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July 17, 1998

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Ex Parte

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
1919 M Street
Washington, DC 20554

96-45

RECEIVED
JUL 17 1998
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Re: CC Docket Nos. 96-45 and 97-160

Dear Ms. Salas:

On July 15, 1998, Jim Madan and Mike Dirmeier from Georgetown Consulting Group and Dionne Caldwell and the undersigned, all representing BellSouth, met with Brad Wimmer, Katie King, Byran Clopton, Bob Laube, Abdel Eqab, Richard Smith, Matthew Vitale, Steve Burnett, and Adrian Wright of the Common Carrier Bureau in connection with the above referenced proceedings. The Georgetown Consulting Group presented the attached materials to the Common Carrier Bureau staff during this meeting. The materials show:

1. 103 of 173 input variables in HAI have minimal impact on total cost;
2. DACS investment should be included in determining the cost of universal service because it is necessary for local competition where DLCs are deployed and, within HAI, the overwhelming majority of lines in low density areas are served by DLC;
3. The HAI national cost inputs do not produce cost inputs that reflect locational differences; and
4. Regional inputs may produce results that vary significantly from state-specific inputs.

Please contact me if you have any questions regarding this material.

Yours truly,

W W Jordan

Vice President-Federal Regulatory

attachments

cc: Brad Wimmer
Katie King
Bryan Clopton
Bob Laube
Abdel Eqab
Richard Smith
Matthew Vitale
Steve Burnett
Adrian Wright

for dewatering. As shown on Schedule 6 lines 16 - 18, the cluster data base files include many clusters that would qualify for application of this input. However, because manholes are included in the BellSouth in-plant installation factors for conduit, the GCG-recommended manhole investment inputs are $0. Therefore, the water depth input has no effect on BellSouth's recommendations.

- As shown by Schedule 5, the effect of removing all of the terrain variables [rock depth, surface texture, water depth] is immaterial. As a result, the overall modification of "national" inputs to state-specific inputs results in very little change to those inputs. In other words, using default adjustment factors, national inputs and "state-specific inputs" are virtually equal!

IV. Regional inputs:

Obviously, there are many ways to develop region-wide inputs, including:

- a straight average of the state-specific inputs, which would give equal weighting to each state although each of the states contributes unequally to overall cost or the overall number of lines;

- a weighted average input, with number of lines used to weight the inputs;

- other weighting methods, including the development of weighted-average inputs using the same method to develop regional inputs that was used to compute state-specific inputs. In effect, this would develop inputs that treat the region as a state.

The preliminary results [see Schedule 7] of our studies are:

1. region-wide inputs can be developed that, taken in total, produce outcomes in the model that are reasonably representative of the average result of the states included in the region.

2. the use of region-wide inputs produces results that, from a state-by-state perspective, vary significantly from the use of state-specific inputs.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
	)	
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs	)	CC Docket No. 97-160

GEORGETOWN CONSULTING GROUP, INC.

PRESENTATION TO FCC STAFF

JULY 15, 1998

BellSouth Telecommunications, Inc.
FCC Sensitivity Analysis
Low Sensitivity Inputs vs. Default

	State	Scenario	USF Support ($000s)*	UNE Rates: Loop	UNE Rates: Agg Switch	UNE Rates: Total Network Elements	Lines	Filename
1	Alabama	Low Sensitivity	$ 75,033	$ 18.14	$ 4.13	$ 22.28	1,968,210	AL(HM50a)lowsens.xls
2		Default	81,395	18.42	4.64	23.06	1,968,210	AL(HM50a)default.xls
3		Difference	$ (6,362)	$ (0.28)	$ (0.51)	$ (0.79)		
4	Florida	Low Sensitivity	$ 8,144	$ 10.66	$ 3.16	$ 13.83	6,520,381	FL(HM50a)lowsens.xls
5		Default	11,124	10.74	3.62	14.36	6,520,381	FL(HM50a)default.xls
6		Difference	$ (2,980)	$ (0.08)	$ (0.46)	$ (0.54)		
7	Georgia	Low Sensitivity	$ 45,307	$ 13.43	$ 3.41	$ 16.84	4,343,728	GA(HM50a)lowsens.xls
8		Default	51,432	13.61	3.91	17.53	4,343,728	GA(HM50a)default.xls
9		Difference	$ (6,125)	$ (0.18)	$ (0.51)	$ (0.68)		
10	Kentucky	Low Sensitivity	$ 29,061	$ 16.84	$ 4.48	$ 21.31	1,255,189	KY(HM50a)lowsens.xls
11		Default	33,220	17.05	5.07	22.13	1,255,189	KY(HM50a)default.xls
12		Difference	$ (4,159)	$ (0.22)	$ (0.60)	$ (0.81)		
13	Louisiana	Low Sensitivity	$ 55,942	$ 14.84	$ 4.18	$ 19.02	2,305,079	LA(HM50a)lowsens.xls
14		Default	61,149	15.00	4.74	19.74	2,305,079	LA(HM50a)default.xls
15		Difference	$ (5,207)	$ (0.16)	$ (0.57)	$ (0.73)		
16	Mississippi	Low Sensitivity	$ 103,745	$ 23.47	$ 5.20	$ 28.67	1,264,008	MS(HM50a)lowsens.xls
17		Default	111,874	23.96	5.78	29.74	1,264,008	MS(HM50a)default.xls
18		Difference	$ (8,130)	$ (0.49)	$ (0.58)	$ (1.07)		
19	North Carolina	Low Sensitivity	$ 20,877	$ 13.70	$ 3.64	$ 17.35	2,534,578	NC(HM50a)lowsens.xls
20		Default	24,691	13.86	4.22	18.08	2,534,578	NC(HM50a)default.xls
21		Difference	$ (3,814)	$ (0.16)	$ (0.58)	$ (0.74)		
22	South Carolina	Low Sensitivity	$ 20,346	$ 15.44	$ 3.99	$ 19.43	1,455,585	SC(HM50a)lowsens.xls
23		Default	23,675	15.65	4.57	20.22	1,455,585	SC(HM50a)default.xls
24		Difference	$ (3,329)	$ (0.20)	$ (0.58)	$ (0.78)		
25	Tennessee	Low Sensitivity	$ 56,309	$ 15.31	$ 3.85	$ 19.16	2,846,289	TN(HM50a)lowsens.xls
26		Default	62,864	15.51	4.46	19.96	2,846,289	TN(HM50a)default.xls
27		Difference	$ (6,555)	$ (0.20)	$ (0.61)	$ (0.81)		
			Total	Line-weighted average			Total	
28		Average low sensitivity	$ 414,763	$ 14.26	$ 3.73	$ 18.00	24,493,047	
29		Default	461,425	14.44	4.26	18.71	24,493,047	
30		Effect of low sensitivity inputs	$ (46,662)	$ (0.18)	$ (0.53)	$ (0.71)		
31		Percent decrease	-10.1%	-1.2%	-12.5%	-3.8%		

* - Density Zone - using monthly benchmark values of $31 for Primary Residence Lines and $51 for Single Line Business Lines.

