, I heard today, because he originally did not
8 include them.

9 Q And that was on August 18th; is that right?

10 A I don't remember the exact date.

11 Q August 19th, I think it was.

12 On Page 8 of your rebuttal, you mention there and
13 we heard earlier, I think yesterday, that BellSouth has 41%
14 of its residential customers that did not subscribe to
15 vertical services. What do you include in vertical
16 services?

17 A Vertical services includes such services as
18 three-way calling, speed calling, those type of class type
19 services, basically discretionary type services. It does
20 not include toll services.

21 Q Does it include caller ID?

22 A I believe it does.

23 Q And the 82% figure that you have there, does that
24 include -- how do you classify the calling in the expanded
25 calling area?

1 A I believe expanded local calling service revenues
2 are classified as local, so we are only looking at revenues
3 classified as toll.

4 Q And over what period of time does this 82% figure
5 apply? Is that looking at it at one month or a 12-month
6 period or how long?

7 A I'll have to see if I have that time frame.

8 (WITNESS REVIEWED DOCUMENTS)

9 A I think I have that in here. I'll have to check
10 that. I don't know the exact time frame.

11 Q I guess the important question is, regardless of
12 what numbers you have for various services, can you tell us
13 what percent of your residential customers subscribe only
14 to basic residential service? And by that I mean those
15 that, for which you have listed the rates on your exhibit.

16 A I don't -- I haven't been able to mesh those two
17 figures I gave you earlier, the 41% and the 80 some odd
18 percent. I don't know exactly what percentage of
19 residential customers only get basic dial tone.

20 Q Is that something that you could provide as a
21 late-filed exhibit?

22 A I'll have to check with my billing folks. If we
23 can do it, we can provide it. I can't commit a hundred
24 percent right here. We'll make an effort to do that.

25 Q At Page 9 of your rebuttal testimony, you talk

1 about the appropriate revenue benchmark should be the
2 maximum rate charged for basic residential service. Again,
3 those are the rates that are shown on your Exhibit 1; is
4 that correct?

5 A Yes, with the caveat that you possibly should
6 also include the revenues from extended calling service
7 area plans to the extent they were in effect before, I
8 guess, what was it, July of '95. Whatever is in the
9 definition of basic local exchange service as defined by
10 the Commission, but primarily you would include the basic
11 dial tone charges.

12 Q And in addition to that, you would include the
13 subscriber line charge, wouldn't you?

14 A Yes.

15 Q And why is that appropriate?

16 A That's appropriate because that's a rate received
17 from the end user, and it's associated with his purchase of
18 basic service.

19 Q And what about the PIXC charge, do you know what
20 the PIXC charge is?

21 A Yes, I do.

22 Q Can you explain that?

23 A Yes, the PIXC charge is the presubscribed
24 interexchange carrier charge, or PIXC, and what that is,
25 it's a certain amount per line that generally the local

1 exchange carrier bills to the interexchange carrier, and
2 then they pay that to the local exchange carrier.

3 Q And is it your understanding it's 53 cents for
4 the first line and a dollar 50 cents for the second line?

5 A That sounds right.

6 Q Shouldn't these be included in the revenue
7 benchmark as well?

8 A No, they shouldn't, and the reason is that they
9 are not being paid by the end user. They are being paid by
10 interexchange carriers, and that's an intermediate party;
11 so, again, it's providing an incentive for the
12 interexchange carrier to find another way to get to the
13 customer. We think that you should look at all the
14 revenues received from the end user, but you shouldn't look
15 at things such access charges or PIXC charges, which is the
16 form of an access charge.

17 Q Isn't the PIXC charge a flat rate charge that
18 BellSouth is entitled to when a subscriber subscribes to
19 basic local service?

20 A We collect PIXC charge -- To the extent
21 customer gets service from us, we are able to get this PIXC
22 charge. I should also note, and one thing we are leaving
23 out here, is under BellSouth's proposal -- and we are
24 really not getting into our full proposal here, but we do
25 recommend, of course, that you back out any support

1 received from the federal universal service mechanism. And
2 I think there is a good chance that when the FCC finally
3 ends up dealing with universal service -- there are a lot
4 of unresolved issues -- but I think when they finally do
5 that, you'll see the PIXC charge possibly being eliminated
6 and being replaced by a federal universal service charge;
7 and when that happens, I think we'll have this effect that
8 you're looking for.

9 Q I'd like to refer to your Revised Exhibit 1
10 please. In that exhibit, roughly in the middle of the
11 page, the right side middle, you have two columns for
12 residence flat rate and business flat rate. These are the
13 maximum rates for basic residential service and single line
14 flat rate business; is that correct?

15 A Yes, that's my understanding.

16 Q Is this -- and then there is a third column
17 there, the SLC, the subscriber line charge; is that
18 correct?

19 A Yes, that's correct.

20 Q And what issues were you trying to address in
21 this proceeding by placing that information in this
22 exhibit?

23 A No real issue. We were just showing some
24 information here. We had done exhibits in other states
25 where we showed this kind of information and, you know, we

1 could have left this off. It doesn't really add anything
2 here since we're not testifying at this point on the size
3 of the fund.

4 Q Okay. This is basically what you propose to be
5 your revenue benchmark; is that right?

6 A No, that's not correct. I was trying to stick to
7 the issues laid out by the Commission, so we really didn't
8 get into a lot of testimony on the revenue benchmark. In
9 rebuttal I felt we had to because it was teed up by AT&T,
10 but we weren't testifying originally on the appropriate
11 state revenue benchmark.

12 Q Mr. Martin were you in the room when Doctor
13 Duffy-Deno testified, I think, in his summary and then
14 again on redirect that this Commission should focus on the
15 rural areas because those are where the high-cost areas are
16 going to be?

17 A I heard that.

18 Q If we look at your column for basic residential
19 service and add in the subscriber line charge on your
20 Exhibit 1, isn't it a fact that every single wire center in
21 Florida in BellSouth territory is a high-cost area?

22 A I don't know that I would agree with that. If
23 you're asking does the cost exceed the rate that we are
24 allowed to charge in every wire center, I believe that's a
25 correct statement. Does that mean that it ultimately

1 deserves universal service support? I don't know that that
2 is the case. I think we need to go to the next proceeding
3 and look at things like, you know, what is the appropriate
4 rate in those wire centers. You know, if customers could
5 pay a little bit more, then you might not need universal
6 service support in a Miami or a Jacksonville.

7 Q Well, how would you define a high-cost area?

8 A I would define the high-cost area an area where
9 the costs are high. I mean if you're asking are these all
10 high-cost areas, it depends on what you set the threshold
11 at as high cost. If you say, are these all areas where the
12 cost exceeds the rate that can be charged for basic
13 residential service, then I would agree with you that in
14 all of these wire centers it appears the cost does exceed
15 the rate that we can charge for 1FR service plus the SLC.

16 Q Using the rates that you have in your Exhibit 1
17 and the costs, have you done any calculation as to what
18 size of the fund -- of a universal service fund BellSouth
19 would require using the BCPM in Florida?

20 A We did some calculations a while back. I don't
21 remember the exact number.

22 Q Do you know about what that number was?

23 A It would be probably a fairly large number. I
24 would guess for BellSouth it would be in the range of eight
25 hundred million dollars, thereabouts.

1 Q Thank you.

2 MR. COKER: That's all I have.

3 CROSS EXAMINATION

4 BY MR. HENRY:

5 Q Good afternoon, Mr. Martin. I'm Mickey Henry,
6 and I represent MCI, and I just have a very few questions.

7 One thing I was curious about, when you are
8 talking about subscribership to vertical services, my
9 daughter often makes a call, a conference call where you
10 push a star and do something like that, and 75 cents shows
11 up on my bill. Would you consider that I am a subscriber
12 to that service?

13 A I don't know, and I don't know if those type of
14 revenues would be included, or if that would be included in
15 our percentage. I would have to go back and check with our
16 billing folks.

17 Q Okay. Your other statement on Page 8 that 82% of
18 BellSouth's residential customers make no intraLATA toll
19 calls during a month, correct?

20 A Yes.

21 Q Are you familiar with the expanded calling
22 service or quarter plan routes that BellSouth has in
23 Florida?

24 A Relatively familiar with it.

25 Q Okay. Do you -- would you suspect that a lot of

1 calls that may have previously been classified as toll may
2 now be classified as ECS or quarter calls?

3 A That's certainly a possibility, and as I
4 mentioned earlier, we could include those revenues. To the
5 extent, again, they are for plans that were in effect prior
6 to, I guess it was July of '95, we could include those
7 revenues since the Commission deemed those were part of
8 basic local telecommunications service.

9 Q Well, I guess my real question was, does it
10 surprise you that no one is making toll calls because there
11 are no more toll routes left in effect?

12 A Not really. Some people are making toll calls.
13 I mean 82% don't, that means 18% are.

14 Q Do you suspect that they are in areas where ECS
15 isn't implemented?

16 A I don't know where they are located.

17 Q Now you indicated to Mr. Cover, I believe, that
18 you were going to supply us with the number of customers --
19 Turning to your Exhibit PFM-1 for a moment, and I don't
20 have the revised one, and when I go to the example I want
21 to use, you'll have to tell me whether the numbers are
22 still the same. But going to PFM-1, that is a listing by
23 end office in Florida of the residential flat rate, the
24 business flat rate, the subscriber line charge and the BCPM
25 calculated cost for that end office, correct?

1 A Yes.

2 Q Okay. And you indicated to Mr. Coker that you
3 would supply us with the number of customers by end office
4 that, for example, in Archer, Florida only pay \$8.80 per
5 month?

6 A I don't remember agreeing to that. I said that
7 we would try to provide a percentage statewide for our
8 serving area of what customers only get basic dial tone
9 service. I didn't agree to do that by wire center. I
10 think that would be a tremendous undertaking.

11 Q Okay. So you are going to be able to supply
12 though for the state how many of your subscribers only pay
13 the flat rate for either residence or business?

14 A Yes.

15 Q Okay. Now let me -- On Pages 5, 6, and 7 you
16 generally discuss the FCC process and how that process is
17 going to work, correct, universal service fund?

18 A Yes.

19 Q Okay. And you discuss in here the fact that
20 there is going to be a 25/75 jurisdictional split between
21 interstate and intrastate; is that correct?

22 A That was the tentative way they were going to do
23 it. As I note, that issue has been referred to the joint
24 board, and so by November the 23rd, I believe it is, we
25 should know if this is going to change.

1 Q Okay. My recollection was that that issue -- the
2 joint board actually asked the FCC to refer to it, the
3 question of the appropriate jurisdictional split; isn't
4 that correct?

5 A Yes, and it's actually gone beyond that. The FCC
6 has gone ahead and done that.

7 Q Right. And you also -- At the FCC level, they
8 have selected a revenue benchmark of \$31, correct?

9 A I believe that was tentative, and they're
10 collecting data and going to recalculate that.

11 Q And your company is supplying that data to the
12 FCC, correct?

13 A That's correct.

14 Q And that \$31 at the time it was calculated is
15 made up of, on average, the local -- basic local revenues,
16 the subscriber line charge, the average vertical service
17 revenues, the average toll revenues, the average access
18 revenues, correct?