BellSouth Telecommunications, Inc.
HAI R5.0a - Low Sensitivity Values

		Low-Sensitivity Input Values									
		Default	Alabama	Florida	Georgia	Kentucky	Louisiana	Mississippi	N Carolina	S Carolina	Tennessee
	Distribution NID										
	Indoor NID case	5	4	4	4	4	4	4	4	4	4
	Distribution DROP										
	Average Lines per business location	4	5	5	5	5	5	5	5	5	5
	Distribution Cable & Riser										
1	Distribution Riser Cable Investment per foot 1	25	20	20	20	20	20	20	20	20	20
1	Distribution Riser Cable Investment per foot 2	20	16	16	16	16	16	16	16	16	16
1	Distribution Riser Cable Investment per foot 3	15	12	12	12	12	12	12	12	12	12
1	Distribution Riser Cable Investment per foot 4	12 5	10	10	10	10	10	10	10	10	10
1	Distribution Riser Cable Investment per foot 5	10	8	8	8	8	8	8	8	8	8
1	Distribution Riser Cable Investment per foot 6	7 5	6	6	6	6	6	6	6	6	6
1	Distribution Riser Cable Investment per foot 7	5 3	4 24	4 24	4 24	4 24	4 24	4 24	4 24	4 24	4 24
1	Distribution Riser Cable Investment per foot 8	3 15	2 52	2 52	2 52	2 52	2 52	2 52	2 52	2 52	2 52
1	Distribution Riser Cable Investment per foot 9	2 05	1 64	1 64	1 64	1 64	1 64	1 64	1 64	1 64	1 64
1	Distribution Riser Cable Investment per foot 10	1 5	1.2	1.2	1.2	1 2	1 2	1 2	1 2	1 2	1 2
1	Distribution Riser Cable Investment per foot 11	0 95	0 76	0 76	0 76	0.76	0 76	0.76	0 76	0 76	0 76
1	Distribution Riser Cable Investment per foot 12	0 8	0 64	0 64	0 64	0 64	0 64	0 64	0 64	0 64	0 64
	Distribution Poles and Conduit										
2	Pole Investment	201	160 8	160 8	160 8	160 8	160 8	160 8	160 8	160 8	160 8
2	Pole Labor	216	172 8	172 8	172 8	172 8	172 8	172 8	172 8	172 8	172 8
4	Conduit Investment per foot	0 6	0 48	0 48	0 48	0 48	0 48	0 48	0 48	0 48	0 48
	Distribution Placement Fraction										
17	Buried fraction available for shift - 0	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
17	Buried fraction available for shift - 5	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
17	Buried fraction available for shift - 100	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
17	Buried fraction available for shift - 200	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
17	Buried fraction available for shift - 650	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
17	Buried fraction available for shift - 850	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
17	Buried fraction available for shift - 2550	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
17	Buried fraction available for shift - 5000	0 000	0 200	0 200	0 200	0 200	0 200	0 200	0 200	0 200	0 200
17	Buried fraction available for shift - 10000	0 000	0 200	0.200	0 200	0 200	0 200	0 200	0 200	0 200	0 200
	Distribution Fill & Pole Spacing										
19	Pole Spacing, feet - 0	250	300	300	300	300	300	300	300	300	300
19	Pole Spacing, feet - 5	250	300	300	300	300	300	300	300	300	300
19	Pole Spacing, feet - 100	200	240	240	240	240	240	240	240	240	240
19	Pole Spacing, feet - 200	200	240	240	240	240	240	240	240	240	240
19	Pole Spacing, feet - 650	175	210	210	210	210	210	210	210	210	210
19	Pole Spacing, feet - 850	175	210	210	210	210	210	210	210	210	210
19	Pole Spacing, feet - 2550	150	180	180	180	180	180	180	180	180	180
19	Pole Spacing, feet - 5000	150	180	180	180	180	180	180	180	180	180
19	Pole Spacing, feet - 10000	150	180	180	180	180	180	180	180	180	180

BellSouth Telecommunications, Inc.
HAI R5.0a - Low Sensitivity Values

		Low-Sensitivity Input Values									
		Default	Alabama	Florida	Georgia	Kentucky	Louisiana	Mississippi	N Carolina	S Carolina	Tennessee
	Distribution Geology and Clusters										
21	Rock Depth Threshold, inches	24	29	29	29	29	29	29	29	29	29
22	Hard Rock Placement Multiplier	3 5	2 8	2 8	2 8	2 8	2 8	2 8	2 8	2 8	2 8
23	Soft Rock Placement Multiplier	2	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6
	Distribution Long loop investments										
28	Repeater Investment, installed	$ 527	$ 422	$ 422	$ 422	$ 422	$ 422	$ 422	$ 422	$ 422	$ 422
29	Integrated COT, installed	$ 420	$ 336	$ 336	$ 336	$ 336	$ 336	$ 336	$ 336	$ 336	$ 336
30	Remote Multiplexer Common Equip Inv, installed	$ 8,200	$ 6,560	$ 6,560	$ 6,560	$ 6,560	$ 6,560	$ 6,560	$ 6 560	$ 6 560	$ 6,560
31	Channel Unit Investment, per subscriber	$ 125	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100
32	COT investment per RT, installed	$ 1,170	$ 936	$ 936	$ 936	$ 936	$ 936	$ 936	$ 936	$ 936	$ 936
33	Remote Terminal fill factor	0 9000	0 9600	0 9600	0 9600	0 9600	0 9600	0 9600	0 9600	0 9600	0 9600
34	Maximum T1s per cable	8	10	10	10	10	10	10	10	10	10
35	T1 repeater spacing, dB	32	38	38	38	38	38	38	38	38	38
36	Aerial T1 attenuation, dB/kft	6 3	5 04	5 04	5 04	5 04	5 04	5 04	5 04	5 04	5 04
37	Buried T1 attenuation, dB/kft	5	4	4	4	4	4	4	4	4	4
	Distribution SAI										
38	SAI Indoor Investment 1	$ 9,656	$ 7,725	$ 7,725	$ 7,725	$ 7,725	$ 7,725	$ 7,725	$ 7,725	$ 7 725	$ 7,725
38	SAI Indoor Investment 2	$ 7,392	$ 5,914	$ 5,914	$ 5,914	$ 5,914	$ 5,914	$ 5,914	$ 5,914	$ 5,914	$ 5 914
38	SAI Indoor Investment 3	$ 4,928	$ 3,942	$ 3,942	$ 3,942	$ 3,942	$ 3,942	$ 3,942	$ 3,942	$ 3,942	$ 3,942
38	SAI Indoor Investment 4	$ 3,352	$ 2,682	$ 2,682	$ 2,682	$ 2,682	$ 2,682	$ 2,682	$ 2,682	$ 2 682	$ 2 682
38	SAI Indoor Investment 5	$ 2,464	$ 1,971	$ 1,971	$ 1,971	$ 1,971	$ 1,971	$ 1,971	$ 1,971	$ 1 971	$ 1 971
38	SAI Indoor Investment 6	$ 1,776	$ 1,421	$ 1,421	$ 1 421	$ 1 421	$ 1 421	$ 1 421	$ 1 421	$ 1 421	$ 1 421
38	SAI Indoor Investment 7	$ 1 232	$ 986	$ 986	$ 986	$ 986	$ 986	$ 986	$ 986	$ 986	$ 986
38	SAI Indoor Investment 8	$ 888	$ 710	$ 710	$ 710	$ 710	$ 710	$ 710	$ 710	$ 710	$ 710
38	SAI Indoor Investment 9	$ 592	$ 474	$ 474	$ 474	$ 474	$ 474	$ 474	$ 474	$ 474	$ 474
38	SAI Indoor Investment 10	$ 296	$ 237	$ 237	$ 237	$ 237	$ 237	$ 237	$ 237	$ 237	$ 237
38	SAI Indoor Investment 11	$ 148	$ 118	$ 118	$ 118	$ 118	$ 118	$ 118	$ 118	$ 118	$ 118
38	SAI Indoor Investment 12	$ 98	$ 78	$ 78	$ 78	$ 78	$ 78	$ 78	$ 78	$ 78	$ 78
	Feeder Copper placement										
47	Copper Manhole Spacing, feet - 0	800	960	960	960	960	960	960	960	960	960
47	Copper Manhole Spacing, feet - 5	800	960	960	960	960	960	960	960	960	960
47	Copper Manhole Spacing, feet - 100	800	960	960	960	960	960	960	960	960	960
47	Copper Manhole Spacing, feet - 200	800	960	960	960	960	960	960	960	960	960
47	Copper Manhole Spacing, feet - 650	600	720	720	720	720	720	720	720	720	720
47	Copper Manhole Spacing, feet - 850	600	720	720	720	720	720	720	720	720	720
47	Copper Manhole Spacing, feet - 2550	600	720	720	720	720	720	720	720	720	720
47	Copper Manhole Spacing, feet - 5000	400	480	480	480	480	480	480	480	480	480
47	Copper Manhole Spacing, feet - 10000	400	480	480	480	480	480	480	480	480	480
48	Pole Spacing, feet - 0	250	300	300	300	300	300	300	300	300	300
48	Pole Spacing, feet - 5	250	300	300	300	300	300	300	300	300	300
48	Pole Spacing, feet - 100	200	240	240	240	240	240	240	240	240	240
48	Pole Spacing, feet - 200	200	240	240	240	240	240	240	240	240	240
48	Pole Spacing, feet - 650	175	210	210	210	210	210	210	210	210	210
48	Pole Spacing, feet - 850	175	210	210	210	210	210	210	210	210	210
48	Pole Spacing, feet - 2550	150	180	180	180	180	180	180	180	180	180
48	Pole Spacing, feet - 5000	150	180	180	180	180	180	180	180	180	180
48	Pole Spacing, feet - 10000	150	180	180	180	180	180	180	180	180	180

BellSouth Telecommunications, Inc.
HAI R5.0a - Low Sensitivity Values

		Low-Sensitivity Input Values									
		Default	Alabama	Florida	Georgia	Kentucky	Louisiana	Mississippi	N Carolina	S Carolina	Tennessee
19	Pole Materials	201	160 8	160 8	160 8	160 8	160 8	160 8	160 8	160 8	160 8
19	Pole Labor	216	172 8	172 8	172.8	172 8	172 8	172 8	172 8	172 8	172 8
50	Inner Duct Investment per foot	0 3	0 24	0 24	0 24	0 24	0 24	0 24	0 24	0 24	0 24
	Feeder Fiber placement										
51	Buried fraction available for shift - 0	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
51	Buried fraction available for shift - 5	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
51	Buried fraction available for shift - 100	0.750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
51	Buried fraction available for shift - 200	0.750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
51	Buried fraction available for shift - 650	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
51	Buried fraction available for shift - 850	0.750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
51	Buried fraction available for shift - 2550	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
51	Buried fraction available for shift - 5000	0.750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900
51	Buried fraction available for shift - 10000	0 750	0 900	0 900	0.900	0 900	0 900	0 900	0 900	0 900	0 900
52	Fiber Pullbox Spacing feet - 0	2,000	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2 400	2 400
52	Fiber Pullbox Spacing feet - 5	2,000	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2 400
52	Fiber Pullbox Spacing feet - 100	2,000	2,400	2,400	2,400	2,400	2,400	2,400	2 400	2,400	2,400
52	Fiber Pullbox Spacing feet - 200	2,000	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2 400	2,400
52	Fiber Pullbox Spacing feet - 650	2,000	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2 400
52	Fiber Pullbox Spacing feet - 850	2,000	2,400	2,400	2,400	2,400	2,400	2,400	2 400	2,400	2 400
52	Fiber Pullbox Spacing feet - 2550	2,000	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2 400	2 400
52	Fiber Pullbox Spacing feet - 5000	2,000	2,400	2 400	2,400	2,400	2,400	2,400	2,400	2 400	2 400
52	Fiber Pullbox Spacing feet - 10000	2,000	2,400	2,400	2,400	2,400	2,400	2,400	2 400	2 400	2 400
	Feeder Copper Manhole Investment										
71	Dewatering factor manhole excavation (additive)	0 2	0 16	0 16	0 16	0 16	0 16	0 16	0 16	0 16	0 16
72	Water table depth for dewatering, ft	5	6	6	6	6	6	6	6	6	6
	Switching End Office Switching										
74	Switch Capacity Real-Time (BHCA) - 1	10,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
74	Switch Capacity Real-Time (BHCA) - 2	50,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000
74	Switch Capacity Real-Time (BHCA) - 3	200,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000	240,000
74	Switch Capacity Real-Time (BHCA) - 4	600,000	720,000	720,000	720,000	720,000	720,000	720,000	720,000	720,000	720,000
75	Switch Capacity Traffic (BHCCS) - 1	30,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000
75	Switch Capacity Traffic (BHCCS) - 2	150,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000
75	Switch Capacity Traffic (BHCCS) - 3	600,000	720,000	720,000	720,000	720,000	720,000	720,000	720,000	720,000	720,000
75	Switch Capacity Traffic (BHCCS) - 4	1,800,000	2,160,000	2,160,000	2,160,000	2,160,000	2,160,000	2,160,000	2,160,000	2,160,000	2,160,000
76	Initial Switch Maximum Equipped Line Size	80,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000
78	Switch Maximum Processor Occupancy	0 9	1	1	1	1	1	1	1	1	1
	Processor Feature Loading Multiplier - normal										
84	- normal	1 2	0 96	0 96	0 96	0 96	0 96	0 96	0 96	0 96	0 96
84	- heavy business	2	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 6
85	- business penetration threshold	0 3	0 36	0 36	0 36	0 36	0 36	0 36	0 36	0 36	0 36