19 A I believe that's correct.

20 Q Okay. Now let me take you to just an example
21 of -- So at the federal level, what they are going to do
22 is make a determination as to the cost in a particular wire
23 center, and then they are going to compare that to revenues
24 and make a determination as to how many lines are in need
25 of a subsidy, correct?

1 A That was the way they were going to do it.
2 Again, they've thrown the whole process open, and United
3 States Telephone Association has made a proposal, a new
4 proposal on how to do the federal support, and I think that
5 is being seriously considered. So, again, I need to note
6 that this is the way they were going to do it. They
7 referred a lot of issues back to the joint board, and I
8 think the FCC could change direction on some of this.

9 Q But we don't expect the basic math to change.
10 There will be revenues minus cost equals subsidy or not,
11 correct?

12 A May or may not be that way. I think one thing
13 they are looking at -- I think in total you need to look
14 at the cost versus the revenue. That is how you size the
15 problem in total, and the state will ultimately have to do
16 that, but for what is the federal side of the problem, I
17 think one thing the FCC is looking at is maybe we can look
18 at the amount of support provided via the PIXC charge that
19 you referred to earlier and the carrier common line charge
20 and total that up, and that could be an estimate of the
21 interstate or federal support. And then in addition, they
22 may have additional federal support provided to keep state
23 rates lower, maybe in some of the very rural states; so I
24 think this is an issue that is very much still up in the
25 air.

1 Q Well, let me take you to an example, and this is
2 the last part of my question. If you would go to your
3 PFM-1, and exchange or the wire center that I picked out
4 was Cocoa Beach, I believe; and it's about, I'll call it 15
5 lines down, the CLLI code is CCBHFLMA.

6 A Okay.

7 Q Okay? As I go across that line, I see that the
8 costs are \$30.56 according to the BCPM, okay?

9 A The corrected revised cost is \$30.48, but okay.

10 Q Okay. Well, if I screw up with my math, you'll
11 know it's because I was using the 30.56, but give or take
12 six cents, eight cents. So the basic math would work is
13 that from residential customers in that wire center you're
14 today receiving \$9.50 in a flat rate -- flat 1FR rate and
15 \$3.50 in a subscriber line charge, correct?

16 A That's correct.

17 Q And that would be \$12?

18 A I believe that totals to \$13.

19 Q You're right. Now in order to get to a \$31
20 revenue benchmark, I've just used some illustrative
21 numbers, okay? I want you to assume that on average from
22 those customers you receive \$6 in vertical services \$5 in
23 ECS revenues, \$4 in intraLATA toll and \$3 in access
24 charges, okay? That adds up to \$31. Now if a revenue
25 benchmark was selected that only reflected the \$13, we

1 would subtract \$13 from \$30.56, and for a line in that wire
2 center there would be a subsidy payment of \$17.56, correct?

3 A Yeah, using the number you have.

4 Q Okay. Now if, in fact, the company was receiving
5 \$31 from that customer, then for that customer the company
6 would receive \$31 from the customer and \$17.46 from the USF
7 fund, correct?

8 A No. I'm glad you asked this question because it
9 gives us a chance to clarify some things. When this fund
10 is set up, there will be rate reductions offsetting
11 whatever support is received. And, again, this is getting
12 into the next phase, but he's brought it up, so I need to
13 respond to it.

14 There will be rate reductions, so the rates will
15 not stay the same. The rates will come down. I don't know
16 which rates will come down, but the bottom line is there
17 will be rate reductions totaling whatever amount of support
18 is provided via the universal service fund. So there will
19 be no new dollars flowing to the local exchange carrier
20 from day one from the federal fund or from the state fund
21 under BellSouth's proposal.

22 COMMISSIONER JACOBS: Which rates are those that
23 will come down?

24 MR. MARTIN: Sorry?

25 COMMISSIONER JACOBS: Which rate, your \$30 rate

1 will come down?

2 MR. MARTIN: We'll make the recommendation. The
3 Commission here will be the ones that ultimately decide
4 which rates come down. I would guess that access rates
5 would come down. It's possible vertical service revenues
6 or rates would come down. It's possible that business
7 rates would come down. That's a package we would have to
8 put together. And, again, I think this is out there a ways
9 because we have to go through some other steps; but, yes,
10 rates would come down to offset in total whatever support
11 we get.

12 COMMISSIONER JACOBS: So that would reduce the 17
13 then?

14 MR. MARTIN: I don't know if it would come down
15 to 17, but clearly certain rates would come down when the
16 fund is instituted.

17 BY MR. HENRY (Continuing):

18 Q Well, in any event, even if you reduce vertical
19 services in half, let's just say, then we'd cut that to \$3
20 and you'd receive -- you'd still be receiving \$14.56
21 though, correct, over and above what you're receiving from
22 the customer? I'm sorry, \$17.56.

23 A I think in your static example that could work.
24 Again, I think once you start seeing competition come in,
25 you've now made these -- all of these customers attractive

1 to competitors, and I think competition will start knocking
2 down revenues. But, again, you are focusing on one
3 customer, and I guess you're saying we are going to get
4 more revenue from that customer. In total we are not going
5 to get any more revenue, so it's hard to make the two
6 examples mesh; but bottom line is there won't be new
7 revenues in total flowing to the local exchange carrier.

8 Q Well, that was the point I wanted to get to. You
9 are going to be getting a government check in effect of
10 \$17.56 from that customer. You are going to be getting \$13
11 from that customer by billing him, correct?

12 A I would say that if we keep the customer we would
13 get the subsidy and we would get the revenue he pays as an
14 end user.

15 Q So a competitor could come in and you could
16 basically drop your vertical, ECS and toll services to
17 cost, correct, and still maintain the same revenue stream
18 for that customer?

19 A I don't know that I follow that. I know that the
20 competitor comes in. He'll have a certain cost he needs to
21 cover, and it's possible he'll go down to a certain point.
22 We'll have to compete.

23 Q Well, I'm not talking about the competitor's
24 cost. I'm talking about BellSouth is receiving \$13 from
25 that customer by billing him. They are receiving \$17.56

1 from the government for a total of roughly 30, \$31. Okay,
2 today they are billing him roughly \$18 in vertical, ECS,
3 intraLATA toll and intraLATA access. You could cut those
4 prices almost to cost, still have the same amount of
5 revenue coming in from that customer, correct?

6 A I guess if you could show me the math. I mean
7 from a given average customer?

8 Q Yeah.

9 A Again, I think it's dangerous to just look at the
10 average customer because part of the problem, and the
11 reason we think you need to look at the basic rate versus
12 the cost associated with it, is that some customers don't
13 get any vertical services; and for that customer it's not
14 going to be viable for a competitor to serve that customer
15 unless they are going to get support for the difference.
16 For the customers who get a lot of vertical service
17 revenues, I think you are going to see a substantial
18 reduction in toll revenues and vertical service revenues as
19 competition takes hold and those above-cost rates start
20 getting competed downwards.

21 Q Mr. Martin, in my example, you're receiving \$31
22 from that customer today on average. Tomorrow you are
23 going to receive \$13 directly from the customer and \$17.56
24 from the government, okay? You are still supplying him
25 with vertical, ECS, intraLATA toll and billing

1 interexchange carriers access, okay?

2 A Yes.

3 Q Now you can basically wipe all those other
4 revenue sources down to zero and you still get the same
5 amount of money tomorrow as you did the day before,
6 correct?

7 MS. KEYER: Madam Chairman, I'd like to make an
8 objection. I think he has, this is another asked and
9 answered. And in addition to this, it's really irrelevant
10 to this proceeding. He has gone over the same example -- I
11 believe Mr. Martin has given him the best answer he can
12 give him two or three different times, so I would object to
13 any further questioning along these lines and particularly
14 that question.

15 MR. HENRY: Madam Chairman, I don't believe he
16 has given me an answer. I'm asking him whether he could
17 basically reduce his vertical, ECS, intraLATA toll and
18 enter -- and his access charges to nothing and retain the
19 same amount of money from that customer with a \$17.56 USF
20 check.

21 CHAIRMAN JOHNSON: You can answer the question.

22 A Yeah, under the very simple example you've given
23 then the dollars would be the same.

24 (Transcript continues in sequence in Volume 11).
25

#46 1082:3
 #47 1082:4
 #48 1082:5
 #49 1082:6

★

* 1116:19,19,19

1

1084:24
 10 1080:10 1082:1 1114:11
 1080 1080:11
 1088 1081:6
 105 1081:7
 1116 1082:3,4
 1116 1082:5
 1119 1081:10
 1154 1081:11
 1177 1080:11
 13 1080:17
 14 1117:14
 148 1080:20
 15 1114:11
 150 1085:17
 18 1117:12
 1998 1080:17 1117:15

2

20 1114:11,12
 24% 1095:11 1096:1,16,17
 1097:2
 2nd 1117:15

3

30-minute 1101:22
 31% 1097:12
 32% 1097:13

4

4.6% 1104:14,15
 40 1097:6,12
 43 1097:13
 43% 1096:8 1104:2 1105:25
 1106:13
 48 1115:18
 47 1115:18
 48 1115:6,10
 49 1115:4

5

50 1118:10

6

675 1117:6
 68% 1095:23,24,25

8

8% 1095:21
 80% 1109:1,8
 88 1097:16
 88% 1096:5,7 1097:5,16

9

9 1083:2
 96% 1104:19,23
 9:30 1080:18

A

a.m 1080:18
 able 1101:18 1115:15
 about 1085:15 1090:9 1091:12
 1092:16,23 1093:14 1097:16
 1098:3 1102:14 1109:19 1110:
 18,22 1113:23 1114:8
 above 1087:3 1105:7,8
 Absolutely 1089:17 1094:7
 according 1109:24
 account 1088:1

accurate 1091:16 1093:7,9
 1116:1
 accurately 1093:7 1109:22
 achieve 1107:23
 across 1104:9,11,12
 activated 1102:5
 actual 1089:13 1090:12 1091:
 3,5,22 1092:24 1093:12 1110:
 4,8 1112:13,14 1113:23
 actuality 1090:12
 actually 1089:23 1091:2,9
 1092:3,5 1096:20 1100:1,14
 1110:12 1112:4,15 1113:5
 add 1085:22 1087:1 1089:2
 1094:16 1102:25 1103:4
 added 1102:15
 adding 1095:8
 addition 1102:18
 additional 1095:1,8,15 1104:7
 1106:4 1108:9
 address 1083:19 1084:7 1098:
 3 1109:22 1112:13,20,22 1117:
 4,6
 adjur* 1100:25
 adjustment 1107:11,17
 adjustments 1106:25 1108:5
 admitted 1115:19 1116:10
 ADMTD 1082:2
 AFFIRMATIVELY 1088:17
 after 1104:2 1116:23
 afternoon 1103:11 1105:19,20
 again 1083:24 1086:1 1088:3
 1092:1,1,5,11,18 1096:9 1097:
 17 1105:11 1106:20 1107:6
 1110:8 1112:18 1115:14
 agree 1091:4 1095:3 1097:23
 1099:6,8 1103:17
 ahead 1096:22
 along 1087:23 1110:10
 although 1089:10 1101:10
 1113:21
 always 1087:3
 amount 1084:18,21 1085:3,12,
 22,24 1087:18,20,22 1089:14
 1091:2 1095:13 1096:15,16,18
 1098:7 1103:14,18,22 1104:22
 1105:7 1106:19,20 1112:25
 1113:9,16,18
 analysis 1082:6 1087:13 1090:
 14 1093:15,21,24 1095:2 1102:
 16,17 1103:12 1104:2,22 1105:
 4,6,24 1106:11,24 1107:2
 1114:24 1115:5
 angle 1088:25
 answer 1092:9,11,13 1093:4,
 11 1101:18 1103:1,5 1106:17,
 18 1115:11,15
 answered 1091:25 1092:4,6
 answers 1118:2
 APPEARANCES 1080:24
 apples 1090:13 1095:2,2
 appreciate 1102:23
 approach 1089:9
 appropriate 1099:18 1103:21
 1105:12 1106:18
 area 1085:4,6,20,23 1086:7
 1087:7 1093:25 1094:5,10
 1098:8 1099:4 1103:14 1107:8,
 10,12,14 1109:7,11 1110:23
 1112:24
 areas 1085:16,17,25 1086:11
 1094:6 1095:24,25 1099:6
 1109:3,6 1114:4,10
 aren't 1091:15 1113:22
 argue 1113:9
 arguing 1094:18
 argument 1090:8 1093:20
 around 1113:7
 art 1091:14
 artifact 1112:5
 ask 1092:17 1093:14 1098:10
 1099:19 1100:12 1102:2,8,17,
 1107:25 1109:3 1110:22 1112:

10 1113:12 1114:25 1115:10,
 16 1117:25 1118:6
 asked 1091:24 1102:14 1108:
 2 1118:1
 asking 1092:14,15
 assigned 1113:18
 assume 1110:23 1112:11
 assumes 1085:7
 assuming 1085:7 1101:7
 1109:21 1110:6,17
 assumption 1086:5,11 1087:
 25
 AT&T 1101:8
 Atlanta 1117:6
 available 1105:10
 average 1095:10,21,23 1096:
 15 1104:11 1105:2

B

back 1092:4 1095:22 1101:11,
 24 1109:12
 backbone 1085:12,21,22
 1086:5 1087:21 1094:24 1107:
 8,12
 backup 1088:11
 based 1098:14 1099:6 1105:
 25 1106:23
 Basically 1113:13
 BCPM 1083:13 1087:11,14,17
 1088:1,5,6 1093:15,24 1094:3,
 8 1095:7,10,13,23 1096:1,8,12
 1097:6,12,18,20 1098:9,13,18
 1099:5,16 1101:9,12,15 1102:
 14 1104:1,3,15 1105:9,25
 1106:25 1107:11 1108:22
 1111:12,23
 BCPM's 1107:12
 bearing 1089:21
 because 1086:23,23 1091:9
 1093:20,21 1100:18 1102:6
 1105:11,14 1107:5 1110:25
 1111:8
 BEFORE 56:1 1080:14
 begin 1086:23
 behalf 1084:5 1105:21 1116:
 23
 behold 1093:22
 believe 1086:15 1092:9 1096:
 1 1100:9,10,16 1101:2 1103:
 12,25 1104:1 1108:25 1109:13,
 14
 BellSouth 1104:12 1115:18
 1116:15,23 1117:10
 BellSouth's 1104:17
 benchmark 1103:21,24 1105:
 11,13
 best 1083:14
 better 1096:13 1107:6
 between 1084:4 1086:24
 1094:15 1096:18
 biased 1093:21
 big 1111:10 1114:11
 bit 1103:3 1111:14
 block 1090:10 1109:19,24
 1110:3,7,9,19 1111:10 1112:3
 blocks 1090:4
 bogging 1090:13
 both 1083:8 1088:5
 bound 1105:13
 boundary 1084:3 1090:10
 1107:10,15 1109:24 1110:3,11,
 14,16 1111:8,9 1112:3
 branch 1085:12,20,22 1086:6
 1087:20 1094:25 1107:8,12
 break 1101:22
 BRIAN 1087:16 1088:3 1101:18
 BRIEF 1101:23
 bring 1114:8
 broad 1111:18
 brought 1095:14
 build 1090:15,22 1098:1,4
 1099:5 1100:17 1107:7 1112:

15,16,22
 building 1099:4 1101:10 1105:
 25 1106:14,23
 builds 1097:20,21 1098:1,12,
 13 1101:13 1112:23
 built 1099:6
 business 1117:3,5

C

cable 1084:18,21 1085:12
 1086:6,24 1087:2,4,21,23,24
 1089:19,25 1090:7,12 1091:21
 1094:24 1098:7 1103:22,22
 1105:12 1107:5,8,13 1112:25
 1113:9,17
 cables 1085:13
 cabling 1083:7
 calculate 1088:21 1090:20
 calculated 1094:8
 calculates 1088:15 1098:14
 calculating 1094:3,9
 calculation 1093:15
 call 1089:1 1113:21
 called 1116:23
 calls 1116:15
 came 1093:23
 can 1083:11,12,18 1087:14,24
 1092:21 1095:11,21 1096:9
 1100:25 1101:10,12 1102:3
 1104:8 1107:5,6 1108:2 1111:
 21 1113:8,12 1114:4,4,8
 can't 1091:5,6,16 1094:16
 1097:23 1105:4
 cannot 1087:21
 cap 1087:17,18,20
 capacity 1117:9
 care 1090:2,3,4,5
 CARVER 1091:23 1092:9
 1093:2 1108:16,19 1110:24
 1111:2,5,18,19,21 1112:9
 1114:20 1115:18
 case 1085:6 1110:17
 cause 1106:12
 caused 1117:12
 CCR 1080:22
 CD 1083:25
 cell 1108:4
 cells 1107:22
 census 1090:4,10 1099:24
 1100:3,6,19,23 1109:18,21,
 24 1110:3,7,9,19 1111:10
 1112:3
 centroid 1094:16,21 1095:1
 1096:4 1104:6 1106:3
 certainly 1093:13 1107:21
 1108:2,8 1115:14
 CHAIRMAN 1080:14 1091:23
 1092:13 1093:4 1101:21,24
 1102:3,6,11,24 1103:2,6 1108:
 13,15 1114:21 1115:3,9,19,21
 1116:10 1118:4,8
 change 1100:25 1101:3,8,9,12
 1107:18
 changed 1101:6 1107:23
 changes 1117:22
 check 1090:25 1106:16,24
 1116:1
 clarification 1097:24
 clarity 1088:8 1110:13
 CLARK 1060:15 1099:19
 1100:5,12,24 1101:5
 clear-cut 1087:14
 clearly 1088:5
 close 1110:4
 closer 1111:14
 cluster 1083:23 1084:4,23
 1085:3,25 1086:24 1088:9,11,
 19 1089:3,12,12,13,14,20
 1091:7 1093:17,19 1094:15,16,
 21 1098:8 1112:19,19,25 1114:
 6,7,15
 clustered 1114:1

clusters 1083:22 1084:8,9,16,
19 1086:4,16,20,22 1087:7
1093:19 1094:14 1096:4,5,7,8,
25 1097:11,15,16 1098:1,5,7,
13 1114:5,10
CO 1086:12
code 1107:18
coding 1108:3
Coker 1081:11
come 1086:12
comes 1086:2 1088:2,5 1089:
11 1107:3,11 1108:7
Commenced 1080:18
COMMISSION 1080:1 1099:
17 1105:21
Commission's 1102:1
COMMISSIONER 1080:15,16
1083:5,10 1086:8,17,21 1087:
5,8,9,12 1099:19 1100:5,12,24
1101:5,14 1110:24 1111:3,16,
22 1112:6
Commissioners 1108:13
compare 1085:23 1091:8
1094:24,25
comparison 1088:18,22
completely 1111:1
comprehensive 1089:24
compress 1085:1
compressed 1085:19
Conceptually 1103:20 1113:6
concern 1087:7
concludes 1108:12
configuration 1086:9
connect 1084:22 1085:24
1088:16 1090:7,8 1094:19
1115:13
connected 1085:20 1102:19
connecting 1085:24 1086:13,
24 1087:2,4,21 1094:14,24
connections 1084:4
conservative 1089:9
considered 1100:22 1107:18
consistency 1089:25
consistent 1090:24
constant 1096:12
containing 1098:13,14
continues 1083:4
Continuing 1088:7 1092:19
1102:12 1105:18 1108:19
1111:19 1112:9
contributes 1087:25
convex 1084:2
Correct 1090:22 1094:1,22
1100:2,14 1101:6 1103:15,16
1104:4,6,17,21 1106:2,3,14,25
1108:6 1109:17 1114:11
cost 1080:4 1090:18,20 1091:
3,21 1092:24 1093:7,12 1098:
13 1100:13
costing 1100:17
costs 1098:14
couldn't 1096:6
couple 1105:22
cover 1097:19
Cox 1081:7 1105:18,21 1108:
12 1114:21 1115:5,8,22 1116:
2,5
create 1083:8
creativity 1089:1
criteria 1099:10,12
criterion 1099:12
Cross 1081:6,7,11 1103:7
1108:20
crow 1087:1
current 1099:16
customer 1083:19,23 1088:10
1091:12 1098:18,21 1106:1
1109:15 1110:2,4 1112:12,13
1113:14,15 1114:1,3,14
customers 1084:8,18,22
1085:2,7,14,18,25 1088:4
1088:13 1089:19,23 1090:1,8,
12,16,19,20 1091:6,9,10,14

1093:8,12 1094:19 1098:1
1103:23 1110:10,18 1111:7,10,
13 1113:1,4,7,7,10,17,21,22
1114:9