BellSouth Telecommunications, Inc.
HAI R5.0a - Low Sensitivity Values

		Low-Sensitivity Input Values									
		Default	Alabama	Florida	Georgia	Kentucky	Louisiana	Mississippi	N Carolina	S Carolina	Tennessee
	Switching Wirecenter										
6	Lot Size, Multiplier of Switch Room Size	2	1 6	1.6	1 6	1 6	1 6	1 6	1 6	1 6	1 6
7	Tandem/EO Wire Center Common Factor	0 4	0 48	0 48	0.48	0 48	0 48	0 48	0 48	0 48	0 48
9	Switch Room Size, sq ft 1	500	400	400	400	400	400	400	400	400	400
9	Switch Room Size, sq ft 2	1,000	800	800	800	800	800	800	800	800	800
9	Switch Room Size, sq ft 3	2,000	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1 600
9	Switch Room Size, sq ft 4	5,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4 000	4,000
9	Switch Room Size, sq ft 5	10,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8 000	8,000
0	Construction Investment, sq ft 1	75	60	60	60	60	60	60	60	60	60
0	Construction Investment, sq ft 2	85	68	88	68	68	68	68	68	68	68
0	Construction Investment, sq ft 3	100	80	80	80	80	80	80	80	80	80
0	Construction Investment, sq ft 4	125	100	100	100	100	100	100	100	100	100
0	Construction Investment, sq ft 5	150	120	120	120	120	120	120	120	120	120
1	Land Investment, sq ft 1	5	4	4	4	4	4	4	4	4	4
1	Land Investment, sq ft 2	7.5	6	6	6	6	6	6	6	6	6
1	Land Investment, sq ft 3	10	8	8	8	8	8	8	8	8	8
1	Land Investment, sq ft 4	15	12	12	12	12	12	12	12	12	12
1	Land Investment, sq ft 5	20	16	16	16	16	16	16	16	16	16
	Switching Traffic Parameters										
7	Local DEMs, thousands	state -specific	32,715 838	76 878,349	63,147,640	18,535,172	35,997,714	17,469,843	28,387 208	20,274,765	42 008 973
8	Intrastate DEMs, thousands	values from	2,307,362	8,064,850	4,197,959	1,662,427	2,048,685	1,432,556	3,417 591	1 730,834	2,990,226
9	Interstate DEMs, thousands	ARMIS files	4,241,600	15,488,000	10,592,800	2 637 600	5,164,000	3,016,800	5,692,000	3,540 000	6 236 800
	NOTE The state-specific, low sensitivity values for DEMS (B97-B99) are 80% of each state's ARMIS values										
00	Local Business/Residence DEMs	1 1	1 32	1 32	1 32	1 32	1 32	1 32	1 32	1 32	1 32
01	Intrastate Business/Residence DEMs	2	2 4	2 4	2.4	2 4	2 4	2 4	2 4	2 4	2 4
02	Interstate Business/Residence DEMs	3	3.6	3 6	3 6	3 6	3 6	3 6	3 6	3 6	3 6
05	Residential Holding Time Multiplier	1	0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8
05	Business Holding Time Multiplier	1	0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8
06	Residential Call Attempts per BH	1 3	1 04	1 04	1 04	1 04	1 04	1 04	1 04	1 04	1 04
06	Business Call Attempts per BH	3.5	2.8	2 8	2 8	2 8	2 8	2.8	2 8	2 8	2 8
	Switching Interoffice Investment										
13	Regenerator, installed	$ 15,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
14	Regenerator spacing, miles	40	48	48	48	48	48	48	48	48	48
27	Fiber, pole spacing, feet	150	180	180	180	180	180	180	180	180	180
28	Fiber Investment, pole material	201	160 8	160 8	160 8	160 8	160 8	160 8	160 8	160 8	160 8
28	Fiber Investment, pole labor (basic)	216	172 8	172.8	172 8	172 8	172 8	172 8	172 8	172 8	172 8
29	Fraction Poles and Buried/UG Placement Common with Feed	0 750	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900	0 900

BellSouth Telecommunications, Inc.
HAI R5.0a - Low Sensitivity Values

		Low-Sensitivity Input Values									
		Default	Alabama	Florida	Georgia	Kentucky	Louisiana	Mississippi	N Carolina	S Carolina	Tennessee
	Switching Transmission parameters										
142	Maximum nodes per ring	16	13	13	13	13	13	13	13	13	13
142a	Ring transiting traffic factor	0.40	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
142b	Intertandem fraction of tandem trunks (additive)	0.10	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
	Switching Tandem Switching										
143	Real-time Limit, BHCA	750,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000
144	Port Limit, trunks	100,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000
145	Common Equipment Investment	$ 1,000,000	$ 800,000	$ 800,000	$ 800,000	$ 800,000	$ 800,000	$ 800,000	$ 800,000	$ 800,000	$ 800,000
146	Maximum Port Fill	0.9	1	1	1	1	1	1	1	1	1
147	Maximum Real-time Occupancy	0.9	1	1	1	1	1	1	1	1	1
148	Common Equipment Intercept Factor	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Switching Signaling										
151	STP Maximum Link Fill	0.8	1	1	1	1	1	1	1	1	1
155	Signaling Link Bit Rate	56,000	67,200	67,200	67,200	67,200	67,200	67,200	67,200	67,200	67,200
158	ISUP Messages per Interoffice BHCA	6	5	5	5	5	5	5	5	5	5
159	ISUP Message Length, bytes	25	20	20	20	20	20	20	20	20	20
160	TCAP Messages per transaction	2	1	1	1	1	1	1	1	1	1
161	TCAP Message length, bytes	100	80	80	80	80	80	80	80	80	80
	Switching OS and Public Telephone										
164	Operator Investment per position	$ 6,400	$ 5,120	$ 5,120	$ 5,120	$ 5,120	$ 5,120	$ 5,120	$ 5,120	$ 5,120	$ 5,120
165	Operator Maximum Utilization, per position, CCS	32	36	36	36	36	36	36	36	36	36
167	Public Telephone Investment, per station	$ 760	$ 608	$ 608	$ 608	$ 608	$ 608	$ 608	$ 608	$ 608	$ 608
	Switching ICO Parameters										
175a	Equivalent Facility Investment per DS0	138.08	110.464	110.464	110.464	110.464	110.464	110.464	110.464	110.464	110.464
175b	Equivalent Terminal Investment per DS0	111.62	89.296	89.296	89.296	89.296	89.296	89.296	89.296	89.296	89.296
	Expense Other										
184	Billing/Bill Inquiry per line per month	1.22	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976
190	Monthly LNP cost, per line	0.25	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
191	Carrier to Carrier Customer Service, per line per year	1.69	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
192	NID Expense per line per year	1	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8

BellSouth Telecommunications, Inc.

FCC Sensitivity Analysis

GCG Litespan vs. GCG Litespan without DACS

	State	Scenario	USF Support ($000s)*	UNE Rates: Loop	UNE Rates: Agg Switch	UNE Rates: Total Network Elements	Lines	Filename
1	Alabama	GCG Litespan	$ 269.726	$ 32.31	$ 7.67	$ 39.98	1,968,210	AL(HM50a)GCGlitespan.xls
2		GCG Litespan w/o DACS	266,060	32.03	7.66	39.69	1,968,210	AL(HM50a)GCGlitespanwoDACS.xls
3		Effect of Removing DACS	$ 3,666	$ 0.27	$ 0.02	$ 0.29		
4	Florida	GCG Litespan	$ 291,916	$ 25.83	$ 6.37	$ 32.20	6,520,381	FL(HM50a)GCGlitespan.xls
5		GCG Litespan w/o DACS	285,973	25.41	6.37	31.77	6,520,381	FL(HM50a)GCGlitespanwoDACS.xls
6		Effect of Removing DACS	$ 5,943	$ 0.43	$ 0.00	$ 0.43		
7	Georgia	GCG Litespan	$ 265,183	$ 25.61	$ 6.40	$ 32.01	4,343,728	GA(HM50a)GCGlitespan.xls
8		GCG Litespan w/o DACS	259,224	25.21	6.39	31.60	4,343,728	GA(HM50a)GCGlitespanwoDACS.xls
9		Effect of Removing DACS	$ 5,959	$ 0.40	$ 0.01	$ 0.40		
10	Kentucky	GCG Litespan	$ 144,792	$ 30.04	$ 7.67	$ 37.71	1,255,189	KY(HM50a)GCGlitespan.xls
11		GCG Litespan w/o DACS	142,656	29.75	7.65	37.40	1,255,189	KY(HM50a)GCGlitespanwoDACS.xls
12		Effect of Removing DACS	$ 2,136	$ 0.29	$ 0.02	$ 0.31		
13	Louisiana	GCG Litespan	$ 407,351	$ 37.45	$ 7.52	$ 44.97	2,305,079	LA(HM50a)GCGlitespan.xls
14		GCG Litespan w/o DACS	402,475	37.03	7.51	44.55	2,305,079	LA(HM50a)GCGlitespanwoDACS.xls
15		Effect of Removing DACS	$ 4,877	$ 0.41	$ 0.01	$ 0.42		
16	Mississippi	GCG Litespan	$ 335,627	$ 45.53	$ 7.58	$ 53.11	1,264,008	MS(HM50a)GCGlitespan.xls
17		GCG Litespan w/o DACS	331,632	45.14	7.57	52.71	1,264,008	MS(HM50a)GCGLitespanwoDACS.xls
18		Effect of Removing DACS	$ 3,995	$ 0.39	$ 0.01	$ 0.40		
19	North Carolina	GCG Litespan	$ 196,543	$ 27.99	$ 6.63	$ 34.62	2,534,578	NC(HM50a)GCGlitespan.xls
20		GCG Litespan w/o DACS	192,681	27.60	6.62	34.22	2,534,578	NC(HM50a)GCGlitespanwoDACS.xls
21		Effect of Removing DACS	$ 3,862	$ 0.39	$ 0.01	$ 0.40		
22	South Carolina	GCG Litespan	$ 213,925	$ 37.79	$ 6.81	$ 44.60	1,455,585	SC(HM50a)GCGlitespan.xls
23		GCG Litespan w/o DACS	210,679	37.36	6.81	44.17	1,455,585	SC(HM50a)GCGlitespanwoDACS.xls
24		Effect of Removing DACS	$ 3,246	$ 0.44	$ 0.00	$ 0.44		
25	Tennessee	GCG Litespan	$ 193,438	$ 24.49	$ 6.29	$ 30.78	2,846,289	TN(HM50a)GCGlitespan.xls
26		GCG Litespan w/o DACS	190,221	24.17	6.27	30.44	2,846,289	TN(HM50a)GCGlitespanwoDACS.xls
27		Effect of Removing DACS	$ 3,216	$ 0.32	$ 0.02	$ 0.34		
			Total	Line-weighted average			Total	
28		GCG Litespan	$ 2,318,501	$ 29.42	$ 6.76	$ 36.18	24,493,047	
29		GCG Litespan w/o DACS	2,281,600	29.03	6.75	35.79	24,493,047	
30		Effect of Removing DACS	$ 36,901	$ 0.38	$ 0.01	$ 0.39		
31		Percent increase	1.6%	1.3%	0.1%	1.1%		

* - Density Zone - using monthly benchmark values of $31 for Primary Residence Lines and $51 for Single Line Business Lines.

HAI R5.0a
Labor Rates

	Alabama	Florida	Georgia	Kentucky	Louisiana	Mississippi	N. Carolina	S. Carolina	Tennessee	
1. Hourly labor rate assumed in HAI R5.0a default inputs	$ 35.00	$ 35.00	$ 35.00	$ 35.00	$ 35.00	$ 35.00	$ 35.00	$ 35.00	$ 35.00	
2. Percentage of hourly rate affected by Regional Labor Adjustment ("RLA")	0.571	0.571	0.571	0.571	0.571	0.571	0.571	0.571	0.571	(1)
3. Hourly rate affected by RLA	$ 19.99	$ 19.99	$ 19.99	$ 19.99	$ 19.99	$ 19.99	$ 19.99	$ 19.99	$ 19.99	L 1 x L 2
4. 1 - Line 9	0.420	0.320	0.380	0.270	0.280	0.420	0.490	0.450	0.300	
5. Regional labor adjustment	$ (8.39)	$ (6.40)	$ (7.59)	$ (5.40)	$ (5.60)	$ (8.39)	$ (9.79)	$ (8.99)	$ (6.00)	L 3 x L 4
6. Hourly labor rate in default	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	L 1
7. Loaded hourly labor rate used by AT&T / MCI application of HAI R5.0a	**$ 26.61**	**$ 28.60**	**$ 27.41**	**$ 29.60**	**$ 29.40**	**$ 26.61**	**$ 25.21**	**$ 26.01**	**$ 29.00**	(2)
8. AT&T/MCI labor rate, % of BST cost	65.2%	70.1%	67.2%	72.6%	72.1%	65.2%	61.8%	63.7%	71.1%	L 7 / L 10
9. Regional Labor Adjustment factor ("RLA")	0.580	0.680	0.620	0.730	0.720	0.580	0.510	0.550	0.700	
10. BellSouth regional hourly labor rate (1997 - 1999)	**$ 40.80**									

(1) Percentage labor content varies by type of activity. See Hatfield R5.0a Input Portfolio Section 7.

(2) Equivalent result is:
Labor rate x Percent affected by RLA x RLA
+ Labor rate x (1 - Percent affected by RLA).

Schedule 4

BellSouth Telecommunications, Inc.
FCC Sensitivity Analysis
Terrain Inputs at 1 vs. Default Inputs