D

data 1095:12 1100:23 1105:10
1107:5
database 1084:16 1089:24
DATE 1080:17
dated 1117:14
day 1100:20,21
DEASON 1083:5,10 1087:9,12
1101:14
debate 1091:11
default 1085:17 1098:18 1101:
10
definition 1098:17,20 1100:4
density 1098:7,8 1097:7,8,9,
13,14 1104:3,9,10 1106:6
depending 1114:6
depth 1085:13 1086:6 1107:9,
15,15
Determination 1080:4
determine 1089:4 1090:17,19
1091:1 1093:8,12 1112:25
determines 1113:18
determining 1089:18 1107:22
developed 1084:7
development 1084:6
didn't 1094:15,17,17 1100:5
1106:11
difference 1096:18 1099:13
1101:14 1113:23
different 1092:14 1106:12
1109:11 1110:23 1113:5
differently 1099:18
Direct 1081:10 1108:8 1117:1,
13,22 1118:1,5
direction 1117:20
directly 1086:12
director 1117:11
discussion 1105:23 1108:21
1109:2
dispersion 1085:2,2,3 1090:
11
distance 1085:24 1087:18,24,
24 1088:16,22,25 1089:2,5,6,
11,12,13 1093:16 1094:3,10,
15,24,25 1095:7,18 1096:16,20
1103:22 1110:19,21 1112:14
1114:2
distances 1091:8
distribution 1085:8 1087:18
1094:4,6 1096:19 1103:14,19,
22 1104:16 1107:1
DLC 1094:4,9 1102:16 1106:2
1114:24 1115:5,11,13
docket 1117:12
DOCTOR 1083:9,11 1086:15,
18,22 1087:6,11,13,16 1088:3
1091:25 1099:19 1100:1,9,16
1101:2,7,17,18 1102:25,25
1103:4,5,9 1105:19 1108:8,10,
20 1112:8 1115:6,14,15,17,22,
25 1116:4,7
does 1083:8,9 1086:8 1088:6
1089:25 1090:7,15,25 1091:19
1093:10 1094:25 1095:6,7,7,12
1096:13 1098:4 1101:14 1103:
13 1104:15 1112:12,15,22,23
doesn't 1083:6 1095:20 1112:
17
doing 1089:17,18 1094:11
1097:1 1100:11 1102:14
done 1084:5 1088:24 1092:21
1095:17 1104:22 1105:4 1112:
14
down 1088:19 1089:14 1091:7
1103:3 1111:9,11 1116:8
drawn 1110:15,21
drew 1089:21

drop 1085:17,23 1087:21
1088:19 1089:14 1094:24
due 1084:24 1112:2
DUFFY-DENO 1081:5 1083:3,
9,11 1086:15,18,22 1087:6,11,
13 1091:25 1100:1,9,16 1101:
2,7,17 1102:25 1103:4,9 1105:
19 1108:10,20 1112:8 1115:6,
14,17,22,25 1116:4,7
duty 1116:24

E

each 1090:5 1094:5,19
early 1108:20
easier 1084:12
easily 1101:11
effect 1097:17 1107:24 1113:3
either 1089:4 1112:7 1117:22
else 1086:14
employed 1117:8,10
encompasses 1099:4
enough 1083:6 1084:22 1089:
19,25 1090:7,12 1091:3,16,20
1092:23 1104:16 1115:6
entire 1096:20,24 1104:12,17
equal 1089:4,5,6
equating 1099:22 1100:7,8
essence 1090:14
essentially 1084:16 1085:8
estimates 1084:18 1089:25
1090:7 1093:7,7
estimated 1084:21 1096:19
1113:9
estimates 1085:12 1087:19
1088:19 1090:12 1098:7
estimating 1113:16
estimation 1091:13
even 1085:19 1105:6
ever 1109:7 1111:7
evidently 1099:21
exact 1091:24
exactly 1107:22
Examination 1081:6,7,11
1103:7 1108:18,20 1117:1
example 1105:1 1109:12,13,
18 1110:2,6,13
exceed 1087:21
exceeded 1104:20,23
Excel 1107:19
Excuse 1086:8
excused 1116:13
executed 1101:9
exhaustive 1105:23
exhibit 1095:11 1096:10 1114:
23 1115:1,23 1116:6 1117:13,
14 1118:6,10
EXHIBITS 1082:1 1115:9
exist 1083:8,9,13
exists 1083:12,14 1091:2
experts 1108:3
explain 1083:11,14,16 1107:6
explained 1092:11
explaining 1092:15
extend 1085:13 1107:13
extends 1086:6
extent 1106:17,18
extremely 1111:12

F

fact 1106:13
factor 1106:11
failure 1085:10
fair 1095:16 1106:14
fairly 1096:12 1106:22 1110:7,
21 1111:18 1114:8
falls 1084:23
far 1088:5 1105:8 1110:7,11,
21
FCC 1099:10,14,24
feel 1107:6
feet 1085:18
fell 1104:3

few 1103:10 1108:16 1110:9
figure 1108:25
file 1096:9
filed 1117:12
final 1112:10
find 1088:20 1089:3 1102:21
findings 1093:23
first 1089:20 1095:3
five 1097:9,10 1106:8
flaw 1083:6,8,8
flies 1087:1
flip 1109:12
FLORIDA 1080:1,21 1088:20,
20 1089:15 1090:19,21 1091:3,
4,7,8,22 1092:25
focus 1087:6 1090:14 1103:25
1104:9
follow-up 1111:25
following 1083:15 1093:11
1111:21
follows 1083:2 1116:24
footage 1091:2,21
footers 1089:2
forest 1109:20
forgotten 1114:23
form 1083:22 1096:5,7 1116:9
formed 1083:23 1084:4,8
1112:19
forward 1095:15
four 1102:19 1115:12
fundamental 1098:16,17
further 1085:19 1101:20

G

GARCIA 1080:16 1110:24
1111:3,16 1112:6
Garcia's 1111:22
gave 1102:16 1104:1 1105:24
general 1099:3,8
Generally 1098:24 1103:16
generates 1091:20 1092:23
geocode 1109:8,15 1112:12
geocoded 1083:19 1084:6,7
1090:9 1098:4 1109:22 1112:
20,20,22
geocodes 1088:10 1112:12
geocoding 1088:14 1108:22,
25
geographic 1106:12
Georgia 1117:6
give 1087:14
given 1084:21 1106:22
glad 1095:14
good 1095:13 1096:11,11
1105:19,20 1115:6
got 1083:15 1088:9,24 1094:
12,18 1095:12 1096:23 1103:
10 1114:6 1115:25 1116:1
graphic 1112:17
graphs 1097:20
great 1092:11
greater 1085:3 1090:11 1106:
19
grid 1093:25 1095:1 1102:15,
20 1104:6 1106:4 1111:23
grids 1098:14 1104:3,11,15,
19,24
ground 1089:2
guess 1095:3 1106:17
guide 1107:22

H

HAI 1095:16
half 1087:9 1097:16 1110:18
happens 1084:13 1085:18
1107:10
happy 1107:22
HATCH 1102:5
Hatfield 1083:12,14,21 1084:
6,17,23 1086:3,19 1088:5,9,25
1089:3,5 1090:11 1093:16,16
1094:14 1095:18,20,24,25

1096:4,6,14 1097:6,15,18,
21,25 1098:3,12,20 1099:21
1100:25 1101:1,6 1107:4,7
1109:14,15,24 1112:1,11,15
1113:13 1115:7 1116:7
he'll 1094:22
HEAD 1088:17
hear 1102:3
HEARING 1080:13
huck 1084:12
herce 1090:11
here 1085:16 1098:6 1105:11
1110:6 1112:2,21 1113:10,11,
18
heretofore 1080:25
high-cost 1109:3
higher 1109:1,8
homework 1094:11
honestly 1094:17
hope 1093:13
house 1097:21 1100:20,21
1106:8 1112:14,14
household 1099:23 1100:4,8
households 1088:21 1097:22
1098:2,13,21,22,23,25 1099:1,
1,5,6,11,13,14,15,20 1100:2,7
1101:13,15
houses 1088:20,21 1089:15
housing 1098:2,15,18,24
1099:4,11,15,17 1100:14,18,22
1101:1,10,16 1108:8
how 1087:24 1089:9 1090:9,
19,22 1093:14 1101:14 1105:8,
14 1107:25 1110:3
However 1095:16,19 1105:11
hull 1084:2
hypothetical 1109:15

I'd 1095:3
ID 1082:2
idea 1087:22
identification 1118:7
identified 1089:20 1090:1,2
1109:21
identifies 1111:23
identify 1115:3
ignore 1100:10
implies 1113:10
important 1084:3,3
inaudible 1102:2
include 1086:9 1093:21 1094:
4,9 1095:1,15 1102:18 1106:3
1115:10
included 1084:15
includes 1115:12
including 1106:1
increase 1095:6,8,12,20 1097:
1,2 1108:24
increased 1097:11,14
increases 1095:10,18,19,21
1096:15,17
incumbent's 1100:18
indeed 1110:11 1112:3
indicated 1104:1 1107:1
indicates 1110:1,1 1111:24
indulgence 1102:1,23
information 1105:8 1114:25
1115:5,12,24
input 1100:25
inserted 1081:10 1118:5,8
instead 1107:14
interior 1085:19
internal 1087:3 1089:24 1090:
15 1093:9 1106:16,24
internality 1090:24
interpret 1099:18
interpreted 1099:17
involved 1111:17
irregular 1084:9,10,13,25
1086:3 1112:18
isn't 1084:22 1087:14 1095:2

1102:4
issue 1088:4 1100:10
item 1114:21 1116:5
itself 1069:3 1107:18

J

JACOBS 1086:8,17,21 1087:5,
8
JOE 1080:16
JOHNSON 1080:14 1092:13
1093:4 1101:21,24 1102:3,6,
11,24 1103:2,6 1108:13,15
1114:21 1115:3,9,19,21 1116:
10 1118:8
JULIA 1080:14
jumps 1087:17

K

keep 1100:6
KEVIN 1081:5 1083:3
KEYER 1116:15 1117:2 1118:
4,11
kind 1086:13
know 1088:4 1091:5,10 1095:
4 1098:18 1101:17,17 1102:21
1105:1,14 1106:20
knowledge 1109:9
knows 1103:1,5

L

lack 1089:1
laid 1107:13
Lamoureux 1081:6 1088:7
1089:21 1092:3,17,19 1094:11,
18 1101:20 1102:1,9,12,22
1108:21 1111:22 1115:10,16
large 1110:7 1114:5,8
last 1084:9 1093:11 1097:19
1102:2,8,9,13 1105:24 1110:22
1111:20 1113:20
Late-filed 1082:6 1095:11
1096:5 1115:4,23 1116:3,4
least 1083:7 1090:8,13 1091:
17 1111:13 1113:3
length 1092:11
less 1089:5,8,7,12 1097:9,10
1105:2 1106:8
Let 1088:11 1092:17 1093:4
1098:10,16 1099:19 1100:12
1107:5 1109:3 1113:12
let's 1100:6 1103:25 1110:23
1112:11
level 1105:12
like 1095:4 1098:5 1110:18
1115:7,25 1116:2,8
likely 1110:4
limited 1107:9
line 1102:13
linear 1111:13
literally 1113:22
little 1111:14 1113:12
located 1088:14,14 1089:23
1090:16 1091:6,10,14 1110:10
1111:10 1112:4 1113:7,10,18
locates 1097:20,21
locating 1099:3
location 1088:12,15 1089:9
1090:9 1091:2,3,12 1092:24
1108:1 1109:14 1111:12,23
1112:16,23 1113:5,14,23 1114:
2,2,15,15
locations 1083:19,22,23 1084:
6,7 1088:10 1089:19 1090:1,3
1091:22 1109:16,20 1110:3,5,8
1111:8,25 1112:20 1113:8,24
long 1111:11
look 1083:15 1093:9
looked 1106:1
looking 1094:2 1106:15 1109:
5
looks 1110:18
lot 1084:12 1086:8 1107:9,15

lot's 1085:13
lots 1085:6,8
low 1093:22
low-density 1109:6,7
lower 1105:13
lower-bound 1103:23
lowest 1096:7,8 1097:7,8,13
1104:3,9 1106:6
ludicrous 1091:17
lunch 1101:22