	State	Scenario	USF Support ($000s)*	UNE Rates: Loop	Agg. Switch	Total Network Elements	Lines	Filename
1	Alabama	Terrain Inputs at 1	$ 79,588	$ 18.27	$ 4.64	$ 22.91	1,968,210	AL(HM50a)surftextat1.xls
2		Default	81,395	18.42	4.64	23.06	1,968,210	AL(HM50a)default.xls
3		Difference	$ (1,807)	$ (0.15)	$ (0.00)	$ (0.15)		
4	Florida	Terrain Inputs at 1	$ 10,554	$ 10.65	$ 3.62	$ 14.28	6,520,381	FL(HM50a)surftextat1.xls
5		Default	11,124	10.74	3.62	14.36	6,520,381	FL(HM50a)default.xls
6		Difference	$ (570)	$ (0.09)	$ 0.00	$ (0.09)		
7	Georgia	Terrain Inputs at 1	$ 51,287	$ 13.60	$ 3.91	$ 17.52	4,343,728	GA(HM50a)surftextat1.xls
8		Default	51,432	13.61	3.91	17.53	4,343,728	GA(HM50a)default.xls
9		Difference	$ (145)	$ (0.01)	$ 0.00	$ (0.01)		
10	Kentucky	Terrain Inputs at 1	$ 32,268	$ 16.96	$ 5.07	$ 22.03	1,255,189	KY(HM50a)surftextat1.xls
11		Default	33,220	17.05	5.07	22.13	1,255,189	KY(HM50a)default.xls
12		Difference	$ (952)	$ (0.10)	$ (0.00)	$ (0.10)		
13	Louisiana	Terrain Inputs at 1	$ 60,480	$ 14.96	$ 4.74	$ 19.71	2,305,079	LA(HM50a)surftextat1.xls
14		Default	61,149	15.00	4.74	19.74	2,305,079	LA(HM50a)default.xls
15		Difference	$ (669)	$ (0.04)	$ (0.00)	$ (0.04)		
16	Mississippi	Terrain Inputs at 1	$ 110,744	$ 23.84	$ 5.78	$ 29.63	1,264,008	MS(HM50a)surftextat1.xls
17		Default	111,874	23.96	5.78	29.74	1,264,008	MS(HM50a)default.xls
18		Difference	$ (1,130)	$ (0.11)	$ (0.00)	$ (0.11)		
19	North Carolina	Terrain Inputs at 1	$ 24,169	$ 13.82	$ 4.22	$ 18.04	2,534,578	NC(HM50a)surftextat1.xls
20		Default	24,691	13.86	4.22	18.08	2,534,578	NC(HM50a)default.xls
21		Difference	$ (522)	$ (0.04)	$ (0.00)	$ (0.04)		
22	South Carolina	Terrain Inputs at 1	$ 23,502	$ 15.61	$ 4.57	$ 20.18	1,455,585	SC(HM50a)surftextat1.xls
23		Default	23,675	15.65	4.57	20.22	1,455,585	SC(HM50a)default.xls
24		Difference	$ (173)	$ (0.04)	$ 0.00	$ (0.04)		
25	Tennessee	Terrain Inputs at 1	$ 61,392	$ 15.42	$ 4.46	$ 19.87	2,846,289	TN(HM50a)surftextat1.xls
26		Default	62,864	15.51	4.46	19.96	2,846,289	TN(HM50a)default.xls
27		Difference	$ (1,472)	$ (0.09)	$ (0.00)	$ (0.09)		
			Total	Line-weighted average			Total	
28		Terrain Inputs at 1	$ 453,984	$ 14.37	$ 4.26	$ 18.64	24,493,047	
29		Default	461,425	14.44	4.26	18.71	24,493,047	
30		Effect of Removing Terrain Inputs	$ (7,441)	$ (0.07)	$ 0.00	$ (0.07)		
31		Percent decrease	-1.6%	-0.5%	0.0%	-0.4%		

* - Density Zone - using monthly benchmark values of $31 for Primary Residence Lines and $51 for Single Line Business Lines.

BellSouth Telecommunications, Inc.

Terrain Multipliers and Water Table Depth - Number of Clusters by State

	Rock Placement Multiplier	AL	FL	GA	KY	LA	MS	NC	SC	TN
1	Minimum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	Maximum	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
3.	Number of clusters greater than 1.0							9	1	

	Difficult Surface Multiplier	Number of Clusters								
		AL	FL	GA	KY	LA	MS	NC	SC	TN
4.	1.00	2,586	2,056	4,780	2,069	3,038	2,738	2,391	1,634	3,478
5.	1.10	478	3,892	193	170	693	1,009	296	356	35
6.	1.20	167		26	103					397
7	1.30									
8.	1.50									
9.	2.00	104		4	56	1		21		95
10.	3.00									
11.	3.50									
12.	4.00									
13.	Total	3,335	5,948	5,003	2,398	3,732	3,747	2,708	1,990	4,005
14.	% at 1.00	77.5%	34.6%	95.5%	86.3%	81.4%	73.1%	88.3%	82.1%	86.8%
15.	% at 1.10	14.3%	65.4%	3.9%	7.1%	18.6%	26.9%	10.9%	17.9%	0.9%

	Water table	Number of Clusters								
		AL	FL	GA	KY	LA	MS	NC	SC	TN
16.	<= 5 ft	1,904	5,948	1,848	1,465	3,606	3,575	933	1,990	1,969
17	> 5 ft	1,431	0	3,155	933	126	172	1,775	0	2,036
18	Total	3,335	5,948	5,003	2,398	3,732	3,747	2,708	1,990	4,005

BellSouth Telecommunications, Inc.
FCC Sensitivity Analysis
Georgetown Regional Inputs vs. State-Specific Inputs [Litespan DLC]
Line-Weighted Inputs

	State	Scenario	USF Support ($000s)*	UNE Rates: Loop	UNE Rates: Agg Switch	UNE Rates: Total Network Elements	Lines
1	Alabama	Regional Inputs [Litespan]	$ 375,043	$ 38.86	$ 7.59	$ 46.45	1,968,210
2		GCG Litespan	269,726	32.31	7.67	39.98	1,968,210
3		Difference	$ 105,317	$ 6.55	$ (0.08)	$ 6.47	
4	Florida	Regional Inputs [Litespan]	$ 175,046	$ 22.01	$ 5.96	$ 27.97	6,520,381
5		GCG Litespan	291,916	25.83	6.37	32.20	6,520,381
6		Difference	$ (116,870)	$ (3.83)	$ (0.40)	$ (4.23)	
7	Georgia	Regional Inputs [Litespan]	$ 326,943	$ 27.82	$ 6.36	$ 34.18	4,343,728
8		GCG Litespan	265,183	25.61	6.40	32.01	4,343,728
9		Difference	$ 61,760	$ 2.21	$ (0.03)	$ 2.17	
10	Kentucky	Regional Inputs [Litespan]	$ 207,992	$ 36.64	$ 7.85	$ 44.49	1,255,189
11		GCG Litespan	144,792	30.04	7.67	37.71	1,255,189
12		Difference	$ 63,200	$ 6.60	$ 0.18	$ 6.78	
13	Louisiana	Regional Inputs [Litespan]	$ 311,166	$ 32.04	$ 7.38	$ 39.42	2,305,079
14		GCG Litespan	407,351	37.45	7.52	44.97	2,305,079
15		Difference	$ (96,185)	$ (5.41)	$ (0.14)	$ (5.55)	
16	Mississippi	Regional Inputs [Litespan]	$ 439,579	$ 53.76	$ 9.11	$ 62.87	1,264,008
17		GCG Litespan	335,627	45.53	7.58	53.11	1,264,008
18		Difference	$ 103,952		$ 1.53	$ 9.76	
19	North Carolina	Regional Inputs [Litespan]	$ 209,704	$ 28.62	$ 6.67	$ 35.30	2,534,578
20		GCG Litespan	196,543	27.99	6.63	34.62	2,534,578
21		Difference	$ 13,161	$ 0.63	$ 0.04	$ 0.67	
22	South Carolina	Regional Inputs [Litespan]	$ 168,232	$ 32.91	$ 6.94	$ 39.85	1,455,585
23		GCG Litespan	213,925	37.79	6.81	44.60	1,455,585
24		Difference	$ (45,693)	$ (4.88)	$ 0.13	$ (4.75)	
25	Tennessee	Regional Inputs [Litespan]	$ 343,327	$ 32.13	$ 7.03	$ 39.16	2,846,289
26		GCG Litespan	193,438	24.49	6.29	30.78	2,846,289
27		Difference	$ 149,890	$ 7.64	$ 0.74	$ 8.38	
			Total	Line-weighted average			
28		Regional Inputs [Litespan]	$ 2,557,032	$ 30.23	$ 6.81	$ 37.05	24,493,047
29		GCG Litespan	2,318,501	29.42	6.76	36.18	24,493,047
30		Difference	$ 238,531	$ 0.82	$ 0.05	$ 0.87	
31		Percent increase	10.3%	2.8%	0.8%	2.4%	

* - Density Zone - using monthly benchmark values of $31 for Primary Residence Lines and $51 for Single Line Business Lines

BellSouth Telecommunications, Inc.
FCC Sensitivity Analysis
Georgetown Regional Inputs (NEW) vs. State-Specific Inputs [Litespan DLC]
Re-Computed Regional Inputs

	State	Scenario	USF Support ($000s)*	UNE Rates: Loop	UNE Rates: Agg Switch	UNE Rates: Total Network Elements	Lines
1	Alabama	Regional Inputs [Litespan] f	$ 335,283	$ 36.41	$ 7.53	$ 43.95	1,968,210
2		GCG Litespan	269,726	32.31	7.67	39.98	1,968,210
3		Difference	$ 65,557	$ 4.11	$ (0.14)	$ 3.97	
4	Florida	Regional Inputs [Litespan] f	$ 150,080	$ 21.00	$ 5.98	$ 26.98	6,520,381
5		GCG Litespan	291,916	25.83	6.37	32.20	6,520,381
6		Difference	$ (141,836)	$ (4.83)	$ (0.39)	$ (5.22)	
7	Georgia	Regional Inputs [Litespan] f	$ 288,128	$ 26.31	$ 6.36	$ 32.67	4,343,728
8		GCG Litespan	265,183	25.61	6.40	32.01	4,343,728
9		Difference	$ 22,945	$ 0.70	$ (0.04)	$ 0.66	
10	Kentucky	Regional Inputs [Litespan] f	$ 184,350	$ 34.28	$ 7.78	$ 42.06	1,255,189
11		GCG Litespan	144,792	30.04	7.67	37.71	1,255,189
12		Difference	$ 39,558	$ 4.24	$ 0.11	$ 4.35	
13	Louisiana	Regional Inputs [Litespan] f	$ 277,565	$ 30.13	$ 7.31	$ 37.44	2,305,079
14		GCG Litespan	407,351	37.45	7.52	44.97	2,305,079
15		Difference	$ (129,786)	$ (7.32)	$ (0.21)	$ (7.53)	
16	Mississippi	Regional Inputs [Litespan] f	$ 396,682	$ 50.20	$ 8.75	$ 58.95	1,264,008
17		GCG Litespan	335,627	45.53	7.58	53.11	1,264,008
18		Difference	$ 61,055	$ 4.68	$ 1.16	$ 5.84	
19	North Carolina	Regional Inputs [Litespan] f	$ 184,517	$ 27.04	$ 6.68	$ 33.72	2,534,578
20		GCG Litespan	196,543	27.99	6.63	34.62	2,534,578
21		Difference	$ (12,025)	$ (0.95)	$ 0.05	$ (0.90)	
22	South Carolina	Regional Inputs [Litespan] f	$ 148,258	$ 30.95	$ 6.92	$ 37.87	1,455,585
23		GCG Litespan	213,925	37.79	6.81	44.60	1,455,585
24		Difference	$ (65,667)	$ (6.84)	$ 0.11	$ (6.74)	
25	Tennessee	Regional Inputs [Litespan] f	$ 303,626	$ 30.18	$ 7.00	$ 37.18	2,846,289
26		GCG Litespan	193,438	24.49	6.29	30.78	2,846,289
27		Difference	$ 110,188	$ 5.68	$ 0.71	$ 6.40	
			Total	Line-weighted average			
28		Regional Inputs [Litespan] f	$ 2,268,491	$ 28.51	$ 6.78	$ 35.29	24,493,047
29		GCG Litespan	2,318,501	29.42	6.76	36.18	24,493,047
30		Difference	$ (50,011)	$ (0.91)	$ 0.02	$ (0.89)	
31		Percent increase	-2.2%	-3.1%	0.3%	-2.5%	

* - Density Zone - using monthly benchmark values of $31 for Primary Residence Lines and $51 for Single Line Business Lines.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
	)	
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs	)	CC Docket No. 97-160

GEORGETOWN CONSULTING GROUP, INC.

PRESENTATION TO FCC STAFF

JULY 15, 1998

I. Low-sensitivity outputs:

Our Report indicates that we analyzed the HAI Model to determine which input variables have a significant effect on the model's output UNE cost rates, and which do not. Approximately 70 of the inputs are significant. The Staff asked us for our "low sensitivity" analyses that show that changing the remaining 103 inputs, all in a direction designed to decrease UNE cost, produces a change of less than $1.

The low sensitivity analysis is based on changing the inputs by 20%, with each input changed in a direction designed to reduce cost.[1] Thus, the low sensitivity analysis does not allow for the possibility that some changes would increase cost, while others would decrease cost. Schedule 1 shows that the use of low-sensitivity inputs reduces the default UNE rates by a total of 71¢ per line per month, which is a 3.8% reduction in the UNE rate. Schedule 1 Line 30 also shows that on a line-weighted average basis for BellSouth, the low sensitivity inputs reduce the default USF[2] by $46.7 million per year. That is a 10.1% reduction from the USF produced by the default inputs.

To put that effect in context, the GCG recommendations for the roughly 70 sensitive inputs, when adjusted to territory-specific least-cost forward-looking values, increase the system-wide USF from $461 million [Schedule 1 Line 29] to $2.3 billion [Schedule 3 Line 28]. The combined loop and switch UNE rate increases from the average default level of $18.71 per line per month to $36.18.

We emphasize that GCG's input recommendations, for the 70 sensitive input variables, are based on forward-looking costs and in no way reflect the use of any set percentage change from the default inputs.

Schedule 2, attached hereto, provides the inputs that were used for the low-sensitivity analyses.

\1 In certain instances, the change in input would be less than 20% where, for example, a change of 20% would produce an unachievable input such as CCS in excess of 36.

\2 Computed at density-zone level using $31 / $51 res / bus benchmarks. It should be noted that the USF level can be computed at any of three levels of detail: density-zone, wire-center or census-block. As between the density-zone and wire-center computations, neither method always produces a higher USF. The Louisiana Commission has recommended the use of the census-block method, which for that state produced a higher USF.

II. Effect of DACS investment:

In the June 24, 1998 meeting with Staff, we indicated that removing the DACS investment from our recommended DLC costs changed the model's output by approximately 10¢ per line per month. That was based on a back-of-the-envelope computation that did not consider what turn out to be significant second-order effects of removing DACS costs from the DLC investment.

The BellSouth average loop UNE rate decreases by 38¢ per month [1.3% decrease] from the average value, using GCG recommended inputs, of $29.42 per month. Schedule 3 Line 30 indicates that the USF effect of removing DACS cost is small, at $36.9 million [1.6% decrease from GCG Lifespan position].

DACS investment should be included in determining the USF. The USF is being implemented in a competitive environment. There are two issues concerning whether DACS costs will be incurred in the low density areas in which HAI determines that USF support is needed. *First*, if the model does not implement DLC in low density areas, then the inclusion of DACS costs in DLC inputs would have no effect on the USF. In other words, DACS costs would not be an issue for USF. However, our analyses indicate that, within HAI, the overwhelming majority of lines in low-density areas are served via DLC.