M

Madam 1091:23 1118:4
made 1106:25 1108:5
main 1086:20,24 1087:7,7
1093:19,19 1096:5,7
make 1097:24 1101:8,8,15
1108:3,23 1110:25 1111:5,20,
25 1114:25 1116:1
makes 1084:12
manner 1107:23
map 1083:21
marked 1118:6,9
Martin 1116:14,16,22 1117:5,
8,25
Martin's 1118:4
Matter 1080:3
may 1099:17 1102:2 1105:7
1116:13
maybe 1083:12 1087:25 1102:
6,25 1103:4 1107:13
MCI 1103:10
MDB 1084:15
mean 1099:15,15 1112:16
meaning 1099:24
means 1085:14
meant 1099:14
measure 1099:25
meet 1083:7 1104:16
Melaon 1103:6,8,9 1105:16
mention 1114:23
mentioned 1086:9 1114:22
methodology 1088:13,15
1089:9 1091:12,13,15 1109:25
1112:1
METZKE 1080:22
middle 1094:4 1102:15,20
1111:9,11
might 1083:13 1088:3 1101:9,
18 1106:12 1108:5,9,23 1115:
15
mile 1102:3,4,5 1103:2
mileage 1087:22
miles 1114:11,13,16
mind 1088:2 1090:13 1107:3,
11 1108:7
minimum 1083:7 1084:20
1085:11 1086:25 1087:3 1091:
16 1094:10,13 1095:6 1096:19
1103:23 1104:5,16,20,23 1105:
7,8,14,15,23 1106:10,19,24
1107:2
missed 1111:1
mixing 1090:13
model 1083:6,12,13,14,25
1084:6,15,15,17,23 1085:7,11,
18 1086:1,3,5,19 1088:9,10,25
1089:3,5,11,18,20,24,25 1090:
1,7,11,15,15,16,25 1091:6,19
1092:22,23 1093:6,8,16 1094:
14 1095:17,19,21 1096:4,14
1097:18,25 1098:1,3,4,7,12,20
1100:25 1101:1 1103:13 1104:
1 1106:15 1107:4,7 1112:7,11,
16,22,23 1113:9,1,13
modeled 1085:4,20,23 1086:7
1107:8,10,14 1113:23
modeling 1084:11,12,17,21
1085:8 1100:13 1107:8 1112:5
1113:3,8,11,17 1114:9
models 1083:8 1084:11 1088:
5 1089:17 1090:23,23 1097:25

1100:16 1113:6
module 1101:12
more 1087:24 1088:3 1098:10,
24 1099:1,5 1105:2 1111:16
1113:13
move 1113:7 1116:5 1118:4
moved 1100:21 1113:4,22
1114:3
movement 1114:9,14,16
moves 1115:18
Moving 1109:11 1113:21
1114:1
MS 1116:15 1117:2 1118:4,11
MST 1082:6 1086:18 1088:8,
15,25 1089:6,12 1090:14 1093:
10,15,15,16 1094:8,25 1095:
18,22 1097:1 1102:14 1103:12
1104:16 1105:2 1114:24 1115:
5
much 1095:20 1096:13 1101:
14 1102:22 1105:14

N

name 1117:3,5
NANCY 1080:22
national 1109:12,20
near 1112:13
necessarily 1110:15
need 1083:17 1086:13 1093:9
1095:14,15,16 1097:19,24
1102:7,21
needed 1084:18 1085:24
1096:8 1105:7 1106:19 1113:1
needs 1085:18
Neither 1098:1
network 1094:20
new 1095:22 1096:3
next 1083:21,22 1100:21 1102:
13 1116:15
nice 1116:9
nine 1085:7
nobody 1112:4
NODDED 1088:17
node 1094:9 1095:2,8,15
1104:7 1106:4
nota 1117:16
noted 1080:25
notion 1100:6
Now 1084:2,5,14 1085:10
1088:3 1089:8 1090:2 1092:1
1096:15 1100:24 1109:13
1110:2
NUMBER 1082:2 1084:24
1088:25 1096:23,25 1097:11,
14,15 1098:22 1104:11 1105:
24 1106:21
numbers 1095:22 1096:3
1097:5 1102:16 1103:25 1105:
9 1116:1,8

O

oath 1083:4
Objection 1091:23 1092:18
1093:2 1115:20 1116:11
obligation 1100:18
observations 1111:24
obstacles 1106:12
Obviously 1099:13,16
occupied 1098:19
occur 1109:6
occurring 1109:19
occurs 1085:2,17
October 1080:17
oddy 1114:7
off 1097:5 1110:19
offset 1105:14
Oh 1086:21 1091:15 1114:12
okay 1083:24 1086:21,22
1088:24 1089:8 1094:2 1095:8
1098:10,11 1099:10 1102:11,
24 1103:6 1104:19 1106:5,7,22
1108:5 1109:3 1110:17 1111:2

1113:20,25 1115:3,9,17 1116:2,5 Once 1112:14,18 one 1085:13 1086:6 1087:17 1093:18 1100:22 1102:2,8,9,10 1107:3,3,4,6,9,11,15,25 1108:7 1109:12,15,22,25 1110:1 1111:23 1114:21 ones 1100:14 only 1085:4,13,17 1086:6 1088:2 1094:19 1096:23 1102:10 1103:23 1105:12 1106:7 1116:8 open 1084:15 opinion 1099:14 oranges 1090:14 order 1085:15 other 1090:6 1094:19 1103:17,21 1108:5 1109:16 1113:14 others 1088:11,11 out 1083:23 1087:17 1088:19,25 1089:11 1094:3 1101:9 1102:21 1107:13 1111:22 1112:19 outer 1084:1,4 outlier 1086:11,16,22 outliers 1086:24 1087:2,2,4 1093:20,22,22 1096:6 over 1092:1 1104:17 overhead 1083:22 1107:6 overheads 1083:15 overstate 1103:18	5,6 1102:18 1115:12 polygon 1084:9,25 1112:18 1113:1 1114:7,15 populated 1110:9 1114:5 population 1098:23 portion 1109:14 positions 1111:6 possible 1089:16 1091:18 1092:6,8 1100:7,24 1108:22 1112:1 Possibly 1114:18 pre-processing 1063:21,24 1101:3,12 1107:16 precise 1098:10 precisely 1113:13 precision 1108:24 predominantly 1085:16 1088:1,19 Prefiled 1081:10 prepared 1117:19 presentation 1086:10 pretty 1110:11 probably 1106:13 1108:3 problem 1085:16 1086:1,19,19 1088:4 1103:20 1108:6 1112:6 proceeding 1090:17 1091:1,20 1092:23 PROCEEDINGS 1080:13 process 1112:5 program 1094:13 promise 1102:9 proposition 1099:3,8 provide 1083:12 1090:18,20 1095:11 1114:22 1115:1 1116:2 PUBLIC 56:1 pull 1103:2 purpose 1090:17 1091:1,19 1092:22 1093:6 purposes 1109:22 1112:21 1113:4,8,11,16,17,20 1114:9 pursuant 1080:5 put 1090:3,4,5 1093:22 1107:5	1086:4 1114:2,8,16 rectangular 1084:16 1112:24 Redirect 1108:15,17,18 reference 1095:22 references 1108:4 referred 1084:2 referring 1086:15 refers 1099:10 refined 1104:2 regard 1093:9 regardless 1092:8,20 regular 1084:11,12 regularly 1086:4 regulatory 1117:11 relation 1089:22 relative 1096:11 relevant 1089:16 remaining 1109:23 remotes 1086:12 removed 1110:8 repetitive 1092:12 REPORTED 1080:22 representing 1103:9 request 1101:8 require 1115:22 required 1103:14,18 requirement 1083:7 requirements 1090:23 reside 1110:12 residential 1098:17,20 aspect 1091:8 1097:25 RESPONSE 1108:14 restate 1098:16 result 1097:1 1108:24 results 1095:4 1096:12 1101:15 1115:7 revised 1097:1 1117:13 1118:6 RFM-1 1117:14 Rick 1103:9 right 1086:25 1088:2 1090:19 1093:12,17 1097:5,22 1099:11 1108:4 road 1087:18,20,22,24 1104:6 1106:3 1110:14,16,19 1111:9,11,13 1112:13 road-reduced 1094:5 1107:12,14 roads 1087:23 1090:5 1110:9,10 1111:8 Room 1080:20 roughly 1097:16 1104:19 route 1089:14 route 1089:11,13 routing 1086:25 1106:13 RPR 1080:22 running 1110:19 runs 1101:19 1111:9,11 rural 1085:16,17,25 1109:6,7 1114:4,10	13 September 1117:15 sequence 1083:2 series 1112:10 serious 1083:6 serve 1084:18 1089:19 1090:1,12 1091:3,9,21 1092:24 1093:8 1098:8 1100:19 1103:14,22 1113:1 served 1085:15 serves 1092:22 SERVICE 1060:1 1090:18,20 1098:22 1099:16 1100:3 1104:17 services 1080:5 serving 1093:12,25 1094:5 1095:24,25 1096:1 1098:8 1112:23 several 1092:10 1114:16 shape 1084:10,11,12,13,25 1085:5 1112:18 1114:6 shaped 1084:9 1086:3,4 1114:7 short 1084:23 1086:2 1095:23,24,25 1096:1,5,6,8,17 1097:1,11 1104:3,11 1115:4 shortage 1086:2 1087:25 1095:10,13,19,20 1096:16 1097:4,4 1105:15,15 1106:1 should 1090:24,24 1092:7 1100:17 1106:25 1107:23 1117:16 Show 1116:10 shown 1112:2 shows 1083:18,23 1095:12 1112:18 1115:19 side 1093:24 1103:17,21 significant 1114:3 simply 1084:22 1099:6 1100:24 slightly 1110:23 small 1086:23 smaller 1097:17 1098:22 some 1083:13,15,19,19 1087:15 1088:10,13,14,25 1090:23 1091:7 1093:9,20 1102:16 1104:2 1108:9 1112:14 1114:12 somebody 1100:21 1112:3 somehow 1088:13 1090:10 something 1086:14 1088:8 1097:6,12 1101:3 1107:20 sometimes 1114:10 somewhere 1088:19 1105:7 1113:14 sorry 1090:9 1095:25 1096:22 1097:15 1110:24 sort 1113:4 spanning 1084:20 1085:11 1086:25 1087:4 1091:17 1094:10,13 1095:6 1096:19 1103:23 1104:5 1105:15,24 1106:11,19,24 1107:2 sparsely 1110:8 1114:5 spatial 1113:8 spatially 1083:20 1113:6 specific 1098:2 1099:20 specifically 1099:10 1108:1 sponsor 1107:21 sponsors 1099:16 spreadsheets 1107:19 square 1106:8 1114:11,13 staff 1105:21 1106:22 1107:20,22 1115:21 1116:5 staff's 1108:12 stage 1083:24 1101:3 Stair 1087:16 1088:3 1101:18 1103:1,5 1108:8 1115:15 standpoint 1100:13 started 1094:13 state 1091:14 1092:24 1096:20,24 1109:20 1117:3 stated 1092:10 1106:10
P Pages 1080:11 1117:13,14 park 1109:12,20 part 1091:7 1103:12 particular 1097:25 1100:20 1110:13 pass 1090:24 Peachtree 1117:6 penetration 1100:10 people 1100:15 1110:9 per 1106:8 percent 1097:6,12 percentage 1104:8,23 1106:23 perform 1107:20 performs 1096:12,13 perhaps 1114:16 perimeter 1084:1 1085:14 1090:3 1107:14 period 1090:16 Peter 1116:16,22 1117:5 PFM-1 1117:16 1118:6,9 phone 1098:22 1100:3 phones 1099:2 place 1086:14 1104:15 1112:3 placed 1083:20 1088:12 1109:16,23,25 1110:3,18 placement 1083:18 1084:8 1085:5 1090:10 1112:2 places 1089:10 placing 1110:10 plant 1090:15 1091:21 1092:24 1097:20,21 1098:1,2,4,12,13 1099:5 1100:17 1106:19 1107:1 1112:15,16 play 1106:11 please 1115:8 1117:3 plot 1091:7 ploy 1111:18 plus 1087:2 1093:20 PNR 1084:5,6,19,23 1085:3,25 1112:19 1113:5 point 1094:9,16,20 1095:13 1096:11,11 1101:9 1102:15,20 1103:12 1107:3 1110:25 1111:5,20,22,25 1112:21 pointed 1111:22 points 1083:17 1084:1,5 1088:16 1091:15 1094:15 1098:4,5,	Q quadrant 1087:19,22 1115:12 quadrants 1102:19 question 1087:10 1091:24 1092:4,6,14,17,20 1093:3,14 1094:2 1098:10 1099:20 1102:2,8,9,10 1103:1,5 1108:8 1109:12 1112:10 1113:12,20 1115:11 questions 1092:16 1101:20 1102:13 1103:10 1105:22 1108:12,17 1112:11 1114:24 1118:1 quick 1105:22	R rate 1109:1,8 rather 1099:4 1113:10 rationale 1087:19 rattled 1097:5 read 1118:8,9 readily 1105:10 ready 1116:12,14 real 1111:14 really 1084:2 1087:6 1092:7 1095:2 1105:13 1113:15 reason 1084:23,24 1085:4,10 1086:2 1091:11 1094:12 reasons 1083:13 1084:24 1107:4,7 rebuttal 1117:14,23 1118:1,5 recall 1109:1,2,18 RECESS 1101:23 recognizing 1105:6 recommend 1087:15 record 1101:25 1118:5,9 rectangle 1084:14,14 1085:1,9	S said 1086:10 1095:23 1096:15 1097:6 1108:22,25 1113:5 same 1086:13 1091:24 1092:1 1093:2,2,23 1098:9 1099:24 1107:10 1117:25 1118:2 satellite 1111:24 say 1089:3 1090:13 1091:13,17 1106:14 1112:15 saying 1094:22,23 1099:23 says 1084:20 1087:20 1090:6,16 screen 1098:6 second 1085:10 1087:9 see 1083:25 1087:5,16 1113:12 seems 1083:5 seen 1101:19 1109:7 sees 1106:22 send 1108:3 sense 1099:21 1108:23 1111:

statement 1095:23 1097:24
 Statutes 1080:6
 step 1083:21 1084:9
 still 1090:6,6 1096:13
 straight 1087:1
 Street 1117:8
 structure 1090:19
 subfeeder 1090:20
 subject 1097:19
 substantial 1106:23 1108:24
 subtlety 1111:4,17
 success 1109:8
 successfully 1112:12
 such 1106:12 1112:24
 sufficient 1089:13 1091:21
 suggested 1115:1
 summary 1095:22
 suppose 1112:21
 Sure 1089:16 1092:5 1095:5,6,
 7,7 1103:13 1107:21 1108:3
 1111:3 1116:1
 surrogate 1083:19 1084:7
 1088:12,12,15 1089:8 1090:9
 1109:16,25 1111:6 1112:2,20
 surrogates 1089:10
 SUSAN 1080:15
 sworn 1116:24

T

table 1095:12
 take 1088:18 1091:6,9 1100:
 17 1101:21
 takes 1086:25
 talk 1087:15
 talked 1102:14
 talking 1085:15 1098:3 1109:
 19,21 1112:21 1113:22
 Tallahassee 1080:21
 team 1084:6
 technology 1086:13
 Telecommunications 1117:
 10
 telephone 1099:16
 tell 1104:8 1105:1,4
 tend 1109:4,6 1110:9 1114:5
 tends 1085:1,1
 term 1099:13,20,23,23 1100:8
 termination 1094:20
 terms 1085:10 1087:14 1098:2
 1114:8
 territory 1104:12,18
 test 1084:20 1085:11 1088:6
 1089:18,25 1090:6,6 1091:17,
 19 1092:7,7,21,22 1093:10,18,
 19 1096:12,13
 testified 1116:24
 Testimony 1081:10 1083:4
 1117:13,14,19,23 1118:2,5,8
 tests 1093:10,18
 Thank 1087:8 1102:22 1105:
 17 1108:10,16 1109:10 1111:
 17 1114:19 1116:11 1117:18
 1118:11
 That's 1083:7 1088:2 1091:10
 1093:2,10 1094:1,20 1098:20
 1097:4 1099:21 1100:10 1104:
 5,21 1105:17 1108:7 1110:17
 1112:19 1114:20
 therefore 1091:16 1098:12
 1099:24
 they've 1111:10
 thing 1087:17 1088:2 1092:1
 1107:3,10 1110:22
 things 1106:11
 think 1086:9 1091:24 1092:3,
 4,10,12 1094:17,22 1100:1,13
 1102:13 1108:22,25 1114:12
 those 1083:23 1084:4 1086:11
 1087:4 1088:16 1090:2,8 1091:
 9,10 1097:7 1098:4,5,6 1109:
 22 1110:4,17 1114:10 1115:19
 though 1113:8 1118:9

thought 1092:13 1098:21
 1101:5 1111:16
 thoughts 1087:15,16 1088:3
 1108:9
 three 1091:24,25 1092:16
 1109:20
 TIME 1080:18
 times 1091:24,25 1092:10
 title 1115:4
 titled 1117:13
 today 1118:1
 tool 1084:17,21
 top 1088:19 1089:15 1090:5
 1091:7
 total 1097:4 1104:15
 Transcript 1083:2
 transformation 1084:10,11,25
 1085:5 1086:3 1114:7
 transformed 1084:14
 tree 1084:20 1085:11 1086:25
 1087:4 1091:17 1094:10,13
 1095:6 1096:19 1113:24 1104:
 5 1105:15,24 1106:11,20,24
 1107:2
 true 1089:8
 truly 1090:14
 trying 1110:25 1111:5
 Tuesday 1080:17
 turn 1102:7
 twice 1105:2
 two 1084:24 1109:16,23 1110:
 2 1111:6
 typed 1116:9

U

ultimate 1090:25 1091:19
 1092:21 1093:25 1094:10
 1095:1 1098:14 1102:15,20
 1104:6 1106:4 1111:23
 under 1083:4 1105:25 1106:
 14,23 1107:7
 underlined 1084:19
 underlying 1084:22 1085:25
 1113:1
 understand 1099:22 1100:6
 1106:15 1113:21
 understanding 1100:2 1109:5
 understate 1103:13
 understatement 1106:13
 1107:1
 understates 1107:4
 unequivocally 1092:10
 Unfortunately 1087:13 1097:
 23
 uniform 1085:6,8
 unit 1093:24 1098:17,18 1100:
 22
 units 1097:21 1098:2,15,24
 1099:4,11,15,17 1100:14,18
 1101:1,10,16 1106:8
 Unless 1092:14
 unlikely 1111:7,12
 unoccupied 1098:19 1100:22
 up 1083:17 1085:22 1086:2
 1087:1 1088:5 1089:2 1093:11,
 23 1095:14 1098:6 1107:5
 1111:21 1112:18
 upwards 1114:12
 us 1104:1 1105:1 1107:25
 1114:22
 use 1091:16 1095:22 1099:22,
 25 1100:8,14 1101:1,15 1108:
 22
 used 1084:17 1086:5 1096:3
 1098:5,8 1112:25
 useful 1105:13
 user 1101:4,11,12
 uses 1087:17 1098:20,21
 1099:12
 using 1088:12 1091:14 1099:
 22 1100:2 1101:12 1104:6
 1114:24 1115:5

V

vacant 1100:20
 valid 1090:6
 validity 1093:10
 value 1085:17
 versus 1097:6
 very 1089:10 1100:21 1101:10
 1102:22 1110:7 1111:7
 VOLUME 1080:10 1082:1
 1083:2,4

W

want 1088:8,21 1093:14 1097:
 19 1102:8 1103:13,18 1111:25
 wanted 1102:17 1110:22
 1111:20
 way 1083:14 1089:22 1091:15
 1096:6 1111:11
 we'll 1089:1 1115:3
 welcome 1108:11
 Well 1083:11 1087:23,25
 1089:10 1091:13 1094:18
 1095:19 1100:1,5,12 1101:5
 1102:6 1110:6 1111:5 1112:24
 1113:9
 West 1117:6
 What's 1084:3,5,14 1090:18
 whatever 1088:21
 whatsoever 1089:21
 Whereas 1111:12
 Whereupon 1116:21
 whether 1089:18 1090:25
 1091:18,19,20 1092:6,7,8,20,
 22,23 1093:8 1099:14 1101:15
 1105:2
 whole 1090:8 1091:11
 whom 1117:8
 width 1085:13 1086:6 1107:9,
 15
 will 1085:12 1092:18 1102:10,
 25 1105:21 1115:4 1116:5
 1118:8,9
 within 1085:3,6,8 1086:6,7
 1087:19,22 1094:21 1107:9,15
 1109:19 1115:11
 without 1105:6 1115:19 1116:
 10
 WITNESS 1088:17 1114:22
 1116:16,23
 word 1099:12
 worse 1088:6
 written 1094:13 1116:8
 wrong 1094:23

Y

yields 1090:10

Z

zone 1096:7 1097:8,9,13,14
 1104:3,9 1106:6
 zones 1096:9 1097:7 1104:10

<p>common 1171:19 common-sense 1152:13 company 1170:11 1173:4,5 company-specific 1152:5 compare 1170:23 compete 1153:12 1175:22 competed 1176:20 compatibility 1153:16 1174:24 1175:1 1176:19 competitive 1150:16,25 1151: 4 1153:11,24,24 1155:6 1158: 24 competitor 1175:15,20 1176: 14 competitors 1175:23 competitors 1150:22 1175:1 concerned 1159:19 conclusion 1154:1 conference 1167:9 consider 1149:18 1167:11 considered 1171:5 considering 1158:14 continue 1155:6 1156:22 continues 1177:24 Continuing 1149:1 1174:17 contribute 1158:25 correct 1155:17 1157:8,19,20 1159:10,11 1162:4 1154:14,18, 19 1165:6,25 1167:19 1168:25 1169:17,21 1170:4,8,12,13,18, 19,25 1171:11 1172:15,16 1173:2,7 1174:21 1175:11,17 1176:5 corrected 1172:9 correctly 1149:24 cost 1149:9,13,16,22 1150:11, 23 1151:7 1152:1,2,7,10,14,22, 25 1153:2,4,21 1154:2,5,19,20, 24 1155:11 1159:7,18,23 1160: 6 1165:23 1166:11,12,14 1168: 25 1170:22 1171:10,14 1172:9 1175:17,20,24 1176:4,12 coating 1154:22 costs 1151:3 1153:6 1154:18, 21 1155:24 1159:25 1160:6 1166:9,17 1172:8 course 1163:25 cover 1151:2,7 1175:21 critical 1149:20 cross 1154:8,11 1167:3 curious 1167:7 current 1159:3 customer 1163:13,21 1173:5, 5,6 1174:22 1175:3,4,10,11,12, 18,25 1176:5,7,10,13,14,22,23 1177:19 customers 1150:20,21 1151: 2,6,7 1152:18 1158:13 1160:14 1161:13,19 1166:4 1167:18 1168:18 1169:3,8 1172:13,22 1174:25 1176:12,16 cut 1174:19 1176:3</p>	<p>depends 1166:10 deserves 1166:1 designated 1153:22 designating 1153:10 determination 1170:22,24 determine 1150:10 1152:2 1155:15 determined 1153:1,2,5 1155: 14 1156:3 1159:7 dial 1151:14 1152:18 1161:19 1162:11 1169:8 didn't 1157:23 1165:7 1169:9 difference 1150:23 1155:24 1176:15 different 1158:22 1177:12 direct 1156:14,14 direction 1171:8 directly 1176:23 discretionary 1160:19 discuss 1150:12 1151:8 1169: 16,19 discussion 1156:15 docket 1149:15,20 1151:10 dockets 1149:7 Doctor 1165:12 DOCUMENTS 1161:8 does 1151:21,23 1158:9,11 1159:15,23 1160:19,21,22,23 1161:4 1165:23,25 1166:14 1166:9 doesn't 1159:4,12,17 1165:1 dollar 1163:4 dollars 1156:25 1157:1,1,3 1166:25 1173:19 1177:23 Don 1159:20,24 done 1164:24 1166:17 1170:6 down 1155:2,4 1172:5 1173: 15,16,23 1174:1,4,5,6,7,10,14, 15 1175:2,21 1177:4 downwards 1176:20 drop 1175:16 due 1153:3 Duffy-Deno 1165:13 during 1167:19</p>	<p>21 exactly 1157:20 1161:18 EXAMINATION 1154:11 1167: 3 example 1152:13 1156:24 1168:20 1169:4 1170:20 1172: 1 1174:23 1176:21 1177:10,22 examples 1175:6 exceed 1165:23 1166:14 exceeded 1155:11 1166:12 exchange 1150:11,23 1154:5 1155:11,25 1158:24 1162:9 1163:1,2 1172:3 1173:19 1175: 7 exhibit 1154:17 1161:15,21 1162:3 1164:9,10,22 1165:20 1166:16 1168:19 exhibits 1164:24 expanded 1160:24 1161:1 1167:21 expect 1171:9 expected 1151:2 explain 1156:20 1162:22 explicit 1156:10 1158:10,12, 17,18 1159:4 extended 1153:13 1162:6 extent 1155:10 1162:7 1163: 20 1168:5</p>	<p>generally 1159:9,15 1162:25 1169:16 gets 1163:21 getting 1163:24 1173:11 1175: 9,10 1176:20 Gillan 1151:17 give 1172:11 1177:12 given 1176:7 1177:11,16,22 gives 1173:9 glad 1173:8 Good 1149:7 1154:4,15 1164: 2 1167:5 government 1175:9 1176:1,24 greatly 1153:7 group 1154:19,22 1159:8 groups 1159:10 guess 1161:11 1162:8 1166: 24 1168:6,9 1174:4 1175:3 1176:6</p>
H			
<p>HAI 1152:11,13 1159:17 half 1174:19 hand 1152:10 happening 1157:21 1158:4 happens 1164:7 hard 1175:5 having 1153:13 1158:13,23 He'll 1175:20,21 heard 1159:20,24 1160:7,13 1165:17 HENRY 1167:4,5 1174:17 1177:15 here 1149:7 1161:9,24 1163: 23,24 1164:24 1165:2 1169:19 1174:3 high 1153:21 1166:9,11 high-cost 1165:15,21 1166:7, 8,10 hold 1176:19 how 1158:18 1160:24 1161:6 1166:7 1169:12,16 1170:24 1171:4,14 However 1150:11,19 1153:3 hundred 1156:25 1157:6,7,25 1158:1 1161:23 1166:25 hundred-million-dollar 1158: 7 Hyde 1159:22 hypocrisy 1151:5</p>			
I			
<p>I'd 1154:25 1159:16 1164:9 1177:7 ID 1160:21 identified 1149:11 ignores 1150:19 ILEC 1151:1,1 1158:23 illustrative 1172:20 impact 1154:23 1155:1 implemented 1168:15 implicit 1155:6,10 important 1161:11 incentive 1153:20 1163:11 include 1151:24 1159:18,23 1160:8,15,20,21,24 1162:6,10, 12 1168:4,6 included 1150:18 1160:5 1163:6 1167:14,14 includes 1160:17 including 1151:20 increase 1154:23 incumbent 1151:1 indicated 1168:17 1169:2 information 1164:21,24,25 Initially 1153:2 1159:8 input 1154:20 inputs 1152:5,7,12,22 1154:3 instituted 1174:16 interesting 1151:4 interexchange 1162:24 1163: 1,10,12 1177:1</p>			
E			
<p>earlier 1160:13 1161:17 1168: 4 1171:19 ECS 1168:2,14 1172:23 1175: 16 1176:2,25 1177:17 effect 1157:7,12,13 1158:1,2 1162:7 1164:7 1168:5,11 1175: 9 effort 1161:24 eight 1166:24 1172:12 either 1155:2 1169:13 eligible 1153:10 eliminated 1164:5 enables 1153:11 end 1149:25 1162:17 1163:9, 14 1168:23,25 1169:3 1175:14 ends 1164:3 ensure 1151:6 enter 1153:20 1177:18 entitled 1163:18 entrants 1153:11,17,19 entry 1163:24,25 environment 1155:7 1158:22 envisioned 1153:16 equals 1171:10 established 1149:17 establishing 1149:21 establishment 1149:19 estimate 1154:4 1171:20 estimated 1149:23 ETC 1153:12 ETCs 1153:11,22 even 1152:17 1153:5,7 1158: 16 1174:18 event 1174:18 every 1165:20,24 exact 1160:10 1161:10 1166:</p>			
F			
<p>fact 1157:9 1160:6 1165:20 1169:19 1173:4 factor 1159:25 fairly 1166:23 familial 1167:21,24 family 1151:20 far 1159:19 FCC 1156:16 1158:11,12 1164:2 1169:16 1170:2,5,7,12 1171:8,17 FCCA 1151:18 February 1149:13 federal 1156:25 1158:25 1164: 1,6 1170:21 1171:4,16,21,22 1173:20 felt 1165:9 few 1167:6 figure 1160:23 1161:4 figures 1161:17 finally 1164:2,4 find 1163:12 first 1149:20 1151:9 1163:4 flat 1163:17 1164:12,12,14 1168:23,24 1169:13 1172:14, 14 Florida 1149:14 1154:6 1156: 13 1165:21 1166:19 1167:23 1168:23 1169:4 flowing 1173:19 1175:7 focus 1165:14 focuses 1149:15 focusing 1175:2 folks 1161:22 1167:16 follow 1175:19 form 1163:16 forward-looking 1152:2,7,24 found 1154:20 frame 1161:7,10 full 1163:24 fully 1150:16 fund 1149:19,24 1150:1 1151: 22 1155:14,20 1156:2,18,25 1157:7,10 1158:8,22,25 1159: 13 1165:3 1166:18,18 1169:17 1173:7,9,18,20,20 1174:16 funding 1157:4 further 1177:13 future 1150:15 1153:4</p>			
G			
<p>gave 1161:17 Gene 1154:13</p>			

intermediate 1163:10
 interstate 1157:2 1169:21
 1171:21
 intraLATA 1150:20 1167:18
 1172:23 1176:3,3,25 1177:17
 intrastate 1169:21
 irrelevant 1177:9
 isn't 1159:1 1163:17 1165:20
 1168:15 1170:3
 issue 1150:14 1161:9,9 1152:
 1,24 1164:23 1169:23 1170:1
 1171:24
 issues 1149:11,18 1150:5,7,8,
 9,12 1151:8 1164:4,20 1165:7
 1171:7

J

Jacksonville 1166:6
 JACOBS 1173:22,25 1174:12
 JOHNSON 1154:9 1177:21
 joint 1158:14 1169:23 1170:2
 1171:7
 July 1149:11 1162:8 1168:6
 jurisdictional 1169:20 1170:3

K

keep 1150:3 1171:22 1175:12
 Kentucky 1159:22
 KEYSER 125:1 1154:7 1177:7
 kind 1164:25
 knocking 1175:1
 know 1154:25 1156:11 1158:
 19 1161:10,18 1162:19 1164:
 25 1165:22 1166:1,3,4,22
 1167:13,13 1168:18 1169:25
 1172:11 1173:15 1174:14
 1175:19,19
 knowledge 1152:19