Second, if there is no competition in the low density zones, then there would be no need for DACS investment in the DLCs implemented in those areas. However, the Telecommunications Act is an Act "To promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunication consumers and encourage the rapid deployment of new telecommunications technologies."[13]

Paragraph 3 of the FCC's August 6, 1996 First Report and Order in CC Docket Nos. 96-98 and 95-185 states:

> We are directed to remove these impediments to competition in all telecommunications markets, while also preserving and advancing universal service in a manner fully consistent with competition.

Paragraph 7 states:

> Our universal service reform order, consistent with section 254, will rework the subsidy system to guarantee affordable service to all Americans in an era in which competition will be the driving force in telecommunications. By reforming the collection and distribution of universal service funds, the states and the Commission will also ensure that the goals of affordable service and access to advanced services

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[13] Telecommunications Act of 1996.

are met by means that enhance, rather than distort, competition. Universal service reform is vitally connected to the local competition rules we adopt today.

It seems clear that the intent of the Act is for competition to be the driving force in telecommunications services, not only in high-density low cost areas, but in all areas. The suggestion that costs necessary to a competitive environment should be excluded from the computation of the USF introduces a logical disconnect between USF and competition, which is inconsistent with the Act and the FCC's Order.

III. Effect of state-specific variables:

An important issue is the ability to develop a cost-proxy model that begins with a set of national cost inputs, and then attempts to develop state-specific values based on the use of cost indices or other factors that would produce cost inputs that are specific to local conditions. HAI R5.0a claims to produce state-specific results based on the application of (i) regional labor adjustment factors and (ii) terrain variables.

In effect, cost indices are intended to enable one to go from a single cost number at a particular point and location in time, and convert to costs at other locations and times based on locational and time differences. In principle, this linking and indexing could produce reasonable results in various areas of the country. However, no one has shown that the cost indices inherent to HAI accurately reflect locational differences, or even that the starting point default input is correct. Our analyses show that they are not correct.

A. Labor

The default state-specific labor costs in HAI R5.0a are not correct. *First*, the analysis included on page 6, footnote 4 of the GCG Report shows that the default labor cost input in HAI R5.0a is $35, which already is *below* BellSouth's regional labor cost rate of $40.80. *Second*, this disparity is exacerbated by the use of the regional labor adjustment factors. In the June 24 meeting with Staff, we provided a schedule [see Schedule 4 attached hereto] for each BellSouth state comparing BellSouth's region-wide labor rate to the labor rates resulting from the AT&T-recommended regional labor adjustment and default inputs. Those inputs produce an effective labor rate in BellSouth's region that is 27% to 38% below BellSouth's actual labor rate. If anything, the regional labor adjustment factor applied to HAI R5.0a's default inputs should be greater than 1.0, to adjust for the default input's understatement of labor costs.

B. Terrain

Our analysis, on Schedule 5, indicates that removing the terrain and rock hardness variables has minimal effect on the output of HAI R5.0a. Removing these variables reduces the default UNE rates by 7¢ per line per month, a reduction of 0.4%. It is difficult to believe that state-specific terrain variables would produce that small of an effect. There is strong reason for

doubting the accuracy of the cluster-specific terrain variables:

- the terrain input variables included in the HM50.mdb data base file have not been shown to be accurate. For each cluster, there are four inputs, which interact to produce a change in investment under relatively rare conditions:

  - rock hardness – relatively few clusters have an input for rock hardness. The Hatfield Inputs Portfolio ("HIP") indicates that clusters with "hard" rock have a default rock placement multiplier input of 3.5, and those with "soft" rock have a default rock placement multiplier input of 2.0. This is not entirely correct, because (i) clusters not having any rock hardness input, which account for the vast majority of clusters, have a multiplier input of 2.0 and, (ii) the model adjusts the placement multiplier based on the degree to which the rock depth in the cluster is less than the default input of 24 inches.

  - rock depth – which is used to modify the rock hardness multiplier.

    If the rock depth exceeds 24 inches, which it usually does, even if there is hard rock then no hard rock placement multiplier is applied in HAI R5.0a. As an example, if there is hard rock and the rock depth is 23 inches, then the *applied* rock placement multiplier is not 3.5 but 1.10:

    $$3.5 - (3.5 - 1.0) \times 23 / 24 = 1.10.$$

    In this example, because the hard rock is assumed to be fairly deep, the rock depth adjustment eliminates 23/24ths of the effect of the hard rock placement multiplier. Schedule 6 Lines 1 - 3 show that, using default inputs, the applied rock placement multiplier in HAI R5.0a is rarely anything over 1.0 [*i.e.*, no adjustment for hard rock]. In fact, it appears that the rock placement multiplier affects only 9 out of the 32,866 clusters in BellSouth's 9-state territory.

    There are (a) relatively few clusters that have "hard" rock, (b) very few clusters that have rock closer to the surface than 24 inches, and (c) extremely few clusters that have both "hard" rock and rock close to the surface. Therefore, rock hardness is a very insignificant input factor.

    Finally, the applied rock placement multiplier affects *only the labor portion* of pole placement cost, buried cable placement and conduit placement. As discussed above, the labor costs in HAI R5.0a's default inputs are understated. Therefore, any rock placement multiplier is also understated at least to the same extent.

  - surface texture – HAI R5.0a has 258 categories of surface texture, for which there are 2 x 258 = 516 inputs. For each surface texture type, one input is the "effect,"

which is a cost multiplier. The second input, which defaults to 1.0 for each type of texture, is for "fraction cluster affected." The 1.0 default assumes that the surface texture covers the entire cluster.

Of the 258 surface texture types, 141 types have a default "effect" input of 1.0. Therefore, only 117 of the surface texture types have the potential for increasing cost in HAI R5.0a. The following table indicates the default "effect" inputs in the model, along with the number of surface texture types having each such input:

Number	Input
141	1.0
39	1.1
41	1.2
24	1.3
5	1.5
2	2.0
4	3.0
1	3.5
1	4.0

Most of the surface types have the potential for increasing cost by only a very small amount.

As for the rock placement multiplier, the surface texture input affects only the labor portion of the costs of installing poles, and placing buried cable and underground conduit. As shown above, most of the surface texture inputs are not much different from 1.0. Schedule 6 lines 4 - 15 indicate that, at least for BellSouth's territories, the vast majority of clusters utilize difficult surface multipliers of 1.0 or 1.1.

- distribution distance multiplier, difficult terrain – the default input for this variable is 1.0, which means that HAI R5.0a does not implement any extra distribution cable in difficult terrain situations. The HIP explains, "While the typical response to difficult soil conditions is often to simply route around those conditions, which could be reflected in this [distance multiplier] parameter, HM 5.0a instead treats the effect of difficult soil conditions as a multiplier of placement cost . . ."

  In effect, while the model has the ability to increase distance in response to difficult terrain, it does not do so. The authors of the model have rejected the typical response to difficult soil conditions.

- water depth – if the water table in a cluster is higher than the water depth threshold [default 5 ft], then HAI R5.0a increases the cost of copper feeder manholes to account