L

lack 1152:20
 laid 1165:7
 large 1166:23
 larger 1159:13
 last 1152:24 1160:4 1172:2
 late-filed 1161:21
 later 1159:9
 layman's 1159:5
 least 1150:6 1151:7 1153:23
 leaving 1163:22
 LEC 1151:1
 LECa 1156:17,19
 left 1156:8 1165:1 1168:11
 legislature 1149:10,13 1150:
 10 1154:6
 legislature's 1149:21
 less 1152:14,15
 let 1169:15 1170:20 1172:1
 let's 1174:19
 level 1153:3,15,19 1170:7,21
 like 1159:16,21 1164:9 1166:3
 1167:10 1177:7
 line 1152:14,16 1155:1,3,4
 1162:13,25 1163:4,4 1164:13,
 17 1165:19 1168:24 1170:16
 1171:19 1172:7,15 1173:1,16
 1175:6
 lines 1156:16 1170:24 1172:5
 1177:13
 list 1149:11 1150:7,12 1151:9
 listed 1161:15
 listing 1168:22
 little 1166:5
 local 1149:14,23 1150:3,11,23
 1151:10,13,19,23 1152:3,23,25
 1153:16 1154:5 1155:9,11,24
 1158:24 1161:1,2 1162:9,25
 1163:2,19 1168:8 1170:15,15
 1173:19 1175:7
 located 1168:16
 long 1161:6
 look 1163:13,14 1165:18

1166:3 1171:13,17 1176:9,11
 looking 1158:12 1161:2,5
 1164:8 1171:13,17
 looks 1155:23
 lot 1164:3 1165:8 1167:25
 1171:7 1178:16
 lower 1171:23

M

Madam 1154:7,10 1177:7,15
 made 1154:16 1156:10 1157:
 24 1158:10,16 1159:21 1160:2
 1170:15 1171:3 1174:25
 maintain 1175:17
 make 1152:17 1161:24 1167:
 18 1170:22,24 1174:2 1175:5
 1177:7
 makes 1150:22 1152:21 1167:
 9
 making 1168:10,12
 mandate 1158:12,17 1159:5
 many 1 50:4,19 1169:12
 1170:24
 market 1153:25 1156:11
 marketplace 1150:18 1151:4
 markets 1152:20
 Martin 1149:2 1154:7,13 1165:
 12 1167:5 1173:24 1174:2,14
 1176:21 1177:11
 math 1171:9 1172:10,12 1176:
 6
 matter 1151:18
 maximizes 1153:24
 maximum 1162:2 1164:13
 may 1157:24 1159:21 1168:1,1
 1171:12,12,22
 maybe 1159:25 1171:17,23
 MCI 1152:11 1159:22,24 1167:
 6
 mean 1161:14 1165:25 1166:9
 1168:13 1176:8
 means 1156:21,23 1168:13
 mechanism 1149:22 1157:5
 1164:1
 meet 1149:16 1158:9,17
 meets 1158:11
 mention 1156:18 1159:6,17
 1160:12
 mentioned 1168:4
 mesh 1161:16 1175:6
 Miami 1152:14 1166:6
 Mickey 1167:5
 middle 1164:10,11
 might 1168:5
 million 1156:25 1157:1,1,3,6,
 7,25 1158:1 1166:25
 minimizes 1153:23
 minimum 1151:6
 minus 1171:10
 model 1152:2,4,6,11,22 1154:
 2 1159:17 1160:1
 moment 1168:19
 money 1152:17 1177:5,19
 month 1161:5 1167:19
 monthly 1151:6
 more 1150:14 1166:5 1168:11
 1175:4,5
 Most 1151:14
 move 1159:8,12,16
 moving 1158:13
 MS 125:1 1152:5 1154:7,19
 1177:7
 much 1157:20 1171:24

N

name 1154:13
 necessary 1155:8,16,21 1156:
 5
 need 1149:17 1150:6 1166:2,5
 1170:24 1171:5,13 1173:12
 1178:11
 needed 1154:21

needs 1175:20
 net 1156:19,23 1157:1,7,12,13,
 18 1158:1,2
 neutrality 1151:1
 never 1153:20
 new 1151:7 1153:11,17,19
 1154:18,21 1155:3 1171:3
 1173:19 1175:6
 next 1149:13 1152:1 1156:22
 1166:2 1173:12
 night 1160:4
 nine 1155:1,4
 note 1150:6,15 1151:4 1163:
 22 1169:23 1171:5
 nothing 1177:18
 November 1169:24
 Now 1150:5 1151:8 1154:7
 1158:15 1159:16 1168:2,17
 1169:15 1170:20 1172:19,24
 1173:4 1174:25 1177:3
 number 1166:21,22,23 1168:
 18 1169:3 1173:3
 numbers 1161:12 1168:21
 1172:21

O

object 1177:12
 objection 1177:8
 obligation 1149:12,17 1158:
 19
 obviously 1150:9
 odd 1161:17
 odds 1150:16 1153:15
 off 1165:1
 office 1168:23,25 1169:3
 offset 1174:10
 offsetting 1157:16 1173:10
 often 1167:9
 Okay 1154:9 1165:4 1167:17,
 25 1169:2,11,15,19 1170:1,20
 1172:6,7,8,9,10,21,24 1173:4
 1176:1,24 1177:1
 old 1158:22
 once 1155:14,19 1156:3 1174:
 24
 one 1150:6 1155:3 1161:5
 1163:22 1167:7 1168:10,20
 1171:12,17 1173:20 1175:2
 ones 1174:3
 only 1151:16 1152:18 1153:8
 1157:17,19 1158:23 1161:2,13,
 19 1169:4,8,12 1172:25
 open 1171:2
 opinion 1159:5
 opportunities 1153:25
 order 1149:11,16 1172:19
 original 1155:3
 originally 1160:7 1165:10
 other 1152:10 1156:4,4 1164:
 24 1167:17 1174:9 1177:3
 out 1150:5,10 1151:25 1155:5
 1158:13 1163:23,25 1165:7
 1172:3 1174:8
 outcome 1150:3
 over 1156:13 1161:4 1174:21
 1177:10
 own 1152:17

P

package 1174:7
 Page 1155:5 1156:14 1159:17
 1160:12 1161:25 1164:11
 1167:17
 Pages 1169:15
 paid 1157:6,20,25 1163:9,9
 part 1156:19 1168:7 1172:2
 1176:10
 particular 1156:18 1170:22
 particularly 1177:13
 parties 1151:14
 party 1150:6 1151:16 1163:10
 pass 1152:12

pay 1157:1 1158:21 1163:2
 1166:5 1169:4,12
 paying 1157:10
 payment 1173:2
 pays 1175:13
 people 1168:12
 per 1152:14 1155:3 1162:25
 1169:4
 percent 1161:13,18,24
 percentage 1161:18 1167:15
 1169:7
 perhaps 1157:23
 period 1161:4,6
 permanent 1149:19,22
 PFM-1 1168:19,22 1172:3
 phase 1173:12
 picked 1172:3
 PIXC 1162:19,20,23,24 1163:
 15,17,20,21 1164:5 1171:18
 place 1160:5
 placing 1164:21
 plan 1167:22
 plans 1162:7 1168:5
 please 1149:5 1156:20 1164:
 10
 plus 1166:15
 point 1152:21 1155:5 1157:5
 1165:2 1175:8,21
 position 1150:15,19 1151:3,5,
 21
 positive 1158:15
 possibility 1168:3
 possible 1159:18 1174:5,6
 1175:21
 possibly 1158:13 1162:5
 1164:5
 prepared 1149:2
 prescribed 1162:23
 pretty 1158:5
 previously 1168:1
 prices 1176:4
 primarily 1162:10
 prior 1168:5
 probably 1166:23
 problem 1156:9 1171:15,16
 1176:10
 proceeding 1150:9,15 1159:
 19 1164:21 1166:2 1177:10
 proceedings 1149:25
 process 1169:16,16 1171:2
 proposal 1150:25 1163:23,24
 1171:3,4 1173:21
 propose 1149:8 1157:4 1165:
 4
 proposed 1153:14
 provide 1149:5 1154:4 1158:
 20 1161:20,23 1169:7
 provided 1152:5,8 1154:22
 1171:18,22 1173:18
 provides 1152:7
 providing 1152:3,19,22 1163:
 11
 proxy 1152:2
 purchase 1162:17
 push 1167:10
 put 1150:5 1174:8

Q

quarter 1167:22 1168:2
 question 1157:23,25 1158:9
 1161:11 1168:9 1170:3 1172:2
 1173:5 1177:14,21
 questioning 1177:13
 questions 1167:6
 quite 1150:8 1152:21

R

range 1166:24
 rate 1157:16 1158:3,6,8 1162:
 2,16 1163:17 1164:12,12,14
 1165:23 1166:4,12,15 1168:23,
 24 1169:13 1172:14,14 1173:

understand 1154:20 1157:23 understanding 1151:17 1163: 3 1164:15 understate 1152:22 undertaking 1169:10 United 1171:2 universal 1149:9,16,19,22,24 1150:1,22 1153:4,6,9,12,17,21 1155:14,16,20,21 1156:2,5,9, 18 1158:8,9,20,23 1159:13 1164:1,3,6 1166:1,5,18 1169: 17 1173:18 unless 1150:22 1176:15 unresolved 1154:4 up 1150:22 1155:2 1164:3 1165:9 1167:11 1170:15 1171: 20,24 1172:10,24 1173:10,12 updated 1160:1 us 1161:12 1163:21 1168:18 1169:3 1173:9 use 1151:25 1154:3 1158:13 1168:21 used 1172:20 user 1162:17 1163:9,14 1175: 14 USF 1173:6 1177:19 using 1151:14 1152:11 1166: 16,19 1172:11 1173:3	witness's 1159:24 Wood 1159:20,24 work 1149:21 1169:17 1172: 12 1174:23 wouldn't 1162:13 wrong 1159:19
Y	
year 1149:13 1156:22 years 1150:4 yesterday 1159:20,24 1160:13 yet 1152:18	
Z	
zero 1157:8,12,13 1158:2 1177:4	
V	
variable 1159:18,23 various 1161:12 vary 1153:7 versus 1171:14 1176:11 vertical 1150:20 1151:20,24 1160:15,15,17 1167:8 1170:16 1172:22 1174:5,18 1175:16 1176:2,13,16,18,25 1177:17 very 1155:2 1167:6 1171:23, 24 1177:22 via 1152:11,15 1171:18 1173: 18 viable 1153:25 1176:14 view 1158:10 violate 1159:4 violates 1150:25 Volume 1177:24	
W	
want 1168:20 1172:21 wanted 1175:8 wasn't 1155:2 way 1155:2 1157:11,19 1163: 12 1169:22 1171:1,6,12 ways 1174:8 We'll 1157:4 1161:24 1164:7 1174:2 1175:22 we're 1165:2 well 1150:7 1157:6,9,12,23 1158:6 1163:7 1166:7 1168:9 1172:1,10 1174:18 1175:8,23 what's 1156:15 Whatever 1162:8 1173:11,17 1174:10 whenever 1157:5 whether 1152:24 1168:21 1177:16 whole 1171:2 will 1149:17 1150:3,15,21 1151:1,3 1154:4 1155:15,15 1156:17,22 1157:10 1158:12, 24 1171:10,15 1173:10,14,14, 15,16,17,18,23 1174:1,3 1175: 1 wipe 1177:3 wire 1152:14,17 1153:1,2,7,14, 23 1159:7,14 1165:20,24 1166: 4,14 1169:9 1170:22 1172:3,13 1173:1 within 1153:7 without 1153:13 WITNESS 1161:8	